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The application of the Theory of Planned behaviour among Gum Arabic Consumers in Malaysia

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ABSTRACT

Acacia senegal and acacia seyal, which are known as gum arabic, are not only used as food stabilisers and protective agents against dental erosion, but also as dietary supplements to be consumed daily. Due to the multi-functionality and increasing demand for gum arabic, the present study aims at applying the theory of planned behaviour among gum arabic consumers by investigating the relationship between attitudes towards consuming gum arabic (M = 29.56, SD = 5.96), subjective norms (M= 20.95, SD = 5.32), perceived behavioural control (M = 23.78, SD = 4.78), intention (M = 30.04, SD = 6.37) and behaviour. A cross-sectional survey with purposive sampling technique was used to recruit 100 participants (72% females and 28% males) who were gum arabic consumers. Their age range was between 18 to 64 years old. The Survey of the Theory of Planned Behaviour was used to measure the variables in the present study. Results indicate that attitudes towards gum arabic (r = .79, p < .001), subjective norms (r = .54, p < .001) and perceived behavioural control (r = .88, p < .001) .001) were positively associated with the intention to consume gum arabic. The intention was positively correlated with consumption behaviour (r = .32, p < .001). As the consumer psychology study on gum Arabic in Malaysia is scarce, the findings provide a noteworthy contribution to the body of knowledge, especially in understanding the consumption behaviour among gum arabic consumers from psychological perspective. In addition, the present study offers valuable insights for gum arabic marketers and suppliers in understanding their consumers so as to develop effective and winning strategies to market this product, in line with the regulations and guidelines from the government.

Keywords: consumer psychology, gum arabic, theory of planned behaviour, Malaysia.

INTRODUCTION

Gum arabic refers to the dried exudates originating from the stems and branches of acacia senegal and acacia seyal. It is a type of medicinal plant and natural product that can be consumed as a dietary supplement. Gum arabic as a natural health product is classified under dietary supplement, similar to vitamins and minerals, herbal remedies, homeopathic medicines such as traditional Chinese medicines, probiotics, or other products such as amino acids and essential fatty acids (Health Canada, 2007).

At the present time, the use of dietary supplements is common in Malaysia and they are sometimes favoured over medicine. As opposed to food supplements which only provide additional nutrition to the human body (Nemeth, 2020), dietary supplements are consumed to replace medicine and its usage goes beyond providing bodily nutrition. Gum arabic for example, has been associated with

various health benefits such as functioning as a prebiotic for human gut (Calame, Weseler, Viebke, Flynn, & Siemensma, 2008), improving human intestinal health (Cherbut, Raison, Kravtchenko & Severine, 2003), enhancing faecal incontinence and improving stool consistency (Bliss, Jung, Lowry, Lemoine, Jensen, Werner, & Scaffer, 2001).

Previous research has found that individuals consume dietary supplements based on prescriptions from health professionals (Dickinson, Bonci, Boyon, & Franco, 2012), media advertisements, recommendations from family members and close friends (Goston & Correia, 2010) and attitudes towards the products (Abdullah, Afrad, Bhuiyan, Haque, & Islam, 2018; Thongruang, 2008). Urala and Lahteenmäki (2003) opine that differences in consumers' attitudes towards food products are associated with their willingness to consume those particular products. This can be possibly explained by the pleasure resulting from eating such products, which is aimed at self-care (Urala & Lahteenmäki, 2007) or maintaining a healthy lifestyle (Dima-Cozma, Gavrilută, Mitrea, & Cojocaru, 2014). Apart from consumers' attitudes and other social variables (e.g., medical doctors' prescriptions, recommendations from significant others, and media advertisement), psychological variables such as subjective norms, perceived behavioural control, and intention as proposed in the theory of planned behaviour, were not highlighted in gum arabic research. Previous research on health behaviours and supplement intake found that both subjective norms and perceived control were strong predictors of intention, which in turn predicted behaviour (Pawlak, et. al., 2008). By understanding these psychological variables, the marketers might be able to better understand the purchasing behaviour of the consumers.

Gum arabic

Various studies conducted on gum arabic include clinical studies (Alkarib, Saeed, Khalid, Groun, & Ghalib, 2017; Kaddam et al., 2017), animal studies (Ali et al., 2013), functional properties of gum arabic (Ahmed, 2018; Mohammed, 2017) and knowledge of gum arabic (Eltahir, Elsayed, Abbas, & Hamad, 2013). In the Malaysian context, studies on gum arabic are mainly laboratory studies on animals (Daugan & Aminah, 2014; Kassem & Abdullah, 2015) or experiments on gum arabic's functional properties (Khalid, Mohamed, Ali, Ding & Ghazali, 2015; Addai, Abdullah, Mutalib, & Musa 2013). Hence, it can be seen that there is an inadequacy of consumer-related study on gum Arabic in this country.

As the growing awareness of medicinal benefits and multifunctionality of gum arabic increases, exports of gum arabic almost tripled in the last 25 years, from an annual average of 35,000 tons in 1992– 1994 to an annual average of 102,000 tons in 2014-2016 (United Nations, 2018). In addition, gum arabic's market is estimated to grow at the rate of 5.33% between 2020 to 2027 (Data Bridge Market Research, 2020-2027). The increasing popularity of dietary supplements, not only in developed countries, but also the developing countries such as Malaysia, increased the demands of such products including gum arabic. Hence, from the marketing perspective, it is important to investigate consumers' attitudes and behaviours towards products in the market in order to enhance marketers' understanding of the challenges related to the sustainability of the products. Therefore, the present study aims to investigate the relationship between attitudes towards gum arabic, subjective norms, perceived behavioural control, intention, and behaviour.

Theory of planned behaviour

The theory of planned behaviour (Ajzen, 1991) offers a framework in understanding intentional individual behaviour. This theory provides behavioural insights in explaining and predicting behaviour based on attitudes, subjective norms, perceived behavioural control, and intention. Attitudes towards a behaviour form individuals' evaluation of that behaviour. For example, if individuals believe that gum arabic acts as a prebiotic, the theory of planned behaviour suggests that they will have a favourable attitude towards it. This favourable attitude in turn will influence their intention to consume gum arabic, and subsequently they do consume gum arabic.

Another determinant of intention in the theory of planned behaviour is subjective norm, which refers to the social pressures by significant others, either to perform or not to perform any behaviour. In relation to the above example, if the individuals' spouse or children encourage them to consume gum arabic, and at the same time, the individuals value the opinions of their significant others, the subjective norms will influence their intention to consume gum arabic.

Perceived behavioural control is the individuals' perception on whether or not they have control over their behaviour. For example, if individuals perceive that they have the ability to purchase gum arabic, this can influence their intention to purchase and consume it, and subsequently they do consume gum arabic. Intention is theorised as the most important direct predictor of behaviour (Ajzen, 1991). The theory of planned behaviour has been used extensively to predict health-related behaviours such as addictive behaviour, screening eating, exercising, maintaining oral hygiene, retaining low-fat diet and taking dietary supplements (Backman, Haddad, Lee, Johnson, & Hodgin, 2001, Godin & Kok, 1996).

Existing literature on the theory of planned behaviour indicates that perceived behavioural control is the strongest predictor of intention (Pawlak, Brown, Meyer, Connell, Yadrick, Johnson, & Blackwell, 2008), while subjective norm is the least influential determinant of intention (Petraszko, 2013). Other research on the theory of planned behaviour such as the one conducted by Udomkitmongkol (2016) only investigates the association between intention and behaviour without including the predictors of intention. To date, the theory of planned behaviour was applied in understanding the consumption of dietary and health supplement in general (e.g., Nagar, 2020; Conford & Pupat, 2019), but none specific study on the application of this theory among gum Arabic consumers. Therefore, in the present study, the theory of planned behaviour is used to identify the relationship between attitudes towards behaviour, subjective norms, perceived behavioural control, intention and consumption behaviour of gum arabic.

METHOD

A cross-sectional survey design was used and 100 participants in total were recruited via purposive and snowball sampling techniques, targeting at only gum arabic adult consumers in Malaysia (age 18 and above). Participants were recruited through social media platforms (e.g., Facebook, Twitter, and Instagram) and gum arabic sellers or agents. Those who have never consumed gum Arabic, those who were below 18 years old, and those who were not residing in Malaysia at the time the study was conducted were excluded from the study.

Data were collected by using an online questionnaire. The questionnaire adapted a scale developed by Pawlak and colleagues (2008) that consisted of 18 items measuring attitudes towards behaviour, subjective norms, perceived behavioural control and intention. Response rates of the scale ranged from "strongly disagree = 1" to "strongly agree = 7". The Cronbach's alpha value for the scale in the present study was .97. As the original scale only have four variables measuring attitudes, subjective norms, perceived behavioural control, and intention, some questions on the consumption behaviour and demographic variables were included in the questionnaire. The consumption behaviour

was measured by daily and weekly consumption of gum arabic as reported by participants and were categorised as "1 = very few", "2 = sometimes" and "3 = always". Demographic background included age, gender, occupation and residential area.

A Google form consisting the questionnaire was created for online distribution. The Google form comprised of information sheet, demographic information and the scale. The data were then analysed by using IBM SPSS software. Participants were recruited via social media platforms such as Facebook, Twitter and Instagram, and online shopping platform such as Shopee and Lazada. Participants were informed that their participation was voluntary and they might withdraw from the study at any time that they like. Participants' confidentiality was protected and they were assured that all information provided would be used for research purpose only.

FINDINGS

Table 1 summarises the demographic information of the participants.

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Demographic information	Number	Percentage
Age		
< 20 years old	1	1%
20-30 years old	31	31%
30-40 years old	45	45%
40 -50 years old	17	17%
> 50 years old	6	6%
Gender		
Male	28	28%
Female	72	72%
Employment status		
Employed	90	90%
Unemployed	10	10%
Area of residence		
Urban	71	71%
Rural	29	29%
Duration of gum Arabic consumption		
< 5 months	34	34%
5 to 12 months	55	55%
> 12 months	11	11%

The youngest participant in the present study was 18 years old while the oldest participant was 64 years old, with 45% of them between 30 to 39 years old (refer Table 1). The majority of the respondents were females (72%). The respondents also shared the reasons for consuming gum arabic which included improving their digestive system, controlling their cholesterol level and weight gain as well as maintaining their energy and stamina.

Of all variables, the mean score for intention to consume gum Arabic was the highest (M = 30.04, SD = 6.37), followed by attitudes towards consuming the product (M = 29.56, SD = 5.96). Additionally, the mean score for perceived control (M = 23.78, SD = 4.78) was slightly higher than subjective norms (M = 20.95, SD = 5.32). As hypothesised, the correlational analysis among the variables under study indicates positive significant relationships between attitudes towards gum arabic (r = .79, p < .001), subjective norms (r = .54, p < .001) and perceived behavioural control (r = .88, p < .001) with the intention to consume the dietary supplement. Likewise, intention was positively correlated with consumption behaviour (r = .32, p < .001).

DISCUSSION

From the results, it was found that attitudes towards consumption behaviour, subjective norms, and perceived behavioural control were positively correlated with intention to consume gum arabic, with perceived behavioural control having the highest correlation (r = .88, p < .001). This finding is supported by previous research indicating that perceived behavioural control was the strongest predictor of intention, followed by subjective norms and attitudes towards healthy eating (Malek Umberger, Makrides, ShaoJia, 2017). Kiriakidis's (2015) research further supports this finding in which he found that perceived behavioural control was the most influential determinant of intention towards the behaviour. The finding also supports Ajzen's (1985) proposal in the theory of planned behaviour that perceives behavioural control would depend on individuals' set of beliefs in relation to the presence or absence of necessary resources and opportunities. Since most participants in this study belong to the working population and reside in urban areas, they have the resources and opportunities to consume gum arabic such as the financial ability to purchase the product and have various channels of information on the supply of gum arabic. Consistently, Zaki and colleagues (2018) found that the prevalence of supplement users were higher in urban area and those with higher income.

In addition, attitudes towards gum arabic consumption were found to be positively related to intention (r = .79, p < .001). This finding is consistent with previous research that found similar association between attitudes and intentions across a range of dietary behaviours (McEachan, Conner, Taylor, Lawton, 2011). Prior research suggested that attitudes towards food and the level of consumption depended on consumers' substantial awareness and extra knowledge of that particular product (Stobbelaar, Casimir, Borghuis, Marks, Meijer, & Zebeda, 2007). Additionally, Ajzen, Joyce, Sheikh and Cote (2011) are of the opinion that the subjectively held information in the sense of belief is also important and shapes individuals' attitudes. If individuals perceive that there are positive outcomes resulting from the consumption of gum arabic, then their attitudes towards consuming the product are likely to be positive.

Besides attitudes, there is considerable research showing that individuals are influenced by subjective norms (Ajzen 1991), supporting the positive association between subjective norms and intention found in the present study (r = .54, p < .001). The finding supports previous research on the relationship between subjective norms and intention among consumers of dietary supplements (Conner, Kirk, Cade, & Barrett, 2001). The mean score of subjective norms in this study revealed a high desire to comply with the opinions of significant others, including family members and peers. As a collectivistic society (Hofstede, 1991), the majority of Malaysians comply to their reference groups in which their decisions rely on the approval of their referents such as close family members and friends in order to avoid any risk and uncertainty associated with the consumption behaviour.

Positive correlation was also found between intention to consume gum arabic and the actual behaviour of consuming the product (r = .31, p < .001). Participants who indicated greater intention to consume gum arabic consume the product more and on a regular basis. This finding supports the notion that intention is the main predictor of behaviour as proposed by Ajzen (1991) in the theory of planned behaviour.

CONCLUSION

This research is not without limitations, but the shortcomings may guide future studies. Firstly, all participants were gum arabic consumers who were residing in Malaysia, hence limiting the geographical generalisability of the study. Secondly, only participants who had access to online media were recruited, hence this study did not capture the views of gum arabic consumers who had no access to online media. Thirdly, findings of this research were based on a cross-sectional survey design, hence the relationship between variables across time could not be assessed. Therefore, future longitudinal studies on global consumers of gum arabic are suggested in the future.

In conclusion, this research suggests that individuals' attitudes, subjective norms and perceived behaviour were related to intention and intention was related to the actual behaviour of consuming gum arabic. The present study contributed to both theoretical and industrial perspectives. The applicability of the theory of planned behaviour was extended from general health supplements and multivitamins, to a specific product, which is gum arabic. In terms of industrial perspective, the findings could be useful for gum arabic suppliers and marketers in understanding their consumers' purchasing behaviour, hence strategising on the production and sales of gum Arabic in line with the regulations and guidelines from the relevant ministries.

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