

**Special Issue (UniSZA), Malaysia:**ICAFT 2023: 3rd International Conference on Agriculture, Animal Sciences & Food Technology

Customer Satisfaction, Attitude, and Purchase Intention Towards Stingless BeeHoney Consumption in Seremban, Negeri Sembilan

Mohamad Rahijan Abdul Wahab* and Ahmad Aiman Salahudin*Faculty of Fisheries and Food Science, Universiti Malaysia Terengganu, Terengganu, Malaysia.*

Abstract | Stingless bee honey contains high source of antioxidants, phenolic acids, and flavonoids that are capable of promoting health and wound healing. However, few studies have been conducted on factors determining stingless bee honey consumption. This study aims to ascertain customer satisfaction, attitude, and purchase intent with reference to Seremban, Negeri Sembilan, and stingless bee honey consumption. The study's other goals include figuring out how attitude and customer satisfaction are related, as well as how sociodemographic characteristics affect these variables. A total of 160 individuals from an appropriate sample within the Seremban area took part in the survey. The respondents were between the ages of 13 and 65, and they must have previously tasted stingless bee honey. A questionnaire containing four sections: section A for sociodemographic information, section B for satisfaction evaluations, section C for attitude evaluations, and section D for evaluations of purchase intentions, was used. The data were examined using SPSS. Quantitative data are utilized in the analytical process. This quantitative approach allows for statistical analysis using SPSS to calculate means and standard deviations, providing a clear summary of customer attitudes and purchase intentions. Overall customer attitude was calculated at a mean of 4.01 ± 0.63 , and customer buy intention was calculated at a mean $= 3.66 \pm 0.58$. A significant difference in customer satisfaction with stingless bee honey consumption was found among groups of employment status and frequent consumers. However, there was no discernible difference in the satisfaction of customers about the use of stingless bee honey between groups according to gender, age, ethnicity, educational attainment, and monthly income. Customers' attitudes on the consumption of stingless bee honey did not differ significantly based on their gender, ethnicity, age, education level, or work status; however, their satisfaction levels did differ significantly based on their monthly income and frequency of consumption. Groups based on gender, age, ethnicity, and work status did not significantly differ in their purchase intentions towards stingless bee honey consumption; however, groups based on education level, monthly income, and frequency of consumption did significantly differ. The question with the highest correlation was between customer satisfaction and customer purchase intention.

Received | February 22, 2024; **Accepted** | August 06, 2024; **Published** | October 07, 2024***Correspondence** | Mohamad Rahijan Abdul Wahab, Faculty of Fisheries and Food Science, Universiti Malaysia Terengganu, Terengganu, Malaysia; **Email:** rahijan@umt.edu.my**Citation** | Wahab, M.R.A. and A.A. Salahudin. 2024. Customer satisfaction, attitude, and purchase intention towards stingless bee honey consumption in Seremban, Negeri Sembilan. *Sarhad Journal of Agriculture*, 40(Special issue 1): 28-42.**DOI** | <https://dx.doi.org/10.17582/journal.sja/2024/40/s1.28.42>**Keywords** | Attitude, Purchase intention, Satisfaction, Stingless bee honey**Copyright:** 2024 by the authors. Licensee ResearchersLinks Ltd, England, UK.This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

Introduction

Stingless bee honey is gaining popularity globally, including in Malaysia and West Asia, due to its unique properties and health benefits. Unlike honey from stinging bees, stingless bee honey differs in color, taste, viscosity, and moisture content, and is easier to extract as it doesn't require special safety equipment. It is rich in macronutrients, micronutrients, amino acids, vitamins, minerals, and unique phenolic and flavonoid compounds with antibacterial, anti-inflammatory, and antioxidant properties (Tuksitha *et al.*, 2018).

Harvesting stingless bee honey requires identifying colonies typically found in tree hollows, wall cavities, and other sheltered places (Salim *et al.*, 2015). The quality criteria for stingless bee honey differ from *Apis mellifera* honey, presenting challenges in standardization (Biluca *et al.*, 2016). Issues like adulteration with sugar and fungal growth can harm consumers and the industry. However, innovations such as a nano-coating product to prevent fungal growth show promise for improving honey quality and supporting the socio-economic status of producers (Raimi, 2017).

Sustainable and eco-friendly harvesting methods, such as managed hives and habitat protection, are crucial to prevent the negative impact on tropical forests, where stingless bees play a vital pollination role (Samejima *et al.*, 2004). Stingless bee honey is also prone to quicker degradation due to its lower sweetness and higher moisture content (Se *et al.*, 2018).

Despite its challenges, stingless bee honey is becoming popular in the pharmaceutical and health food sectors for its potential health benefits, such as antioxidant activity and wound healing properties (Truchado *et al.*, 2011; Abd-Jalil *et al.*, 2017). Publicizing these benefits can increase demand and value.

Customer satisfaction is a critical factor for market success. It is influenced by the quality and price of the product (Johnson, 2015; Kim *et al.*, 2019). For stingless bee honey, customer education about its health benefits can enhance satisfaction and loyalty. Attitudes towards stingless bee honey are shaped by brand reputation, quality, and packaging (Das, 2014; Fakhir *et al.*, 2016). Effective marketing and clear

product information can positively influence purchase intentions (Rana and Paul, 2017).

The intention to purchase is driven by positive attitudes and perceived benefits, including health advantages (Shafiee and Wahab, 2021). Social influences and local preferences also play a role in consumer decisions (Yunus and Rashid, 2016; Rahim *et al.*, 2016).

The current study seeks to determine the levels of customer satisfaction, attitude, and purchase intention about the consumption of stingless bee honey in Seremban, Negeri Sembilan.

Objectives

1. To determine customer satisfaction, attitude and purchase intention towards stingless bee honey consumption.
2. To find out the difference in socio-demographic factors on customer satisfaction, attitude and purchase intention towards stingless bee honey consumption.
3. To determine the relationship between customer satisfaction, attitude and purchase intention with stingless bee honey consumption.

Materials and Methods

Study area

Figure 1 showed all districts in Negeri Sembilan. However, only the Seremban area had been chosen for this research. Seremban area had been marked.



Figure 1: The map of Negeri Sembilan state.

There are seven districts in Negeri Sembilan: Jelebu, Jempol, Tampin, Kuala Pilah, Seremban, Rembau, and Port Dickson. Based on information from George and Mallery (2003) (Table 2). Malaysia's Department of Statistics (2020), the population in Negeri Sembilan

in 2020 is 1,199,974 million people. As we know, the stingless bee honey had been popular in Malaysia because of its benefit to the consumer. As mentioned above, Seremban, the capital city of Negeri Sembilan with a population of approximately 383,536, has been chosen for this research. Given its bustling nature and busy residents, it is an ideal location to study customer satisfaction, attitude, and purchase intention towards stingless bee honey, ensuring an ample and diverse pool of respondents.

Instrument and data collection

The targeted respondents for this research were between the age of 13 to 65 years old. This group was chosen because they may consume the stingless bee honey in their daily life. So, to determine the sampling size, the [Yamane \(1967\)](#) formula had been used, with a 92% confidence level and $P = 0.8$.

$$n = \frac{N}{1 + N(e^2)}$$

Where, N = sample size; N = Number of populations; e = significant level; $n = 383536$; $1 + 383536 (0.08^2)$; $n = 159.99 \approx 160$ respondents; *160 respondents contributed to this research.

As stated, the research had been conducted in the area of Seremban, Negeri Sembilan. So, for this study, only those who consume stingless bee honey will take part in the survey. Convenience sampling, a non-probability sampling method, selects samples from the population purely for the researcher's convenience. ([Bhat, 2019](#)). In other words, the convenience sample was used because it was easier for the researcher to recruit the participants to answer the questionnaire.

The questionnaire had been developed based on the research on customer satisfaction, attitude and purchase intention towards stingless bee honey consumption in Negeri Sembilan. The questionnaire was produced in two languages which are Malay and the English language. In order to be sure that respondents who did not speak English well would truly comprehend the questions, a Malay version of the questionnaire was developed. Before the respondents answer the questionnaire, detailed instruction had been given at the front page of the questionnaire. Since the questionnaire used closed-ended questions, the answers had been pre-prepared. Closed-ended questions have a limited range of viable solutions (A,

B, C, or All of the above), or they can only receive a response of "Yes" or "No." Closed-ended questions are frequently beneficial for surveys because you obtain higher response rates when users do not have to type so much ([Shafiee and Wahab, 2021](#)). In addition, the closed-ended question can easily be analysed statistically. This questionnaire has 4 sections.

Section A: Socio-demographic profile

Section B: Satisfaction assessment to stingless bee honey

Section C: Attitude assessment to stingless bee honey

Section D: Purchase intention assessment to stingless bee honey

For section A, the questions consist of multiple-choice questions (MCQ), which the respondents choose an answer based on their socio-demographic profile. There are 10 questions in Section B and C. Section B will test the knowledge of the respondent about their satisfaction to stingless bee honey. For section C, it will test the attitude of respondents to stingless bee honey. For section D, 12 questions will test the purchase intention of stingless bee honey. Section B, C, and D used a Likert scale. According to [Wahab et al. \(2018\)](#), a Likert scale is a technique used in questionnaires where respondents are asked to rate items on a range from strongly agree to strongly disagree.

The relationship between two variables can be examined and its strength can be ascertained using correlation analysis. For a relationship to be considered significant, the value of r should be above 0.4. If the value of r is below 0.4, the question is rejected. According to the rule of thumb suggested by [Guilford \(1957\)](#). [Table 1](#) illustrates the strength of the relationship for each question.

Table 1: *Strength relationship of question.*

Value of r	Strength of relationship
<0.2	Almost negligible relationship
0.2-0.4	Low correlation, definite but small relationship
0.4-0.7	Moderate correlation, marked relationship
0.7-0.9	High correlation, marked relationship
>0.9	Very high correlation, marked relationship
1.0	Perfect correlation

The perfect correlation is when the value of r is 1.0. Moreover, the range between 0.4 to 0.9 can be marked as a good relationship. But for values below 0.4, there

is low relationship or no relationship between the questions. So, the items with less or no relationship between the question will be deleted.

Table 1 reported the Cronbach Alpha score and the internal consistency of the question. Questions can be accepted at a range of 0.6 to above 0.9.

Table 2: Consistency of question.

Cronbach alpha score	Internal consistency
>0.9	Excellent
0.8-0.9	Good
0.7-0.8	Acceptable
0.6-0.7	Questionable
0.5-0.6	Poor
<0.5	Unacceptable

Reliability tests ensure the measurement technique consistently measures the concept of interest. Sarantakos (2005) defines dependability as a measurement's ability to yield consistent results. Cronbach's alpha is used to assess inter-item reliability. Scores are interpreted as follows: <0.50 = unacceptable, 0.50–0.59 = poor, 0.60–0.69 = questionable, 0.70–0.79 = acceptable, and >0.80 = good (George and Mallery, 2003).

Data analysis

The data were examined using SPSS version 23.0. The type of data used for analysis is quantitative. This quantitative approach allows for statistical analysis using SPSS to calculate means and standard deviations, providing a clear summary of customer attitudes and purchase intentions. The central limit theorem was also applied. The normality assumption was used to assume the population being studied was normally distributed. Central limit theorem is shown in Table 3.

Table 3: Central limit theorem.

If	Then
$n \geq 100$	It is always safe to relax the normality assumption
$50 \leq n < 100$	It is almost always safe
$30 \leq n < 50$	It is probably safe
$n < 30$	It is probably not safe

n is the number of respondents.

According to Table 3, it shows that the normality can be assumed as safe when the sample is higher

than 100. This is because the higher the number of respondents, the normality assumption is considered safer. According to this research, the number of respondents was 160. So, it can be assumed to have normality. When the sample is lower than 30, the assumption of normality is not safe because the number of samples is considered too small.

Results and Discussion

Socio-demographic profile of respondents

The respondents were a convenient sample since they were chosen among those near the location of the researcher. The respondents also have had experience consuming the stingless bee honey in their life. The data was collected in Negeri Sembilan, specifically in the Seremban area. Therefore, the socio-demographic profile provided some useful information to the researcher.

Table 4 shows the frequency and percentage of the socio-demographic profiles of customers consuming stingless bee honey who were involved as respondents in this research. The data was obtained after 3 weeks of passing the survey question to the respondents. The table above illustrates that there were more female participants (58.75%) as compared to the male respondents (41.25%). For ethnicity, the Malays contributed most (87.50%) in this questionnaire than the non-Malays (20%). In addition, among non-Malays, they were from Chinese (3.7%), Indian (6.2%), Australian (0.7%), Indian-Muslim (1.2%) and Serani (0.7%). For age groups, most contribution came from the 21–30 years old (43.1%), followed by 31–40 years old (15.6%), 41–50 years old (14.4%), under 20 years old (12.5%) and above 51 years old (14.4%).

Next, for education level, those with MCE (Malaysian Certificate of Education) level contributed the highest in this questionnaire (40.6%), followed by degree level (31.3%), diploma (14.4%), other education (8.1%) and MHSC (Malaysian Higher School Certificate) (5.6%). For other education, about (3.1%) came from the Master level, (1.9%) came from LSA (lower secondary assessment), (1.3%) from MSC (Malaysian skills certificate) and (1.25%), Ph.D. level, Form 1, and PSAT (Primary School Achievement Test) were (0.6%). About (56.2%) respondents were employed, followed by students (21.2%), and unemployed (13.1%). Self-employed status had the least respondents (9.5%).

Table 4: Socio-demographic profile of respondents.

Demographic characteristic	Frequency (n=160)	Percentage (%)
Gender		
Male	66	41.25
Female	94	58.75
Ethnicity		
Malay	140	87.5
Non-Malay	20	12.5
Non-Malay		
Chinese	6	3.7
Indian	10	6.2
Aussie	1	0.7
Indian-Muslim	2	1.2
Serani	1	0.7
Age		
Under 20 years old	20	12.5
21-30 years old	69	43.1
31-40 years old	25	15.6
41-50 years old	23	14.4
Above 51 years old	23	14.4
Education level		
MCE	65	40.6
MHSC	9	5.6
Diploma	23	14.4
Degree	50	31.3
Others education	13	8.1
Master	5	3.1
PhD	1	0.6
Form 1	1	0.6
Malaysian skills certificate	2	1.25
LSA	3	1.9
PSAT	1	0.6
Employment status		
Employed (Full time/ Part-time)	90	56.2
Self-employed	15	9.5
Unemployed	21	13.1
Student	34	21.2
Monthly income		
No Income	45	28.1
Between RM 1,001 - RM 1,999	50	31.
Between RM 2,000 - RM 2,999	25	15.6
Between RM 3,000 - RM 3,999	12	7.5
Between RM 4,000 - RM 4,999	10	6.3
RM 5,000 and above	18	11.3
How frequently do you consume stingless bee honey?		
Every day	14	8.7
3-4 times per week	16	10
1-2 times per week	20	12.5
1 time per month	20	12.5
Less than 1 time per 6 months	40	25
Less than 1 time per year	50	31.3

n is number of respondents.

For monthly income, about (31.2%) respondents were in the range between RM 1,001-RM 1,999, followed by no income (28.1%), between RM 2,000-RM 2,999 (15.6%), RM 5,000 and above (11.3%), between RM 3,000-RM3,999 (7.5%), and between RM 4,000-RM4,999 (6.3%). Based on the data, (31.3%) of respondents had consumed stingless bee honey less than 1 time per year, followed by less than 1 time per 6 months (25.0%). Both 1-2 times per month and 1 time per month were (12.5%) of respondents, followed by 3-4 times per week (10%) and every day (8.7%).

Customer satisfaction towards stingless bee honey

In this study, customer satisfaction towards stingless bee honey consumption had been determined. Table 5 shows the mean and standard deviation of customer satisfaction towards stingless bee honey consumption. The higher the score rated by respondent indicates that the factor was highly likely to be a concern by respondents when purchasing stingless bee honey.

Table 5: Mean and standard deviation of customer satisfaction towards stingless bee honey.

No	Question	mean±SD
1	I am satisfied consuming stingless bee honey	3.96±0.86
2	I find the value of stingless bee honey to be satisfactory.	3.93±0.85
3	I think all stingless bee honey company successful produce stingless bee honey product	3.55±0.89
4	The stingless bee honey exceeds expectations	3.93±0.78
5	The market's supply of stingless bee honey is of high grade.	3.83±0.81
6	Stingless bee honey meets your needs	3.89±0.81
7	I am satisfied with the effect stingless bee honey towards my health	3.95±0.81
8	I am satisfied with the price of stingless bee honey	3.53±0.94
9	How would you rate the value of money to the stingless bee honey?	3.66±0.85
10	The quality of stingless bee honey is proportional to the price market	3.65±0.85
	Overall satisfaction	3.79±0.63

Descriptive analysis was used; Customer satisfaction was 5-point Likert scale where; Scale 1=strongly dissatisfied to 5=strongly satisfied; Scale 3 indicated that customer neutral to stingless bee honey; SD>1 indicated that the value is far to the mean which is not good; SD<1 indicated that the value is close to the mean which is good.

Table 5 also shows the overall satisfaction towards stingless bee honey consumption. Based on the result, it reflected a more neutral stance with a mean score of

3.79±0.63. All the satisfaction question was not much different in term of the mean scores. However, there is slight difference in mean scores by each question.

Most of the respondents agreed that they were more satisfied consuming stingless bee honey (mean=3.96±0.86). This indicated that the respondent has a slight concern about satisfaction consuming stingless bee honey. [Mohammed and Rashid \(2018\)](#), said that some customers or consumer is concerned more about the consumption experience. Meaning that customer experience to the stingless bee honey will affect their satisfaction to the product. Furthermore, as per the Economic Theory, pricing is a crucial component that influences the decisions of buyers, and customers tend to favor cheaper prices in order to maximize their pleasure ([Kirchner et al., 2019](#)). Therefore, one of the things that contributed to the customers satisfaction with stingless bee honey consumption was the honey's affordable pricing. When the customer is satisfied with the stingless bee honey, they will consume it more in the future.

However, the lowest factor rated by respondents were in question 8; I am satisfied with the price of stingless bee honey (mean=3.53±0.94). As per [Ullah et al. \(2019\)](#), customer satisfaction will improve the overall reputation of hotel and profit, which is useful for the national economy. In light of the aforementioned assertion, the production of stingless bee honey company can gain more profit by increasing the satisfaction of customers to the product. But in this case, the price is an issue of least satisfaction to stingless bee honey. As we know, the price of honey and stingless bee honey can be a bit pricy because of quality. Furthermore, as noted by [Hussin et al. \(2016\)](#), product quality and affordable costs are equally significant qualities, and a product's pricing strategy should reflect its brand. Not a single food or non-food firm wants to lose a lot of money on their products. Keeping the cost of stingless bee honey under control could increase customer satisfaction. Therefore, the primary reason why customers aren't as happy with stingless bee honey is its high price.

Customer attitude towards stingless bee honey

This study assessed customer attitudes toward the consumption of stingless bee honey. [Table 6](#) displays the mean and standard deviation for the question in Section C. Customer attitude towards stingless bee

honey consumption. The higher the score rated by respondents shows the factor to be likely a concern by respondents when purchasing the stingless bee honey.

Table 6: Mean and standard deviation of customer attitude towards stingless bee honey.

No	Question	mean±SD
1	Stingless bee honey is sold and packed with attractive and safe conditions	3.90±0.83
2	Stingless bee honey should be packed in glass bottles	4.17±0.70
3	You will see the price first before buying a stingless bee honey	4.21±0.81
4	Stingless bee honey brands should be popular and well-known	3.91±0.90
5	Popular brands are safer to use	3.83±0.93
6	Product information is easy to understand	4.29±3.4
7	Stingless bee honey can heal the disease	4.00±0.81
8	Preparation of stingless bee honey is safe	3.83±0.83
9	Stingless bee honey meets your needs	3.90±0.78
10	Stingless bee honey high in antioxidant	4.06±0.78
	Overall attitude	4.01±0.63

Note: Descriptive analysis was used; Customer attitude was 5-point Likert scale where; Scale 1=strongly disagreed to 5=strongly agreed; Scale 4 indicated that customer agreed to stingless bee honey; SD>1 indicated that the value is far to the mean which is not good; SD<1 indicated that the value is close to the mean which is good.

The overall attitude towards stingless bee honey consumption is also shown above. Based on the result, the mean score is 4.01±0.63; it demonstrates that the majority of responders agreed with the majority of the query. All attitude questions showed not much difference in term of the mean scores. In addition, it still had a slightly different mean scores between each question.

Most of the respondents agreed that the stingless bee honey product information should be easy to understand (mean=4.29±3.36). Since the stingless bee honey claims to be a healthy product, the information should be well known by respondents. Numerous studies have demonstrated the value of including nutritional information on the menu and the impact it has on customers' attitudes and their decision-making when it comes to making healthy choices ([Fakih et al., 2016](#)). Based on this study, it is useful to show the information that stingless bee honey is a healthy product. As the information is easy to understand, customer attitude towards stingless bee honey will be positive.

However, the lowest factor rated by respondents is in question 5 (a popular brand is safer to used) and question 8 (preparation of stingless bee honey is safe). 150 respondents rated least on question 5 (mean=3.83±0.93) and question 8 (mean=3.83±0.83). According to the findings on question 5, this does not mean that the popular brands are safer to use will promote a positive attitude of the consumer towards stingless bee honey. It might be that an unpopular brand is safer to use than the popular brand. A different outcome in research by [Mohammed and Rashid \(2018\)](#), stated that brand image significantly influences customer's perceptions of value, satisfaction and intention to revisit.

Given that Malays make up the bulk of Malaysia's consumer base, halal concerns may have an impact on how they perceive stingless bee honey and how it should be prepared. According to [Fakih et al. \(2016\)](#), withholding information regarding the ingredients and preparation techniques might have a negative impact on client attitudes and the establishment's ability to earn their trust.

Customer purchase intention towards stingless bee honey

In this study, the customer purchase intention towards stingless bee honey had been determined. [Table 7](#) shows the mean and standard deviation of customer purchase intention towards stingless bee honey. The higher the score rated by respondent indicates that the factor is likely to be a concern by the respondent when purchasing the stingless bee honey.

[Table 7](#) also shows the overall purchase intention towards stingless bee honey consumption. Based on the result, it reflected a more neutral stance with a mean score of 3.66±0.58. All the purchase intention questions showed not much difference in term of the mean scores. However, it still has a slightly different mean scores between each question.

Most of the respondents agreed that buying stingless bee honey can help in maintaining body health (mean=4.13±0.77). This indicated that the respondents were slightly concerned about their body health when buying stingless bee honey. According to [Kuo et al. \(2009\)](#), the consumer's proclivity to buy goods or services from the same store and share their experience with others is known as the post-purchase intention. Since the customer knows the benefit of stingless bee honey, they will buy it again at another

time. Stingless bee honey claims to be a healthy product, thus the experience is important in order for them to consume stingless bee honey in future. The composition of stingless bee honey has never been thoroughly investigated, yet it is thought to be a healthy product ([Biluca et al., 2017](#)). Thus, customers will purchase stingless bee honey in the future due to the benefits it provides to their bodies.

Table 7: Mean and standard deviation of customer purchase intention towards stingless bee honey.

No	Question	mean±SD
1	I will strongly recommend others to purchase stingless bee honey	4.05±0.81
2	I will frequently purchase stingless bee honey in the future	3.62±0.95
3	The family is one of the factors that you purchase the stingless bee honey	3.63±0.97
4	Social media is one of the effects that cause me to purchase the stingless bee honey	3.53±1.13
5	I keep buying the stingless bee honey even the price the stingless bee honey is quite expensive	3.29±1.06
6	Stingless bee honey is better than other honey	3.81±0.85
7	Marketing strategy of seller affects you buying stingless bee honey	3.63±0.99
8	Buy stingless bee honey from Malaysia only than neighboring country	3.84±0.82
9	Stingless bee honey from neighboring countries is less trusted	3.68±0.84
10	Buying stingless bee honey because it recognizes good quality	3.92±0.78
11	Buying stingless bee honey because of trends	2.79±1.13
12	Buying stingless honey because it helps in body health	4.13±0.77
	Overall Purchase Intention	3.66±0.58

Note: Descriptive analysis was used; Customer purchase intention was measured using a 5-point Likert scale, where; Scale 1=strongly disagreed to 5=strongly agreed; Scale 3 indicated that customer neutral to stingless bee honey; SD>1 indicated that the value is far to the mean which is not good; SD<1 indicated that the value is close to the mean which is good.

However, the lowest factor rated by the respondent was in question 11 (Buying stingless bee honey because of trends). All respondents rated least on question 11 (mean=2.79±1.13). Question 11 is also a negative question, as the respondent was alert to this question. According to [Nam et al. \(2017\)](#), consumer expectations can be predicted and observed about beliefs and the reliability of the product and services. So, the experience in consuming stingless bee honey by

the consumer will not affect the trend of consuming it. Even if the stingless bee honey was not trending in a country or social media, the regular customer will be purchasing it in the future because of its benefit. According to the findings, consumers do not buy stingless bee honey because it is popular, but rather because it is a high-quality product.

Comparison of customer satisfaction towards stingless bee honey consumption based on the demographic profile

To investigate the effect of demographic profile on customer satisfaction with stingless bee honey consumption, an independent t-test was employed for gender, while a one-way ANOVA was utilized for ethnicity, age, education level, employment status, monthly income, and frequency of consumption. Table 8 shows the comparison of customer satisfaction towards stingless bee honey consumption based on demographic profiles.

Based on Table 8, there was no significance difference in customer satisfaction towards stingless bee honey consumption among the group according to gender, ethnicity, age, education level, and monthly income. However, there is a significance difference in customer satisfaction towards stingless bee honey consumption among a group of employment status and frequency of consumption.

As mentioned above, there was no significance difference in customer satisfaction towards stingless bee honey consumption among gender ($t=0.94$ $p=0.14$). However, male respondents were significantly more satisfied ($\text{mean}=3.88\pm0.95$) towards stingless bee honey consumption as compared with the female ($\text{mean}=3.72\pm0.61$). Next, on ethnicity, there were no significant difference in customer satisfaction towards stingless bee honey consumption ($t=0.89$ $p=0.71$). Moreover, the non-Malay respondents were more satisfied with stingless bee honey ($\text{mean}=3.83\pm0.61$) as compared with Malays ($\text{mean}=3.78\pm0.63$).

Age ($F=0.03$; $p=0.10$) also showed no significance difference in customer satisfaction towards stingless bee honey consumption. On the other hand, both age groups of 21-30 years old ($\text{mean}=3.80\pm0.56$) and 31-40 years old ($\text{mean}=3.80\pm0.82$) showed to be more satisfied than the other age group. The under 20 years old ($\text{mean}=3.76\pm0.52$) showed to be least satisfied with the stingless bee honey.

Table 8: Comparison of customer satisfaction towards stingless bee honey based on the demographic profile.

Demographic variable	N	mean $\pm$ SD	F/t value	p value
Gender				
Male	66	3.88 $\pm$ 0.95	0.94	0.14
Female	94	3.72 $\pm$ 0.61	(t-statistic)	
Ethnicity				
Malay	140	3.78 $\pm$ 0.63	0.89	0.71
Non-Malay	20	3.83 $\pm$ 0.61	(t-statistic)	
Age				
Under 20 years old	20	3.76 $\pm$ 0.52	0.03	0.10
21-30 years old	69	3.80 $\pm$ 0.56	(F-statistic)	
31-40 years old	25	3.80 $\pm$ 0.82		
41-50 years old	23	3.78 $\pm$ 0.58		
Above 50 years old	23	3.78 $\pm$ 0.58		
Education level				
MCE	65	3.81 $\pm$ 0.65	3.26	0.14
MHSC	9	4.06 $\pm$ 0.69	(F-statistic)	
Diploma	23	4.10 $\pm$ 0.56		
Degree	50	3.61 $\pm$ 0.54		
Others education	13	3.60 $\pm$ 0.66		
Employment status				
Employed	90	3.87 $\pm$ 0.65	3.02	0.03*
Self-employed	15	3.34 $\pm$ 0.74	(F-statistic)	
Unemployed	21	3.80 $\pm$ 0.54		
Student	34	3.76 $\pm$ 0.48		
Monthly income				
No income	45	3.68 $\pm$ 0.49	1.84	0.11
Between RM 1,001-RM 1,999	50	3.91 $\pm$ 0.60	(F-statistic)	
Between RM 2,000-RM2,999	25	3.70 $\pm$ 0.66		
Between RM3,000-RM3,999	12	3.88 $\pm$ 0.65		
Between RM4,000-RM4,999	10	3.46 $\pm$ 0.92		
RM5,000 and above	18	3.62 $\pm$ 0.60		
Frequent consume				
Everyday	14	4.18 $\pm$ 0.47	7.90	0.00*
3-4 times per week	16	3.99 $\pm$ 0.51	(F-statistic)	
1-2 times per week	20	4.17 $\pm$ 0.54		
1 time per month	20	4.08 $\pm$ 0.58		
Less than 1 time per 6 months	40	3.55 $\pm$ 0.55		
Less than 1 time per year	50	3.51 $\pm$ 0.62		

Customer satisfaction was 5-point Likert scale where; 1=strongly dissatisfied to 5=strongly satisfied; Independent t-test was used for gender and ethnicity; One-way ANOVA was used for age, education level, employment status, monthly income and frequent consume; *Significance at the 0.05 level.

Next, there is no significance difference in customer satisfaction towards stingless bee honey consumption among groups of monthly income ($F=1.84, p=0.11$). In comparison, between monthly income of RM1,001-RM1,999 (mean= 3.91 ± 0.60) showed to be more satisfied as compared with other monthly income groups. In addition, those with a monthly income between RM4,000-RM4,999 (mean= 3.46 ± 0.92) showed to be the least satisfied with stingless bee honey consumption.

There is no significance difference in customer satisfaction towards stingless bee honey consumption among education level group ($F=3.26, p=0.14$). Diploma respondents that contributed most at this survey showed to be more satisfied with stingless bee honey (mean= 4.10 ± 0.56) as compared to the other groups. Furthermore, the least satisfied with stingless bee honey consumption comes from the others education level (mean= 3.60 ± 0.66). As said by Johnson (2015), satisfaction is highest in the goods industry, lowest in the services sector, and much lower in public and government institutions.

Employment Status ($F=3.020, p=0.032$) showed significance difference in customer satisfaction towards stingless bee honey consumption. 85 employed respondents (mean= 3.87 ± 0.65) rated to be more satisfied with stingless bee honey consumption than the other employment status. Moreover, the self-employed amounting to 14 respondents (mean= 3.34 ± 0.74) showed to be least satisfied towards stingless bee honey consumption. This result showed that employed respondents were more aware of the stingless bee honey than the self-employed respondents.

Next, frequency of consumption ($F=7.90, p=0.00$) also showed significance difference in customer satisfaction towards stingless bee honey consumption. About 13 respondents who consume it every day (mean= 4.18 ± 0.47) rated to be more satisfied towards stingless bee honey compared with other frequency consumption. In addition, respondents who consume less than 1 time per year (mean= 3.51 ± 0.62) showed to be the least satisfied in consuming stingless bee honey. Research by Davras and Caber (2019), stated that good company will aim to increase customer happiness by increasing the performance of products or services.

Comparison of customer attitude towards stingless bee honey consumption based on demographic profile

To determine the effect of demographic profile on customer attitude towards stingless bee honey consumption, the independent t-test was used for gender and one-way ANOVA was used for ethnicity, age, education level, employment standing, monthly income also frequent consume. Table 9 shows the comparison of customer attitude towards stingless bee honey consumption based on demographic profile.

According to Table 9, there was no significance difference between customer attitude towards stingless bee honey consumption among groups of gender, ethnicity, age, education level and employment status. However, there is significance difference of customer satisfaction towards stingless bee honey consumption among groups of monthly income and frequency of consumption.

As mentioned above, gender ($t=0.62, p=0.93$) showed no significance difference of customer attitude towards stingless bee honey. In contrast, the male group (mean= 4.02 ± 0.57) showed more positive attitude towards stingless bee honey consumption as compared with females (mean= 4.01 ± 0.68). Next, ethnicity ($F=0.07, p=0.98$) showed no significance difference of customer attitude towards stingless bee honey. Both Malays and non-Malays showed a mean= 4.01 ± 0.65 and 4.01 ± 0.44 , respectively. Moreover, there is no significance difference in customer attitude towards stingless bee honey by age groups ($F=0.40, p=0.81$). The findings indicated that, in comparison to other age groups, those between the ages of 21 and 30 had a more favorable opinion regarding stingless bee honey. The respondents with the least favorable attitudes toward consuming honey from stingless bees were those between the ages of 41 and 50.

For education level ($F=1.47, p=0.19$) also showed no significance difference in customer attitude towards stingless bee honey consumption. However, Diploma level respondents (mean= 4.26 ± 0.97) showed a more positive attitude as compared with others education. In addition, others education respondents (mean= 3.81 ± 0.67) showed least on positive attitude towards stingless bee honey consumption.

Next, there is no significance difference on customer attitude towards stingless bee honey consumption among employment status groups ($F=1.08, p=0.36$).

Table 9: Comparison of customer attitude towards stingless bee honey consumption based on demographic profile.

Demographic variable	N	mean±SD	F/t value	p value
Gender				
Male	66	4.02±0.57	0.62	0.93
Female	94	4.01±0.68	(t-statistic)	
Ethnicity				
Malay	140	4.01±0.65	0.31	0.98
Non-Malay	20	4.01±0.44	(t-statistic)	
Age				
Under 20 years old	20	4.00±0.38	0.40	0.81
21-30 years old	69	4.04±0.69	(F-statistic)	
31-40 years old	25	4.00±0.70		
41-50 years old	23	3.87±0.61		
Above 50 years old	23	4.01±0.63		
Education level				
MCE	65	4.01±0.52	2.08	0.09
MHSC	9	4.28±0.62	(F-statistic)	
Diploma	23	4.26±0.97		
Degree	50	3.89±0.49		
Other's education	13	3.81±0.67		
Employment status				
Employed	90	3.98±0.59	1.08	0.36
Self-employed	15	3.91±0.65	(F-statistic)	
Unemployed	21	4.23±0.99		
Student	34	3.98±0.36		
Monthly income				
No income	45	4.03±0.75	2.39	0.04*
Between RM 1,001- RM 1,999	50	4.12±0.51	(F-statistic)	
Between RM 2,000- RM2,999	25	4.07±0.46		
Between RM3,000- RM3,999	12	4.02±0.50		
Between RM4,000- RM4,999	10	3.99±0.58		
RM5,000 and above	18	3.51±0.81		
Frequent consume				
Everyday	14	4.18±0.60	2.83	0.02*
3-4 times per week	16	3.97±0.36	(F-statistic)	
1-2 times per week	20	4.37±1.01		
1 time per month	20	4.16±0.49		
Less than 1 time per 6 months	40	3.94±0.47		
Less than 1 time per year	50	3.81±0.60		

Note: Customer attitude was 5-point Likert scale where; 1=strongly disagreed to 5=strongly agreed; Independent t-test was used for gender and ethnicity; One-way ANOVA was used for age, education level, employment status, monthly income and frequent consume; *Significance at the 0.05 level.

On the other hand, unemployed respondents (mean=4.23±0.99) showed more positive attitude as compared with the other employment status. Then, those who are self-employed (mean=3.91±0.65) showed least positive attitude towards stingless bee honey consumption.

Based on Table 9, only monthly income and frequency of consumption showed significance difference on customer attitude towards stingless bee honey consumption. For monthly income (F=2.39, p=0.04), respondents with income between RM1,001-RM1,999 (mean=4.12±0.51), they showed a more positive attitude as compared with the other monthly income group. In contrast, respondents with income RM5,000 and above (mean=3.51±0.81) showed least on positive attitude to consume stingless bee honey. As said by Yau and Tsang (2018), teachers and students with higher average monthly incomes exhibited a more positive attitude and behavior toward online shopping. In other words, consumers who have an average monthly income have a tendency for more positive attitude to buy stingless bee honey as compared to consumers with high monthly income. In short, high-income group does not ensure a positive attitude to buy stingless bee honey compared with consumers with an average income per month.

About 14 respondents who consume stingless bee honey everyday (mean=4.18±0.60) showed a more positive attitude towards stingless bee honey consumption as compared with other frequency of consumption by respondents. On the other hand, respondents who consume less than 1 time per year (mean=3.81±0.60) showed least positive attitude towards stingless bee honey consumption. Kirchner *et al.* (2019) claimed that risk-averse people prefer to take little risk and are willing to sacrifice some projected benefits in order to reduce the possibility of negative outcomes, whereas risk-seekers are eager to accept high risk. In this context, consumer that consume most tend to take higher risk to buy the stingless bee honey from knowing the benefit of its consumption.

Comparison of customer purchase intention towards stingless bee honey consumption based on demographic profile

The independent t-test was used to assess gender, and a one-way ANOVA was used to assess ethnicity, age, education level, job status, monthly income, and frequency of consumption in order to ascertain the

impact of demographic profile on consumer purchase intention for stingless bee honey consumption. Table 10 showed the comparison of customer attitude towards stingless bee honey consumption based on demographic profile.

Table 10 shows that there was no statistically significant change in customer purchase intention towards stingless bee honey consumption among groups of gender, ethnicity, age and employment status. However, there is a significance difference in customer purchase intention towards stingless bee honey consumption among groups of education level, monthly income and frequency of consumption.

As mentioned before, there is no significance difference of customer purchase intention towards stingless bee honey consumption among groups of gender ($t=0.76$ $p=0.18$). In contrast, male (mean= 3.73 ± 0.63) will positively purchase more in future of stingless bee honey as compared with female (mean= 3.60 ± 0.54). Surprisingly, as reported by Wolf and Zhang (2016), male consumer decision-making traits are different from female. Moreover, ethnicity ($t=0.94$, $p=0.63$) also showed no significance difference of customer purchase intention towards stingless bee honey consumption. However, Non-Malays (mean= 3.72 ± 0.59) showed more positive intention to purchase stingless bee honey as compared with Malays (mean= 3.65 ± 0.58).

Next, there is no significance difference in customer purchase intention towards stingless bee consumption among age ($F=0.75$, $p=0.56$) groups. However, the above 50 years old age group (mean= 3.75 ± 0.49) will positively purchase stingless bee honey as compared with others age groups. Furthermore, the respondents in the age range of 31 to 40 (mean= 3.50 ± 0.75) expressed the least desire to buy stingless bee honey in the future.

For the employment status ($F=0.51$, $p=0.67$), it showed no significance difference in customer purchase intention towards stingless bee honey consumption. On the other hand, both employed (mean= 3.70 ± 0.64) and unemployed (mean= 3.70 ± 0.40) respondents showed positive intention to purchase the stingless bee honey in the future as compared with the other employment status. However, self-employment (mean= 3.55 ± 0.64) respondents showed the least positive intention to purchase stingless bee honey.

Table 10: Comparison of customer purchase intention towards stingless bee honey consumption based on demographic profile.

Demographic variable	N	mean±SD	F/t value	p-value
Gender				
Male	66	3.73±0.63	0.76	0.18
Female	94	3.60±0.54	(t-statistic)	
Ethnicity				
Malay	140	3.65±0.58	0.94	0.63
Non-Malay	20	3.72±0.59	(t-statistic)	
Age				
Under 20 years old	20	3.61±0.52	0.75	0.56
21-30 years old	69	3.72±0.55	(F-statistic)	
31-40 years old	25	3.50±0.75		
41-50 years old	23	3.65±0.57		
Above 50 years old	23	3.75±0.49		
Education level				
MCE	65	3.61±0.59	3.68	0.01*
MHSC	9	4.11±0.57	(F-statistic)	
Diploma	23	3.92±0.60		
Degree	50	3.52±0.52		
Others education	13	3.54±0.52		
Employment status				
Employed	90	3.70±0.64	0.51	0.67
Self-employed	15	3.55±0.64	(F-statistic)	
Unemployed	21	3.70±0.40		
Student	34	3.57±0.49		
Monthly income				
No income	45	3.56±0.46	2.80	0.02*
Between RM 1,001- RM 1,999	50	3.85±0.53	(F-statistic)	
Between RM 2,000- RM2,999	25	3.68±0.62		
Between RM3,000- RM3,999	12	3.57±0.57		
Between RM4,000- RM4,999	10	3.77±0.65		
RM5,000 and above	18	3.28±0.77		
Frequent consume				
Everyday	14	3.90±0.58	7.27	0.00*
3-4 times per week	16	3.83±0.43	(F-statistic)	
1-2 times per week	20	3.93±0.37		
1 time per month	20	4.04±0.52		
Less than 1 time per 6 months	40	3.52±0.55		
Less than 1 time per year	50	3.36±0.58		

Customer purchase intention was 5-point Likert scale where; 1=strongly disagreed to 5=strongly agreed; Independent t-test was used for gender and ethnicity; One-way ANOVA was used for age, education level, employment status, monthly income and frequent consume; *Significance at the 0.05 level.

According to Table 10, education level ($F=3.68$, $p=0.01$) showed significance difference in customer purchase intention towards stingless bee honey consumption in Negeri Sembilan. In contrast, MHSC level (mean= 4.11 ± 0.57) showed positive intention to purchase the stingless bee honey as compared with other education level. In addition, the least positive intention in purchasing the stingless bee honey is from degree level (mean= 3.52 ± 0.52). As reported by (Saludin *et al.*, 2019), consumers who were married and had at least secondary education demonstrated a substantial preference for native forest and savannah honey. It showed that high education group had high knowledge and might know the benefit of the stingless bee honey.

There is a significance difference in customer purchase intention towards stingless bee honey consumption among groups of monthly income ($F=2.80$, $p=0.02$). When compared to respondents with monthly incomes between RM1,001 and RM1,999 (mean= 3.85 ± 0.53), around 49 of them expressed a greater inclination to buy stingless bee honey in the future. The result also showed that respondents with a monthly income from RM5,000 and above (mean= 3.28 ± 0.77) showed least purchasing intention of the stingless bee honey in the future. Research by Saludin *et al.* (2019), said that one factor influencing a person's willingness to spend more for high-quality honey is their income.

Frequency in the consumption of stingless bee honey also showed significance difference on customer purchase intention ($F=7.27$, $p=0.00$). However, the most positive to purchase the stingless bee honey in the future was those who consume at least 1 time per month (mean= 4.04 ± 0.52). In addition, respondents who consume less than 1 time per year (mean= 3.36 ± 0.58) showed least positive intention to purchase the stingless bee honey in the future.

The relationship between customer satisfaction, attitude and purchase intention towards stingless bee honey consumption

Table 11 demonstrates that there is a 0.621 link between customer satisfaction and attitude and a 0.765 correlation between customer satisfaction and purchase intention. Next, there is a 0.653 link between buy intention and consumer sentiment. It indicates that there is a significant correlation between the customer satisfaction question and the purchase behavior of customers. As reported by Prajitmutita

et al. (2016), when customer perceive high value of product or services, their satisfaction will increase and this will stimulate their purchase intention. If the buyer is satisfied with the stingless bee honey, they will purchase more in the future. Moreover, there is a low correlation between customer attitude-customer satisfaction. But it can be assumed that moderate correlation, marked a relationship. Research by Kim *et al.* (2019) showed that a successful service recovery can provide customers a sense of fulfilment and well-being. But in this content, when customer have high positive attitude to stingless bee honey, the satisfaction to stingless bee honey can be determined. Moderate correlation is found between customer attitude and purchase intention.

Table 11: *Correlation between customer satisfaction, attitude and purchase intention towards stingless bee honey.*

Variable	r-value	p-value
Attitude-satisfaction	0.621**	<0.000
Attitude-purchase intention	0.653**	<0.000
Satisfaction-purchase intention	0.765**	<0.000

**Correlation is significant at the 0.01 level (2-tailed).

Conclusions and Recommendations

Stingless bee honey is beneficial to be consumed by humans. The main objective of this research was focused on customer satisfaction, attitude and purchase intention towards stingless bee honey consumption in Seremban, Negeri Sembilan. Specifically, customer satisfaction, attitude and purchase intention towards stingless bee honey had been determined.

The mean scores of sociodemographic profiles on satisfaction, attitude, and purchase intention were also compared in the study. Investigations were also conducted into the relationship between attitude, purchase intention, and satisfaction.

The three objectives for this research had been met. Thus, it can be said that the general level of client satisfaction towards stingless bee honey is demonstrated by the findings with the mean= 3.79 ± 0.63 , overall customer attitude mean= 4.01 ± 0.63 , and customer purchase intention mean= 3.66 ± 0.58 . For objective 2, there was no significance difference in customer satisfaction towards stingless bee honey consumption among the groups of gender, ethnicity, age, education

level, and monthly income. However, there is significance difference in customer satisfaction towards stingless bee honey consumption among the groups of employment status and frequency of consumption. There was no significance difference in customer attitude towards stingless bee honey consumption among the groups of gender, ethnicity, age, education level, and employment status. However, there is significance difference in customer satisfaction towards stingless bee honey consumption among groups of monthly income and frequency of consumption. There was no significance difference in customer purchase intention towards stingless bee honey consumption among groups of gender, ethnicity, age and employment status. However, there is significance difference in customer purchase intention towards stingless bee honey consumption among groups of education level, monthly income and frequency of consumption. For the third objective, the question with a higher correlation was between customer satisfaction-customer purchase intention questions.

For further research, some improvement is necessary in order to obtain a more accurate result. The present study only involved a small sample which was 160 respondents. Moreover, it was conducted in the Seremban area only, which limits the generalizability of findings and not considered to be a national representative. In my opinion, future study should be extended to all areas in Negeri Sembilan or all over Malaysia with a larger sample size. In addition, the study only determined and examined perspectives which include satisfaction, attitude and purchase intention towards stingless bee honey. For future study, other perspectives to stingless bee honey can also be determined.

This research which determined customer satisfaction, attitude and purchase intention towards stingless bee honey consumption in Negeri Sembilan may give benefits to breeders and researchers. It may be useful for stingless bee honey production considerations to make it a healthier option which can be beneficial to the consumers. The study also clarifies why the quality of the stingless bee honey is a crucial factor in determining its suitability for consumption by consumers. Moreover, this study helps identify consumer concerns to the stingless bee honey, especially since not all stingless bee honey is purely derived from stingless bee.

Acknowledgements

We want to thank the Faculty of Fisheries and Food Science for their support of this study.

Author's Contribution

MohamadRahijanAbdulWahab: Conceptualization, review and editing, final approval of the manuscript and overall supervision.

Ahmad Aiman Salahudin: Methodology and data analysis, literature review and writing the original draft and data collection and results interpretation.

Conflict of interest

The authors have declared no conflict of interest.

References

- Abd-Jalil, M.A., A.R. Kasmuri and H. Hadi. 2017. Stingless bee honey, the natural wound healer: A review. *Skin Pharmacol. Physiol.*, 30(2): 66-75. <https://doi.org/10.1159/000458416>
- Bhat, A., 2019. A rudimentary understanding of research in the social sciences. *Voice Res.*, 7(4): 38-44.
- Biluca, F.C., F. Braghini, L.V. Gonzaga, A.C.O. Costa and R. Fett. 2016. Physicochemical profiles, minerals, and bioactive compounds of stingless bee honey (*Meliponinae*). *J. Food Comp. Anal.*, 50: 61-69. <https://doi.org/10.1016/j.jfca.2016.05.007>
- Biluca, F.C., J.S. de Gois, M. Schulz, F. Braghini, L.V. Gonzaga, H.F. Maltez, E. Rodrigues, L. Vitali, G.A. Micke, D.L.G. Borges and A.C.O. Costa. 2017. Phenolic compounds, antioxidant capacity and bioaccessibility of minerals of stingless bee honey (*Meliponinae*). *J. Food Composit. Anal.*, 63: 89-97. <https://doi.org/10.1016/j.jfca.2017.07.039>
- Das, G., 2014. Factors affecting Indian shoppers' attitude and purchase intention: An empirical check. *J. Retail. Consum. Ser.*, 21(4): 561-569. <https://doi.org/10.1016/j.jretconser.2014.04.005>
- Davras, Ö. and M. Caber. 2019. Analysis of hotel services by their symmetric and asymmetric effects on overall customer satisfaction: A comparison of market segments. *Int. J. Hospit. Manage.*, 81: 83-93. <https://doi.org/10.1016/j.ijhm.2019.03.003>

- Department of Statistics Malaysia, 2020. Negeri Sembilan. Retrieved March 31, 2021, from Department of Statistics Malaysia website: https://v1.dosm.gov.my/v1/index.php?r=column/coneandmenu_id=dE1BS2RzYnZFcl-A3SVhTTS84WDI2UT09
- Fakih, K., G. Assaker, A.G. Assaf and R. Hallak. 2016. Does restaurant menu information affect customer attitudes and behavioral intentions? A cross-segment empirical analysis using PLS-SEM. *Int. J. Hosp. Manage.*, 57: 71-83. <https://doi.org/10.1016/j.ijhm.2016.06.002>
- George, D. and P. Mallery. 2003. SPSS for Windows step by step: A simple guide and reference 11.0 update (4th ed.). Allyn and Bacon.
- Guilford, J.P., 1957. Creative abilities in the arts. *Psychol. Rev.*, 64(2): 110-118. <https://doi.org/10.1037/h0048280>
- Hussin, S., H.F. Talhah, N.A. Rozekhi and R. Hashim. 2016. The perceived value of celebrity chef endorsement toward consumer purchase intention on food products. In: (eds. M.A. Abdullah *et al.*), *Regional Conference on Science, Technology and Social Sciences (RCSTSS 2014)*. Springer, Singapore. https://doi.org/10.1007/978-981-10-1458-1_83
- Johnson, M.D., 2015. Customer satisfaction. In: (ed. J.D. Wright), *international encyclopedia of the social and behavioral sciences*, Elsevier. 11(2): 630-632. <https://doi.org/10.1016/B978-0-08-097086-8.73025-X>
- Kim, W.H., J.L. Cho and K.S. Kim. 2019. The relationships of wine promotion, customer satisfaction, and behavioral intention: The moderating roles of customers gender and age. *J. Hosp. Tour. Manage.*, 39: 212-218. <https://doi.org/10.1016/j.jhtm.2019.03.001>
- Kirchner, T.A., J.B. Ford, J. Lindenmeier, B. Lowe, B. McDonald and G.S. Mort. 2019. Special session: Nonprofit and nongovernmental organization (NPO and NGO) marketing: Examination of multicultural perspectives: An abstract. In: (eds. P. Rossi and N. Krey), *Finding new ways to engage and satisfy global customers: Proceedings of the Academy of Marketing Science (AMS) World Marketing Congress (WMC)*. Springer, Cham. pp. 23-24. https://doi.org/10.1007/978-3-030-02568-7_7
- Kuo, Y.F., C.M. Wu and W.J. Deng. 2009. The relationships among service quality, perceived value, customer satisfaction, and post-purchase intention in mobile value-added services. *Comp. Hum. Behav.*, 25(4): 887-896. <https://doi.org/10.1016/j.chb.2009.03.003>
- Mohammed, A. and B. Rashid. 2018. A conceptual model of corporate social responsibility dimensions, brand image, and customer satisfaction in Malaysian hotel industry. *Kasetsart J. Soc. Sci.*, 39(2): 358-364. <https://doi.org/10.1016/j.kjss.2018.04.001>
- Nam, C., H. Dong and Y.A. Lee. 2017. Factors influencing consumers purchase intention of green sportswear. *Fashion Textil.*, 4(1). <https://doi.org/10.1186/s40691-017-0091-3>
- Prajitmutita, L.M., A. Perényi and C. Prentice. 2016. Quality, value? Insights into medical tourists' attitudes and behaviors. *J. Retail. Cons. Ser.*, 31: 207-216. <https://doi.org/10.1016/j.jretconser.2016.04.005>
- Rahim, A., S.Z. Safin, K.K. Law, A. Nurliyana and S.M. Ali. 2016. Factors influencing purchasing intention of smartphone among university students. *Proc. Econ. Finance*, 37(16): 245-253. [https://doi.org/10.1016/S2212-5671\(16\)30121-6](https://doi.org/10.1016/S2212-5671(16)30121-6)
- Raimi, R., 2017. Better quality kelulut honey with new nano coating product. *New Straits Times*. Retrieved April 2, 2019, from <https://www.nst.com.my/news/nation/2017/12/313074/better-quality-kelulut-honey-new>
- Rana, J. and J. Paul. 2017. Consumer behavior and purchase intention for organic food: A review and research agenda. *J. Retail. Cons. Ser.*, 38: 157-165. <https://doi.org/10.1016/j.jretconser.2017.06.004>
- Salim, H.M.W., A.D. Dzulkiply, R.D. Harrison, C. Fletcher, A.R. Kassim and M.D. Potts. 2015. Stingless bee (Hymenoptera: Apidae: Meliponini) diversity in dipterocarp forest reserves in Peninsular Malaysia. *Raffles Bull. Zool.*, 60(1): 213-219.
- Saludin, S.F., N.H. Kamarulzaman and M.M. Ismail. 2019. Measuring consumers preferences of stingless bee honey (Meliponine honey) based on sensory characteristics. *Int. Food Res. J.*, 26(1): 225-235.
- Samejima, H., M. Marzuki, T. Nagamitsu and T. Nakasizuka. 2004. The effects of human disturbance on a stingless bee community in a tropical rainforest. *Biol. Conserv.*, 120(4): 577-587. <https://doi.org/10.1016/j.biolcon.2004.03.003>

biocon.2004.03.030

- Sarantakos, S., 2005. Social research (3rd ed.). Palgrave Macmillan. https://doi.org/10.1007/978-0-230-20901-5_1
- Se, K.W., S.K. Ghoshal, R.A. Wahab, R.K.R. Ibrahim and M.N. Lani. 2018. A simple approach for rapid detection and quantification of adulterants in stingless bees (*Heterotrigona itama*) honey. Food Res. Int., 105: 453-460. <https://doi.org/10.1016/j.foodres.2017.11.012>
- Shafiee, S.N.Z. and M.R.A. Wahab. 2021. Consumer attitude, satisfaction, food safety awareness, and purchase intention of food ordered through online food delivery using mobile application in Penang island, Malaysia. Malaysian Appl. Biol., 50(2 Special Issue): 165-175. <https://doi.org/10.55230/mabjournal.v50i2.2161>
- Truchado, P., P. Vit, F. Ferreres and F. Tomas-Barberan. 2011. Liquid chromatography tandem mass spectrometry analysis allows the simultaneous characterization of C-glycosyl and O-glycosyl flavonoids in stingless bee honeys. J. Chromatogr. A, 1218(42): 7601-7607. <https://doi.org/10.1016/j.chroma.2011.07.049>
- Tuksitha, L., Y.L.S. Chen, Y.L. Chen, K.Y. Wong and C.C. Peng. 2018. Antioxidant and antibacterial capacity of stingless bee honey from Borneo (Sarawak). J. Asia-Pac. Entomol., 21(2): 563-570. <https://doi.org/10.1016/j.aspen.2018.03.007>
- Ullah, I., G. Rukh, J. Zhou, F.U. Khan and Z. Ahmed. 2019. Modeling customer satisfaction in online hotel booking. J. Retail. Cons. Ser., 48: 100-104. <https://doi.org/10.1016/j.jretconser.2019.01.012>
- Wahab, R.A., R. Nurdiyanah, F. Ahmad and W.H.Z. Shukri. 2018. Perceived value, customer satisfaction, and behavioral intention in relation to seafood restaurants in Johor Bahru. Malays. Appl. Biol., 47(4).
- Wolf, A., and L. Zhang. 2016. The effect of customization and gender on customers attitude. Int. J. Hosp. Manage., 56: 28-32. <https://doi.org/10.1016/j.ijhm.2016.04.001>
- Yamane, T., 1967. Statistics, An introductory analysis (2nd ed.). New York: Harper and Row.
- Yau, H.K. and L.C. Tsang. 2018. The relationships between education level, income level, and prior experience, and the attitude of college students about online shopping in Hong Kong Higher Education. In: (eds. S.I. Ao, H. Kim, O. Castillo, A.S. Chan and H. Katagiri), transactions on engineering technologies IMECS 2017. Springer, Singapore. pp. 87-95. https://doi.org/10.1007/978-981-10-7488-2_7
- Yunus, N.S.N.M. and W.E.W. Rashid. 2016. The influence of country of origin on consumer purchase intention: The mobile phones brand from China. Proc. Econ. Finance, 37(16): 343-349. [https://doi.org/10.1016/S2212-5671\(16\)30135-6](https://doi.org/10.1016/S2212-5671(16)30135-6)