Factors Influencing Energy Drinks Consumption Among Adult Men in Tanzania: A Case Study of Tunduma Town Council in Songwe Region

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Abstract
The increasing consumption of energy drinks among adults has become a growing public health and behavioural concern worldwide. This study examined factors influencing energy drink consumption among adult men in Tunduma Town Council, Songwe region, Tanzania. A cross-sectional design used a mixed-methods approach; data were collected through interviews, surveys, focus group discussions, and documentary reviews, predominantly quantitative and supported by qualitative data. Quantitative data were collected from 397 adult men using structured questionnaires, while 20 purposively selected key informants provided qualitative insights. Quantitative data were analysed using descriptive statistics and multiple linear regression with the aid of IBM SPSS version 28 as a statistical tool. Whereas qualitative data were thematically analysed using NVivo version 12. The results show that taste and perceived improvement in work performance were the main reasons for energy drink consumption. Regression analysis revealed that physical performance, rehydration, mood improvement, peer influence, advertisement and branding, and perceived sexual performance enhancement were significantly associated with energy drink consumption ($p \leq 0.05$). The study concludes that energy drink consumption is largely driven by performance-related perceptions and social influence rather than health awareness. Based on these findings, the study recommends that the Ministry of Health, in collaboration with relevant regulatory authorities, should strengthen community-based health education programs to raise awareness of the potential health risks associated with excessive energy drink consumption, particularly among adult men.

Keywords: *Energy Drinks, Consumption, Adult Men.*

1.0 INTRODUCTION

Across the world, energy drink consumption is a prevalence issue that affects most of the adults in many countries (Adeola & Molehin, 2024; Nawal, 2024; Rahman et al., 2023; Romano et al., 2022; Semih et al., 2016). This is because energy drink consumption is promoted to stimulate mental and or physical activity and their popularity has increased over the years, especially among adult people (Biggio et al., 2024; Ghozaye et al., 2020; Nawal, 2024; Romano et al., 2022; Semih et al., 2016). Historically, in the globe, energy drinks were first started to be used in Asian and European countries in 1960s and then they became familiar firstly in Europe and later in North America in the 1980s (Semih et al., 2016). Furthermore, nowadays, energy drinks consumption continues to increase every year worldwide (David, 2024; Edmond et al., 2015). Besides, energy drinks are used quite heavily by adult men (Adeola & Molehin, 2024; Choi, 2019; David, 2024; Pettigrew et al., 2016). Moreover, most of energy drinks consumers worldwide have the belief that energy drinks improve attention, physical performance, emotional resilience and the concentration (Semih et al., 2016).

Data from the United States National Center for Complementary and Integrative Health (NCCH, 2018) indicate that for every 10 adult men at least one is using energy drinks. Besides, there is an increase of the market of energy drinks in United States (US), for example the U.S Market Trend Research Report of 2018 shows that the market grew up to 60% from 2008 to 2012. It is predicted to grow at 5.9% from 2019 to 2024 (Ali et al., 2023).Worldwide, energy drinks are marketed on their supposed improvement in mental or physical performance (Adeola & Molehin, 2024; Kamble & Varade, 2024; Kobik, 2024; Subaiea et al., 2019), and promoted within many subpopulations like commercial bus drivers, athletes and college students (Aljaadi et al., 2023; Michael & Jorge, 2019).

Like other continents in the world, Africa, energy drinks have transitioned from an aspiration product sold exclusively in retail outlets and service stations to finding everyday relevance. For example, in the bus terminal across the region from Zambia, Tanzania, Nigeria and Ghana energy drinks are finding their place alongside other snacks as biscuits, soft drinks, nuts, and confectionaries (Adeola & Molehin, 2024; Hammond, 2018; Kobik, 2024; Saku et al., 2020). In addition, street vendors in these countries have added them to the daily stock, selling the drinks directly to consumers looking for a way to power through workdays that can begin as early as 4.00 am and end as late as 10:00 pm (Mutabazi, 2019).The growing popularity among consumers is enough of proof to the market block Africa. In South Africa, for example, the region's largest market Global Data Research from 2018 ranked the drink category in the Top 5 best performing soft drinks (Hammond, 2018). Besides, the African Development Bank (AfDB)

indicates that currently energy drinks consumers are estimated to be 313 million in Africa, it is also projected to rise to 1.1 billion by 2060 (Food Business Africa, 2021).

Studies on factors for energy drinks consumption have been conducted in different countries worldwide. For example, in case of developed countries, Pang, (2019) conducted research to investigate of factors influencing generation youths' intention on functional energy drinks in Malaysia. The primary data were collected through survey questionnaire with 384 respondents who have consumed sport drinks. The analysis included both descriptive and inferential analysis. The results indicate that most of the youths consume energy drinks due to behavioral beliefs, as most of them believe that energy drink is good for rehydration, good taste, energy drinks go well with food, energy drink extends consumer's excise performance, and energy drink is sophisticated. Another study was conducted in Korea by Choi, (2019) on the influence of psychosocial factors on energy drink consumption in Korean nursing students. The cross-sectional research design was used with a total of 187 nursing students who were involved in the study. Moreover, self-administered questionnaire was used to collect information. Analysis of data was done by using descriptive statistics, the chi-square, t-test and logistic regression. The results indicated that among the psychosocial factors for energy drink consumption among the nursing students in Korea is depression which appeared to most strongly influence energy drink consumption.

In Africa, (Mulenga & Mwape, 2019) conducted a study to assess the factors for consumption of energy drinks and their effects on sleep quality among students at the Copperbelt University School of Medicine in Zambia. The authors employed a self-administered questionnaire to collect information from 195 undergraduate students. After analysis, the findings found that studying for exam was the most common reason for drinking energy drinks. Moreover, majority of participants (59.6%) were found to have poor sleep quality. In Libya, (Shintiri et al., 2022) conducted a study to examine the factors for energy consumption at Libyan International Medical. The study employed a cross-sectional study whereas 434 participants were invited via self-administered questionnaire. After analysis, the study found that energy drinks consumption is associated with sleep problems which are progressively used regardless of negative health effects particularly among adolescents and adult men. Another study was conducted in Uganda (Moses, 2018) to assess the factors for increasing energy drinks consumption in Ugandan market. The study employed a descriptive survey design with a quantitative approach, then descriptive analysis was employed to generate findings. After analysis, the study found that most of the participants

consume energy drinks because they need to avoid sleeping in working place. However, other factors included; good tests and availability energy drinks around the place.

Aljaadi et al., (2023) conducted a study on soft and energy drinks consumption and associated factors in Saudi adults. The study involved a secondary data analysis based on socio-demographics, anthropometrics, physical activity, and soft and energy drink consumption. Then, the study found that energy drinks are consumed with high level frequency particularly by adult men. This has resulted to significant increases in norepinephrine and BP. In that case, the study proposed that there is a need for consideration of greater regulatory oversight of the content and consumption of energy drinks, as well as warning labels, particularly with regard to the risks of consuming multiple drinks over short time periods.

Gooddhew, (2017) conducted a study to determine energy drink consumption rates in New Zealand. The author employed a cross-sectional research design with an online questionnaire to collect information from 248 respondents. Data were analyzed by using a descriptive statistic. Moreover, the results concerning level of consumption indicated that 57.9% of respondents consuming energy drinks at least one energy drink per week. In addition, energy drink addiction was reported to be at a level of daily consumption of up to three energy drinks per day for over three years. Alhumud (2020) conducted a study to investigate to assess the level of energy consumption among adult people in two different countries; Wales and Saudi Arabia. The cross-sectional research design and a mixture approach was used to accomplish the study. Then analysis involve descriptive statistics and inferential analysis for quantitative information, however for qualitative data content analysis was involved. The findings indicated that most of the respondents were found to use more than 100 mg/day of caffeine found in energy drinks. Besides, the impact of energy drink on sleep is very critical, as poor sleep quality can lead to individuals feeling tired in the day due to greater energy drink consumption.

Tanzania, like other countries in Africa continent, energy drinks are immensely popular, with some brands selling only at 500/= Tanzania shillings, with Red Bull considered the most popular energy drink in the country. Other brands include Monster Energy, Azam Energy, Mo Energy, Jembe Energy, Rockstar, and Supa Commando, to name but a few (Kisenge et al., 2023). Besides, energy drinks consumption in Tanzania has increased over 50% in the past decade (Tanzania Food and Drugs Authority-TFDA and Food Business Africa, 2023). Most energy drinks consumers in Tanzania are adult men between 18 and 35 years, moreover,

energy drink consumption is more common among urban residents than rural residents (Kisenge et al., 2023).

According to the Tanzania Bureau of Standards (TBS), the daily recommended amounts is not to drink more than 500 ml per day as well as energy drinks (EDs) are not recommended to children, pregnant women and breastfeeding mothers (Tanzania Bureau of Standard-TBS, 2018). In addition, other important guidelines found on package label are not recommended to persons sensitive to caffeine, people with high blood pressure, heart problems, and metabolic diseases. Moreover, it is also not recommended to mix energy drinks with alcoholic drinks or drink them during or after exercise (Rashid, 2020). Scholars indicate that failure to follow the guideline in consuming energy drinks may lead to health effects including conditions such as high blood pressure, various types of cancers, cardiovascular diseases and diabetes (Kisenge et al., 2023). Moreover, due to an increase of several industries in Tanzania producing several brands of energy drinks as well as presence of imported products, there has been relatively the availability and relatively popular of these products among adult men regardless of the stipulated effects.

Statistics indicate that energy drink consumption in Tanzania has increased by approximately 50 percent over the past decade, with adult men aged between 18 and 35 years constituting the largest consumer group (Tanzania Food and Drugs Authority (TFDA) and Food Business Africa, 2023). The widespread availability of energy drinks in grocery stores and general shops, where they are often sold and perceived similarly to soft drinks, has further normalized their consumption (Rashid, 2020). It is increasingly common to observe adult men consuming energy drinks in workplaces to enhance alertness and sustain mental and physical performance during daily activities. This national trend, however, manifests with varying intensity across different local contexts, necessitating area-specific investigation. Tunduma Town Council presents a unique and relevant setting for examining energy drink consumption among adult men in Tanzania. As a rapidly growing border town and a key transit hub linking Tanzania with Zambia and other Southern African countries, Tunduma hosts a high concentration of traders, long-distance drivers, customs officials, informal sector workers, and shift-based employees. These occupational groups are often exposed to long working hours, irregular schedules, physical fatigue, and performance pressure conditions that may encourage reliance on energy drinks. Compared to larger urban centers such as Dar es Salaam, Arusha, Mwanza, or Mbeya, Tunduma's economic activities are heavily driven by cross-border trade and transport logistics, which may intensify patterns of stimulant beverage consumption among adult men.

Despite the growing popularity of energy drinks in Tanzania, limited empirical research has examined the socio-economic, cultural, and psychological factors influencing their consumption at the local level, particularly in high-risk and economically dynamic towns such as Tunduma. While energy drinks are commonly perceived as enhancing alertness and productivity, concerns remain regarding their potential health risks, including cardiovascular complications and adverse behavioural effects associated with excessive intake. The lack of context-specific evidence creates a critical knowledge gap that limits the development of targeted public health interventions. Therefore, this study focused on Tunduma Town Council to generate localized evidence on the determinants of energy drink consumption among adult men, thereby contributing to informed policy formulation and health promotion strategies tailored to similar urban and border-town settings in Tanzania.

Based on studies of energy drink (ED) consumption in Tanzania and similar East African. This paper seeks to address the factors influencing energy drinks consumption in Tunduma Town Council, Songwe region. The paper is structured as follows: first, the introduction outlines the situation of energy drinks consumption. Next, the literature review summarizes previous research findings and key assumptions on the matter. The methodology section details the data collection methods used to capture the factors for energy drinks consumption and how these data were analyzed. The results and discussion follow, culminating in the paper's conclusions.

2.0 THEORETICAL REVIEW GUIDING THE STUDY

The Theory of Planned Behaviour (TPB), developed by Icek Ajzen in the late 1980s, explains behaviour as a result of deliberate intentions shaped by attitudes, subjective norms, and perceived behavioural control (Bordens & Horowitz, 2001). The theory assumes that individuals act rationally by evaluating expected outcomes, social pressures, and their ability to perform a behaviour. Behavioural intention is therefore the immediate predictor of action, particularly in situations where behaviour is under personal control (Treloar, 2015). A major strength of TPB is its ability to integrate psychological, social, and situational factors in explaining health-related behaviours, including consumption patterns (Conner et al., 2022). The inclusion of perceived behavioural control improves its predictive capacity in real-life contexts. However, the theory has limitations, as it may overlook habitual, emotional, and marketing-driven influences, which can also affect consumption behaviour such as energy drink use (Conner et al., 2022).

In this study, the Theory of Planned Behaviour is particularly relevant for explaining energy drink consumption among adult men in Tanzania by clearly

linking individual beliefs, social influences, and environmental conditions to consumption behaviour. Attitudes toward energy drink use are shaped by perceived benefits such as improved taste satisfaction, rehydration, enhanced work performance, improved sexual performance, and relief from fatigue or depressive feelings. Subjective norms operate through peer influence and parental influence, where approval or normalization of energy drink consumption within social and family networks increases the likelihood of use. Perceived behavioural control is reflected in factors such as widespread availability, affordability, aggressive advertisement and branding strategies, and work-related demands, which collectively enhance individuals perceived ability to consume energy drinks (Zoellner et al., 2012). Through these interacting constructs, TPB provides a structured framework for understanding how psychological perceptions, social pressure, and contextual facilitators influence consumption intentions and actual energy drink use, thereby guiding the development of the conceptual framework and interpretation of the study findings (Conner et al., 2022).

2.1 Conceptual Framework

With the help of reviewed literature and theory guiding the study, the study has developed a conceptual framework to show energy drinks consumption (dependent variable) is the outcome of factors for energy drinks consumption (independent variables). In clarification, the conceptual framework indicates that adult men consume energy drinks due to different factors including rehydration, taste, extends consumers' work performance, depression, advertisement and branding, and improves sexual intercourse performance. This means, if these factors are not present, there would be no energy rinks consumption among the adult men, however, the vice versa leads to energy drinks consumption among adult men (Figure 1).

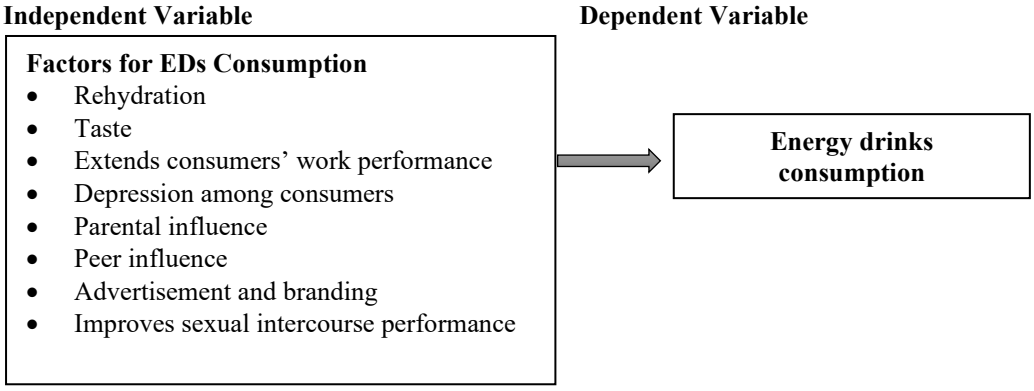

Figure 1: Conceptual Framework

3.0 RESEARCH METHODOLOGY

The study was located at Tunduma Town Council in Songwe Region. The rationally of selecting this council like other towns in Tanzania, is due to adult men's are seen in working places such as in bus terminals, in market places, at bodaboda stations and other working places handling energy drinks in their hands to tune up their brains and keep them sharp for the day's activities (Tanzania Food and Drugs Authority-TFDA and Food Business Africa, 2023). The study employed a cross-sectional research design as blended with quantitative approach with minimal qualitative was applied. The study has chosen to employ a cross-section research design because data are collected at a single point of time, in fact it is relatively cheap and less time consuming than other types of research design(Thomas, 2020). In addition, this design allows a researcher to collect data from a large pool of subjects and compare differences between groups.

For the purpose of this study, *adult men* were defined as males aged 18 years and above**,** consistent with the legal and demographic classification used in Tanzania's Population and Housing Census. In this study, sample size was obtained by using a formula recommended by Yamane in 1967. The study used a population of 53156 adult men working in different stations in Tunduma Town Council, as it is mentioned in the Population and Housing Census of 2022.

Yamane's formula $n = \frac{N}{1+N\,(e)^2}$

Whereas:

n = Sample size

N = Population

e = Probability of error (0.05), assuming 95% confidence level, and with a precision of 5%.

$$= \frac{53156}{1+53156\,(0.05)^2}$$

$$= \frac{53156}{1+53156(0.0025)}$$

$$= \frac{53156}{1+132.89}$$

$$= \frac{53156}{133.89}$$

n= 397

The total sample size of 397 adult men was proportionally and nearly equally distributed across 20 selected working stations in Tunduma Town Council to ensure balanced representation of different occupational settings. On average, 19 to 20 respondents were selected from each station**,** depending on accessibility and availability at the time of data collection. The selected stations included the central market, bus terminal, truck parking areas, border post and customs

facilities, warehouses, construction sites, retail business centers, informal trading areas, fuel stations, milling and processing centers, small industries and workshops, bars and entertainment areas, transport offices, agricultural produce collection points, financial and mobile money centers, security service points, loading and offloading zones, restaurant and food vending areas, transit lodges, and logistics and clearing agencies. These stations were identified and justified as major economic activity hubs in Tunduma, where adult men are predominantly engaged in labor-intensive, shift-based, and time-demanding occupations. To each station, respondents were selected using simple random sampling, ensuring that every eligible adult man had an equal chance of participation. This mult-stage sampling approach enhanced the representation of the sample and strengthened the validity of the findings by reflecting variations in work environment, social interaction, and exposure to factors influencing energy drink consumption among adult men in Tunduma Town Council.

Furthermore, data were gathered using a structured questionnaire, comprising both closed – ended a limited open- ended question. The questionnaire was administered through face-to-face interviews rather than self-completion to accommodate respondents such as motorcycle riders, cargo loaders and other who are often mobile and time -constrained. Interviews were conducted at designated resting points, waiting areas, or during off-peak hours to avoid disruption to respondents' work activities. Consequently, pilot study was conducted in Kyela Town Council, Mbeya region which shares similar boarder and socio-economic characteristics with Tunduma Town Council. The pilot study aimed to test the clarity, sequence, validity, and reliability of the questionnaire and to refine questions before the main data collection in targeted study area.

But also, qualitative data were collected through methods and their tools interview which used interview guide, focus group discussion and observation used checklist and analyzed thematically through NVivo- 12 tool. The study employed both descriptive and inferential statistics for data analysis using SPSS version 28 as statistical tool. Descriptive analysis used a five -point of Likert scale which were used to develop mean index ($\bar{X}$) and standard deviation (SD) applied to measure factors influencing drink consumption among adult men. Inferential analysis specifically multiple linear regression was involved to establish relationship between energy drink consumption (dependent variable), and factor for energy drink consumption (independent variables). The model was tested by examining normality, linearity, multicollinearity, and homoscedasticity before model estimation. The multiple linear regression model was chosen because the study sought to examine the simultaneous effect of several independent factors on energy drinks consumptions among adult men. But also,

this model is appropriate for determining the magnitude, direction and statistical significance of each factor-like taste, rehydration, peer influence and advertisement while controlling for the influence of other variables. Consequently, the model provides a robust analytical approach for identifying key predictors of energy drink consumption and aligns well with the study's theoretical framework based on the Theory of Planned Behaviour. Results are shown through Model Summary (Table 3), ANOVA results (Table 4), and Regression Analysis Coefficient Results (Table 5). The theoretical multiple regression model is specified as:

$$EDC = \beta_0 + \beta_1 RH + \beta_2 EP + \beta_3 GT + \beta_4 DEP + \beta_5 PI + \beta_6 PEI + \beta_7 AD + \beta_8 SIP + \varepsilon$$

Where:
EDC = Energy Drinks Consumption
RH = Rehydration
EP = Exercise Performance
GT = Good Taste
DEP = Depression
PI = Parental Influence
PEI = Peer Influence
AD = Advertisement and Branding
SIP = Sexual Intercourse Performance
ε = Error term

Throughout the study ensured ethical consideration to safeguard the rights and dignity of adult male who use energy drink in Tunduma Town Council. Efforts to reduce power asymmetries during interviews and focus group discussion included working closely with local facilitators and conducting discussions in Kiswahili and appropriate local languages to advocate cleat communication and trust. All respondents were informed about the specific purpose of the study and given informed consent prior to data collection, with strict measures conducted to maintain confidentiality and anonymity of their responses. Furthermore, the research process was conducted in accordance with local cultural norms and emphasized respect, inclusivity and active participants engagement. But also, the blending of limited qualitative elements alongside quantitative methods provided valuable contextual understanding of the factors influencing energy drink consumption, the study recognizes the methodological constraints associated with its predominantly quantitative design. However, this limitation was addressed through careful questionnaire design, triangulation of key variables, and the inclusion of open-ended responses that allowed respondents to elaborate on their consumption behaviours and underlying motivations.

4.0 FINDINGS AND DISCUSSION

4.1 Socio-Demographic Characteristics

Socio-demographic characteristics of respondents in this study includes three variables; age, education, and marital status. (Table 1).

Age of respondents was among the socio-demographic characteristics variables which were examined in this study. The findings indicate that in a total of 397 respondents who participated in this study, 159(40.1%) their age ranged from 26-35 years old, followed by 118(29.7%) from 18-25 years old, 76(19.1%) from 36-45 years old, and 44(11.1%) had 46 and above years old. The findings indicate that the most of the respondents of this study had an average age of rang from 26-35. Since the study collected data in different working places where different adult men met either for a casual job such as riding motorcycles, loading cargoes, and those who attract passengers to select a particular bus/car (commonly known as *wapiga debe* in Swahili language). In tally to other scholars, Biletta (2019) argues that casual work does not seem to be concentrated in any particular age group, however the average age of casual workers is 37

The education level of respondents indicates that in a total of 397 respondents, more than half 243(61.2%) had primary education level, 121(30.5%) secondary education level, 16(4.0%) diploma education level, 13(3.3%) certificate education level, and 4(1.0%) degree education level. These findings suggest that adult men with low level of education are more likely to use energy drinks compared to adult men with other level of education. Consistent with Faris (2020), a lack of proper education, limited experience in stress management, and insufficient coping skills contribute to the use of unhealthy substances such as energy drinks, alcohol, drugs, and tobacco as a means of alleviating stress.

Out of 397 respondents, 249 (62.7%) were married, 124 (31.2%) were single, 12 (3.0%) were separated, 8 (2.0%) were widowed, and 4 (1.0%) were divorced. These results suggest that adult men who are married are more likely to consume energy drinks compared to other marital status categories. This may be attributed to the increased responsibilities they bear within their families, which can lead to stress and depressive feelings, prompting greater energy drink consumption. However, this finding contrasts with that of Olatona et al. (2018), who reported that single individuals consumed more energy drinks, possibly due to higher risk-taking behaviors and lifestyle factors associated with single adulthood.

Table 1: Socio-demographic characteristics of respondents

Variable	Category	Frequency (n=397)	Percent %
Age	18-25 years	118	29.7
	26-35 years	159	40.1
	36-45 years	76	19.1
	46 and above	44	11.1
Education Level	Primary	243	61.2
	Secondary	121	30.5
	Certificate	13	3.3
	Diploma	16	4.0
	Degree	4	1.0
Education level	Degree	16	53.3
	Masters	14	46.7
Marital status	Single	124	31.2
	Married	249	62.7
	Separated	12	3.0
	Widow/Widower	8	2.0
	Divorced	4	1.0

4.2 Descriptive statistics results on factors for energy drinks consumption

In this section, the study provides statistical analysis based on the factors for energy drinks consumption among the adult men in Tunduma Town Council. Moreover, the study come up with some indicators for the variable 'factors for energy drinks consumptions. (Figure 2 and Table 2).

4.2.1 Rehydration

The findings presented in Figure 2 and Table 2 indicate a strong consensus among respondents regarding rehydration as a factor influencing energy drink consumption among adult men. The results show a low mean index ($\bar{X} = 1.44$) with a standard deviation of 0.93, signifying responses that are heavily concentrated toward disagreement with minimal dispersion. The Likert scale reveal that 293(73.8%) strongly disagreed that adult men consume energy drinks because of good for rehydration, 56(14.1%) disagreed, 32(8.1%) neither agreed nor disagreed (neutral), 12(3.0%) agreed, and 4(1.0%) strongly agreed while standard deviation from the mean imply that low agreement, responses concentrated toward disagreement. These results imply that although empirical

evidences show rehydration to be among the reasons for energy drinks consumption, it is different from what was obtained in this study, adult men in the study area do not consider rehydration as a factor for energy drink consumption. This is because high number (74.0%) of respondents disagreed that adult men consume energy drinks due to a rehydration reason. Furthermore, the findings differ from Walle's 2023), Ali et al., (2023), Olatona et al., (2018), Pettigrew et al., (2016), and Hammond, (2018) arguments that people's body needs hydration to function. Therefore, most of people use drinks like energy drinks to cure dehydration to balance their bodies.

4.2.2 Good Taste

The findings displayed in Table 2 reveal that taste is a significant factor influencing energy drink consumption among adult men. The results indicate a relatively high mean index ($\bar{X} = 3.6$) with a standard deviation of 1.02, suggesting moderate variability in responses but a clear tendency toward agreement. More than half of the respondents, 214 (53.9%), agreed that adult men consume energy drinks due to their good taste. The moderate standard deviation implies some variation in individual opinions; however, the overall distribution of responses is skewed toward agreement. The implication is that adult men prefer to consume energy drinks due a good taste, it might be because of most energy drinks contain sweeteners like glucose and other flavorings which contribute to improve taste (Saku et al., 2020). In with the findings obtained by Elsoadaa et al., (2016), Khraim, (2020), Shahzad et al., (2019) and Utter et al., (2018) different factors were reported to trigger adults and adolescents to consume energy drinks, enjoying the taste was among the reported factors, others include a need of being more active and energized, stay awake for a long time, and to improve physical and mental activities. In contrast, scholars like Sudarmawan et al., (2016) and Visram et al., (2016) found that taste of energy drinks have a little contribution on energy drinks consumption among youths, as their findings indicated 23% and 28% of youths respectively consumed energy drinks due to its good taste. The difference of findings implies that the factors for using energy drinks are not uniform, it they depend on individual habit and decision that is why in some places good taste is considered as a factor while in other places it does not contribute on energy drinks consumptions among the consumers.

Furthermore, through open-ended questions, respondents reported that most of energy drinks sweeteners taste which influence most of them to consume energy drinks. As one of respondents a male of 28 years old had this story:

> *"In fact, most energy drinks contain sweeteners such as glucose and other flavorings that enhance their taste. We consume them mainly for their flavor rather than for other reasons".*

These findings suggest that good taste plays an important role in motivating energy drink consumption among adult men in the study area, highlighting taste preference as a key driver of consumption behavior.

4.2.3 Extends Consumers' Work Performance

The findings presented in Table 2 and Figure 2 indicate that enhancement of work performance is a major factor influencing energy drink consumption among adult men. The results show a high mean index ($\bar{X} = 4.02$) with a relatively low standard deviation (SD = 0.88), implying a strong level of agreement and a high degree of consistency in respondents' views. A substantial proportion of respondents, 180 (45.3%), agreed that adult men consume energy drinks to extend work performance, while an additional 145 respondents (36.5%) strongly agreed. Moreover, the findings concur with the findings obtained by Ronen et al., (2019) that most of the drivers consumed energy drinks to enhance driving performance, energy drinks helps them keeping away while driving, for an energy boost, reduce fatigue, and mental enhancement. In addition, the results also concur with the results obtained by Jacob et al., (2019), and Itany et al., (2014) who showed that more than 50% of the respondents who participated in their studies consumed energy drinks to boost their abilities to perform in their work. The implication of this study findings is that probably the drinks are defined as 'energy drinks' most of the users interpreted them as the catalyst of ability to work without getting tired.

In addition, through the open-ended questions, the respondents reported that energy drinks are very essential to enhance work performance. One of the respondents with this view confirmed that:

> *"For me, I cannot perform my work effectively without consuming energy drinks, as they give me the energy to work better and help me stay awake while driving"*

These findings therefore demonstrate that improving work performance is a key motivating factor for energy drink consumption among adult men in the study area.

4.2.4 Depression or Stress

Depression and stress were examined in this study due to their potential influence on respondents' overall well-being and productivity. The findings presented in Figure 4.2 reveal varied perceptions regarding the impact of these factors on

respondents' lives. The results in Table 2 further indicate a relatively low mean index ($\bar{X} = 2.18$) with a standard deviation of 1.11, reflecting mixed opinions and a relatively high dispersion of responses. The elevated standard deviation suggests substantial variability in respondents' experiences and perceptions. Results from mean index and standard deviation demonstrate that most of the respondents disagreed that depression has no negative effects on wellbeing and productivity, but it has significant negative effects on daily performance of activities, health and performance. Overall, nearly half of the respondents (49.9%) acknowledged that depression and stress significantly hindered their daily activities and mental health.

These findings imply that, although perceptions vary, depression and stress remain important factors affecting the well-being and productivity of a considerable proportion of respondents within the study area. The study findings imply that mental health issues are prevalent among the population, necessitating targeted interventions and support services. The results align with those of James (2022) and Mwaki (2023), who reported that stress and depression are critical challenges facing individuals in similar contexts. However, these findings contrast with the report from UNDP (2024), which shows that stress levels among the population are decreasing due to improved social support systems. Nevertheless, through in-depth interviews, it was found that many respondents still experience significant psychological distress, often feeling overlooked by existing support structures.

In the same vein, one of the adult man respondents, aged 26, had this to say*:*

> *"I often feel overwhelmed by my responsibilities, and despite the support available, I continue to struggle with managing daily stress."*

Therefore, the study concluded that while there are some improvements in the general mental health landscape, a substantial portion of the population continues to face challenges related to stress and depression, highlighting the need for ongoing research and enhanced mental health resources.

4.2.5 Parental Influence

To assess the influence of parental factors on energy drink consumption among adult men, descriptive statistical analysis was conducted using the mean and standard deviation. The results presented in Table 2 indicate a low Mean Index ($\bar{X} = 1.54$) with a relatively small standard deviation (SD = 0.97), implying strong disagreement with limited variation among respondents regarding parental influence. Consistent with these statistics, Figure 4.2 shows that out of 397

respondents, 225 (56.7%) strongly disagreed and 132 (33.2%) disagreed with the statement that parental influence contributes to energy drink consumption, while 36 respondents (9.1%) were neutral and only 4 respondents (1.0%) agreed. These findings provide strong empirical evidence that parental influence does not significantly contribute to energy drink consumption among adult men. This may be attributed to the autonomy associated with adulthood and increased awareness of the adverse health effects linked to excessive energy drink consumption, which likely limits parental encouragement or involvement. In the same vein, Sabbah et al., (2020) and Smith, (2019) found most of parents never liked their children to consume energy drinks due their side effects. However, these findings do not concur with that obtained by Marinoni et al., (2022) that participants with a low parental monitoring were more likely to consume energy drinks. In addition, parents also played a key role in influencing participant's use of energy drinks, either by disapproving and prohibiting or encouraging endorsing their use (Visram et al., 2016).

4.2.6 Peer Influence

To examine the role of peer influence on energy drink consumption among adult men, descriptive statistics was employed. The results in Table 2 indicate a low Mean Index ($\bar{X} = 1.62$) with a standard deviation of 1.04, suggesting dominant disagreement with a moderate spread of responses regarding peer influence as a motivating factor. Consistency with these results, Figure 4.2 shows that out of 397 respondents, 213 (53.7%) strongly disagreed and 148 (37.3%) disagreed that adult men consume energy drinks due to peer influence. In contrast, only 20 respondents (5.0%) agreed, 12 (3.0%) were neutral, and a very small proportion of 4 respondents (1.0%) strongly agreed. The implication of the findings is that adult men in the study area are never attracted to energy drinks through peer influence factor. These findings provide strong empirical evidence that peer influence does not significantly contribute to energy drink consumption among adult men in the study area. But also, consumption behavior is largely driven by individual preferences and personal decision-making rather than social pressure from peers. The study findings corroborated with the studies by Ali et al., (2023), Hewitt, (2020), and Biggio et al., (2024) energy drinks consumption is sometimes more likely to be influenced by individual behaviour rather than peer influence. Moreover, the findings differ from what was obtained by Nawal (2024) and Ghozayel, (2020) that excessive consumption of energy drinks is linked to variety factor including peer influence, lack of knowledge about the ingredients, and living away from parents. The study suggested that, the divergence may reflect contextual differences in demographic characteristics, social environments, and levels of health awareness among study populations.

4.2.7 Advertisement and Branding

To assess the influence of advertisement and branding on energy drink consumption among adult men, descriptive statistical analysis was conducted. The results presented in Table 2 show a low Mean Index ($\bar{X} = 1.52$) with a standard deviation of 1.06, indicating overall disagreement with a moderate dispersion of responses, though clearly skewed toward disagreement. This suggests that most respondents did not perceive advertisement and branding as key drivers of energy drink consumption. In line with these statistics, Figure 4.2 indicates that out of 397 respondents, 221 (55.7%) strongly disagreed and 144 (36.3%) disagreed that adult men consume energy drinks because of advertisement and branding. Only a small proportion of respondents agreed (24; 6.0%), while 8 respondents (2.0%) reported a neutral position. The findings concur with findings obtained by Thomson et al., (2018) and Mulenga & Mwape (2019) that more that 50% of the respondents who participated in their studies indicated that although they consume different kinds of energy drinks there were some of those drinks which were not advertised, they just found them in shops or groceries. This implies that sometimes energy drink users consume energy drinks because they are available in their environment even if those energy drinks have not been advertised to them. In addition, the findings differ from what was found by Visram et al., (2016) and Yayra et al., (2020) that advertising and brand loyalty have been highlighted as major influences on adult people's attitudes towards energy drinks, and peers, and parents.

The quantitative findings were further supported by qualitative responses from selected participants, which revealed limited influence of advertisement and branding on energy drink consumption among adult men. Respondents emphasized availability and personal choice over promotional exposure. For instance, one respondent stated:

> *"I do not buy energy drinks because I see them on television or social media; I purchase them only when they are available in nearby shops."*

Another participant echoed a similar view, highlighting minimal exposure to advertising:

> *"Some of the energy drinks I consume are not even advertised; I know about them simply because they are sold everywhere."*

In addition, respondents expressed skepticism toward promotional messages, suggesting limited trust in advertisements:

"Advertisements exaggerate the benefits, so I do not rely on them when choosing energy drinks."

These qualitative insights reinforce the descriptive statistics, particularly the low mean score and moderate dispersion, by demonstrating that adult men largely perceive energy drink consumption as a personal and situational choice. Therefore, the study observed that these contrasting results may be attributed to differences in age groups, contextual settings, and levels of advertising exposure, as the present study focused specifically on adult men rather than adult er populations.

4.2.8 Energy Drinks Improve Intercourse Performance

To examine whether improvement of sexual intercourse performance influences energy drink consumption among adult men, descriptive statistical analysis was conducted using both frequency distributions and summary statistics. The results presented in Table 2 indicate a Mean Index of $\bar{X} = 2.98$with a standard deviation of 1.21, suggesting mixed perceptions with relatively high variability among respondents. Although the mean value indicates an overall tendency toward disagreement, the larger standard deviation reflects considerable divergence in individual opinions. Consistent with these results, Figure 4.2 shows that out of 397 respondents, 109 (27.5%) strongly disagreed and 44 (11.1%) disagreed that adult men consume energy drinks to improve sexual intercourse performance. However, a substantial proportion of respondents either agreed (88; 22.2%) or strongly agreed (84; 21.2%), while 72 respondents (18.1%) remained neutral.

These findings imply that improving sexual intercourse performance is not a dominant factor driving energy drink consumption among adult men in the study area, although it remains relevant for a notable subgroup of consumers. The relatively high standard deviation underscores the presence of differing perceptions, indicating that motivations for consumption vary across individuals. This suggests that while many adult men do not associate energy drink consumption with sexual performance enhancement, some still perceive or experience such effects.

The findings imply that the issues of consuming energy drinks as a means of improving intercourse performance is not a factor for energy drinks consumption for some of those who consume energy drinks. In the same vein, Rahman et al., (2023) and Pang, (2019) stipulated that the issue of consuming energy drinks to improve sexual intercourse performance is more likely to happen to youths of 14-25 years old, however, for adults, they had consumed energy drinks due to other factors such as improving performance in work, and refreshing their minds.

Furthermore, these findings differ from what was observed by Scalese et al., (2022), and Shintiri et al., (2022) that it is perceived by most of adult men and adolescents who consume energy drinks that performance in sexual intercourse is improved when someone consumes energy drinks before going to sexual intercourse. The difference in findings implies that factors behind the use of energy drinks varies among users. Most of the youths consumes energy drinks to improve sexual intercourse performance, however adults have their own factors based on improving work performance and refreshment. However, the findings demonstrate that improvement of sexual intercourse performance is not a primary determinant of energy drink consumption among adult men, although it remains a secondary factor for some individuals, reflecting variability in perceptions and consumption motives across different age groups.

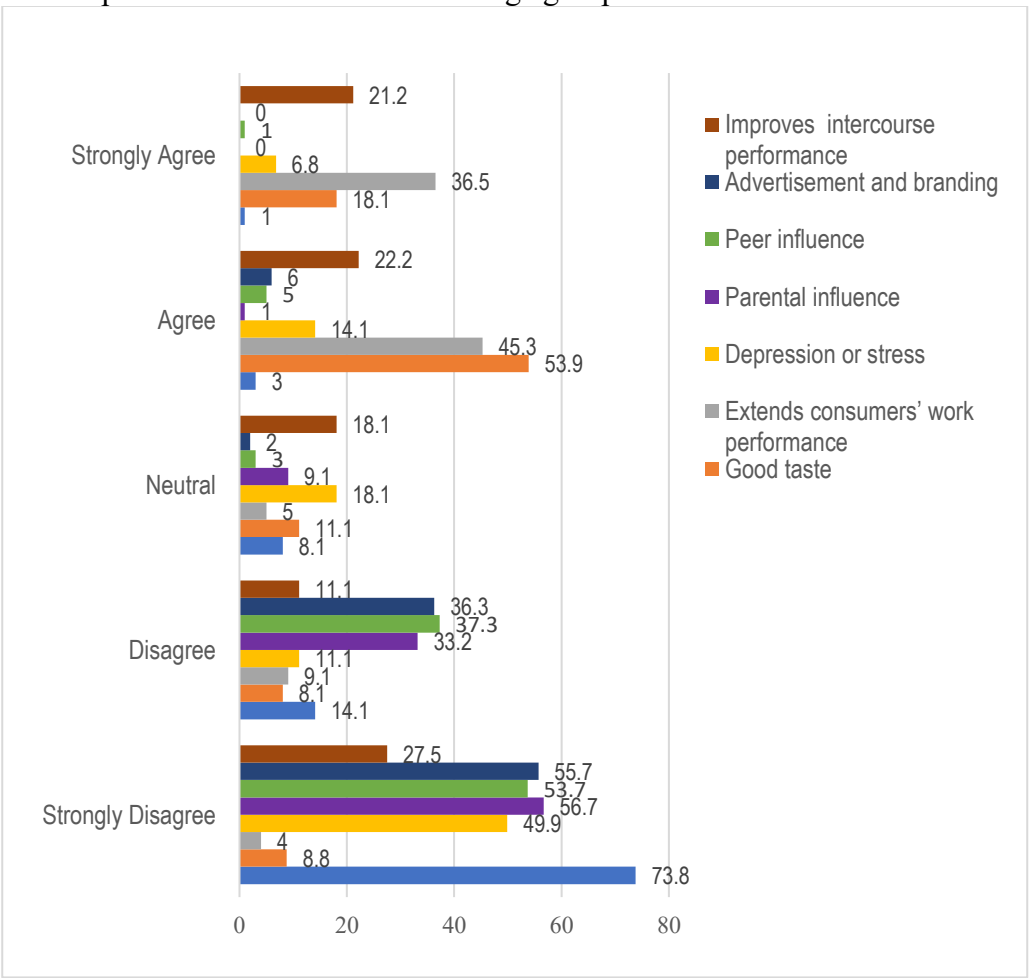

Figure 4.2: Reasons for Energy Drinks Consumption Description Results by Likert scale of Five levels (n=397)

Table 2: Descriptive statistics on measuring Mean Index and Standard Deviation

S/N	Variable	Mean Index (MI)	SD	Interpretation
1	Rehydration	1.44	0.93	Low agreement, responses concentrated toward disagreement
2	Good Taste	3.65	1.02	Moderate variability with strong agreement tendency
3	Extends Consumers' Work Performance	4.02	0.88	High agreement, relatively consistent responses
4	Depression or Stress	2.18	1.11	Mixed opinions, higher dispersion
5	Parental Influence	1.54	0.97	Strong disagreement, limited variation
6	Peer Influence	1.62	1.04	Disagreement dominant, moderate spread
7	Advertising and Branding	1.52	1.06	Responses dispersed but skewed to disagreement
8	Improves Intercourse Performance	2.98	1.21	Highly divided perceptions

4.3 Inferential Analysis on factors influence energy drink consumption

4.3.1 Assumption of Multiple linear regression

Diagnostics of Multiple linear regression indicated the assumption of the model were satisfactorily met. Normality of residuals was found through visual inspection of the normal probability (P-P) plot, which showed residuals approximately following a straight line. Linearity was demonstrated by scatter plots of predicted values against observed values, showed a linear relationship between the independent variables and energy drinks consumptions. Furthermore, Multicollinearity was examined using Tolerance and Variance Inflation Factor (VIF) statistics. Most variables recorded tolerance values above 0.10 and VIF values within acceptable limits indicating no serious multicollinearity problem. But also, Homoscedasticity was observed as the residues were evenly distributed around the zero line across predicted values, implying constant variance. Generally, these results confirm that the regression model was fit and appropriate for use in this study.

4.3.2 Model Specification

To examine the factors influencing energy drinks consumption among adult men in Tunduma Town Council, this study employed Multiple linear regression model. The study regressed independent variables based on the factors for energy drink consumption. These independent variables include rehydration, taste, extends consumers' excise performance, depression among consumers, parental

influence, and advertisement and branding. Moreover, the identified independent variables were regressed against one dependent variable energy consumption. Results are shown through Model Summary (Table 3), ANOVA results (Table 4), and Regression Analysis Coefficient Results (Table 5). The theoretical regression model is specified as shown in methodology section.

4.3.3 Model Summary

The model summary was used to predict factors for energy consumption by using eight predictors: sexual intercourse performance, extends consumers' excise performance, rehydration, and good taste, depression among consumers, peer influence, parental influence, advertisement and branding. The model's performance metrics are as follows: the coefficient (R) is 0.627, the R square value is 0.538, the Adjusted R square is 0.519, and standard error is 0.13619 (Table 3). But also **R (0.627) **: The coefficient indicates a moderate positive relationship between the predictors and energy drinks consumption. **R square (0.538) **: This means that approximately 53.8% of the variance in predictors of energy drinks consumption can be explained by the model. While this is not an overwhelmingly high value, it suggests that there are other reasons for energy consumptions outside of this model. **Adjusted R square (0.519) **: The adjusted R square accounts for the number of predictors in the model, slightly slower than the R square, suggesting a modest adjustment for predictors.

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.627[a]	.538	.519	.13619

a. Predictors: (Constant), sexual intercourse performance, extends consumers' excise performance, rehydration, good taste, depression among consumers, peer influence, parental influence, advertisement and branding

b. Dependent Variable: Energy Drinks Consumption

4.3.4 ANOVA Results

Table 3 indicates results of analysis of variance (ANOVA). Additionally, the table also indicates the model fit results. Of the interest in these findings in the Table are F-statistics and its associated sig. The results, therefore, describe that F-statistics is 33.958, $p=0.000<0.05$. These results imply that in model there is influence that affects energy drinks consumptions among the adult men.

Table 4: ANOVA Results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.587	8	.673	33.958	.000[a]
	Residual	7.253	388	.619		
	Total	7.840	396			

a. Predictors: (Constant), sexual intercourse performance, extends consumers' excise performance, rehydration, good taste, depression among consumers, peer influence, parental influence, advertisement and branding

b. Dependent Variable: Energy Drinks Consumption

4.3.5 Regression Analysis Coefficient Results

The results in Table 5 are on coefficients of the regression model. The coefficient results show the influence of eight predictors (sexual intercourse performance, extends consumers' excise performance, rehydration, good taste, depression among consumers, peer influence, parental influence, advertisement and branding) on energy drinks consumptions among adult men in Tunduma Town. The influence of exercise performance was found to be positively, statistically, and significantly *(B=011***, p=0.08<0.05)* related to energy drinks consumption among adult men in Tunduma Town. Rehydration was found to be positive, statistically, and significantly *(B=0.039***, p=0.045<0.05)* related to energy drinks consumptions. Additionally, the influence of depression was found to be positive, statistically, and significantly *(B=0.114***, p=0.000<0.05)* related to energy drinks consumption among adult men. Peer influence was also found to be positively, statistically, and significantly *(B=0.032***, p=0.011<0.05)* related to energy drinks consumptions. Advertisement and branding were found to be positively, statistically, and significantly *(B=0.094***, p=0.029<0.05)* related to energy drinks consumptions. Lastly, the findings show that, the predictor 'sexual intercourse performance' was found to be positively, statistically, and significantly *(B=0.043***, p=0.010<0.05)* related to energy drinks consumptions. However, two predictors, good taste and parental influence were found to statistically insignificant to energy drinks consumptions among adult men in Tunduma Town. This implies that although adult men consumed energy drinks, good taste and parents had a little contribution to their decision of using energy drinks.

Table 5: Regression Analysis Coefficient Results

	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig	Tolerance	VIF
(Constant)	-.047	.038		-1.243	.215		
Rehydration	.039	.019	.121	2.015	.045	.657	1.522
Excise performance	.011	.037	.015	.302	.0.08	.900	1.111
Good taste	.016	.025	.032	.618	.537	.889	1.124
Depression	.114	.024	.408	4.844	.000	.334	2.994
Parental influence	.000	.042	-.001	-.008	.994	.106	9.415
Peer influence	.032	.036	.114	.881	.011	.140	7.130
Advertisement	.094	.049	.332	1.897	.029	.077	12.972
Sexual intercourse	.043	.017	.139	2.598	.010	.822	1.217

Dependent Variable: Energy Drinks Consumption

5.0 CONCLUSIONS

The study concludes that the primary factors driving energy drink consumption among adult men in Tunduma Town are the appeal of the taste and the perceived benefit of improving work performance. Additionally, the findings indicate that several other factors have a significant influence on consumption habits. These includes it help alleviate stress and depression, and enhance physical endurance, peer influence, along with advertising and branding strategies, also play a critical role in shaping consumer behavior. Moreover, some respondents associate energy drink consumption with improved sexual performance. But also, most respondents strongly disagreed that energy drinks are consumed for rehydration. These findings suggest that energy drinks are consumed not only for immediate physical and mental benefits but also due to external social and marketing pressures. The study emphasizes the need for public health awareness campaigns to inform consumers about the potential health risks associated with regular energy drink consumption, particularly in light of these multifaceted influences.

6.0 RECOMMENDATIONS

Given the reasons for energy drinks consumption, the adult men should be informed by the government under the Ministry of health about the side effects of energy drinks consumptions, this may help them to ignore the reasons of energy drinks consumption. The Ministry of Health and Social Affair and health organizations should implement awareness campaigns to educate the public, especially men, on the potential health risks associated with frequent consumption of energy drinks. These campaigns could include information on healthier alternatives to boost energy, such as proper nutrition, hydration, and regular exercise.

Health regulatory bodies in Tanzania, such as the Tanzania Food and Drugs Authority (TFDA), the Ministry of Health, Community Development, Gender, Elderly and Children (MoHCDGEC), and the Tanzania Bureau of Standards (TBS), should enforce stricter guidelines on the advertising of energy drinks to minimize misleading claims that associate these drinks with enhanced masculinity or increased physical and mental performance. Labels on energy drinks should clearly indicate the potential health risks and recommended consumption limits. Public health facilities in regions such as Tunduma Town Council should integrate the monitoring of energy drink consumption into routine health check-ups. This will help identify early signs of health issues caused by excessive consumption, such as cardiovascular problems or sleep disturbances, and allow for timely interventions. Manufacturers are required to display clear warnings on energy drink labels, highlighting potential health risks and recommended consumption limits. This will help consumers make informed decisions.

7.0 CONFLICT OF INTERESTS

There is no any conflict of interests

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