

Food packaging cues as vehicles of healthy information: Visions of millennials (early adults and adolescents)

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ABSTRACT:

Because packaging has become an important marketing tool, firms must know what type of packaging can affect consumers' packaging cues. Also, still today there is little attention paid to the relevance of educating millennials about the importance of a healthier lifestyle and eating. The aim is to analyse the effects of young consumers with varying degrees of healthy lifestyles and food involvement on packaging cues. Also, the paper analyses differences between early adults and adolescents millennials. Using a sample of 890 millennials (300 early adults and 590 adolescents) and SEM methodology, interesting results are reached. Some healthy habits affect food involvement, and this is related to informative packaging cues. Some differences among both groups of millennials are found. The results/ findings would be valuable for the marketers and administration in the food industry to formulate marketing packaging strategies and to promote a healthier lifestyle and food consumption among millennials.

Keywords: healthy lifestyle; food involvement; informative and visual packaging cues; millennials

1. INTRODUCTION

The millennial generation is a unique and influential consumer group whose behaviour is often discussed but not fully understood (Valentine & Powers, 2013). Millennials play their own role in the food consumption process (Wang, Zhong, Wang, Zhao, Gong, Pan, ... & Yu, 2016) and represents a large and affluent market segment. For this reason, it is important that managers and public entities gain insight into what factors influence their products/services experiences (Scully, Wakefield, Niven, Chapman, Crawford, Pratt & Morley, 2012). Because of it and because research on millennials is still scarce (Tarabashkina, Quester & Crouch, 2016), this paper focuses on the millennial market and its involvement with food and healthy lifestyles. Specially, the aim of this paper focuses in the packaging cues as vehicles of healthy information among millennials. To reach this objective, and based on the fact that 18 years old is the age at which young consumers reach the age of majority in our country, two main segments have been identified: early adults millennials (born between 1982 and 1996) and adolescents millennials (born between 1997 and 2004). 890 millennial consumers (300 early adults and 590 adolescents millennials) were interviewed through a writing form in both, public and private schools and in a university campus.

With this proposal, we will try to fill three literature gaps. First, the majority of existing research on food marketing for the millennial market has focused on television advertising only, forgetting other important marketing tools such as packaging (Harris, Schwartz & Brownell, 2010). Second, the millennial market has been seldom analysed from a marketing perspective, especially regarding food choice involvement and healthy habits (Scully et al., 2012). Third, although some papers investigate age/generation differences in food choice behaviours (Chang, Elliott, Sand, Dailey & Blachford, 2014), its application in the millennial market considering the segmentation of this target and packaging perceptions has not been explored yet.

2. HEALTH, FOOD INVOLVEMENT AND PACKAGING ELEMENTS

Although no studies have been found that address how food involvement is linked to packaging perceptions, this link seems evident following two theoretical frameworks: first, following classic attitude–behaviour models, because involvement has a clear effect on information searching due to the package is a strong tool to provide information; and second, because cue utilisation theory advises that consumers tend to use extrinsic cues as surrogate indicators of product quality (Richardson, 1994). For this reason, the packaging becomes a powerful weapon in the food industry (Hawkes, 2010). For this reason, and as stated before, this paper focuses on healthy lifestyles among millennials, and their relationship with food involvement as a way to analyse the impact of food involvement on packaging cues. Moreover, we try to study possible differences among millennial segments.

2.1. Healthy lifestyle and food involvement

Nowadays, lifestyle factors play a significant role when describing how consumers make food decisions. In this paper, we focus on health-related behaviour, known as healthy lifestyle that is used to denote the general way of life based on the interaction between the living conditions in the broadest sense and individual patterns of behaviour determined by sociocultural factors and personal characteristics (Grimaldo, 2010). As this author proposes, this healthy lifestyle considers the following areas: sports, food consumption, sleep and rest.

In the end, people are changing their dietary habits to maintain or improve their health, and functional foods open a promising avenue for consumers to pursue a healthier life (Chen, 2011). For example, Garaulet & Westerterp-Plantenga (2017) study the relationship among food patterns, sleep habits and sport activity. Related to physical activity, the systematic review of Kelly, Stephens, Hoying, McGovern, Melnyk & Militello (2017) identify several studies where the relationship between physical activity and nutrition is evident in both secondary and high

schools' students. Not in vain, Meyer & Reguant-Closa (2017) defend the link of sport practice and food intake. In this sense, Haddad, Ullah, Bell, Leslie & Magarey (2018) analyse the influence of home and school environments and conclude that in both environments there is a positive relationship between physical activity and food involvement and intake. In a different context, sports clubs, Ibrahim, Brée & Naja (2017) point out how the practice of an organized sport in federal sport clubs will have an influence on children's sensitivity to values and healthy lifestyle, affecting their food involvement and consumption. Related to sleep and rest habits, Geiker, Astrup, Hjorth, Sjödin, Pijls & Markus (2018) show how literature confirm a relationship among the concepts of stress, sleep and food intake among others.

Because of argued in previous lines, lifestyle can affect the consumption of some functional products (i.e., Urala & Lähteenmäki, 2004; Verbeke, 2005). In this sense, Chan, Prendergast, Grønhøj & Bech-Larsen (2011) concluded that the degree of healthy perceptions can affect the food that millennials eat and, in consequence, their food involvement. The empirical studies of perceptions of healthy eating have found that they were generally based on food choice, characteristics of food, and healthy concepts held by the public (Chan et al., 2011). Thus, the following hypotheses are proposed where healthy and unhealthy lifestyles act as antecedents of food involvement.

H1: For millennial consumers, a healthier lifestyle is associated with higher food involvement.

H1_1: For millennial consumers, more sport activities practices are associated with higher food involvement.

H1_2_ For millennial consumers, healthier sleep and rest habits are associated with higher food involvement

H2: For millennial consumers, an unhealthier lifestyle is associated with less food involvement.

2.2. Food involvement and its effects on packaging

Van Loo, Hoefkens & Verbeke (2017) define involvement as “the degree to which an object or idea is centrally related to an individual’s value system”. This definition implies that higher levels of involvement are typically related to individuals that are more active, e.g. engaging in higher levels of information search and processing, extended decision-making processes, and a higher likelihood of using information in attempting to align choice behavior with the information received (Van Loo, Hoefkens & Verbeke, 2017). In this sense, if a consumer feels involved in food, all the information will be useful to avoid the wrong selections. Packaging is a powerful information tool. For this reason, and with the move to self-service retail formats, packaging increases its key characteristic as the ‘salesman on the shelf’ at the point of sale (Silayoi & Speece, 2004). Following Silayoi and Speece (2004), packaging elements can be classified according to non-verbal cues (graphics, size, colour and shape) and verbal cues (health and nutritional claims), that is, visual elements and informative elements (Authors, 2016).

Visual cues (graphics) include layout, colour combinations, typography, and product photography, all of which create an image (Silayoi & Speece, 2004). In this sense, for example, claims that emphasise ‘heart healthiness’ might have an accompanying symbol, such as a large red heart on the front of the package or next to the menu item (Kozup, Creyer & Burton, 2003). Also, in the study of Ares, Besio & Gimenez (2010), package colour and the presence of a picture on the label were the variables with the highest relative importance, regardless of consumers’ involvement with the product. Along the same line, Rundh (2005) found that ‘consumers, who made their purchase on impulse tended to rely heavily on the extrinsic attributes of the packaging, especially pack photography, to assist in their choice’ (p. 684).

Written cues on the package can assist consumers in making their decisions carefully as they consider product characteristics. Many consumers appreciate food labelling, but are not

satisfied with standard formats (Silayoi & Speece, 2004). As Silayoi and Speece (2004) reviewed, while not all consumers use the label information, the trend seems to be towards increasing attention to it. Partly, concerns about food safety and nutritional health drive this trend (Smith & Riethmuller, 2000).

In sum, there is a growing need to provide young consumers with more food information. Food packaging is a good tool to this end, as far as involvement and information searching are terms linked to it. This general proposal is extracted from a classic attitude behaviour model of Engel, Blackwell & Miniard (1995). That is, during their decision-making process, consumers will have different involvement and, accordingly, they will search and rely on different attributes or cues before deciding their product preferences (Authors, 2016). Our proposal focuses on those attributes related to the package of the product that can be separated in two blocks: visual and informative elements.

Then, it could be stated that millennials food involvement is related to perceptions of the importance of packaging cues.

H3: Millennials highly involved in food decisions will pay more attention to food packaging's informative cues than less involved millennials.

H4: Millennials highly involved in food decisions, will pay more attention to food packaging's visual cues than less involved millennials.

2.3. Differences among millennials generation consumers

Based on the Generational Cohort Theory's, Strauss & Howe (2000) show how today's teens and young adults are recasting the image of youth from downbeat and alienated to upbeat and engaged. According to the authors, millennials could emerge as the next great generation

(Strauss & Howe, 2000). Millennials, Generation Y or The Net Generation show interest in health and nutrition concerns and consumers' demands for healthier food options (Chang et al. 2014). But also, millennial consumers show other interesting characteristics (Valentine & Powers, 2013) that can explain their food perceptions. For example, as the authors state, millennials are more concerned than previous generations about work life quality, are more responsible, independent, less brand-loyal, and pay less attention to brand after they reach a certain age.

The millennial cohort has been described as a mystery to most marketers because they are not as influenced by traditional media as previous generations and new marketing techniques are used to more effectively reach these consumers (Valentine & Powers, 2013), for example, packaging as information vehicle. In order to understand them, demographic segmentation may show how and where to find these consumers (Valentine & Powers, 2013). Interestingly, the findings of consumer preferences and food choices based on the differences in consumer characteristics often generate inconsistent and/or contradictory results (Chang et al., 2014) and require deep research. Consequently, this study focuses on a specific cohort of consumers: the millennial generation (born between 1982 and 2004), and this is segmented into two main groups, early adults millennials (1982–1996) and adolescents millennials (1997–2004).

According to Silayoi & Speece (2007), not all consumers evaluate packaging the same way. Just as in consumer responses to other elements of marketing, segmentation is an important factor. In this sense, Valentine & Powers (2013) underline the study carried out by the US Chamber of Commerce Foundation (2012), in which the habits and behaviours among these consumers are shown to differ as a function of the age. The Chamber establishes 18 years of age as a cut-off point that differentiates the habits of younger and older millennials. Likewise, Wolfe (2004) states that millennials become less interested in brand labels after they reach a certain age.

Therefore, we try to study to what extent the relationships among health perceptions, food involvement and the perceived importance of different packaging cues differ between early adults versus adolescents millennials. In sum, involvement and demographic characteristics are related terms (Bell & Marshall, 2003). At the same time, and based on previous comments, it is expected that the effects of food involvement on the search for information on a package will be different between both groups of millennials. So, we could ask if age in the millennial's generation could affect the relationships among the studied variables, as follows.

RQ1: Do early adults millennials and adolescents millennials show the same relationships among health perceptions, food involvement and perceptions of packaging cues?

That is, are there differences in hypotheses 1 to 4 between early adults and adolescents millennials?:

H1_b: The relationship between healthy lifestyle (sports) and food involvement will differ between both groups of millennials.

H1_2b: The relationship between healthy lifestyle (sleep) and food involvement will differ between both groups of millennials.

H2b: The relationship between unhealthy lifestyle and food involvement will differ between both groups of millennials.

H3b: The relationship between food involvement and information packaging will differ between both groups of millennials.

H4b: The relationship between food involvement and visual packaging will differ between both groups of millennials.

Figure 1 summarises all the relationships stated before.

(Figure 1. Proposed model: early adults-millennials and adolescents-millennials)

3. METHODOLOGY

3.1. The population

The present study was carried out in a particular Spanish region and focused on millennials. And, as stated before, this market has been segmented into two main groups: 300 early adults millennials (1982–1996) (mean = 24.84 years old nowadays) and 590 adolescents millennials (1997–2004) (mean = 18.04 years old nowadays) (US Chamber of Commerce Foundation, 2012; Valentine & Powers, 2013; Casella, 2015).

This study had the financial support of the University of Valencia (Spain) and the Ministry of Economy (Spain).

3.2. Information collection

Prior to the quantitative data gathering, a qualitative phase was done based on seven experts' opinions (young Spanish consumers) in order to review the proposed questionnaire. A team of interviewers pass the final questionnaire among millennials (early adults and adolescents millennials). For early adults millennials (all are up to 18 years old and not parental consent was needed), interviewers selected people in one university campus close to a main hospital. The reason to choose this campus is because there is a university hospital where participants from diverse educational ranges could participate. For adolescents millennials (less than 18 years old), and following to Scully et al. (2012), our sampling procedure was a stratified two-stage probability design: interviewers went to schools that were stratified by the two education sectors (government and private), taking into account the social desirability of the participants. And so, our sample was defined according to consumer profile quotas for a metropolitan statistical area representing the teen market in Spain (sample error 4%; confidence level 95%, p

= $q = 0.5$). Active parental consent was required for students less than 18 years old and an approval to conduct the study was obtained from the regional public institution. Therefore, following this procedure, 890 millennial consumers were questioned (300 early adults millennials and 590 adolescents millennials).

As Table 1 illustrates, 48.4% are men and 51.6% are women. At the same time, Table 2 shows that the 50.1% of the millennials would like to weigh less (they think that they are overweight), 32.6% state that they are at an ideal weight, and 17.2% would like to weigh more (they consider themselves underweight). There are, therefore, significant differences between adolescents and early adults millennials in relation to their perception of ideal weight.

(Table 1. Men and women in millennials)

(Table 2. Weight perceptions in millennials)

3.3. Measurement

The questionnaire considers the measurement of the concepts under analysis. Each concept is measure following 5-point Likert scales proposed by the literature. Annex 1 shows all the scales and items used.

Healthy lifestyle. According to Grimaldo (2010), the healthy lifestyle comprises three areas concerning habits and behaviours: sports, repose and sleep habits, and food consumption. In our study, food consumption has its own entity. Other 3 items from He, Kramer, Houser, Chomitz & Hacker 's (2004) scale were used to measure unhealthy habits.

Food involvement. We adapted Bell & Marshall's Food Involvement Scale (2003), which includes 11 items related to the five phases of the life cycle of food (acquisition, preparation, cooking, eating and disposal).

Relevance of packaging visual and informative information. We followed the proposals of Silayoi & Speece (2004) and Kuvykaite, Dovaliene & Navickiene (2009). For this, we used a five-point Likert scale.

3.4. Data analysis

Data were analysed through PLS techniques. PLS (partial least squares) was used because it does not presuppose a normal distribution of the data and can simultaneously assess the measurement model and the theory. In terms of benefits, PLS simultaneously estimates all path coefficients and individual item loadings in the context of a specified model and, as a result, allows eluding biased and inconsistent parameter estimates (Loureiro & Miranda, 2011). Furthermore, it is an effective analytical tool to test interactions by reducing type II error (Chin, Marcolin, & Newsted, 2003).

Before the hypotheses' contrast, and following Anderson & Gerbing (1988), confirmatory factor analysis (CFA) was first conducted to test for the quality and adequacy of the measurement model by investigating reliability, convergent validity, and discriminant validity.

4. RESULTS DISCUSSION

4.1. Adequacy of the measurement model

The measurement model psychometric properties were evaluated before verifying the proposed hypotheses through a Confirmatory factor analysis (CFA). The purification results of CFA revealed that the goodness-of-fit of the model and the overall statistics both achieved the best appropriateness and could not be further improved. In this case, Composite Reliability of

all the scales reach good value (CR sports=0.6; CR sleep =0.8; CR unhealthy = 0.7; CR involvement = 0.9; CR visual pack. = 0.8; CR informative pack. = 0.8).

After the scales depuration, the means of the concepts analysed were: mean sports=2.5; mean sleep =3.1; mean unhealthy = 1.6; mean involvement = 3.1; mean visual pack. = 3.1; mean informative pack. = 3.6.

4.2. Hypotheses testing

After the psychometric properties' analysis of the diverse scales used in this study, structural equation models have been used to test the hypotheses.

4.2.1. General model testing

In the general model, four relationships were found to be significant ($p < 0.05$), with the model showing a good fit and the right R^2 values for the structural equations (Table 3).

(Table 3. Hypotheses Testing)

First, our results demonstrate that those millennials who have healthier sleep and rest habits (H1_2), will also be significantly more food involved. But, no significant relationship has been found between sport activities and food involvement (H1_1). So, H1 can be partially accepted.

Second, there is not a significant relationship between unhealthy habits with food involvement. So, H2 cannot be accepted.

Third, our results can confirm that when a millennial is food involved, he/she will assign higher importance to informative packaging cues, such as the presence of easily interpretable labels

and the use of understandable words. This is because this involved consumer needs clear and useful information. Thus, H3 is confirmed.

And finally, our results confirm that when a millennial is food involved, he/she will allocate higher importance to visual cues (H4). That is, aspects such as the size and the shape of the packaging, its colours and the materials are relevant. So, H4 should be accepted.

4.2.2. Differences between early adults millennials and adolescents millennials

To analyse the moderating role of millennial segments in the general model, we conducted two independent estimations: one for the 300 early adults millennials and one for the 590 adolescents millennials. The idea was to compare our hypotheses in these two scenarios.

The moderating hypotheses associated to RQ1 (H1_1b, H1_2b, H2b, H3b, and H4b) were tested by a multi-group analysis with EQS (Table 4). Two steps were followed. The first did not involve any formal analysis of the moderating effect, as for each group of interviewees the parameters and significance of each of the proposed causal hypotheses were estimated. Secondly, and to test the significant differences between the parameters in both subgroups, the Lagrange multiplier test (Lmtest) was used after including the restrictions in our model. The statistic associated to the X^2 difference for each separate restriction indicates that just one of the relationships is significant.

In sum, just one of the hypotheses regarding the moderating role of the millennial's segmentation can be accepted. That is, there are differences among them in relation to the effect of food involvement on information packaging cues (H3b). Some other differences among early adults and adolescents millennial consumers are found, but they are not significant or they have no sense due to the sign of the relationship.

(Table 4. Moderating variable: early adults versus adolescents millennials)

5. CONCLUSIONS, IMPLICATIONS AND FURTHER RESEARCH

The present paper attempts to expand the scientific knowledge related to millennials' lifestyles perceptions and their possible effects on their food involvement, and packaging cues. At the same time, the moderating role of age segmentation among millennials has been studied. Although this study has some limitations (e.g. millennial consumers born between 1982 and 2004 are not necessarily representative of the general millennial population), these findings contribute to a better understanding of how healthy lifestyle perceptions may be related to food involvement and packaging cues. So, in our opinion, this study represents one of the first challenges to examining the effect of healthy lifestyle perceptions on food involvement, and the latter on packaging cues among young consumers. The empirical results and findings from this study are helpful for the continued development of the food industry and public sector, and make a contribution to further research in this field (Chen, 2011). So, with a sample of 890 young consumers born between 1982 and 2004 (300 early adults and 590 adolescents millennials), some interesting conclusions and managerial implications can be addressed.

First, and related to healthy/unhealthy habits and their effects on food involvement, our results only find a significant relationship between consumers' sleep and rest activities and food involvement. In this sense, young consumers who practise some balanced rest habits are those who are more food involved. No significant relationships have been found between sports activities and food involvement, or between unhealthy habits and food involvement.

Second, and considering the scales used, food-involved millennials (those who think about the food they take in and outside the home, and who are involved with the buying process) are

those consumers who carefully read the packaging label, and pay more attention to packages whose labels have easily untestable words and which are orientated to transmit confidence and security. They are interested in the label design and pay attention to the country of origin. At the same time, the visual cues on packaging also play an important role for these targets. That is, they pay attention to product appearance, packaging materials, colours, shape, and size.

Finally, and based on the separated analysis for early adults and adolescents millennials, age could be considered as a variable capable of moderating the relationships among healthy/unhealthy lifestyle, food involvement, and packaging decisions. In fact, some differences can be found between these two segments, but our results cannot contrast all the hypotheses established. Just one of the relationships shows significant differences among millennials; that is, in the early adults millennials' segment, the relationship between food involvement and information packaging cues is stronger than among adolescents millennials. This could be explained because, as Higgins, Wolf & Wolf (2016) state, these younger consumers are familiar with the use of information, they are more engaged with products and information technologies than the older consumers.

Before the proposal of diverse managerial implications, it is important to underline the sample analysed: consumers born between 1982 and 2004. In this sense, we carried out a pre-test in order to ensure understandability of the questionnaire. Therefore, we introduced the feedback and rewrote some of the questions and items. But even with all these changes, and in view of the results of the assessment of the psychographic characteristics of the scales, we understand that future studies should be closer to the reality of these young people.

Taking into account the previous lines of research and the scales used in this study, this research allows for some managerial implications to be stated. First, authorities, public and private, must

pay attention to healthy habits among millennials. Considering the scales used in this study, results show that this segment is still not aware of healthy habits (for example, those habits related to sports activities) or of the consequences of unhealthy habits on food consumption. The same argument can be used if authorities want to 'teach' the importance of healthy eating practices. In this sense, their marketing campaigns must take into consideration the information processing of these young consumers.

Second, and as stated before, and because food involvement plays an important role, public and private authorities must pay attention to the food involvement of young consumers. They have to reorient their marketing communications to teach the meaning of food and eating habits.

Third, both information and visual packaging cues play a significant role among food-involved millennials. For this reason, and taking into account the scales used, marketers in the food industry, for example, should invest both in visual and information elements because both are going to draw the attention of millennials. They should work more on typographies, texts and labels instead of on images (i.e. silhouettes.). So, marketers of this industry need to write clearly on the package the properties of the food (i.e. high in vitamins, rich in calcium, high fiber, etc.) with special emphasis on the label design. Supported by our results, managers should adapt the text in the packaging (informative cues) to each segment (early adults and adolescents millennials). Marketers cannot forget the packaging design (materials, size, colours). Also, public entities should encourage private firms to design their packages according to these recommendations. This result could follow the observations of Kozup et al. (2003) who state that claims must be accompanied by an appropriate label and packaging design.

Finally, some differences can be found between early adults and adolescents millennials, although all the relationships have not been significant. In any case, authorities and companies

should reinforce their marketing campaigns to differentiate possible differences among diverse age segments. So, for example, public and private organisations and firms should consider both early adults and adolescents millennials' differences, and should try to increase their preoccupation with healthy lifestyle and eating habits. Public campaigns, as well as private companies, should show early adults and adolescents millennials exhibiting 'good' habits and should raise the awareness of these young consumers about the importance of these 'good' habits.

Some limitations to this study should, however, be kept in mind when generalising the findings from it (i.e. the sample profile and the scales used). Future studies could investigate other consumer segments that use alternative measures. Another limitation of this study is that the questionnaires relied on subjective self-reporting on healthy lifestyle, eating perceptions and food intake without objectively assessing health-related activities. Further research with this young segment could include the opinions of parents or tutors. Future studies should address these issues, in other young segments too. Furthermore, Scully et al. (2012) recommend that future research include other potentially important sources of marketing exposure for millennials such as websites, and that the scope of the measures be broadened to take into account advertising that may be simply reminding consumers about a particular product.

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Annex 1: Measurement scales

Variable	Items	Authors
Healthy/unhealthy lifestyle		
Sports activities	Individual sports	Grimaldo (2010)
Frequency scale (1=never, 5=everyday)	Team sports	
	Combat sports	
	Outdoor and adventure sports	
Repose and sleep habits	My nap is about 30 minutes	Grimaldo (2010)
Frequency scale (1=never, 5=everyday)	I have a set time for bed	
	I have a set schedule to get up	
	I take some time to relax before going to bed or go to sleep	
	My bedroom is maintained at a suitable temperature	
	When I wake up I feel I've slept enough	
	Having rested, I feel I've recharged the batteries	
Unhealthy habits	Tobacco consumption	He, Kramer, Houser, Chomitz and Hacker (2004)
Frequency scale (1=never, 5=everyday)	Drugs consumption	
	Alcoholic beverages consumption	
Perceptions of healthy/unhealthy eating		
Perceptions of healthy eating	Have a balanced diet	Chan et al (2011)
5-points Likert scale (1= nothing important; 5 = very important)	Eat at regular time intervals	
	Have three meals a day (5 in Spain)	
	Eat natural food	
	Eat almost the same amount each meal	
Perceptions of unhealthy eating	Eat fast foods	Chan et al (2011)
	Eat too fast	
5-points Likert scale (1= nothing important; 5 = very important)	Eat food with preservatives or additive	
	Eat a narrow range of food	

continue Table 1

Variable	Items	Authors
Food involvement scale		
Level of agreement with the food involvement 5-points Likert scale (1= nothing important; 5 = very important)	I think much about food each day	Bell and Marshall (2003)
	Cooking is much fun	
	Talking about what I ate or am going to eat is something I like to do	
	Compared with other daily decisions, my food choices are very important	
	When I travel, one of the things I anticipate most is eating the food there	
	I enjoy cooking for others and my self	
	When I eat out, I think and talk much about how the food tastes	
	I like to mix or chop food	
	I do most or all of my own food shopping	
	I do most or all of the clean up after eating	
	I care whether or not a table is nicely set	
Visual packaging cues		
Importance/search of visual packaging cues 5-points Likert scale (1= nothing important; 5 = very important)	Shape	Silayoi and Speece (2004)
	Size	Kuvykaite et al (2009)
	Colours	
	Materials	
	Pictures and images	
	Product aesthetical appearance	
	Manufacturer	
	Country of origin	
	Brand	
Informative packaging cues		
Importance/search of informative packaging cues 5-points Likert scale (1= nothing important; 5 = very important)	Size of the letters	Silayoi and Speece (2004)
	It helps to interpret the content	Kuvykaite et al (2009)
	Easily understandable words	
	Label design	
	It gives confidence and security	

	Emphasis on important nutrients	
	Country of origin	

Figure 1. Proposed model: early adults-millennials and adolescents-millennials

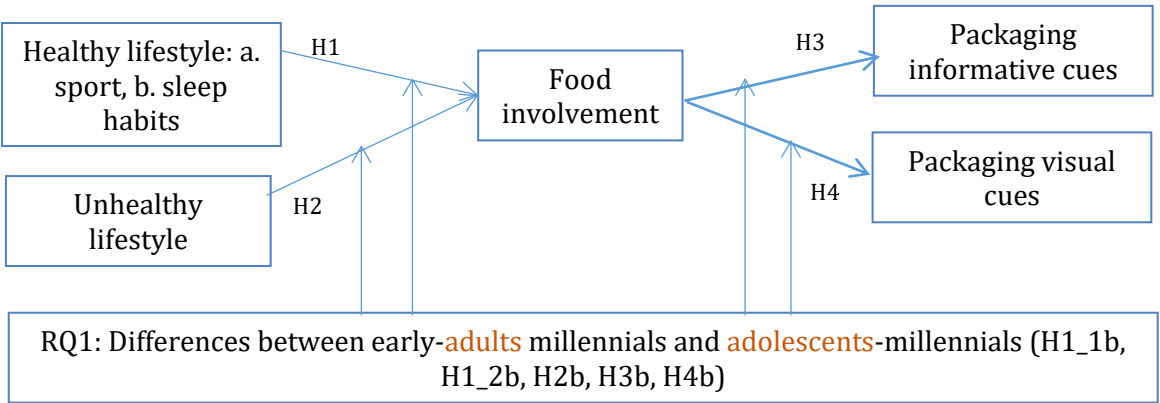


Table 1. Men and women in early adults and adolescents millennials.

	Sample (890) (100%)	Adolescents (590) (66.3%)	Early adults (300) (33.7%)
Men	431 (48.4%)	273 (46.3%)	158 (52.7%)
Women	459 (51.6%)	317 (53.7%)	142 (47.3%)
Total	890 (100%)	590 (100%)	300 (100%)

Table 2. Weight perceptions in early adults and adolescents millennials.

	Sample (890)	Adolescents (590)	Early adults (300)
Overweight perception	100% (50.1%)	61.9% (46.8%)	38.1% (56.7%)
Perfect weight perception	100% (32.6%)	79.7% (39.2%)	20.3% (19.7%)
Underweight perception	100% (17.2%)	54.2% (14.1%)	45.8% (23.3%)
Total	890 (100%)	590 (100%)	300 (100%)

Chi Square=38.9; $p < 0.00$. Significant differences.

Table 3. Hypotheses Testing

Hypotheses	Beta Value	R ²	Contrast
H1_1: Healthy lifestyle (sports) - Food involvement	-0.25ns	0.081	No
H1_2: Healthy lifestyle (sleep) - Food involvement	0.21*	0.081	Yes
H2: Unhealthy lifestyle- Food involvement	0.23ns	0.081	No
H3: Food involvement – Information packaging	0.63**	0.38	Yes
H4: Food involvement – Visual packaging	0.54**	0.28	Yes
Satorra_Bentler Chi Square = 771.47 (95FD); S-B chi square/fd=8.12 NFI=0.76; NNFI=0.72; CFI=0.78; IFI=0.78; RMSEA=0.08			

**=p<0.01;*= p<0.05; ns=no significant

Table 4. Moderating variable: early adults versus adolescents millennials

Contrast	Diff χ^2		Structural relationship	Beta coef	T rob	Beta coef	T rob
Healthy/unhealthy habits and food involvement				Early adults		Adolescents	
NO	1.44 ns	H1_1b	Healthy lifestyle (sports) - Food involvement (early adults versus adolescents millennials)	0.05 ns	0.26	0.03 ns	0.26
NO	0.41 ns	H1_2b	Healthy lifestyle (sleep) - Food involvement (early adults versus adolescents millennials)	0.06 ns	1.64	0.07 ns	1.64
NO	3.01*	H2b	Unhealthy lifestyle- Food involvement (early adults versus adolescents millennials)	-0.06 ns	0.8	-0.06 ns	0.8
Food involvement and packaging							
YES	4.18**	H3b	Food involvement – Information packaging (early adults versus adolescents millennials)	0.89 ***	5,61	0.78 ***	5,51
NO	0.32 ns	H4b	Food involvement – Visual packaging (early adults versus adolescents millennials)	0.89 ***	13,9	0.93 ***	6.3
Satorra_Bentler Chi Square = 712.31 (195FD); S-B chi square/fd=3.65 NFI=0.76; NNFI=0.77; CFI=0.81; IFI=0.81; RMSEA=0.07							

ns=no significant; * p<0.1; ** p<0.05; ***; p<0.01