

## Meal Selection of Malaysian University's Students

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**Abstract:** This survey attempted to investigate the relationship between meal selection of university's students as predicted by eating habit and environment in the state of Terengganu. A total of 580 samples of the study specifically involved students of UiTM Terengganu, UniSZA and UMT. This study will furnish findings on to what extent eating habits and environment that usually assumed to be part of daily routine elements influencing the meal choice among students. For further exploration the examination on differences were analyzed for understanding similarities or differences. A total of 580 samples were captured through quota sampling to provide an insight of the research issues. The result of the investigation revealed that all the two constructs were significantly related with the meal selection. Further evidence provided through multiple regression demonstrated 26.8% of the constructs were able to explain its contribution of meal selection.

**Key words:** Meal selection, eating habit, environment, result, examination

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### INTRODUCTION

The meal selection of healthy foods is food that has low in additive which is food that should involve a minimum of processing, low in sugar, salt, fat or high in fibre such as are organic foods (Darrall, 1992). By eating healthy daily food, it will provide the nutrients that body needs to keep bones, organs and muscles in optimum shape. Meanwhile, healthy eating may also help someone maintain a healthy weight, boost heart health, prevent diabetes and improve brain functioning. The healthy food consumption trends have been in line with the dietary reports and these trends appear to be continuing which are the move towards foods low in sugar, salt and fat and high in fibre while it can be summarize the "healthy" eating trends occurring not only in the UK has also in Europe, North America and rest of the world (Darrall, 1992).

For food consumption to be sustainable it has to be safe and healthy in amount and quality; and it has to be realized through means that are economically, socially, culturally and environmentally relevant and at the same time should attempt to minimize waste and pollution and not jeopardizing the needs of others (Reisch, 2010). Selection of healthy meal is essential to be part of healthy living as it provide a person with guidelines about the nature of food that can be categorized as healthy while proposing the food pyramid guide based on the varieties of foods offered to meet the special needs of the body

(Andonova, 2014). Careful identification of simple effective nutrition strategies need to be identified and implemented. These strategies could then be utilised to improve nutrition knowledge and awareness as well as to motivate a change in nutrition behaviour (Karim *et al.*, 2008).

**Problem statement:** The percentage of obese, diabetes and heart attack in Malaysia had increased steadily from year to year. Despite of repeated reminders given by the world health organization as well as the Malaysian authorities about the need to have healthy meals has still the message often failed to capture their attention about the need to grow up with having healthy daily eating habit. Despite of understanding or lacking of awareness about their food intake they are continuously been exposed to serious disease such as diabetes and obesity at young age. Most nutritionists expressed that imbalanced nutrition intake not only leads to obesity but also contribute to chronic diseases that can shorten the life such as hypertension, heart diseases and diabetes (Din *et al.*, 2012). It is also had been reported that six of the ten leading causes of death were related to imbalanced nutrition intake. Awareness about their food intake can reduce the number of disease suffered especially among the less caring Malaysians about their food consumption. Our observation and interviews with dieticians, doctors, food supplement suppliers, mutually agreed that although the populations were given abundance of information

about the importance of selecting the right meal has still when comes to enjoying meals, they failed to control their appetite, thus end up with taking unhealthy meals.

There are several factors that act as barriers to eating healthily such as difficulties of travel to shops, unaffordable to purchase inability healthy food or lack of the cooking skills necessary to prepare fresh vegetables (Shaw, 2012). All of these factors are internal factors which require the government to create healthy culture among the citizens.

**Objective and scope of study:** The objectives of this study are to explore the inclination of appropriate meal selection, to investigate the relationship between eating habits and environment based on weight, gender and accommodation. Lastly, examine the impact of the predictors in the selection of meal among universities students.

The investigation on the selection of meal is expected to furnish data collected from university's student at UiTM, UniSZA and UMT in Terengganu. The framework of this investigation only focused on two predictors involving eating habit and campus environment by observing their influence on the meal selection among university's students.

### **Literature review**

**Meal selection of university's students:** One of the general assumptions of choosing the right meal is very much associate with the food quality (Dollah *et al.*, 2012) besides the purchasing power of each person. As the nation's economy moved progressively has been reflected by the Malaysian's per capita income, other changes such as lifestyle, quality of life and changes in spending habits (Mansor *et al.*, 2013) has generally empowered consumers to seek for more varieties for food and beverages, financially capable, more concerned of healthy living and willingness to consume more nutritious food intake (Hadi *et al.*, 2012).

The occurrence of changes can be observed not only at the childhood but also among the older generation, due to their exposures to different kinds and varieties of meal selection. One of the challenges that changes, dominate attitude and beliefs in food choice was the added flavor enhancement to be part of the ingredients of the new food products that make someone believed that it can enhance one's health (Thomas, 1991).

In most observation, women have the inclination to have healthier diet compared to men. They put more effort to control their physical outlook, the need to be healthy internally and externally and also need to be selective in deciding the appropriate meals (Pollard *et al.*, 1998). Women therefore demonstrated higher concern and keep

on updating their knowledge of nutrition than men (Kiefer *et al.*, 2005). In another observation (Schafer *et al.*, 1999; Wardle *et al.*, 2004) noted that men are more likely prefer to have diet such as low fat foods, less high fiber foods and fewer fruits and vegetables compared to women.

Malaysia has abundance of varieties of foods, thus making it easier for its population to consume foods more regularly at weekly intervals (Norimah *et al.*, 2008). As a consumer, Malaysian must make a good decision in choosing their food by eating healthy food and avoiding unhealthy food. With a bundle of choices of food to consume, Malaysians should not be having problem to find healthy food. Example, for people who live in rural areas, they can get fresh resources for instance green vegetable and fruits easily. Meanwhile, for people who live in the urban areas, they can easily get canned food and instant food that are making available in the markets.

Dietary intake is a significant part of consumer behavior and very much associated with meal selection. The increasing use of dietary supplements presents a special challenge in managing patient's health care (Huang and Lesko, 2004). As such specialist advices are important before a person take any supplement medication needed so that there will be no negative impact to human body. Supplements medication include any consumed products that aim to supplement the diet and provide additional nutrients that may be missing from it or aren't supplement's and 'nutritive drinks and tonic's. Researchers have identified that health concerns are attributable to individual's socio-demographic backgrounds and social cognitive variables such as attitudes and perceptions of health risks (Armitage and Connor, 1999). The small number of non-consumer thereby gives little information on the effect of dietary supplement on the nonverbal intelligence of students. Superior dietary supplement ingredients to promote health based on sound science and proven experience. The needs of an increasingly health-conscious consumer from immune and digestive function has lead the dietary supplement plays a very important role in increasing the academic performance among students (Vermeir and Verbeke, 2008).

Individuals that are educated and knowledgeable about healthy eating are more likely to be good in healthy dietary choices. This is because they know what to eat more and what to eat less. Besides, knowledgeable person will usually concern about their health and the right eating style.

**Eating habits:** Eating habits can be explained as how a person or group eats what types of food and in what

quantities eaten and appropriate time for eat having breakfast, lunch and a dinner. The decision of what, how and even when to eat for breakfast is really important as it will shape the next journey of what to do next such as supporting student's concentration in class. The need to consume healthy foods at college is essential as it will keep a person strong, becoming more energetic and strongly assisting well function brain. In addition with these practices it makes a person more healthier and supporting better immune system. However there were still many university's or college's students make little attempt to diagnose and get into control of favorable eating habits.

Regardless of the guideline proposed by Colleges and Universities administrators, still the choice of food varieties found to be not that healthy. In fact on the observing of teenagers reported that >50% of teenage girls and over one-third of teenage boys continued consistently in skipping meals, smoking more cigarettes and using food supplement to control their weight.

Malaysia is ranked sixth in the Asia-Pacific region for obesity and tops the list in South-East Asia for both obesity and diabetes. It is due to the unhealthy eating habit, added with varieties of food offered, thus making Malaysians less concern about sustaining their health. For example, Malaysian is reported to consume sugar and salt in a large quantity. This makes the situation to be more dangerous and harmful. It will further affecting someone health in a long term if such consumption behaviour could not be controlled. They further added that sugar has been linked to over 60 ailments from cancer, diabetes, obesity, heart problems, osteoporosis and kidney problems to asthma and allergies. Some of these killer diseases are showing worrying upward trends in just a few years.

Everyone knows that food is important and essential for living. Food has a direct impact on our cognitive performance which is why a poor decision at lunch can derail an entire afternoon.

**Environments:** As reported by Seaman *et al.* (1997) parents act one of the dimensions within the environmental context that constantly provide the main source of information in the meal selection. Other elements involved were friends and mass media. For example for those after 8 years of age, dimensions such as television advertising, peer-group pressure and formal nutrition education dominated their influences. The receiving formal nutrition education often influence or exert changes in meal patterns and food selection consumption amongst younger age group (Thompson *et al.*, 1994).

Promote the concept of School Nutrition Action Groups (SNAGS) with the intention that students may become less attractive to unhealthy meals such as fast food. With such a promotion, those in schools will be demonstrating picking healthier snack selection as part of the school meals (Young, 1993).

Most of the parents reported to be lacking of information about balance meals, thus limiting children's dietary pattern (Gummeson *et al.*, 1996). The results of (McCullough *et al.*, 2004) indicated that children and parents appeared to be aware of the importance of balanced diet but still lacking of nutritional knowledge on unbalanced dietary patterns. For food consumption to be sustainable it has to be safe and healthy in amount and quality and it has to be realized through means that are economically, socially, culturally and environmentally and at the same time it must minimizing waste and pollution and not jeopardizing the needs of others (Reisch, 2010).

The growing number of fast food restaurant in Malaysia is also affecting consumer's meal selection. Malaysian seems to enjoy eating in most occasions. They will continuously eating without concerning their health even though repeated advice were publicly make known about the need to be health conscious is part of maintaining quality of life. All these efforts and strategies can be effectively realized through changes made in nutritious behaviour (Karim *et al.*, 2008). As such to cultivate healthy eating habits, obviously demand consumers to acquire knowledge by educating them about understanding differences between healthy and non-healthy eating habit within the given environments. Consumers need to know what to eat more and what to eat less.

## MATERIALS AND METHODS

**Research framework and hypotheses:** The main interest of this study is meal selection of the university's students in which the variance is attempted to be explained by the construct on eating habit and environment (Fig. 1):

- H<sub>1</sub>: There is significant relationship between eatinghabits and selection of healthy meals
- H<sub>2</sub>: There is significant relationship between environment and selection of healthy meals

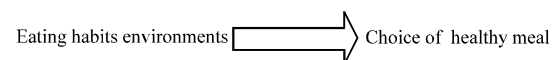


Fig. 1: Framework explaining the relationship

- H<sub>3</sub>: There is significant different between respondents weight category and selection of healthy meals
- H<sub>4</sub>: There is significant different between gender and selection of healthy meals
- H<sub>5</sub>: There is significant different between students accommodation and selection of healthy meals

**Research design:** The explanation of the result centers on descriptive and correlational analysis. With these analyses we attempt to ascertain and describe the characteristics of the variables of interest in a non-contrived environment, for instance, analysis of members who are at senior and junior years, sex composition and accommodation. Thus with the profile we are able to describe relevant aspects of the phenomenon of interest or subject matter under investigation.

**Sampling procedures and data collection:** Based on the statistic produced by Division of Planning and Research Ministry of Higher Education the population for UnisZA reported to be about 6,500 while a total of 7,000 each were those from UiTM and UMT. Using the total population of approximately 20,500 a total sample of 400 was recommended to be appropriate as suggested by Krejcie and Morgan (1970). For the purpose of getting better generalizability, the sample size was inflated reaching a total of 580, then the possibility of observing the differences become more meaningful.

The distribution of questionnaires was personally administered for ensuring higher percentage of response, quick accessibility, cheaper and more likely to be accurate. Most of the items measuring each variable were formulated through discussion with senior academicians of the faculty members. Thus, allowing the chances of having validity and reliability of the instrument. The instrument consisted of 4 sections whereby section A was formulated to elicit the profiles of respondents, Section B focused on gathering information related with the meal selection, section C and D, respectively captured information related to eating habits and environment.

## RESULTS AND DISCUSSION

### Data analysis and interpretation

**Reliability analysis:** The Cronbach's alpha for the construct on meal selection, eating habits and environment were 0.788, 0.621 and 0.786, respectively. Thus provide us the confident of the reliability for measuring the constructs.

**Frequency distribution:** This research involved students from 3 Institution of Higher Learning (IHL) namely:

Table 1: Mean analysis on meal selection

Variables	Mean
Meal selection	3.659
I know about the healthy meal	4.160
I prefer dinied cereal for breakfast	3.080
I take high calcium every day	3.150
I prefer low fat food	3.360
I prefer less sugar in my food	3.450
I like to cook by using fresh ingredient	4.060
I prefer eat food that contain high vitamin and mineral	3.790
I realize that the importance of healthy diet to stay healthy	4.290
I know about the proper food pyramid	3.880
Healthy diet can avoid me from obesity	4.090
I often exercise	3.130
Every day I drink 8 glasses of mineral water	3.440
I eat 3 times per day	3.160
I am aware the effect of the excessive intake of diet pill	4.010

Table 2: Correlation analysis between variables

Variables	Meal choice	Eating habit	Env.
Pearson correlation	1	0.372	0.486
Sig. (2-tailed)	-	0.000	0.000

UniSZA (199 samples), UMT (200 samples) and UiTM (180 samples) covering all semesters of their enrollment within the age of 20-27 years old. There are 580 respondents been selected as sample for eliciting the data. Out of 580 respondents, there were 24.1 male and 75.9% female respondents. Most of the students reported living in their own house or rental house while 48.4% were living in college. Based on the Body Mass Index (BMI) those with BMI under 18.5 were categorized as underweight, 18.5-24.9 as normal, 25-29.9 as overweight and the obesity is around 30 and above (Table 1).

The assessment of meal selection is displayed in the above Table 2. There were 14 items attempted to address the variable. Of the total 14 items only 6 items indicating that students do make effort to select proper meal. Among the items were having knowledge about healthy meal, understand that healthy diets avoid them from obesity, like to cook using fresh ingredient, aware about the effect of diet pill excessive intake, knowing about the proper food pyramid and prefer to eat food that contain high vitamin and mineral. Respectively the score of the above measurement were within 3.79-4.16. Nevertheless as a whole the importance of considering selection of healthy meal is considered just above average among the college student which was about 3.6591.

**Correlation of coefficient:** Table 2 shows the relationship between eating habit and environment as a construct, indicated that there was a significant relationship as related to the meal selection. In terms of the strength of relationship environment demonstrated of a moderately strong while eating habit is of low relationship.

**Multiple regression analysis:** Regression procedure is expected to provide analysis for explaining explanatory

Table 3: Exploring predictive power of the independent variables

Summary			ANOVA				
R	R <sup>2</sup>	Adj. R <sup>2</sup>	F-value	Sig.	Dimensions	$\beta$	p-value
0.515	0.266	0.263	104.294	0.000	Eating habit	0.191	0.000
					Environment	0.400	0.000

Table 4: Analysis of meal selection based on profile

Variables (items)	No	Mean	Sig. value
<b>Weight (kg)</b>			
30-49	175	266.14	0.176
50-69	305	299.43	-
70-89	86	300.08	-
90 and >	11	276.86	-
<b>Gender</b>			
Male	140	3.7944	0.001
Female	440	3.6161	-
<b>Accommodation</b>			
House	298	3.7085	0.022
College	281	3.6056	-

power as of the eating habit and environment as related to the meal choice. Based on the above adjusted R<sup>2</sup> value, only 26.3% of all the two constructs are able to explain their impact on the meal selection. Obviously, there could be other constructs that need to be taken into consideration for explaining the meal selection among the students. It seems that environment provide a much stronger explanatory power and this can be exploited in ensuring a favorable meal selection can be made into good practices (Table 3).

**Analysis of differences:** The result of the analysis by observing the weight, gender and accommodation are displayed in Table 4. Based on the above analysis the result indicated there was a significant difference between the male and female student as well as in terms of where they stays while studying at the Sig. value of 0.001 and 0.022 respectively in terms of meal selection. However, regardless of the weight category as related to meal selection, the result indicated of no significant difference (Table 4).

## CONCLUSION

The need to have a good knowledge on the selection of proper meals is all depending on each individuals. Through the normal observations thousands of meals are made available in the market. Even though efforts had been done to enforce labeling for each food so that consumers will be given information to decide whether the meal is appropriate to be consume has still not all meals are obligated to display the relevant information.

It is surprisingly to be noted that during our preliminary investigation, students were less attentive to read the information displayed for the meals. The matter become more serious as most of the students are exposed with the fast changing environment that limit themselves to be more analytical and concern about having adequate

knowledge and information about the meal to be consume. For some others, the need to thoroughly investigate the quality rather than the taste is the main consideration for food consumption among college students (Dollah *et al.*, 2012). The fact that only 6 items displayed the mean value concerning their favorable reaction while 8 items falls within moderately concerned needed serious attention not only among the students but also to the authorities that are responsible in monitoring appropriate meal selection among consumers. Definitely more initiatives should be taken to address what can be done within the environment to keep on persuading the societies to have favorable eating habits so that citizens become healthy and the nations become more prosperous.

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