Less is more: the role of frugality in the Malaysian hotel industry

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Abstract

Purpose – *The environmental impact of excessive use of natural resources such as energy and water in the tourism industry has increased significantly. Thus, it is crucial to investigate the notion of frugality in this industry. Particularly, this study aims to examine the effect of green marketing strategies
(eco-labelling and environmental advertising) and hotel guests' green attitude towards frugality in the context of the Malaysian hotel industry. Furthermore, the mediating effect of green attitude is also examined.*

Design/methodology/approach – *Stimulus-organism-response theory was used to develop the research framework. The data were collected via a self-administered survey questionnaire, which yielded 150 complete and usable responses. A partial least square-structural equation modelling approach was used to validate the proposed model.*

Findings – *The results of this study revealed that environmental advertising and eco-labelling, directly and indirectly, affect frugality. Moreover, the link between green attitude and frugality also was supported. Furthermore, data supported the mediating effect of green attitude in the relationship between green marketing strategies and frugality.*

Practical implications – *The findings from this study can benefit hoteliers who are targeting frugal and environmentally conscious consumers. Moreover, the hoteliers will be able to understand the drivers of frugality in the tourism industry. It can assist them to formulate better marketing strategies in attracting and retaining frugal consumers.*

Social implications – *The findings from this study offer a number of important social implications for society, the local government and the city and tourism council. Particularly, understanding the strategies towards frugality can pave the way towards the formation of a "less consumption" community. Moreover, it will serve as the guideline for designing the green and sustainability campaign for the nation.*

Originality/value – *This study is among the pioneers to investigate the issue pertaining to frugality in the tourism industry context. This study examines new linkages such as the indirect effect of green marketing strategies towards frugality. Moreover, the mediating effect of green attitude in the relationship between green marketing strategies (eco-labelling and environmental advertising) and frugality is comparatively a new link.*

Keywords *Frugality, Green attitude, Eco-labelling, Environmental advertising, Stimulus-organism-response theory, Malaysian hotel industry*

Paper type *Research paper*

Introduction

Due to the massive environmental pollution and excessive use of natural resources, the world is being threatened for its survival (Quoquab and Mohamad, 2017). It certainly suggests taking the right measures for the survival of the future generation (Chua *et al.*, 2020). The notion of frugality is closely tied with sustainability (Pepper *et al.*, 2009). Frugality shapes an individual's lifestyle and consumption behaviour (McDonald *et al.*, 2006) and is described as restraining in acquiring possessions and using them resourcefulness (Lastovicka *et al.*, 1999). Frugal consumers are prudent in their consumption behaviour, consciously avoid waste, low in acquisitiveness, less materialistic and focus on long term

orientation (Boccomino Marselha and Botelho, 2017; Harnish and Roster, 2018). Although the importance of frugality in attaining sustainability is well documented (Boccomino Marselha and Botelho, 2017; Bove et al., 2009; Pepper et al., 2009), the drivers of the frugality are not fully uncovered. Likewise, little attention has been paid to investigate the notion of frugality in the context of the tourism industry.

In recent years, the tourism and hospitality industry has become one of the fastest-growing sectors of the economy (Borges et al., 2019). Parallel with this trend, overuse of natural resources (e.g. energy and water) and excessive consumption in the hotel industry also have increased (MacKenzie and Gannon, 2019; Paskova and Zelenka, 2019). It is estimated that nearly 75% of the hotel industry's environmental impacts are directly associated with excessive consumption (Khatter et al., 2019). It also reported that the hotel industry consumes about 209 gallons of water per occupied room every day (Zaiton et al., 2016). In Malaysia, the rapid increase in the number of hotels contributed to the development of the tourism industry but became detrimental to the environment due to unsustainable consumption. To ameliorate this issue, the hotels ranked as three stars and above have incorporated green practices such as considering used energy conservation measures like energy-efficient lighting and recycling programmes in their daily operation (Kiron et al., 2012). Despite the continuous effort by hoteliers in reducing environmental issues, the overconsumption issue in the hotel industry persists and seems a daunting task to resolve the problem.

It is argued that the implementation of green practices alone is insufficient if it is unable to induce and attract hotel guests to behave sustainably. To solve this issue, promoting sustainable consumption amongst consumers is crucial for ecological, social and economic reasons (United Nations, 2019). Moreover, the inculcation of sustainable consumption also serves as a critical element in reversing the negative impacts of human activities on the environment (Castaneda et al., 2015). To achieve sustainable consumption, a better understanding of the driver and mechanism towards sustainable consumption is inevitably crucial (Helm and Subramaniam, 2019). As such, being the mobilizer of sustainability, consumers' frugal behaviour is of utmost necessity to consider in this regard (Geels et al., 2015; Pepper et al., 2009). It could be a promising antidote in addressing the overconsumption issue in the hotel industry. Thus, guided by the Stimulus-organism-response (S-O-R) theory, this study attempts to shed some light on hotel guests' frugal consumption behaviour from the perspective of the tourism industry.

Sillani and Nassivera (2015) argued that green marketing strategies such as environmental advertising and eco-labelling are two key drivers of sustainable consumption behaviour. Environmental advertising and eco-labelling enable hotel guests to learn more about green practices at hotels and are likely to motivate consumers to search and continuously learn on sustainable practices, namely, reduce, reuse and recycle (Bove et al., 2009). Past studies found that marketing strategies play a significant role in building consumers' green attitudes (Chekima et al., 2016; Merli et al., 2019; Vazifehdoust et al., 2013). However, there is a dearth of research examining this relationship in the context of the tourism industry context. Thus, the first objective of this study is to examine the effect of green marketing strategies in terms of environmental advertising and eco-labelling on consumers' green attitudes.

The positive relationship between green attitude and green consumption behaviour is well documented (Ellison et al., 2016; Kim and Hall, 2015). Nevertheless, there is a paucity of research that examined the relationship between green attitude and frugal consumption behaviour. As frugality is also considered one type of sustainable consumption behaviour (in the form of curtailment and consuming less) (Verain et al., 2015), it is assumed that a green attitude is likely to drive frugality. In the context of the hotel industry, it is expected that when hotel guests hold a positive attitude towards the green and sustainable aspects of the hotel, they will restrain themselves from over-consuming hotel resources (products/services) while staying at the hotels. Following this argument, this study considers the green

attitude as the critical determinant of hotel guests' frugal consumption behaviour. Thereby, *the second objective* of this study is to examine the effect of green attitude towards frugality.

Past studies in consumer behaviour literature have considered the mediating effect of attitude in various contexts such as counterfeit products (Quoquab *et al.*, 2017), the Islamic mortgage sector (Amin *et al.*, 2017) and green energy brands (Hartmann and Apaolaza-Ibáñez, 2012). However, there is a dearth of studies investigating the mediating effect of green attitude in the relationship between green marketing strategies (environmental advertising and eco-labelling) and frugality. As environmental advertising and eco-labelling are generally perceived as most reliable green marketing strategies (Chin *et al.*, 2018; Rahbar and Abdul Wahid, 2011; Rashid, 2009), this study assumes that both will positively affect green attitude which in turn will enhance hotel guests' frugal consumption behaviour. Thus, *the third objective* of this research is to examine the mediating effect of green attitude in the relationship between green marketing strategies (eco-labelling and environmental advertising) and frugal consumption behaviour in the context of the tourism industry.

The rest of the paper is structured as follows. In the next section, an overview of the Malaysian hotel industry is provided. The following section reviewed the relevant literature and discussed hypotheses development and presented the conceptual framework. Next, the methodology and explained, followed by presenting the findings and discussion. Finally, the conclusion, theoretical and managerial implications, limitations and future research directions are highlighted.

Malaysian hotel industry

To date, there are 2,264 hotels in Malaysia registered under the Ministry of Tourism and Culture Malaysia (MOTAC) as star rating hotels (one to five), amongst which 20 are classified as green hotels (Malaysian Investment Development Authority, 2020). Approximately 643 hotel chains are operating in Malaysia (in 14 states) with "three and above" star ratings. In highly urbanized states in Malaysia such as Kuala Lumpur, Selangor, Pulau Pinang, Johor and Malacca, 306 hotels "three and above" star ratings, accounted for nearly 50% of cumulative three and above' star rating hotels in Malaysia (Mytourismdata, 2018). Many hotel operators, especially three stars and above ratings, have implemented green practices in their hotel operation (Thestar.com, 2014). Parallel with the Malaysian government's green initiatives which began to include the green practices in its eighth and 9th Malaysia Plan (the concept was reinforced in National Green Technology Policy 2009, NGTP); the tourism industry started to incorporated green practices in their operation (Yusof *et al.*, 2017). In the hotel industry, green practices are generally referred to as processes and procedures implemented by the hotel operators and management, which are directed towards minimizing negative environmental impacts. Green practices that are generally implemented by the hotel industry adhere to the 3R principles (i.e. reduce, reuse and recycle) such as water and energy savings, reduction of waste and recycling programmes, etc (Deraman *et al.*, 2017).

The most common green practices in hotels are energy-saving practices, solid waste management practices and water conservation or water-saving practices. Other green practices include eco-cuisine, energy-efficient lighting, installing hinge activated lighting and using electronics as an email and check-in using the internet rather than paper. Many hotels use vital cards that turn the power in the room on and off, and some of them also use occupancy sensors in the room (Huh and Chang, 2017). In Malaysia, fluorescent light use is one of the solutions rather than using incandescent lamps in terms of energy saving in guest rooms. In respect to water-saving practices, many Malaysian hotels use low-flow showerheads and faucet aerators, whereas for solid waste management, the recycling programme is widely implemented (Yusof *et al.*, 2017). Specifically, G Tower, a five-star hotel in Malaysia, uses light fixtures that use low energy LED lighting and energy savings PLC and T5 lighting, implementing active recycling policy and reusing towels to show their

commitment towards sustainability (GTower, 2019). Additionally, as a part of the green initiatives, Element Hotel, a four-star hotel in Malaysia, uses low-flow bathroom fixtures as one of the energy reduction practices and in-shower dispenser as one of the mechanisms in reducing plastic bottle wastes (Marriott International, 2019). Furthermore, Artisan Eco Hotel, a three-star hotel in Malaysia, has implemented considerable green practice measures such as making reusable glasses and water bottles available for usage at every level, implementing linen reuse and recycling programme and also involved in up-cycling projects.

However, there is often the perception of some conflict between four and five-star hotels as luxurious (even if they are labelled green) and the hotel's green initiatives and strategies. It is because of the conservation of resources due to the implementation of green initiatives and strategies that may affect hotel guest experience, which is crucial for luxury hotels like four to five-star hotels (Ahn and Pearce, 2013). Nevertheless, as environmental and social responsibility has become an important agenda for hoteliers (Kyriakidis and Felton, 2008), higher star rating hotels like four to five-star hotels have started to balance the concept of luxury and frugality (in the means of promoting efficient consumption) in their marketing and positioning of their green initiatives. In other words, the strategies include incorporating a range of smart, environmentally friendly design features and encouraging hotel guests towards efficient consumption without impacting the hotel guest's experience. For instance, Hilton hotels have driving water stewardship, re-engineering waste and fostering innovation for sustainable operations while delivering exceptional services to their guests (Hilton, 2019). Besides, four to five-star hotels have shown to encourage their guest to practice efficient consumption or behave frugally. For example, Accor Hotels educate their guests on energy conservation with the practical guide that lists a few simple actions that hotel guest can follow or emulate (Kyriakidis and Felton, 2008). Also, Marriott Hotel (five-star hotel) and Melia Hotel (four-star hotel) provide leaflets in all their hotel rooms, encouraging hotel guests to reuse their linens and towels (Zaiton et al., 2016). As four to five-star hotels have integrated the concept or notion of luxury and frugality in their hotel's strategies, it can be inferred that it is relevant to promote frugality within this study context.

Considering the potential of frugality in addressing overconsumption issues in the hotel industry, the designation of appropriate marketing strategies towards promoting frugality is inevitably crucial, especially for the hotels that implement green practices. However, to date, there is no prior study that examined the frugal purchase behaviour in this particular industry context, which this study attempts to address.

Literature review and hypothesis development

Theoretical underpinning

The present study considered the S-O-R theory (Mehrabian and Russell, 1974) to build the research framework. The S-O-R model consists of stimuli (S) (i.e. external factors embedded in the environment); organism (O) (i.e. the storehouse of the individual's emotive and cognitive systems, namely, his/her attitudes, knowledge, beliefs, intentions, values, etc.) and response (R) (i.e. the reaction that externally detectable which includes nonverbal verbal and behavioural responses) (According to Jacoby, 2002). For example, an attractive advertisement (S) may lead to the formation of a positive attitude (O) towards the advertised products or services, which leads to buying that product or services (R). In the marketing literature, S-O-R theory has been widely used in understanding the drivers of consumer behaviour. For example, Li et al. (2012) found that S-O-R provides a better understanding of consumer behaviour, as it successfully interprets the relationship between marketing mix elements (stimuli) and behavioural action of consumers (responses). In the same manner, Quoquab et al. (2019) used the S-O-R theory to support the direct relationships between the halal logo (S) and customer loyalty through customer trust (O).

Grounded in the S-O-R theory, this study aims to examine the impact of green marketing strategies, namely, environmental advertising and eco-labelling towards frugality. Past studies have conceptualized marketing strategies like 4Ps (Rahahleh *et al.*, 2020) and advertisement (Min *et al.*, 2019) as "stimuli". Similarly, Demangeot and Broderick (2016) and Qiu *et al.* (2020) considered attitude as an "organism". Additionally, conventional consumption behaviour (Gatautis *et al.*, 2016) and green purchase behaviour (Piligrimienė *et al.*, 2020) also are treated as "response". In the same manner, this study assumed that green marketing strategies, namely, environmental advertising and eco-labelling (marketing stimuli), can positively affect the hotel guest's attitude towards green (organism). Eventually, it results in the hotel guest's behavioural outcomes, which is portrayed as frugality (response).

Frugal consumption behaviour

Frugal consumption behaviour referred to consumers' restraining in acquiring and resourcefully using economic goods and services to achieve a long-term goal (Goldsmith *et al.*, 2014; Lastovicka *et al.*, 1999). Frugality suggests controlling the compulsive buying tendency and focusses on long-term goals rather than short-run gratification (Evers *et al.*, 2018). It emphasizes value for money, efficiency and sufficiency in consumption (Mirosa and Lawson, 2012). It advocates for financial prudence and restrained expenditure (Jagannathan *et al.*, 2020. Additionally, it emphasizes value and price when selecting the product or services (Cervellon *et al.*, 2012).

As frugality focusses on the "less is more" principle, it is suggested to be one of the facets of sustainability (Geiger *et al.*, 2018; Pepper *et al.*, 2009). Additionally, past studies suggested that frugality is linked with the environmental dimension (Balderjahn *et al.*, 2013; Do Paço *et al.*, 2019). Moreover, it is considered as one of the drivers of environmentally responsible consumption (ERC) (Gupta and Agrawal, 2018). In addition, recent literature also has associated frugality with sustainable consumption behaviour (Awais *et al.*, 2020; Barrera-Hernández *et al.*, 2020; Thøgersen, 2018). Additionally, Ekardt (2020) advocates that frugality as one of the essential elements of the sustainability transition.

In the Malaysian context, mostly three stars and above hotels have implemented green practices such as energy efficiency, water efficiency, etc (Thestar.com, 2014). Such practices are in line with the frugality traits that suggest the 3R principles (Awais *et al.*, 2020). In this study, it is expected that frugal consumers likely to prefer to stay at hotels that can provide them value for money and can satisfy their aims towards efficiency and sufficiency in consumption. It is to note that frugality does not necessarily suggest for deprivation from consuming any expensive goods or services. Instead, it suggests restraining from resource wastage and opting for efficiency and sufficiency in using the resources. Thus, individuals with frugal traits may prefer to stay at three stars or above rating hotels as long they perceive the hotel follows 3R principles and care for efficient use of resources.

Individuals with frugal consumption behaviour tend to form a habit of saving and exhibiting conservation behaviour in their daily activities such as saving and reusing water and saving electricity (Wang *et al.*, 2020). Thus, it is presumed that hotel guests with frugal consumption behaviour are likely to reduce water and electricity, resourcefully using hotel amenities, reusing towels and participates in recycling activities while staying at the hotel. Due to its inclination towards curtailment and resourceful with consumption (Philp and Nepomuceno, 2020), it is predicted that frugality could be the panacea for the prevailing overconsumption issue in the hotel industry. This is because the green practices implemented by the hotel industry, which mainly adhere to 3R principles, are in line with the frugality trait. Moreover, frugality focusses on using financial and physical resources prudently and consciously (Do Paço *et al.*, 2019) and is associated with eco-sufficiency and less consumption (Kraisornsuthasinee and Swierczek, 2018). Hence, understanding the

precursor and strategies that will stimulate this frugality is indispensable for the unsustainable industry like hotels. For this study, frugality is referred to as the degree to which consumers restrain themselves from acquiring and using products and services while staying in the hotel. In more detail, driven by the motivation to save money and long-term orientation mindset, frugality nature tends to adopt green practices at the hotel, namely, reuse the towel, reduce the food and services consumption and to participate in incentivizing recycling programme.

Environmental advertising and green attitude cognition, evaluation

In general, advertising aims to affect consumer's knowledge, beliefs, attitudes and images about specific products, services and brands. Environmental advertisement delivers information about eco-friendly products from a product or service to attract customers to purchase and use products/services that are friendly to the environment (Prasetya, 2016).In the context of the hotel industry, environmental advertising refers to an ad that applied by hoteliers to promote the hotel's green practice, emphasizing the eco-friendliness concept of the hotel and to presenting the hotel's corporate image of environmental responsibility (Chan and Han, 2014). While green attitude is operationalized as hotel guests' perception and the implicit tendency or favouritism towards green and sustainable aspects regarding the hotel experience.

The S-O-R theory can support the relationship between environmental advertising and green attitude. Besides the theoretical support, empirical studies in the consumer behaviour field have demonstrated that environmental/green advertising positively affects consumers' attitudes towards the green product (Chekima *et al.*, 2016; Chin *et al.*, 2018; Hartmann *et al.*, 2015). In addition, Magee (2019) asserted that the presence of an environmental image in an ad could generate positive attitudes towards a firm's product or services. However, not much is known about the impact of environmental advertising on green attitude in the hotel industry context. In the same manner, this study assumed that environmental advertising would exert a positive effect on the guests' green attitude in the context of the hotel industry. Based on this assumption the following relationship is developed:

H1. Environmental advertising positively affects hotel guests' green attitude.

Eco-labelling and green attitude

Eco-labelling is a formal symbol that shows that a product or service has been designed to do less harm to the environment (Galarraga, 2002). It is an effective way of informing customers about the environmental impacts of selected products (Bleda and Valente, 2009). In the tourism context, eco-labelling is defined as a form of claims that assure the hotel is implementing green practices and adhere to the environmental and sustainable themes (Testa *et al.*, 2015). It is suggested that eco-labelling is one of the "key instruments for sustainable tourism development and implementation of environmental certification of tourist accommodation facilities and services" (Constantin *et al.*, 2013, p. 521).

The theory of S-O-R can link eco-labelling with consumer green attitude. In addition, past studies found that eco-labelling positively affect green attitude in purchasing organic food products (Ellison *et al.*, 2016) and other green products (Vazifehdoust *et al.*, 2013). Moreover, Hall *et al.* (2016) in their systemic review of the literature suggested that eco-labelling assist consumers in identifying the hotels that implement green practices, which eventually affect their positive feeling towards that hotel. Nevertheless, little attention has been paid to empirically examine the effect of eco-labelling on hotel guests' green attitude in the tourism industry. Considering this gap, the present study assumes that eco-labelling can positively affect the hotel guest's green attitude. Based on this assumption the following hypothesis is developed:

H2. Eco-labelling positively affects hotel guests' green attitude.

Green attitude and frugal consumption behaviour

Frugality stresses on the careful management of resources and to spend on necessities (Bove *et al.*, 2009), Being the mobilizer of the sustainability (Pepper *et al.*, 2009), the notion of frugality has received research attention (Gupta and Agrawal, 2018; Geiger *et al.*, 2018). In regard to the hotel industry, it is expected that frugal consumers may translate their self-restraining nature by adopting sustainable practices while staying at the hotels such as focussing on less consumption, reusing the towel, reducing the food consumption and to participate in an incentivized recycling programme. Thus, it is presumed that when hotel guests have a positive attitude towards green aspects of the hotel, they will limit their consumption and use of hotel resources driven by the "less is more" principle.

Again, the S-O-R theory can support the positive relationship between green attitude and consumer frugal behaviour. Also, past studies found a positive relationship between consumers' green attitude and their green purchase behaviour (Ellison *et al.*, 2016), as well as their sustainable consumption behaviour (Joshi and Rahman, 2019). However, less attention was given to investigate the green attitude and frugality link. In addressing this gap in the literature, the following hypothesis is developed:

H3. Green attitude positively affects frugality.

Environmental advertising and frugal consumption behaviour

In the context of the hotel industry, environmental advertising implemented by hotels is for tackling environmental issues and communicating eco-friendly hotels' initiative (Sahin *et al.*, 2019). Thus, it is assumed that environmental advertising may directly affect consumer frugal behaviour, who is inclined to reduce consumption and reuse the product (Awais *et al.*, 2020). Moreover, environmental and green advertising have been suggested for promoting favourable green behaviours and customers' purchase decisions (Ham and Han, 2013; Sahin *et al.*, 2019). Additionally, advertising communication has exerted a positive effect on people's behaviour (Johannessen *et al.*, 2010). Nonetheless, the lack of research has been considered the relationship between environmental advertising and frugality. Thus, it is assumed that environmental advertising is likely to affect frugality among hotel guests positively. Considering this assumption, the following hypothesis is developed:

H4. Environmental advertising positively affects frugality.

Eco-labelling and frugal consumption behaviour

In the tourism industry, eco-labels act as communication systems that aim to influence consumer behaviour towards greater consideration of environmental concerns (Gössling and Buckley, 2016). It implied that the application of eco-labelling on tourism may promote frugality amongst hotel guests, which is also reflected as the "waste not, want not" principle (Goldsmith *et al.*, 2014). Specifically, it is assumed that eco-labelling may influence hotel guests to be more restrained and resourceful while using the product or service at the hotel. Eco-labelling is viewed as one of the useful tools to encourage green and eco-friendly consumption (Jin *et al.*, 2020). In regard to the hotel industry, Barbulescu *et al.* (2019) suggested hotels that had an environmental certification or implemented environmental protection measures has a positive influence on consumer decision. However, the link between eco-labelling and frugality is yet to be examined. Thus, considering this gap and grounded in the previous discussion, the following relationship is developed:

H5. Eco-labelling positively affects frugality.

Mediating effect of green attitude

The present study considers the S-O-R as the theoretical basis, which supports the idea of considering green attitude as the mediator in the relationship between marketing strategies (environmental advertising and eco-labelling) and frugality, which is comparatively a new link. For this study, it is assumed that environmental advertising and eco-labelling strategies implemented by green hotels are external stimuli that can positively affect consumers' attitudes (O) towards green and sustainable aspects of the hotel to restrain themselves from overconsumption resources of the hotel during their stay (R).

In the marketing literature, attitude is considered as a mediator between subjective norm and behavioural intention (Saleki *et al.*, 2019), service quality and consumer preference (Amin *et al.*, 2017) and social capital and perceived eco-capability (Castaneda *et al.*, 2015). In their study, Taufique *et al.* (2017) found that attitude towards the environment mediates the relationship between eco-labelling and green advertising knowledge and pro-environmental consumer behaviour. As such, it is expected that a green attitude will mediate the relationship between green marketing strategies (environmental advertising and eco-labelling) and frugal consumption behaviour, which is a considerably new link in the existing body of the literature. Based on this discussion, the following relationships are hypothesized:

H6. Green attitude mediates the relationship between environmental advertising and frugality.

H7. Green attitude mediates the relationship between eco-labelling and frugality.

Conceptual framework

The proposed relationships among the study variables are shown in Figure 1.

## Methodology

Sampling area

Klang Valley area was the focus of this study, as it is considered "the heart of Malaysia" (Krist, 2007). It is an area in Malaysia centred in Kuala Lumpur and includes its adjoining cities and towns in Selangor. People from all major ethnicity (Malay, Chinese and Indian) live in Klang Valley and have their neighbourhood and maintain their religion and culture peacefully.

Kuala Lumpur is famous for its iconic Petronas Twin Towers, the 88-story landmark, the Putra World Trade Centre (PWTC), the Putrajaya Convention Centre (PICC), a Ma forest in the heart of the city, Bukit Nanas Forest Recreational Park, the "Green Lung", the Islamic Arts Museum and International Airport (Krist, 2007). As it is considered as the main tourist attraction, many three to five-star hotels are based in the Klang Valley area. "Truly Asia" became the main marketing slogan to attract tourists from worldwide. As such, the Klang Valley area was considered deemed appropriate to be considered as the sampling area.

Sample, sampling technique and data collection

A web-based survey was designed to collect the data. The use of an online survey is considered as a reliable method to collect data pertaining to respondents' perception, attitude and behaviour (Evans and Mathur, 2005) which is a common practice in the tourism literature (Jaini *et al.*, 2019a; Su *et al.*, 2018). Google form was used to build the online questionnaire and the questionnaire link was then disseminated via email. The key strengths of an online self-administered survey include wider coverage of the respondents, flexibility and low administration cost (Sekaran, 2000). It yielded 165 responses and 150 were found

Figure 1 Proposed conceptual framework
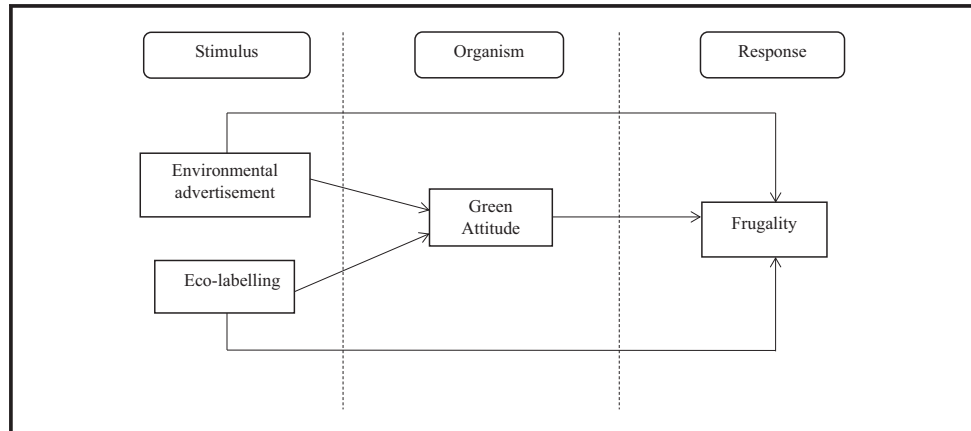
useful for further analysis. A total of 15 questionnaires were deleted due to missing values (5 cases) and irrelevant answers (outliers) (10 cases).

Non-probability judgemental sampling was used to collect data from consumers in Malaysia who were at least 18 years old and had experience in staying in at least three-star and above hotels within the past one year. This study used non-probability sampling due to several reasons. Firstly, the non-probability sampling technique is a widely used sampling technique to collect data in the hospitality and tourism literature (Jaini *et al.*, 2019b; Sharma and Nayak, 2019; Quoquab *et al.*, 2020; Tiamiyu *et al.*, 2020; Wang and Hsu, 2010). Secondly, there was no readily available sampling frame for this study. Thirdly, the purpose of this study is to examine new relationships and to focus on the "theoretical generalizability" (Calder *et al.*, 1983). Moreover, Quoquab *et al.* (2019) also mentioned that when the researcher's main concern is a theoretical generalization, the utilization of a non-probability sampling technique is suitable.

The reason for the target respondents to be at least 18 years old and above is that this group is considered to have the purchasing power and can make proper decisions (Quoquab *et al.*, 2018). The choice of three-star and above hotel is due to the reason that, in general, these hotels in Malaysia have implemented green practices, which focus on energy efficiency, water efficiency, etc (Thestar.com, 2014). Hence, it fits with the frugality traits that more directed towards Reduce, Reuse and Recycles practices (Awais *et al.*, 2020). Thus, it serves the purpose of the study to examine the role of green marketing strategies towards frugality in the Malaysian hotel industry. As judgemental sampling involves the selection of appropriate respondents for participating in the research, thus the choice of non-probability (judgemental sampling) is deemed appropriate for this study.

Sample size

The sample size for this study was decided based on two rule of thumb. Firstly, power analysis (using G* power software) was considered as suggested by Cohen (1992). By using G* power software, the minimum sample size required to achieve a power higher than 0.80, a significant level of less than 0.05 and an effect size greater than 0.15 in 107 respondents. Secondly, Hair *et al.*'s (2011) suggestion to consider a 1:5 ratio where five observations are required for each statement item was considered. In such instance, in this study, 95 cases (19 items x 5 observations) were found sufficient to run the analysis. As such, 150 responses were deemed appropriate to proceed for further analysis.

Measurement

All measurement items were adapted from past literature (Appendix). Environmental advertising was measured by using three items from taken from Rahbar and Abdul Wahid (2011) and eco-labelling was measured by using five items adapted from Joshi and Rahman (2016). To measure a green attitude, the present study used three items borrowed from Paul et al. (2016) and frugality was measured by using eight items taken from Lastovicka et al. (1999). All items were assessed by using a five-point Likert scale ranging from 1(strongly disagree) to 5 (strongly agree). To assess the content validity, the feedback was sought from three academics from one reputed public university who were subject experts.

Respondents' profile

As shown in Table 1, the majority of the respondents were female (60.7%). Nearly half of the respondents were within the range of 18 to 25 years (45.3%). The majority of the respondents were Malay (76.7%), single (58.7%) and had income less than RM2,000 (50.7%). In terms of the profession, 37.3% were students, 19.3% worked at the administrative and managerial position, 11.3% worked in the technical field and 9.3% were non-executives.

Data analysis and results

Common method variance

This study applied the cross-sectional design to collect data from respondents; thus, it was crucial to examine the presence of common method variance (CMV) (Fuller et al., 2016; Podsakoff et al., 2003). CMV refers to the variance that is being caused by the measurement method rather than the constructs of interest (Podsakoff et al., 2003). As suggested by scholars (MacKenzie and Podsakoff, 2012; Podsakoff et al., 2003), both procedural and statistical remedies have been used to address this statistical issue. In terms of procedural remedies, authors have informed the respondents that anonymity is assured. Moreover, unclear, ambiguous and double-barreled questions were avoided through experts' opinions during the content validity and face validity process. Regarding the statistical remedies, Harman's single factor test was used (Podsakoff et al., 2003). For this purpose, principal component analysis with an unrotated solution was conducted. CMV present when a single factor accounting for the majority of variance in the data. The results indicate that neither a single factor nor a general factor represents the majority of the explained variance (MacKenzie and Podsakoff, 2012; Podsakoff et al., 2003). In addition, full multi-collinearity tests were performed and their VIFs are less than the acceptable 3.3 (Kock and Lynn, 2012). Thus, it can be concluded that CMV was not a serious threat in this study.

Descriptive statistics

Table 2 provides the descriptive statistics in terms of the mean and standard deviation for all variables (environmental advertising, eco-labelling, green attitude and frugality purchase behaviour). The means for all variables were above 4.00. Relatively, the GA score was the highest with 4.318, followed by FR, 4.123, EA, 4.104 and finally EL, 4.039. The dispersion values measured by standard deviation indicate that the highest score was GA with 0.814, whereas the lowest score was FR with 0.516.

Structural equation modelling

Structural equation modelling, partial least squares (PLS-SEM) was used to analyze the hypothetical model using Smart PLS 3.7 software (Ringle et al., 2015). As the main concern of this research is to predict the endogenous constructs and minimize their unexplained

Table 1 Demographic backgrounds of the respondents		
Demographic variables	*No of respondents = 150*	*(%)*
Gender		
Male	59	39.3
Female	91	60.7
Age		
18–25 years	68	45.3
26–35 years	52	34.7
36–45 years	18	12
46–55 years	10	6.7
56 years and above	2	1.3
Ethnicity		
Malay	115	76.7
Chinese	4	2.7
Indian	8	5.3
Bumiputera	21	14.0
Others	2	1.3
Marital status		
Single	88	58.7
Married	56	37.3
Divorced	6	4.0
Widow/widower		
Education		
Secondary school certificate/SPM	12	8.0
Technical school certificate/ pre-diploma	3	2.0
Diploma/STPM	43	28.7
Bachelor degree	52	34.7
Master degree	36	24.0
Doctoral degree	4	2.7
Profession		
Administrative and managerial	29	19.3
Technical	17	11.3
Sales and service	9	6.0
Non-executive	14	9.3
Educator	7	4.7
Entrepreneur	8	5.3
Student	56	37.3
Retired	3	2.0
Others	7	4.7
Monthly income		
Below 2,000	76	50.7
RM2,001-3,000	22	14.7
RM3,001-4,000	14	9.3
RM4,001-5,000	8	5.3
Above RM5,000	30	20.0
Background question		
Frequency to stay at a hotel in a year		
Once	28	18.7
2 to 3 times	64	42.7
4 to 5 times	40	26.7
>6 times	18	12.0

variance, the use of PLS-SEM is justified (Hair *et al.*, 2017). Additionally, PLS-SEM is a variance-based technique that is recommended to validate exploratory models (Mondéjar-Jiménez *et al.*, 2016), and can be used when theoretical knowledge about the relationships are not well developed (Wold, 1980). This is in line with the objectives of this study i.e to

Table 2 Reliability and validity

Construct	Items	Mean	SD	Loadings	AVEs	CRs	CAs
EA	EA1	4.104	0.634	0.839	0.704	0.877	0.790
	EA2			0.827			
	EA3			0.851			
EL	EL1	4.039	0.576	0.679	0.553	0.860	0.795
	EL2			0.644			
	EL3			0.812			
	EL4			0.778			
	EL5			0.790			
FR	FR1	4.123	0.507	0.715	0.516	0.842	0.769
	FR3			0.667			
	FR5			0.743			
	FR6			0.707			
	FR8			0.757			
GA	GA1	4.318	0.609	0.896	0.814	0.929	0.886
	GA2			0.922			
	GA3			0.888			

Notes: EA = environmental advertising; EL = eco-labelling; FR = frugality; GA = green attitude; FR2, FR4 and FR7 were removed to increase AVE for FR

examine the causal relationships between green marketing strategies (environmental advertising and eco-labelling) and frugality through green attitude, which are comparatively new links; thus, the use of PLS-SEM is acceptable (Richter *et al.*, 2016)

Following Anderson and Gerbing' (1988) recommendation, the two-stage approach assessment was used. Firstly, the measurement model was assessed in terms of factor loadings (FL), Cronbach alpha (CA), composite reliability (CR), convergent validity (CV) and discriminant validity (DV). Next, the structural model was assessed by examining the significance and relevance of path coefficients, the explanatory power of the model (R^2), effect size (F^2) and predictive relevance of the model (Q^2).

Measurement model assessment

To examine the measurement model, the PLS algorithm with a path weighting scheme, 300 iterations and stop criterion: 1.0E-7 was run. Tables 2, 3 and 4 present the measurement model results. To test the reliability of the measurement model, all factor loadings, average variance extracted (AVE) and composite reliability was examined. As illustrated in Table 2, the indicator loading for all items surpassed the threshold value of 0.60 except for FR2, FR4 and FR7. Thus, these three items were removed from further analysis. Moreover, the values of Cronbach's alpha (CA) and composite reliability (CR) exceeded 0.70 and 0.80, respectively, for all latent variables. This result confirmed the internal consistency reliability for all constructs (Hair *et al.*, 2017). Next, this study assessed convergent validity based on AVE as advised by Hair *et al.* (2017). As shown in Table 2, AVE values for all constructs surpassed the cut-off value of 0.50. This indicates that each construct shared a high portion of variance (>0.50) with its own items, which ascertained the convergent validity for all latent variables.

For assessing discriminant validity, this study used two methods, i.e. Fornell and Larcker (1981) criterion and heterotrait–monotrait ratio (HTMT) (Henseler *et al.*, 2015). According to the first method, the square root of the AVE of each construct has to be higher than its correlation with other constructs in the model. Table 3 reveals that this condition was met; thus, discriminant validity was achieved. With respect to the HTMT method, which estimates the ratio of between constructs correlation to within construct correlation, discriminant validity is confirmed if HTMT

Table 3	Fornell-Larcker criterion			
Constructs	Environmental advertisement	Eco-labelling	Frugality	Green attitude
Environmental advertisement	0.839			
Eco-labelling	0.605	0.744		
Frugality	0.436	0.515	0.719	
Green attitude	0.552	0.718	0.539	0.902

Note: Diagonal values represent the square root of AVE, while off-diagonal values represent the correlation between latent constructs

values for all constructs are less than 0.85 (Kline, 2011). A close look at Table 4, demonstrates that this condition also was achieved, which provide support for the discriminate validity for all construct.

Structural model assessment

To assess the structural model, it is suggested to assess the values of R^2, F^2, Q^2 and the standardized beta coefficient and their corresponding t-values using a bootstrapping procedure with 5,000 resample (Hair $et\ al.$, 2017, 2019). According to Cohen (1988), R^2 values of 0.02, 0.13 and 0.26 are small, medium and large, respectively. The R2 for the green attitude is 0.537, suggesting that 53.7% of the variance in green attitude can be explained by EA and EL. The R^2 for frugality is 0.336, suggesting that GA, EA and EL can explain 33.6% of the variance in frugality. In summary, all the R^2 values are greater than 0.26, indicating substantial explanatory power for the model (Cohen, 1988). Next, the effect size (f^2) was assessed to determine whether an exogen latent construct has a weak, moderate or substantial effect on an endogenous latent construct. Cohen (1988) suggested that f^2 values of 0.02, 0.15 and 0.35 are small, medium and large, respectively. The results indicated that eco-labelling has a large effect on the green attitude (f^2 = 0.502), whereas environmental advertising has a weak effect (f^2 = 0.047). The result also indicate that green attitude (f^2 = 0.07), environmental advertising (f^2 = 0.021) and Eco-labelling (f^2 = 0.027) exerted weak effect on frugality. In addition, the blindfolding procedure with a distance of seven was run to assess the predictive relevance of the model. The results of Q^2 ascertains

Table 4	HTMT method			
Constructs	Environmental advertisement	Eco-labelling	Frugality	Green attitude
Environmental advertisement				
Eco-labelling	0.769			
Frugality	0.528	0.631		
Green attitude	0.659	0.855	0.631	

Table 5	Structural model assessment (direct relationship)						
					95%CI		
Hypotheses	Relationship	β	SE	t-value	LL	UL	Decision
H1	EA → GA	0.185	0.092	2.012	0.035	0.337	Supported
H2	EL → GA	0.606	0.078	7.783	0.483	0.737	Supported
H3	GA → FR	0.317	0.124	2.554	0.110	0.518	Supported
H4	EA → FR	0.137	0.079	1.739	0.018	0.275	Supported
H5	EL → FR	0.204	0.117	1.748	0.017	0.401	Supported

Notes: EA = environmental advertising; EL = eco-labelling; FR = frugality; GA= green attitude

the model's predictive relevance for green attitude (Q^2 = 0.406) and FR (Q^2 = 0.157) (Hair et al., 2017).

Next, the sizes of the path coefficients were examined to determine if they were statistically significant. Result in Table 5 and Figure 2 illustrate that environmental advertising (β = 0.185, $p < 0.05$) and eco-labelling (β = 0.606, $p < 0.05$) were positively associated with green attitude. This provides support for H1 (environmental advertisement positively affects hotel guests' green attitude) and H2 (eco-labelling positively affects hotel guests' green attitude). These findings indicate that both green marketing strategies (environmental advertising and eco-labelling) as the builder of the green attitude. Also, Green attitude (β = 0.317, $p < 0.05$) has a positive effect on frugality, which confirmed H3 (green attitude positively affects frugality). It can be implied that, when hotel guests have a positive green attitude, they will be translated into frugality, which is to limit and be resourceful with their consumption while staying at the hotel. In addition, EA (β = 0.137, $p < 0.05$) and EL (β = 0.204, $p < 0.05$) has a positive effect on frugality, supporting H4 (environmental advertising positively affects frugality) and H5 (eco-labelling positively affects frugality) (Table 5). Based on these findings, it can be concluded that both environmental advertising and eco-labelling directly promoting the frugality of the hotel guests.

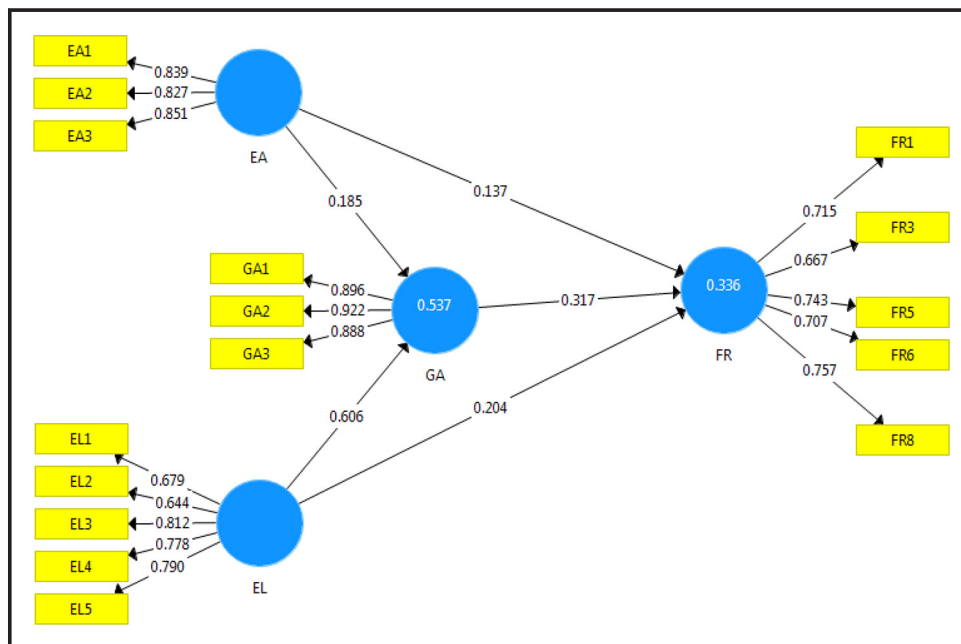### Assessment of the mediating effect

Figure 2 Structural model

Table 6 Structural model assessment (mediating effect assessment)

Hypotheses	Relationship	Indirect effect	SE	t-value	95%CI LL	95%CI UL	Decision
H6	EA→GA→FR	B1 = 0.059	0.025	2.360	0.015	0.108	Supported
H7	EL→GA→FR	B2 = 0.192	0.083	2.320	0.029	0.354	Supported

Notes: EA = environmental advertising; EL = eco-labelling; FR = frugality; GA = green attitude

To examine the mediating effect of green attitude between marketing strategies (i.e. green advertising and eco-labelling) and frugality, the present study bootstraps the indirect effect with 5,000 resample as suggested by Preacher and Hayes (2008) and Hair et al. (2017). Table 6 presents the results obtained from the bootstrapping analysis.

The findings reveal that the indirect effect of $\beta 1 = 0.059$ was significant with a t-value of 2.36, 95% Boot CI: (LL = 0.015, UL = 0.108). In addition, $\beta 2 = 0.192$ was significant with a t-value of 2.320, 95% Boot CI: (LL = 0.029, UL = 0.354). These results confirmed the mediating effect of GA, which ascertained H6 (Green attitude mediates the relationship between environmental advertising and frugality) and H7 (Green attitude mediates the relationship between eco-labelling and frugality). Notably, as the direct and indirect effects were pointing in the same direction, the mediating type was complementary (Hair et al., 2017).

Discussion and conclusion

This study's main objectives are to examine the direct and indirect effect of marketing strategies on green attitude and frugality. To accomplish these objectives, a theoretical model was developed based on the S-O-R model and was tested using SEM-PLS. The output of this research found support for all developed relationships. Notably, the findings reveal that marketing stimuli (environmental advertising and eco-labelling) positively affect hotel guests' green attitude (H1, H2) and frugality (H4, H5). Additionally, a green attitude directly affects frugality (H3). Besides, a green attitude mediates the link between marketing stimuli and frugality (H6, H7). These results are in line with the S-O-R theory and past studies (Chekima et al., 2016; Kim and Hall, 2015; Hartmann et al., 2015). The findings from this study contribute to the understanding the role of green marketing strategies, namely, environmental advertising and eco-labelling, towards frugality in the Malaysian hotel industry. As environmental sustainability can also be economically attractive for business (Kitheka et al., 2016), the findings from this study can provide fruitful insights into addressing the overconsumption issue in the tourism industry.

This study found that green marketing strategies (environmental advertising and eco-labelling) have a direct and indirect effect on frugality. Notably, environmental advertising and eco-labelling exert a positive and significant effect on frugality. It can be implied that both environmental advertising and eco-labelling increase the degree to which hotel guests to reuse and reduce the consumption of their resources and hotel amenities while staying in the hotel. This study's output also confirms the favourable association between environmental advertising and eco-labelling towards green attitude. Thus, it is understood that both environmental advertising and eco-labelling has significant and positive effects on cultivating hotel guests' attitude towards sustainable practices while staying at the hotel. These findings are consistent with the past studies that suggested that environmental advertising and eco-labelling positively affect attitudes towards consumer's green purchase behaviour (Chekima et al., 2016; Ellison et al., 2016). In other words, hotel guests consider both environmental advertising and eco-labelling as an essential reference for their decision-making. Moreover, the findings of this study confirmed the positive effect of a green attitude on frugality. This result is in line with earlier findings suggesting a positive relationship between green attitude and sustainable consumption behaviour (Joshi and Rahman, 2019; Kim and Hall, 2015). This result suggests that, when hotel guests possess a green attitude, they tend to comply with sustainable practices, and thus behave frugally. In more detail, they become conscious of the over/excess use of the hotel resources (e.g. energy and water).

The mediating effects of green attitude between green marketing strategies and frugal consumption behaviour were also supported by the data. Thus, it is evident that, environmental advertising and eco-labelling boost green attitude, which, in turn, leads to frugality. As such, it can be concluded that hotel guests in Malaysia, environmental

advertising, eco-labelling and green attitude are important determinants in inculcating frugality.

Theoretical contribution

From the theoretical perspective, the present study contributes to the sustainability marketing literature by investigating frugality from the hotel guests' perspective. Moreover, this study extends the understanding of S-O-R theory by using it to develop the research framework pertaining to frugal consumption behaviour which is comparatively very new. Based on the S-O-R theory, this study suggests that environmental advertising and eco-labelling (marketing stimuli) contribute to form hotel guests' favourable green attitude (organism), which in turn affects hotel guests' sustainable practices and ultimately driving frugality (response).

Besides, the present study establishes a few new linkages. In more detail, this study is among the pioneers in suggesting green attitude-frugality links in the consumer behaviour field. The finding from this study also provides support for this new relationship. These novel findings sharpen the understanding of the psychological states that promote frugality amongst hotel guests. Moreover, the mediating effect of green attitude in the relationship between "environmental advertising and frugality" and "eco-labelling and frugality" is also comparatively new. The results of this study provide support for both mediating effects. Such important links shed light on how hoteliers interpret green marketing strategies, namely, environmental advertising and eco-labelling into driving frugality by nurturing green attitude.

Managerial implications

The findings from this study provide several managerial implications for the hoteliers and green marketer especially in the urbanized states that accounted for nearly 50% of the three and above' star rating hotels in Malaysia. *Firstly*, it presents the importance of environmental advertising and eco-labelling in promoting frugality in the hotel industry. It signalled the necessities for the hoteliers and marketers to be more vigilant in making use of their green marketing strategies, namely, environmental advertising and eco-labelling to promote their hotel.

Secondly, the finding from this study demonstrates that environmental advertising and eco-labelling are two important key factors in promoting frugality as it drives a green attitude and eventually promotes frugality amongst hotel guests. Therefore, taking consideration of these findings, hoteliers and marketers should emphasize on proper and effective communication via environmental advertising to promote their green practices. For instance, it is recommended for the hoteliers and marketers to provide information about the energy consumption on the energy-intensive products in intelligible manners such as by using graphical displays (use energy guide labels on appliances). Additionally, marketers should consider designing the message on environmental conservation and sustainability in the form of captivating animation or caricature as it may increase hotel guests and potential customers' affinity towards staying at the hotels. To create more enthralling environmental advertising, hoteliers and marketers should organize a contest for designing the most inspired ads on a quarterly basis so that the ads will be always relevant and in line with the current environmental conditions.

Thirdly, the hoteliers should promote green campaign emphasizing the importance of environmental issues such as "green is the new black" and "less is more". Most importantly, all of these interactive environmental advertising should be broadcasted via numerous channels such as the hotels' websites, social media such as Facebook, Instagram and the hotels' webpage itself. In addition to environmental advertising, hoteliers and marketers also should consider applying or continually renew eco-labels as hotel guests recognize its role

as trusted claims which assure that the particular hotel follows the environmental and sustainability principles. Eventually, it will enhance hotel guests' positive attitude towards sustainable practices as hotel guests will be able to gain more credible information about hotels' green practices.

Fourthly, the findings from this study also highlight the mediating role of green attitude in boosting frugal consumption behaviour. As environmental advertising and eco-labelling drive a green attitude, hoteliers should consider adapting green marketing strategies and communicate the message to the green and frugal consumers accordingly. To develop a relational route of environmental advertising towards green attitude and frugality, hoteliers and marketers should consider designing environmental advertising to be more interesting and sprinkled with emotionally appealing content as emotional attachment and feeling is known to enhance an individual's attitude towards related or targeted events. Marketers also should involve hotel guests in the storyboard creation for environmental advertising by encouraging hotel guests to craft meaningful stories on their hotel staying experience through discounts or rebates. Furthermore, as hotel guests appreciate the sustainability elements of eco-labelling, it is recommended for hoteliers to advertise their eco-labels or green certificates in the hotels' websites and social networking sites.

Social implications

The present study aims to encourage sustainable consumption practices to promote "less is more". In spite of the plethora of past studies on emphasizing frugality as curtailment or reduction in consumption (Shoham *et al.*, 2017), there is no prior study that has examined frugality as one of the desired sustainable consumption for the hotel industry context. As the findings from this study evidenced the potential of green marketing strategies namely, environmental advertising and eco-labelling in uncovering the psychological aspect that is, a green attitude which leads to frugality, it may offer means to achieve fundamental positive sustainability change and addressing overconsumption issue not only in industry but also at the society level. Focussing on environmental advertising and eco-labelling implies building green attitude and promoting frugality could lay the foundations towards holistic and long-term sustainability developmental approach. It may increase the environmental stewardship via inculcating the green attitude and lead to create a sustainable environment.

This study's findings advocate for the necessities for the government to promote information and campaign to generate awareness on 3R, aiming at nurturing a green attitude to stimulate frugality in daily life. Government programmes also need to centre towards reinforcing the sustainable side of the frugality nature in individuals and communities. These programmes can emphasize the need for preservation and protection. Eventually, it will contribute to the sustainability development of the nation.

Essentially, the results of this study also contribute towards developing sustainable urban tourism which is in line with sustainable development goals (SDG). It advocates for the importance of promoting efficiency and resourcefulness with consumption towards developing cleaner cities. As becoming more sustainable has been accepted as an increasingly important policy goal for cities worldwide (Aall and Koens, 2019), the findings of this study provide important insight for city and tourism council towards promoting sustainable urban tourism. For instance, the installation of eco-friendly facilities, namely, incentivized fully-organized recycling centres, especially in the tourist attraction and etc. could promote the "waste not, want not" principle. Additionally, the city and tourism council could execute a specified campaign to cultivate the notion of frugality and answering how the implementation of simple frugal practices like limiting food waste and use reusable bottles especially while travelling can address the overconsumption in the cities. These campaigns also should highlight the beneficial aspects of frugal practices in the tangible (financial benefits) and intangible manner (i.e. moral satisfaction). Ultimately, it will foster the frugality or "less is more" principle in the urban context.

Limitations and future research directions

Although this study provides useful insights about the role of environmental advertising and eco-labelling in enhancing hotel guests' frugal consumption behaviour, this study is not beyond its limitations. However, the limitations of this study may provide an opportunity for future research. For example, this study applied a positivist approach (quantitative method) for comprehending the research problem, thus future studies can consider a pragmatic approach (mixed method) for exploring and gaining a deeper understanding of the issue. Additionally, data were collected via a cross-sectional survey. Future studies may consider longitudinal design to tap the behavioural response more accurately. Moreover, data were collected from hotel guests in Malaysia, whereas, future studies may test the research framework build in this study in other countries to gain better insight from a different culture. Last, but not the least, future studies can consider other variables as the antecedents in enhancing consumers' green attitudes such as perceived value, green awareness and environmental knowledge. It is hoped that the findings from this study will serve as the foundation for future research in promoting frugality in the tourism business landscape.

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Appendix

Table A1	Measurement items	
Construct	**Items**	**Source**
Frugality	If I carefully chose the hotel to stay, I will definitely save money in the long run (e.g. only choose the hotels that reasonably priced) There are many things that are normally thrown away in the hotels that are still quite useful (e.g. food during breakfast, shampoo bottle and leftover soap, old electronics and furniture) Making better use of resources while staying at the hotels makes me feel good (e.g. reducing water and energy consumption, not using all towels and toiletries, take only food that I can finish during breakfast buffet) While staying at the hotel, if I can re-use and reduce the item I already have (e.g. towel and toiletries), there's no need to ask for something new I believe in being careful in how I spend my money while staying at the hotel (e.g. eat food in a cheaper restaurant instead of buying food at a hotel) I discipline myself to get the most from my money when staying at the hotels (e.g. restraining from ordering room services and additional charges facilities) I am willing to wait to choose a hotel that I want so that I can save money (e.g. wait for online booking promotion, MATTA fair, etc.) While staying at the hotel, there are things I resist buying (e.g. expensive food and laundry services), so I can save for tomorrow	Lastovicka *et al.* (1999)
Environmental advertising	Environmental advertising enhances my knowledge about hotels green practice I enjoy watching broadcast environmental advertising broadcasted by hotels (e.g. posted on social media, company website, poster and banner, etc.) Environmental advertising by hotels guides customers to make an informed purchase decision.	Rahbar and Abdul Wahid (2011)
Eco-labelling	Whenever possible, I stay at the hotels that implement green practice (e.g. use of keycard system, use energy-saving lamp such as LED, have a recycling programme, etc.) I stay at the hotels if they are certified by the environmental organization or have eco-label (e.g. ISO, earth check, etc.) I trust the eco-friendly claims in the advertisements used by hotels Marketers must advertise the environmental aspects of their hotel services Government must make eco-label or eco certifications for hotels that implement green practices mandatory	Joshi and Rahman (2016)
Green attitude	I like the idea of staying at hotels that follows green practices Staying at hotels that follows green practices is a good idea I have a favourable attitude towards staying at hotels that follows green practices	Paul *et al.* (2016)

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