Route to Green Restaurant: Malaysian Perceptions and Attitudes

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Abstract
The changes in lifestyle and environmental concern has influence the selection of restaurant among customers. Thus, restaurant that are using locally grown foods for their menu and implement green management practices in their operations will be the selection. For this reason, restaurants have changed the way they are operating. In order to capture this issue, this study aims to explore customer perceptions and attitudes towards implementing green management practices in Malaysia restaurants. The survey was conducted online and there are 244 respondents has participated in this quantitative study. Descriptive and ANOVA analyses were performed to explore the respondent’s perceptions and attitudes in implementing the green practices in the restaurants. The main findings of this study have indicating a statistically significant different among demographic profiles in perceptions and attitudes towards green restaurant. The final section of this study discussed on how the perceptions and intentions of Malaysian influence the restaurant decision to embark into more sustainable operations.

Keywords: Green Restaurant, Malaysian, Perception, Attitudes

1. Introduction

The growth of restaurant industry around the world has the potential to negatively impact the environment. The business operations indirectly contribute to the effects of global warming, high energy consumption, consumption of large quantities of food supplies as well as the increment in food waste disposal (Krause, 1993; Han et al., 2011; Langgat, 2019; Asadi et al., 2020). Hence, customers are becoming more aware and concern about the environmental issues and has significantly influence them to participate and the taking the responsibility. Surprisingly, the concerns have led to a new trend in restaurant industry; green restaurants. The changes in customers attitudes and behaviors importantly influence the way how restaurants should operate nowadays. Green restaurants have become a choice to dine compare to other commercial restaurants. The strong sentiments and social responsibility of environmental concern influenced the selection of restaurants.

Looking at the Malaysian restaurant industry, green practices are still at an early stage where it has not received widespread attention among consumers. This can be seen through, very few restaurants in Malaysia or even restaurants applying green practices. However, restaurant operators in Malaysia will apply green practices in the event of increased awareness among entrepreneurs and the public; full government guidance and support; and there are also experts who can monitor green practice operations (Langgat, 2019). Therefore, this study aims to explore customer perceptions of and attitudes towards implementing eco-friendly practices in Malaysia restaurant establishments. This study is also important to look at to what extent does Malaysians are accepting through the perception and behavior of this green practice in restaurants. The findings of this study can serve as a reference to restaurant operators to determine the direction of green practices in their respective businesses. At the same time, this study can also serve as a reference to their respective treasury councils to make the city a green city. Thus, each of these efforts can serve as a prelude to the government to intensify its environmental protection campaign towards a green country.

2. Literature Review

2.1 Green Restaurant

Green restaurant has gained a lot of attention since 1990s since it gives good business performance. Most restaurants adopt green practices because it can help them with business performance such as; reduce operational costs (Schubert et al., 2010; Susskind, 2014), improve a business’ corporate image and customer ratings (Hu et al., 2010; Namkung and Jang, 2013; Peiró-Signes et al., 2014), increase consumers’ purchasing and word-of-mouth intentions (Barber and Deale, 2014; Manaktola and Jauhari, 2007), and foster long-term success of a company’s financial performance (Singal, 2014). Green restaurants can affect the sustainability of natural environments (Dutta et al., 2008; Asadi et al., 2020). Long operating hours with excessive usage of energy and water; raw ingredients; chemicals and detergents usage give a significant impact to the eco-system.
Gilg, Barr and Ford (2005) advised to convert the operation into green practices could reduce the impact towards environment by focusing on three Rs (reuse, reduce, recycle) and two Es (energy and efficiency).

Green Restaurant Association (2012) has provided guidance to follow in implementing the concept of green practices in restaurant operations. The green practices guidance: “green” action (energy and water efficiency, recycling, and “green” construction); “green” foods (organic and local); “green” donations (engaging with and/or donating to “green” projects). These guidelines enable restaurants to implement this green practice more efficiently. It is not only reducing the environmental impacts but also improving the restaurant performances (Namkung and Jang, 2013; Asadi et al., 2020).

2.2 Perceptions and Attitudes

Eco-friendly Attitudes

Environmental sustainability is a focus of debate today. Various effects of development, business operations and daily activities contributing to environmental deterioration. On regards to this, the society awareness and the responsibility to care for the environment is increasing (Han et al., 2011; Easterling et al., 1996; Kalafatis et al., 1999). Awareness of environmental protection has instilled a positive attitude among the society to monitor their attitudes towards the environment (Kalafatis et al., 1999; Laroche et al., 2001). In addition to that, Laroache et al (2001) revealed the attitudes towards environmental concern has to do with the levels to which an individual wants to participate in maintaining the sustainability of the ecosystem. It can be seen most of the consumers nowadays will go extra miles to support the environmental activities. Having a deep sense of sentiment and concern for the environment made them constantly aware and often took initiative; environmentally friendly behaviors (Kalafatis et al., 1999; Mandese, 1991).

Demographic Characteristics

Early studies findings have revealed the important of demographic characteristics influenced the acceptance of green practices among customers (e.g., Gilly and Zeithaml, 1985; Henion, 1972). These studies have discovered gender, age, education, and income played an important role to explain customers buying behaviors in green practices. According to previous studies, there are differences in decision-making between men and women while dine in upscale restaurants (Han and Ryu, 2007). Women are more concerned with people’s welfare (Eagly, 1987), more concern on interpersonal relationships (Konrad et al., 2000), and are more interested in seeking information (Lehto et al., 2001). In addition, women are also more concern and willing to go extra miles taking care for the environment (Banarjee and McKeage, 1994).

Meanwhile, age characteristics also has been the focus in determine the customers behavior in green practices. The differences between the age groups indicate that there are differences in buying attitudes and decision-making (Evanschitzky and Wunderlich, 2006). Meanwhile, younger people tend to choose to go for green purchases. Younger people are more prone to search for information and new alternative, which in turn influences their buying patterns (Gilly and Zeithaml, 1985). However, there are also inconsistent findings for the green purchase behaviors and decision making among age groups which attracts researcher to further explore this characteristic (Han et al., 2011).

In addition, education and income has also been identified to be important to influence the green practices are education and income. Customers with a higher education background and higher income are expected to have a higher level of awareness of a matter and selection of products and services. It is quite different from individuals with low education background and low income (Keaveney and Parthasarathy, 2001). According to Roberts (1996), those with a higher education and high income tend to be more ecologically conscious and practice green purchasing to preserve the ecosystem. However, Han et al., (2011) has revealed that education and income do not significantly influence the decisions to go for green practices. To conclude that, previous studies findings has exposed demographic characteristics: female; younger; highly educated; high income, influence the buying behaviors of green practices. These could be used as a guideline to explore Malaysian perceptions and attitudes if the restaurant business wanted to embark into green operation.

3. Methodology

3.1 The questionnaire

The measurement items were adopted from the previous study by Schubert et al., 2010 and consist of three sections. The demographic characteristics of the respondents were placed in the first part of the questionnaire which covered the respondent’s gender, age, education, household income and the frequency to dine out. Meanwhile, the respondent’s perceptions and attitudes were asked in second part of the questionnaire. Also, the third part of the questionnaire were asked about the important of green practices in a restaurant. All the constructs in the second and third were measured using 5-point Likert type scale ranging from 1 = strongly disagree to 5 = strongly agree.
There are ten constructs were tested to explore the respondent’s perceptions and attitudes toward implementing a green restaurant operation in Malaysia (Table 1). All the items were adopted from previous studies and have been tested and verified therefore there are no reliability and validity issue.

| Table 1 Measurement items for study variables |
|-----------------------------------------------|
| Variables                                    | Measurement items                                      | Alpha |
| Perceptions and Attitudes                    | Dining at green restaurants will help to protect the environment. | 0.739 |
|                                               | Dining at green restaurants will be more expensive.     |       |
|                                               | Dining at green restaurants will be healthier for me.   |       |
|                                               | It is good for restaurants to protect the environment.  |       |
| Importance of Green Practices                | It is important for me that restaurants reduce energy usage and waste. | 0.800 |
|                                               | It is important for me that restaurants use biodegradable or recycled products. |       |
|                                               | It is important for me that restaurants serve locally grown food. |       |
|                                               | It is important for me that restaurants donate to environment projects. |       |
|                                               | It is important for me that restaurants pay fees to reduce their ecological footprint. |       |

3.2 Data collection and sample characteristics

The present study was using online survey to collect the data throughout Malaysia. This approach was identified to be suitable for this study as it involves the fourteen states in Malaysia with no cost incurred during data collection period. Most of the researchers have accepted online approach as a medium to collect the data where it can reach more and bigger population (Han and Kim, 2009; Han et al., 2009; Kim and Canter, 2010). The questionnaire was typed and coded using Google form and circulated among friends and families and then being spread all over Malaysia through their contacts. The demographic summary of the respondents was presented in Table 2.

| Table 2. Demographic Characteristics |
|--------------------------------------|
| Demographic characteristics          | Frequency | Percentage of sample |
| Gender                                |           |                     |
| Male                                  | 87        | 35.7%               |
| Female                                | 157       | 64.3%               |
| Age                                   |           |                     |
| 18 - 25 years                         | 39        | 16.0%               |
| 26 - 35 years                         | 111       | 45.5%               |
| 36 - 45 years                         | 72        | 29.5%               |
| 46 - 55 years                         | 16        | 6.6%                |
| 56 - 65 years                         | 6         | 2.5%                |
| Education                             |           |                     |
| SPM                                   | 28        | 11.5%               |
| Diploma                               | 42        | 17.2%               |
| Bachelor’s Degree                     | 114       | 46.7%               |
| Master’s Degree                       | 40        | 16.4%               |
| Doctor of Philosophy                  | 13        | 5.3%                |
| Others                                | 7         | 2.9%                |
| Household Income                      |           |                     |
| < RM900                               | 34        | 13.9%               |
| RM900 - RM1999                        | 52        | 21.3%               |
| RM2000 - RM3999                       | 64        | 26.2%               |
| RM4000 - RM5999                       | 46        | 18.9%               |
| RM6000 - RM7999                       | 23        | 9.4%                |
| > RM8000                              | 25        | 10.2%               |
| Dining Out                            |           |                     |
| 1 - 2 times a week                    | 94        | 38.5%               |
| 3 - 5 times a week                    | 94        | 38.5%               |
| 6 - 10 times a week                   | 34        | 13.9%               |
| 11 - 15 times a week                  | 17        | 7.0%                |
| More than 16 times a week             | 5         | 2.0%                |
The researcher has utilised three weeks for the whole data collection process. A total of 244 questionnaires has been received for the present study. Within the 244 respondents, 87 were male and 157 were female. The frequency age group of the respondents was 26-35 years old with 45.5% from the whole respondents. Among the respondents, 76.4% had an undergraduate degree and below, and 21.7% has and postgraduate degree. About 35.2% of respondents’ household income was under RM1999 a month; 45.1% was between RM2000 and RM5999; 19.6% was over RM6000 a month. A total of 150 respondents has informed the frequencies of them to dine out was more than 3 times; and 94 participants reported they dine out less than 2 times a week.

4. Results

4.1 Confirmatory Factor Analysis

The ten items of the perceptions and attitudes were subjected to principal components analysis (PCA) using SPSS Version 23. The results of the confirmatory factor analysis revealed that the correlation matrix revealed the proposed 10-dimensional structure of perceptions and attitudes is extremely satisfactory ($X^2 = 78.70$, $df = 45$, $p<.000$). A descriptive analyse were utilised to explore customer perceptions and attitudes towards implementing green practices and important of green practices. The frequency values were used to determine whether the respondents agreed about the implementation of green practices in a restaurant. An analysis of variance (ANOVA) was employed to investigate customer perception and attitudes in implementing green practices differ across gender, age and states of origin. In addition, 244 samples were identified appropriate to use ANOVA analysis and enough to validate and generalised the findings for the present study.

4.2 Respondents and Perceptions and Attitudes

There is a significant difference in respondent’s perceptions and attitudes towards green practices in a restaurant. Fig. 1 present the results of the descriptive analyses of this present study. Majority of the respondents agreed that by implementing green practices in a restaurant can protect the environment ($M=4.020$). The implementation of such practices could be more expensive ($M=3.549$) but will give a healthier dining experience to customer ($M=3.860$). In addition, most of the respondents agreed that if a restaurant want to embark into green practices it is a good initiative to protect the environment ($M=4.364$). This finding revealed the customer is ready to accept the changes if restaurant operations in Malaysia would like to change into more sustainable operations.

![Perceptions and Attitudes](image)

**Fig. 1. Result of Descriptive Analysis: Perceptions & Attitudes**

4.3 Respondents and Importance of Green Practices Areas

Fig. 2 presents the findings of the respondent’s perceptions on the importance of green practices areas in a green restaurant. Having a mean score of 4.155 indicates reducing energy usage and waste are two of the importance aspects when restaurant decided to go for eco-friendly restaurants.
The respondents also agreed it is importance for them that the restaurants use biodegradable or recycled products ($M=3.967$) as well as using organic products ($M=3.930$) as one of the importance aspects to consider. Hence, they also considered serving locally grown food is also importance for a green restaurant ($M=3.967$). Interestingly, donating to environment projects ($M=3.913$) and paying fees to reduce ecological footprint ($M=3.741$) was considered as important aspects in green practices areas that restaurant businesses need to carry out.

![Importance of Green Practices Areas](image)

**Fig. 2. Result of Descriptive Analysis: Important of Green Practices**

### 4.3 Gender and Perceptions and Intentions

The ANOVA tests revealed significant differences in perceptions and intentions across gender groups (help to protect environment: $F = 6.793$, $p = .010$; good for restaurant to protect environment: $F = 11.214$, $p = .001$). Table 3 below present the results of the ANOVA tests.

| Variables | Gender   | Mean (SD) | F-Value | P-Value |
|-----------|----------|-----------|---------|---------|
| Dining at Green Restaurant help to protect environment. | Male | 3.816 (1.084) | 6.793 | .010 |
| | Female | 4.133 (.801) | | |
| It is good for restaurant to protect environment. | Male | 4.114 (1.082) | 11.214 | .001 |
| | Female | 4.503 (.721) | | |

Mean scores for each dine at green restaurant help to protect environment were higher for the female group than male group (help to protect environment $M_{female} = 4.133$ vs. $M_{male} = 3.816$; good for restaurant to protect environment: $M_{female} = 4.503$ vs. $M_{male} = 4.114$). These results indicate that women seem to be more favourable if Malaysian restaurants would like to change their current operations into more eco-friendly operations. On that note, women do believe that dining at green restaurant is one way to protect the environment and it is good for restaurant to protect environment. Surprisingly, these results were consistent with previous study that conducted in other countries which also revealing the gender differences in green practices behaviors (e.g., Han et al., 2011; Laroche et al., 2001; Roberts 1996; Banerjee and McKeage, 1994).

### 4.4 Age and Perceptions and Intentions

As can be seen in Table 4 below, there is a significant different across age groups on regards to the perceptions and intentions for a restaurant to go for green practices (green restaurant will be more expensive: $F = 4.872$, $p = .001$; good for restaurant to protect environment: $F = 2.951$, $p = .021$).
Table 4 Results of ANOVA: Age differences in perceptions and intentions.

| Variables                                      | Age       | Mean (SD) | F-Value | P-Value |
|------------------------------------------------|-----------|-----------|---------|---------|
| Dining at Green Restaurant will be more expensive. | 18-25 years | 3.641 (.810) | 4.872 | .001 |
|                                                 | 26-35 years | 3.576 (.769) |         |         |
|                                                 | 26-35 years | 3.680 (.916) |         |         |
|                                                 | 46-55 years | 2.875 (.957) |         |         |
|                                                 | 56-65 years | 2.667 (.816) |         |         |
| It is good for restaurant to protect environment. | 18-25 years | 4.384 (.935) | 2.951 | .021 |
|                                                 | 26-35 years | 4.459 (.783) |         |         |
|                                                 | 36-45 years | 4.333 (.872) |         |         |
|                                                 | 46-55 years | 3.687 (1.302) |         |         |
|                                                 | 56-65 years | 4.666 (.516) |         |         |

Similar with previous study findings, it showed that the mean scores in dining at green restaurant will be more expensive: $M_{18-25\ years} = 3.641$ vs. $M_{26-35\ years} = 3.576$ and $M_{26-45\ years} = 3.680$; good for restaurant to protect environment: $M_{18-25\ years} = 4.384$ vs. $M_{26-35\ years} = 4.459$ vs. $M_{36-45\ years} = 4.333$ vs. $M_{46-55\ years} = 3.687$ vs. $M_{56-65\ years} = 4.666$. These findings have indicated that age groups of 45 years old and below indicates that dine in green restaurant will cost them more compare to a normal restaurant. Interestingly, even though they believe green restaurant will be more expensive, but they do agree if the restaurant go for green practices in order to protect the environment.

4.5 States of Origin and Perceptions and Intentions

The ANOVA investigation also showed a significant in perceptions and intentions across states of origin (Table 5). The results of ANOVA are shown in Table 5 (green restaurant will be more expensive: $F = 2.474$, $p = .004$; dine at green restaurant will be healthier: $F = 2.065$, $p = .017$; good for restaurant to protect environment: $F = 1.984$, $p = .023$). Interestingly, the mean scores for perceptions and intentions also showed a significant different across the groups. The means results revealed that dining at green restaurant help to protect environment: $M_{Terengganu} = 4.800$ vs $M_{Johor} = 4.600$ vs $M_{Penang} = 4.400$ vs $M_{Kuala Lumpur} = 4.214$ vs $M_{Putrajaya} = 4.181$ vs $M_{Sarawak} = 4.176$ vs $M_{Selangor} = 3.854$ vs $M_{Sabah} = 3.825$; dine at green restaurant will be healthier: $M_{Terengganu} = 4.300$ vs $M_{Johor} = 4.200$ vs $M_{Penang} = 4.090$ vs $M_{Sarawak} = 3.843$ vs $M_{Sabah} = 3.872$ vs $M_{Selangor} = 3.785$ vs $M_{Putrajaya} = 3.785$ vs $M_{Selangor} = 3.729$; good for restaurant to protect environment: $M_{Terengganu} = 4.900$ vs $M_{Johor} = 4.600$ vs $M_{Putrajaya} = 4.545$ vs $M_{Penang} = 4.400$ vs $M_{Sarawak} = 4.392$ vs $M_{Selangor} = 4.375$ vs $M_{Sabah} = 4.337$ vs $M_{Kuala Lumpur} = 4.000$.

Table 5 Results of ANOVA: States differences in perceptions and intentions.

| Variables                                      | States    | Mean (SD) | F-Value | P-Value |
|------------------------------------------------|-----------|-----------|---------|---------|
| Dining at Green Restaurant help to protect environment. | Sabah     | 3.825 (.960) | 2.474 | .004 |
|                                                 | Sarawak   | 4.176 (.817) |         |         |
|                                                 | Johor     | 4.600 (.547) |         |         |
|                                                 | Selangor  | 3.854 (1.010) |         |         |
|                                                 | Kuala     | 4.214 (.699) |         |         |
|                                                 | Lumpur    | 4.181 (.750) |         |         |
|                                                 | Putrajaya | 4.400 (.547) |         |         |
|                                                 | Penang    | 4.800 (.421) |         |         |
| Dining at Green Restaurant will be healthier for me. | Sabah     | 3.872 (.823) | 2.065 | .017 |
|                                                 | Sarawak   | 3.843 (.784) |         |         |
|                                                 | Johor     | 4.200 (.836) |         |         |
|                                                 | Selangor  | 3.729 (.868) |         |         |
|                                                 | Kuala     | 3.785 (.892) |         |         |
|                                                 | Lumpur    | 4.090 (.700) |         |         |
|                                                 | Putrajaya | 4.200 (.447) |         |         |
|                                                 | Penang    | 4.300 (.674) |         |         |
| It is good for restaurant to protect              | Sabah     | 4.337 (.862) | 1.984 | .023 |

environment.

| State         | Mean | SD  |
|---------------|------|-----|
| Sarawak       | 4.392| .873|
| Johor         | 4.600| .547|
| Selangor      | 4.375| .890|
| Kuala         | 4.000| 1.414|
| Lumpur        | 4.545| .5222|
| Putrajaya     | 4.900| .316|
| Penang        | 4.400| .547|

The results lead to the conclusion that respondents from Terengganu have a positive reaction towards the implementation of green practices in a restaurant. This current study results were found to be the new findings from Malaysian perspective in term of states differences in perceptions and intentions.

5. Discussion

5.1 Respondents and Perceptions and Attitudes

This current study has revealed that Malaysian is ready to accept if the restaurant operations in Malaysia moving towards green practices. This is because they are aware of the impacts of the restaurant operations towards the environment. On that note, the initiative to embark into the green management practices will be successful as it received full support by the Malaysians. After all, the awareness and concern for the environment influence the society to react positively towards the green practices (Langgat, 2019).

5.2 Respondents and Importance of Green Practices Areas

In supporting the green management practices in a restaurant, Malaysian belief that by reducing the energy usage and the restaurant waste are the two most critical aspect to considered. The machinery and equipment used in the restaurant has led the increasing usage of the utilities. Hence, it is also due to the restaurant long operation hours. In addition, the usage of raw materials and other ingredients also practically will determine the waste from the day to day operation in a restaurant. Therefore, by minimising the usage of the utilities usage and reducing the wastage will be the proactive actions in moving towards green management practices in a restaurant to lessen the impact towards the environment.

5.3 Gender and Perceptions and Intentions

Malaysian women were identified to be more favourable if restaurants are moving towards into more eco-friendly operations. This is due to the nature of the feminine behavior where women tend to appreciate and concerned what happen to the environment. This finding was found to have the similar conclusion from the previous studies conducted by Han et al., 2011, Laroche et al., 2001 and Robert, 1996. Female customers are one of the target markets for a green restaurant (Lehto et al., 2001).

5.4 Age and Perceptions and Intentions

Malaysians age group of 45 years old and below indicates dine in in a green restaurant will cost them more compare to normal type of restaurant. Extra price will be charged to the menu offered in a green restaurant due to organic food supplies usage. Apart from that, takeaway packaging, serviette and others also ecological friendly. This practice is assuming will cost them more due to the disposable income received by this age group as compare to those that is 46 years old and above who are willing to pay more (Manaktola and Jauhari, 2007).

5.5 States of Origin and Perceptions and Intentions

Among all states in Malaysia, five states (Sarawak, Johor, Selangor, Penang, Terengganu) and two federal territories (Kuala Lumpur and Putrajaya) were found to have a positive reaction for a restaurant to go for green practices. These states and federal territories were known as popular destinations among the tourist. Therefore, it is believed that despite of having sustainable tourism operations it is the time for restaurant operation to move towards this green management practices. Adding to that, both hospitality and tourism industry in Malaysia should focusing to have more sustainable operations. Clear guidelines and instructions should be introduced for this practice to be well implemented (Langgat, 2019; Siti et al., 2011).

6. Conclusion

Restaurant business should hold a responsibility in operating their businesses more ethical by considering the impact of their operations towards environment. Besides that, the consumer nowadays was also concerned about how sustainable restaurant are operating. As revealed by this study, Malaysians are giving their full support if the restaurants would like to embark into green practices.
However, extra efforts need to be done by the government and restaurant owner to create the awareness and giving clear understanding why it is important for the restaurant to move towards that directions. To this date, minimal study has been done in Malaysia perspective on society perceptions and attitudes about green management practices in a restaurant. Therefore, this study findings can be a reference route for a restaurant to embark into green management practices.

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