

TELEVISION FOOD ADVERTISING AND ITS IMPACT ON THE EATING HABITS OF INDIAN CHILDREN IN MALAYSIA: A MIXED-METHODS STUDY

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Abstract: *This study investigates the impact of television food advertising (TFA) on the eating habits of Indian children in Malaysia, employing a mixed-methods approach. The research aims to understand how TFA influences food preferences within the Malaysian Indian community and the role of socio-demographic factors in shaping these behaviors. Quantitative data was collected through surveys administered to a sample of Malaysian Indian children, assessing their trust in food advertisements and its effect on their food choices. Complementary qualitative data was obtained through in-depth interviews with parents, providing insights into their perceptions of their children's food preferences and the influence of TFA. The findings indicate that while TFA has a moderate impact on children's purchasing behaviors, socio-demographic factors such as age, gender, and parental education also play a significant role. The study underscores the need for targeted interventions by policymakers to mitigate the adverse effects of food advertising on children's health and promote healthier dietary choices. This research contributes to the broader understanding of the role of television in shaping child nutrition and offers practical recommendations for stakeholders seeking to improve the dietary habits of Malaysian Indian children.*

Keywords: *TV food advertising; childhood obesity; children's attitudes; eating behaviors; parental perceptions; mixed-methods study.*

Introduction

Children worldwide are growing up in a media environment heavily shaped by advertising, particularly in the realm of TFA. In Malaysia, with its popular television advertising medium, the impact of TFA on children's food behaviours is a significant concern. Advertising, with a focus on children due to their influence on household purchases, plays a crucial role in introducing various food products, contributing to advertisement profit and meeting consumer demands.

According to (MCMC, 2018), the advertising expenditure in Malaysia is expected to grow tremendously between 2019 to 2025 and at present Statista Advertising Expenditure and Market Forecasts in 2024 reported that Malaysia's advertising expenditures have reached approximately US\$1,819.00 million (Statista, 2024). Notably, unhealthy food categories receive robust advertising, while promotions for healthy foods like fruits and vegetables are scarce (Man et al., 2021).

Children watching more than 2 hours of television daily in Malaysia are exposed to 56 to 126 food advertisements per week (Kelly et al., 2010). This exposure correlates with increased consumption of fast food, sweetened beverages, and snacks, leading to a 45% higher energy intake. Unhealthy eating practices during childhood can persist into adulthood, contributing to the rising prevalence of childhood obesity in Malaysia. Advertising, perceived by consumers as both informative and potentially misleading, is a potent tool used by businesses to boost sales. Marketers employ creative strategies to capture children's attention, using language, signs, and symbols to effectively communicate product messages. Consumer attitudes toward advertisements directly influence brand perceptions, particularly in the context of television advertisements (Emond et al., 2019).

The study highlights the vulnerability of children to sophisticated food marketing strategies due to limited cognitive abilities and lack of impulse control. As children mature, they develop the cognitive skills necessary to comprehend marketing messages, critically evaluate them, and regulate their consumption. However, scepticism toward advertising messages is prevalent among consumers, linked to a mature understanding of advertising strategies (Wang & Mizerski, 2019). Concerns arise about the impact of advertising agency tactics on children, necessitating meticulous research on the influence of advertising on children and the methods employed by advertising companies to reach them through television platforms. The study underscores the roles of parents, advertising practitioners, and policymakers in aiding children's understanding of advertisements and promoting responsible advertising to children.

Given the universal nature of advertising targeting children and the growing concerns about its effects, particularly in developing countries like Malaysia, the research holds significance. The short- and long-term negative consequences of frequent exposure to unhealthy products through TFA warrant comprehensive investigation. The study aims to fill the dearth of data on TFA targeting children in Malaysia, focusing on the influence of television food advertising on children's food behaviours and parents' views on family grocery shopping through a mixed-methods approach.

Literature review

Academic research extensively explores the impact of TFA on children's eating habits and parental perspectives. In Malaysia, the prominence of television as an advertising medium, coupled with substantial investments in TV advertisements targeting children, underscores the

importance of understanding the effects of TFA (Mokhtar, 2018). Television advertising significantly influences children's attitudes and behaviours, given their vulnerability (Norman et al., 2020). Advertisers tailor sophisticated strategies to children's cognitive abilities and limited impulse control (Naderer, 2021; Rozendaal et al., 2011). As children mature, they develop skills to understand and critically evaluate advertisements, emphasizing the need to examine the impact of TFA on children aged 10 to 12 years.

Advertisements introduce diverse food products, aiming to boost profits and meet consumer demands. Children actively influence family consumption decisions, shaping brand evaluations (Smith et al., 2019). Advertisements, often featuring high-calorie and low-nutrition items, raise concerns about the long-term impact on childhood dietary habits and adult food intake patterns (WHO, 2022).

Qualitative research in Malaysia reveals children's active enjoyment of television advertising, driven by bright colours, cartoon characters, and celebrity endorsements. Children wield significant influence on family budgets, especially concerning food items and toys, (Lazim et al., 2018). While the positive correlation between television advertisements and children's eating behaviours is noted, concerns arise about potential misleading information in TFA, normalizing the consumption of less healthy products (Boyland & Halford, 2013). Television viewing is linked to reduced physical activity, increased energy consumption, and childhood obesity. A study in Selangor (Poh et al., 2013) highlights the Indian community's vulnerability to overweight issues, emphasizing the need to further investigate TFA's impact on Indian children's food behaviours and parental perspectives in the Klang District, Selangor, to promote healthier choices and lifestyles.

The context of advertising in Malaysia

The Malaysian government and The Federation of Malaysian Manufacturers worked together to constrained TFA (Ng et al., 2021) that excessive consumption of nutritionally poor, high-energy foods, as promoted in TV advertisements, exposes children to obesity, high cholesterol, and elevated blood fat levels (Karupaiah et al., 2008). Research indicates that children exposed to food ads for 14 minutes tend to consume an extra 8.8 grams of food, potentially resulting in a yearly undesired weight gain of 5 kg if exposed for 30 minutes daily (Harris et al., 2009) TV-watching displaces time for physical activities, contributing to health issues and deficiencies in micro-nutrients, including anaemia or iron deficiency. In Malaysia, advertising is a vital component of marketing management, playing a crucial role in business success within a competitive market. The term 'ad vertere,' meaning 'to turn towards,' encapsulates the core objective of advertising capturing public attention and directing it towards specific products or services. The Malaysian advertising landscape is dynamic, adapting to changes in consumer behaviour, technology, and cultural factors. Advertisers focus on creating impactful campaigns that resonate with the diverse population, considering cultural sensitivities, (Waller & Shyan Fam, 2000).

Effective advertising strategies are essential for building a strong brand identity, attracting customers, and thriving in the competitive marketplace. Advertising serves as a means to inform customers about the availability of brands and products, targeting individuals of all age groups through various media channels. The evolution of advertising in Malaysia, from traditional forms to digital platforms, reflects changes in the media landscape and consumer preferences. Digital advertising offers new possibilities for precise targeting, interactivity, and personalized messaging. As the advertising industry continues to evolve, marketers in Malaysia must adapt

to new trends and technologies while understanding the unique characteristics and preferences of the Malaysian audience. The role of advertising remains significant in shaping consumer perceptions and informing purchase decisions. Staying abreast of industry changes is crucial for marketers, ensuring that advertising continues to play an integral role in the Malaysian business landscape.

Research statement

TFA plays a crucial role in shaping children's food preferences and consumption behaviors, raising concerns about its influence on their ability to make informed and healthy dietary choices. Prior research indicates that exposure to TFA can significantly impact children's attitudes towards food, leading to increased demands for advertised products, often high in sugar, fat, and salt (Obermiller et al., 2005). This influence is particularly concerning within the context of Malaysian Indian children, a demographic that may be uniquely vulnerable due to cultural and socio-demographic factors. The issue this study addresses is the need to understand how TFA affects the food preferences and purchasing behaviors of Malaysian Indian children, and how these effects are moderated by factors such as age, gender, and parental influence. This investigation is essential for informing policy interventions aimed at reducing the adverse impacts of TFA on child nutrition and promoting healthier eating habits within this community.

Research objectives

1. To examine the relationship between children's exposure to television food advertising and their subsequent purchasing intentions, as well as its potential correlation with diet-related health concerns, such as childhood obesity.
2. To investigate differences in children's purchasing behaviors based on various socio-demographic profiles, including age, gender, weight, educational level, parental income, and living arrangements.
3. To identify and analyze the specific contextual factors that trigger Malaysian Indian children's desire to purchase food products as a result of exposure to television advertising.
4. To explore parental perspectives on the effects of television food advertising on their children's preferences and behaviors, and to understand the strategies they use to mediate these effects.

Research questions

1. How does the exposure of children to television food advertising relate to their subsequent purchasing intentions and its potential correlation with diet-related health concerns like childhood obesity?
2. Are there any differences in children's purchasing behaviours based on the children's profiles (age, gender, weight, standard, parents' income, and living with whom)?
3. What are the specific contextual factors that trigger children's desire to purchase food products as a result of television advertising exposure?
4. What are the parents' views regarding their observations of the effects of television food advertising on their children's preferences and behaviours, and how do they perceive their role in mediating these effects?

Method & Material

This study employs a mixed-methods approach, combining quantitative and qualitative data collection methods to provide a comprehensive understanding of the influence of TFA on the purchasing behaviours of Malaysian Indian children. The mixed-methods approach strengthens

the study by allowing for a detailed exploration of both statistical trends and personal experiences, thereby providing a richer and more nuanced understanding of the phenomenon under investigation.

Conceptual framework

This section elaborates on the conceptual framework that elucidates the study's hypotheses in quantitative research. Grasping this influence is considered essential for the conceptual framework, as depicted in Figure 1.

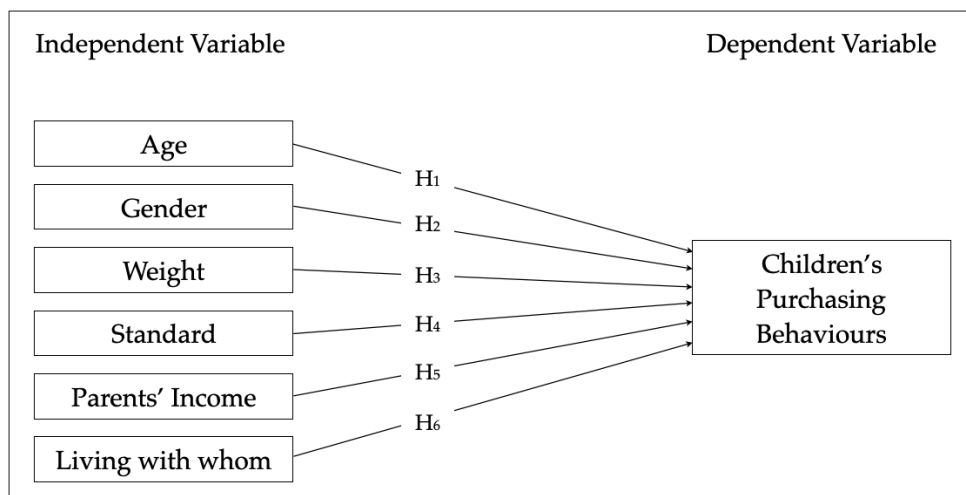


Figure 1.

Figure 1 illustrates between independent and dependent variables in this quantitative research. The study's independent variables encompass age, gender, weight, standard, parents' income, and living with whom. Conversely, the dependent variable examined in this study is Children's Purchasing Behaviours. Subsequently, the hypotheses for quantitative research are as follows:

Hypothesis H1: There is significant differences between level of children's purchasing behaviours and age.

Hypothesis H2: There is significant differences between level of children's purchasing behaviours and gender.

Hypothesis H3: There is significant differences between level of children's purchasing behaviours and weight.

Hypothesis H4: There is significant differences between level of children's purchasing behaviours and standard.

Hypothesis H5: There is significant differences between level of children's purchasing behaviours and parent's income

Hypothesis H6: There is significant differences between level of children's purchasing behaviours and living with whom.

Data collection and sampling procedure

Quantitative Data Collection

The quantitative component of this study involves a survey administered to Malaysian Indian children. The survey is designed to measure the impact of TFA on children's purchasing intentions and behaviors. A 7-item scale adapted from Robertson and Rossiter (1976) was

employed to assess children’s cognitive and affective responses to TFA. This scale includes items that measure perceived truthfulness, annoyance, objectivity, overall liking, persuasive influence, believability of characters, and trustworthiness as a guide for purchasing products. The survey was distributed to a purposive sample of Malaysian Indian children, aged 8-12 years, to ensure a diverse representation of socio-demographic profiles, including age, gender, weight, standard, parental income, and living arrangements. The chosen scale aimed to encompass a range of cognitive and affective responses associated with television advertising. These included perceived truthfulness, potential annoying qualities, objectivity in describing advertised products, overall liking, perceived persuasive influence, believability of characters, and trustworthiness as a guide for purchasing products (Pereira, 1996). Robertson and Rossiter’s study identifies several variables related to children’s behaviours, as outlined in Table 1.

Table 1: 7 Item scale.

1. Truth: Television advertisements tell the truth.
2. Annoy: Most TV advertisements are in poor taste and very annoying
3. Good only: TV advertisements tell only the good things about a product.
4. Like: I like most television advertisements
5. Persuade: TV advertisements try to make people buy things they don’t really need.
6. Believe: You can always believe what the people in advertisements say or do.
7. Best: The products advertised the most on TV are always the best products to buy.

Questionnaire design

The questionnaire was designed using a figurative scale, as detailed in the appendices. All seven items were gauged on a 4-point scale, as illustrated in Figure 2, where smiling and unsmiling faces serve as indicators of the children’s responses. According to Hall et al. (2016), employing a figurative scale is especially effective when surveying child respondents.

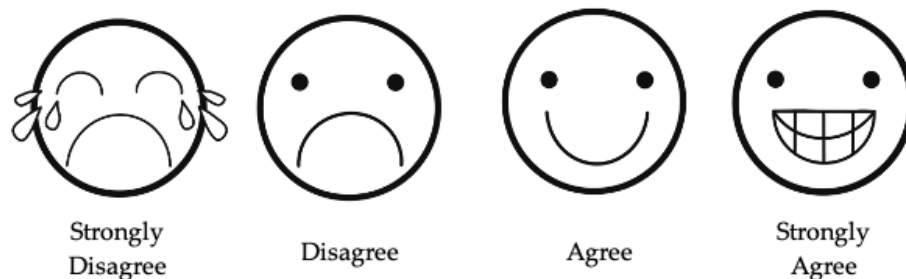


Figure 2.

Qualitative Data Collection

To complement the quantitative data, qualitative interviews were conducted with parents of the surveyed children. These interviews aimed to gain deeper insights into the parental perceptions of TFA's impact on their children’s food choices and the strategies they use to mediate these influences. The interview questions were designed to explore parents' views on the effects of TFA on their children's preferences and behaviors, their awareness of advertising effects, and how they navigate their children's responses to TFA.

Sampling procedure

The study employed a purposive sampling technique facilitated through digital platforms, focusing on Malaysian Indian children and their parents from the Klang Valley. This approach ensured that the sample was representative of the specific demographic of interest. The selection criteria included children's age (8-12 years), exposure to television, and willingness of parents to participate in the interview. The sample size for the quantitative survey was a total of 116 children determined based on the requirement for statistical power, while the qualitative interviews conducted with ten parents who voluntarily participated in the study. The initial participants were identified through the researchers' personal networks and invited to participate via WhatsApp groups and various social media platforms, such as Facebook and Instagram. The inclusion criteria focused on Malaysian Indian children aged 8 to 12 years. The online survey link was shared with participants, who were encouraged to forward it to their contacts who fit the study criteria. The study utilized a self-administered survey questionnaire format, with parents offering assistance for any queries that arose during completion. To ensure better understanding among the children, the items in the questionnaire were translated into Tamil, their native language. In addition, qualitative data for this study was collected through semi-structured interviews conducted with parents. Participants for the interviews were selected using a random sampling method, resulting in ten participants for qualitative data collection.

Data analysis

The present study utilized a mixed-methods approach to analyse the collected data. This involved integrating the qualitative data obtained from parents, providing insights into changes in children's food behaviours, with the quantitative data derived from a survey questionnaire assessing children's attitudes to determine the potential influence of TFA on them. For the quantitative data, SPSS Version 29 was employed to transform and analyse the collected data for statistical purposes. Demographic information collected through the survey questionnaire included age, gender, weight, and parents' salary, and was analysed accordingly. Additionally, the items were scrutinized in alignment with the formulated research questions.

Results

Quantitative analysis results

After analysing the quantitative data collected from the survey questionnaire, the following are the findings of the statistical analysis conducted.

Demographic details

In terms of age, the predominant age group among participants is 10 years old, comprising 43 (37.1%) of the participants, followed by 12 years old, with 40 (34.5%) participants. In contrast, the age group 11 years old had the lowest representation, accounting for 33 (28.4%) of the total respondents. Regarding the gender distribution of the participants, the majority, constituting 65 (56%) of the total, are female, while the remaining 51 (44%) are male participants. When it comes to the weight of the participants, it was distributed spread across the categories. The highest number of participants which is 47 (40.5%) weighed between 31-35kg, followed by 32 (27.6%) participants who weighed Less than 30kg and 20 (17.2%) participants weighed between 36-40kg. As stated before, the participants were from the upper primary school that are standard 6, standard 5 and standard 4 with 40 (34.5%) participants, 33 (28.4%) participants and 43 (37.1%) participants respectively. In terms of the household income of the participants, the majority of 65 (56%) participants earned less than RM5000 a month and 51 (44%) participants earned more than RM5000 a month. The final demographic information collected

from the survey questionnaire was the living status among the participants; the majority, 102 (87.9%) of them live with their parents and only 14 (12.1%) of them live with their guardians. The summary of the demographic details is summarized in Table 2.

Table 2: Summary of demographic details of the participants.

Demographic Profile (n=116)			
Items	Range	f	%
Age	10 years old	43	37.1
	11 years old	33	28.4
	12 years old	40	34.5
Gender	Male	51	44
	Female	65	56
Weight	Less than 30KG	32	27.6
	31 to 35 KG	47	40.5
	36 to 40 KG	20	17.2
	More than 40 KG	17	14.7
Standard	Standard 4	43	37.1
	Standard 5	33	28.4
	Standard 6	40	34.5
Parent's Income	<5000	65	56
	>5000	51	44
Living with	Parent / Guardian parent	102	87.9
	Guardian	14	12.1

Level of children's behaviours towards television food advertising

There are 7 items developed to investigate the children's views about the influence of TFA on their eating behaviours. Table 3 reported the mean and standard deviation for different statements related to children's purchasing behaviours and their perceptions of television advertisements. On average, children's purchasing behaviours are slightly positive with a mean score of 3.14 and a moderate level of variability with a standard deviation of 0.66. The majority of respondents fall into the Agree category, with 50 respondents (43.1%) agreeing with the statements about children's purchasing behaviours. Additionally, 45 respondents (38.8%) strongly disagree while 21 respondents (18.1%) disagree with the statements.

Table 3: Descriptive analysis for each item in children's purchasing behaviours towards television food advertising.

Items	Mean	STD	SD		D		A		SA	
			f	%	f	%	f	%	f	%
Children's Purchasing Behaviors	3.14	0.66	21	18.1			45	38.8	50	43.1
Television advertisements tell the truth.	3.07	1.08	1	0.9	6	5.2	60	51.7	49	42.2
Many TV advertisements are created with creativity and aim to capture viewers' attention effectively.	3.35	0.62	1	0.9	12	10.3	59	50.9	44	37.9

TV advertisements tell only the good things about a product. They don't tell you the bad things.	3.26	0.67	1	0.9	10	8.6	54	46.6	51	44
I like most TV advertisements	3.34	0.67	17	14.7	13	11.2	46	39.7	40	34.5
TV advertisements aim to inform consumers about a wide range of products that may meet their various needs	2.94	1.02	17	14.7	13	11.2	46	39.7	40	34.5
You can always believe what the people in advertisements say or do.	2.97	0.92	12	10.3	14	12.1	55	47.4	35	30.2
The product advertised the most on TV are always the best product to buy.	3.03	0.97	14	12.1	10	8.6	50	43.1	42	36.2

STD= Standard Deviation, SD= Strongly Disagree, D= Disagree, A= Agree, and SA= Strongly Agree

The data for the statement many TV advertisements are created with creativity and aim to capture viewers' attention effectively reveals that the mean score is 3.35, indicating a slightly positive perception among the respondents. The standard deviation (0.62) is relatively low, suggesting that there is relatively little variability in the responses. Among the respondents, only 1 participant (0.9%) strongly disagreed with the statement, while 12 participants (10.3%) disagreed. On the other hand, a significant majority of 59 participants (50.9%) agreed, and 44 participants (37.9%) strongly disagreed with the statement. This data indicates that the majority of the respondents tend to have a positive or somewhat positive view of the creativity and effectiveness of TV advertisements, with a relatively small percentage expressing disagreement or strong disagreement.

The data for the statement "I like most TV advertisements" indicates that, on average, respondents have a moderately positive perception with a mean score of 3.34. The standard deviation (0.67) suggests that there is some variability in the responses, but the majority of respondents appear to have consistent views. Among the respondents, 17 participants (14.7%) strongly disagreed, and 13 participants (11.2%) disagreed with the statement, indicating a small proportion of respondents with negative opinions. Conversely, a substantial portion of 46 participants (39.7%) agreed, and 40 participants (34.5%) somewhat agreed with the statement, reflecting a significant majority with positive or somewhat positive attitudes toward TV advertisements.

The analysis indicated that the children have a moderately positive perception with a mean score of 3.26 on TV advertisements telling only the good things about a product. They don't tell you the bad things. The standard deviation (0.67) suggests that there is some variability in the responses, but the majority of participants appear to have consistent views. Only 1 person (0.9%) strongly disagreed while 10 participants (8.6%) disagreed with the statement, indicating a relatively small proportion of participants with negative opinions. In contrast, a significant majority of 54 people (46.6%) agreed, and 51 participants (44%) strongly disagreed with the statement, reflecting a strong majority with positive or somewhat positive attitudes toward the idea that TV advertisements may emphasize the positive aspects of a product while downplaying the negatives.

Next, descriptive analysis of the statement “Television advertisements tell the truth” shows that, on average, respondents have a moderately positive perception with a mean score of 3.07. The standard deviation (1.08) suggests that there is relatively more variability in the responses compared to some other statements. Only 1 participant (0.9%) strongly disagreed, while 6 participants (5.2%) disagreed with the statement, indicating a relatively small proportion of participants with negative opinions. In contrast, a majority of 60 participants (51.7%) agreed, and 49 participants (42.2%) strongly disagreed with the statement, reflecting a majority with positive or somewhat positive attitudes toward the truthfulness of television advertisements. This data suggests that most respondents tend to believe that television advertisements generally tell the truth, with a minority expressing strong disagreement or disagreement.

The analysis for the statement “The products advertised the most on TV are always the best product to buy” shows that, on average, respondents have a moderately positive perception with a mean score of 3.03. The standard deviation (0.97) indicates that there is some variability in the responses, with a range of opinions among the respondents. Among the respondents, 14 participants (12.1%) strongly disagreed, and 10 participants (8.6%) disagreed with the statement, indicating a minority with negative opinions. Conversely, 50 participants (43.1%) agreed, and 42 participants (36.2%) strongly disagreed with the statement, reflecting a majority with positive or somewhat positive attitudes toward the idea that the most advertised products on TV are the best to buy. However, the data also suggests that a substantial portion of respondents have reservations or disagreements about this notion, as indicated by the presence of those who strongly disagree or disagree. Overall, this data implies that while a majority of respondents may lean towards the belief that highly advertised products are the best, there is significant variation in opinions.

The mean and standard deviation for “You can always believe what the people in advertisements say or do” have a somewhat sceptical perception with a mean score of 2.97 and a standard deviation of 0.92. Result shown, 12 participants (10.3%) strongly disagreed, and 14 participants (12.1%) disagreed with the statement, indicating a minority with negative opinions. Conversely, 55 participants (47.4%) agreed, and 35 participants (30.2%) somewhat agreed with the statement, reflecting a majority with positive or somewhat positive attitudes toward the trustworthiness of participants in advertisements. However, the data also suggests that a significant portion of respondents express some level of scepticism, as indicated by the presence of those who strongly disagree or disagree. Overall, this data implies that while a majority of participants may generally trust individuals in advertisements, there is a notable proportion who maintain reservations or disbelief in their claims.

Table 3 revealed that the statement “TV advertisements aim to inform consumers about a wide range of products that may meet their various needs” indicates that, on average, respondents have a moderately positive perception with a mean score of 2.94. The standard deviation (1.02) suggests that there is some variability in the responses. Analysis shows about 17 participants (14.7%) strongly disagreed, and 13 participants (11.2%) disagreed with the statement, indicating a minority with negative opinions. On the other hand, 46 participants (39.7%) agreed, and 40 participants (34.5%) strongly disagreed with the statement, reflecting a majority with positive or somewhat positive attitudes toward the idea that TV advertisements aim to inform consumers about various products.

Normality distribution

Normality tests are conducted to assess whether the data collected from a sample follows a normal distribution. While the comparison mean uses Analysis of Variance and independent t-test strictly requires normally distributed data, Hair et al. (2019). Skewness and kurtosis are statistical measures used to understand the shape and distribution of data. Skewness quantifies the asymmetry in the data distribution. A perfectly symmetrical distribution has a skewness of 0, indicating that the data is equally distributed around its mean. A negative skewness, as in the case of Children's Purchasing Behaviours with a value of -1.233, means that the data is skewed to the left, where the tail on the left side is longer or extends further than the right side. In practical terms, this suggests that there might be a concentration of lower values in the dataset, causing the distribution to be stretched towards the lower end. Kurtosis, on the other hand, measures the degree to which data deviates from a normal distribution. A kurtosis value of 0 represents a normal distribution and values greater than 0 (positive kurtosis) indicate heavier tails and a more peaked distribution, while values less than 0 (negative kurtosis) suggest lighter tails and a flatter distribution. In this case, Children's Purchasing Behaviours have a kurtosis of 0.319, which is within the acceptable range. It implies that the distribution of this variable is not excessively peaked or flat but relatively close to a normal distribution. Generally desirable for skewness and kurtosis to be within the range of -2.00 to 2.00 to indicate a reasonably symmetric and normally distributed dataset. In the case of Children's Purchasing Behaviours, the kurtosis falls within this range, but the skewness is slightly negatively skewed, indicating a slight imbalance in the distribution with a tendency towards lower values. Refer to table 4.

Table 4: Skewness and Kurtosis result.

Variable	Skewness	Kurtosis
Children's Purchasing Behaviors	-1.233	0.319

The differences between level of children's purchasing behaviours based on age.

The results of the analysis of variance (ANOVA) in Table 5, indicate that there are statistically significant differences in the mean scores of children's responses to age as denoted by the F-statistic ($F = 6.63$) with a p-value of 0.00 (p-value < 0.05). Hypothesis 1 was supported. These differences suggest that the age groups (10, 11, and 12 years old) have varying mean scores, and the differences are likely to have occurred by chance. Specifically, the mean score for 10-year-olds is 3.36 with a standard deviation of 0.56, while 11-year-olds have a mean score of 3.19 and a standard deviation of 0.63, and 12-year-olds have a lower mean score of 2.86 with a standard deviation of 0.71. These results imply that the variable being measured is perceived differently across the age groups, with the 10-year-olds showing the highest mean score, followed by the 11-year-olds, and the 12-year-olds having the lowest mean score.

Table 5: ANOVA between level of children's purchasing behaviours based on age.

Age	N	Mean	Standard Deviation	F	Sig.
10	43	3.36	0.56	6.63	0.00
11	33	3.19	0.63		
12	40	2.86	0.71		
Total	116	3.14	0.66		

The differences between level of children’s purchasing behaviours based on gender.

The independent t-test is a statistical method used to compare the means of two independent groups to determine if there is a significant difference between variables. In this specific case, the groups are divided by gender, with one group comprising 51 males and the other 65 females. The mean score for males is 3.22 with a standard deviation of 0.617, while for females, the mean score is 3.07 with a standard deviation of 0.79. However, the t-statistic, which measures the difference in means relative to the variability within the groups, is 1.198 with a p-value of 0.233 (p-value>0.05). In the context of gender, this means that there is no statistically significant difference in the mean scores between males and females regarding the variable being measured. The p-value (0.233) is greater than the commonly used significance level of 0.05, indicating that any observed differences are likely due to random variation, rather than a true gender-based difference. In other words, there is no strong evidence to suggest that gender has a significant influence on the variable in question. Hypothesis 2 was rejected. Refer to Table 6.

Table 6: Independent T-test between level of children’s purchasing behaviours based on gender.

Gender	N	Mean	Standard Deviation	t	Sig.
Male	51	3.22	0.62	1.20	0.23
Female	65	3.07	0.70		

The differences between level of children’s purchasing behaviours and weight.

Table 7 presented the analysis of variance (ANOVA) results on level of Children’s Purchasing Behaviours according to children’s weight. There are four weight categories “Less than 30 KG,” “31 to 35 KG,” “36 to 40 KG,” and “More than 40 KG.” The ANOVA test yields an F-statistic of 4.95 with a p-value of 0.00 (p-value<0.05), indicating a highly statistically significant difference among the groups. Hypothesis 3 was supported. In this context, it means that the variable being measured, which might be related to weight categories, has different mean scores across the groups. Specifically, the “Less than 30 KG” group has the highest mean score of 3.34 with a lower standard deviation of 0.54, followed by “31 to 35 KG” (mean 3.17, standard deviation 0.69), “36 to 40 KG” (mean 3.16, standard deviation 0.48), and “More than 40 KG” with the lowest mean score of 2.62 and a higher standard deviation of 0.78.

Table 7: ANOVA between level of children’s purchasing behaviours based on weight.

Weight	N	Mean	Standard Deviation	F	Sig.
Less than 30KG	32	3.34	0.54	4.95	0.00
31 to 35 KG	47	3.17	0.69		
36 to 40 KG	20	3.16	0.48		
More than 40 KG	17	2.62	0.78		
Total	116	3.14	0.66		

The differences between level of children’s purchasing behaviours and standard.

The statistical analysis presented here employs an F-test, commonly used in the analysis of variance (ANOVA), to assess potential differences in means among three different groups categorized as Standard 4, Standard 5, and Standard 6. The F-statistic of 6.63, with a p-value of 0.00 which is less than 0.05, indicates a highly statistically significant difference among these groups. Therefore, Hypothesis 4 was supported. The results demonstrate that the variable being

measured varies significantly across these standards. Specifically, Standard 4 has the highest mean score of 3.36 with a lower standard deviation of 0.56, followed by Standard 5 with a mean of 3.19 and a standard deviation of 0.63, and Standard 6 with the lowest mean of 2.86 and a higher standard deviation of 0.71. This suggests that there is a significant difference in the variable of interest among these different standards, and further post-hoc analyses may be needed to pinpoint specific group differences and understand the implications of these variations. Refer to Table 8.

Table 8: ANOVA between level of children’s purchasing behaviours based on standard.

Standard	N	Mean	Standard Deviation	F	Sig.
Standard 4	43	3.36	0.56	6.63	0.00
Standard 5	33	3.19	0.63		
Standard 6	40	2.86	0.71		
Total	116	3.14	0.66		

The differences between level of children’s purchasing behaviours and income.

The presented analysis in Table 9, involves an independent t-test between level of Children’s Purchasing Behaviours and income. The t-statistic is 1.055, and the p-value is 0.294. This indicates that there is no statistically significant difference in the mean scores between the two income groups regarding the variable being measured. The p-value of 0.294 is greater than the commonly used significance level of 0.05, suggesting that any observed differences are likely due to random variation rather than a true income-based difference. In other words, there is no strong evidence to suggest that income level has a significant influence on the variable in question. Hypothesis 5 was rejected.

Table 9: Independent T-test between level of Children’s Purchasing Behaviours based on Weight.

Income	N	Mean	Standard Deviation	t	Sig.
<5000	65	3.1956	0.63866	1.055	0.294
>5000	51	3.0644	0.69653		

The differences between level of children’s purchasing behaviours and living with whom?

Table 10 shows an independent t-test, between level of Children’s Purchasing Behaviours and living with a parent or guardian. The t-statistic is -3.771, and the p-value is 0.001. Since the p-value less than 0.05, it indicates that there is a highly statistically significant difference in the mean scores between these two groups regarding the variable being measured. Hence, hypothesis 6 was supported. The negative t-statistic and the p-value less than 0.05 suggest that individuals living with a guardian tend to have higher mean scores, implying a significant difference in perceptions or attitudes compared to those living with a parent/guardian. In other words, the type of living arrangement appears to influence the variable under consideration. The mean score for those living with a parent/guardian is 3.09, with a standard deviation of 0.69. For those living with a guardian, the mean score is 3.48, with a lower standard deviation of 0.29.

Table 10: Independent T-test between level of children’s purchasing behaviours and living with whom.

Living With?	N	Mean	Standard Deviation	t	Sig.
Parent / Guardian parent	102	3.09	0.69	-3.771	0.001
Guardian	14	3.48	0.29		

Qualitative data analysis findings

In parental interviews exploring the factors influencing children’s attraction to Television Food Advertising (TFA), several key themes emerged.

- A substantial majority of parents (60%) identified the perceived tastiness of advertised food products, often containing high preservatives and monosodium glutamate (MSG), as the primary reason for their children’s attraction.
- Half of the parents emphasized the effectiveness of persuasive techniques in TFA, particularly enticing premium offers like free gifts and toys.
- Some parents highlighted their children’s captivation with engaging storylines, vibrant visuals, and special effects in TFA.
- Interestingly, children in standard 6 demonstrated increased awareness that not everything portrayed in TFA is true, potentially influenced by parents promoting healthy eating behaviours.
- Parents earning less than RM5000 expressed concerns about the strong allure of TFA for their children.
- The study noted that younger children, particularly those in standard 4, displayed a higher susceptibility to TFA’s influence, leading to requests for unhealthy products.
- Indian parents expressed concerns about TFA influencing their children’s eating habits, contributing to negative perspectives and conflicts over unnecessary purchases.
- This study emphasized key variables influencing children’s purchasing behaviour, including the preference for unhealthy foods, new snacking habits, family eating habits, addiction to eating out and MSG, increased greediness and materialism, parent-child conflicts, and changes in mood.
- The weight category of 31 to 35 kg, standard 4, and living arrangements with parents or guardians emerged as dominant factors influencing children’s purchasing behaviour alongside the impact of television advertising.

After analysing the qualitative data as stated before., the themes that can be summarized are as follows:

1) Preference for unhealthy foods

Research findings reveal that continuous exposure to television food advertisements significantly increases children’s desire for high-fat and high-sugar foods, fostering a preference for unhealthy options. Two parent observations highlight the impact of advertisement sounds on a boy’s snack choices and the influence of advertisements on a girl’s beverage preferences. The study shows that after viewing such advertisements, children prioritize unhealthy food items, mimicking sounds and developing a strong preference for branded snacks. Parents note a significant increase in potato chip consumption influenced by sound effects and a shift from plain water to sugary drinks, suggesting that TFA persuasively shapes children’s food choices.

One parent of a 12-year-old boy said:

“My boy has been munching on a lot more potato chips lately for lunch and sometimes as an evening snack. It seems like he only wants chips now, and what I’ve noticed he often eats them while trying to mimic the sounds he hears from the ‘Mister Potato Chips’ television advertisement. He told me that was the best thing to eat for him. He will finish at least a packet of it daily.”

Another parent of a 10-year-old girl commented:

“I’ve noticed that my daughter doesn’t drink plain water at home. She is always on the ‘Spritzer POP’ fizzy drinks or those packaged ‘Ribena’ brand juices. Even for school, she carries this with her. When I asked her why not drinking plain water, she said I saw it on TV only this drink is a good thing for me.”

2) Adopting to a new snacking habits and beliefs

A notable new snacking habit was identified in the findings, with a child expressing excitement about having popcorn not only at the theatre but also at home while watching TV. This suggests that the child’s perception of popcorn as a snack was influenced by television food advertising.

One parent of a 12-year-old boy mentioned:

“I found that my child has a new eating habit while watching TV. He told me, “Hey, Mom! Now I can have popcorn at home while watching TV, not just at the theatre’. I see him every time eating popcorn while watching TV or even when he is playing. That kind of thing lah.”

Another parent shared their child’s request for famous biscuit packets when asked to finish homework from school. The child believed that consuming these biscuits will provide them with more energy to complete their homework.

One parent commented:

“When I asked my 11-year-old girl to finish her homework, she started asking for those famous Tiger biscuit packets. She tells me that eating those biscuits will give her more power to do her homework. It’s obviously a new habit that I can see she has got influenced by the TV ads. Last time she finished homework by herself without asking me anything. I can see her demanding to her dad nowadays. This is something that makes me troubled now.”

Children’s snack preferences, influenced by advertisements like popcorn becoming a desired home TV snack, contribute to altered snacking patterns. A diet high in such foods may pose risks like nutritional imbalances and obesity.

3) Influencing family member’s eating habits

Children’s influence, driven by advertisements, extends to family meal choices, impacting siblings’ eating habits. The appeal of advertised foods prompts children to actively encourage their siblings to consume the same processed, enticing items, contributing to increased consumption of unhealthy foods within the household.

One parent said:

“My son 11-year-old boy was telling his younger brother 10 years “let’s have this yummy super-hot flavour nuggets and good for us” and put nuggets in the shopping

trolley. He told his brother “taste so good!” The younger one said “Yey, I’m excited to try new snacks!” and the elder one said “Let’s have fun” at the same time to his father and me. So, four of us need to eat that nugget together now”

The dialogue highlights that the son was persuading his younger brother to choose a specific food item, “yummy super-hot flavour nuggets.” The son emphasized that these nuggets are not only delicious but also good for them, suggesting that he has adopted the persuasive messaging from television advertisements. This finding suggested that children can be influenced by advertisements to perceive certain foods as both enjoyable and beneficial, leading them to actively seek out those products. The son’s statement, “I’m excited to try new snacks! Let’s have fun at the same time,” indicated that TFA may contribute to the child’s enthusiasm for trying new snack foods. These findings suggested that television advertisements have a significant influence on children’s food choices and their emotional responses to those choices. Consequently, family members, including parents, often find themselves compelled to consume these foods due to the insistence and influence of their children.

Another parent shared:

“recently my son 10-year-old said “Mom these cookies have that superhero on the package, and they say on TV they’re super delicious! Let’s enjoy this together to become a superhero at home. We can have more energy to do household cleaning.”

4) Addicted to eating out and MSG

A noteworthy finding reveals concerns about children developing an addiction to eating out, particularly fast food. Parents express challenges in steering their children towards healthier home-cooked meals, attributing this preference for dining out to the influence of TV food advertisements.

As a parent said:

“if it’s Sunday my girl 10-year-old will start saying “Mom, I really don’t like this chicken curry. It’s just not tasty to me. KFC chicken always tastes so much better. I want that now, every Sunday is a KFC day mom.”

The child expressed dissatisfaction with the chicken curry being served and asserted that it is not tasty to them. They made a direct comparison to the taste of KFC chicken, stating that it always tastes much better. This finding indicated that the child’s perception of taste has been influenced by TFA promoting KFC, which portrayed their chicken as delicious and tempting offers, potentially associating it with a preferred routine.

Another parent said his children 12-year-old boy will ask for food and says something like,

“The food at the restaurant tastes so good! I can’t live without those fries and burgers; I really love that”. He just changed to a new person when he saw the burger. His smile will go wider. He can eat two burgers sometimes even if he is not hungry. Every time, he just goes with the Zinger burger. He will ask for the set meal which comes on the promotion every time. He likes trying the promotions. He will wait for the new flavours whenever they are shown on TV.”

5) Being greedier and materialism

Children exhibit a materialistic mindset, influenced by TV food advertisements, seeking branded items for perceived coolness and social status. Parents note increased emphasis on

brand and packaging over health considerations. In one instance, a child's repeated requests for a cereal with toys inside highlight the impactful influence of such advertisements.

One parent said his 10-year-old boy will say

"Can we get the cereal daily with the cool toy inside? It'll be so much fun! Whenever he knows I am buying these cereals he will ask "Can I have one more packet so that I can have more toys". Always will ask for more. He never gets satisfied just with the one packet you know. So selfish to get more packets and he will finish the cereal very fast just to get more free gifts. Sometimes I get angry and scold him for this character."

Another parent said two of their children aged 10 year and 11 years will ask for Pizza Hut every day. They only want Pizza Hut, and they told me it's so yummy! You know, for homemade food they will say

"You both can have this, we will eat the pizza hut dad."

They just want Pizza Hut for breakfast, lunch, and dinner dad. They will ask me to buy more often. Me and my wife bored with this, but they will force us to buy. We go to Pizza Hut three or four times a week you know still never get satisfied and they want more. If not, they won't eat anything.

Children, influenced by TV food ads, develop strong preferences for specific brands like Pizza Hut, expressing a desire for these foods daily. This contributes to a sense of greediness and increased demands on parents to satisfy these preferences.

6) Conflicts between the parent and child

Children's strong desire for unhealthy foods, influenced by TV ads, leads to conflicts with parents who prioritize health. Parents face challenges during grocery shopping and meal discussions, with children persistently demanding advertised items, causing emotional tensions and family discord.

The parent said her daughters aged 10 and 11 years old

"will continue to torture me until I buy those things for them. Sometimes I just get irritated with them you know."

Another parent said his 11-year-old girl

"will argue with me in the supermarket if I didn't get those things for her. She will just get upset immediately lah. We can see that from her face you know. Then, she won't come out of her room and will be pretending like she is not hungry after we get back home."

7) Changes of mood

The findings emphasized that parents observed the changes in moods among their children in particular their happiness levels. This was obvious each time when they bought the advertised foods as they requested. There was temporary joy existed, however, they felt disappointed or unsatisfied when they were unable to get the products they desired. Parents said that the children believed that consuming such products would bring them happiness.

One parent mentioned that her 10-year-old daughter became

“hyper and smiles throughout their time in the supermarket until they reached home after shopping, especially when she was bought whatever she wanted. Her face reaction was something interesting to see. She will have a bright smile and talk nicely to me.”

Another parent shared that their 11-year-old daughter became upset immediately if what she saw in the ads was different from what she received. If she became upset, she would be angry and sometimes scold others.

“I have seen her crying when she was dissatisfied with a food item she had purchased after seeing it in a TV ad.”

This finding suggested that television advertisements impact children’s emotional state, leading to excitement, happiness, and positive behaviours when they obtain the advertised products. Furthermore, they can also significantly influence children’s expectations and emotional responses, leading to disappointment and negative behaviours if the reality does not match with their expectations.

Discussion

The study examines the impact of TFA on children’s food behaviours in the context of Malaysia’s unique food and media landscape. TFA has been identified as a powerful influencer of children’s dietary preferences, often deviating from healthy eating guidelines. In Malaysia, high levels of food advertising, particularly promoting unhealthy options, have been observed during specific time slots, with strategic tactics like bundling free gifts with purchases. This study sheds light on local companies adopting such strategies, emphasizing their potential impact on children’s understanding of healthy and unhealthy foods. Malaysia’s diverse culinary heritage and rich food culture contribute to visually enticing advertisements that stimulate children’s cravings, potentially influencing their food behaviours (Suhaimi et al., 2017). The country’s vibrant street food culture amplifies the persuasive power of television advertising, particularly featuring local delicacies. The study underscores the crucial role of parents in mitigating the effects of TFA on children. Parents actively involved in traditional meal preparation and incorporating Malaysian cuisine into their family’s diet were found to counteract the influence of advertising effectively. The findings also highlight the importance of parental media literacy. Parents informed about advertising tactics were more likely to critically assess and discuss advertisements with their children. This underscores the potential effectiveness of media literacy programs tailored to the Malaysian context. Children’s purchasing behaviours, as identified in the study, are influenced by various factors, including age, standard, weight, and living arrangements. The study calls for further research, especially in understanding children’s television viewing habits and potential correlations between exposure to unhealthy food advertising and viewing patterns (Lazim et al., 2018). A comparative analysis of TFA across different industries and media platforms beyond traditional television is suggested for a more comprehensive understanding. As Malaysia’s economic affluence grows, future research should encompass data from diverse media platforms to provide a holistic view of the impact of TFA on children’s food behaviours. In essence, the study addresses the pressing issue of TFA’s influence on children’s dietary choices in Malaysia and proposes avenues for future research and interventions to promote healthier eating habits among the youth.

Policy implications

The government should take measures to oversee and enhance rules and regulations governing advertisements. Stricter laws on food advertising targeting children must be applied, such as restricting unhealthy food ads during peak viewing hours and requiring clear labelling that meets nutritional criteria to mitigate the influence of TFA on children's eating habits in Malaysia. Television networks should restrict the time allocated to advertisements; parents must limit their children's time to watch television. Additionally, establish nutritional criteria for advertised foods, similar to programs in other nations. Create a certification mechanism for "child-friendly" advertisements that meet strict nutritional standards, incentivizing businesses to generate and promote healthier options. Moreover, the government should fund culturally relevant media literacy programs in Malaysian schools and communities to raise awareness among children and parents about advertising strategies and the value of healthy eating. Parents should focus on raising awareness, providing guidance, and promoting healthier eating habits by explaining how TFA influences their children.

Conclusion

This mixed-methods study in Malaysia explores the intricate dynamics between TFA, children's food behaviours, and parental perspectives. It reveals that children, exposed to a significant volume of TFA promoting unhealthy foods, influence family dietary choices and even impact parents' purchasing decisions. The study underscores the need for tailored strategies to address the influence of TFA on children's dietary choices, emphasizing the potential for positive change by incorporating healthier food options and informative content in advertisements. In the global context, there's a growing trend toward self-regulatory measures and legislative initiatives to protect children from the excessive marketing of unhealthy food and beverages. The study highlights the substantial impact of advertisements on children's preferences, purchasing behaviours, and requests. While children display a degree of scepticism, their positive disposition toward advertising translates into a willingness to try advertised products. Parents, however, express concerns about the impact of advertisements, particularly regarding junk food and toy promotions, emphasizing the need for greater awareness and regulation of advertising practices targeting children. Additionally, the study notes a notable increase in children's buying attitudes following the COVID-19 pandemic, with heightened engagement with TFA influencing their purchasing behaviours. The findings contribute valuable insights for advertisers, product manufacturers, policymakers, and parents to develop strategies that ensure responsible advertising practices and protect the well-being of children in the marketplace. Recognizing the influence of TFA can pave the way for safeguards and interventions to promote healthier and responsible consumer choices among children in Malaysia, considering the unique cultural and media landscape factors.

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