

Appealing to the health-conscious: low glycaemic food purchase behaviour

¹Tan, B.Z., ²Lau, T.C., ^{3,*}Tan, B.C. and ⁴Lo, Y.T.

¹*Universiti Tunku Abdul Rahman, Faculty of Accountancy and Management, Jalan Sungai Long, Bandar Long, 43000 Kajang, Selangor, Malaysia*

²*Faculty of Business and Law, School of Management and Marketing, Taylors University, 1, Jalan Taylors, Subang Jaya 47500, Selangor, Malaysia*

³*Multimedia University, Faculty of Management, Persiaran Multimedia, 63100 Cyberjaya, Selangor, Malaysia*

⁴*XJTLU Entrepreneur College (Taicang), Xi'an Jiaotong-Liverpool University, Suzhou, Jiangsu, People's Republic of China*

Article history:

Received: 4 December 2021

Received in revised form: 24 January 2022

Accepted: 27 January 2022

Available Online: 7 December 2022

Keywords:

Healthy living,
Low glycaemic food,
Purchase behaviour

DOI:

[https://doi.org/10.26656/fr.2017.6\(6\).890](https://doi.org/10.26656/fr.2017.6(6).890)

Abstract

Frequent consumption of high glycaemic food may increase the risk of chronic diseases such as diabetes, high blood pressure, high cholesterol, heart disease and more. Low glycaemic food has the benefit of controlling ideal weight, lowering total cholesterol, better blood glucose control and more. Consumers tend to consume low glycaemic food due to various reasons, such as health issues, environmental concerns, peer pressure and others. In this study, various factors such as food attributes, environmental concerns, price fairness, knowledge of low glycaemic food and health concern are investigated on their impact on the purchasing behaviour of low glycaemic food. Quantitative research with the use of a survey questionnaire was adopted. The convenience sampling method was used to ensure the largest possible sample with the least amount of administration and was distributed via online Google form. A final 313 valid responses via online survey were analysed. Based on the findings, health concerns, environmental concerns and knowledge of glycaemic food had a positive relationship to the purchasing behaviour of low glycaemic food. The findings can be used by food manufacturers, food technologists and retailers to increase health awareness to bring positive benefits to the general well-being of consumers.

1. Introduction

Asia has been infamously labelled as the centre of type two diabetes (Ma and Chan, 2013). Easy access to a vast variety of food all year long in Asia made the transition from pre-diabetes into diabetes significantly higher. Obesity is one of the main contributors to developing diabetes. Prior research discovered that after meals, our bloodstream will have a larger variation in blood glucose. This is a significant sign of glucose tolerance for type two diabetes (Kaur *et al.*, 2016). Choosing the right types and quantity of food to consume could significantly reduce the potential of having blood sugar level variation in our bodies.

The glycaemic index (GI) is a numeric value assigned to foods based on how slowly or quickly they can increase blood glucose levels. It is a rating system for carbohydrate-containing foods. Foods having a low

GI are the ones that tend to release glucose slowly and steadily. By contrast, foods that fall high on the GI scale release glucose rapidly. Foods with a low GI help to facilitate weight loss and promote healthy living. People who have or are at risk of diabetes should eat foods with a low GI. This is because they tend to have low amounts of insulin (type 1 diabetes) or a high degree of resistance to insulin (type 2 diabetes). Insulin is the hormone that keeps blood glucose levels under check. In its absence, blood sugars may increase when a person eats high-glycaemic foods. Low-glycaemic foods release sugar gradually and thus will prevent an abrupt increase in blood sugar. The low GI refers to a GI value of 55 or less. Low-GI foods include most fruits and vegetables, whole or minimally processed grains, beans, pasta, low-fat dairy products and nuts.

The purpose of this research is to examine

*Corresponding author.

Email: bctan@mmu.edu.my

purchasing behaviour of low glycaemic food in Malaysia. Specifically, the aim is to investigate the relationship between the independent variables (Food Attribute, Environmental Concern, Price Fairness, Knowledge of Low Glycaemic Food, and Health Concern) towards purchasing behaviour toward low glycaemic food. At this moment, there are hardly any studies that look at the purchasing behaviour of low glycaemic food. Therefore, the current research will fill an important gap in addressing the dearth of studies in this area.

The current study will adopt the Theory of Planned Behaviour (Ajzen, 2006) and the Theory of Price Fairness (Konuk, 2017). The theory of Planned Behaviour looks at the attitude and behaviour of customers' consistency with a good inclination towards a brand when they are making a purchase decision (Ajzen, 2006). Each individual have different type of inclinations, personal resources and other basic needs to embark on a given behaviour. For the Price Fairness Theory, the concept of fairness involves a judgment of the ratio between outcomes and inputs in an exchange (Homburg *et al.*, 2005). According to the equity theory, consumers do not only think about what they pay and get when considering buying a product, they also consider what the firm pays (costs) and what it gets (price).

In studies concerning organic food purchases, it was discovered that consumers will choose organic food over non-organic food if they believe the health effect related to organic food is better than non-organic food. Customers consuming organic food as their daily routine are more likely to pay the price incur for organic food as compared to non-organic food. Organic food is mostly pricier than non-organic food where the process of production is longer and the volume of production of each product is lower. Organic food that is more environmentally friendly are perceived to be healthier and a safer choice for younger children, pregnant women and patients who are unwell (Paul and Rana, 2012).

In Nelson and McLeod (2005), they found that consumers will learn the pattern of consuming a product by the behaviour they learn and experience. Firstly, they will learn from their family member and parents. Children are learning the behaviour of their parents in their early life cycle and this will influence their outlook later in their adult life. Secondly, consumers learn the consuming behaviour by peers, and usually, peer pressure will influence their purchasing behaviour. Thirdly, media which includes various forms of social media also play an important role. The information on social media platforms will have a direct influence on consumers' purchasing behaviour.

According to Pollard *et al.* (1998), consumers need to understand the label of the food they purchase. Sellers should indicate the ingredient on the outer packaging of the product to increase customers' trust in the product they going to purchase. Lindeman and Väänänen (2000) explained that environmentally friendly products are more likely to be accepted by consumers. According to Chen (2007), some customers see the price to equate with products quality. Some customers are more price-sensitive, and they will look for price discounts on a particular product. Customers' knowledge of a product will affect their purchasing intention and the benefit of the product. According to Bredahl (2000), customers need to be educated by the seller about the product information and strong points. Paul and Rana (2012) discovered that when customers make the decision to choose a product, they will focus on the health attributes of these products, followed by pricing and later only they will consider other factors related to their diet plan and environmental issues. Deterioration of a person's health is the main motivating factor that encourages people to take organic food. From another point of view, consumers who routinely take organic food do so as an investment toward future lower medical fees. They believe that if they are healthier, they are likely not to develop the chronic disease as compared to those who are less concerned about health issues. Therefore, this study aimed to examine the influence of food attributes, environmental concerns, price fairness, knowledge of low glycaemic food and health concerns on the purchasing behaviour of low glycaemic food.

2. Materials and methods

2.1 Research framework and hypotheses

Figure 1 illustrates the proposed research framework. From the framework, the following hypotheses were proposed:

H1: Food attribute has a positive effect on the purchasing behaviour of low glycaemic food.

H2: Environmental concern has a positive effect on the purchasing behaviour of low glycaemic food.

H3: Price fairness has a positive effect on the purchasing behaviour of low glycaemic food.

H4: Knowledge of low glycaemic food has a positive effect on the purchasing behaviour of low glycaemic food.

H5: Health concerns has a positive effect on the purchasing behaviour of low glycaemic food.

2.2 Research methods

In this study, a questionnaire-based approach was applied. The unit of analysis was individual consumers

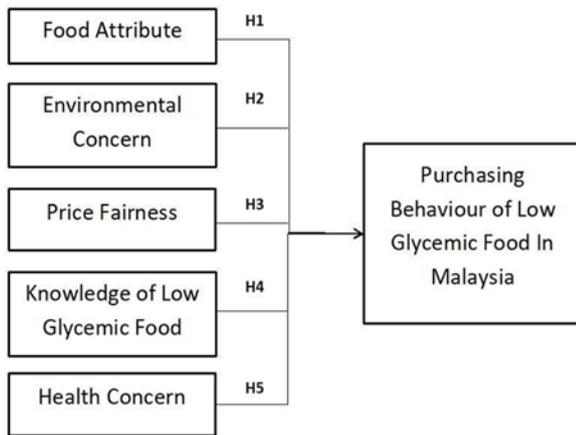


Figure 1. Research framework

aged 17 and above. Due to the nature of the study, the use of a self-administered questionnaire was more effective as it allows researchers to collect more responses from consumers. The questionnaire was designed using simple and unbiased wording so that the respondents could understand the questions easily. Question items were adapted from earlier studies with modifications after the initial pilot study and pre-test. The survey instruments of purchase behaviour (6 items) were adopted from Bredahl (2000) and Pliner and Hobden (1992), food attribute (5 items) and health concern (5 items) from Pollard *et al.* (1998), environmental concern (5 items) from Lindeman and Väänänen (2000), price fairness (4 items) from Chen (2007) and finally knowledge of low glycaemic food (4 items) from Bredahl (2000). All items were measured using a five-point Likert scale. In terms of the method used to collect the data, survey questionnaires were conducted via social media platforms. The convenience sampling method was used to ensure the largest possible sample with the least amount of administration and was distributed via online Google form. The questionnaire was prepared online and circulated to 330 respondents. According to Saunders *et al.* (2012), a sample containing 300 respondents was deemed sufficient for this study. Data collected from respondents' self-administered questionnaires were analysed with SPSS version 21 software. Data analysis conducted were descriptive analysis, factor analysis, reliability analysis, and multiple linear regression analysis.

3. Results

3.1 Descriptive analysis

A total of 313 completed questionnaires were analysed after data checking, editing and cleaning. Of this, 50.9% of the respondents were female, the majority (39.6%) in the age group of 26-40 years old and 33.5% earned a monthly income of RM3,001-RM5,000. In terms of marital status and educational background, the majority of respondents were married (51.8%) and has bachelor's degrees (33.5%).

3.2 Factor analysis and scale reliability

At the initial stage, factor analysis was conducted to identify factors that statistically explain the variation and co-variation among measures. Factor analysis can be viewed as a data-reduction technique since it reduces a large number of overlapping measured variables to a much smaller set of factors (Green and Salkind, 2008). In interpreting the factor, only a loading of 0.5 or greater on the factor was considered (Igbaria *et al.*, 1995). Results from the factor analysis indicated that six significant factors with eigenvalues greater than 1 contributed 69.85% of the total of 29 items (Table 1). The KMO measure of sampling adequacy for the items was 0.907 (that is, > 0.7), indicating sufficient inter-correlations of Bartlett's Test of Sphericity, which was found to be significant (Chi-square = 6780.894, $p < 0.005$). Thus, the sample size of 313 was adequate and satisfactory in this study. The Cronbach alpha for each factor was shown in Table 1. Cronbach alpha for all the six variables were greater than 0.5 which means that the scale scores for each of the dimensions were reasonably reliable (Hair *et al.*, 1998).

3.3 Multiple regression analysis

Multiple linear regression was performed to test hypotheses 3 to 5. The result of this regression was shown in Table 2. As highlighted, the overall result for the regression model was significant (Significance = 0.000). From the adjusted R square value (Adjusted R² = 0.704), the five independent variables contributed 70.4% towards purchasing behaviour. From the analysis, health concern, environmental concern and knowledge of low glycaemic food contributed significantly towards purchasing behaviour whereas food attribute and price fairness did not. The results of the standardized coefficient (beta) revealed that health concern (beta = 0.419) was the most important variable that contributed to the dependent variable followed by knowledge of low glycaemic food (beta = 0.286) and environmental concern (beta = 0.225). The results of tolerance and VIF value for each variable were also displayed in Table 2. Each variable tested the different dimensions clearly and without any multi-collinearity problem as indicated by the tolerance rate of more than 0.1 and VIF < 10 (Hair *et al.*, 1998).

4. Discussion

Results indicated that health concern is the strongest determinant in influencing purchasing behaviour of low glycaemic food in Malaysia. According to Paul and Rana (2012), when customers make the decision to purchase a healthy product, they will firstly focus on health concerns, followed by pricing, and only later they will

Table 1. Factor analysis and scale reliability

Variables	Items	Factor Loading	No of Items	Reliability
Purchasing behaviour	• I am willing to purchase low glycaemic food if they are available.	0.773	6	0.886
	• If I wanted to, I could buy low glycaemic food instead of high glycaemic food.	0.713		
	• It's mostly up to me whether or not to buy low glycaemic food.	0.697		
	• I can afford time and money to purchase low glycaemic food.	0.623		
	• Purchasing low glycaemic food is easy.	0.574		
	• I will try to purchase low glycaemic food in the forthcoming months.	0.532		
Food Attribute	• Low glycaemic food has good quality.	0.711	5	0.828
	• Low glycaemic food taste good.	0.634		
	• Low glycaemic food is fresh.	0.587		
	• I often buy products that are labelled as low glycaemic food.	0.570		
	• When I buy a product, I will search for food that is certified as glycaemic certified food.	0.567		
Environmental Concern	• Low glycaemic food is produced without harmful to the wildlife animal.	0.689	5	0.824
	• Low glycaemic food has environmentally friendly packaging.	0.660		
	• Low glycaemic food is produced with environmental protection in mind.	0.588		
	• It is important that humans maintain good balance with nature for our long-term survival.	0.575		
	• Human interferences with nature often produce disastrous consequences.	0.532		
	• Low glycaemic food is not expensive.	0.819		
	• Low glycaemic food offers a good value for the money.	0.693		
Price Fairness	• Low glycaemic food distributors pay fair price to the farmers.	0.512	4	0.774
	• Low glycaemic food is produced by companies that consider and care about the social environment.	0.502		
	• I am aware of low glycaemic food.	0.694		
	• I am familiar with the term of low glycaemic Index (Low GI).	0.636		
Knowledge of Low Glycemic Food	• I had purchased low glycaemic food before.	0.528	4	0.846
	• I am interested in finding out more about low glycaemic food.	0.512		
	• I choose food carefully to ensure good health.	0.716		
	• I consider myself as a health-conscious consumer.	0.642		
Health Concern	• I often think about health-related issues.	0.584	5	0.851
	• Low glycaemic food has least harmful ingredients.	0.573		
	• Low glycaemic food helps to enhance health and well-being.	0.531		

Table 2. Results of regression analysis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	0.550	0.134		4.105	0.000		
Health Concern	0.389	0.045	0.419	8.613	0.000	0.402	2.490
Food Attribute	0.028	0.040	0.031	0.691	0.490	0.460	2.174
Environmental Concern	0.223	0.045	0.225	4.972	0.000	0.463	2.159
Price Fairness	0.001	0.040	0.001	0.021	0.983	0.478	2.094
Knowledge of Low Glycaemic Food	0.243	0.042	0.286	5.729	0.000	0.381	2.626

Dependant variable: purchasing behaviour

consider other factors related to their diet plan and environmental issues. The possible deterioration of a person's health is the main concern that motivates people to take low glycaemic food. Consumers who regularly consume low glycaemic food do so as an investment towards future lower medical fees. If they are in a better health condition, they are more likely not to develop chronic diseases compared to those who are less concerned about their health. Pollard *et al.* (1998) stated that the increase in medical fees made consumers better aware of health-related issues.

Knowledge of low glycaemic food is the second most important contributor towards purchasing behaviour of low glycaemic food. Chaniotakis *et al.* (2009) suggested that buying intention toward a specific brand will be influenced by the product's benefit and the knowledge. To be more specific, when consumers choose a brand, it will need to fulfil their expectations of that particular brand (Yeow *et al.*, 2012). This expectation will be followed by benefits, pricing and quality of the product (Yeow *et al.*, 2012). When customers assess a product, they will rely on their knowledge of these products when making the decision to purchase. Hence, customer knowledge will affect customers' purchasing intention. According to Bredahl (2000), customers need to be educated by the seller about the product specifications and benefits.

Environmental concern is also supported in the result. There are many factors that will influence the decision of the consumer while purchasing. Customer intention when making a purchase may be related to demographic factors, their current lifestyle, the availability of the product and the health benefit (Paul and Rana, 2012). Consumers will learn the pattern of consuming a product by the behaviour they learn and experience from many different aspects. Firstly, the consumer will learn the pattern from their family member and parents. Children are learning the behaviour of their parents and this will influence their decision making later in their adulthood. Secondly, consumers also learn the consuming behaviour through peers, where peer pressure will influence their purchasing behaviour. Thirdly, media is also playing an important role where information on the social media platform will have a direct influence when making a purchasing decision. The intention of customer purchasing behaviour will be influenced by their ecological awareness and their preference for ecological development. The intention to purchase is higher in the group of customers that have high ecological awareness. They will routinely purchase organic products on a regular basis. Their satisfaction with organic vs non-organic food is different as well.

5. Conclusion

This paper examines the influence of food attributes, environmental concerns, price fairness, knowledge of low glycaemic food and health concerns on the purchasing behaviour of low glycaemic food. The current research is of theoretical significance since it adopted the Theory of Planned Behaviour (Ajzen, 2006) and the Theory of Price Fairness (Konuk, 2017). Future researchers could extend and include other variables for investigation. Furthermore, this study addresses the research gap as it is one of the very few studies that look specifically at the purchase behaviour of low glycaemic food. The results from this research would be of interest to companies promoting healthy living and healthy food products in Malaysia. By being sensitive to the specific consumer's preference, companies would be able to better predict the behavioural patterns of these consumers. Furthermore, corporations also need to be aware that consumers would only act if they believe that purchasing low glycaemic products make a difference in improving their overall health. Hence, convincing consumers and changing the mindset of pre-believers would be crucial. These would be some of the challenges that companies in the low glycaemic food market need to consider in promoting their product.

Conflict of interest

The authors declare no conflict of interest.

References

- Ajzen, I. (2006). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Bredahl, L. (2001). Determinants of consumer attitudes and purchase intentions with regard to genetically modified food—results of a cross-national survey. *Journal of Consumer Policy*, 24(1), 23-61. <https://doi.org/10.1023/A:1010950406128>
- Chaniotakis, I., Lymperopoulos, C. and Soureli, M. (2009). A Research Model for Consumers' Intention of Buying Private Label Frozen Vegetables. *Journal of Food Products Marketing*, 15(2), 152-163. <https://doi.org/10.1080/10454440802317006>
- Chen, F.F. (2007). Sensitivity of goodness of fit indexes to lack of measurement invariance. *Structural Equation Modeling: A Multidisciplinary Journal*, 14 (3), 464-504. <https://doi.org/10.1080/10705510701301834>
- Green, S.B. and Salking, N.J. (2008). Using SPSS for Windows and Macintosh: Analyzing and understanding data. 5th ed. New York, USA:

Pearson International Edition

- Hair, J.F., Anderson, R.E., Tatham, R.L. and Black, W.C. (1998). *Multivariate Data Analysis*. Englewood Cliffs, New Jersey, USA: Prentice Hall.
- Homburg, C., Koschate, N. and Hoyer, W.D. (2005). Do satisfied customers really pay more? A study of the relationship between customer satisfaction and willingness to pay. *Journal of Marketing*, 69(2), 84-96. <https://doi.org/10.1509/jmkg.69.2.84.60760>
- Igbaria, M., Iivari, J. and Maragahh, H. (1995). Why do individuals use computer technology? A Finnish case study. *Information and Management*, 5, 227-238. [https://doi.org/10.1016/0378-7206\(95\)00031-0](https://doi.org/10.1016/0378-7206(95)00031-0)
- Kaur, B., Quek Yu Chin, R., Camps, S. and Henry, C. (2016). The impact of a low glycaemic index (GI) diet on simultaneous measurements of blood glucose and fat oxidation: A whole body calorimetric study. *Journal of Clinical and Translational Endocrinology*, 4, 45-52. <https://doi.org/10.1016/j.jcte.2016.04.003>
- Konuk, F. (2017). Price fairness, satisfaction, and trust as antecedents of purchase intentions towards organic food. *Journal of Consumer Behaviour*, 17(2), 141-148. <https://doi.org/10.1002/cb.1697>
- Lindeman, M. and Väänänen, M. (2000). Measurement of ethical food choice motives. *Appetite*, 34(1), 55-59. <https://doi.org/10.1006/appe.1999.0293>
- Ma, R.C. and Chan, J.C. (2013). Type 2 diabetes in East Asians: similarities and differences with populations in Europe and the United States. *Annals of the New York Academy of Sciences*, 1281(1), 64. <https://doi.org/10.1111/nyas.12098>
- Nelson, M.R. and McLeod, L.E. (2005). Adolescent brand consciousness and product placements: awareness, liking and perceived effects on self and others. *International Journal of Consumer Studies*, 29(6), 515-528. <https://doi.org/10.1111/j.1470-6431.2005.00429.x>
- Paul, J. and Rana, J. (2012). Consumer behavior and purchase intention for organic food. *Journal of Consumer Marketing*, 29(6), 412-422. <https://doi.org/10.1108/07363761211259223>
- Pliner, P. and Hobden, K. (1992). Development of a scale to measure the trait of food neophobia in humans. *Appetite*, 19(2), 105-120. [https://doi.org/10.1016/0195-6663\(92\)90014-W](https://doi.org/10.1016/0195-6663(92)90014-W)
- Pollard, T.M., Steptoe, A. and Wardle, J. (1998). Motives underlying healthy eating: using the Food Choice Questionnaire to explain variation in dietary intake. *Journal of Biosocial Science*, 30(2), 165-179. <https://doi.org/10.1017/S0021932098001655>
- Saunders, M., Lewis, P. and Thornhill A. (2012). *Research Methods for Business Students*. 6th ed. United Kingdom: Pearson Education.
- Yeow, J.A., Chow, M.M., Cheak, A.P.C. and Soon, Y.H. (2012). Develop a framework on consumers buying attitude: a study on private label brand products. In *International Conference of Management, Economics and Finance*, p. 611-627. Sarawak, Malaysia.