

## Purchase intention towards dietary supplements during COVID-19 pandemic: consumers' perspective

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### Abstract

The consumption of dietary supplements (DSs) has been steadily increasing in the wake of the COVID-19 outbreak in most countries. Consumer purchase intention towards DSs is expected to be of concern to many companies in the pharmaceutical industry. This study extends the Theory of Planned Behaviour by adding health consciousness and perceived price in the model to investigate its effect on consumer purchase intention towards DSs during the COVID-19 outbreak. A questionnaire-based survey was distributed via an online survey to 207 respondents. Results from multiple regression analysis revealed that consumer attitudes, subjective norms, perceived behavioural control, and health consciousness contributed significantly to purchase intention towards DSs. Perceived price did not have an impact on intention. Further investigation revealed that favourable attitudes towards DSs were the most important contributor towards purchasing DSs during the COVID-19 pandemic.

## 1. Introduction

Despite poor business operations and a low level of acceptance by customers, the demand for dietary supplements (DSs) continues to expand steadily each year (Birruntha, 2019). Interest in immunity-positioned vitamins and DSs have grown significantly since the start of the COVID-19 pandemic, as many customers look for products that offer the promise of broad disease prevention (Parikh *et al.*, 2020). Unlike other consumer health products, immunity types of products sustained global interest even after the initial wave of panic-induced stockpiling in the first weeks of the crisis, with strong growth continuing into the second half of 2020.

Generally, the market size of DSs has seen an increase in Malaysia (Birruntha, 2019). Vitamin supplements, the mineral form of supplement products, calcium, omega 3 fish oil products, and botanicals are popular DSs (Phillips and Rimmer, 2013). The historical market size of multi-vitamins consumption of DSs in Malaysia grows steadily from RM 2.22Bil in 2015 to RM3.57Bil in 2020 (Euromonitor, 2019b). Nevertheless, previous research on factors affecting the decision to purchase DSs is still under-explored in Malaysia. In addition, the COVID-19 treatment options have raised

many concerns among populations across the world (International Monetary Fund, 2020), leading to many attempts to find alternative options to prevent the spread of the disease or to mitigate the progression of the infection, including a greater emphasis on preventive measures to improve immunity and minimize the risk of infection (Alyami *et al.*, 2020).

In the context of consumer behavioural study related to the DSs, the Theory of Planned Behaviour (TPB) (Ajzen, 1991) has been commonly applied over the years (Petraszko, 2013; Noor *et al.*, 2014; Lee *et al.*, 2016; Tan *et al.*, 2019; Alami *et al.*, 2019). TPB mainly consisted of three core components, namely, attitude, subjective norms, and perceived behavioural control, together influence an individual's behavioural intention. Attitude contributed to the Dss purchase intention significantly (Lee *et al.*, 2016; Tan *et al.*, 2019). Noor *et al.* (2014) revealed that consumers who displayed an optimistic attitude to consume DSs believed that it could enhance their health and may have a higher intention to consume DSs. Besides, Petraszko (2013) showed that subjective norms did not support the behavioural intention of sports women's decision to increase their intake of multivitamins. In addition, Noor *et al.* (2014) revealed that perceived behavioural control has positive effects on

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behavioural intention towards DSs; and Petraszko (2013) and Alami *et al.* (2019) found perceived behavioural control to be positively related to the behavioural intention to consume vitamin and minerals respectively. In Malaysia, Tan *et al.* (2019) reported that perceived behavioural control and health consciousness were able to influence the purchase intention of consumers towards health supplement products. In contrast, Michaelidou and Hassan (2008) discovered that consciousness of well-being is the least important reason for the intention to buy organic food. Another study also shows that price-consciousness has a significant effect on consumers purchase intention of DSs (Ezlika *et al.*, 2014; Wongsawasdi, 2016).

Nevertheless, all the previous studies were conducted prior to the COVID-19 outbreak, hence the importance of the current research in looking at the different perspectives. Therefore, this study aims to extend the Theory of Planned Behaviour (TPB) by adding the additional two variables, namely, health consciousness and perceived price in the model to predict consumer purchase intention towards the DSs during the Covid pandemic outbreak. The outcome of this study will assist pharmaceutical firms in implementing their marketing strategies to promote DSs products to the right target market more effectively.

## 2. Methodology

### 2.1 Research framework and hypotheses

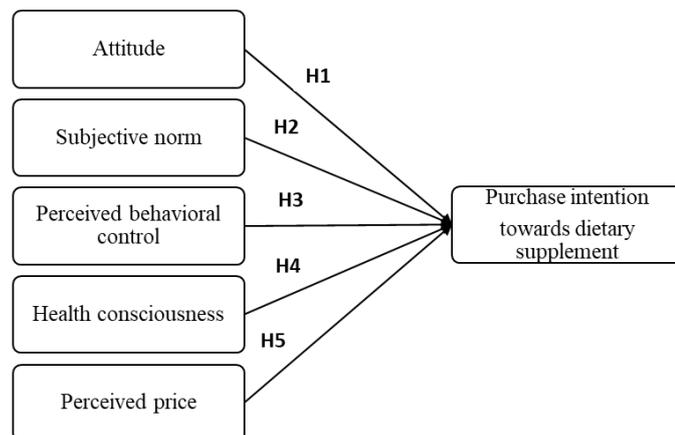


Figure 1. Research framework

Figure 1 illustrated a proposed research framework by adding the variables of health consciousness and perceived price to the TPB model. The following hypotheses were proposed:

H1. There is a significant relationship between attitude and purchase intention towards DSs.

H2. There is a significant relationship between subjective norms and purchase intention towards DSs.

H3. There is a significant relationship between perceived

behavioural control and purchase intention towards DSs.

H4. There is a significant relationship between health consciousness and purchase intention towards DSs.

H5. There is a significant relationship between perceived price and purchase intention towards DSs.

### 2.2 Research methods

In this study, the survey instruments of purchase intention (5 items) were adopted from Udomkitmongkol (2016) and Lee *et al.* (2016), attitude (5 items) was adopted from Udomkitmongkol (2016), subjective norm (6 items) and perceived behavioural control (5 items) were adopted from Shen and Chen (2020) respectively. Besides, 8 items used to measure health consciousness were adopted from Plank and Gould (1990); while 6 items used to measure perceived price were adopted from Alford and Biswas (2002), Noh *et al.* (2013), and Udomkitmongkol (2016). 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 a social media platform. The questionnaire was prepared online and circulated to 207 respondents. 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

From the collected sample (N = 207), 45.4% of the respondents were female, 53.6% were in the age group of 31-40 years, 71.5% obtained a bachelor degree qualification and 36.7% earned the monthly income of RM3,001-RM5,000. In terms of occupational level, the majority of respondents were executives working in the private sector (76.3%), followed by students (9.2%). Besides, 66.2% of respondents were Chinese and 62.3% were married. With regards to the existing DSs consumption and purchase behaviour, 41.1% of the respondents were taking DSs daily and 59.9% bought supplements in the last 3 months. A total of 40.1% indicated no history of buying DSs.

### 3.2 Factor analysis

The details of the results for the factor analysis and scale reliabilities are presented in Table 1. The KMO measure of sampling adequacy for each of the constructs was greater than 0.6, indicating sufficient inter-correlations of Bartlett's Test of Sphericity (Hair *et al.*, 2010), which was found to be significant (0.000, sig.< 0.05). Thus, the sample size of 207 was adequate and satisfactory in this study. The Cronbach alpha for each

factor was greater than 0.60 (range from 0.650 to 0.940) which means that the scale scores for each of the factors were reasonably reliable (Hair *et al.*, 2010). The factor loadings of all the items were above 0.50, except SN1, SN4 and PP6. These three items were eventually removed due to low commonalities (< 0.50).

Table 1. Results of the factor analysis and scale reliabilities

Construct	Items	Factor Loading	KMO	Alpha Value
Attitudes	A1	0.842	0.71	0.726
	A2	0.83		
	A3	0.846		
	A4	0.822		
	A5	0.667		
Subjective Norm	SN2	0.78	0.613	0.65
	SN3	0.635		
	SN5	0.865		
	SN6	0.876		
Perceived Behavioural Control	PBC1	0.522	0.755	0.754
	PBC2	0.636		
	PBC3	0.658		
	PBC4	0.689		
	PBC5	0.653		
Health Consciousness	HC1	0.78	0.928	0.94
	HC2	0.779		
	HC3	0.8		
	HC4	0.885		
	HC5	0.886		
	HC6	0.86		
	HC7	0.817		
	HC8	0.859		
Perceived Price	PP1	0.554	0.784	0.787
	PP2	0.82		
	PP3	0.811		
	PP4	0.818		
	PP5	0.775		
Purchase Intention	IN1	0.812	0.872	0.911
	IN2	0.74		
	IN3	0.714		
	IN4	0.765		
	IN5	0.842		

### 3.3 Multiple regression analysis

The result of this regression was shown in Table 2. The overall result for the regression model was significant ( $p = 0.000$ ). The adjusted R square is 0.737 which means that all the factors contributed 73.7% towards the purchase intention of DSs. From the analysis, perceived price (H5) did not contribute significantly to the purchase intention of DSs ( $p = 0.102$ ,  $> 0.05$ ). However, attitude (H1), subjective norm (H2), perceived behavioural control (H3), and health consciousness (H4) contributed significantly to the

purchase intention of DSs. The results of the standardized coefficient (beta) revealed that attitude was the most important variable that contributed to the dependent variable (beta = 0.536) followed by perceived behavioural control (beta = 0.366). Besides, the tolerance rate of more than 0.1 and VIF <10 showed that each factor tested the different dimensions clearly and without any multi-collinearity problem (Hair *et al.*, 2010).

## 4. Discussion

In this study, H1 is supported. The attitude of consumers toward DSs is important in influencing their intention to purchase DSs. This is consistent with previous studies on purchase intention towards DSs (Wongsawasdi *et al.*, 2016; Alami *et al.*, 2019). Besides, attitude is the most important factor in influencing behavioural intention, especially in DSs purchase intention (Lee *et al.*, 2016; Wongsawasdi *et al.*, 2016).

Based on the results, H2 is also supported. Similar findings are obtained from previous studies, where family, friends, doctors and advertisements are the most relevant source of knowledge on supplement use (Al-naggar and Chen, 2011). News on the current ongoing pandemic is likely to be the major talking point among consumers (Lee *et al.*, 2016). In addition, H3 is supported which mean perceived behavioural control influences consumer intention to purchase DSs (Noor *et al.*, 2014). Respondents indicated that they are willing to purchase DSs as they believe in the value of DSs and the expectation that these products will improve personal health, especially during the pandemic.

The two new variables added to the TPB model are health consciousness and perceived price. Health consciousness is consumers awareness that purchasing DSs is the best option to enhance one's health (Dickinson *et al.*, 2014). Furthermore, health maintenance was given as the key reason for performing regular physical check-ups and buying health supplement products (Tse *et al.*, 2014). The result in this study showed that there is a significant relationship between health-consciousness and DSs purchase intention during the pandemic. Hence, H4 is supported.

It is also observed that there is an insignificant relationship between perceived price and purchase intention of DSs. One possible explanation for this might be that 75% of the respondents are in the age category of 21-40 years old. This age group may be unwilling to spend on products with higher prices (Lee *et al.*, 2015). Past studies reported different results in determining perceived price among Malaysians in various aspects especially in the marketing promotion programme. A similar and comparable study on price has shown to be

Table 2. Results of regression analysis

Model		Coefficients <sup>a</sup>				
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.310	0.276		-4.748	0.000
	Attitude	0.736	0.072	0.536	10.157	0.000
	Subjective Norm	0.193	0.074	0.121	2.600	0.010
	Perceive Behavioural Control	0.525	0.072	0.366	7.307	0.000
	Health Consciousness	-0.192	0.057	-0.142	-3.377	0.001
	Perceived Price	0.078	0.047	0.065	1.643	0.102
	a. Dependent Variable: Behavioural Intention					

significant in the purchase intention behaviour of organic food product (Ali Indabawa, 2017). In the current research, perceived price did not show a significant relationship with the purchase intention of DSs during the pandemic outbreak. DSs may be just one of the many preventive options to control disease or illness during this pandemic and some consumers may find that they would rather choose other cheaper alternatives.

This study contributes to the current health-care-related businesses and pharmaceutical marketing literature. It provides insights to health and medicinal industry stakeholders. In addition, family and friends are an imperative group that is crucial for health supplements users during the pandemic. Advertising information related to the advantages associated with consuming supplements is commonly disseminated through mass and social media. However, if this message is delivered by close family members and friends, this could create a significant impact on their purchase intention (Noor *et al.*, 2014).

The outcome could also be used by dietary advertisers to justify the importance of advertising campaigns to draw customers to their products based on the significant results on attitude and subjective norm. Perceived price is shown to be not significant, therefore marketers could perhaps identify the right product with the right pricing in positioning their dietary product in order to attract more customers. Although the outcome shows that the effect on the pandemic is more significant in terms of spending among the lower and middle-income groups, purchasing intention among the high-income groups remains high (Cox *et al.*, 2020).

Perceived behavioural control demonstrated a significant relationship with general consumers' purchase intention. This may be due to consumers having a mental preference for certain DSs products and its perceived benefits that strengthen their perception of

these products. This is further fueled by the growing trend of health consciousness globally. Recognising customer preference and their sense of health consciousness will encourage purchase towards DSs as this is perceived to enhance their overall health objectives.

## 5. Conclusion

Dietary supplements are experiencing robust growth in the industry (Euromonitor, 2019a). Understanding factors that affect the purchase intention towards dietary supplements are important for businesses to build their marketing strategies and to have a more effective targeted marketing campaign. In Malaysia, these posed an opportunity to address some research gaps on factors affecting consumers purchase intention towards DSs. The extended TPB model with integrated health consciousness and perceived price were tested during the COVID-19 outbreak. Multiple regression analysis showed that TPB's variables (i.e., attitudes, subjective norms and perceived behavioural control) together with health consciousness significantly affect purchase intention towards DSs. However, the perceived price was not significantly related to purchase intention. Among the significant factors, attitude is the most influential attribute impacting purchase intention followed by perceived behavioural control. This research contributed significantly to marketers thinking of a new and innovative approach to encourage the purchase of dietary supplements, especially during the pandemic situation.

## Conflict of interest

The authors declare no conflict of interest.

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