

## The Relationship Between Attitude Dimension, Social Influence and Self-Efficacy on Behavioural Intention to Consume Functional Food among Malaysian

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**Abstract:** This study is intended to minimize the gap in the literature and develop more understanding concerning the issue of unhealthy consumption behaviour among Malaysians which indeed leads to the prevalence of obesity and Non-Communicable Diseases (NCDs). Many studies had scientifically proven that functional foods, with fortified nutritional values could help prevent the risks of NCDs and improve overall health. Therefore, this study is aimed to investigate the relationship between antecedent factors of attitude dimensions (i.e., reward, necessity, confidence and safety), social influence and self-efficacy on behavioural intention to consume functional foods among Malaysians. A survey was conducted with a sample of 452 respondents by using the self-administered questionnaire. The results revealed that only reward, self-efficacy and necessity factors significantly influence consumer-behavioural intention to consume functional foods. On the other hand, confidence, safety and social influence factors have no significant bearing on consumer-behavioural intention. The results from this study can shed further light on functional foods consumption behaviour and will be valuable for health food industry marketers in formulating effective marketing communication strategies to facilitate favourable attitudinal change towards healthy foods.

**Key words:** Behavioural intention, functional food, attitude, self-efficacy, social influence

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### INTRODUCTION

To be healthy is one of the frequently mentioned reasons when people choose to consume a certain food. The World Health Organisation (WHO) has reported that unhealthy foods, unhealthy eating habits and lack of physical activity may lead to obesity which is known to be a major contributor to the global burden of food-related diseases known as Non-Communicable Diseases (NCDs). Although, non-infectious, NCDs are often chronic and life-threatening. It is a cause for concern because NCDs like kidney and heart diseases, diabetes, high cholesterol levels and certain types of cancer, are on the rise, affecting people of all age groups around the world (WHO, 2015a). The National Health and Morbidity Survey in 2011 reported that NCDs, despite being the most prevalent, preventable diseases and expensive to cure, continue to be the main health problems in Malaysia and the situation has not improved (Edularads and Wen, 2012). In order to prevent NCDs, individuals should maintain a healthy diet, such as by consuming more functional foods

and carry out physical activities. Following the trends, functional food was introduced as a new category of health food products. Functional food is defined as foods and drinks that provide health benefits that reduce the risk of diseases in addition to its nutritional value (Urala and Lahteenmaki, 2007).

Past studies had scientifically proven that individuals who consume more functional foods have reduced obesity rate and since obesity is a significant contributor to the risk of many chronic diseases, consuming functional food will improve the overall health among individuals (Pereira *et al.*, 2004). This has resulted in substantial increase in public awareness and interest in functional foods in Malaysia. Accordingly, consumers are switching to products they perceive to be healthier and can contribute to good health and well-being. However, to date, very few studies in Malaysia have reported empirical research from the consumer behaviour perspectives, particularly concerning the influence of antecedent factors towards behavioural intention to consume functional foods. Thus, the purpose of this

study was to examine the predicting power of reward, necessity, confidence, safety, social influence and self-efficacy on consumer-behavioural intention to consume functional food and also to analyse the relationship between variables.

**Literature review:** Obesity is recognised as the leading contributor of NCDs in many countries around the world including Malaysia. Due to unhealthy eating habits, the prevalence of overweight and obese individuals is occurring at an alarming rate and has developed as an epidemic of the 21st century. The world health organisation reported that in 2014, >1.9 billion adults aged 18 and above were overweight and over 600 million were obese (WHO, 2015b). According to a 2013 study by the British Medical Journal, *The Lancet*, the problem is prevalent Malaysia with 45.3% of its population rated as overweight and 49% of females and 44% of males were found to be obese (The STAR Online, 2014). Ministry of Health (2010) indicated that NCDs lead to premature deaths among Malaysian citizens and this phenomenon has the significant, twin-pronged effect of increasing healthcare costs and decreasing economic productivity due to disability and death. Consequently, more and more consumers have accepted that health foods contribute directly to their good health, thus, consumers are more inclined to adopt health-oriented changes in their eating habit including consuming more functional foods (Niva, 2007).

The majority of literature on functional food studies in most countries varies broadly in terms of their emphasis, for example, the acceptance of functional foods, research methodology, consumer knowledge and awareness, the consumer attitude towards functional foods and the associated possible health effects of the functional foods (Verbeke, 2005; Niva and Makela, 2007; Roupas and Margetts, 2009). However, the findings of these studies in many cases produced very mixed results and were not consistent with each other (Verbeke, 2005). This leads to the conclusion that the influencing factors of consumer-behavioural intention may not be consistent across different countries (Urala, 2005; Verbeke, 2005). In Malaysia, very few studies have reported empirical research concerning knowledge about consumer awareness, their perceptions towards functional foods and the influential factors towards the intention to consume functional foods among consumers (Rezai *et al.*, 2012).

TPB model by Ajzen (1991) stated that intention is the main predictor and regarded as the immediate antecedent of individual behaviour. Behavioural intention refers to a person's perceived likelihood of performing the

intended behaviour in a specific way (Ajzen, 1991). Armitage and Conner (2001) mention that, with the influence of positive attitude and perceived opportunities, a behavioural intention is likely to be performed. Rezai *et al.* (2012) and Teng *et al.* (2012) found that most of the consumers in Malaysia are willing to pay for functional foods and have a positive perception towards the intention to consume functional foods and believe that such foods are beneficial for their health. It shows that intention influences the numerous behavioural tendencies in many different settings and in addition, intention has been established to have a significant positive relationship towards actual behaviour. Prior literature has mentioned numerous antecedents that influence the consumer-behavioural intention towards the consumption of functional food. However, the antecedents were only explained in general with regard to their relationship towards the intention to consume functional foods without taking into consideration the health-protective behaviour behind it. Therefore, in this study, the antecedents factor were examined based on the unique attributes of functional food products, that such foods provide health benefits, increase well-being and lower the risk of getting certain diseases.

In previous researches, the elements of attitude towards food choice, including functional foods were measured using general attitude scales. For example, the statements of healthiness and taste were measured using scales of "bad to good" and "pleasant to unpleasant" (Poulsen, 1999; Ajzen and Fishbein, 1980) and not focusing on health benefits gained from using the functional foods. In addition, Urala (2005) argued that there is a lack of published attitude measurements that would be targeted directly to functional foods consumption behaviour. Therefore, in order to have a better prediction of consumer behaviour towards functional foods, this study adopted four dimensions of attitude developed by Urala and Lahteenmaki (2007) that are more relevant to functional food-related attitudes, which are; reward, necessity, confidence and safety. These four dimensions of attitude were chosen because functional foods are different from conventional foods in terms of extra health benefits gained from consumption of such foods.

Reward from using functional foods is defined as feeling of satisfaction and enjoyment in terms of health, mood and well-being resulting from functional food consumption (Urala and Lahteenmaki, 2004, 2007). Individuals consume functional foods not just to satisfy their hunger but also to obtain the rewards from using functional foods such as being healthy and lower risks of getting certain diseases. The necessity for functional

foods refers to the perceived need for functional food for an individual or for people in general due to the possible benefits for good health (Urala and Lahteenmaki, 2004). Therefore, attitude towards necessity to consume functional foods is important for individuals in order to obtain good health and well-being (Urala and Lahteenmaki, 2007). In terms of the confidence dimension of attitude towards functional food, in order for consumption behaviour to be performed, individuals need to have a strong confidence and trust in the food safety and benefits of using functional foods as claimed by the manufacturers and marketers (Landstrom *et al.*, 2007; Urala and Lahteenmaki, 2007). Urala and Lahteenmaki (2004) reported that confidence in functional foods is the confidence that the individual has in functional foods as foods that promote health and the reliability of scientific basis and researches of the promised health effects. Meanwhile, the safety of functional foods refers to how individual perceive the related risks or possible harmful effects when functional foods are consumed. This study concerns the analysis of the consumer-behavioural intention to consume functional food; food that comes with health claims promoting their benefits. Thus, the decision-making process towards such foods will involve risk and safety choices (Frewer *et al.*, 2003). Hence, the following hypotheses were proposed:

- H<sub>1</sub>: Perceived rewards of using functional foods are positively related to consumer-behavioural intention to consume such food
- H<sub>2</sub>: Necessity for functional foods is positively related to consumer-behavioural intention to consume such foods
- H<sub>3</sub>: Confidence in functional foods is positively related to consumer-behavioural intention to consume such foods
- H<sub>4</sub>: Perceived safety of functional foods is positively related to consumer-behavioural intention to consume such foods

Social influence of an individual is known as the perception of individual towards his/her social influences or environmental referents that are around him/her, expect him/her to act or not to act towards certain behaviour (Ajzen, 1991). According to marketing literature, it was reported that social influence such as parents, family members and friends, were the most influential people in predicting intention for the healthy eating behaviour (Fitzgerald *et al.*, 2013; Larson *et al.*, 2009; Stanton *et al.*, 2007; Baker *et al.*, 2003; Kassem *et al.*, 2003; Verbeke and Vackier, 2005). A study by Chan *et al.* (2009) in Taiwan reported that family members were the most influential

group concerning healthy eating. Studies by Smith and Paladino (2010) in Australia and Arvola *et al.* (2008) in Italy, Finland and United Kingdom, indicated that subjective norms were positively influenced the buying intention of the consumers towards organic food. Moreover, Annunziata and Vecchio (2011) stated that the significant others influence an individual towards the behavioural intention to consume functional foods in their study on Italian consumers. Thus, the following hypothesis is proposed:

- H<sub>5</sub>: Social influence is positively related to consumer-behavioural intention to consume functional foods

Despite the health benefits obtained from consuming functional foods, it is difficult to change consumer behaviour especially towards healthy consumption unless they have a strong and high level of internal motivation of self-efficacy. Bandura (1986) defined self-efficacy as the confidence one feels about performing a particular behaviour, including confidence in overcoming the barriers to achieve that behaviour. Strahan *et al.* (2002) reported that people with high levels of self-efficacy leads to a high confidence that they can engage in healthy consumption behaviour because they have a strong believe that they can succeed. Povey *et al.* (2000) found that increased self-efficacy would enhance the intention towards the behaviour to eat fruits and vegetables. Cox *et al.* (2004) reported that self-efficacy was a significant predictor towards behavioural intention to consume functional foods. In addition, Locke and Latham (1990) stated that the stronger the individual's self-efficacy, the higher his/her obligation to consume functional food and therefore, individual self-efficacy would have a positive relationship with intention towards certain behaviour and the behaviour itself. Therefore, it is hypothesised that:

- H<sub>6</sub>: Self-efficacy is positively related to consumer-behavioural intention to consume functional foods

## **MATERIALS AND METHODS**

This study employs quantitative methodology involving individual consumers aged 18 and above who went shopping at various hypermarkets in Klang valley, Malaysia. Consumers in the Klang Valley were chosen as the study samples for several reasons. Firstly, the Klang Valley has the largest number of shopping malls in Malaysia that plays a major role in attracting consumers

Table 1: List of selected shopping malls in klang valley and numbers of questionnaires

Shopping mall	Grocery store/supermarket/ hypermarket	Question. distributed	Returned and usable	Response rate (%)	Overall response rate (%)
Mid valley megamall	Carrefour, jusco and metrojaya	130	80	61.5	10.0
Ampang park	Ori supermarket	40	27	67.5	3.38
Lot 10	Isetan	40	22	55.0	2.75
Sogo	Sogo	50	23	46.0	2.88
Maju junction mall	Giant	50	35	70.0	4.38
Sungai wang plaza	Parkson and giant	80	43	53.8	5.38
Suria KLCC	Parkson, isetan and cold storage	120	55	45.8	6.88
Pavilion	Parkson	40	20	50.0	2.50
Sunway putra mall	Parkson and cold storage	90	55	61.1	6.88
Great eastern mall	Cold storage	40	16	40.0	2.00
Brem mall	Giant	40	31	77.5	3.88
Festival city mall	Econsave and parkson	80	45	56.3	5.63
Total		19	800	452	56.5

from different backgrounds. Secondly, the Klang valley is known as the focal point of consumers from other states to come for shopping, especially on weekends and public holidays which contributes to the variety of the consumer pool from different states and backgrounds. Thirdly, consumers in the Klang valley are more exposed to the information on health foods including functional foods and, finally, the variety of functional food types are widely available in most of the shopping mall outlets around the Klang valley compared to others states in Malaysia.

The cluster sampling technique was used in this study because a complete list of exact members of the population (consumers aged 18 and above) for this study cannot be determined as well as the numbers of population are >1,000,000. In addition, the lists of subjects are also widely scattered. Based on Krejcie dan Morgan (1970), it should be noted that as the population increases, the sample size increases at a diminishing rate and remains constant at 384 cases when the population reach 250,000 and above.

All of the variables included in this study were measured using multiple items drawn from previous studies. However, phrasings of the items were modified to suit the sample and local setting. To ensure consistency among variables and to avoid confusion among respondents, all of the items were measured using one to 5 point Likert scale (Ackfeldt and Coole, 2005). For the purposed of this study, attitude dimensions (reward, necessity, confidence and safety) measures were adopted from Urala and Lahteenmaki (2007), social influence measures was based on Chan *et al.* (2009) and self-efficacy measures was based from Armitage and Conner (1999) with modifications concerning the phrasing of the items to suit the functional food context in this study.

Self-administered questionnaire was distributed to the respondents personally by using mall intercept survey

method. For data collection purposes, 800 questionnaires were distributed to individual consumers in 12 shopping malls which consists of 19 grocery stores or supermarkets/hypermarket such as Giant, Cold Storage, Parkson and Isetan. Table 1 showed the list of selected shopping malls, the number of questionnaires distributed and overall response rate with a consideration of a 5 percent margin of error (Sekaran, 2006). Out of 800, a total of 452 responses were usable and used for subsequent analysis, giving a response rate of 56.5%. The sample size appears to be adequate and was comparable to several studies using adult consumers as the study sample in Malaysia. Respective sample sizes for such studies were 439 (Teng *et al.*, 2012) and 200 (Issa *et al.*, 2010). In this study, the analysis was conducted using a general functional food without any specification on different categories since functional food is a new concept in Malaysia.

## RESULTS AND DISCUSSION

**Background of the respondents:** Regarding the background of the respondents, 70.4% of the respondents are females and 29.6% are males. The majority of the respondents (74.6%) are at the ages of 18-30 and 31-40. Followed by respondents of ages 41-50 (22.3%) and finally, only 3.1% respondents are above 50 years old. With regards to the marital status of the respondents, 68.4% are married. Those who are single constitutes 30.5 and 1.1% are divorced. In terms of monthly household income, more than half of the respondents (62.1%) had a household income of below RM5001. About 16.6% respondents have household income between RM5001-RM7000. Those with household income between RM7001-RM9000 constitute 11.1% followed by 10.2% with a household income of RM9000 and above.

Table 2: Reliability coefficient for all of the variables

Variables	Items	Reliability
Consumer-behavioural intention	4	0.84
Reward	8	0.86
Necessity	6	0.91
Confidence	4	0.82
Safety	4	0.78
Social influence	4	0.82
Self-efficacy	5	0.73

Table 3: Factors influencing consumer-behavioural intention (N = 450)

Independent variables	B	SE B	$\beta$
Reward	0.44	0.05	0.48**
Necessity	0.08	0.02	0.14**
Confidence	-0.03	0.04	-0.03
Safety	-0.04	0.03	-0.06
Social influence	-0.03	0.03	-0.05
Self-efficacy	0.24	0.04	0.26**

R<sup>2</sup> = 0.43; F = 55.17, 0.00; Sig.; \*\*p<0.01; B = Unstandardised coefficient beta; SEB = Standard Error of regression coefficient;  $\beta$  = Beta coefficient

**Reliability test:** Reliability test for all variables was shown as in Table 2. The values of Cronbach’s Alpha were all higher than the lower limit of acceptability (R<sup>2</sup>>0.60) as recommended by Sekaran and Bougie (2009). Thus, it shows that a highly reliable measurement for all of the variables is obtained.

**Multiple regression analysis:** Multiple regression analysis was undertaken on the antecedent factors of behavioural intention to consume functional food; i.e. rewards, necessity, confidence, safety, social influence and self-efficacy. Table 3 showed that the relationship between independent variables (consumer-behavioural intention) and dependent variable (antecedent factors) was significant (F = 55.169; p<0.01). The model showed a moderate relationship with antecedent variables explained only 43% of the variation in consumer-behavioural intention towards functional foods. The results indicated that reward, necessity and self-efficacy were positively influenced consumer-behavioural intention to consume functional food. Therefore, hypotheses 1, 2 and 6 were accepted. Whereas, confidence, safety and social influence have no significant influence on consumer-behavioural intention and, leads to the conclusion that hypotheses 3, 4 and 5 were not supported. The results also explained that reward ( $\beta$  = 0.48) was the strongest predictor of the consumer-behavioural intention, followed by self-efficacy ( $\beta$  = 0.26) and necessity ( $\beta$  = 0.14).

The results showed that two out of three influences of consumer-behavioural intention were found in the attitude dimensions which are, reward and necessity. This shows that Malaysian consumers perceive the consumption of functional food as personally rewarding in terms of health benefits. Thus, it is necessary for them

to consume functional foods in order to maintain and promote good health and well-being. Thus, it can be said that Malaysian consumers perceive that functional foods are essential in promoting a healthy lifestyle and believe that people need to consume more functional foods to stay healthy and ward off diseases. This result is congruent with Urala and Lahteenmaki (2007) and Chen (2011) who reported that consumers showed a positive attitude towards functional foods and regarded the foods as rewarding particularly in health benefits, health promoting and necessary to be consumed. Landstrom *et al.* (2007) stated that consumers who experienced both clinical and placebo effects from using functional foods have demonstrated a positive attitude towards such foods. Thus, this shows that Malaysian consumers’ acceptance of functional food is linked to the strong beliefs and positive perceptions relating to the positive effects and benefits from functional food consumption.

The other two dimensions of attitude; confidence and safety were reported to be of no significance. This may be due to the lack of confidence and trust among Malaysian consumers in the safety of the food and in the claims of its benefits by the manufacturers of functional foods. For example, if the manufacturer of functional food claims that the food can reduce the risk of diseases or promote improved well-being, unfulfilled promises and undetectable effects could create dissatisfaction and lack of confidence among Malaysian consumers towards such food. This might hinder them from buying and consuming functional food products. Thus, Malaysian consumers’ impression in functional food safety and benefits would not determine the consumption of such food. This is in line with Landstrom *et al.* (2007) who noted that safety of functional food and consumer confidence seems to fail to have an impact on consumer-behavioural intention towards such food. In addition, Chen (2011) reported that perceived safety towards possible harmful effects of functional food does not influence the consumption of functional food in general. However, the result contradicts with the findings of previous studies. For example, Chen (2011) reported that confidence in functional foods has been found to be a crucial factor to consume such food among Taiwanese consumers. This is consistent with Urala and Lahteenmaki (2004, 2007) who found that confidence in functional foods significantly influences the intention to use functional foods after perceived reward. Likewise, Verbeke (2005) reported that confidence in the functional food that were said to have positive health effects demonstrated a positive relationship with consumers’ intention to consume functional food.

The result also demonstrated that Malaysian consumers' self-efficacy has a positive relationship with their behavioural intention to consume functional food, although the ability of self-efficacy to influence consumer-behavioural intention was weak compared to reward. Thus, an increase in consumers' self-efficacy would enhance the behavioural intention to consume functional food among Malaysians. This result is comparable to Cox *et al.* (2004) who reported that self-efficacy seems to be the most important factor in consumers' intention to consume functional food. Likewise, this is consistent with Armitage and Conner (1999) who reported that self-efficacy independently predicted the behavioural intention to consume health foods among consumers in United Kingdom. These results are also comparable to previous studies in different contexts, such as a fruit and vegetable diet (Povey *et al.*, 2000), physical exercise (Weinberg and Gould, 2007) and the intention to get a mammogram screening (Tolma *et al.*, 2006) that explained the important of self-efficacy as a significant predictor towards consumer-behavioural intention. One plausible reason is because generally individuals with high levels of self-efficacy are more expected to make an effort to switch their behaviour towards a healthy diet because they believe they can succeed (Strahan *et al.*, 2002). This indicates that individuals with strong self-efficacy have a higher tendency to consume functional foods in their everyday life in order to stay healthy. The significant influence of self-efficacy on consumer-behavioural intention is probably due to the nature of the individual's strong internal self-motivation. Thus, when people are internally motivated to be healthy, they are driven to seek healthy food, for instant functional food whereby they believe that consuming such food can lead to health benefits and healthy well-being.

Another antecedent that appears to have no significant relationship with consumer-behavioural intention to consume functional food among Malaysian consumers is social influence. This indicates that the personal considerations to consume functional food for one's increased health are better predictors of intentions than the social influence. One of the possible explanations is that individuals with a high level of health consciousness and strong self-efficacy are more inclined to participate in activities related to health in order to maintain good health and excellent well-being, for instance to consume a healthy diet (such as functional food, fruits and vegetables) and physical exercises. Thus, the influence of others would be insignificant or less. Another reason for the lack of a significant influence by the social influence is more likely due to the human nature

of health survival, where, in general, individuals make decisions on food choice based on their liking, ability and suitability with their own body. This may be due to the beliefs that consumers' own behaviour can directly affect their health (Rezai *et al.*, 2012). Thus, individuals will only consume foods that they think will satisfy their wants and needs as well as can provide benefits in terms of good health and well-being. The result of this study was found to be inconsistent with previous studies by Verbeke and Vackier (2005), Chan *et al.* (2009), Smith and Paladino (2010), Annunziata and Vecchio (2011) and Fitzgerald *et al.* (2012) who generally found that significant others influence an individual towards healthy food consumption such as functional foods, organic food, fruits and vegetables. However, it is consistent with Brewer *et al.* (1999) who noted that social influences did not have any correlation with behavioural intention to consume healthy food.

Furthermore, this study also reveals that the reward from using functional food has the highest positive influence on the level of consumer-behavioural intention and the strongest predictor of behavioural intention performed by the Malaysian consumers, followed by self-efficacy and necessity. This means that the stronger the consumers' belief in the rewards they will receive from using functional food (for example, promote their well-being, performance, health and mood), the greater their behavioural intention would be. This is consistent with Urala and Lahteenmaki (2007) who found that perceived reward is the most important dimension of attitude among Finnish consumers in influencing behavioural intention to consume functional food. In addition, apart from the strong belief among Malaysian consumers in the necessity to consume functional food in order to stay healthy as well as getting beneficial health rewards, the behavioural intention to consume functional food is also well effected by the beliefs in individual self-efficacy, in other words, the belief that they can perform the behaviour. Therefore, they are more responsive and motivated to consume functional foods for better health and to promote well-being and a higher achievement in life.

## **CONCLUSION**

The result from regression equation on six antecedent factors of consumer-behavioural intention among Malaysian consumers, which are: reward, necessity, confidence, safety, social influence and self-efficacy, concludes that only three factors appeared as significant predictors of consumer-behavioural intention-reward, necessity and self-efficacy. The result also shows that the reward from using functional food was the strongest

predictor of the consumer-behavioural intention, followed by self-efficacy and necessity. Another three antecedents-confidence, safety and social influence- appear to have no significant relationship with consumer-behavioural intention.

Therefore, out of the six hypotheses tested, three hypotheses were accepted. In other words, three antecedents were positively related to consumer-behavioural intention (i.e., reward, self-efficacy and necessity). Whereas the hypotheses formulated for the relationship between consumer-behavioural intention and confidence, safety and social influences, did not appear to be supported. Even though three of the hypothesised relationships were not supported in this study, the results are extremely meaningful because they focus on only the most salient effects. In addition, the results showed that concurrent analysis of antecedents caused some of the antecedents to become less important.

The finding would shed further light on the knowledge in the area of functional food consumption behaviour, especially when it comes to discussing the relationship between attitude dimensions (i.e. reward, necessity, confidence and safety), social influence and self-efficacy on consumer-behavioural intention to consume functional food among Malaysians. Thus, marketers and the government of Malaysia can use this information in promoting functional food buying and consumption, as well as practicing a healthy diet and a healthy lifestyle among Malaysians.

## REFERENCES

- Ackfeldt, A.L. and L.V. Coote, 2005. A study of organizational citizenship behaviors in a retail setting. *J. Bus. Res.*, 58: 151-159.
- Ajzen, I. and M. Fishbein, 1980. *Understanding Attitudes and Predicting Social Behavior*. Prentice-Hall, Englewood Cliffs, New Jersey, ISBN-13: 978-0139364358, Pages: 278.
- Ajzen, I., 1991. The theory of planned behavior. *Organiz. Behav. Hum. Decis. Process.*, 50: 179-211.
- Annunziata, A. and R. Vecchio, 2011. Factors affecting Italian consumer attitudes toward functional foods. *AgBioForum*, 14: 20-32.
- Armitage, C. and M. Conner, 2001. Efficacy of the theory of planned behavior: A meta-analysis review. *Br. J. Social Psychol.*, 40: 471-499.
- Armitage, C.J. and M. Conner, 1999. Distinguishing perceptions of control from self-efficacy: Predicting consumption of a low-fat diet using the theory of planned behavior. *J. Applied Social Psychol.*, 29: 72-90.
- Arvola, A., M. Vassallo, M. Dean, P. Lampila, A. Saba, L. Lahteenmaki and R. Shepherd, 2008. Predicting intentions to purchase organic food: The role of affective and moral attitudes in the theory of planned behaviour. *Appetite*, 50: 443-454.
- Baker, C.W., T.D. Little and K.D. Brownell, 2003. Predicting adolescent eating and activity behaviors: The role of social norms and personal agency. *Health Psychol.*, 22: 189-198.
- Bandura, A., 1986. *Social Foundations of Thought and Action: A Social Cognitive Theory*. Prentice Hall, Englewood Cliffs, NJ., USA., ISBN-13: 978-0138156145, Pages: 617.
- Brewer, J.L., A.J. Blake, S.A. Rankin and L.W. Douglass, 1999. Theory of reasoned action predicts milk consumption in women. *J. Am. Dietetic Assoc.*, 99: 39-44.
- Chan, K., G. Prendergast, T. Bech-Larsen and A. Gronhoj, 2009. Communicating healthy eating to adolescents. *J. Consum. Market.*, 26: 6-14.
- Chen, M.F., 2011. The joint moderating effect of health consciousness and healthy lifestyle on consumers' willingness to use functional foods in Taiwan. *Appetite*, 57: 253-262.
- Cox, D.N., A. Koster and C.G. Russell, 2004. Predicting intentions to consume functional foods and supplements to offset memory loss using an adaptation of protection motivation theory. *Appetite*, 33: 55-64.
- Edwards, A. and L.W. Wen, 2012. Liow: Time to provide incentives for staying healthy. *The STAR Online*. <http://www.thestar.com.my/news/nation/2012/07/16/liow-time-to-provide-incentives-for-staying-healthy/>.
- Fitzgerald, A., C. Heary, C. Kelly, E. Nixon and M. Shevlin, 2013. Self-efficacy for healthy eating and peer support for unhealthy eating are associated with adolescents' food intake patterns. *Appetite*, 63: 48-58.
- Frewer, L., J. Scholderer and N. Lambert, 2003. Consumer acceptance of functional foods: Issues for the future. *Br. Food J.*, 105: 714-731.
- Issa, Z.M., H. Hamdan and N.H. Ismail, 2010. Identifying the customers' acceptance levels towards healthy cakes at hypermarkets in Klang Valley, Malaysia. *Asian Social Sci.*, 6: 170-177.
- Kassem, N.O., J.W. Lee, N.N. Modeste and P.K. Johnston, 2003. Understanding soft drink consumption among female adolescents using the theory of planned behavior. *Health Educ. Res.*, 18: 278-291.
- Krejcie, R.V. and D.W. Morgan, 1970. Determining sample size for research activities. *Educ. Psychol. Meas.*, 30: 607-610.

- Landstrom, E., U.K. Hursti, W. Becker and M. Magnusson, 2007. Use of functional foods among Swedish consumers is related to health-consciousness and perceived effect. *Br. J. Nutr.*, 98: 1058-1069.
- Larson, N.I., D. Neumark-Sztainer, L.J. Harnack, M.M. Wall, M.T. Story and M.E. Eisenberg, 2009. Fruit and vegetable intake correlates during the transition to young adulthood. *Am. J. Prev. Med.*, 35: 33-37.
- Locke, E.A. and G.P. Latham, 1990. *A Theory of Goal Setting and Task Performance*. Prentice-Hall, Englewood Cliffs, NJ.
- Ministry of Health, 2010. National strategic plan for non-communicable disease: Medium term strategic plan to further strengthen the cardio vascular diseases and diabetes prevention and control program in Malaysia (2010-2014). Non-Communicable Disease Section, Disease Control Division, Ministry of Health Malaysia, Putrajaya, Malaysia.
- Niva, M. and J. Makela, 2007. Finns and functional foods: Socio-demographics, health efforts, notions of technology and the acceptability of health-promoting foods. *Int. J. Consum. Stud.*, 31: 34-45.
- Niva, M., 2007. All foods affect health: Understandings of functional foods and healthy eating among health-oriented Finns. *Appetite*, 48: 384-393.
- Pereira, M.A., E. O'Reilly, K. Augustsson, G.E. Fraser and U. Goldbourt et al., 2004. Dietary fiber and risk of coronary heart disease: A pooled analysis of cohort studies. *Arch. Intern. Med.*, 164: 370-376.
- Poulsen, J.B., 1999. Danish consumers' attitudes towards functional foods. MAPP Working Paper No. 62, The Aarhus School of Business, Aarhus University, Aarhus, Denmark.
- Povey, R., M. Conner, P. Sparks, R. James and R. Shepherd, 2000. Application of the theory of planned behaviour to two dietary behaviours: Roles of perceived control and self-efficacy. *Br. J. Health Psychol.*, 5: 121-139.
- Rezai, G., P.K. Teng, Z. Mohamed and M.N. Shamsudin, 2012. Functional food knowledge and perceptions among young consumers in Malaysia. *Int. J. Econ. Manage. Sci.*, 6: 28-33.
- Roupas, P.W. and C. Margetts, 2009. Regulatory Issues and Functional Health Claims for Bioactive Dairy Compounds. In: *Bioactive Components in Milk and Dairy Products*, Park, Y.W. (Ed.). Wiley-Blackwell, Ames, USA., pp: 311-327.
- Sekaran, U. and R. Bougie, 2009. *Research Methods for Business: A Skill Building Approach*. 5th Edn., John Wiley and Sons Ltd., New York, UK.
- Sekaran, U., 2006. *Research Methods for Business: A Skill Building Approach*. 4th Edn., Wiley India Pvt. Ltd., India, ISBN-13: 9788126509287, Pages: 464.
- Smith, S. and A. Paladino, 2010. Eating clean and green? Investigating consumer motivations towards the purchase of organic food. *Aust. Marketing J.*, 18: 93-104.
- Stanton, C.A., S.L. Green and E.A. Fries, 2007. Diet-specific social support among rural adolescents. *J. Nutr. Educ. Behav.*, 39: 214-218.
- Strahan, E.J., J.S. Steven and P.Z. Mark, 2002. Subliminal priming and persuasion: Striking while the iron is hot. *J. Exp. Psychol.*, 38: 556-568.
- Teng, P.K., G. Rezai, Z. Mohamed and M.N. Shamsudin, 2012. Malaysian Consumers' willingness-to-pay for functional food. *Proceedings of the 2nd International Conference on Management*, June 11-12, 2012, Kedah, Malaysia -.
- The STAR Online, 2014. Malaysia's obesity rate highest in Asia. 16 June 2014. <http://www.thestar.com.my/News/Nation/2014/06/16/obesity-malaysia-high-est-in-asia-says-pm-science-advisor/>.
- Tolma, E.L., B.M. Reininger, A. Evans and J. Ureda, 2006. Examining the theory of planned behavior and the construct of self-efficacy to predict mammography intention. *Health Educ. Behav.*, 33: 233-251.
- Urala, N. and L. Lahteenmaki, 2004. Attitudes behind consumers' willingness to use functional foods. *Food Qual. Preference*, 15: 793-803.
- Urala, N. and L. Lahteenmaki, 2007. Consumers changing attitudes towards functional foods. *Food Qual. Prefer.*, 18: 1-12.
- Urala, N., 2005. *Functional Foods in Finland: Consumers' Views, Attitudes and Willingness to Use*. VTT Publications, Finland, ISBN: 9789513866747, Pages: 195.
- Verbeke, W. and I. Vackier, 2005. Individual determinants of fish consumption: Application of the theory of planned behaviour. *Appetite*, 44: 67-82.
- Verbeke, W., 2005. Consumer acceptance of functional foods: Socio-demographic, cognitive and attitudinal determinants. *Food Qual. Preference*, 16: 45-57.
- WHO., 2015. Non-communicable diseases. Fact Sheet 355. <http://www.who.int/mediacentre/factsheets/fs355/en/>.
- WHO., 2015. Obesity and overweight. Fact Sheet No. 311, World Health Organization, Geneva, Switzerland. <http://www.who.int/mediacentre/factsheets/fs311/en/>.
- Weinberg, R.S. and D. Gould, 2007. *Foundation of Sport and Exercise Psychology*. 4th Edn., Human Kinetics Publisher, Champaign, IL.