
Identification and analysis of factors influencing food advertisements on buying behaviour of children in emerging consumption markets: the case study of Afghanistan

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Abstract: This study assessed impact of food advertising on purchasing behaviour of children in emerging consumption markets. A case study was conducted in Kabul, Afghanistan. In this research, we considered a system where children's buying behaviour was the output and food advertising and moderator variables namely age, siblings, gender, parent's influence and media type were considered as inputs. The study relied on primary data collected from 385 children aged between 5 and 15. Data were analysed with STATA 2013. The data and statistical models were tested for validity and reliability; the tests included Cronbach's alpha, Jarque-Bera, Bruesch-Pagan/Cook-Wisberg, Winsorization, Skewness and Kurtosis, Akaike information criterion (AIC), and variance inflation factor (VIF). The study found that television advertisements had the most influence on purchasing behaviour of children directly or indirectly through their parents. The study also found that the magnitude of advertising outcome on children varied based on moderator variables mentioned above.

Keywords: children's buying behaviour; food advertisement; TV advertising; parents' influence; quantitative analysis; reliability; multiple regression; business statistics; AIC and systems.

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1 Introduction

Advertisement is an integral part of any modern society and market where companies and industries compete against each other to increase their sales and revenues. Organisations employ various advertisement channels to influence consumption and purchasing behaviour of their prospects to increase sales and revenues. These channels include televisions, radios, newspapers, magazines, billboards, and the internet including social media platforms. Advertising is conducted for the purpose of introducing new products and services or increasing sales of the existing products and services. To use the right type of advertisement channel at the right time for the right people in the right place,

organisations conduct market research to study the influence of each advertising channel on the potential consumers with different characteristics and under different situations.

In Afghanistan, advertisement has begun to play a key role in different industries since collapse of Taliban regime in 2003 (Siddiqi, 2012; USAID, 2013). The key factors that have stimulated and paved the way for growth of digital advertisements are the increased inflow of foreign direct investments, introduction of new technologies including the internet, the increased number of television and radio stations, and introduction of new industries and technologies since 2003 (Siddiqi, 2012). International donors' assistance provided to television stations and media companies is the other factor that has led to an increase in the digital advertisement (Siddiqi, 2012). Children are the major end-users for many industries in Afghanistan as the country's population is among the youngest in the world with approximately 48% of its population aged less than 15 years old (Afghanistan CSO, 2012). To be successful in their industries, industry owners should understand the impact of their advertising efforts on buying behaviour of children in Afghanistan.

One of the responsibilities of the Afghan government and policy makers in the country is to reduce the negative effects of food advertisements on people, as all advertised foods are not healthy (Linn and Novosat, 2008). Advertisements of unhealthy foods, such as snacks and energy drinks, which are rich in sugar, fat and salt can take heavy toll on the health condition of people (Amanzadeh et al., 2015). The victims of such harmful food advertisements are mostly children. Overall, this study will argue how food advertising influences buying behaviour of children in Kabul on different dimensions and by measuring various factors including age of children, gender of children, and number of siblings of children.

1.1 Problem statement

The magnitude of influence of food advertising on children's purchasing behaviour may depend on several factors, including age of children, gender of children, education level of parents, family income, and cultural practices. Type of advertising channels also has important role in changing the buying behaviour of children.

Though not in Afghanistan, the relation between purchasing behaviour of children and these factors have been studied by several researchers in the past. Some researchers assessed the effect of age and income on children's food consumption behaviour (Martins and Brooks, 2010; Rozendaal, 2011).

Influence of parents on food consumption and purchasing behaviour of children has also been researched by several people. As parents are responsible for controlling food consumption of their children, usually researchers study buying behaviour of children in tandem with their parents (Fan and Li, 2010; Kumar and Raju, 2013; Shabbir, 2016). The results of previous studies show that not all parents have the same level of influence on their children's purchasing decision-making process. For example, Tomko (2012) found that educated parents control consumption behaviour of their children more strictly as compared with uneducated parents.

Researchers have also found that each advertising channel has different level of influence on people. Generally, any channel that uses a wider bandwidth, delivers a message more effectively to the audience (Korzenny and Bauer, 1981). In terms of communication bandwidth, experts say communication occurs along five common

sensory: auditory, visual, tactile, olfactory and gustatory (Sekaran, 2006). The larger number of these five sensory is used in a communication message, the higher influence we can expect from that message. Thus, television advertisements that involve visual and auditory senses are more effective than radio with only auditory sense. People's access to the advertising channel is also important. For instance, for a community with limited access to the internet, online advertising does not work effectively. Some studies have been conducted mostly in developed countries, to investigate the relationship between food advertisement and child's health problems like obesity and cardiac diseases (Grier et al., 2007; Seiders and Petty, 2007).

To control the downside effects of advertising on children, there are three main actors: the government institutions, parents, and health centres. Mostly, children, in particular at the younger ages, do not have the sufficient cognition to distinguish between advertisers' intention to increase their sales and nutritional value of the advertised foods (Rozendaal, 2011). This study will seek to assess the effect of food advertisements along with the above-mentioned factors on purchasing and consumption behaviour of children in Kabul. As food advertisements in Kabul are mostly about packed snacks and soft drinks in a ready-to-eat form, this study uses advertisements of snacks and soft drinks to represent food advertisements.

2 Literature review

There is convergence of views among all researchers that advertisement can influence the buying behaviour of humans of any age, in any situation and in all industries. However, the magnitude of influence on buying behaviour of people differs due to many factors including age, literacy, socio-economic status of the families, educational level of parents, the dominant culture (Singh, 2012; Akhter et al., 2012; Majid, 2013; Sethi and Chawla, 2014) and the advertising tools used to communicate message (Moore, 2004; Moore and Rideout, 2007; Raine et al., 2013; Sibinska, 2013).

The other factor that greatly influences the buying behaviour of children is the information sources they use to make buying decisions. The main information sources are media, parents, retailers, and friends (Fan and Li, 2010; Shabbir, 2016). As for the advertising channels, the most effective channel is television (Brody et al., 1981; Raine et al., 2013; Sibinska, 2013; Majid, 2013). However, with increasing access rate to the internet, cyber-marketing is the other most effective advertising tool after television (McGaughey and Mason, 1998; Moore, 2004; Moore and Rideout, 2007; Calvert, 2008). A question widely raised in other studies is whether advertising has downside and negative impact, in particular, on children (Fan and Li, 2010; Siriya, 2014; Amanzadeh et al., 2015).

Though many researchers have tried to find a relationship between food advertising and health condition of children, only a few of them have recommended countermeasures and policy options to tackle this widespread problem (Arnas, 2006; Linn and Novosat, 2008; Amanzadeh et al., 2015). To study the relationship between different variables that influence the buying behaviour of children, the most frequently used methodology in the past research is administration of questionnaires to the children and their parents as well as conducting experiments (Chernin, 2008). The collected data are analysed using different statistical models including correlational and regression models. The next section reviews and discusses the findings of previous researchers and their

methodologies conducted to investigate the effect of relevant factors on the outcome of child-targeted food advertising.

2.1 Advertising channel and cyber-marketing

TV advertisements have the highest level of influence on the children's buying behaviour. Sibinska (2013) conducted a focus group survey with a prime goal of investigating the role of TV advertising on children's brand perception. The results of her group survey with 30 schoolchildren in city of Lodz showed that though children did not like TV advertising, the TV advertising had a significant influence on their perception towards advertised brands. TV does not only influence buying behaviour of children, but it also influences the buying decision of adults. Brody et al. (1981) studied the effect of TV food advertising on children and their mothers. The study had two steps. In the first step, one child and his/her mother were invited to watch a 20 minute cartoon with food advertising after which they were escorted to a grocery shop for shopping. In the grocery shop, they were observed to see if they were buying the advertised foods or not. In the second step, the family's buying patterns were studied. About 57 mothers and their children attended the two steps of the experimental study. The study found that when children watched TV advertisements together with their mothers, they were more likely to persuade their mothers buy the advertised food as compared to the children watching TV advertisements alone. In its second step, the study revealed that mothers were not explaining to their children sufficiently the reason for not recommending the advertised food, as a result of which, the children were surprised to see that their mothers were not interested in buying the advertised foods. Therefore, the study recommended to the mothers if they wanted their children to have good nutrition, they should have explained the nutrition value of the advertised foods and goals of advertising to them.

An uninterrupted increase in the access rate to the internet has stimulated many researchers to study the effect of cyber-marketing (McGaughey and Mason, 1998). One of the research in this regards is a study conducted by Calvert's (2008) whose study findings suggested that in addition to TV, the marketers could reach the children online using digital devices like iPods, smart phones, and game platforms. In his research, Calvert talked about effectiveness of 'advergame' in reaching the children in the marketplace. He defines 'advergame' as an online game containing advertisements about products or companies. He argued that children use media more than others do and that they were early adopters of new media and technology.

McGaughey and Mason (1998) also conducted a research on importance of internet in marketing. They used the classical problem solving approach in making purchasing decision, that is to say: recognition of problem, searching information, evaluating alternatives, making purchase decision, showing post-purchase behaviour. The researchers argued that internet should not be viewed merely as a place to post an advertisement, but it should be much more. The research concluded that internet was a very effective marketing tool and anticipated its growth in the future. At the end, the researcher encouraged to pay more focus to cyber-marketing as the number of internet users is increasing sharply. Another study that touched upon 'advergame' is a survey by Moore (2004) aimed to assess the influence of marketing on children in the 21st century. Moore concluded that marketers could get more effective and efficient results from their advertisements if they linked the advertisements to the digital entertainments in particular

advergames. According to the US Department of Education (2003) a large number of children (64%) using internet play online games (Moore, 2004).

2.2 Food advertising and children's eating behaviour

While advertising always lead to an increase in sales volume, it can have both advantages and disadvantages for consumers. That is to say, if not controlled by relevant authorities, the advertisements can impose negative impact on consumers by increasing the sales of harmful and unhealthy products (Moore and Rideout, 2007; Linn and Novosat, 2008; Dutton et al., 2012; Siriya, 2014). In such cases, children are the most vulnerable ones. Hence, some civil society organisations such as the UK's Labour Party has vowed to ban junk food adverts from primetime TV shows such as the X Factor until after the 9 p.m. as part of a manifesto pledge to halve childhood obesity within five years. The advantages include being informed about new products and services and learning the usage of new products and technologies. The negative impacts of advertisement are mostly seen in the food industry. Some producers advertise unhealthy products to make more profit by changing the consumption behaviour of children.

Siriya (2014) conducted an analytical study and found that the advertising can sometimes have downside impact on children's behaviour if parents are not careful. The study also highlights the fact that children are more easily influenced by advertisement as compared with adults. One of the key negative impacts of advertisement on children is changing their food choices. The food advertisements stimulate the children to demand more fast food with high calorie density but very low nutrient density. Although this study only focuses on parents' role in controlling the behaviour of children against such negative advertising, the governments and in particular their ministry of public health can play a key role in controlling food advertising.

Another study in this regards reveals that many food ads focus on four themes: cheap price, fast, large size, and modern (Amanzadeh et al., 2015). The study found that most of these ads persuade people to shift their dietary patterns to processed foods and beverages with low nutrients and high in carbohydrates, sugar, fat and salt that increase the chance of tooth decay, obesity, cardiovascular disease, and cancer among consumers. This study did not offer any specific recommendations to cope with this problem, but it emphasised that such advertisements must be controlled by authorities.

Arnas (2006) is one of the other researchers that studied the effects of food advertising on eating behaviour of children and its negative consequences on the children's health condition. He conducted his study by analysing the contents of TV advertisements and distribution of 347 questionnaires to mothers who had kids of 3 to 8 years old in Adana, Turkey. The study findings showed that about 40% of the children asked their parents buy snacks, which were advertised on TV, and about 9% of them strongly requested or cried in order their parents should purchase a specific snack. The foods that children tended to buy were unhealthy foods such as ice cream, cake, soft drinks, biscuits and candy. Over 50% of the foods advertised on TV were rich in sugar and fat, which were harmful for the children, affecting mostly the young children.

Moore and Rideout (2007) who used a similar methodology as Arnas (2006) investigated the nature of cyber-marketing and offered some policy options to decision makers who are seeking ways to limit or ban advertising of unhealthy food to children. In their study, Moore and Rideout (2007) found that almost all types of foods advertised on TV were advertised through internet websites. Therefore, they argued that the

government's regulations on food advertising to children should not be limited only to TV, but they should be also applied to online advertising in websites. Although many researchers have argued the negative impacts of food advertising on children's buying behaviour, not all of them offer countermeasures and preventive strategies (Arnas, 2006; Linn and Novosat, 2008; Amanzadeh et al., 2015).

A few studies, in particular, in developed countries like the USA and European countries have touched upon controlling measures and policy options. One of such surveys conducted to study the preventive measures in controlling the negative effects of food advertisements on children in the USA (Galst, 1980). In this experimental study, children of 3 to 6 years old from New Jersey, USA were exposed to cartoons for a period of four weeks. Two types of foods were advertised during the cartoons:

- 1 foods rich in sugar
- 2 foods without added sugar.

Every day, after the cartoons, the children were asked to select a snack from the two types. After four weeks, the study findings revealed that the best way for controlling the negative impact of unhealthy snacks by children was exposing the children to the healthy pro-nutrition announcements, which are usually made available by governmental institutions. Giving advice by parents and other adults were said to be the other effective preventive measure.

The other interesting study strived to find a way to decrease the disadvantages of food advertising on children was an experimental research conducted by Kotler et al. (2012), which was aimed to assess whether or not branding of advertised snacks with media characters could be effective in this regards. A number of 343 children aged between 2 and 6 from New York City participated in the experiment. Kotler conducted his experiment in two stages. First, he relied on the kids' self-reported choices. Second, he focused on actual preference of the children. The children were first exposed to cartoons in order for the researcher to identify their favourite characters. Then, they were asked to choose either 'snacks with pictures of their favourite character' or 'snacks with other brands'. In the other experiment, the children were asked to choose between unhealthy (sugary and salty) snacks and healthy snacks.

The experiment results revealed that children who favoured the cartoon characters to a higher degree did not care about the nutritive effects of foods and chose the foods with their favoured cartoon character. While, the children who relatively showed less interest in cartoons, mostly preferred healthy foods over unhealthy foods with cartoon characters. Overall, the study revealed that cartoon pictures on the covers of snacks changed the consumption behaviour of children very significantly, and that effect became stronger when healthy foods were branded with cartoon characters. Another study in the developed country of Canada reviewed the country's public policies in banning food marketing to children (Dutton et al., 2012). The study focused on role of non-governmental health organisations in Canada to unite in persuading the Federal to develop and implement a more comprehensive policy to ban marketing of all unhealthy foods to children. The study argued that the Federal organisations do not pay sufficient attention in this regards, so the health activists need to intervene more actively.

However, Linn and Novosat (2008) emphasised that the government could be the most effective entity in playing roles to reduce the negative impact of food advertising to children by regulating child-targeted marketing. The study argued that government could

play a more effective role as compared to parents in avoiding marketing of unhealthy food to children. The authors express their concern over growing influence of food advertising on children as the marketers influence the consumption behaviour of children more than ever with emergence of new technologies and increasing of mass media. Dutton et al. (2012) and Linn and Novosat (2008) argued the government's policy to restrict child-targeted marketing worked better than advices by parents while Seiders and Petty (2007) opposed their argument. Seiders and Petty (2007) presented two strong rationales in support of their claim:

- 1 the marketers can evade the public policies by exploring alternative ways to do their marketing such as trading-off between TV advertisement and 'advergaming'
- 2 such restrictions can harm freedom of speech.

Ogba and Johnson (2010) conducted a survey to study the role of packaging on buying behaviour of children and parents. The researchers argued that some countries have placed legislation to ban or limit advertising of unhealthy food to children, but no such legislations have been developed to control packaging, which can have a strong role on changing the eating behaviour of children. In the study, the respondents were parents not children. A number of 150 questionnaires were administered to parents, with 95% response rate. The study revealed that there was a relationship between packaging and children's eating behaviour and their influence on parents buying decision.

2.3 Demographic factors

Age is one of the demographic factors that researchers have studied its effect on the outcome of child-targeted advertising in the food industry. However, some of these studies have selected their sample sizes from a short range of ages, the findings of which cannot be very reliable and valid; for instance, Fan and Li (2010) targeted children ranging in age from 0 to 13 and Tomko (2012) targeted children aged between 8 and 11 in their studies. Of course, not all of the past researches have been conducted based on such a narrow range; some researchers have considered a relatively wider range of ages (Rozendaal, 2011, Shabbir, 2016).

Researchers have found that children's buying behaviour changes as they become older. Shabbir (2016) analysed the effect of media, parents and peers on children's buying behaviour in Pakistan with a focus on the age of the children. In that study, children's buying behaviour was a dependent variable and media, parents and peers were explanatory variables. To analyse the relationship between the dependent and independent variables, Shabbir used primary data by conducting a questionnaire survey in several schools. The three variables had different impacts on children's buying behaviour in Pakistan. The study found, being the major decision maker and sponsor in buying foods to their children, the parents have more influence on their children's buying behaviour as compared with media and peers. Moreover, the author found a relation between age of children and each of the three variables. The study findings revealed that buying behaviour of children aged 6 to 9 years old was mostly influenced by their parents; buying behaviour of children belonging to ages 10 to 12 was mostly influenced by media and advertisement, and the buying behaviour of children aged between 13 to 16 years old was mostly influenced by their friends and peers.

Rozendaal (2011) studied the literacy level of children about advertising and its relationship with their vulnerability to food advertising among children of different ages. The study was done by deploying a computerised survey of 294 children aged between 12 and 18, and 198 adults aged between 12 and 18. The survey categorised the literacy level of children about advertising in three areas:

- 1 advertising recognition
- 2 understanding selling intent of advertising
- 3 understanding persuasive intent of advertising.

These three stages of literacy were a function of children's age. Children's aged 9 and 10 had advertising recognition literacy and children aged 12 were to some extent aware of the selling and persuasive intent of advertising.

Sibinska (2013) also conducted a study that presented its findings based on literacy and cognition level of children. She found that age was a key factor when we study brand perception of children about TV advertised brands. The younger children enjoy watching TV ads and share their opinions with their friends while the older children are sceptical about the advertised brands. However, not all researchers agree that age of children is correlated with outcome of advertisements on their buying behaviour. An experimental survey done by Chernin (2008) found that advertising effect did not vary among young and older children. Chernin (2008) conducted an experiment to see the role of gender and age on children's buying decisions. The children who participated in the experiment were 133 kindergarten and school students aged between 5 and 11. The experiment results demonstrated that advertisements influenced the purchasing preferences of boys more than girls. However, younger and older children were equally influenced by the advertisements. In addition to age and information sources, other demographic factors can influence the buying behaviour of children or their parents too.

Tomko (2012) studied effects of several factors that influence behaviour of parents in buying foods for their children. The research hypotheses were tested through statistical tools and by collecting information from a random sample of 343 respondents. The study findings demonstrated that the socio-economic situations of parents and their educational level as well as gender and age of children were associated with parents' behaviour in buying foods for their children. The findings of this study show that girls influence their parents' buying behaviour greater than boys, which is contrary to the practices in developing countries like Afghanistan where most parents take affirmative actions in favour of male children. Interestingly, Sethi and Chawla (2014) found in their survey that the education level and disposable income of mothers did not have any relation with the nutrient intake of children. Charlene et al. (2013) are the other researchers who found no relationship between family income and influence of food advertising on buying behaviour of children. The other difference seen in outcome of advertising is whether the advertisements are targeting people in rural or urban area.

Singh (2012) compared the influences of marketing and advertising outcomes on people in rural and urban areas in India. His survey sample included 204 urban and 207 rural Indians selected on non-probability convenience bases. For this purpose, Singh chose three durable goods from three product categories:

- 1 television from entertainment goods
- 2 refrigerator from home appliance

3 automobile (two-wheeler, motorcycle and car).

His research findings showed that written advertisements such as manufacturer’s brochures have less influence on rural dwellers as compared with urban dwellers, which are more educated. The findings also revealed that the outcome of advertising on refrigerator and television differed insignificantly on urban and rural dwellers; while, the difference was considerable regarding the automobiles, which is more expensive. The literature reviewed above demonstrate that when it comes to effects of demographic and socio-cultural factors on the outcomes of food advertising to children and their parents, it should be recalled that ‘one size doesn’t fit all’. That is to say, the effects of those factors differ from one country to another country and from one time to another time based on our target group’s culture, level of education and other attributes. However, the findings of previous studies reviewed above, can be generalised to a high extent in emerging markets, which has similar socio-cultural features. In other word, the above literature provides a standardised framework to analyse and apprehend the buying behaviour of children in emerging consumption markets. Nevertheless, the literature reviewed and discussed in this section provides good information in framing and designing a multi-dimensional study to investigate the effects of food advertising on buying behaviour of children in Kabul market.

3 Methodology

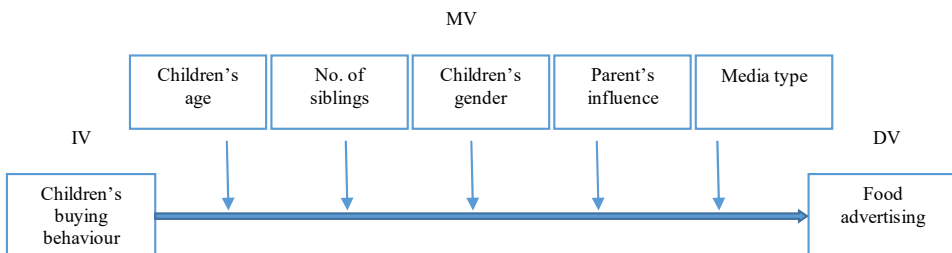
To understand the impact of food advertising on buying behaviour of children, all the relevant factors will be investigated. For this purpose, the relationship between these factors and buying behaviour of children in Kabul will be investigated. So, the dependent variables of the study will be related to buying behaviour of children and the independent variables will be demographic and social factors, including: children’s age, children’s siblings, and advertising media, including: TV, internet and radio.

3.1 Research framework

Children’s buying behaviour is the dependent variable (DV) and food advertising is the independent variable (IV). In addition, five moderator variables (MV) affect the relationship between the dependent and the independent variables in this study.

Without loss of generality, we look at the research framework as a system where the children’s buying behaviour (DV) is the output and the other variables including the food advertising and the moderator variables are considered as inputs.

Figure 1 Research framework (see online version for colours)



3.2 *Research objective and hypothesis*

The study aimed to assess the influence of snacks and soft drink advertisements on buying behaviour of children in Kabul on different dimensions and by measuring the influence of several factors. Specifically, the study seeks to achieve the following objectives.

To analyse the influence of television, the internet, and radio on snack and soft drink purchasing behaviour of children in Kabul.

To find out how parents control snack and soft drink purchasing behaviour of their children in Kabul with consideration to gender and age of the children.

The following hypotheses are developed based on the literature reviewed in the previous section and with considering the purpose of the study. All of these hypotheses are tested based on the results of correlation and regression analysis.

- H0(1) In buying foods for children, TV influences their buying decision, but radio and internet do not influence.
- H1(1) In advertising foods to children, not only TV but also the internet and radio influence buying behaviour of children.
- H0(2) There is no relation between food consumption behaviour of a child and number of his/her siblings.
- H1(2) There is a significant relation between food consumption behaviour of a child and number of his/her siblings.
- H0(3) Age is not correlated with parents influence on their children's buying decision-making process.
- H1(3) Age is correlated with parents influence on their children's buying decision-making process.
- H0(4) In buying snacks for their children, parents spend same amount for their girls and boys.
- H1(4) In buying snacks for their children, parents spend more money for their sons than for their daughters.
- H0(5) Influence of parents on their daughter's and son's buying decision-making process is at the same level.
- H1(5) Parents influence their daughter's buying decision-making process to a higher scale as compared with their sons.
- H0(6) Food advertisements influence buying behaviour of boys and girls at the same level.
- H1(6) Food advertisements influence buying behaviour of boys more than girls.

3.3 *Type of study*

The study is mainly quantitative, non-experimental and correlational. Data are collected by administering questionnaires to children, but to understand the WHY and HOW questions of the research, secondary data are analysed too. A quantitative survey design

is more appropriate for this research as qualitative survey design cannot assess the relationship between the study variables. The survey is designed and data are collected and analysed based on certain hypotheses that are developed based on the previous research and purpose of this study.

To test the relationship between the variables of the study, the primary data is collected from Kabul by distributing questionnaires. The questionnaires are first prepared in English and translated into local language, Dari.

3.4 *Population and sampling design*

As it was explained in the previous section, the sampling frames of this study are children from kindergartens and public and private schools aged between 5 and 15. The sample population was selected based on a multi-stage sampling technique. Sampling was done in three stages. First, five districts in Kabul city were selected based on a simple sampling technique. In the second stage, in each district, four public schools (two female and two male schools), four private schools (two female and two male schools) and five kindergartens were selected randomly from a list of all schools and kindergartens provided by the Ministry of Education and Ministry of Labour and Social Affairs. In the last stage, students were selected randomly for each age group from school attendance sheets. The sample size for the study was 385.

The sample size was calculated online from monkey survey website with 5% margin of error, 95% confidence level for a population of 1,000,000 (Afghanistan CSO, 2012). The formula used by monkey survey is:

$$n = \frac{X^2 * N * P(1 - P)}{(ME^2 * (N - 1) + (X^2 * P * (1 - P)))} \quad (1)$$

where

n sample size

X^2 chi-square for the specified confidence level at 1 degree of freedom

N population size

ME desired margin of error (expressed as a proportion).

3.5 *Data collection procedures*

The primary data was collected from kindergartens and schools students. To administer the questionnaires among the students, an introduction letter from the American University of Afghanistan and two other letters from Ministry of Education (one letter from Department of Private Schools Affairs and one letter from Deputy Minister Office) were prepared and presented to the schools authorities to get their permission to distribute questionnaires in those schools and kindergartens. However, prior to interviewing the specific students selected for filling the questionnaires, they were asked to sign a consent form by their parents. After presenting the letters, explaining the purpose of the study and obtaining permission from schools authorities, 385 sets of questionnaires were administered. The balance between female and male respondents as well as the different

age groups was carefully taken into consideration during distribution of the questionnaires. The questionnaires were distributed and collected by six interviewers.

The purpose of the study and the contents of the questionnaires were explained in details to the interviewers. To make sure the questions were appropriately designed and questionnaires had the required skills, each interviewer completed eight questionnaires – four from parents and four from children for piloting purpose. As a result of the piloting process, languages of some questions were simplified and the orders of some questions were changed to increase response rate and reduce missing information. Of the seven interviewers, six of them worked voluntarily and one of them was paid. The questionnaires were both male and female. Based on the culture of the target community, female interviewers interviewed students in the girls' schools and male interviewers interviewed students in the boy's schools. The interviewers were four female schoolteachers, one kindergarten teacher, one staff of the Ministry of Public Health, and one staff from a company working with private schools to install an application named 'school management system' that helps schools digitalise their accounting and management systems. The interviewers completed the questionnaires for children aged less than ten. Children aged more than ten were asked to fill in the questionnaires by themselves after the interviewers explained the purpose and contents of the questionnaires to them. Those children who found it difficult to fill in the questionnaires by themselves could ask the interviewers to complete their questionnaires.

3.6 Measurement and instrumentation

The questionnaires had three parts:

- 1 demographic questions
- 2 self-reported questions asking how often the children used different digital media, their favourite cartoons and their favourite package design
- 3 questions on their real consumption experience during one week before filling the questionnaire, the influence of their parents and advertising media as well as other factors such as price and nutrition value of the advertised foods.

The data collected through distribution of questionnaires was fed into and analysed with STATA 13.

3.7 Research variables

There are three dependent and eight independent variables. As some of these variables are not measurable, some proxy variables are selected to represent these unobservable and immeasurable variables for the purpose of data analysis. The variables are explained under the statistical models.

3.8 Data analysis techniques

The collected data are analysed with STATA 13 software package. STATA is a professional software used to analyse data in the quantitative studies. Once the data are cleaned, labelled and recoded, necessary statistical techniques are employed to analyse

the relationship between the dependent and explanatory variables to test the hypotheses. In analysing the data, both parametric and non-parametric statistical methods and techniques are used.

3.8.1 Reliability and internal consistency

Reliability analysis is conducted for all variables generated based on the data collected from distributed questionnaires. For this purpose, Cronbach's alpha is employed. Cronbach's alpha that is interchangeably called a coefficient alpha is widely used in research to test internal consistency and generalisability, which is analogous to reliability (Tavakol and Dennick, 2011). In quantitative research, Cronbach's alpha is used to test the reliability of questionnaires. This means, an acceptable Cronbach's alpha coefficient indicates that if the same questionnaire is used with the same sample size again, similar results will be attained (Sekaran, 2006).

Cronbach's alpha is calculated based on the following formula (Tavakol and Dennick, 2011):

$$\alpha = \frac{N\bar{c}}{\bar{v} + (N-1)\bar{c}} \quad (2)$$

where

N number of variables

\bar{c} average inter-item covariance among the study variables

\bar{v} average variance.

According to Sekaran (2006), an alpha coefficient of 0.6 or higher is 'acceptable' in the social science studies. Thus, any questions with an alpha value of less than 0.06 should be eliminated. Table 1 shows the range of Cronbach's alpha value with internal consistency and reliability (Yeu, n.d.).

Table 1 The range of Cronbach's alpha value

<i>Range of Cronbach's alpha value</i>	<i>Reliability</i>
1.00	Perfect
0.80–0.99	Good
0.60–0.79	Acceptable
Below 0.60	Poor
3.8.2.	Model selection

3.8.2 Model selection

To choose between regression models for a given set of data, the Akaike information criterion (AIC) is used in this study. According to Bozdogan (2000), AIC measures relatively the quality of each model with different number of independent variables. Therefore, AIC is a statistical method used for model selection. In fact, AIC is used to trade-off between complexity of the model, and its goodness of fit. To define AIC, let us assume to have a statistical model M of a set of some data x where the letter k is the

number of estimate parameters, \hat{L} is the maximised value of the likelihood function of the regression model, that is to say: $\hat{L} = P(x|\hat{\theta}, M)$ where $\hat{\theta}$ is parameter value maximiser. In such case, AIC value is calculated based on the following formula (Bozdogan, 2000):

$$AIC = 2k - 2\ln(\hat{L}) \quad (3)$$

3.8.3 Winsorisation

Researchers use winsorisation (also called winsorising) as a statistical method for reducing the effects of outliers in the sample (Collins and Twumasi-Ankrah, 2013). There are several other methods in preventing the effects of suspicious outliers, such as ‘trimming’ or ‘truncation’, which simply excludes the outliers from the data. However, winsorisation method does not simply discard the outlier from the data (which is not recommended); for instead; it replaces the extreme values or the suspicious outliers with certain percentiles (Eldin and Aly, 1983). In this paper, after seeing the evidence of suspicious outliers in the ‘box plots’ of the variables and looking at the 5% extreme values of that certain variable (using the STATA HILO syntax), a 95% winsorisation is conducted to reduce the effects of those extreme outliers on the data analysis results.

3.8.4 Multiple linear regression

A multiple OLS Regression is used when the dependent variable is continuous and there is more than one independent variable. The OLS regression is used to predict the changes in the dependent variable based on the changes in the values of the independent variables.

This is the estimated OLS multiple regression equation (Kutner et al., 2005):

$$y = b_0 + bx_{i1} + bx_{i2}, \dots, bx_{ik} + e_i \quad (4)$$

where y is the value of response variable, b_0 is estimated intercept, b_1, b_2, \dots, b_k is the slope of regression line, $x_{i1}, x_{i2}, \dots, x_{ik}$ are the observations and e is error term. Multiple linear regressions are used to assess the relation between dependent variable and independent variables of the study. The five underlying assumptions of a multiple OLS regression are tested to make sure the OLS estimators are the best linear unbiased estimators (BLUE) of b_0 and b_i .

3.8.4.1 Linearity

In simple regressions, linearity is evaluated by drawing the scatter plot of the dependent and independent variables. However, in multiple regressions, we intuitively judge whether or not the variables have linear regression. Mostly, a high R-square indicates the variables are linearly related with each other.

3.8.4.2 Normality

One of the underlying assumptions of OLS Regression is normal distribution of the residuals. To evaluate the model for normality assumption, there are three ways. A histogram of the residuals can give an idea whether or not the residuals are normally distributed. However, to more precisely decide and judge, Jarque-Bera and skewness and

kurtosis tests are conducted. While Jarque-Bera test results help us to know about normality of the residuals the later test gives information about skewness and kurtosis separately (Sky and Gregorio, 2017). These tests calculate the p-value to reject or accept null hypothesis of normality. A p-value of 0.05 or low rejects the null hypothesis of normality; thus, the residuals are considered to be normally distributed when the p-value is not larger than common threshold value of 0.05. The skewness and kurtosis tests give two p-values – one for skewness and one for kurtosis.

Therefore, this test gives the necessary information to know whether the distribution of residuals has skewness or kurtosis or both problems. This is the formula for calculating Jarque-Bera test for normality in multiple regression analysis (Sky and Gregorio, 2017):

$$JB = \frac{n-k}{6} \left(S^2 + \frac{1}{4} (C-3)^2 \right) \quad (5)$$

where

n number of observations

S sample skewness

C sample kurtosis

K number of regressors.

$$S = \frac{\hat{\mu}_3}{\hat{\sigma}^3} = \frac{\frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})^3}{\left(\frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})^2 \right)^{3/2}}; \quad S = \frac{\hat{\mu}_4}{\hat{\sigma}^4} = \frac{\frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})^4}{\left(\frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})^2 \right)^2} \quad (6)$$

where

$\hat{\mu}_3$ estimates of third central moment

$\hat{\mu}_4$ estimates of fourth central moment

\bar{x} sample mean

$\hat{\sigma}^2$ estimates of second central moment, variance.

3.8.4.3 Heteroskedasticity

The easiest way to check for heteroskedasticity is drawing the scatter plot of residuals against the dependent variables of fitted plots. However, it is sometimes difficult to make an decision confidently about existence of heteroskedasticity based on such scatter plot. When deciding about heteroskedasticity is difficult based on the information given by the scatter plot, researchers use Brusch-Pagan/Cook-Weisberg (Fosu-Brefo and Arthur, 2015). This test is used to test the null hypothesis of constant variance. A p-value of 0.05 or less indicates that the issue of heteroskedasticity exists. Thus, the model is considered homoscedastic and we fail to reject the null hypothesis of constant variance.

3.8.4.4 Multicollinearity

Multicollinearity problem exists when two independent variable are highly correlated. To check for existence of multicollinearity problem in the model, drawing the correlation matrix of all independent variable is the simplest approach. However, researchers use variance inflation factor (VIF) as a more formal test for detecting multicollinearity. The VIF test gives more precise information about multicollinearity by providing an index that gages how much the variance of coefficient in the regression model is increased because of collinearity (Kutner et al., 2005). If the VIF value reaches 10, the multicollinearity is considered problematic. In that case, one of the two highly correlated variables is omitted from the model.

3.8.4.5 Autocorrelation

The other assumption of an OLS regression is independence of residuals. The residuals should be independent. Autocorrelation problem exists when the independent variables are time-dependent. To evaluate the model for autocorrelation, the easiest approach is to plot the residuals against time in a scatter plot.

3.8.5 Pearson correlation coefficient

It is used to show the direction and strength of linear correlation between two continuous variables. It has a value between -1 and $+1$, where 1 indicates perfect positive linear correlation, 0 indicates no linear correlation, and -1 indicates perfect negative linear correlation. As in this study the data to be analysed are samples, the following formula is used to calculate the Pearson correlation (Kutner et al., 2005).

$$r = r_{xy} = \frac{n \sum_1^n x_i y_i - \sum_1^n x_i \sum_1^n y_i}{\sqrt{n \sum_1^n x_i^2 - \left(\sum_1^n x_i \right)^2} \sqrt{n \sum_1^n y_i^2 - \left(\sum_1^n y_i \right)^2}} \quad (7)$$

where r denotes the Pearson correlation coefficient, n is number of observations, x_i is x observations and y_i is y observations.

4 Research analysis and results

In this section, the data are analysed, tested and validated that are ultimately used for hypothesis testing. The data analysis is preceded with an overview of the survey respondents. The hypotheses are tested by employing regression and correlation methods. The OLS regression is used when the dependent variable is continuous and Pearson correlation methods are used to find the direction and strength of pairs of variables.

4.1 Overview of collected data

4.1.1 Response rate

The response rate was 74% (285/384). That is to say, of the 385 sets of questionnaires distributed to children, they returned 285 duly filled sets. About 24% of questionnaires were either returned defected or not returned at all.

Table 2 Response rate

<i>Description</i>	<i>Number</i>	<i>Percentage</i>
Questionnaires distributed	384	100%
Questionnaires returned	285	74%
Questionnaires unreturned	99	26%

4.1.2 Profile of respondent

As the objective of this study is to assess the role of demographic characteristics on buying behaviour of children, detailed demographic information or profile of the respondents were collected. The demographic information consists of gender, age, employment status, and education level of the respondents, which are presented in Table 3.

Table 3 Respondents' profile

<i>Description</i>	<i>Number</i>	<i>Percentage</i>
Male	143	50%
Female	138	48%
Missing	4	1%
5–7 years old	51	18%
8–10 years old	94	33%
11–12 years old	64	22%
13–15 years old	74	26%
Missing	2	0.7%

As it is evident from the pie chart, child respondents aged 5 to 7 years old returned fewer completed questionnaires as compared with what other age groups did. The result implies children less than seven years old had difficulties to answer the questions though the interviewers helped them.

4.1.3 Reliability analysis

To test the reliability of the variables, Cronbach's alpha was calculated for technical questions of both questionnaires. The Cronbach's alpha coefficient is higher than 0.69, which means the data are reliable. The following data shows results of Cronbach's alpha test.

Table 4 Results of Chrobanch's alpha test

<i>Questionnaire</i>	<i>Number of items</i>	<i>Cronbach's alpha</i>	<i>Reliability</i>
Children	33	0.74	Acceptable

4.2 Regression analysis

To have better and scientifically acceptable results from the regression model, the following pre and post-regression tests are conducted for each model:

- Before running the regression model
 - a Winsorisation: outliers are detected and winsorised to reduce their effects on outcomes of the regression models.
 - b Akaike information criteria (AIC): it is conducted to include independent and control variables in the model by balancing between model complexity and its goodness of fit (balancing between over-fitting and under-fitting).
- After running the regression model

OLS underlying assumptions (normality, linearity, multicollinearity, heteroskedasticity, autocorrelation) are checked. If the assumptions are not fulfilled, data are transformed and smoothed.

4.2.1 Linear regression analysis

OLS multiple regression model is conducted to analyse the relationship between expenditure of children for purchasing snacks in one week and a set of predictor variables. The variables were transformed by taking their square roots because homoskedasticity and normality assumption were not fulfilled. The results of testing the assumptions of OLS regression after transformation process follow the regression model as follows:

- Dependent variable
 - a Weeklyexp_sqrt: This variable shows total expenditure of children for purchasing snacks in one week before filling the questionnaire. It is used as a dependent variable to represent monetary value of children's purchases.
- Predictor variables
 - x_1 Netpurchase_sqrt: Number of snack and drink items consumed by children that they saw on online ads. The square root of this variable was calculated during data analysis.
 - x_2 TVpurchase_sqrt: The code 'TVpurchase_sqrt' indicates number of food items children purchased that they saw on TV ads. The square root of this variable was calculated during data analysis.

- x_3 Radiopurchase_sqrt: The code 'radiopurchase_sqrt' denotes the square root of the number of food items a child purchased during one week before filling the questionnaire that he/she heard from radio ads.
- x_4 Age: This code shows how old a child is.
Gender: It is used as dummy variable showing the sex of interviewed children. This variable has two values of 0 and 1, where 0 = male and 1 = female.
- x_5 Healthy: number of food items children consumed during one week that they believed they were healthy.
- x_6 f_age: age of the interviewed child's father.
- x_7 m_age: age of the interviewed child's mother.
- x_8 Children: number of children in the family that the interviewed child belonged to.

Table 5 Predictors of children's one-week snack/drink consumption expenditures

<i>Weeklyexp_sqrt</i>	<i>Coef.</i>	<i>Std. Err.</i>	<i>t</i>	<i>P value</i>
Netpurchase_sqrt	2.114	1.164	1.82	**0.071
TVpurchase_sqrt	2.173	0.450	4.83	*0.000
Radiopurchase_sqrt	-2.143	0.912	-2.35	*0.020
Age	0.012	0.121	0.1	**0.921
Gender	-0.226	0.680	-0.33	**0.740
Healthy	1.157	0.176	6.57	*0.000
f_age	-0.008	0.046	-0.17	**0.866
m_age	-0.019	0.052	-0.36	**0.720
Children	-0.292	0.144	-2.02	*0.045
Constant	7.940	2.252	3.53	*0.001

Notes. * $p < .05$, ** $p > .05$.

Table 6 Model summary

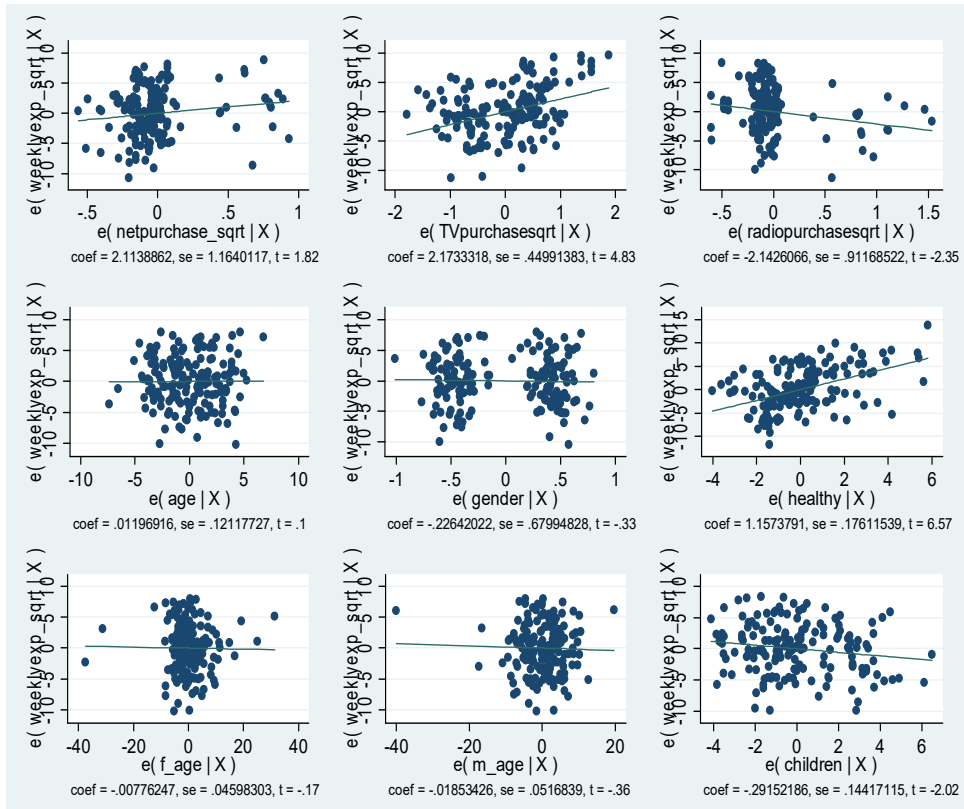
<i>Observations</i>	<i>R²</i>	<i>Adjusted R²</i>	<i>F</i>	<i>Prob > F</i>	<i>df</i>
263	0.49	0.46	(9, 153) = 16.24	0.001	29

The underlying assumptions of OLS regression are tested one by one as follows.

4.2.1.1 Linearity

An R-squared of 0.49 indicates that there is a linear relation between dependent and independent variables. Besides, the following matrix of scatterplots drawn by STATA for the purpose of regression diagnostics does not show nonlinear relation between the dependent and any of the independent variables of the model.

Figure 2 Scatterplots of independent variables against dependent variable (see online version for colours)



4.2.1.2 Normality

The histogram of residuals and the normality tests conducted show that the normality assumption is fulfilled. The Chi-square values are 0.324 and 0.402 in the skewness and kurtosis and Jarque-Bera tests of normality, respectively. As they are greater than the alpha value of 0.05 we fail to reject the null hypothesis of normality.

Table 7 Skewness/kurtosis tests of residuals

Variable	Observations	Pr (skewness)	Pr (kurtosis)	Adj. chi 2 (2)	Prob. > chi 2
Residual	163	0.535	0.175	2.26	0.324

4.2.1.3 Multicollinearity

The correlation matrix and the VIF test show no multicollinearity issue. That is to say, the independent variables are not moderately or strongly correlated with each other.

Table 8 Correlation matrix of variables

<i>Variables</i>	<i>Netpurchase_sqrt</i>	<i>TVpurchase_sqrt</i>	<i>Radiopurchase_sqrt</i>	<i>Age</i>	<i>Gender</i>	<i>Healthy</i>	<i>f_age</i>	<i>m_age</i>	<i>Children</i>
<i>Netpurchase_sqrt</i>	1								
<i>TVpurchase_sqrt</i>	0.286	1							
<i>Radiopurchase_sqrt</i>	0.411	0.192	1						
<i>Age</i>	0.142	-0.022	0.0172	1					
<i>Gender</i>	-0.106	-0.122	0.0903	-0.137	1				
<i>Healthy</i>	0.225	0.472	0.1377	-0.196	0.013	1			
<i>f_age</i>	0.078	0.134	-0.037	0.305	-0.016	-0.012	1		
<i>m_age</i>	0.013	0.040	0.0193	0.315	0.068	-0.069	0.545	1	
<i>Children</i>	0.103	0.044	0.0291	0.276	0.002	-0.022	0.389	0.274	1

Figure 3 Histogram and density estimate of residuals (see online version for colours)

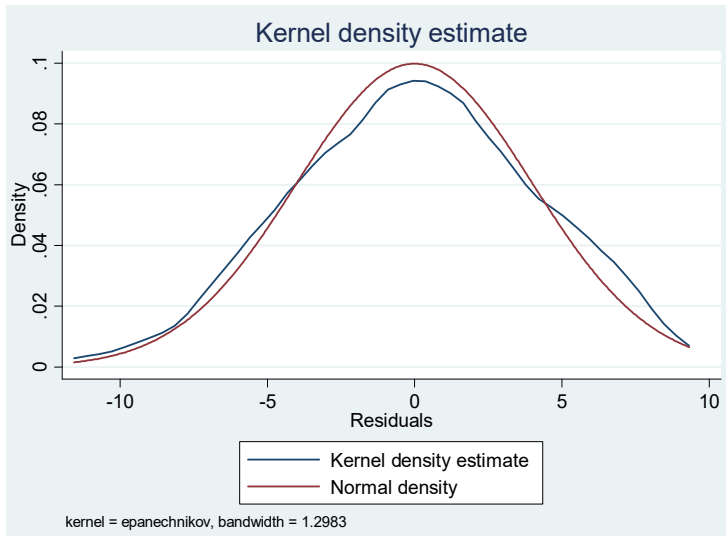


Table 9 VIF of the independent variables

<i>Variable</i>	<i>VIF</i>	<i>1/VIF</i>
f_age	1.59	0.627
m_age	1.49	0.670
TVpurchase_sqrt	1.37	0.730
Age	1.35	0.741
Healthy	1.34	0.746
Netpurchase_sqrt	1.28	0.779
Children	1.24	0.805
Radiopurchase_sqrt	1.2	0.835
Gender	1.11	0.898

As the value of the VIF is less than ten, the independent variables are not highly or moderately correlated with each other. Thus, multicollinearity issue is not diagnosed in the regression model.

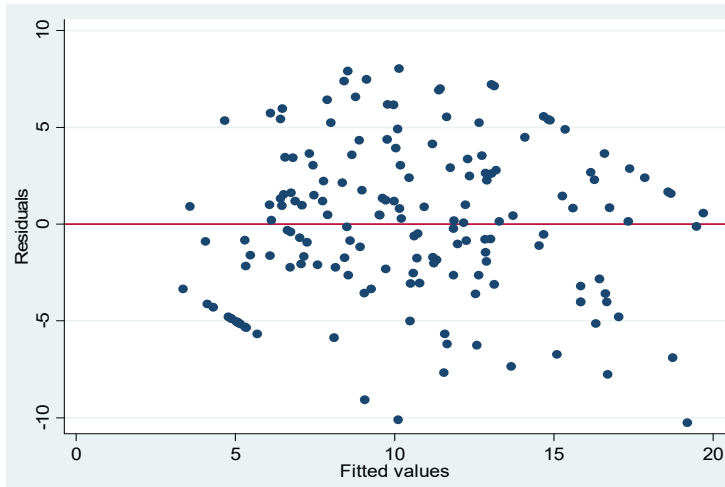
4.2.1.4 Heteroskedasticity

The scatter plot of residuals and the Bruschi-Pagan/Cook-Weisberg test indicates no issue of heteroskedasticity.

Table 10 shows that the probability of chi 2 is much bigger than common alpha value of 0.05. Thus, we fail to reject the null hypothesis of constant variance of error terms and we conclude that the data does not encounter heteroskedasticity problem. The scatter plot of residuals in the graph also shows no pattern to suspect over heteroskedasticity problem.

Table 10 Brusch-Pagan/Cook-Weisberg test for heteroskedasticity

<i>H0</i>	<i>Constant variance</i>
Variables	Fitted values of weeklyexp_sqrt
Prob. chi (2) 1	0.51
Prob. > chi 2	0.476

Figure 4 Scatter plot of residuals for heteroscedasticity test (see online version for colours)

4.2.1.5 Autocorrelation

As the data in the model are not time-dependent, we do not suspect over autocorrelation of the residuals.

4.2.2 Correlation analysis

To test the hypothesis that claimed relations between two variables, the Pearson Correlations analysis is conducted. The variables analysed are:

- TVpurchase: Items of snacks a child purchased during one week that they say on TV ads.
- Parent_purchase: Number of snack items a child consumed that were purchased by their parents.
- Age: This code shows how old a child is
- Gender: It is a dichotomous variable with two values of 0 and 1, where 0 = male and 1 = female

The results of Pearson correlation analysis summarised in Table 11 indicate that the relationships between all of the three pairs of variables are statistically significant. The corresponding P-values of all of the pairs of variables are less than common alpha of 0.05.

Table 11 Summary results of Pearson correlation analysis of variables

<i>Variable 1</i>	<i>Variable 2</i>	<i>Pearson correlation value</i>	<i>P-value</i>
TVpurchase	Gender	0.12	0.041
Parent_purchase	Gender	0.17	0.006
Parent_purchase	Age	-0.23	0.000

4.3 Summary of hypothesis test

Table 12 contains a summary of the results of research hypothesis tested by employing multiple regression and Pearson correlation analysis. In Table 12, a type 1 error (α) shows the probability of incorrect rejection of a true null hypothesis while a type 2 error (β) shows the probability of incorrect retaining of a false null hypothesis. In this paper, the confidence level is set at 95%. Thus, the alternative hypothesis is accepted when $\alpha \leq 0.05$; otherwise, it is rejected.

Table 12 Results of hypothesis testing based on data analysis

<i>Hypothesis</i>	<i>Probability of type 1 error = α</i>	<i>Probability of type 2 error = β</i>	<i>Decision about H1</i>
H0(1) In buying foods for children, TV influences their buying decision but radio and internet do not influence.	0.000	0.999	Accepted
H1(1) In advertising foods to children, not only TV but also internet and radio influence buying behaviour of children.			
H0(2) There is no relation between food consumption behaviour of a child and number of his/her siblings.	0.045	0.955	Accepted
H1(2) There is significant relation between food consumption behaviour of a child and number of his/her siblings.			
H0(3) Age is not correlated with parents influence on their children's buying decision-making process.	0.000	0.99	Accepted
H1(3) Age is correlated with parents influence on their children's buying decision-making process.			
H0(4) In buying snacks for their children, parents spend same amount for their girls and boys.	0.740	0.260	Rejected
H1(4) In buying snacks for their children, parents spend more money for their sons than for their daughters.			

Table 12 Results of hypothesis testing based on data analysis (continued)

<i>Hypothesis</i>	<i>Probability of type 1 error = α</i>	<i>Probability of type 2 error = β</i>	<i>Decision about H1</i>
H0(5) Influence of parents on their daughter's and son's buying decision-making process is at the same level.	0.0058	0.994	Accepted
H1(5) Parents influence their daughter's buying decision-making process to a higher scale as compared with their sons.			
H0(6) Food advertisements influence buying behaviour of boys and girls at the same level.	0.042	0.958	Accepted
H1(6) Food advertisements influence buying behaviour of boys more than girls.			

5 Discussions, recommendations and conclusions

In this section, the findings of study, which were presented in the previous section, are explained and discussed in details. Some comparative discussion is made to compare the findings of this study with findings of other similar studies. The other key topics in this section are research limitation, recommendations for future research and research conclusion.

5.1 Discussions

The study assessed the impact of food advertising on buying behaviour of children on different dimensions and by assessing the impact of several factors.

5.1.1 Influence of TV, internet and radio on children's buying behaviour

Of the three types of digital media – TV, internet and radio – the study found that only TV had significant influence on purchasing and consumption behaviour of children in Kabul. Other researchers like Calvert (2008) and Sibinska (2013) also found that TV influence buying behaviour of children. However, the findings of researchers about radio and internet are different. Several researchers found that radio influenced buying behaviour of consumers, but they conducted those studies long time ago, which implies that radio is no longer an interesting advertising medium for advertisers (Hettinger, 1934; Korzenny and Bauer, 1981; Duncan and Nelson, 1985; Abernethy, 1993).

Contrary to findings about radio, McGaughey and Mason (1998) found that internet was too new (access to internet is not sufficient at the moment) though it could have higher potential as a marketing tool than its predecessors, including TV. Therefore, for children in Kabul, who do not have sufficient access to internet, internet is still not an effective advertising medium. About 73% of children, who participated in the

questionnaire survey, never used internet in the past one week before filling the questionnaire.

Overall, there are two reasons that TV influences buying behaviour of children in Kabul, but radio and internet do not. First, TV advertisements communicate the messages with a wider bandwidth as compared with radio and internet. Second, children in Kabul use TV regularly but they use internet and radio very rarely. In terms of communication bandwidth, experts say communication occurs along five common sensory: auditory, visual, tactile, olfactory and gustatory (Sekaran, 2006). The larger number of these five sensory is used in a communication message, the higher influence we can expect from that message. Thus, TV advertisements that involves visual and auditory senses is more effective than radio with only auditory and internet with only visual senses (internet uses both auditory and visual sometimes, but not always as TV does).

In terms of children's access to radio and internet, the results of questionnaires shows 78% of children never listened to radio during one week before filling the questionnaire, 73% never used internet, and only 3% of respondents did not watch TV. The study also assessed the effect of TV advertising on children of different age. The findings based on analysis of the data collected from children, revealed that as children get older they buy more food items advertised on TV. The findings of other researchers are not the same in this regards. Chernin (2008) found no difference in the level of TV advertisement effects on younger and older children while Rozendaal (2011) found that when children are aged between 10–13 they are influenced by media and when they get older they are mostly influenced by peers. Perhaps Chernin (2008) did not find any differences because the age interval selected for that study was too narrow ranging from 5 to 11.

The relation between gender and effect of TV advertising is the other finding of this study. The findings based on data collected from children indicate that TV advertising influences purchasing decision of boys more that girls. This is similar to the findings of Chernin (2008) who conducted an experimental survey over children aged 5 to 11. However, the parents reported no difference in the level of TV advertising influence on their sons and daughters.

5.1.2 Food advertising influence through parents on children's consumption behaviour

The study found that both mothers and fathers influence buying and consumption behaviour of their children significantly. It was also found that not only children but also their parents were influenced by TV advertisements. Namely, in buying foods for their children, purchasing decision of parents was influenced by TV advertisements. A hypothesis was developed to find if influence of parents on children changes as the children get older or not. The findings based on children's responses showed that influence of parents on food purchasing and consumption of their children declines as the children get older. The findings are supporting Shabbir's (2016) findings indicating that younger children in Pakistan were influenced by media at a higher level as compared with older children.

The study also hypothesised that parents purchased more frequently for their daughters on their behalf as compared with their sons. The result of hypothesis testing accepted this claim. However, this does not necessarily mean parents spend more for their daughters and less for their sons. The results of these hypotheses, merely, show how

frequently sons and daughters purchases foods by themselves and how frequently their parents purchase for them. To test the amount of money the parents spend or pay for their children to buy snacks and drinks, a separate hypothesis was developed. The findings from analysing the data rejected this claim. This hypothesis was developed based on a claim that in developing countries, like Afghanistan, where discrimination against women is prevalent, parents discriminate against female children. However, the results of this study revealed that parents do not discriminate against girls when they are still children in Kabul.

Overall, some other researchers also found that parents have significant influence over children's purchasing behaviour (Sethi and Chawla, 2014; Singh, 2012; Akhter et al., 2012; Majid, 2013).

5.2 Limitation and recommendation for future research

This study has several limitations that can be considered for future research. The research was designed and conducted within about three months. As a result of the time constraint, the parameters assessed and included in the research were not sufficient to study all dimensions of the research topic. Branding and package design are among the key parameters that can be included in the future research. The other limitation was respondents' cooperation. The response rate was quite low, 74%. In addition, a significant number of respondents did not provide appropriate information about their income. Therefore, family income was not included as a parameter in developing research hypotheses. It is recommended to the researchers to be very careful while designing questions for collecting information about income of families in Kabul. Perhaps, using proxy questions would be the best approach. The other recommendation, though quite ambitious, for future research is developing a software application to analyse the impact of food advertising on purchasing and consumption behaviour of children.

5.3 Conclusions

The study was conducted to assess the effect of food advertising on purchasing behaviour of children in emerging consumption market and conducted a case study in Afghanistan market on different dimensions and by analysing several factors. The study found that food advertising influences the QUANTITY and QUALITY of children's purchasing and consumption. The study revealed that not only children but also their parents were influenced by advertisements. Thus, food advertising influences purchasing and consumption behaviour of children either directly or indirectly through their parents.

The other finding of the study shows that parents purchases more on behalf of their daughters as compared with their sons. However, parents spend and pay almost same amount of money for purchasing snacks and drinks for their daughter and children, which implies parents do not discriminate against female children. Of the three digital media of television, radio and internet, the study found that only television had influence over children's purchasing and consumption behaviour.

Age is correlated with the magnitude of parents' influence on purchasing behaviour of children. As the children grow up, parents' influence reduce on their decision making process for buying snacks and drinks.

Generally, a large number of children in Kabul do not have access to internet and are not interested in listening to radio. The study also revealed that TV advertising influences boys more than girls, and as the children get older their purchasing decision-making process is less likely to be influenced by TV advertising.

5.4 Recommendation to government and industry owners

At a programming and policy level, based on the findings of the study, there are a number of actions recommended that the government and industry owners can take into consideration to make use of the advantages of food advertising and in the meanwhile reduce the negative effects of the advertisements on the health condition of children. These actions are summarised in three points as follows:

- The government should formulate a policy to control the harmful effects of child-targeted food advertisements. In the meanwhile, there is no such policy in Afghanistan to regulate child-targeted marketing.
- Industry owners and advertising companies should use TV as their main advertising channel. In emerging countries, even in big cities like Kabul, it is still too early to rely on cyber-marketing. On the other hand, radio is too old for marketing in such cities. People are no longer listening to radio in big cities.
- The industry owners and advertising companies should target both children and their parents in their advertisements, as food advertisements can influence buying behaviour of the children through their parents. However, they should note that as children grow up the influence of their parents on their buying decisions declines.

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