

# Willingness to Pay for Functional Foods to Stay Fit and Prevent Obesity amongst Malaysian Youth

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## Abstract

In this era, many have been exposed to healthy lifestyle which includes healthy eating. Healthy eating refers to the consumption of functional food which contains nutrients needed by the body. Nevertheless, this kind of food usually would be slightly pricy due to its nutrition and goodness, which is a drawback to many people. Thus, this research aimed to identify the willingness to pay for functional foods to stay fit and prevent obesity amongst Malaysian youth. This study was conducted around Kuala Lumpur, Malaysia among 100 youths aged between 15 to 24 years old. Analysis of the results showed that lifestyle adaptation, contributes the most to the youth generations' perspective as they are more concern on becoming obese-free and active. Social media also influence these youth which in corresponding affects their thinking and increases their confidential level. Third and lastly is food consumption awareness. Findings revealed that functional foods are commonly consumed to tackle obesity related diseases and problem. Dietary supplement usage is widespread among the Malaysian youth citizens as they are more concern about their health as they age.

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## 1. Introduction

Obesity and the metabolic disorder keep on plaguing the world at a disturbing rate. If left untreated, this could cause diabetes, hypertension, and other more serious conditions to increase [1]. Unfortunately, many are not getting enough physical programs and are eating more calorie-based food, subsequently prompting to the considerable worldwide extended pervasiveness of weight [2-4]. In other words, the wealth of refined and fast food diets, sedentary lifestyle and declining rates of activity are few of the major factors contributing to obesity. Surgical methodologies have additionally been created to help the loss of weight to healthy levels in patients experiencing obesity [5]. A functional food based medication is being hailed as the cheapest option to combat weight reduction, and weight management [6]. Nonetheless, purchasing and consuming these functional foods seemed to be hesitant which are influenced by several factors.

An individual's behavior towards consuming a thing is a standout among the most basic precursors for envisioning and clearing up buyers' choices transversely over things and organizations, including functional food items. Hawkins and Mothersbaugh [7] portrayed behavior as a mental construct which addresses an individual's accessibility to act or react absolutely. It is a generally persevering assessment of a question against options, and depends on an individual's considerations (insight), convictions (qualities) and feelings (warmth) towards the product [8]. Past reviews have related functional health food utilization with behavioral natures, for example, wellbeing consciousness, ecological awareness, trust of functional health food cases and appeal of functional food traits, for example, taste, surface, freshness [9]. Moreover, the marketing and production procedures are dictated by some element, such as, buyer states of mind, loyalty, conviction to functional food developed items and the willingness to pay a top notch cost for the functional food. Chia et al [10] stated that an individuals'

state of mind towards consuming a functional food is the most imperative point for anticipating and clarifying consumers' decisions toward the functional foods. Youths' willingness to pay and the intention to buy functional food items may reflect by numerous reasons, for example, wellbeing, environmentalism, observation, mindfulness and elements driving youths' conduct towards purchasing functional food [11].

Among all components, media introduction of thin image is a noteworthy patron to current high frequency of obesity and dietary problems in young people. The eating manner and practices of youths were measured preceding the presentation of local TV and after the prolonged exposure to television viewing [12]. The outcomes showed that taking after the TV introduction, these young people displayed a huge increment in confused eating states of mind and practices. Public awareness campaigns utilize scopes of different awareness-raising techniques through these stations, extending from materials with data to more advanced procedures, similar to social promoting, or utilizing segments created in the psychological sciences, for example, the Social Cognitive Theory. These campaigns eventually help to create awareness among youth to go for functional food to combat obesity and other weight related-disease surrounding them [13].

Peer impact and gathering similarity can be considered as critical determinants in nourishment adequacy and determination [14]. It has been analysed that young people were less likely to have an inspirational state of mind or aim about adhering to a good diet and action if their folks and peers group do not see these practices as vital in life. Some early research also proposed that peers are a vital and enduring impact on the food preferences of youths. Enthusiastic peer modelling has been observed to be the most grounded indicator of more youthful youngsters' eagerness to attempt new nourishments [15].

Learning about an individual's willingness to-pay (WTP) in the interest of its (potential) factors is assumed to be an essential part in numerous ranges of marketing and functional food management like estimating choices or new item advancement is. Worsley et al. [16] stated that Malaysia's youth choice of functional food as well as willingness to pay to stay healthy contributes to development of this country as they will be responsible to shape future youths and increase life expectancy of individuals in relation. Therefore, this study aimed to scrutinize the factors (lifestyle adaptation, social media influence and food consumption awareness) associated to youths in Malaysia's willingness to purchase functional food in order to stay healthy.

## 2. Methodology

### 2.1 Research Design

The main idea regarding this specific research design is to obtain the relationship between youths' family routine and lifestyle adaptation, social life and media influence as

well as obesity and food consumption awareness of achieving obesity free youths in Malaysia. In this study, quantitative approach is utilized to assess the association between the independent factor (determinants) and dependent variable (options of youths' willingness to pay to stay fit through functional health food). Casual research is also utilized as a part of the exploration especially in light of the fact that it distinguished circumstances and end results affiliation. It likewise can be portrayed as the specific independent variable can impact the after effect of dependent variable. Thus, causal research is suitable to be used.

### 2.2 Population, Sample and Research Location

The survey was carried out to gather information from a segment of population of customers in Kuala Lumpur, the capital city of Malaysia. Targeted participants were acknowledged using the following criteria:

- (a) They are at most 15-24 years old
- (b) Studied in secondary, tertiary education and working environment
- (c) Capable to answer comprehensively to an English linguistic study questionnaire and
- (d) Have consumed functional food goods for at least one year.

From a population of 31 million of Malaysian citizens, 5.3 million or 16.86% is composed of youth citizens. Malaysia was expected to reach ageing nation status by 2030. Hence 5.3 million is taken as population size. From 5.3 million of youth generations in Malaysia, 200 respondents have been chosen from Kuala Lumpur region. By referring to the target population, a total of 200 survey questionnaires is distributed to the population instead from original 384 questionnaires. This is based on population sampling size table with expected 5.0% of marginal error. The reason behind reduction in number of respondents is due to time constraint surrounding the research.

### 2.3 Data Collection

In this study, the data has been collected using questionnaire distributed to the directed respondents. The survey questionnaire measures:

- a) Approaches towards functional food
- b) View of social prospects of functional food consumption due to obesity
- c) Concerns toward well-being and environment
- d) Willingness to pay (WTP) for functional food.

These items are measured on a 5 point Likert scale where 1 is "strongly disagree" and 5 is "strongly agree". It consist of strongly disagree, disagree, neutral, agree and strongly agree. Most of respondents are from Malay, Chinese and Indian background in order to reduce defect and likeability for selection. The questionnaire covers concepts, review enquiry and basis of literatures.

## 2.4 Data Analysis

Statistical Package for the Social Sciences (SPSS) is easy to utilize, smart and has the ability to interface with different databases. Information examination is the data that been accumulated and dealt with to finish the research objective. . In this way, this research utilized SPSS PC programming to determine the gathered information. Information examination incorporated descriptive analysis, reliability analysis and inferential analysis.

## 3. Results and Discussion

### 3.1 Descriptive Analysis

Descriptive statistics are brief descriptive coefficients that abridge a given informational index, which can be either a portrayal of the whole populace or a specimen of it. Descriptive statistics are broken down into measures of central tendency and measures of variability, or spread. Measures of central tendency incorporate the mean, median and mode, while measures of variability include the standard deviation or variance, and the minimum and maximum variables. Descriptive statistics, to put it plainly, help portray and comprehend the components of a particular informational index, by giving short outlines

about the example and measures of the information. The most perceived sorts of descriptive statistics are the mean, median and mode, which is utilized at all, levels of math and measurements. Nonetheless, there are less-regular types of descriptive statistics that are still important [17]. Exploratory factor analysis (EFA) was embraced to distinguish and affirm the components under each build [18].

#### 3.1.1 Independent variable- Lifestyle Adaptation

Table 1 showed the lifestyle adaptation as one of the factor influencing willingness to pay and an independent variable for this study. The data showed only the fifth criteria having the lowest variance of 0.472 whereas others were above 0.5 which exposed that lifestyle adaptation as one of the major component influencing the willingness to pay for functional food despite many setbacks. The standard deviation of the fourth criteria showed the highest deviation while the fifth criteria had the lowest standard deviation. The fourth criteria is more deviated about 1.00 which indicated different respondents has different ideology and perception on value, security and price of functional food but ended up agreeing on the importance of it.

Table 1: Descriptive analysis for lifestyle adaptation factor

	N	Min.	Max.	Mean	Std. Deviation	Variance
My loved ones wants me to buy more functional food for them	200	1.0	5.0	3.760	0.7781	0.605
Functional food is extensively regarded as an improved alternative to conventional food ( chemically processed food)	200	1.0	5.0	3.875	0.8503	0.723
My household members and relative consume functional food in daily basis	200	1.0	5.0	3.905	0.8057	0.649
I worry about the value, security and price of my functional food	200	1.0	5.0	4.445	1.0060	1.01
I care about cholesterol and fat in my food	200	1.0	5.0	4.000	0.6873	0.472
Valid N (listwise)	200					

#### 3.1.2 Independent variable- Social media influence

Table 2 presented the descriptive analysis of social media influence as one of the factor influencing willingness to pay and an independent variable for this study. The data showed that the fifth criteria having the lowest variance of 0.517 which are still above 0.5 and thus demonstrated that social media as one of the major component

influencing the willingness to pay for functional food despite many setbacks. The standard deviation of criteria one showed highest deviation and criteria five showed the lowest standard deviation. Criteria one is more deviated about 0.9277 which proved that different respondents has different thought and insight on availability of functional food in some stores but overall finds them as beneficial.

Table 2: Descriptive analysis for social media influence factor

	N	Min.	Max.	Mean	Std. Deviation	Variance
Functional food is only available in some stores	200	1.0	5.0	3.730	0.9227	0.851
Functional food is more environmentally friendly	200	1.0	5.0	3.875	0.7696	0.592
Functional food is less expensive	200	1.0	5.0	3.940	0.8776	0.770
Functional food does not contain extracts and synthetic flavouring	200	1.0	5.0	3.880	0.8055	0.649
Functional food is good for health	200	1.0	5.0	4.015	0.7193	0.517
Valid N (listwise)	200					

### 3.1.3 Independent variable- Food consumption awareness

Based on the descriptive data of food consumption awareness as tabulated in Table 3, it is shown that the fourth criteria having the lowest variance of 0.462 followed by fifth and second criteria with each denoting 0.470 and 0.492 respectively. Although the values are below 0.5, the acceptance of functional food and the

impact of social media are vital to determine the willingness to pay among respondents. The standard deviation of the third criteria showed highest deviation and criteria five showed the lowest standard deviation. Criteria three is more deviated by 0.7598 which indicated different respondents has different thought and insight on processing of functional food but overall finds them as safe and healthy to consume.

Table 3: Descriptive analysis for food consumption awareness factor

	N	Min.	Max.	Mean	Std. Deviation	Variance
I am worried about the type and amount of nourishment in the nutrition that I take daily	200	1.0	5.0	3.900	0.7435	0.553
I am concerned about the presence of food additives	200	1.0	5.0	4.030	0.7011	0.492
I am concerned about how food is processed	200	1.0	5.0	3.975	0.7598	0.577
I keep a strict diet to maintain my health	200	1.0	5.0	3.980	0.6796	0.462
I trust the information on functional food labels	200	1.0	5.0	4.050	0.6855	0.470
Valid N (listwise)	200					

### 3.1.4 Dependent variable- Willingness to pay

Table 4 showed willingness to pay as dependent variable for this study. The data showed only the fourth criteria having the lowest variance of 0.417 whereas others are above 0.5 which showed that the total acceptance to have the willingness to pay for functional food despite many

setbacks. The standard deviation of a dataset measure how spread it is. In this case, the third criteria displayed the highest standard deviation while the fourth criteria had the lowest standard deviation. Hence, the third criterion is more widespread than other criteria from this dataset.

Table 4: Willingness to pay as dependent variable

	N	Min.	Max.	Mean	Std. Deviation	Variance
I'm willing to purchase useful functional food despite the fact that options are restricted	200	1.0	5.0	3.935	0.7372	0.543
I'm willing to purchase functional food on the basis that the advantages exceeds the cost	200	1.0	5.0	3.925	0.7498	0.562
Purchasing functional food is the proper thing to do regardless of the possibility that they cost more	200	1.0	5.0	4.485	0.9187	0.844



I wouldn't care investing more time sourcing for functional food	200	1.0	5.0	4.015	0.6456	0.417
I would in any case purchase functional food despite the fact that conventional alternatives are on market.	200	1.0	5.0	4.480	0.8908	0.794
Valid N (listwise)	200					

### 3.2 Reliability Test

Table 5 presented the results of the reliability test of this study. Based on the table generated, it is clearly shown that all of the variables reliability was at least well/good for its internal consistency of Cronbach alpha, whereas one of it falls in excellent range. The least consistency range is seen on lifestyle adaptation factor of about 0.874, followed by dependent variable willingness to pay on 0.887 and social media influence on 0.893. Only, food consumption awareness factor, was in the excellent range of 0.904. This portrayed the relationship among all the variables and the Cronbach alpha is reliable and proven to be perfect for study.

Table 5: Reliability test results

Variable	Number of items	Cronbach Alpha
Willingness to pay	5	0.887
Lifestyle adaptation	5	0.874
Social media influence	5	0.893
Food consumption awareness	5	0.904

### 3.3 Pearson Correlation Test

From the Pearson correlation table produced in Table 6, the relationship between independent and dependent variables is significant and showed strong positive degree of correlation. From the data given, it can be said lifestyle adaptation versus social media influence denoted 0.640 or strong positive degree of correlation for the first column followed by 0.611 for lifestyle versus food consumption and lastly 0.618 for lifestyle adaptation versus willingness to pay. This represented that lifestyle adaptation being

significantly important to other factors although there is small difference in value between the three other factors.

For the second column, social media influence has been taken as the referral point. Social media influence versus lifestyle influence denoted 0.640, followed by 0.780 and 0.661 for food consumption awareness and willingness to pay respectively. The data showed that social media influence versus food consumption has the highest degree of correlation. This happened as respondents agree that social media such as Facebook, Instagram, Twitter and etc. play a big role in deciding and influencing what, where and which place to dine and choices of foods for them to select from variety of eateries.

For the third column, food consumption awareness versus lifestyle adaptation has the lowest correlation relationship of about 0.611, as this signified that respondents adapting to balance what they eat and how they live. This process is ongoing between respondents, food and lifestyle.

For the last column, dependent variable (willingness to pay) is set as referral point where willingness to pay versus lifestyle adaptation showed a correlation value of 0.618, followed by willingness to pay versus social media influence had correlation of 0.661 and the highest at 0.706 of willingness to pay versus food consumption awareness. The lowest relationship, 0.618 denoted that respondents are learning to adapt a new life-style, a healthy one and thus will pay for functional food to combat obesity and stay fit. In conclusion, all the independent variable versus dependent variable showed strong positive relationship and the relationship is significant as well as the two factors are directly related. The results of this correlation analysis are in line with the findings obtained by Voon et al. [9].

Table 6: Pearson Correlation Test

	Lifestyle adaptation	Social media influence	Food consumption awareness	WTP
Lifestyle adaptation				
Pearson Correlation	1	0.640**	0.611**	0.618**
Sig. (2-tailed)		0.000	0.000	0.000
N	200	200	200	200

Social media influence Pearson Correlation Sig. (2-tailed) N	.640** .000 200	1 200	0.780** 0.000 200	0.661** 0.000 200
Food consumption awareness Pearson Correlation Sig. (2-tailed) N	0.611** 0.000 200	0.780** 0.000 200	1 200	0.706** 0.000 200
WTP Pearson Correlation Sig. (2-tailed) N	0.618** 0.000 200	0.661** 0.000 200	0.706** 0.000 200	1 200

\*\* Correlation is significant at the 0.01 level (2-tailed).

### 3.4 Regression Test

#### 3.4.1 Multiple Regression

The Coefficients table presented in Table 7 offered the essential data to predict dependent variable, willingness

to pay from independent variable, lifestyle adaptation, social media influence and food consumption awareness, in addition to determine whether independent variables contribute statistically meaningful to the model by observing the "Sig." column.

Table 7: Coefficient table

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.738	0.219		3.370	0.001
	Lifestyle adaptation	0.245	0.061	0.252	4.000	0.000
	Social media influence	0.169	0.076	0.177	2.215	0.028
	Food consumption awareness	0.450	0.084	0.414	5.351	0.000

Furthermore, the values in the "B" column under the "Unstandardized Coefficients" column, as shown below to present the regression equation as:

$$B = X_1 + X_2 + X_3 + \text{Constant}$$

$$B (\text{Willingness to pay}) = X_1 (\text{Lifestyle adaptation}) + X_2 (\text{Social media influence}) + X_3 (\text{Food consumption awareness}) + C (\text{Constant})$$

$$B = 0.245 + 0.169 + 0.450 + 0.738$$

$$B = 1.602$$

The final B value defined the sum by which dependent variable changes on the off chance that we change independent variable by one unit keeping other

free factors constant. The unstandardized regression coefficient is subject to the sizes of estimation. It is shown that for each unit of independent variable changed; it changed by 1.602 unit for dependent variable.

#### 3.4.2 ANOVA

This ANOVA table (refer Table 8), reported how well the regression equation fits the data as well as the regression model predicts the dependent variable significantly well. The Sig. column indicated the statistical significance of the regression model that was run. Here,  $p < 0.0005$ , which is less than 0.05, and showed that overall, the regression model statistically significantly predicts the outcome variable and it is a good fit for the data [19].

Table 8: ANOVA result

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	48.952	3	16.317	84.962	0.000
	Residual	37.643	196	0.192		
	Total	86.595	199			

The model summary in Table 9 provided the R and R square values. The R value represented the simple correlation and is 0.752, which showed a high degree of correlation. The R square value denoted how much of the total variation in the dependent variable, willingness

to pay corresponding to the independent variable consisting of lifestyle adaptation, social media influence and food consumption awareness. In this case, 56.5% can be explained, which is large.

Table 9: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.752	0.565	0.559	0.43824

#### 4. Conclusion

Based on the results from this study, it can be concluded that, lifestyle adaptation, social media and food consumption awareness do significantly impact the willingness to pay (WTP) functional food by these youths. In addition, this relationship is strongly positive. Among these three factors, 'food consumption awareness' had the highest correlation with r value of 0.706, followed by social media influence ( r = 0.661) and lastly lifestyle adaptation ( r =0.618).

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