



Eating styles of young females in Azerbaijan

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Abstract

An epidemic of twenty-first century is overweight and obesity which is a consequence of inappropriate eating habits and sedentary lifestyle. Relying on statistical data overweight and obesity is a serious problem for young people, since the ratio of obese young people (below 35) is constantly increasing in the developed regions of the world. In an empirical research 419 adult females between 24 and 38 were questioned. The aim of the research was to segment Azerbaijan females belonging to Generation Y based on their eating behaviour. In order to measure eating behaviour the shorter version of Three Factor Eating Questionnaire (TFEQ-R 18) including 18 items was used. Relying on the results three main consumer groups can be distinguished, namely functional eaters (36.3%), conscious eaters (27.2%) and emotional and hedonic eaters (36.5%). *Functional eaters* have average level of income and bachelor degree. They are typically single. They do moderate physical activity and have normal weight based on their BMI. *Conscious eaters* have high level of income (over the average) and bachelor or master degree. The ratio of married and single women is almost the same among them. They do regularly sport, mainly once a week, or at least three times a week. They can be characterized by underweight or normal body weight. *Emotional and hedonic eaters* have low income level and associate or bachelor degree. They are single. They follow sedentary lifestyle; none of them do high level of physical activity and they have problems with their weight (overweight or obesity). Segmenting customers based on their eating styles are really useful for health sector, especially doctors, dietetics and psychologists since they can plan their assortment based on customers' needs or plan a personal diet.

Keywords Generation Y · TFEQ-R 18 · Emotional eating · Cognitive restrained · Uncontrolled eating · Clustering

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1 Introduction

Analysing the customer behaviour of different generations is a current topic of marketing researchers. Each generation has unique expectations, experiences, generational history, lifestyles, values (Ercsey 2014), and demographics that influence their buying behaviours (Williams and Page 2010, p. 1.). Members of a generation were born at the same time that is why they share the same experiences, adventures and values (Töröcsik 2011, p. 175.) Investigating the youth, especially members of Generation Y is a challenge for theoretical and practical researchers, too, since they represent an essential consumer group worldwide. Furthermore, they will determine the behaviour and shopping habits of the future generation.

Distinguishing each generation is not so obvious since different researchers use different age categories. Originally Yankelovich (Töröcsik 2011) defined three generations: the youth, middle-aged people and the elderly. Later they started to deal with Generation Y, youths of the new generation. Multi-generational marketing is a popular topic in marketing literature. There are seven generations: Pre-Depression or Veterans (born before 1925), Depression (born between 1925 and 1944), Baby Boom (1945–1964), Generation X (born between 1965 and 1979), Generation Y (1980–1994) and Generation Z (born between 1995 and 2010), finally the newest, Generation Alpha (born after 2011), are those born in a digital world (McCrindle 2014).¹ This study focuses on the eating behaviours of Generation Y, born between 1980 and 1994 and are currently aged between 24 and 38. In addition to this we are looking at the females of this age group in Azerbaijan. Using the most up-to-date statistical data (United Nations 2018) the population of Azerbaijan is 10,084,342 people (100%) and the ratio of females belonging to Generation Y is 13.25% (1,336,763 people).

Overweight and obesity is an epidemic that appears in the developed countries of the world but also in developing countries. This phenomenon can be explained by inappropriate eating habits and a sedentary lifestyle. Relying on statistical data overweight and obesity is a serious problem for young people, since the ratio of obese young people (below 35) is constantly increasing in the developed regions of the world. Generation Y follows an unhealthier lifestyle than older generations. Relying on WHO (2017) statistics the average BMI of Azerbaijani females is 27.9, which means that women on average are overweight. From 1975 (average BMI = 24) the BMI of females has been constantly increasing (2000: 26.2, 2010: 27.2).

The analysis of the relation between obesity and eating habits were mainly published in psychological and sociological studies both in international and in domestic literature. A relatively few scientific publications deal with the management of BMI and eating styles from a marketing point-of-view. The aim of this present research is to segment females from Generation Y based on their eating behaviours and measure this using the revised version of the Three Factor Eating Questionnaire (TFEQ-R 18), which includes 18 items.

¹ There are different categories considering the date of birth of each generation depending on the researchers. In this study the authors use the McCrindle generations.

2 Theoretical background

Psychologists have developed more measuring methods for the analysis of obese people and individuals with normal body weight: the latent obesity survey (Pudel et al. 1975), the eating attitudes test (Garner and Garfinkel 1979) and, the restraint scale (Herman and Polivy 1980). In this study the authors deal with the Three Factor Eating Questionnaire (TFEQ) developed by Stunkard and Messick (1985). This questionnaire was developed from the previously mentioned eating attitude tests and has been validated in several countries. In the domestic literature mainly the TFEQ – Three Factor Eating Questionnaire – was used by psychologists and marketing experts (Czeglédi and Urbán 2010; Szabó et al. 2014). These authors identified the three types of eating behaviours and explored the characteristics of customers belonging to different segments based on their eating habits using the shorter version (TFEQ21, TFEQ18) of the original TFEQ, which includes 51 items. TFEQ analyses food consumption through three subscales: the uncontrolled eating scale, the cognitive restraint scale and the emotional eating scale. The *uncontrolled eating* scale analyses whether individuals keep or lose control over eating during their food consumption in the case if they are hungry and in the case if they are exposed to external stimuli. The *cognitive restraint* scale measures the reduction of food consumption in favour of affecting body weight and figure, while the *emotional eating* scale examines whether the individual over-consumes during their meals while in a state of anger, sadness, loneliness and dispiritedness (Czeglédi et al. 2011). The scale was tested among the members of Generation Y in both psychological and marketing fields of research in Hungary. Czeglédi and Urbán (2010) executed the adaptation of the 21-item TFEQ to the Hungarian language and its psychometric analysis in a sample of university students (262 respondents). 20 items of the questionnaire had to be evaluated on a 4-point scale, and one item had to be evaluated on an 8-point scale. Later Czeglédi et al. (2011) analysed the connections between eating behaviour, the statement of nourishment, food preferences, physical activity and satisfaction with body image. In a quantitative study 295 female university students were questioned. The cognitive control eating style means the avoidance of calorie-rich food products and the emotional and uncontrolled eating styles cause a preference of food with high energy. The researchers found that the higher the BMI, the more young females are willing to follow the cognitive control eating behaviour. However this eating style does not mean a diet but a healthful and conscious eating behaviour. There is a strong correlation between eating styles and physical activity. Physically active students had significantly higher scores on the cognitive control scale than physically passive ones. When young females have higher BMI they cannot have an ideal body image, as suggested by western countries, so they will be dissatisfied with their weight and they will reduce their food intake.

Most up-to-date research used shorter versions of TFEQ, namely TFEQ-R 18, where 17 items are measured on a four point Likert scale, with the end-points definitely true (4) and definitely false (1). One item is measured on an 8 point Likert a scale of 1 to 8, where 1 means no restraint in eating (eating whatever you want, whenever you want it) and 8 means total restraint (constantly limiting food intake and never ‘giving in’) (Karlsson et al. 2000). International studies applied longitudinal examinations (Keränen et al. 2011; Kearney et al. 2012; Nurkkala et al. 2015) to discover the connections between eating styles and overweight and obesity. Szabó et al. (2014) examined the

health behaviour on a nationally representative sample of 1000 people from the Hungarian adult population. Based on the TFEQ 18 and the 'Body Attitude Test' they executed the determination of factor structure, and then they conducted cluster analysis and they classified the Hungarian population into five consumer groups. They distinguished the groups as 'uncontrolled emotional eaters', 'tense dissatisfied people', 'unconcerned people', 'overweight impulsive eaters' and 'conscious eaters'. This segmentation could be really useful to food producers and experts working in the field of health management since they could target their audience with special unique products or services. For example 'overweight impulsive eaters' (13%) would like to lose weight but they can be characterised by emotional and uncontrolled eating. 20% of the population belong to the group 'conscious eaters' and they are the most important target audience of healthy food. They are not emotional eaters and they have a high income so they can afford premium category products. Keller and Dernóczy-Polyák (2017) distinguished functional eaters (49.2%), Carpe Diem and YOLO (31.1%) and emotional eaters (19.7%) in Hungary based on TFEQ 16. People belonging to the first group consider eating as a basic need. They like eating and consider healthy food as an important aspect in their choice and they are satisfied with their weight. People belonging to the second group are hedonic and love life and eating. They do not care about healthy food and their weight. People in the third cluster eat due to negative feelings and can be characterized by uncontrolled eating. They like eating, they are neutral about healthy food, and they are dissatisfied with their weight (Keller and Dernóczy-Polyák 2017).

In this study we are focusing on Generation Y. Youth belonging to Generation Y have been socialized in the world of computers and internet, that is why they are better informed than their parents or older co-workers (Tari 2010). Success, professional career and money are the most important things for them since they know that these are the values in the world of consumption. They mainly use the internet and social media, blogs or online games (based on networks) for socialization. Considering their consumer behaviour they live for the day ('carpe diem') and they spend a lot of money, saving is not important for them. Hedonism and adventure are important factors when they go shopping and they are looking for special and prestige products (Williams and Page 2010). They travel a lot and have a lot of experience from the world; they are culturally open to different nations and they are happy to try out dishes from different cultures. They prefer trying out a new restaurant rather than buying a new pair of shoes. They are interested in festivals offering culinary pleasures more than music events or concerts (Ruiz 2014). They are emotional and sensitive, which may have an effect on their eating behaviour. The British ELIOR research institute published a report on the eating preferences of Generation Y in 2015. They are late eaters, they skip breakfast and prefer a mid-morning snack and for lunch they choose easy-access, high-quality fast-food solutions since they think 'the easier the better'. They follow hectic lives and like snacking so emotional eating is typical for them. People belonging to Generation Y are the members of the digitally connected generation. They like sharing their eating-out experience on social media tools. The vast majority of Generation Y claims they eat or intend to eat healthy food, however their food choices would suggest otherwise. They prefer home cooking and expect to eat out less in the future. When they do cook they tend to serve up the same meals they order in restaurants.

Several international quantitative studies proved the unhealthy eating behaviour of the youth. Lee and his co-authors (Lee et al. 2006) compared the eating behaviour of Korean university students and their parents in a complex empirical study. They identified the preferred dishes of the two generations and analysed the calorie intake. They found that young people follow a western style diet (fast food, frozen and canned food) and they consume more fat than their parents. All in all they follow a more unhealthy diet, which increases the risk of overweight and obesity. A Greek study highlighted that young students living alone and leading their own household have a more unhealthy diet than those who live together with their parents (Papadaki et al. 2007). Kapetanaki and his co-authors (Kapetanaki et al. 2014) found that Greek young adults aged 18–24 adopted healthier nutritional habits after enrolment. Using a qualitative research method (focus group interviews) the researchers highlighted the motivations for healthy eating—good health, appearance and psychological consequences— and the barriers—lack of time, fast-food availability and taste, peer pressure, lack of knowledge and lack of family support.

More studies have analysed the eating behaviour of Generation Y in Malaysia (Kavitha et al. 2011; Pawan et al. 2014; Ying et al. 2013). The food preferences of Generation Y are determined by intrinsic (health, perceptive attractiveness, price) and extrinsic (mood, comfort, similarity) factors (Kavitha et al. 2011). Intrinsic factors have a higher impact on food choice than extrinsic ones. The authors highlighted that the knowledge of a healthy lifestyle of Generation Y is much deeper than their actual behaviour. The research of IFIC (International Information Council) came to the same conclusion: members of Generation Y acknowledge the importance of eating healthfully but all admit they do not always eat as healthfully as they would like. Generation Y has poor health habits, including inactivity and poor development of eating which contribute to the early development of overweight and obesity. They prefer red meats and fried foods and do not consume enough fruits or vegetables. The youth lack time and money but they are social, so they obtain digital or online information on nutrition. This generation likes eating out more than any other (older) generation. They are adventurous in trying new foods and places with their unique eating habits (Pawan et al. 2014). The youth look at the freshness and quality of the products when they want to choose a fast food. Due to the rapid increase in diseases such as high blood pressure, heart attack and obesity consumers look for other varieties of fast food, such as soups, salads and any other healthy dishes.

Other research has focused on the connections between food choice and the basic demographics of people. Different *genders* have different eating behaviours. Males consume more calorie-rich food, junk food and oily food. Females care more about their body weight and eat less (Wah 2016). Women face more pressure from society in terms of how they look so in turn they devote more time for self-care, which includes preparing more healthy food or going to workout (Roos et al. 1998). Additionally low-income households tend to eat less nutritious diets than other households (Chen et al. 2012.). Low-income households have a greater incidence of nutrition related health problems, especially obesity and diabetes. The authors examined the relation between the income level and the cost of food, and have stated that there must be other important variables than this related to unhealthy diets (Moore and Diez Roux 2006, Morland et al. 2002, Zenk et al. 2005). Studies by Chou et al. (2004) and Jeffery et al. (2006) showed that it is more likely to find fast food outlets in low-income areas than in

expensive neighbourhoods. Studies, which were conducted by Kearney and other colleagues in Kearney et al. 2000, indicate that *education* can in some extent affect dietary behaviour. However, the studies claimed that nutrition and good dietary knowledge is not enough if they do not lead to direct action. As the information gained during a self-research of an individual before starting a healthy lifestyle can come from different sources (with different reliability levels) and can be conflicting, this can lead to demotivation. On the other hand the socioeconomic position related indicators were in different ways related to the food patterns (western, prudent, traditional and sweet), but the effect of occupation and income was partly explained by education, especially among women. Women that have control over their work and men's occupations were important factors affecting their eating habits (Kjøllesdal et al. 2010). Another study examined the effect of these factors among French inhabitants, and stated the connections between the socioeconomic position (education, occupation and income) and nutrition intake, indirectly the healthy and conscious lifestyle (Hassen et al. 2016). Additionally, when examining people with different education levels it was found out that those with at least a bachelor's degree were more successful in research and have a tendency to figure out which of the facts can be considered credible and worth believing. Lower socioeconomic position, particularly low education, was associated with lower intakes of nutrients required for a healthy diet. The Pan-European Survey of Consumer Attitudes to Food, Nutrition and Health figured out the top five influences on food choice: (1) 'quality/freshness', (2) 'price', (3) 'taste', (4) 'trying to eat healthy', and (5) 'what my family wants to eat'. In the Pan-European study, females, older subjects, and more educated subjects considered 'health aspects' to be particularly important. Males more frequently selected 'taste' and 'habit' as the main determinants of their food choice (Glanz et al. 1998).

3 The empirical research

The aim of this complex research is to segment Azerbaijani youth belonging to Generation Y based on the previously introduced TFEQ 18 scale and to identify homogenous consumer groups based on the results of factor analysis, the original factor structure, and characterize them based on some important dimensions. The following research questions were defined:

Q_A: Is it possible to segment females of Generation Y based on the TFEQ 18 scale?

Q_B: Is it possible to profile each segment based on demographics (income level, education level, marital status)?

Q_C: Is it possible to profile each segment based on their healthy lifestyle (physical activity and BMI)?

Relying on the literature review the assumption is that women can be classified into homogeneous customer groups and they can definitely be profiled. Moreover we assume that Azerbaijani females can be classified based on the previously identified eating styles, namely emotional, cognitive control eating and uncontrolled eating. We believe that there is a relationship between cluster membership and basic demographics

and other variables connected to a healthy lifestyle. The properly defined segments can be treated in different ways when it is about social marketing campaigns.

During a quantitative research the authors plan to test the following theoretical hypotheses derived from the research questions (Fig. 1).

- H_A : Generation Y can be grouped into homogeneous groups based on their eating styles. There is homogeneity within the group and heterogeneity between groups.
 H_B : Each segment can be profiled by basic demographics.
 H_C : Each segment, defined by eating behaviour, can be profiled by a healthy lifestyle (physical activity and BMI level).

3.1 Measurement and specification of scales

In the primary research we mainly used metric scales but we made scale transformation and recoded some variables into non-metric scales.

- Examining *eating styles* the TFEQ-R 18 (Karlsson et al. 2000) was used. The 18 item questionnaire contained three scales measuring *emotional eating* (3 items e.g., ‘When I feel anxious, I find myself eating.’), *cognitive control eating* (6 items e.g., ‘I deliberately take small helpings as a means of controlling my weight.’), and *uncontrolled eating* (9 items e.g., ‘When I see a delicious food or I can smell it, I find it very difficult to keep from eating, even if I have just finished a meal.’), all of which used a four point Likert scale (see Appendix). Response categories ranged

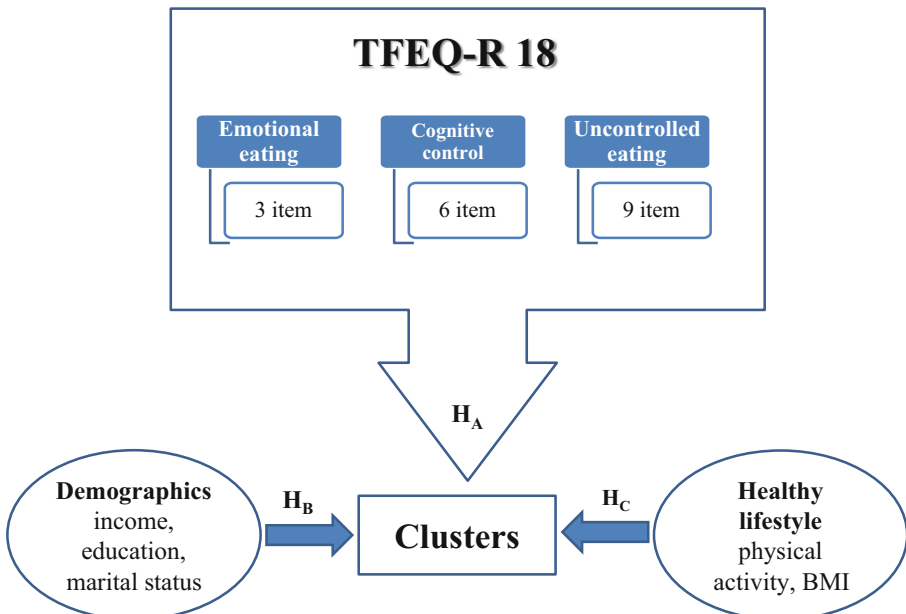


Fig. 1 The framework of hypotheses. Source: Own compilation

from 1 ‘definitely false’ and 4 ‘definitely true’. One question (CC6) was measured on an 8-point Likert scale but it was transformed into a 4 point Likert scale.

- *Age* was measured on a ratio scale and we recoded it into a nominal scale to categorize respondents into generations defined previously, as in the McCrindle studies. We analysed the responses of Generation Y (born between 1980 and 1994, aged between 24 and 38).
- The basic *demographics* were measured on nominal scales.²
- *Physical activity* was measured on a nominal scale with three categories: sedentary lifestyle, moderate activity (medium aerobic activity, such as walking, riding a bike or swimming at least once a week), high physical activity (high-intensity aerobics, such as hiking in the hills, jogging or playing basketball 3 times a week).
- The *BMI* of respondents was calculated from height and weight. However KSH (2018) surveys found that women underestimate their weight and overestimate their height, when the BMI is based on self-declaration. The limitation of this study is the self-declaration instead of the exact measurement of height and weight. Respondents were categorized into one of four categories: underweight ($BMI \leq 18.5$), normal weight ($18.5 < BMI \leq 25$), overweight ($25 < BMI \leq 30$), or obese ($BMI > 30$).

3.2 Sample design and sampling

To answer the research questions the authors chose the single cross-sectional research method. The empirical research was conducted in April 2018. The researchers used the self-reported online questionnaire. To obtain the primary information, the online questionnaire was sent to different social media groups with the intention to reach women from different social classes, income levels and lifestyles. Finally 419 people between 24 and 38 could be reached with the survey and were willing to fill in the whole questionnaire. The average age of the respondents is 26.33 and the standard deviation is 3.18. The sample can be characterized with the following demographics and healthy lifestyle:

- *Income level*: 30.1% with low, 41.5% with medium and 28.4% with high income.
- *Education level*: 20.8% with associate, 58.5% with bachelor’s and 20.8% with master’s degree.
- *Marital status*: 33.4% married and 66.6% single.
- *Physical activity*: 41.3% follow a sedentary lifestyle, 51.6% do moderate physical activity and 7.2% do high physical activity.
- *BMI categories*: 1.4% underweight, 62.3% normal weight, 25.3% overweight and 10.7% obese.

The sample was not a representative one, and the authors would like to emphasize this study is an exploratory one.

² Net income: low (less than AZN 300 per month), medium (less than or equal to AZN 1000 per month) and high (greater than AZN 1000 per month). Education level: associate, bachelor’s, or master’s degree. Marital status: married or single.

3.3 Strategy for data analysis

The data analysis was conducted with the help of SPSS 23.0 software. The hypotheses were tested with multivariate statistical analysis. To test hypothesis A the authors used the method of cluster analysis, especially the method of Ward's hierarchical cluster analysis, namely the agglomerative clustering (Malhotra 2010). Since the aim was to emphasize the main differences we used square Euclidean distance to measure the distances. After investigating the pre-conditions, the researchers considered different cluster solutions but finally they decided to apply the three cluster solution. In the next step they considered these three clusters as nominal variables. In order to test hypothesis B to analyse the connection between cluster membership and basic demographics Chi-square analysis was conducted. In this case the authors took into consideration the expected value and the condition of variables measured on nominal scales. In order to test hypothesis C to analyse the connection between cluster membership and healthy lifestyle, namely physical activity and BMI, cross tabulation was conducted.

4 Results

The simple mathematical means of items belonging to one factor that is belonging to one eating style (Hair et al. 2005) were the bases of cluster analysis. Since this type of multivariate analysis is really sensitive to outstanding values (Sajtos and Mitev 2007) the first step was to identify these respondents. In the process of analysing outstanding cases we revealed that these respondents have a very sharp opinion so they remained in the original sample. Standardization was not needed since the same type of scales (interval scales) were included in the process of clustering. The correlations between the included variables were checked. Since there was no strong correlation (over 0.9) between eating styles, the original conditions were not influenced. Ward's agglomerative clustering was used and the square Euclidean distance was considered. Relying on the results of Elbow criterion and Agglomeration schedule the three cluster solution was chosen. Count and frequency in the case of each cluster is the following: 1st cluster 152 people (36.3%), 2nd cluster 114 people (27.2%) and the 3rd cluster 153 people (36.5%).

In order to make a typology for the different clusters an analysis of the means was necessary. The method of one-way ANOVA was used to check the category means of eating styles in the case of each cluster and significant differences. There are significant differences between the groups in the case of all variables. To test the homogeneity of variables Post-Hoc tests (Dunnett T3 and LSD) were conducted. Relying on the results there are statistically significant differences among the variables. Based on the results it can be stated that there are distinguished groups belonging to a special cluster on the basis of the examined variables. Thus the first hypothesis (H_A) can be accepted since it is possible to distinguish homogeneous consumer groups. The profiling of each cluster based on the original variables (attitude statements of eating behaviour, namely TFEQ-R 18) is summarized in Table 1. There are statistically significant differences among each cluster considering *cognitive restrained* eating items (CR1-CR6). The first group of young females somehow agree with the statements of cognitive restrained eating. In the case of the second cluster youths totally agree with cognitive control eating,

Table 1 Cluster centroids based on TFEQ-R 18

Eating styles		Cluster 1 36.3%	Cluster 2 27.2%	Cluster 3 36.5%
Cognitive Restrained (CR ¹)	CR2	2.61	3.94	1.52
	CR3	2.82	3.84	1.76
	CR4	2.76	3.84	1.54
	CR5	2.66	3.86	1.72
	CR6	2.69	3.71	2.00
	CR	2.74	3.85	1.69
Emotional (EM ²)	EM1	1.66	1.02	3.88
	EM2	1.40	1.05	3.78
	EM3	1.47	1.00	3.80
	EM	1.51	1.02	3.82
Uncontrolled (UN ³)	UE1	3.09	1.10	2.88
	UE2	2.21	1.00	3.13
	UE3	3.03	1.00	3.03
	UE4	3.07	1.07	3.11
	UE5	1.90	1.00	3.05
	UE6	2.75	1.02	3.01
	UE7	2.39	1.02	3.01
	UE8	2.08	1.07	3.21
	UE9	2.34	1.42	3.29
	UE	2.54	1.08	3.09

Source: Own research, $n = 419$; CR¹: F stat. = 899.192; Sig: 0.000; η^2 : 0.812; EM²: F stat. = 1531.651; Sig: 0.000; η^2 : 0.880; UN³: F stat. = 728.418; Sig: 0.000; η^2 : 0.778

however the members of the third cluster do not agree with these items and they cannot be characterized by cognitive control eating. There are statistically significant differences among each cluster considering *emotional eating* items (EM1-EM3). The first group of youths do not agree with the statements of emotional eating. In the case of the second cluster youths totally disagree with emotional eating, however the members of the third cluster agree with these items and they can be characterized by emotional eating. There are statistically significant differences among each cluster considering *uncontrolled eating* items (UE1-UE9). The first group of youths agree with the statements of uncontrolled eating. In the case of the second cluster youths cannot be affected by external stimulus such as delicious food or other people. The members of the third cluster think the items of uncontrolled eating are absolutely true and they often feel hungry and always eat when they are hungry and they are able to eat at any time.

4.1 Typology of clusters

To characterize each cluster based on their eating styles the mean of the original factor items were considered. In order to analyse the connection between cluster membership and basic demographics and healthy lifestyle cross tabulation (Chi-square analysis) was

Table 2 Typology of each cluster

		Functional eaters <i>n</i> = 152	Conscious eaters <i>n</i> = 114	Emotional and hedonic eaters <i>n</i> = 153
<i>Income level</i> $\chi^2 = 299.025, p = 0.00$ $\phi = 0.845$	low	15.8% (24)	0.0% (0)	66.7% (102)
	average	67.1% (102)	21.1% (24)	31.4% (48)
	high	17.1% (26)	78.9% (90)	2.0% (3)
<i>Education</i> $\chi^2 = 111.924, p = 0.00$ $\phi = 0.517$	associate	9.9% (15)	0.0% (0)	47.1% (72)
	Bachelor's	68.4% (104)	65.8% (75)	43.1% (66)
	Master's	21.7% (33)	34.2% (39)	9.8% (15)
<i>Marital status</i> $\chi^2 = 18.023, p = 0.00$ $\phi = 0.207$	married	21.1% (32)	44.7% (51)	37.3% (57)
	single	78.9% (120)	55.3% (63)	62.7% (96)
<i>Physical activity</i> $\chi^2 = 224.020, p = 0.00$ $\phi = 0.731$	sedentary lifestyle	27.0% (41)	0.0% (0)	86.3% (132)
	moderate physical activity	65.1% (99)	84.2% (96)	13.7% (21)
	high physical activity	7.9% (12)	15.8% (18)	0.0% (0)
<i>BMI</i> $\chi^2 = 284.129, p = 0.00$ $\phi = 0.824$	underweight	0.0% (0)	5.3% (6)	0.0% (0)
	normal	90.1% (137)	92.0% (104)	13.1% (20)
	overweight	5.9% (9)	2.7% (3)	61.4% (94)
	obese	3.9% (6)	0.0% (0)	25.5% (39)

Source: Own research, *n* = 419

conducted (Table 2). The first group of young females is not really familiar with any of the eating styles. They are not influenced by weight control or emotions and external stimuli. They are *functional eaters* and they represent 36.3% of the sample. They have an average level of income and a bachelor's degree. They are typically single. The majority of that group do moderate physical activity and have normal weight based on their BMI. In the second group (27.2%) there are women who can be characterized by cognitive restrained eating, however emotional and uncontrolled eating is not typical for them at all. They care about eating and pay attention to their choice that is why they are *conscious eaters*. They have a high level of income (over the average) and a bachelor's or master's degree. The ratio of married and single women is almost the same among them. They do regularly sport, mainly once a week, or at least three times a week. All the underweight females belong to this group. However this cluster can be characterized by normal body weight. People in the third cluster (36.5%) eat due to negative feelings and can be characterized by uncontrolled eating. They eat due to negative feelings and food is a kind of bonus for them and they are influenced by external stimuli such as delicious and tasty food or hunger or by others. They are *emotional and hedonic eaters*. They have a low-income level and an associate or bachelor's degree. They are single. They follow a sedentary lifestyle; none of them do a high level of physical activity. More than two-thirds of them are overweight or obese.

Relying on the results of adjusted standardized residuals it can be stated that *functional eaters* have an average level of income, a bachelor's degree and are single. They do moderate physical activity and have normal BMI. *Conscious eaters* have a

high level of income and a master's degree. They are married and they do moderate or vigorous physical activity. They are underweight or have a normal BMI index. *Emotional and hedonic eaters* have a low level of income and an associate degree. They follow a sedentary lifestyle and have problems with their weight (overweight and obese) (Table 3).

Summing up the results of the empirical research the authors define the following theses highlighting the limitation of the study:

T_A: Generation Y can be grouped into homogeneous groups based on their eating styles, especially with the use of TFEQ-R 18. The three groups are the following: functional, conscious, and emotional and hedonic eaters.

T_B: Considering demographics each segment can be characterized by different traits.

T_C: Each segment defined by eating behaviour can be profiled by a healthy lifestyle.

Table 3 Significant relations with clusters

Demographics		Adjusted standardized residuum			Sign. relations with clusters
		Functional eaters	Conscious eaters	Emotional and hedonic eaters	
Income level	low	-4.8	-8.2	12.4	emotional and hedonic eaters
	average	8.0	-5.2	-3.2	functional eaters
	high	-3.9	14.0	-9.1	conscious eaters
Education	associate	-4.1	-6.4	10.1	emotional and hedonic eaters
	Bachelor's	3.1	1.9	-4.8	functional eaters
	Master's	0.4	4.1	-4.2	conscious eaters
Marital status	married	-4.0	3.0	1.3	conscious eaters
	single	4.0	-3.0	-1.3	functional eaters
Physical activity	sedentary lifestyle	-4.5	-10.5	14.2	emotional and hedonic eaters
	moderate physical activity	4.2	8.2	-11.8	functional eaters conscious eaters
	vigorous physical activity	0.4	4.2	-4.3	conscious eaters
BMI	underweight	-1.9	4.1	-1.9	conscious eaters
	normal	8.8	7.6	-15.8	functional eaters conscious eaters
	overweight	-6.9	-6.5	12.9	emotional and hedonic eaters
	obese	-3.4	-4.3	7.4	emotional and hedonic eaters

Source: Own research

5 Discussion

The TFEQ-R 18 scale is a questionnaire measuring eating styles especially emotional eating, cognitive restrained and uncontrolled eating (Stunkard and Messick 1985; Karlsson et al. 2000). The scale is widely used by researchers specialized in psychology, sociology and social studies (Harden et al. 2009; Lesdéma et al. 2012). Measuring eating styles is a popular and very current topic in the 21st century, however only a few studies have focused on the segmentation of customers based on their eating styles (Szabó et al. 2014). Investigating youths, especially members of Generation Y is a challenge for theoretical and practical researchers, since they represent an essential consumer group worldwide (Kavitha et al. 2011; Ying et al. 2013). Several national (Czeglédi and Urbán 2010; Czeglédi et al. 2011) and international (Lesdéma et al. 2012; Nurkkala et al. 2015) studies investigated the eating behaviour of young females especially university students (Kelly and Stephen 2016) based on TFEQ. Other international research has highlighted the connections between healthy food choice and basic demographics (Wah 2016; Roos et al. 1998; Chen et al. 2012) or the socioeconomic position (Moore and Diez Roux 2006; Morland et al. 2002; Zenk et al. 2005) of people.

In this study the researchers segmented Azerbaijani young women based on their eating styles. Three groups of customers can be distinguished, namely functional eaters (36.3%), conscious eaters (27.2%) and emotional and hedonic eaters (36.5%). It is important to investigate the basic demographics and healthy lifestyle of each cluster. Relying on the results of the empirical research there are statistically significant relationships between cluster-membership and the investigated variables. *Functional eaters* represent 36.3% of the sample. They cannot be characterized by any eating styles. Dernóczy-Polyák and Keller (2017) also distinguished this group in Hungary. They have an average level of income and a bachelor's degree. They are typically single. They do moderate physical activity and have a normal weight based on their BMI. This group is the target of traditional marketing activities, however prevention (avoiding weight-gain) is an important factor. The second group named *conscious eaters* have a high level of income (above the average) and a bachelor's or master's degree. The ratio of married and single women is almost the same among them. They regularly do sport, mainly once a week, or at least three times a week. Females belonging to this group can be characterized by underweight or normal body weight. Various international quantitative studies have proved the unhealthy eating behaviour of the youth (Lee et al. 2006; Papadakia et al. 2007). Generation Y has poor health habits, including inactivity and poor development, which contributes to the early development of overweight and obesity (IFIC 2011; Elior Group 2015). Emotional and hedonic eaters have a low-income level and an associate or bachelor's degree. They are single. They follow a sedentary lifestyle; none of them do a high level of physical activity and they have problems with their weight (overweight or obesity).

6 Implications

Segmenting customers based on their eating styles are really useful for dieticians since they can plan their assortment based on customers' needs or plan a personal diet.

Classifying customers based on their eating habits can be useful for doctors and the health sector to prevent obesity and strengthen people's well-being. Considering overweight and obesity the emotional and uncontrolled eating styles are the most dangerous. These two eating styles are typical for emotional and hedonic eaters who are the youngest and follow a sedentary lifestyle and have a low-level of income. They represent more than one-third of young females belonging to Generation Y. They should be a target audience of social marketing campaigns and convinced to eat and snack more healthy (not so calorie rich) food. Other alternative forms of happiness and reward should be emphasized for them such as adventures or sports (physical activity). Their behaviour and thinking of food should shift towards being more conscious. They are emotional and hedonic and they cannot resist nice, delicious, appealing food. To make a healthy lifestyle (eating habits and physical activity) more popular and decrease the number of overweight and obese people is a global goal. In order to increase the well being of a society a more conscious social marketing campaign is needed, especially in the developed regions of WHO countries where obesity is a serious problem.

The non-profit managers seek to amplify benefits and reduce costs in order to get the target public to behave in certain ways such as eating healthy. Many times people have social support and a belief in the beneficial effects of behaviour such as stopping snacks but they are unable to adopt it because they don't think they can actually succeed. Changes in eating are typically high involvement in nature. High involvement decisions are typically complex in nature, although previous experience can reduce the complexity. High involvement and complex decisions do not come about quickly but evolve over time. The *trans-theoretical model of behaviour change* or it is also called the stages of change model developed by Prochaska and DiClemente (2005), is an integrative theory of therapy that assesses an individual's readiness to act on a new healthier behaviour, and provides strategies or processes of change to guide the individual. The process can be broken down into five stages of change: (1) precontemplation, where a person is not thinking about the behaviour of interest; (2) contemplation, during which the person thinks about the behaviour and calculates its costs, benefits, what others think, and his or her own ability to act; (3) preparation and action, in which the person has moved to a willingness and desire to act; and (4) action, when people find substitute activities related to the unhealthy behaviour with positive ones (5) and maintenance, where the person tries the behaviour and the challenge is to permanently adopt it. Social marketing campaigns can be more effective if marketers tailor their interventions to the stage at which the target audience is found. For people in pre-contemplation, especially in the case of functional eaters, the marketers need to focus on creating awareness, knowledge and interest in the targeted behaviour through marketing actions aimed at need arousal. During the contemplation stage, marketers must influence the target audience in information gathering and ensure that the targeted behaviour is in the set of choices being considered, is evaluated as preferable to other options and then becomes the intended behaviour. For those in preparation and action the key is to help reinforce self-assurance and maximize opportunities to act, while for those in maintenance, especially for conscious eaters, attention must shift to creating reward systems, making repeat behaviour easy, keeping social or interpersonal pressures positive as they bear down on the desired behaviour.

7 Limitations and future directions

The present work is not without limitations. First of all the non-representative sample has to be mentioned. The sample was slightly biased in terms of age. The authors mainly concentrated on younger members of Generation Y. Participants were recruited on social media platforms and university students were overrepresented in this sample. When females are getting older and start working and having babies and families they become more conscious when it comes to eating. The generalizability of the present findings to other samples needs to be assessed. Second, it should be mentioned that self-reported behaviour may be subject to tendencies of socially desirable answering patterns, especially in the case of body weight and height. The validity of the present findings would be better if objectively measured heights and weights were included in the data.

In the future the authors plan to extend the research to more countries to highlight international differences. In order to verify this quantitative research the authors plan to extend the research and conduct a qualitative research, especially depth interviews or mini-focus groups. However they would like to conduct another quantitative research concentrating on the youth. The researchers plan is to investigate the eating attitude and behaviour of Generation Z since former studies (Williams and Page 2010) and WHO statistics highlighted the ratio of overweight and obese people are continuously increasing among the youth. It is also worth comparing the eating styles of youths and their parents, since eating behaviour is formed in childhood under the influence of parents and traditional cuisine (Lovrenovic et al. 2015; Cusatis and Shannon 1996).

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Appendix

TFEQ-R 18

UE uncontrolled eating behaviour

CR cognitive restrained eating behaviour

EM emotional eating behaviour

1. (UE1) When I smell a delicious food, I find it very difficult to keep from eating, even if I have just finished a meal. Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)
2. (CR1) I deliberately take small helpings as a means of controlling my weight. Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)
3. (EM1) When I feel anxious, I find myself eating. Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)

4. (UE2) Sometimes when I start eating, I just can't seem to stop. Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)
5. (UE3) Being with someone who is eating often makes me hungry enough to eat also. Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)
6. (EM2) When I feel blue, I often overeat. Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)
7. (UE4) When I see a real delicacy, I often get so hungry that I have to eat right away. Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)
8. (UE5) I get so hungry that my stomach often seems like a bottomless pit. Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)
9. (UE6) I am always hungry so it is hard for me to stop eating before I finish the food on my plate. Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)
10. (EM3) When I feel lonely, I console myself by eating. Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)
11. (CR2) I consciously hold back at meals in order not to weight gain. Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)
12. (CR3) I do not eat some foods because they make me fat. Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)
13. (UE7) I am always hungry enough to eat at any time. Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)
14. (UE8) How often do you feel hungry? Only at meal times (1)/ sometimes between meals (2)/ often between meals (3)/almost always (4)
15. (CR4) How frequently do you avoid "stocking up" on tempting foods? Almost never (1)/ seldom (2)/ moderately likely (3)/ almost always (4)
16. (CR5) How likely are you to consciously eat less than you want? Unlikely (1)/ slightly likely (2)/ moderately likely (3)/ very likely (4)
17. (UE9) Do you go on eating binges though you are not hungry? Never (1)/ rarely (2)/ sometimes (3)/ at least once a week (4)
18. (CR6) On a scale of 1 to 8, where 1 means no restraint in eating (eating whatever you want, whenever you want it) and 8 means total restraint (constantly limiting food intake and never "giving in"), what number would you give yourself?

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