
Factors Affecting Customer's Intention towards Purchasing Halal Collagen Beauty Drinks in Malaysia: a Structural Equation Modelling

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Abstract – This study attempted to highlight the relationship between three factors, namely attitude, subjective norms, and knowledge of customers towards their intention to purchase Halal collagen beauty drinks. There is an increasing trend of consuming collagen beauty drink products among Malaysian women in recent years. As a Muslim nation, the sources of collagen which are mainly derived from animal parts have become a major concern for Muslim customers, especially their Halal status. In addition, the target respondents of this study were females because they are conscious of beauty and willing to buy several ranges of collagen beauty drink products in the market. The sample of the study consists of 380 Muslim female customers which were collected through self-administered questionnaires using a two-stages sampling technique. This study used a structural equation model (SEM) to develop and test the conceptual model. The results show that attitude, knowledge, and subjective norms have a significant relationship with customer purchase intention towards collagen beauty drink products.

Keywords: Collagen Beauty Drinks; Halal; Muslim; Purchase Intention; Women Customers.

1. Introduction

In general, women nowadays are extremely concerned about their appearance and devoted most of their expenses on beauty products. It is believed that they are attracted by the alluring advertisements and stunning endorsements by celebrities in promoting beauty drink products through commercial ads. This strategy has enticed women customers to purchase at least one product even when it is expensive. Moreover, the convincing testimonials by successful users are very persuasive, which attract women customers. Thus, there is a growing demand for beauty drink products among Malaysian especially collagen-based products under several brands in Malaysia (Ibrahim, 2015; Ridzwan & Hashim, 2015). Every woman desires to look beautiful and they are willing to purchase any collagen-based products to become beautiful.

Collagen is a fibrous protein that makes up one-third of the protein in the human body (James, 2017) and it is the most abundant structural protein in animals, accounting for 30% of total proteins (Cavallaro et al., 1994). Forty per cent of this collagen consists of the extracellular matrix of the skin in which 20% is the cartilage and the remainder is widely distributed throughout the body such as in blood vessels, viscera, and teeth (Foegeding et al., 1996). The structure of collagen is hard, insoluble, and resorbable which can be broken down, converted, and absorbed back into the body (James, 2017). It can be transformed into compacted solids or lattice-like gels that provide multi-functions for various clinical and medical purposes. Currently, collagen products are either ingested, which may boost the health and nutritional value of the products or provided as cosmetic agents. For ingestion, jellies, powders, beverages, and capsules are manufactured using collagen peptides (Togashi et al., 2002; Samonina et al., 2002). For cosmetics, there are high-quality lotions, soaps, and creams manufactured using collagen peptides and/or native collagen.

For centuries, collagen has been used as a health remedy in China, Taiwan, Korea, and Japan due to its extraordinary benefits in advanced medicine for anti-ageing solutions and bone health. Besides that, it has also been used in various cosmetic products to improve skin elasticity and stability. Collagen is considered as a dietary supplement that improves skin health by reducing wrinkles and dryness in the form of collagen fibre (Ridzwan & Hashim, 2015). Besides that, collagen is also considered as an important ingredient in the food and beverage industries and the demand is increasing simultaneously. The examples of dominant and successful beauty collagen-based products that are also known as skin health products in Malaysia in 2019 include Aura White Collagen, Qu Putih, Gluta Collagen Berry, Kcolly, Babies Blink Collagen, Kinohimitsu Japan Collagen Diamond 5300 Drink, and NH-Colla Plus Advance. However, the halal issue of these brands needs to be addressed as most of the collagen for beauty products are produced using animal-based derivatives such as porcine (pig), bovine (cows), and marine (fish). According to Suhana, Suhaiza, and Zainorfarah (2016), purchasers do not focus on halal issues related to beauty and cosmetic products, although

the products are in demand. Therefore, this study will assist manufacturers in producing products which are based on halal collagen sources in the market.

According to Transparency (2013), collagen-based products have a great opportunity to thrive at an annual rate of 6.8%, which may potentially contribute to US\$1.1 billion in 2020 and it is expected to grow rapidly in the Asia-Pacific market. In tandem with the development of market trend and purchasing power of Malaysian customers towards collagen beauty drinks, many players would enter this market either from domestic players (Abu Bakar, 2013) or global entrepreneurs (Moungkhem, Chanintorn, Surakiatpinyo, 2010). Besides, the global collagen market, especially for regenerative medicine and other beauty products are predicted to reach more than US\$700 million by 2022 (Rosli, 2019). There is also an increase in the economic power of Muslim countries which influences Malaysians to spend more on beauty and personal goods (Swidi et al., 2010). Based on Index Mundi (2014), Muslims represent about 61.3% of the total population in this country. Therefore, the consumption of halal collagen beauty drinks becomes a major issue since Muslims are prohibited from consuming products which contain non-halal ingredients or 'syubhah', following the Islamic Shariah law (Azmawani Abd Rahman, Ebrahim Asrarhaghighi & Suhaimi Ab Rahman, 2015).

Halal Collagen Beauty Drinks

Halal collagen should be made from halal raw materials that are permitted by the Shariah law and would not harm the consumers (Azmawani Abd Rahman, Ebrahim Asrarhaghighi & Suhaimi Ab Rahman, 2015). Ridzwan and Hashim (2015) assert that porcine based collagen is forbidden for Muslims while bovine based collagen made from cattle which is slaughtered according to Islam and fish-based collagen are considered halal (Fadzlillah, Man, Jamaludin, Rahman, & Al-kahtani, 2011). Moreover, Muslims are required to eat clean, pure, and wholesome food from plants and animals which are halal and to refrain from food which are forbidden by the holy Al-Quran like pork and blood (Afifi et al., 2014). Consequently, Muslims are not allowed to eat the flesh of swine and its derivatives. Likewise, consuming food products that contain non-halal materials and using them as adulterants or additives are also forbidden in Islam (Afifi, Halim, Mahyeddin & Salleh, 2012). Besides, there was a case involving a collagen drink product, namely Lennox Firm-Up, was banned in Malaysia as it contains hazardous substances which can harm the customers' health (The Star Online, 2011). Hence, Muslim customers are encouraged to conduct an in-depth investigation via scientific knowledge and information in ensuring that the collagen is halal before buying any collagen beauty drink to improve physical appearance and maintain a youthful look (Fadzlillah, Man, Jamaludin, Rahman & Al-kahtani, 2011).

Significantly, this study focused on the halal state of collagen in beauty drinks that contain pure extracts from animal bones by raising two major questions: 1) what is the halal state of the collagen-based beauty drink products? and 2) do women customers, who wanted to look beautiful and youthful, have adequate information about the halal state of the products before purchasing them? Based on a previous study, it was proven that the majority of women customers tend to ignore halal specifications when

purchasing collagen beauty drink products, especially the younger generations (Hashim, 2013) and women who live in the urban areas (Teng & Jusoh, 2013). Even though there is no halal logo by JAKIM, women buy the collagen drinks and consume them without any hesitation. Furthermore, most of the key suppliers for collagen-derived merchandise like beauty drinks, cosmetics, and other personal care products worldwide are resourced by non-Muslim manufacturers (Ahmad, Rahman & Rahman, 2015). Hence, there might be doubts about the halal status of the entire ingredients.

According to Kiew and Don (2013), most of the collagen used in commercial products is obtained from bovine hide, pigskin, and chicken waste; the manufacturers often choose pigskin, lard, and pork as the main ingredients to produce collagen because they are comparatively inexpensive and easy to get compared to other resources (Fadzillah, Man, Jamaludin, Rahman & Al-kahtani, 2011). For the halal status, the collagen beauty drink must not contain forbidden materials like alcohol, toxic chemicals, fats, placenta, or gelatine from pigs or animals that are not slaughtered according to Islamic practices (Teng & Jusoh, 2013). Alternatively, Muslim producers have the options of exploiting gelatine from other animal sources like cattle slaughtered according to Islamic practices, or marine life like fish, sponges, and jellyfish which are Shariah-compliant (Ridzwan & Hashim, 2015) to produce halal collagen products. Manufacturers should be more diligent in producing halal-certified collagen to attract Malaysian customers. They are more knowledgeable with reliable information about halal certification issues that would affect their buying pattern (Hashim & Musa, 2014). Thus, this study further explored the attitudes of women customers and the factors influencing their intention to purchase halal collagen beauty drinks in Malaysia. The hypotheses of this study are as follows:

H1: There is a significant impact of attitude towards purchase intention.

H2: There is a significant impact of subjective norms towards purchase intention.

H3: There is a significant impact of knowledge towards purchase intention.

H4: There is a mediation effect of knowledge towards attitude and subjective norms.

2. LITERATURE REVIEW

Ajzen (1991) describes customer behaviour as attitudes and subjective norms in the theory of planned behaviour (TPB), and an individual's decision to act is typically led by behavioural intention. This statement is supported by Alam and Sayuti (2011) that an individual's performance of certain behaviour is determined by his or her intention to perform the behaviour.

Attitude and Purchase Intention

Attitudes arise from a collection of beliefs, feelings, and experiences that are interrelated to perform the behaviour (Ha & Maaninen-olsson, 2014). It also explains the evaluation of executing certain behaviour towards an object (Blackwell et al., 2006). Widodo (2003) affirms that attitude is a substantial component in forecasting and identifying human behaviour, specifically in inducing the purchase intention behaviour. Generally, attitude is expressed by the degree to which a person favourably or unfavourably evaluates or

appraises the behaviour in question (Vishal & Akhilesh, 2016; Noor, Aziz & Wahab, 2010). In other words, an attitude reveals the mental state of a person whether it is inclined positively or negatively when evaluating a product (Alam, Ahmad, Ahmad & Hashim, 2011). Hence, customer attitude is considered the ultimate factor to influence the action of buying halal collagen beauty drinks (Alam & Sayuti, 2011).

Subjective Norms and Purchase Intention

According to Noreen Noor Abd Aziz and Eta Wahab (2014), subjective norm is an individual's perception and belief in performing a specific behaviour that is accepted by people who are important to the individual. It is believed that family members, friends, and social media have a strong influence on the choice of an action taken by an individual in Malaysia (Afendi, Azizan & Darami, 2014). Numerous studies on social psychology pressure reported that subjective norms have direct effects on customer behavioural intentions (Lada, Tanakinjal & Amin, 2009; Kordnaeij, Askaripoor & Postgraduat, 2013; Widarto, 2018). Besides that, subjective norms can motivate customers to execute certain behaviour depending on the expectation of others and their justification on the importance of each element (Mohamed Omar, Kamariah Nik Mat, Ahmed Imhemed & Mahdi Ahamed Ali, 2012). Different customers might have different beliefs about halal collagen beauty drinks, where attitudes and subjective norms play a significant role in determining their purchase intention behaviour (Lada, Tanakinjal & Amin, 2009).

Knowledge of Halal Products and Purchase Intention

Customers' knowledge about a product can be obtained from some studies that influence their decision to make a purchase (Ha & Maaninen-olsson, 2014). In addition, it can be viewed as a set of ideas, information, and familiar experiences (Tariq, Nawaz, Nawaz & Butt, 2013) that guide customers to assess products (Rao & Monroe, 1988) and execute a particular behaviour. There are two types of knowledge: objective knowledge (ensuring correct information about a product in mind) and subjective knowledge (customer awareness of a product based on his or her subjective understanding) (Saqib, Mahmood, Khan & Hashmi, 2015). Knowledge has great effects on customer behaviour, especially through seeking information (Brucks, 1985; Rao & Sieben, 1992) and information processing (Alba & Hutchinson, 1987). Many researchers reveal a positive and significant relationship between subjective knowledge and purchase intention (Satish & Peter, 2004; Rao & Monroe, 1988). Therefore, this study attempted to investigate customer knowledge among women regarding halal collagen beauty drinks (Abdul, Shaari & Shahira, 2010). Customers with knowledge of halal-certified products would make more informed decision when buying halal-labelled products that contain collagen.

3. Methodology of the Study

Sampling

This study employed a survey method using a questionnaire to test the hypotheses from the 450 sets of questionnaires that were distributed to target respondents. Data sampling was conducted using convenient sampling technique whereby the researchers distributed the questionnaires at a mall. The survey forms were self-administered to the targeted respondents and a link of the online questionnaire was sent to the individuals on the mobile phone's contact list via social networking websites such as Facebook, LinkedIn, Google+, besides individuals whom the researchers know in person. Out of 450 respondents, only 380 respondents had returned the completed questionnaires with a total of 80% response rate. Most of the samples in this study are between 30 - 35 years old.

Data Analysis Procedures

The research findings were analysed using structural equation modelling (SEM) via AMOS 18 to scrutinise the data holistically. This technique is a comprehensive multivariate graphical and statistical analysis for conceptualising a model construct. This study analysed the reliability of each measurement via confirmatory factor analysis (CFA) and measurement model. Kline (1998) states that CFA manages to assist scholars in determining the backbone of a model. Alternatively, SEM can also be used to test the direct and indirect effects, mediation, and moderation in the construct. In order to test the fitness of the proposed model, the researchers used the goodness of fit measurement indices: absolute and incremental fit indices measurements. According to Kenny and McCoach (2009), these measurements work fairly well with different sets of data. Sampling is the selection of a subset (a statistical sample) of individuals within a statistical population to estimate the characteristics of the whole population in statistics, quality assurance, and survey methodology. There are two advantages of sampling: the cost is lower than others; and 2) the data collection is faster than measuring the entire population. Acceptance sampling is used to determine if a production lot of material meets the governing specifications. The use of the lot acceptance sampling plan (LASP) represents the good practice in quality control because it provides definite conclusion on the lot's disposition based on the number of defectives in a sample which is randomly picked.

4. Findings and Discussion

Model Fit Testing and Hypothesis result

The data were analysed using structural equation modelling (SEM) via AMOS 18 for model fit testing. Both CFA and measurement models for each construct were conducted before developing the final potential structural model. The measurement properties of each construct (Table 1) were recorded throughout the process. Four latent constructs (Knowledge, Attitude, Subjective Norms, and Intention) were incorporated into the final structural model with a minimum of four observed constructs for each variable.

Due to a large number of samples ($N > 150$), the requirement for normality distribution checking is not compulsory. More errors are likely to occur due to the lower number of

samples (Newsom, 2018). The normality test was tested earlier in the pilot test before the conducting CFA as the research instrument used in this study is the survey form which consists of Likert ordinal scale (Zainudin 2018). Moreover, the smart approach of maximum likelihood regression (MLR) estimator in SEM which is robust (Bandalos, 2014) can potentially minimise the Type 1 error by automatically removing the outliers to adhere with the multivariate normal distribution assumption using AMOS. For validity checking, the factor loadings for all items and constructs were tabulated. From the table, all of the tested constructs have standardised factor loading of more than 0.5 and the constructs are valid due to the significance of reliability requirement that should be more than 0.7 as suggested by Anderson and Gerbing (1988). All constructs have desirable values between 0.9-0.97. For discriminant validity, the comparison of the average variance extract (AVE) between the tested construct and the square of correlation coefficient shows that all the tested constructs in the measurement model are valid. Later, subjected to the structural model, the results generate a good value corresponding relatively with the matrix fit indices.

According to Hair (2010), three to four fit indices are reasonable to illustrate the model fitness, and the most recommended indices are GFI, AGFI, CFI, TLI, NFI, and RMSEA. Overall, the measurement model indices have values that show it is a considerably good model: CMIN $\chi^2/df = 11.299$ ($df=164$, $p<0.05$, $AGFI=0.504$, $GFI=0.613$, $CFI=0.848$, $IFI=0.848$, $RMSEA=0.172$, $RMR=0.054$). However, the values do not exceed the cut-off point which might be due to the low number of sample (n) and items being tested in this study. Kline (2005) explains that a larger number of sample size and a minimum of 15 items per predictor are required to conduct SEM analysis in the social science field of study. The structural model was examined to test the hypotheses. It was found that knowledge has a positive relationship with purchase intention (H1) ($\beta= 0.081$, $CR=1.438$, $P<0.001$), attitude is significantly and positively related to purchase intention (H2) ($\beta= 0.854$, $CR=13.199$, $P<0.001$), and subjective norm is positively related to purchase intention (H3) ($\beta= 0.039$, $CR=0.618$, $P<0.001$). Therefore, the hypotheses (H1, H2, and H3) on direct causal effect were statistically accepted and the adapted TPB model could be useful in predicting the purchase intention of Malaysian customers regarding halal collagen beauty products. Next, the mediation effect of knowledge in the structural model was tested and discussed.

Table 1: Measurement Properties

Constructs and Items	Standardised Loadings	Construct Reliability
Intention		0.97
IV1	0.93	
IV2	0.96	
IV3	0.96	
IV4	0.93	
IV5	0.92	
Attitude		0.97
II1	0.96	
II2	0.93	

II3	0.93	
II4	0.93	
II5	0.89	
Subjective Norms		0.95
III1	0.89	
III2	0.91	
III3	0.89	
III4	0.92	
III5	0.80	
Knowledge		0.91
I1	0.87	
I2	0.86	
I3	0.75	
I4	0.92	
I5	0.71	

Mediation Test

The mediating effect was examined by comparing the full mediation model and the indirect model using Multi Model Assay. The full mediation model was a better model than the indirect model where the value of CMIN χ^2 for the full model (1853.066) was lower than the indirect model (2275.149) as suggested by Baron and Kenny (1986). Therefore, there was some form of mediation in the model. It was found that knowledge has both indirect and direct relationships towards the intention to purchase. Further testing was conducted in the hypothesised structural model as shown in Figure 1. In this theoretical model, when the parameter of Knowledge \rightarrow Intention is constrained to KI=0, the following path becomes stronger: the relationship between attitude and intention is significant ($\beta = 0.884$, $p < 0.001$) including the path between attitude and knowledge ($\beta = 0.412$, $p < 0.001$). Also, the path between subjective norms and intention shows a sturdier relationship ($\beta = 0.402$, $p < 0.001$). However, the path between subjective norms and mediator (knowledge) is weaker after the model is constrained ($\beta = 0.523$, $p < 0.001$) but it is still significant. The subsequent fit indices are yielded: CMIN $\chi^2/df = 11.243$ ($df=164$, $p < 0.05$, AGFI=0.507, GFI=0.613, CFI=0.848, IFI=0.848, RMSEA=0.171, RMR=0.054). It is proven that the hypothesised model is a better model than the constraint model.

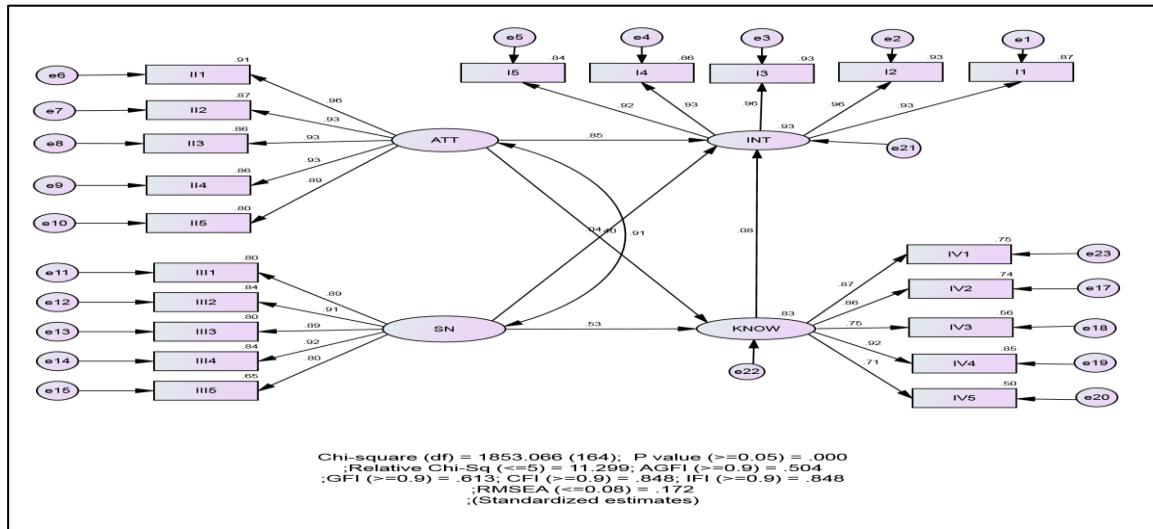


Fig. 1: Hypothesised Structural Model

Overall, this model demonstrated the mediating effect and the direct and full mediation model regression weights examined the plausible decision for specific mediation effect as illustrated in Table 2. The assumption of mediation refers to the beta and p values from both models. It was revealed that knowledge has partially mediated the path between attitude and intention and indirectly affected subjective norms and intention pathway (H4).

Table 2: Mediation Effect Regression Weights (Direct and Full Mediation Model)

Hypothesised Path	b	SE	beta	CR	p
ATTITUDE					
<i>Direct Model</i>					
Attitude → Intention	0.846	0.058	0.890	14.493	***
<i>Full Mediation Model</i>					
Attitude → Knowledge	0.237	0.070	0.402	4.900	***
Knowledge → Intention	0.131	0.091	0.081	1.438	0.151
Attitude → Intention	0.811	0.061	0.854	13.199	***
Plausible Decision					
<i>Partial Mediation</i>					
SUBJECTIVE NORMS					
<i>Direct Model</i>					
Subjective Norm → Intention	0.097	0.026	0.078	1.453	0.146
<i>Full Mediation Model</i>					
Subjective Norm → Knowledge	0.406	0.066	0.531	6.136	***
Knowledge → Intention	0.131	0.091	0.081	1.438	0.151

Subjective Norm → Intention	0.048	0.078	0.039	0.618	0.536
Plausible Decision	Indirect Effect				

5. Conclusion

This study revealed that attitude and subjective norms have a significant relationship with the intention to purchase halal collagen beauty drinks. The finding is consistent with TRA (Fishbein and Ajzen, (1980) which indicates a positive linkage between both variables and behaviour. In sum, the hypothesised model has three direct impacts of attitude towards purchase intention (H1), subjective norms towards purchase intention (H2), and knowledge towards purchase intention (H3). After conducting the multi-model comparison analysis, the findings revealed that knowledge has a partial mediation effect on attitude, as well as an indirect effect on subjective norms. Hence, knowledge is proven to be the mediating variable for the causal criterion variable where the effect of the independent variable (IV) on the dependent variable (DV) has dwindled with the presence of a mediator. Therefore, a high level of knowledge about halal status will contribute to more positive attitudes and enhance subjective norms in influencing the purchase intention of Muslim customers. Most of the respondents stated that knowledge on halal is one of the important factors when purchasing collagen beauty drinks and the majority of them still lack the exposure and information on the sources of collagen of beauty drinks in the market. If the respondents have any doubt on the ingredients of the collagen drinks, they will not purchase the products. In addition, customer attitude towards Muslim producers of collagen beauty drinks and halal logo has a major influence on their purchase intention. Other than that, religious belief and opinions from family and friends have a vital role in the customers' decision in making a purchase. Thus, manufacturers should emphasise on spreading the information on halal-certified collagen beauty drinks through various commercial ads in Malaysia to enhance the knowledge among Muslims which could affect their behavioural intention on purchasing halal collagen beauty drinks.

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