

Supplements purchase intention: young consumer's perspective

Sook Fern Yeo

*Faculty of Business, Multimedia University, Melaka, Malaysia and
Department of Business Administration, Daffodil International University,
Dhaka, Bangladesh*

Cheng Ling Tan

*Graduate School of Business, Universiti Sains Malaysia, George Town, Malaysia and
Department of Information Technology and Management,
Daffodil International University, Dhaka, Bangladesh*

Irene Yoke Chu Leong

*Academy of Language Studies, MARA University of Technology–Melaka Campus,
Melaka, Malaysia*

Dario Natale Palmucci

University of Turin, Turin, Italy, and

Yu Jian Then

Faculty of Business, Multimedia University, Melaka, Malaysia

Abstract

Purpose – This study aims to investigate the factors that influence young consumers' purchase intention towards dietary supplements (DS) in Malaysia.

Design/methodology/approach – The supplement industry in Malaysia has been growing rapidly recently due to a paradigm shift in healthcare management, from curative to prevention. Thus, it has sparked interest to conduct a study on the factors that influence young consumers' purchase intentions towards DS. With a response rate of 74.5%, a survey questionnaire was used to elicit data from 149 Gen-Y respondents who consume supplements on a regular basis.

Findings – The results revealed that the influencing factors towards purchase decisions among these Gen-Y respondents aged between 17 and 25 are based on product knowledge and product quality. The implications of these findings and directions for future research are outlined at the end of this paper.

Originality/value – This study offers empirical insights from the perspective of an emerging digital economy on the factors that influence young consumers' purchase intentions towards DS in Malaysia.

Keywords Young consumers, Supplements, Purchase intention, Health consciousness, Malaysia

Paper type Research paper

Introduction

Over the last decade, lifestyle changes and increasing health awareness have resulted in an emerging trend towards health foods and dietary supplements (DS). In general, dietary supplementation is often required for those who follow a low-energy diet, exclude at least one food category from their meals, use extreme weight-loss methods or consume a high-carbohydrate diet deficient in vitamins and minerals (Daher *et al.*, 2022). Today, however, DS are consumed by people without any clinical signs or symptoms of deficiency



and the use of DS is becoming more widespread, resulting in a multi-billion-dollar business (Statista, 2021). Consumers use supplements for a broad range of reasons, which depends on their age, sex, physical activity or health status, but mainly for overall health and wellness, illness prevention, and correction of dietary deficiencies. According to a report published in October 2020, the sales of DS had increased dynamically in the wake of COVID-19 in most of the countries (Hamulka *et al.*, 2020). Studies conducted during the first and second wave of the pandemic revealed that during the COVID-19 outbreak in March 2020, the interest in immune-related compounds and foods like vitamins C and D, zinc, omega-3, garlic, ginger or turmeric, as well as their consumption increased. Improving immunity was the main reason behind the supplementation and changes in consumption of pro-healthy foods. Additionally, for many young consumers today, the Internet plays a key role in obtaining information, as it provides instant access to many sources. As such, a new paradigm shift is taking place in how healthcare is viewed and managed, particularly among young consumers. The change from curative practices to preventive management in healthcare is making the supplements industry a prime growth factor as the Internet widens the pool of resources, thus creating a generation of well-informed and more discerning young consumers. Young and tech-savvy Generation-Y consumers are now relying on various online sites to help them self-diagnose, to identify targeted health needs and make informed decisions about the types of supplements they may need to improve their health status or as a remedy for their ailments.

Dietary supplements come in a variety of forms; traditional tablets, capsules and powders, as well as drinks and energy bars. Popular supplements include vitamins C and E; minerals like calcium and iron; herbs such as Echinacea and garlic; and specialty products like glucosamine, probiotics and fish oil. With an increasing number of young consumers realising the value of good health, the market has been inundated with supplements that promote remarkable health claims (El Khoury *et al.*, 2021). Thus, there would be a variety of factors that influence young consumers' decision to select from a wide range of supplements that may meet their health or lifestyle goals.

Past research has looked at dietary supplement consumption through the lens of the theory of planned behaviour (TPB). However, these studies have narrowly focused on specific supplements like multi-vitamins/minerals and soy-based DS and have used samples with very different characteristics, such as people with severe health conditions and college students (Alami *et al.*, 2019; El Khoury *et al.*, 2021; Ren *et al.*, 2011). Besides, Batsis *et al.* (2021) conducted a comprehensive study examining how well weight reduction products and alternative treatments worked for a population aged 18 years and above. Using the TPB, this research aims to fill a gap in the present literature by determining the psychosocial predictors of supplement usage among young consumers in Malaysia's southern area. This study investigates the factors affecting generation-Y's purchase intention towards supplement products in Malaysia.

Global market trends

In 2020, the global dietary supplement market was valued at United States dollar (USD) 140.3 billion and is expected to increase at a compound annual growth rate (CAGR) of 8.6% from 2021 to 2028 (Grand View Research, Feb 2021). In 2015, Euromonitor International provided an overview of the sales of health and dietary supplement products in five countries, which are the United States of America (USA), China, Japan and Malaysia. Their data highlighted the USA in the forefront with a market growth rate totalling RM108 billion. This is followed by China with RM61 billion in sales, Japan with Ringgit Malaysia (RM) 40 billion and Malaysia with RM3 billion (Euromonitor International, 2015).

Although Malaysia is ranked one of the lowest in terms of sales and DS consumption compared to other more developed countries, the DS market is anticipated to offer major investment opportunities in Southeast Asian countries. According to data presented by the [Mordor Intelligence \(2018\)](#) analysis of the supplements global market, the industry in the South-East Asian region is still highly competitive without any dominant key player. Furthermore, data in [Figure 1](#) shows that 52% of the Malaysian population are consuming health and nutrition supplements on a regular basis. In fact, as high as 66% of Malaysians are consuming vitamins and supplements every day ([The Nielsen Company, 2019](#)). This clearly indicates that while the dietary supplement industry was valued at RM3 billion in 2015, buoyed by growing domestic demands for supplements and products, the industry has a strong potential to grow rapidly and to contribute significantly towards the Malaysian economy.

Without a doubt, the supplement industry in Malaysia is expected to grow with a relatively strong positive outlook increase over the forecast period of 2015–2019. Based on Malaysia Technavio’s research analysis (2015), it is predicted that the supplements industry in Malaysia will increase to 7% of the CAGR during the forecast period of 2015–2020. Obviously, the industry will bring a substantial income to Malaysia and be the leading industry of Malaysia’s economy in the future.

As Malaysians become more educated about health and wellness issues, the Gen-Y consumers in particular, who lead busier and time-pressed lifestyles are more likely to indulge and spend more on DS ([Gavura, 2013](#)). According to the results of [Liu et al. \(2021\)](#), the fear of COVID-19 was connected with an increased purchasing intention for DS. Thus, research on key-factors that influence purchase intentions among young consumers can provide significant data on the impact of the supplements industry in boosting the Malaysian economy.

This study investigates five possible variables, namely, health consciousness, price, product knowledge and product quality and brand image that may affect young consumers’ purchase intention towards supplement products. These five variables were chosen after a preliminary study was conducted which helped to identify the various factors that influence young consumers’ purchase intention towards supplement products.

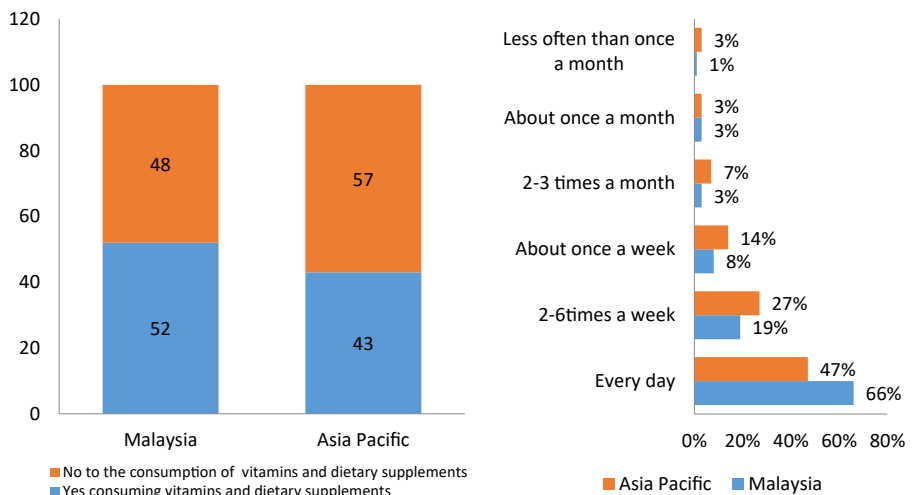


Figure 1. Frequency of vitamins and dietary supplements consumption

Source(s): The Nielsen Company (2009)

Literature review

Purchase intention

Traditionally, purchase intention can be defined as a consumer's plan to buy a product or a service, which can be presented by a cognitive state (Howard and Sheth, 1969). In other words, consumers will think carefully or make a plan before they purchase certain products or services. Purchase intention, therefore, measures how likely customers are to buy a company's product or service in the future (Maxham and Netemeyer, 2002). Purchase intention signifies "what consumers think they will buy" and is also considered as an actual behaviour projection (Billy, 2008). Purchase intention is defined as the likelihood that a customer will engage in a given purchase activity (Dam, 2020). Purchase intention is a proven predictor of purchase behaviour because it indicates the motivating goal of acquiring a thing (Shin and Hancer, 2016). Previous research has shown that attitudes, subjective standards and perceived behavioural control have an impact on purchase intention, either directly or indirectly (Irfan *et al.*, 2021). For instance, before consumers take action or perform the act of purchasing a product or a service, they would visualise the outcome of consuming a product or using a service, in terms of whether it will be valuable or helpful.

According to Dodds *et al.* (1991), the possibility and probability of consumers' desire and willingness to buy specific products could be referred to as consumers' purchase intention. Furthermore, Zeithaml (1998) defines purchase intention as a decision made by consumers about the value and the benefits of the product to the best of their knowledge. Based on consumers' perspective, they will consider how much value they would get from the product before they make their decisions. Purchase intention is a common term and has always been considered as an essential variable in the marketing field (Chandon *et al.*, 2005) but the term "purchase intention" has a more complex and significant meaning attached to it. In other words, comprehending the significance of purchase intention is not an easy matter because many factors can and will affect consumers' purchase intention.

Therefore, for the purpose of this study five hypotheses were developed to investigate the relationship between purchase intention and the five independent variables that were identified, namely, health consciousness, price, product knowledge, product quality and brand image.

Health consciousness

Health consciousness is defined as the dimension to which individuals are concerned about their own health (Gould, 1988). Correspondingly, Hong (2006) explained consciousness as an individual's comprehensive spiritual orientation towards body health. A previous study explained that an individual's health behaviour is based on a healthy lifestyle perception. A healthy lifestyle acts as a health guideline in order to maintain personal wellbeing and to avoid a possible health problem. Therefore, a health-conscious person will take ownership of their own health and focus on means or ways to maintain a healthy lifestyle. They will try to improve and maintain their health by taking supplements, exercising regularly and avoiding specific issues such as smoking that may harm one's personal wellbeing. In short, health conscious consumers can be referred to as staying and acting positive about their own health care (Gould, 1988). People who are concerned about their health will actively manage and control their health activities and they can be considered as proactive and positive participants in health management. Before purchasing a product, health-conscious consumers will scrutinise a product or service by paying more attention to the product ingredients compared with consumers who pay less attention to their health.

Moreover, health-conscious consumers also consider about the value a product has in contributing towards their health. Thus, product value will also affect purchase intention

(Chrysohoidis, 2005). Product value will influence consumers' attitude or behaviour towards the purchase intention. It is undeniable that consumers look for products that can satisfy their desire to be healthy (Newsom *et al.*, 2005).

Therefore, health consciousness is the key determinant of purchase intention towards healthy products as maintained by Kapuge (2016). People are usually driven or motivated by their own state of health consciousness to purchase health foods, health supplements or organic foods that are deemed as valuable in order to maintain a healthy body. According to Nagaraj (2021), health consciousness is important in forecasting customers' buying intention in a rising supplement market. Furthermore, Wang *et al.* (2019) investigated the impacts of health consciousness in their study model and discovered that it was a major predictor of consumers' purchase intention in Kenya and Tanzania. Moreover, a comprehensive assessment of the literature on green restaurants discovered that health-conscious behaviour has been connected to the consumption of green and organic meals (Tm *et al.*, 2020). In line with this, several studies in the literature confirmed that health consciousness positively affects purchase intention (Cavite *et al.*, 2022; Nunes *et al.*, 2021). These results show that purchasing supplements is also a statement of one's health awareness. Accordingly, health consciousness can influence the buying behaviour among young consumers by motivating them to take supplements. Hence, the following hypothesis is formulated:

- H1. Young consumers' health consciousness is positively associated with purchase intention on dietary supplements.

Price

Price also has been explained as an important marketing variable which can affect consumers' purchasing intention and behaviour (Finch *et al.*, 1998). According to Zeithaml (1998), price has been defined as "what is given up or sacrificed to obtain a product". This means that when you wish or desire to purchase or obtain an item, you have to sacrifice a certain monetary value.

Price is regarded as one of the most significant factors in customer preferences (Levrini and dos Santos, 2021). According to Jin and Sternquist (2003), high pricing will negatively influence consumers' intention to purchase a product. This is particular true with consumers who identify product price as a sacrifice for purchasing something. When consumers think the product price is higher than the value of which can be received from the product, then this will affect consumers' purchase intention of the products.

Price sensitivity is usually used as a synonym for price elasticity (Link, 1997). Price sensitivity is based on individuals' adopted mind-sets of price and monetary sacrifice and it is equivalent to the concept of price consciousness. According to Lichtenstein *et al.* (1993), price consciousness is defined as the degree to which consumers pay attention to the lowest price payment. The consumer who has a high price consciousness will focus more on purchasing low priced products compared with non-price consciousness consumers (Kukar-Kinney *et al.*, 2012).

Therefore, as postulated by Zhao *et al.* (2021), price is one of the most influential determinants of purchase intent since higher priced products may lead merchants to lose customers more readily, as consumers have the option to move to other sellers offering the same product at a lower price. According to Sukoco *et al.* (2020), a favourable price will increase the intention to purchase. Consumers with a high price consciousness will try to use the lowest price to purchase their chosen product. If the product price is considered high, then it will affect consumers' purchase intention and compel them to look for other cheaper sources. Accordingly, product price can be a factor that influences consumers' purchase intention towards dietary supplement. Hence, hypothesis 2 is stated:

H2. Young consumers' price consciousness is positively associated with purchase intention on DS.

Product knowledge

Product knowledge is determined as the perception of consumers towards particular products; including the experience of how the consumers had used the product before (Beatty and Smith, 1987). According to Monroe and Krishman (1985), product knowledge is a consumer's prior knowledge and experience of the product. In addition, product knowledge can also be defined as the consumer's understanding and awareness of the specific product (Lin and Chen, 2006).

Alba and Hutchinsons (1987) stated that product knowledge comprises two elements, which are familiarity and expertise. Familiarity means a consumer's combination of total experience and knowledge about a specific product, while the latter relates to the consumer's efforts that enhance their credibility to become knowledgeable about the product. In other words, consumers' product experience can also be referred to as consumers' knowledge and familiarity about the product category (Alba and Hutchinson, 1987). When consumers' product experience is enhanced, then they will be able to discern the multiple brands of a particular product category.

Based on Lin and Lin's analysis (2007), consumers who have good memory retention, recognition, logic abilities and clear analysis can be considered as a group with high product knowledge. Consequently, consumers with high product knowledge will be able to purchase the products that they really want. They will be able to purchase the products that they think are of value to them because they possess the necessary information and are able to make product comparisons with several brands. Conversely, consumers with low product knowledge cannot make a purchase confidently as they lack the knowledge and experience about the product.

Consumers' purchase intention is, therefore, based on their level of product knowledge (Lin and Lin, 2007). Consumers with a high level of product knowledge normally have a clearer understanding about the particular product compared with consumers with a low level of product knowledge. Moreover, consumers armed with strong product knowledge will initiate some form of background research about any product. Conversely, those who are lacking in this area usually rely on opinions sourced from others in order to make a purchase decision. It has been shown that information about the product's origin, quality, composition and manufacturing process that is printed on the label has an effect on consumer acceptance of the supplement. As a result, the labelling on the supplement has an effect on consumers' perceptions of the taste and quality of a product, and consequently, their decisions about whether or not to purchase that supplement (Hamam *et al.*, 2022). Accordingly, it is predicted that product knowledge can play a major factor in influencing consumers' purchase intention towards DS. Thus, hypothesis 3 is formulated:

H3. Young consumers' product knowledge is positively associated with purchase intention on DS.

Product quality

According to Aaker (1991), product quality is determined by a product's superiority and excellence. Nowadays, many consumers prefer to purchase high quality products despite having to pay more as they believe they will get more value back from the product which they have bought. Perceived quality is defined as consumers' evaluation regarding the specific product (Aaker, 1991). This is based on the individuals' perception – some people will think the product is expensive while some may think otherwise. Thus, purchase intention is

affected by consumers' perception towards the product, i.e., whether it is of value or not. According to [Chao \(2001\)](#), the meaning of perceived quality is perceived designed quality, whereby, a consumer evaluates the quality of a product as excellent or superior based on the "materials, parts or assembly" of a product. Furthermore, product quality can also be defined as a consumer's evaluation of the product based on personal feelings ([Chueh and Kao, 2004](#)). Product quality is not a variable which can be easily defined because it is based on subjective opinions which is difficult to measure.

However, there are two elements which can be differentiated statistically, which are perceived quality and object quality. Object quality has been defined by [Monroe and Krishnan \(1985\)](#) as a product's actual technical exquisiteness that can be verified and measured. On the other hand, perceived quality refers to the consumers' judgement and perception towards the excellence and superiority of the product ([Zeithaml, 1998](#)). In addition, according to [Tsiotsou \(2005\)](#), perceived quality can be considered as a high abstraction level because it is hard to differentiate the "good" and "bad" and this should be referred to as a specific consumption condition.

Research has shown that perceived quality will directly influence consumers' purchase intentions ([Carman, 1990](#); [Boulding et al., 1993](#)). In other words, when consumers think the product quality is good, it will influence their intention to purchase the product. Hence, hypothesis 4 is as follows:

H4. Young consumer's on product quality is positively associated with purchase intention on DS.

Brand image

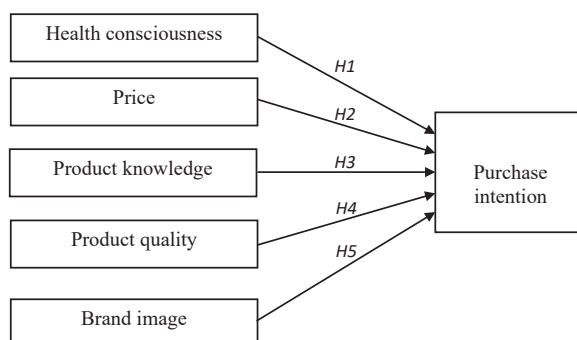
Brand image is defined as an association or perception consumers make based on their memory about a product ([Keller, 1993](#)). Brand image will be retained in consumers' minds when they have a personal experience in using the product. This personal involvement will create feelings, generate ideas and form product expectations in the consumers which will be actively retained in their memory and help them become accustomed to the product.

Firms normally use advertisements or other promotional tools in order to bring up their brand awareness. Efforts to promote and communicate the right information in public can create a lasting brand image in the consumers' minds and influence their needs to be satisfied by the brand. Therefore, it is important for a company to manage the brand image as it plays an important role in this competitive market. Consumers prefer to choose the product brand which is familiar to them and which has a positive image because this will decrease the risk of purchase ([Akaah and Korgaonkar, 1988](#)). Undoubtedly, consumers nowadays are more inclined to choose the brand that they know best and trust. Thus, brand image is also one of the factors that will affect purchase intention. It is presumed that when consumers want to purchase a supplement in order to satisfy their requirements, their purchase intention is influenced by the brand image. Therefore, hypothesis 5 is formulated

H5. Young consumer's on brand image is positively associated with purchase intention on DS.

Methodology

[Figure 2](#) illustrates the underlying research model that guided the research methodology and design of this study. A structured questionnaire adapted from previous research was used for the collection of data. The measures used to operationalise the constructs included in the investigated models and the questionnaires were mainly adapted from previous studies. The independent variables, namely, health consciousness comprising 7 items were adapted



from [Phan and Mai \(2016\)](#) whereas price, product knowledge, product quality and brand image comprising 4 items were adapted from [Zeithaml \(1998\)](#), [Asif et al., \(2018\)](#), [Chueh and Kao \(2004\)](#) and [Keller \(1993\)](#) respectively. Meanwhile, the measurements of the consumers' purchase intention consist of 3 items which were adapted from [Mansori et al. \(2012\)](#). All items were measured using a 5-point Likert-type scale with anchors on 1 for strongly disagree and 5 as strongly agree.

A non-probability purposive sampling strategy was used to recruit research participants. Prospective candidates were given a short summary of the study's aim and were told that, since their participation was voluntary, they may withdraw at any moment without consequence. They were also advised that the survey would take 15–20 min to complete and that their identities and confidentiality would be respected. Data were gathered using a purposive sample strategy, with questionnaires disseminated through social media platforms and participant recruiting websites. The target population for this study consists of young Malaysians aged between 17 and 25 who consume supplements on a regular basis. These sample reside in various parts of the country, namely Kuala Lumpur, Melaka, Johor Bahru and Negeri Sembilan.

In sum, quantitative analysis methods were used to obtain reliable results in order to determine the factors that influence young consumers' intentions when purchasing any form of DS to improve their health.

Results

Demographic profiling

The questionnaires were disseminated to 200 Gen-Y respondents with a response rate of 74.5% ($n = 149$), all of whom fall within the range of 17–25 years of age and consume supplements regularly. Details of the respondents' demographic profiles are illustrated in [Table 1](#).

Assessment of measurement model

The construct validity and reliability of the measurements were determined through the measurement models. The construct validity is determined by convergent and discriminant validity in this study. Convergent validity is often measured by factor loadings, the composite reliability (CR) and average variance extracted (AVE) ([Hair et al., 2011](#)). As the loadings of all construct indicators shall exceed the value of 0.5 ([Hair et al., 2011](#)), GI3 with factor loadings of 0.615 were removed due to the AVE for green initiative is 0.475 which is below 0.50. Composite reliability is used in this study to assess the consistency of the

BFJ 125,7	Options	Frequency	Percent (%)
2618	<i>Gender</i>		
	Male	93	62.4
	Female	56	37.6
	<i>Race</i>		
	Malay	22	16.8
	Chinese	106	71.1
	Indian	15	10.1
	Other	3	2.0
	<i>Age</i>		
	17–19	26	17.4
	20–22	35	23.5
	23–25	88	59.1
	<i>Education Level</i>		
	Secondary Education	18	12.1
	Diploma	35	23.5
	Bachelor Degree	88	59.1
	Master	7	4.7
	PhD	1	0.7
	<i>Job</i>		
	Employed	40	26.8
	Self-employed	23	15.4
	Retiree	18	12.1
	Housewife	7	4.7
	Student	60	40.3
	Other	1	0.7
	<i>Income</i>		
Less than RM 1000	73	49.0	
RM 1001–RM 2000	44	29.5	
RM 2001–RM 3000	20	13.4	
RM 3001–RM 4000	7	4.7	
More than RM 4000	5	3.4	
<i>Have you experienced purchasing a supplement product?</i>			
Yes	121	81.2	
No	28	18.8	
<i>Purchase Frequency of supplement product</i>			
Daily	18	12.1	
Weekly	45	30.2	
Monthly	55	36.9	
Other	31	20.8	

Table 1.
Demographic profile of
the sample

measurement items. The CR values in this study exceeded the recommended value of 0.7 (Hair *et al.*, 2011) which ranged from 0.816 to 0.889. The AVE measures the variance captured by the construct indicators about the measurement error, ranging from 0.519 to 0.812, of which is greater than 0.50 (Hair *et al.*, 2011). As such we can conclude that convergent validity is achieved (Table 2).

Kock (2011) stated that the extent where each latent variable is distinct from the other construct is known as discriminant validity. The discriminant validity of the measures was determined by utilising the Fornell-Lacker Criterion method. According to this criterion,

Constructs	Question items	Loadings	AVE	CR	Supplements purchase intention
Health Consciousness	Health1	0.921	0.790	0.963	2619
	Health2	0.920			
	Health3	0.917			
	Health4	0.912			
	Health5	0.736			
	Health6	0.878			
	Health7	0.923			
Price	Price1	0.946	0.880	0.967	
	Price2	0.923			
	Price3	0.944			
	Price4	0.940			
Product Knowledge	Product1	0.918	0.830	0.951	
	Product 2	0.918			
	Product 3	0.915			
	Product 4	0.894			
Product Quality	Quality1	0.942	0.869	0.964	
	Quality2	0.929			
	Quality3	0.928			
	Quality4	0.929			
Brand Image	Brand1	0.932	0.867	0.963	
	Brand2	0.923			
	Brand3	0.947			
	Brand4	0.924			
Purchase Intention	Purchase1	0.962	0.915	0.970	
	Purchase2	0.958			
	Purchase3	0.950			

Note(s): CR=Composite Reliability, AVE = Average Variance Extracted

Table 2.
Measurement model

the discriminant validity is confirmed when the square root of the AVE of each construct is higher than the correlations among the latent constructs. Table 3 shows the square root of the AVEs of each construct along the diagonal is higher than the correlation of each construct off the diagonal. This indicates that the discriminant validity in this study is well accepted. According to our measurement model (see Figure 3), the R^2 for the endogenous constructs of purchase intention was 0.849, indicating that 84.9% of the variance in purchase intention in the DS in Malaysia can be explained by health consciousness, price, product knowledge, product quality and brand image. According to Hair *et al.* (2019), R^2 values vary from 0 to 1 – the greater the number, the better the predicted accuracy.

	Brand image	Health consciousness	Price	Product knowledge	Product quality	Purchase intention
Brand Image	0.931					
Health Consciousness	0.905	0.889				
Price	0.806	0.814	0.938			
Product Knowledge	0.899	0.894	0.896	0.911		
Product Quality	0.902	0.927	0.799	0.920	0.932	
Purchase Intention	0.826	0.864	0.788	0.903	0.897	0.957

Table 3.
Discriminant validity of constructs: Fornell-Lacker criterion

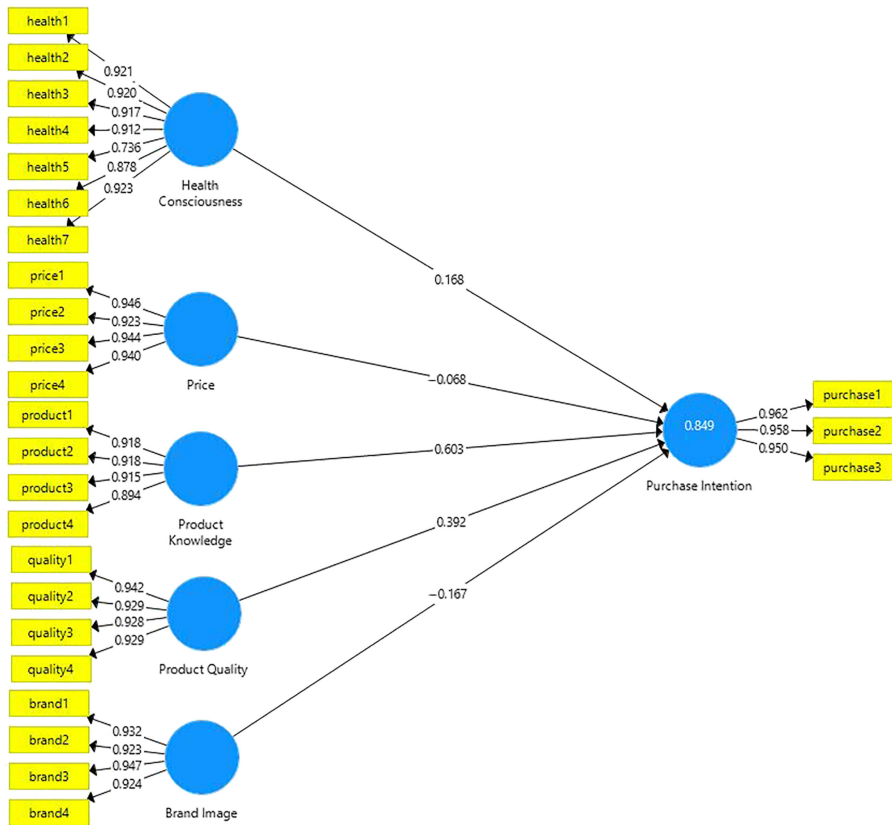


Figure 3.
Measurement model

Table 4 shows all the items loaded highly on its respective construct and low on another construct which provides sufficient support for the convergent validity at item level as suggested by Chin (1998).

Assessment of structural model

Based on Hair *et al.* (2013), the statistical significance of the path coefficients of the structural model was then determined by using the bootstrap procedure with 5,000 resamples. Table 5 shows the direct relationship of, product knowledge ($\beta = 0.603, p < 0.01$) and product quality ($\beta = 0.417392, p < 0.01$) which have a significant positive relationship with customer purchase intention whereas brand image ($\beta = -0.167$), health consciousness ($\beta = 0.168$) and price ($\beta = -0.068$) were found to have no significant relationship with customer purchase intention.

In sum, thorough analysis of data revealed that H3 showed the most significant and positive relationship with purchase intention towards supplements products. This followed by H4. On the other hand, H1, H2 and H5 did not yield a significant relationship.

Discussion

For the purpose of this study, all the five independent variables – health consciousness, price, product knowledge, product quality and brand image were tested to determine the factors

	Brand image	Health consciousness	Price	Product knowledge	Product quality	Purchase intention
Brand1	0.936	0.874	0.785	0.845	0.872	0.798
Brand2	0.929	0.861	0.817	0.880	0.860	0.821
Brand3	0.952	0.871	0.792	0.880	0.892	0.826
Brand4	0.929	0.843	0.753	0.820	0.814	0.752
Health1	0.872	0.926	0.790	0.857	0.872	0.835
Health2	0.859	0.929	0.760	0.850	0.873	0.840
Health3	0.843	0.922	0.765	0.864	0.887	0.848
Health4	0.827	0.922	0.762	0.816	0.859	0.827
Health5	0.780	0.786	0.749	0.722	0.714	0.639
Health6	0.792	0.900	0.780	0.789	0.838	0.753
Health7	0.851	0.927	0.779	0.833	0.875	0.804
Price1	0.805	0.820	0.947	0.866	0.806	0.797
Price2	0.778	0.787	0.929	0.844	0.763	0.754
Price3	0.794	0.786	0.947	0.855	0.786	0.779
Price4	0.791	0.808	0.946	0.871	0.793	0.777
Product1	0.841	0.844	0.830	0.925	0.890	0.882
Product2	0.841	0.854	0.824	0.922	0.882	0.883
Product3	0.855	0.827	0.867	0.923	0.832	0.817
Product4	0.828	0.813	0.837	0.909	0.817	0.775
Quality1	0.832	0.870	0.790	0.870	0.947	0.877
Quality2	0.846	0.893	0.778	0.877	0.936	0.864
Quality3	0.895	0.866	0.778	0.870	0.932	0.834
Quality4	0.877	0.895	0.791	0.881	0.938	0.848
Purchase1	0.827	0.857	0.807	0.888	0.880	0.965
Purchase2	0.819	0.841	0.799	0.882	0.873	0.959
Purchase3	0.814	0.839	0.768	0.865	0.872	0.955

Table 4.
Cross loadings

Path	Beta	Standard error	t-value	p-value	Decisions
Brand Image → Purchase Intention	-0.167	0.143	1.168	0.243	Not supported
Health Consciousness → Purchase Intention	0.168	0.126	1.332	0.184	Not supported
Price → Purchase Intention	-0.068	0.131	0.520	0.603	Not supported
Product Knowledge → Purchase Intention	0.603	0.247	2.444**	0.015	Supported
Product Quality → Purchase Intention	0.392	0.160	2.447**	0.015	Supported

Note(s): ** $p < 0.01$, * $p < 0.05$, Bootstrapping ($n = 5,000$)

Table 5.
Path coefficient

that influence young consumers' purchase intentions towards DS. A thorough analysis of the data collected revealed interesting insights into the factors that affect young consumers' intentions.

The outcome of the study showed that the two major factors that played an influential role in guiding young consumers' purchase intentions towards DS are product knowledge (H3) and product quality (H4). The results from the Partial Least Squares (PLS) analysis confirmed that a significant and direct relationship exists between product knowledge and purchase intention towards supplement products. This highly supports previous studies that product knowledge has a significant impact on consumers' decision on the types of supplements they

deemed relevant to improve their health (Hamam *et al.*, 2022). Undoubtedly, the Internet has created a more knowledgeable and discerning generation of young consumers whose purchase intention is guided by their own research about the supplement products that they require. With a vast knowledge of the types of supplements available at their fingertips, these young consumers are able to take charge of their nutritional needs.

Unsurprisingly, being more knowledgeable and discerning about healthcare needs, the results also showed that young consumers' purchase intention is also strongly influenced by the quality of the supplements. Results from the data analysis revealed that there is a significant and positive relationship between product quality and purchase intention towards supplement products. When young consumers place product knowledge as a major determining factor in their purchase intentions, product quality becomes a prominent feature in their decision-making process. Previous research (Carman, 1990; Boulding *et al.*, 1993) has also proven that product quality has a significant relationship with consumers' purchase intention.

While both product knowledge and product quality play a significant role in young consumers' purchase intention of supplements, interestingly, the study revealed a lack of relationship between young consumers' purchase intention and health consciousness (H1), product price (H2) and brand image (H5). Although majority of the respondents claimed to be health conscious, it has no implication on their intentions to consume supplements. Unlike past research such as (Cavite *et al.*, 2022) study that placed health consciousness as a key determinant in consumers' purchase intention, the findings of this study revealed there is no significant relationship between health consciousness and purchase intention. In other words, for these young consumers, health consciousness is not a key determinant in their purchase intention. This could indicate that the consumption of supplements is not viewed as a health goal but rather, as being part of a current trend in leading a healthy lifestyle in this day and age; therefore, whether one is health conscious or not, or whether one is in need of supplements or otherwise, does not come into play. This implies that to a certain degree their purchase intention is influenced by a fear of missing out of an on-going culture where the consumption of supplements is part of the current trend of healthy living among a young consumer's lifestyle.

Further to this, product price and brand image do not show any significant relationship to their purchase intention. Contrary to past research which showed higher priced products may lead merchants to lose customers since consumers have the option to move to other sellers selling the same product at a lower price (Zhao *et al.*, 2021), the results of this study revealed price is not a major obstacle. Similarly, results of this study contradict previous research that people are likely to purchase products which have a positive and popular image (Akaah and Korgaonkar, 1988). Instead, young consumers do not place brand image as a major factor in their purchasing decisions. This would imply that young and knowledgeable consumers do not associate product quality with brand image. It suggests that as long as a particular brand is viewed as of high quality and meets the standards of their requirements, these young consumers are willing to purchase the supplements irrespective of price.

Conclusion

Malaysian young consumers are now developing a new culture of healthy living, believing that taking supplements can help maintain or improve their health and wellness. Indeed, with this new appreciation for nutritional supplements, young consumers are spoiled for choice given the wide range of supplements available and the presence of established brands. Aggressive promotional campaigns have also increased the popularity of health supplements and based on sales projections by Euromonitor International (2019), Malaysia will continue to enjoy strong sales growth going forward.

Thus, understanding the factors that influence young consumers purchase intention of DS will have strong implications on the sales and promotion of DS, particularly to new and emerging companies in Malaysia. The study provides new insight into what drives and motivates young consumers when selecting their preferred choice of supplements that fit into their personal lifestyle goals. What we have learned is that product knowledge and product quality strongly influence their purchase intention. The advent of the Internet has created a well-informed generation of consumers who know what they are looking for while product price and brand image are secondary.

Therefore, for companies that hope to gain a competitive edge in the supplement industry in the South-East Asian region, particularly in Malaysia, two factors come to fore when strategizing the production and marketability of their products. Promotions of their products should focus on being informative and being more forthcoming about the contents and the quality assurance of their supplements. When young consumers are convinced of the quality of a product irrespective of the brand image, it will be considered value for money as product price is not a priority. Thus, they will undoubtedly gain the faith and trust of this generation's young consumers. Moreover, since brand image does not play a significant role in the young consumers' purchase intention, it augurs well and opens up new doors of opportunity for new and upcoming nutrition companies.

As the study was limited to young consumers or Gen-Y, specifically, it is recommended that a similar study be extended to a sample population beyond this range. Furthermore, it would be interesting to conduct a gender study to gain insight into factors that influence purchase intention.

References

- Aaker, D.A. (1991), *Managing Brand Equity: Capitalizing on the Value of Brand Name*, Free Press, New York.
- Akaah, I.P. and Korgaonkar, P.K. (1988), "A conjoint investigation of the relative importance of risk relievers in direct marketing", *Journal Advertising Research*, Vol. 28 No. 4, pp. 38-44.
- Alami, A., Tavakoly Sany, S.B., Lael-Monfared, E., Ferns, G.A., Tatari, M., Hosseini, Z. and Jafari, A. (2019), "Factors that influence dietary behavior toward iron and vitamin D consumption based on the theory of planned behavior in Iranian adolescent girls", *Nutrition Journal*, Vol. 18 No. 1, pp. 1-9, doi: [10.1186/s12937-019-0433-7](https://doi.org/10.1186/s12937-019-0433-7).
- Alba, J.W. and Hutchinson, J.W. (1987), "Dimension of consumer expertise", *Journal of Consumer Research*, Vol. 13 No. 4, pp. 411-453.
- Asif, M., Xuhui, W., Nasiri, A. and Ayyub, S. (2018), "Determinant factors influencing organic food purchase intention and the moderating role of awareness: a comparative analysis", *Food Quality Prefer*, Vol. 63, pp. 144-150.
- Batsis, J.A., Apolzan, J.W., Bagley, P.J., Blunt, H.B., Divan, V., Gill, S. and Golden, A. (2021), "A systematic review of dietary supplements and alternative therapies for weight loss", *Obesity*, Vol. 29 No. 7, pp. 1102-1113.
- Beatty, S.E. and Smith, S.M. (1987), "External search effort: an investigation across several product categories", *Journal of Consumer Research*, Vol. 14 No. 1, pp. 83-95.
- Billy (2008), "The impact of website quality on customer satisfaction and purchase intentions: evidence from Chinese online visitors", *International Journal of Hospitality Management*, Vol. 27, pp. 391-402.
- Boulding, W., Ajay, K., Richard, S. and Zeithaml, V.A. (1993), "A dynamic model of service quality: from expectations to behavioral intentions", *Journal of Marketing Research*, Vol. 30 February, pp. 7-27.
- Carman, J.M. (1990), "Consumer perceptions of service quality: an assessment of the SERVQUAL dimensions", *Journal of Retailing*, Vol. 66, pp. 33-55.

- Chavite, H.J., Mankeb, P. and Suwanmaneepong, S. (2022), "Community enterprise consumers' intention to purchase organic rice in Thailand: the moderating role of product traceability knowledge", *British Food Journal*, Vol. 124 No. 4, pp. 1124-1148, doi: [10.1108/BFJ-02-2021-0148](https://doi.org/10.1108/BFJ-02-2021-0148).
- Chandon, P., Morwitz, V. and Reinartz, W. (2005), "Do intentions really predict behavior? Self-generated validity effects in survey research", *Journal of Marketing*, Vol. 69 No. 2, pp. 1-14.
- Chao, P. (2001), "The moderating effects of country of assembly, country of parts and country of design on hybrid product evaluation", *Journal of Advertising*, Vol. 20 No. 4, pp. 67-81.
- Chin, W.W. (1998), "The partial least squares approach for structural equation modeling", in Marcoulides, G.A. (Ed.), *Modern Methods for Business Research*, Lawrence Erlbaum Associates Publishers, Mahwah, NJ, pp. 295-336.
- Chrysoschoidis, G.A. (2005), "Organic consumers' personal values research: testing and validating the list of values (LOV) scale and implementing a value-based segmentation task", *Food Quality and Preference*, Vol. 16 No. 7, pp. 585-599.
- Chueh, T.Y. and Kao, D.T. (2004), "Moderating effects of consumer perception to the impacts of country-of-design on perceived quality", *Journal of American Academy of Business*, Vol. 4 Nos 1/2, pp. 70-74.
- Daher, J., El Khoury, D. and Dwyer, J.J.M. (2022), "Education interventions to improve knowledge, beliefs, intentions and practices with respect to dietary supplements and doping substances: a narrative review", *Nutrients*, Vol. 13 No. 11, p. 3935, doi: [10.3390/nu13113935](https://doi.org/10.3390/nu13113935).
- Dam, T.C. (2020), "Influence of brand trust, perceived value on brand preference and purchase intention", *The Journal of Asian Finance, Economics and Business*, Vol. 7 No. 10, pp. 939-947, doi: [10.13106/jafeb.2020.vol7.no10.939](https://doi.org/10.13106/jafeb.2020.vol7.no10.939).
- Dodds, W.B., Monroe, K.B. and Grewal, D. (1991), "Effect of price, brand and store information on buyers' product evaluation", *Journal of Marketing Research*, Vol. 28 No. 3, pp. 307-319.
- El Khoury, D., Tabakos, M., Dwyer, J.J. and Mountjoy, M. (2021), "Determinants of supplementation among Canadian university students: a theory of planned behavior perspective", *Journal of American College Health*, pp. 1-9, doi: [10.1080/07448481.2021.1951276](https://doi.org/10.1080/07448481.2021.1951276).
- Euromonitor International (2015), "Consumer health: an End-of-Year review of 2015 performance to advance market strategy in 2016 and beyond", available at: <https://www.euromonitor.com> (accessed 23 March 2022).
- Euromonitor International (2019), "Industry overview 2022 of The Malaysian Health supplements market", available at: <https://www.euromonitor.com> (accessed 1 March 2022).
- Finch, J., Becherer, R. and Casavant, R. (1998), "An option-based approach for pricing", *Journal of Services Marketing*, Vol. 12 No. 6, pp. 473-483.
- Gavura, S. (2013), "Who takes dietary supplements, and why?", *Science-Based Medicine*, available at: [https://sciencebasedmedicine.org/who-takes-dietary-supplements-and-why/#:~:text=The%20most%20common%20motivations%20for,%25%20and%20women%20\(36%25\)](https://sciencebasedmedicine.org/who-takes-dietary-supplements-and-why/#:~:text=The%20most%20common%20motivations%20for,%25%20and%20women%20(36%25))
- Gould, S.J. (1988), "Consumer attitudes toward health and health care: a differential perspective", *Journal of Consumer Affairs*, Vol. 22 No. 1, pp. 96-118.
- Hair, J.F., Ringle, C.M. and Sarstedt, M. (2011), "PLS-SEM: indeed a silver bullet", *Journal of Marketing Theory and Practice*, Vol. 19 No. 2, pp. 139-151.
- Hair, J.F., Ringle, C.M. and Sarstedt, M. (2013), "Partial least squares structural equation modeling: rigorous applications, better results and higher acceptance", *Long Range Planning*, Vol. 46 Nos 1-2, pp. 1-12.
- Hair, J.F., Sarstedt, M. and Ringle, C.M. (2019), "Rethinking some of the rethinking of partial least squares", *European Journal of Marketing*, Vol. 53 No. 4, pp. 566-584, doi: [10.1108/EJM-10-2018-0665](https://doi.org/10.1108/EJM-10-2018-0665).

- Hamam, M., Di Vita, G., Zanchini, R., Spina, D., Raimondo, M., Pilato, M. and D'Amico, M. (2022), "Consumers' attitudes and purchase intention for a vitamin-enriched extra virgin olive oil", *Nutrients*, Vol. 14 No. 8, p. 1658, doi: [10.3390/nu14081658](https://doi.org/10.3390/nu14081658).
- Hamulka, J., Jeruzska-Bielak, M., Górnicka, M., Drywień, M.E. and Zielinska-Pukos, M.A. (2020), "Dietary supplements during COVID-19 outbreak. Results of google trends analysis supported by PLifeCOVID-19 online studies", *Nutrients*, Vol. 13 No. 1, 33375422, doi: [10.3390/nu13010054](https://doi.org/10.3390/nu13010054).
- Hong, H. (2006), *Scale Development for Measuring Health Consciousness: Reconceptualization*, University of Missouri, Florida.
- Howard, J. and Sheth, J. (1969), *The Theory of Buyer Behaviour*, John Wiley, New York.
- Irfan, M., Elavarasan, R.M., Hao, Y., Feng, M. and Sailan, D. (2021), "An assessment of consumers' willingness to utilize solar energy in China: end-users' perspective", *Journal of Cleaner Production*, Vol. 292, 126008, doi: [10.1016/j.jclepro.2021.126008](https://doi.org/10.1016/j.jclepro.2021.126008).
- Jin, B. and Sternquist, B. (2003), "The influence of retail environment on price perceptions: an exploratory study of US and Korean students", *International Marketing Review*, Vol. 20 No. 6, pp. 643-660.
- Kapuge, K. (2016), "Determinants of organic food buying behavior: special reference to organic food purchase intention of Sri Lankan customers", *Procedia Food Science*, Vol. 6, pp. 303-308.
- Keller, K. (1993), "Conceptualizing, measuring, and managing customer based brand equity", *Journal of Marketing*, Vol. 57 No. 1, pp. 1-22.
- Kock, N. (2011), "Using WarpPLS in e-collaboration studies: descriptive statistics, settings, and key analysis results", *International Journal of E-Collaboration*, Vol. 7 No. 2, pp. 1-18.
- Kukar-Kinney, M., Rigway, N. and Monroe, K. (2012), "The role of price in the behavior and purchase decisions of compulsive buyers", *Journal of Retailing*, Vol. 88 No. 1, pp. 63-71.
- Levrini, G.R.D. and dos Santos, M.J. (2021), "The influence of price on purchase intentions: comparative study between cognitive, sensory, and neurophysiological experiments", *Behavioral Sciences*, Vol. 11 No. 2, pp. 1-16.
- Lichtenstein, D., Ridgway, N. and Netemeyer, R. (1993), "Price perceptions and consumer", *Journal of Marketing Research*, Vol. 30 No. 2, pp. 234-245.
- Lin, L.Y. and Chen, C.S. (2006), "The influence of country-of-origin image, product knowledge and product involvement on consumer purchase decisions: an empirical study of insurance and catering services in Taiwan", *Journal of Consumer Marketing*, Vol. 23 No. 5, pp. 248-265.
- Lin, N. and Lin, B. (2007), "The effect of brand image and product knowledge on purchase intention moderated by price discount", *Journal of International Management Studies*, Vol. 2 No. 2, pp. 121-132.
- Link, F. (1997), "Diffusion dynamics and the pricing of innovations", PhD thesis, Lund University.
- Liu, C., Sun, C.-K., Chang, Y.-C., Yang, S.-Y., Liu, T. and Yang, C.-C. (2021), "The impact of the fear of COVID-19 on purchase behavior of dietary supplements: integration of the theory of planned behavior and the protection motivation theory", *Sustainability*, Vol. 13 No. 22, doi: [10.3390/su132212900](https://doi.org/10.3390/su132212900).
- Mansori, S., Cheng, B.L. and Lee, H.S. (2012), "A study of e-shopping intention in Malaysia: the influence of generation X & Y", *Australian Journal of Basic and Applied Sciences*, Vol. 6 No. 8, pp. 28-35.
- Maxham, J.I. and Netemeyer, R. (2002), "Modeling customer perceptions of complaint handling over time: the effects of perceived justice on satisfaction and intend", *Journal of Retailing*, Vol. 78 No. 4, pp. 239-252.
- Monroe, K. and Krishnan, R. (1985), *The Effect on Price on Subjective Evaluation*, Lexington Books, Boston.

- Mordor Intelligence (2018), "Dietary supplements market - growth, trends, covid-19 impact, and forecasts (2022-2027)", available at: <https://www.mordorintelligence.com/> (accessed 14 April 2022).
- Nagaraj, S. (2021), "Role of consumer health consciousness, food safety and attitude on organic food purchase in emerging market: a serial mediation model", *Journal of Retailing and Consumer Services*, Vol. 59, p. 8, doi: [10.1016/j.jretconser.2020.102423](https://doi.org/10.1016/j.jretconser.2020.102423).
- Newsom, J., McFarland, B., Kaplan, M., Huguet, N. and Zani, B. (2005), "The health consciousness myth: implications of the near independence of major health behaviors in the North American population", *Social Science and Medicine*, Vol. 60 No. 2, pp. 433-437.
- Nunes, F., Madureira, T. and Veiga, J. (2021), "The organic food choice pattern: are organic consumers becoming more alike?", *Foods*, Vol. 10, p. 983.
- Phan, T.A. and Mai, P.H. (2016), "Determinants impacting consumers' purchase intention: the case of fast food in Vietnam", *International Journal of Marketing Studies*, Vol. 8 No. 5, pp. 56-68.
- Ren, J., Chung, J., Stoel, L. and Xu (2011), "Chinese dietary culture influences consumers' intention to use imported soy-based dietary supplements: an application of the theory of planned behavior", *International Journal of Consumer Studies*, Vol. 35 No. 6, pp. 661-669.
- Shin, Y.H. and Hancer, M. (2016), "The role of attitude, subjective norm, perceived behavioral control, and moral norm in the intention to purchase local food products", *Journal of Foodservice Business Research*, Vol. 19 No. 4, pp. 338-351.
- Statista (2021), "Total U.S. Dietary supplements market size from 2016 to 2024", available at: <https://www.statista.com/statistics/828481/total-dietary-supplements-market-size-in-the-us/> (accessed 6 September 2021).
- Sukoco, A., Priyanto, S., Ihalauw, J. and Abdi, A. (2020), "The effect of packaging and prices on intention to buy with the moderation of income and store image", *Proceedings of the International Conference of Business, Economy, Entrepreneurship and Management - ICBEEEM*, pp. 304-313, ISBN 978-989-758-471-8, doi: [10.5220/0009965303040313](https://doi.org/10.5220/0009965303040313).
- The Nielsen Company (2019), "Frequency of vitamins and dietary supplements consumption", available at: <https://www.nielsen.com/> (accessed 15 February 2022).
- Tm, A., Kaur, P., Ferraris, A. and Dhir, A. (2020), "What motivates the adoption of green restaurant products and services? A systematic review and future research agenda", *Business Strategy and the Environment*, Vol. 30 No. 4, pp. 2224-2240, doi: [10.1002/bse.2755](https://doi.org/10.1002/bse.2755).
- Tsiotsou, R. (2005), "Perceived quality levels and their relation to involvement, satisfaction and purchase intention", *Marketing Bulletin*, Vol. 16, p. 1, Research Note 4.
- Wang, X.H., Pacho, F., Liu, J. and Kajungiro, R. (2019), "Factors influencing organic food purchase intention in developing countries and the moderating role of knowledge", *Sustainability*, Vol. 11 No. 1, p. 209, doi: [10.3390/su11010209](https://doi.org/10.3390/su11010209).
- Zeithaml, V.A. (1998), "Consumer perception of price, quality and value: a means-end model and synthesis of evidence", *Journal of Marketing*, Vol. 52 No. 3, pp. 2-22.
- Zhao, H., Yao, X., Liu, Z. and Yang, Q. (2021), "Impact of pricing and product information on consumer buying behavior with customer satisfaction in a mediating role", *Frontiers in Psychology*, Vol. 12, 720151.

Further reading

- Campbell, J. (2013), "Antecedents to purchase intentions for hispanic consumers: a 'local' perspective", *The International Review of Retail, Distribution and Consumer Research*, Vol. 23 No. 4, pp. 440-445.
- Glynn, M. and Chen, S. (2009), "Consumer-factors moderating private label brand success: further empirical results", *International Journal of Retail and Distribution Management*, Vol. 37 No. 11, pp. 896-914.

-
- Liu, C., Sun, C.K., Chang, Y.C., Yang, S.Y., Liu, T. and Yang, C.C. (2021), "The impact of the fear of COVID-19 on purchase behavior of dietary supplements: integration of the theory of planned behavior and the protection motivation theory", *Sustainability*, Vol. 13 No. 22, doi: [10.3390/su132212900](https://doi.org/10.3390/su132212900).
- Moser, A.K. (2015), "Thinking green, buying green? Drivers of pro-environmental purchasing behavior", *Journal of Consumer Marketing*, Vol. 32 No. 3, pp. 167-175.
- Suki, N.M. and Suki, N.M. (2015), "Consumers' environmental behaviour towards staying at a green hotel: moderation of green hotel knowledge", *Management of Environmental Quality: An International Journal*, Vol. 26 No. 1, pp. 103-117.

Corresponding author

Sook Fern Yeo can be contacted at: yeo.sook.fern@mmu.edu.my

For instructions on how to order reprints of this article, please visit our website:

www.emeraldgrouppublishing.com/licensing/reprints.htm

Or contact us for further details: permissions@emeraldinsight.com