

“Waste not, want not”: fostering frugality amongst Muslim tourists in the Malaysian hotel industry

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Abstract

Purpose – The prevailing overconsumption issue in the hotel industry is attributable mainly to the irresponsible consumption behaviour of hotel guests. In parallel with Islamic principles, which advocate abstinence from excess consumption and frugality, the “waste not, want not” notion can be considered as one of the effective solutions to this problem. However, little is known about the factors that drive frugality amongst Muslim tourists. In addressing this gap, this study aims to predict the effect of environmental advertising and green attitude on frugality in the context of the Malaysian hotel industry. The study also tests the mediating role of the green attitude between environmental advertising and frugality. Furthermore, it examines the role of price consciousness as a moderator of the green attitude-frugality link.

Design/methodology/approach – The stimulus-organism-response theory was used to develop the conceptual framework of this study. A cross-sectional method was used to collect 222 usable questionnaires from Muslim tourists in Malaysia. The hypothesised relationships were tested using the structural equation modelling, partial least squares approach.

Findings – The study found support for the direct effect of environmental advertising and green attitude on frugality. It also confirmed the mediating effect of the green attitude in the environmental advertising-frugality link. However, price consciousness did not moderate the relationship.

Practical implications – The findings of the study provide valuable insight for hoteliers in developing a green strategy that will foster frugality amongst Muslim hotel guests. It will also help them develop better strategies for the frugal segment, especially for the Muslim community.

Originality/value – The study is amongst the pioneers in investigating frugality in the tourism industry. It is also the first to introduce price consciousness as a moderator of the relationship between the green attitude and frugality. Furthermore, its examination of frugality amongst Muslim hotel guests is a new contribution to the literature.

Keywords Price consciousness, Frugality, Muslim tourists, Green attitude, Environmental advertisement, Malaysian hotel industry

Paper type Research paper



Introduction

The notion of “frugality” is indispensable for the Muslim community as Islam advocates abstinence from excess consumption and unnecessary waste (Rafikov and Akhmetova, 2019; Yeniaras and Akarsu, 2017). Frugality refers to one’s efforts to consciously reduce consumption and use products or services more equitably to avoid extravagance and overconsumption (Holmes *et al.*, 2019). It is suggested that frugality may contribute to reducing overconsumption and environmental issues plaguing the nation (Wang *et al.*, 2020).

Malaysia is considered a Muslim-majority country, where approximately 61.4% of the Malaysians (constituted by 50.4% Malay and 11% other races) are Muslim (Statistica, 2019; World Population Review, 2020). There are 2,264 hotels in Malaysia classified by the Ministry of Tourism and Culture Malaysia as star-rated hotels (one to five), amongst which 672 hotel chains have a “three and above” star rating classification (Malaysian Investment Development Authority, 2020). The rapid increase in the number of hotels in Malaysia contributed to the development of the tourism industry but impacted adversely on the environment owing to the excessive use of natural resources, including energy and water (Yusof and Jamaludin, 2013). As a remedial measure, many hotels in Malaysia with ratings of three-star and above have been using various green measures that adhere to the 3Rs (reduce, reuse and recycle) principle for their hotel operation, namely, energy and water-saving practices (e.g. energy-efficient lightning, use of low-flow showerheads, towel and linen reuse programme) and recycling programmes (Yusof *et al.*, 2017). The overconsumption issue in the hotel industry, however, remains unresolved (Asadi *et al.*, 2020).

The irresponsible behaviour of hotel guests and their inefficient consumption pattern is believed to have led to overconsumption in the hospitality industry (Karlsson and Dolnicar, 2016). Although the hotel industry’s green practices can have a substantial positive effect on the environment (Ahn and Kwon, 2019), it is impossible to address this issue fully unless hotel guests adopt more sustainable behaviours. It is, therefore, crucial for hoteliers to encourage the notion of frugality amongst their guests. Frugality can be defined as abstinence from unnecessary consumption and avoiding waste (Lastovicka *et al.*, 1999; Philp and Nepomuceno, 2020), which is in line with the 12th goal of the sustainable development goals (SDG) (United Nations World Tourism Organization, 2019). The significant growth in the number of domestic visitors in the different states of Malaysia (Mytourismdata, 2019) has made it essential to understand the notion of frugality, particularly amongst Muslim hotel guests. To motivate individuals to behave frugally, an efficient strategy is an utmost necessity. Sahin *et al.* (2019) proposed that effective communication about hotels’ green initiatives significantly influences hotel guests’ behaviour. As frugality adheres to 3R principles (Awais *et al.*, 2020), environmental advertising is expected to help promote frugality amongst hotel guests.

Environmental advertising has been widely adopted by hoteliers and is known to encourage sustainable behaviour and eco-friendly consumption (Gil-Soto *et al.*, 2019; Tiago *et al.*, 2020). In support of this view, past literature found a positive association between green marketing strategy, i.e. green/environmental advertising and green attitude (Ellison *et al.*, 2016; Kim *et al.*, 2019; Walia *et al.*, 2019). However, there is a dearth of research examining this link, especially in the context of the hotel industry. Furthermore, past studies suggest that the green attitude has a positive effect on sustainable consumption and green purchasing (Adrita and Mohiuddin, 2020; Ellison *et al.*, 2016). Yet, little attention has been paid to testing the link between the green attitude and frugality, particularly in relation to the Muslim community. To address these gaps in the literature, this study developed its first objective, namely, *to examine the effect of green environmental advertising and green attitude on guests’ frugal behaviour in the hotel industry.*

The attitude-behaviour gap is the subject of an ongoing debate in the literature (Juvan and Dolnicar, 2014; Shaw *et al.*, 2016). This implies that, although consumers hold a positive attitude towards an object (product or service), it does not necessarily manifest in behaviour. To minimise this gap, a moderator can be considered. In the existing literature, price consciousness has been suggested as a moderator in predicting consumer behaviour (Jayasingh and Eze, 2012; Saleki *et al.*, 2019). However, the moderating effect of price

consciousness in the green attitude-frugality link has never been examined. As frugality is associated with the economic aspect (Shoham *et al.*, 2017), price consciousness is expected to be able to moderate the relationship between green attitude and frugality. *Thus, the second objective of this study is to examine the moderating role of price consciousness.*

Past studies have found a positive relationship between environmental advertising and attitude (Ellison *et al.*, 2016) and a positive relationship between attitude and frugality (Adrita and Mohiuddin, 2020). However, prediction of the mediating role of green attitude has not been adequately investigated so far. Based on the stimulus-organism-response (S-O-R) theory, the present study argues that the green attitude is likely to mediate the relationship between environmental advertising and frugality. In particular, the study contends that environmental advertising is an external motivating factor that can affect tourist attitude positively towards green hotels (organism) and ultimately increases their frugal behaviour (R). Hence, the third objective of the study is to examine the mediating role of the green attitude in the hotel industry.

The rest of the article is structured as follows. Firstly, the relevant literature is reviewed, hypotheses are developed and the conceptual framework is presented. Next, the methodology is outlined and the findings are discussed. The article concludes with a discussion of the theoretical and managerial implications, limitations and future research possibilities.

Literature review and hypothesis development

Theoretical underpinning

The S-O-R theory, developed by Mehrabian and Russell (1974), serves as the foundation for the development of the research framework governing the effect of green marketing strategies on frugality amongst hotel guests. S-O-R theory proposes that stimulus and individual behaviour are linked by an organism component (Quoquab *et al.*, 2020a). The S-O-R theory has been applied in the field of consumer behaviour, as it elucidates the mechanism between environmental stimuli, customer inputs and action (Gatautis *et al.*, 2016; Zhu *et al.*, 2019).

As this study examines the impact of environmental advertising on green attitude and frugality, it can be best explained by S-O-R. For this study, environmental advertising (green marketing strategy) is considered as a stimulus (S), green attitude as an organism (O) and frugality as a response (R). Past studies have characterised advertising (Min *et al.*, 2019) as a “stimulus” in S-O-R theory. Moreover, according to Chang and Jai (2015), in S-O-R theory, the stimulus can consist of both marketing mix and other environmental elements. Previous studies have also considered attitude as an “organism” (Demangeot and Broderick, 2016). Additionally, sustainable consumption behaviour (green purchasing) has been proposed as a “response” while using the S-O-R theory (Piligrimienė *et al.*, 2020). As frugality represents individuals’ prudent behaviour in regard to purchase and consumption (Awais *et al.*, 2020), in this study, it is considered as the behavioural response. Hence, it is deemed appropriate to apply the S-O-R theory in the context of the study.

In the study, green marketing strategy and environmental advertising (stimulus) are expected to influence hotel guests’ green attitude (organism) positively, resulting in frugality (response) as their behavioural outcome.

Frugality

Frugality refers to consumers’ behavioural traits marked by the degree to which consumers tend to adopt restraint in acquiring goods and services and attempt to use them resourcefully (Holmes *et al.*, 2019; Lastovicka *et al.*, 1999). Frugality advocates caution in expenditure (Kasser, 2005; Lastovicka *et al.*, 1999) and encourage financial prudence

(Jagannathan *et al.*, 2020). As frugality encompasses careful use of physical and financial resources (Naderi and Van Steenburg, 2018) and suggests avoidance of wastage (Lastovicka *et al.*, 1999), it is posited that frugality can be a promising antidote to overconsumption in the hotel industry. Studying frugality amongst Muslim hotel guests is in line with the notion of Islamic teaching, which suggests moderation in consumption and advises against waste (Yeniaras and Akarsu, 2017). However, as not all Muslim tourists behave frugally, it is most essential to understand the drivers of frugality amongst Muslim tourists.

In this study, frugality is conceptualised as a multi-dimensional construct that reflects resource minimisation (RM) and cares for money (CFM). RM refers to the degree to which hotel guests reuse and reduce the consumption of their own resources and hotel amenities while staying in the hotel. CFM refers to the degree to which guests adopt restraint in spending on acquiring products or services while staying in the hotel. In other words, frugality in this study is considered as the degree to which hotel guests restrain their consumption of both physical resources (their own resources and hotel amenities) and financial resources (money) while staying in the hotel.

Antecedents of frugality

Factors or variables to be investigated in this study are decided on the basis of both theoretical and practical views. In regard to the theoretical view, the literature is reviewed to better understand the research trends, find gaps, etc. This involves synthesising what was done and what needs to be done and identifying how the present study contributes to filling these gaps. In doing so, the authors have compiled key or important past studies on selected factors/variables. A summary of the important past studies on frugality, environmental advertising, green attitude and price consciousness is presented in Table 1.

From Table 1, for the frugality construct, past empirical research such as Shoham and Brencić (2004) emphasises the build-up of the character or description of frugality, whereas recent empirical research, such as Wang *et al.* (2020) and Evers *et al.* (2018), emphasises the association of frugality with pro-environmental behaviour. Although it was suggested that frugality has the potential to address overconsumption issues owing to its inclination towards consuming less (Wang *et al.*, 2020), the drivers underlying the frugality notion have rarely been examined in past research. Thus, it creates novelty for the authors to investigate factors or strategies that drive frugality. In addition, environmental advertising and green attitude are evidenced to promote green purchase (consuming differently), green purchase intention and sustainable behaviour intention (Chin *et al.*, 2018; Han *et al.*, 2019; Vergura *et al.*, 2020). Thus, it is posited that they will also positively affect frugality, which is directed towards less consumption. Hence, it creates more value and originality for the researcher to study the impact of environmental advertising and green attitude on the “less consumption” notion or frugality, which is currently under-researched.

In addition, price consciousness as a moderator focusses more on purchase intention and behaviour (Jayasingh and Eze, 2012; Saleki *et al.*, 2019). Thus, it brings newness for the researcher to examine price consciousness as a moderator in the green attitude-frugality link. In regard to theory, many authors consider the theory of planned behaviour (TPB) (Chin *et al.*, 2018; Han *et al.*, 2019; Lita *et al.*, 2014) and extended TPB (Saleki *et al.*, 2019) to understand the sustainable consumption and behaviour phenomenon. However, recent work such as Sivadasan *et al.* (2020) and Vergura *et al.* (2020) used the S-O-R theory in an attempt to understand the effect of the marketing mix (environmental advertising and green brand positioning) and environmental stimuli on green attitude and purchase intention. Thus, S-O-R is more relevant as the theoretical basis for this study as it examines the impact of green marketing strategy (environmental advertising) and green attitude on frugality.

Table 1.
Summary of the important past studies on frugality, environmental advertisement, green attitude and price consciousness

Author/ year	Purpose	Methodology/approach	Theory used	Factors that have been investigated	Findings	Practical implications	Originality and value
<i>Frugality</i> Wang <i>et al.</i> (2020)	To examine the effect of religiosity and frugality consciousness on tourists' pro-environmental behavioural intention in hotels	N = 519, survey, CFA (confirmatory factor analysis)	–	<ul style="list-style-type: none"> – Pro-environmental behavioural intention – Religiosity – Frugality consciousness – Connectedness to nature – Environmental concern 	<ul style="list-style-type: none"> Intrinsic religiosity and extrinsic religion have a positive effect on pro-environmental behavioural intention via frugality consciousness and connectedness to nature 	<ul style="list-style-type: none"> Policymakers and hotel marketers to consider and pay attention to religiosity and frugality consciousness in promoting pro-environmental behavioural intention in hotels –Sustainability policy could focus on encouraging materialistic and frugal consumers in promoting end-use behaviours – Governments to search for new ways to provide convenient, low-cost options for the product and use a positive end-use behaviours – Policymakers to consider methods of reducing cost barriers to reusing and repurposing possessions 	<ul style="list-style-type: none"> The earliest empirical study to highlight the importance of frugality consciousness and connectedness to nature in promoting pro-environmental behavioural intention in the hotel industry –Provide an understanding of the under-researched sustainable consumption context, end-use of consumption behaviour and how materialism and frugality influence behaviours at this stage –Confirming the association of frugality with pro-environmental behaviour
Evers <i>et al.</i> (2018)	To examine the effect of materialism and frugality in determining product end-use consumption behaviours	N = 398, survey, PLS	–	<ul style="list-style-type: none"> –End use-behaviour –Frugality –Materialism – Age –Gender –Education –Household income –Financial stress 	<ul style="list-style-type: none"> Materialism and frugality has a positive effect on consumers' sustainable consumption behaviours (end-use behaviours) – High materialism and frugality were more likely to search for new ways to dispose of products, reuse the product and use a positive end-use product in a different way 	<ul style="list-style-type: none"> –Sustainability policy could focus on encouraging materialistic and frugal consumers in promoting end-use behaviours – Governments to search for new ways to provide convenient, low-cost options for the product and use a positive end-use behaviours – Policymakers to consider methods of reducing cost barriers to reusing and repurposing possessions – Marketers could/to consumers based their level of frugality and targeting frugal consumers should focus on promotions that include reward constrained behaviours 	<ul style="list-style-type: none"> –Provide an understanding of the under-researched sustainable consumption context, end-use of consumption behaviour and how materialism and frugality influence behaviours at this stage –Confirming the association of frugality with pro-environmental behaviour
Shoham and Brenčić (2004)	To examine the relationship between frugality and price and value consciousness	N = 130, survey Multiple regression	<ul style="list-style-type: none"> – Principle of cognitive consistency – Self-perception theory – Solomon's consistency-explaining theory 	<ul style="list-style-type: none"> –Frugality –Value consciousness –Price consciousness 	<ul style="list-style-type: none"> Frugality is positively associated with value and price consciousness 	<ul style="list-style-type: none"> Marketers could/to consumers based their level of frugality and targeting frugal consumers should focus on promotions that include reward constrained behaviours 	<ul style="list-style-type: none"> Amongst the earliest empirical study that examines the relationship between frugality and price and value consciousness

(continued)

Author/ year	Purpose	Methodology/approach	Theory used	Factors that have been investigated	Findings	Practical implications	Originality and value
Environmental advertisement Sivadasan et al. (2020)	To examine the relationships between environmental advertisements green brand positioning attitude towards environmental responsibility and consumers sustainable properties buying intention	N = 143, survey, PLS	– Stimulus-organism-response (S-O-R) theory	– Consumer buying intention – Environmental advertisement – Green brand positioning – Attitude towards environmental responsibility	Environmental advertisement and green brand positioning has positive effect on consumers' attitude towards environmental responsibility and affects consumers' buying intention of sustainable properties Three-dimensional constructs of green marketing tools have a positive effect on the green purchasing behaviour of rural tourism destinations	Marketers to focus on green promotional activities, namely, environmental advertisement and green brand positioning to attract more customers to buy sustainable properties	Being the pioneer study in examining consumers' sustainable property purchase intention, this study provides an understanding of the right marketing tools to attract sustainable properties buyers
Chin et al. (2018)	To examine the relationship between green marketing tools (eco-brand, eco-label and environmental advertisement) and green purchasing behaviour in rural tourism destinations	N = 252, survey, PLS	– Theory of planned behaviour (TPB)	– Green purchasing behaviour – Eco-brand – Eco-label – Environmental advertisement		Destination marketers to re-strategise their promotion techniques by concentrating more on developing the right eco-brand, eco-label and effective environmental advertisement	Provide greater understanding of tourists' readiness in accepting green marketing tools in the context of rural tourism in Malaysia
Rahbar and Abdul Wahid (2011)	To examine the effect of green marketing tools (eco-label, eco-brand and environmental advertisements) on consumer's actual purchase behaviour	N = 250, multiple regression analysis	–	– Actual purchase behaviour – Environmental advertisement – Eco-label – Eco-brand – Trust in eco-label and eco-brand	Trust in eco-label, eco-brand has a positive effect on consumer purchase behaviour whereas eco-label and environmental advertisement has no effect	One of the factors contributing to the failure of applying environmental advertisements in enhancing purchase behaviour is low awareness and the lack of environmental advertisements in Malaysia. Thus, industry players should focus on these issues	Provide some insights to green marketers to better understand consumer behaviour and the application of green marketing tools in Asia especially Malaysia

(continued)

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Author/ year	Purpose	Methodology/approach	Theory used	Factors that have been investigated	Findings	Practical implications	Originality and value
<i>Green attitude</i> Vergara et al. (2020)	To examine the effect of environmental stimuli related to the consumers' experience with organic personal care products (PCP) on attitude (hedonic and utilitarian), which, in turn, on purchase intention	N = 209, survey, CFA	– Stimulus-organism-response (S-O-R) theory	<ul style="list-style-type: none"> – Purchase intention – Knowledge about PCP – Attitude towards organic PCP (utilitarian and hedonic attitude) – Natural content – Ecological welfare – Sensory appeal – Quality – Price – Intention to practice conservation behaviours – Willingness to sacrifice – Green attitude – Social norms – Eco-concern – Personal moral obligation 	<ul style="list-style-type: none"> – Knowledge about organic PCP and sensory effect on utilitarian and hedonic attitude towards organic PCP – Utilitarian and hedonic attitude towards organic PCP has a positive effect on purchase intention – Green attitude, social norms, eco-concern and personal moral obligation have a positive effect on delegates' green behavioural intentions 	<ul style="list-style-type: none"> – Marketers to focus more on disseminating knowledge on organic PCP and pay attention to sensory appeal to enhance the purchase intention of organic PCP – Convention tourism industry to consider nurturing green attitude and pay more attention to social norms, eco-concern and personal moral obligation in promoting delegates' green behavioural intention 	<ul style="list-style-type: none"> – Provide a better understanding of the consumers' psychological motivation in purchasing organic PCP consumers', which scantily by past studies
Han et al. (2019)	To examine the effect of green attitude, social norms, eco-concern and personal moral obligation on delegates' green behavioural intention	N = 501, survey, SEM	Theory of planned behaviour (TPB)	<ul style="list-style-type: none"> – Willingness to pay – Word of mouth – Visit intention – Overall image – Attitude towards green behaviour 	<ul style="list-style-type: none"> – Attitude towards green behaviour has a positive effect on the overall image of hotels and restaurants – Overall image has a positive effect on re-visit intention, positive word of mouth and willingness to pay more for environmentally friendly hotels and restaurants 	<ul style="list-style-type: none"> – Hoteliers and restaurants to consider improving service quality by adopting environmentally friendly practices to meet the changing behaviour of consumers 	<ul style="list-style-type: none"> – Provide insight into the factors that promote delegates' green behaviours during their convention travel
Lita et al. (2014)	To examine the relationship between attitude, image, intention to visit and willingness to pay more for environmentally friendly services of hotels and restaurants	N = 200, survey, PLS-SEM	– Theory of planned behaviour (TPB)	<ul style="list-style-type: none"> – Attitude towards green behaviour – Image – Intention to visit – Willingness to pay more 	<ul style="list-style-type: none"> – Attitude towards green behaviour has a positive effect on the overall image of hotels and restaurants – Overall image has a positive effect on re-visit intention, positive word of mouth and willingness to pay more for environmentally friendly hotels and restaurants 	<ul style="list-style-type: none"> – Hoteliers and restaurants to consider improving service quality by adopting environmentally friendly practices to meet the changing behaviour of consumers 	<ul style="list-style-type: none"> – Produced a unique perspective in understanding behaviour of tourists towards green practice based on the locality at a tourist destination

(continued)

Author/ year	Purpose	Methodology/approach	Theory used	Factors that have been investigated	Findings	Practical implications	Originality and value
<i>Price consciousness</i> Saleki <i>et al.</i> (2019)	To examine the factors that affect consumer intention and behaviour to purchase organic food	N = 246 survey, PLS	–Extended theory of planned behaviour (TPB)	–Purchase behaviour –Purchase intention –Attitude –Subjective norm –Perceived behavioural control –Moral norm –Self-identity –Environmental concern –Price consciousness (moderator)	–Attitude, subjective norm (SN), perceived behavioural control, moral norm (MN), self-identity (SI) and environmental concern (EC) has positive effect on purchase intention (PI) –PI mediate the relationship amongst attitude, SN, perceived behavioural control, MN, SI and EC with purchase behaviour (PB) –Price consciousness moderates the relationship between PI and PB	Marketers to consider implement various marketing strategies such as discount and advertisements to increase consumers' purchase intention and attract them towards purchasing organic food	Guided by extended TPB, this study provides more insight into understanding the factors that influence consumer intention and purchase behaviour or organic product in a scantily tested non-western context
Javasingh and Eze (2012)	To examines the factors that affect consumers' intention to use mobile coupon (m-coupon)	N = 781, survey, SEM	Extended technology adoption model (TAM)	–Behavioural intention (BI) –Perceived usefulness –Perceived ease of use –Coupon proneness –Perceived credibility –Attitude –Personal innovativeness (PI) –Social influence (SI) –Compatibility –Price consciousness (moderator) –Gender (moderator)	–Perceived usefulness, attitude and social factor has a positive effect on behaviour and intention of consumers to use mobilecoupons –Gender and price consciousness moderate the relationship of attitude-BI, PI-BI, SI-BI and compatibility-BI	–Marketers to consider perceived usefulness, attitude and social factor in designing and develop improved mobile coupon applications to enhance the intention to purchase the product prone customers and the factors that affecting consumer intention to use an innovative product like m-coupon	Guided by extended TAM, this study provides a better understanding of characteristics and behaviour of coupon-prone customers and the factors that affecting consumer intention to use an innovative product like m-coupon

Note: PCF = personal care products

Table 1.

In brief, past research trends evidenced that environmental advertising, green attitude and price consciousness have the potential to stimulate sustainable purchasing and behaviour (focussing on consuming differently). From a look at these trends, it is clear that there is a theoretical gap in regard to linking environmental advertising, green attitude and price consciousness with frugality, which is directed towards consuming less. Also, as frugality can be considered as a potential remedy for overconsumption, it is relevant to examine the impact of environmental advertising and green attitude on frugality in the hotel industry, which is one of the largest consuming industries. Hence, considering the gap and referring to this perspective, it is essential for the researcher to link environmental advertising, green attitude, price consciousness and frugality in a unified research framework, guided by S-O-R theory.

In addition, identification of the research problem, research objectives and the particular factors or variables to be evaluated in this study should also be based on a practical view. It is based on discussions with the industry experts and conducting a pilot survey to draw insights from views expressed by both industry/practitioners and consumer/hotel guests. As suggested by Churchill (1995), a preliminary exploratory study is crucial to be able to formulate more precise problem statements and strengthen the research problem. Thus, to understand the problem and to verify whether the antecedents/variables for this study are reflected in the current industry landscape, the authors carried out informal interviews with the hoteliers in Malaysia. Specifically, they interviewed three managers from three-star, four-star and five-star hotels, respectively, to understand the practitioners' point of view on the topic. The interviews led to the conclusion that it is necessary to study the impact of environmental advertising on the inculcation of frugality or the "waste not, want not" principle in the hotel industry.

Also, Sekaran and Bougie (2016) recommend that a pilot study require conducted to further refine the research instrument and the appropriateness of the variables/construct to be applied within the study context. Accordingly, a pilot study was conducted to verify the consistencies of each measurement item in measuring the variables and to gain more insight into whether the variables under study are critically important from the consumer/hotel guest point of view. From the pilot study, all the variables/factors are considered reliable, indicating most consumer or hotel guests understand and agree with the construct and measurement items (questionnaire).

In summary, from both theoretical and practical viewpoints, all variables and factors used in this study can be considered valid and suitable for investigation and evaluation in the context of the hotel industry and conducted from the perspectives of the consumers, i.e. Muslim hotel guests. Thus, the chosen factors/variables, namely, frugality, environmental advertising, green attitude and price consciousness within the context of the Malaysian hotel industry can be considered relevant and worth exploring.

The relationship between environmental advertising and green attitude

In the context of the hotel industry, environmental advertising is a strategy applied by hoteliers to promote hotels' green practices and to emphasise eco-friendliness (Chan and Han, 2014). Environmental advertising has been found to be a good predictor of consumer attitude in the field of services marketing (Chan and Han, 2014; Chin *et al.*, 2018). In the context of the hotel industry, a green attitude refers to the guest tendency towards green and sustainable aspects pertaining to their hotel experience(s).

A significant body of literature has revealed a positive effect of environmental/green advertising on consumers' attitude (Ellison *et al.*, 2016; Kim *et al.*, 2019; Troudi and Bouyoucef, 2020). Moreover, environmental advertising has been studied as a predictor of attitude in the field of consumer

behaviour and services marketing (Chan and Han, 2014; Chin *et al.*, 2018). However, there is a dearth of research with respect to the environmental advertising-green attitude link in the tourism and hospitality industry context. Considering this gap in the literature and guided by S-O-R theory, this study assumes that environmental advertising positively affects Muslim hotel guests' attitude towards sustainable aspects implemented by the hoteliers. On the basis of this assumption, the following hypothesis is postulated:

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

The relationship between green attitude and frugality

In the services and consumer behaviour studies, the positive relationship between attitude towards the environment and green/sustainable behaviour is well-documented (Adrita and Mohiuddin, 2020; Hassan *et al.*, 2015; Wai and Bojei, 2015). In addition, Marzouk and Mahrous (2020) revealed that attitude towards conservation has a positive effect on sustainable consumption behaviour. Attitude refers to the individual's favourable or unfavourable evaluation of a given behaviour and whether or not he or she wants to perform this behaviour (Ajzen, 1991). Similarly, this study argued that a Muslim guest with a positive attitude towards green hotels is likely to restrain his or her consumption of the physical resources (their own resources and hotel amenities) and financial resources (money) while staying in the hotel. This argument is in line with the TPB (Ajzen, 1991). According to this theory, an individual positive or negative attitude about certain objects is a vital factor in motivating him/her to approach/avoid certain behaviours. On the basis of the previous discussion, the following relationship is hypothesised:

H2. Green attitude positively affects Muslim hotel guests' frugality.

The relationship between environmental advertising and frugality

Environmental advertising undertaken by hoteliers is meant to tackle environmental issues and communicate eco-friendly hotels' initiatives (Sahin *et al.*, 2019). Likewise, Sahin *et al.* (2019) revealed that green advertising is a popular strategy undertaken by marketers to promote favourable green behaviours and customers' purchase decisions (Sahin *et al.*, 2019). Similarly, Awais *et al.* (2020) contend that environmental advertising may directly result in reduced consumption and reuse of the product (Awais *et al.*, 2020). Similarly, this study presumed that the message delivered via environmental advertising might motivate Muslim hotel guests to reuse and reduce their consumption of hotel resources and/or services. This assumption is in agreement with past studies that found that green advertising is one of the major drivers of green behaviour (Kumar and Anand, 2015; Troudi and Bouyoucef, 2020). As such, the following relationship is developed:

H3. Environmental advertising positively affects Muslim hotel guests' frugality.

Mediating role of green attitude

According to S-O-R theory, a green attitude can mediate the relationship between environmental advertising and frugality, which is a new link in the field of Islamic marketing. In particular, environmental advertising characterised as stimulus (S) is likely to drive a green attitude (O), leading to frugality on the part of hotel guests (R).

Besides theoretical support, empirical evidence exists. For example, [Taufique et al. \(2017\)](#) advocate that attitude towards the environment mediates the relationship between eco-labelling and green advertising knowledge and pro-environmental consumer behaviour. Similarly, [Muniandy et al. \(2019\)](#) confirmed the mediation effect of attitude on the relationship between environmental concern and the intention to visit green hotels. However, less attention was given to testing the mediating effect of green attitude on the relationship between environmental advertising and Muslim hotel guests' frugality. As such, it is expected that the green attitude will mediate the relationship between environmental advertising and frugality in the hotel industry. On the basis of this expectation, the following hypothesis is postulated:

- H4.* Green attitude mediates the relationship between environmental advertising and Muslim hotel guests' frugality.

Moderating role of price consciousness

Although attitude is suggested to significantly influence consumers' behaviour ([Joshi and Rahman, 2019](#); [Follows and Jobber, 2000](#)), past literature found a discrepancy between green attitude and purchasing behaviour ([Adrita and Mohiuddin, 2020](#); [Singh and Verma, 2017](#)). Furthermore, in respect of green and sustainable behaviour, [Eldesouky et al. \(2020\)](#) and [Elhaffar et al. \(2020\)](#) stated that consumers' attitude rarely translated into the corresponding behaviour. Thus, to resolve this conflict of past study findings, it is crucial to consider the effect of a third variable as a moderator that can strengthen this relationship. As frugality is generally related to price consciousness ([Shoham and Brenčić, 2004](#); [Shoham et al., 2017](#)), this study posited that price consciousness has the potential to moderate the relationship between green attitude and frugality. In this study, price consciousness is considered as hotel guests' unwillingness to pay higher prices for products or services provided by the hotels ([Lichtenstein et al., 1993](#)).

Past literature has suggested price consciousness as a moderator in services marketing and consumer behaviour study ([Jayasingh and Eze, 2012](#); [Saleki et al., 2019](#)). However, the moderating effect of price consciousness in the relationship between green attitude and frugality is yet to be tested. In view of this gap, the following relationship is hypothesised:

- H5.* Price consciousness moderates the relationship between green attitude and Muslim hotel guests' frugality.

Conceptual framework

The proposed relationships amongst the study variables are shown in [Figure 1](#).

Methodology

Measurement

All the items used in this study were adopted and adjusted from the published literature. Frugality (FR) was measured using 8-items borrowed from [Lastovicka et al. \(1999\)](#). Environmental advertising (EA) was measured via three-items adapted from [Rahbar and Abdul Wahid \(2011\)](#). Green attitude (GA) was measured via three-items described by [Paul et al. \(2016\)](#) and price consciousness (PC) was measured using three-items, suggested by [Campbell et al. \(2014\)](#). A five-point Likert scale ranging from strongly disagree (1) to strongly agree (5) was used to measure each construct. To confirm the content validity, which indicates the extent to which each construct is measured by adequate and relevant

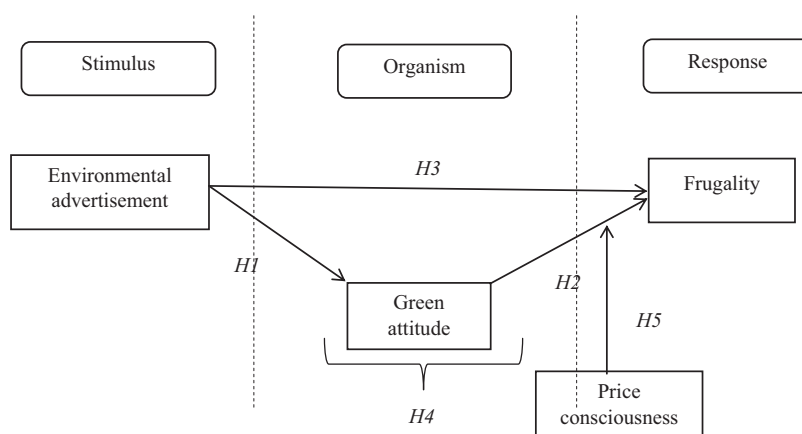


Figure 1.
Proposed conceptual
framework

items (Cavana *et al.*, 2001), the literature was reviewed extensively and the feedback from three academicians from one reputed public university in Malaysia was obtained. In addition, face validity, which indicates the extent to which indicators are clear and readable, was established by interviewing 10 postgraduate students from a public university.

Pilot study and exploratory factor analysis

The questionnaire was piloted by sending it online to 150 respondents who had stayed at a hotel rated three-star and above in the preceding four months. Around 129 returned responses were received and found usable. As the construct of frugality was conceptualised as a multi-dimensional construct that consists of two dimensions, it was crucial to confirm this conceptualisation statistically. Therefore, exploratory factor analysis was used to achieve this objective, as advised by Hair *et al.* (2010). Principal component analysis as the extraction method and Varimax, as the rotation method (Hair *et al.*, 2010), was used to explore the factor structure of frugality. This resulted in obtaining a two-factor structure for frugality, i.e. RM with three items and CFM with five items (Appendix 1). The two factors explained 69.17% of the variance with an eigenvalue greater than 1. The Kaiser-Meyer-Olkin was 0.891, indicating sampling adequacy was acceptable and Bartlett's test of Sphericity of 2017.61 ($p < 0.001$) was significant. The two factors were reliable, with Cronbach's α greater than 0.70. The other constructs were tested for reliability, and Cronbach's α was found to be greater than 0.7 for all the measures used (Sekaran and Bougie, 2016).

Sample and data collection

A self-administered questionnaire was used to collect data from hotels rated three-star and above in Klang Valley, Malaysia. This area is the most visited state with the largest number of hotels in Malaysia (Department of Statistics Malaysia, 2020; Statistica.com, 2018). To target the right respondents, this study used non-probability judgemental sampling. In particular, the target population for this study is the Muslim hotel guests who were at least 18 years old, had stayed at hotels with three-star and above ratings within the past four months and preferred less to more (indicated in the questionnaire as refraining from using/buying excess or unnecessary products or services). The participants were required to be at least 18 years old, as this group is generally believed to have good purchasing power and to

be able to make a proper decision (Quoquab *et al.*, 2019). The respondents should have stayed at hotels rated three-star and above in Malaysia because many of these rated hotels are implementing green practice/services (focussing on energy efficiency, water efficiency, etc.) (Thestar.com, 2014). Hence, the choice of these rated hotels is in line with the frugality traits that are directed more towards 3Rs practices (Awais *et al.*, 2020) and serves the present study's aim of examining the role of green marketing strategies in fostering frugality amongst Muslim hotel guests in Malaysia.

The respondents were assured that their identity would not be disclosed and that the information provided would be used only for academic purposes. They were also informed that their involvement in this survey was voluntary and that they were free to withdraw from participation at any time. To validate the conceptual framework developed and test the developed hypotheses, 222 valid responses were received out of 310 questionnaire surveys distributed. The sample size for this study was determined on the basis of the rule of thumb, suggested by Hair *et al.* (2011), i.e. 10 respondents for each observed variable. Accordingly, the minimum sample size required for this study was 170 respondents ($17 * 10$).

Profile of the respondents

As Table 2 shows, all respondents are Malays (100%). This is of relevance to this study as Muslims in Malaysia are mostly from Malay races (Statistica, 2019; World population review, 2020). More than half of the respondents (59.5%) are female and (52.3%) single. Nearly half of the respondents (45.5%) were 26–35 years old. In terms of education and profession, 53.2% of respondents are degree holders, 34.7% hold administrative and managerial positions and 36% have a monthly income of RM 3,001–4,000.

Data analysis and results

Common method variance

According to Podsakoff *et al.* (2003), it is crucial to examine common method variance if data is collected from the same respondents using the cross-sectional method. Podsakoff *et al.* (2003) suggested procedural and statistical remedies to minimise the effect of this statistical issue. In terms of procedural remedies, this study provided respondents with clear descriptions of all variables and explicit instructions to complete the assessment of the items to avoid any confusion. In addition, the study ascertained the confidentiality of all respondents' identities and the information provided. Statistically, Harman's single factor with five constructs (environmental advertising, green attitude, RM, CFM and price consciousness) was carried out. The 5 constructs were then loaded into a single factor. The result demonstrated that none of the 5 constructs explained more than 50% of the total variance (Podsakoff *et al.*, 2003). In addition, the full collinearity test was carried out; the results showed that the variance inflation factor for all constructs was less than the recommended value of 3.3, indicating that the data was free from common method bias (Kock, 2015).

Structural equation modelling-partial least squares

This study used structural equation modelling-partial least squares [PLS-structural equation modeling (SEM)] to examine the conceptual framework developed. Compared with the covariance-based approach, PLS is more suitable because the objectives of the study are to predict the endogenous constructs and minimise its unexplained variance; develop rather than confirm theory; and the structural model is complicated, it has direct and indirect relationships and higher-order construct (Hair *et al.*, 2017). In addition, PLS-SEM can analyse both measurement and structural models at the same time, making for a more accurate assessment (Mohammad *et al.*, 2019). The frugality construct is measured as a higher-order construct in the form of reflective-reflective because its indicators are highly

Demographic variables	No of respondents = 222	(%)	Muslim tourists
<i>Gender</i>			1669
Male	90	40.5	
Female	132	59.5	
<i>Age</i>			
18–25 years	61	27.5	
26–35 years	101	45.5	
36–45 years	48	21.6	
46–55 years	10	4.5	
56 years and above	2	0.9	
<i>Marital status</i>			
Single	116	52.3	
Married	99	44.6	
Divorced	5	2.3	
Widow/widower	2	0.9	
<i>Education</i>			
Secondary school certificate	5	2.3	
Technical school certificate/ pre-diploma	5	2.3	
Diploma/STPM	55	24.8	
Bachelor's degree	118	53.2	
Master's degree	36	16.2	
Doctoral degree	2	0.9	
Others	1	0.5	
<i>Profession</i>			
Administrative and managerial	77	34.7	
Technical	45	20.3	
Sales and service	21	9.5	
Non-executive	17	7.7	
Educator	19	8.6	
Entrepreneur	8	3.6	
Student	33	14.9	
Others	2	0.9	
<i>Monthly income</i>			
Below 2,000	41	18.5	
RM2,001–3,000	30	13.5	
RM3,001–4,000	80	36.0	
RM4,001–5,000	37	16.7	
Above RM5,000	34	15.3	

Table 2.
Demographic backgrounds of the respondents

correlated, interchangeable and possess common themes and dropping one item will not affect the conceptual definition of the construct. Following Anderson and Gerbings' (1988) recommendation, a two-stage approach assessment was used to analyse the data in the SmartPLS version 3.2.8 (Ringle *et al.*, 2015). The starting point was to assess the measurement model (i.e. validity and reliability), followed by the structural model (i.e. testing the stated hypotheses).

Assessment of measurement model (first-order)

The measurement model was evaluated in terms of construct validity and reliability (Quoquab *et al.*, 2020b). The construct reliability of all constructs was evaluated on the basis

of indicator reliability and composite reliability (Hair *et al.*, 2019). As Table 3 shows, factor loadings for all constructs exceeded the recommended value of 0.50 (Anderson and Gerbing, 1988), except CFM2 and CFM4 and were dropped from further analysis (Hair *et al.*, 2010). Besides, composite reliability as a liberal measure of reliability for all constructs surpassed the suggested value of 0.70 (Hair *et al.*, 2019) (Table 3).

Next, construct validity was evaluated through convergent and discriminate validity (Quoquab and Mohammad, 2020c). The average variance extracted (AVE) metric was used to assess convergent validity (Hair *et al.*, 2019), and the Heterotrait-Monotrait (HTMT) method (Henseler *et al.*, 2015) and Fornell and Larcker (1981) criteria were applied to assess the discriminate validity. Table 3 shows that the values of AVE for all constructs exceeded the threshold value of 0.50, indicating that all constructs possess satisfactory convergent validity (Fornell and Larcker, 1981). As displayed in Table 4, the square root of the AVE of each construct (diagonal values) was higher than the correlation with other constructs (off-diagonal values) in row and columns, implying the establishment of discriminant validity based on Fornell-Larcker criteria. In addition, all HTMT values are below the threshold

Constructs	Items	Loadings	AVE	CR
EA	EA1	0.729	0.598	0.816
	EA2	0.733		
	EA3	0.851		
RM	RM1	0.525	0.501	0.755
	RM2	0.799		
	RM3	0.762		
CFM	CFM2	0.812	0.601	0.854
	CFM3	0.780		
	CFM5	0.730		
GA	GA1	0.834	0.709	0.879
	GA2	0.863		
	GA3	0.828		
PC	PC1	0.847	0.582	0.804
	PC2	0.810		
	PC3	0.611		

Table 3.
Reliability and validity

Notes: EA = environmental advertisement; CFM = care for money; RM = resource minimisation; GA = green attitude; PC = price consciousness

Constructs	CFM	EA	GA	PC	RM
CFM	0.775				
EA	0.198	0.773			
GA	0.264	0.496	0.842		
PC	0.368	0.174	0.174	0.763	
RM	0.303	0.351	0.331	0.222	0.706

Table 4.
Fornell and Larcker (1981)

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

value of 0.85 (Kline, 2011), confirming the discriminant validity for all constructs in the study (Table 5).

Assessment of measurement model (second-order)

To establish the reflective-reflective higher-order construct of frugality, the study used the repeated indicator approach (Becker et al., 2012). CFM and RM represent the lower order of the more general higher-order construct frugality, which is measured by RM1, RM2, RM3, CFM1, CFM3 and CFM5. More clearly, all indicators used to measure the lower-order constructs are assigned simultaneously to the higher-order construct. The validity and reliability of the second-order frugality draw on its relationship with its lower-order components. The PLS algorithm results produce a loading of 0.755 for RM and 0.854 for CFM, which provides support for indicator reliability (Table 6). Based on these loadings, this study calculated AVE and composite reliability manually. The AVE, which represents the shared variance between the higher-order frugality and its lower-order component, was greater than the threshold value of 0.50. The composite reliability value was 0.787, which exceeded the advised value of 0.70. These results provide sufficient evidence for the validity and reliability of the higher-order construct.

Assessment of structural model

The assessment of the structural model includes evaluation of the coefficient of determination (R^2), predictive relevance (Q^2) and the path coefficients size, sign and significance via a bootstrapping procedure with 5,000 resamples (Hair et al., 2019). The coefficient of determination is a measure of the explanatory power of the inner model. The acceptable R^2 value is highly dependent on the discipline, the number of independent variables and model complexity (Hair et al., 2017). For example, Falk and Miller (1992) argued that an R^2 value greater than 0.10 is considered sufficient. On the other hand, Cohen (1988) argued that R^2 values of 0.26, 0.13 and 0.02 are considered substantial, moderate and weak, respectively. As Table 7 illustrates, the R^2 value of green attitude was 0.246 and that of frugality 0.280, indicating moderate to substantial predictive power (Cohen, 1988). Next, Q^2 , as a measure of the predictive power of the structural model, was evaluated using a blindfolding procedure with an omission distance of seven. The results of Q^2 for green

Constructs	CFM	EA	GA	PC	RM
CFM					
EA	0.27				
GA	0.361	0.673			
PC	0.567	0.279	0.261		
RM	0.505	0.595	0.528	0.394	

Table 5.
HTMT

Construct	Dimensions	Factor loading	CR	AVE
FR	RM	0.755	0.787	0.650
	CFM	0.854		

Table 6.
Assessment of the measurement model (second-order)

attitude (0.158) and frugality (0.075) were higher than zero, signifying the small to medium predictive relevance of this structural model (Hair *et al.*, 2017).

To determine the size, sign and significance of path coefficients (β), a bootstrapping procedure with 5,000 subsamples was used. Table 7 summarises the standardised path coefficient (β), standard error, *t-values*, R^2 and Q^2 for all the relationships. The findings indicated that environmental advertising has a significant positive impact on green attitude. Thus, *H1* is not supported ($\beta = 0.496, t = 8.779$). Furthermore, the results indicated that green attitude has a significant positive effect on frugality, and, hence, *H2* is supported ($\beta = 0.208, t = 3.195$). Moreover, the results showed that environmental advertising has a significant positive effect on guest frugality behaviour. Therefore, *H3* ($\beta = 0.139, t = 2.793$) is supported (Figure 2).

Mediating and moderating analysis

To examine *H4*, which assumed that green attitude mediates the relationship between environmental advertising and frugality, this study bootstrapped the indirect effect with 5,000 resamples, as suggested by Preacher and Hayes (2008). The results were found statistically significant ($\beta = 0.103, t = 2.985, 95\% \text{ CI: LL} = 0.048, \text{UL} = 0.162$), and hence, *H4*

Table 7.
Assessment of the structural model

Hypotheses	Relationship	Beta	SE	<i>t</i> -value	R^2	F^2	Q^2	Decision
<i>H1</i>	EA → GA	0.496	0.056	8.779	0.246	0.326	0.158	Supported
<i>H2</i>	GA → FR	0.208	0.065	3.195	0.280	0.044	0.075	Supported
<i>H3</i>	EA → FR	0.193	0.069	2.793		0.037		Supported

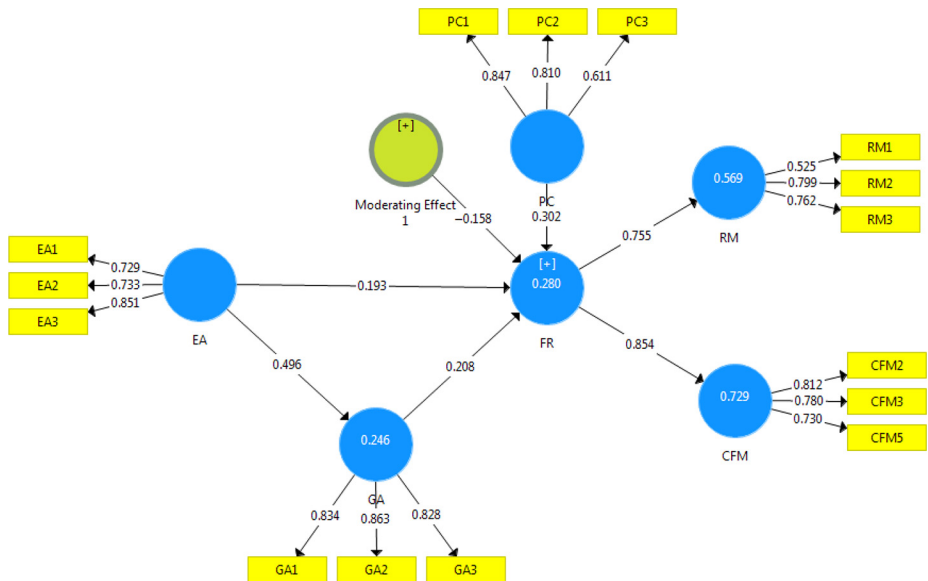


Figure 2.
Structural model

is supported (Table 8). As the direct and indirect effects were positive, the mediation type was complementary (Hair et al., 2017).

To examine H5, which assumed price consciousness can moderate the relationship between green attitude and frugality, the product indicator approach, using PLS-SEM (Henseler and Chin, 2010), was used. As the nature of the effect between independent and dependent variables differs with and without the moderator when using the product indicator or two-stage approach, PLS-SEM analysis should be initially executed without a moderator (Hair et al., 2017). Based on this recommendation, this study evaluated the measurement model, followed by the structural model before including the moderator. Next, the moderator variable and its interaction effect were introduced and the PLS algorithm with a factor weighting scheme was executed. The evaluation of the moderator variable measurement model showed that the price consciousness was valid and reliable (Tables 3–5).

All indicator loadings are above 0.60, providing support for indicator reliability of price consciousness. Cronbach’s alpha and composite reliability were above 0.70 and 0.80, respectively, indicating internal consistency reliability. AVE exceeded 0.50, providing support for convergent validity. In terms of discriminant validity, PC’s HTMT values with other constructs were less than 0.85, providing support for the measures’ discriminant validity. To examine the significance of the interaction effect, PLS bootstrapping with 5,000 resamples were carried out. The results indicate that the interaction term representing GA * PC was found not significant ($\beta = -0.158$, $t\text{-values} = 0.861$, $p > 0.05$), and, therefore, the H5 is not supported (Table 8).

Discussion and conclusions

The main purpose of the study was to examine the effects of environmental advertising and green attitude on frugality amongst Muslim hotel guests in Malaysia. In addition, it examined the mediating effect of green attitude and the moderating role of price consciousness. To accomplish these objectives, a theoretical framework was developed on the basis of the S-O-R theory and tested empirically using structural equation modelling. The results of partial least squares found support for four out of five hypotheses. In particular, the findings found that environmental advertising positively affects Muslim hotel guests’ green attitude and frugality. This implies that environmental advertising encourages Muslim hotel guests/tourists to develop positive attitudes towards green hotels and to behave frugally by abstaining from overconsuming the resources of the hotel, as well as their own money while staying in them. This finding is consistent with past studies that suggest environmental advertising exerts a positive effect on attitude towards green behaviour and green purchase behaviour (Ellison et al., 2016; Walia et al., 2019). Additionally, this finding creates research novelty by demonstrating the positive association between green strategy and frugality link. Unlike in the case of past studies, which concentrated more on promoting “consuming differently” (i.e. green purchasing, etc.) (Chin et al., 2018; Saleki et al., 2019), the results of this study contribute to the least explored “consuming less”, which actually has a better effect on addressing overconsumption.

Hypotheses	Relationship	Indirect effect	SE	t-values	95%CI		Decision
					LL	UL	
H4	EA → GA → FR	$\beta 1 = 0.103$	0.034	2.985	0.048	0.162	Supported
H5	GA → FR moderated by PC	$\beta = -0.158$	0.139	0.861	-0.209	0.178	Not supported

Table 8.
Assessment of
mediating and
moderating effect

Moreover, this study also found support for the positive effect of green attitude on frugality amongst Muslim hotel guests. This finding implies that when hotel guests have a positive attitude towards the green aspects of the hotel, they tend to behave more frugally and practice the “less consumption” behaviour during their stay at the hotel. This result is consistent with [Joshi and Rahman \(2019\)](#) and [Wai and Bojei \(2015\)](#), which found a positive relationship between green attitude and sustainable consumption behaviour. The results of this study also suggest that the green attitude mediates the relationship between environmental advertising and frugality. This implies that environmental advertising fosters hotel guests’ green attitude, which consequently leads to Muslim hotel guests’ frugality. The results of this study are in line with those of [Taufique et al. \(2017\)](#), which proposed that attitude towards the environment mediates the relationship between green advertising knowledge and pro-environmental consumer behaviour. This result provides a new understanding of how hoteliers can interpret green marketing strategies, namely, environmental advertising in driving frugality by nurturing psychological factors such as green attitude.

Contrary to expectation, price consciousness did not moderate the green attitude-frugality link. The possible reason for this result may be that frugality considers both price and value consciousness in regard to their consumption ([Shoham and Brenčič, 2004](#)). In other words, Muslim hotel guests may find a balance between the price and value of services in their decision-making. Thus, it may offset the moderation effect of price consciousness in promoting frugality in this context. Also, the results obtained may be because of the demographic characteristics of the respondents/Muslim hotel guests. For example, more than 60% of the hotel guests/respondents were working in administrative/managerial positions and at a professional level, such as educators, in technical fields, with a monthly income exceeding RM3,000. In addition, nearly 70% of them had a good educational background. These groups of educated persons with professional jobs generally have a greater awareness of environmental issues and their impact on the environment and nation. They are also generally more receptive to environmental messages and may act accordingly if they think the message would benefit them and the community and nation. This is supported by [Akehurst et al.’s \(2012\)](#) findings, namely, that consumers with a higher level of education and socio-economic status are more sensitive to the cause and tend to act in accordance with it. Also, [Nguyen et al. \(2019\)](#) mentioned that education is one of the key determinants of sustainable consumption. Thus, environmental advertising that promotes “less consumption” or the frugality principle, may have a greater effect on these groups of people. Additionally, as they have high incomes, they may be willing to pay higher prices for products or services provided by hotels if they are of good quality. This may be the reason that the moderating effect of price consciousness is not supported for this study. Additionally, nearly 70% of the respondents are 26–35 years and 36–45 years. The people within this age range are generally more frugal than those in their early 20s and 50s, and thus, better results may be expected from fostering frugality in this group of people. This is supported by [Sung \(2017\)](#), who suggests that the effects of frugality were significant for people in their 30s and 40s but not for those in their 20s and 50s. [Table 9](#) presents a summary of the relationship, hypotheses and results.

Overall, the study provides a greater understanding of the marketing strategy that can be used to foster frugality or the “waste not, want not” principle amongst Muslim hotel guests in Malaysia. The frugality notion, which is in line with the 12th goal of the SDGs, can be considered as one of the important concepts that industries that tend to waste resources, such as the hotel industry, should take into account. More importantly, the findings of this study indicate that environmental advertising to foster frugality amongst Muslim hotel

Table 9.
The summary of the
relationship,
hypotheses and
result

Relationship	Hypotheses	Result/decision
EA-GA	Environmental advertisement positively affects Muslim hotel guests' green attitude	Supported
GA-FR	Green attitude positively affects Muslim hotel guests' frugality	Supported
EA-FR	Environmental advertisement positively affects Muslim hotel guests' frugality	Supported
Mediating effect of green attitude (EA-GA-FR)	Green attitude mediates the relationship between environmental advertisement and Muslim hotel guests' frugality	Supported
Moderating effect of price consciousness in GA-FR	Price consciousness moderates the relationship between green attitude and Muslim hotel guests' frugality	Not supported

Notes: EA = environmental advertisement; GA = green attitude; FR = frugality; PC = price consciousness

guests is worth exploring. Without a proper understanding of frugality and its drivers, the overconsumption issue plaguing the nation and the hotel industry will remain. Besides, frugality and conscious consumption may be a relevant trend for years to come owing to economic instability and trends towards “the less, the better”. Thus, the frugality notion is crucial for social researchers, hoteliers, tourism council and non-governmental organisations (NGOs) to better understand.

Theoretical contributions

This study produced both theoretical and managerial implications. From the theoretical viewpoint, the findings of this study contributed to the understanding of a theoretical model by explaining new relationships between environmental advertising, green attitude and frugality behaviour. More concretely, it developed new relationships that have received less attention in the literature. For example, the study examined the direct effect of environmental advertising on green attitude and frugality. The findings also confirmed the crucial effect of environmental advertising adopted by green hotels in boosting Muslim guests' attitude and frugal behaviour. Additionally, the study proposed the mediating effect of green attitude in the relationship between advertising and frugality, which is a comparatively new link in the Islamic marketing field. Understanding this new link could elucidate the psychological factors and inner feelings that foster the frugality notion amongst Muslim hotel guests. Thus, the contribution of the study has been to link environmental advertising to frugal behaviour through the mediation of guests' green attitude in the context of the hotel industry. Furthermore, the study has contributed to the green attitude and behaviour literature by exploring the moderating effect of price consciousness on the green attitude-frugality link. However, the non-significant moderating effect of price consciousness on the relationship between green attitude and frugality is a sign that the inclusion of this latent construct does not have an impact on the green attitude-frugality link amongst hotel guests in Malaysia. Nevertheless, the literature has indicated that there is a lack of research on testing the moderating effect of price consciousness on frugality. Thus, the results of the moderating effect of this study are a unique contribution to the literature.

The other theoretical contribution of the study is that it has provided a better understanding of the S-O-R theory in tourism marketing literature. More clearly, our

findings have confirmed the usability and relevance of the S-O-R theory in the non-Western context such as Malaysia. This theory suggested that environmental advertising (stimuli) boosts Muslim hotel guests' favourable green attitude (organism) and eventually drives frugality (response). A further theoretical contribution of the study is treating frugality as a multinational construct in the form of the reflective-reflective model. The results of the study have confirmed the validity and reality of this construct at first and second-order. This is expected to contribute significantly to the theory of frugality in regard to the measurement of this construct.

Managerial/practical implications

The findings of this study provide several valuable insights for hoteliers to better formulate their green marketing strategy, namely, environmental advertising aimed at promoting frugality amongst Muslim hotel guests.

Firstly, the study showed that environmental advertising is one of the important predictors of frugality amongst Muslim hotel guests. It is, thus, recommended that hoteliers design a message that incorporates both tangible (money) and intangible (less consumption) benefits. Specifically, hoteliers should emphasise how efficient consumption and avoidance of waste provide monetary gain for Muslim hotel guests.

Secondly, the findings of the study showed that environmental advertising is one of the important factors or strategies for fostering frugality as it drives a green attitude and, eventually, promotes frugality amongst Muslim hotel guests. It signalled the importance to the hoteliers of incorporating elements that may enhance the inculcation of green attitude in the designation of messages/environmental advertising aimed at promoting frugality amongst Muslim hotel guests. Thus, in consideration of these findings, hoteliers should promote environmental advertising towards the inculcation of green attitude amongst Muslim hotel guests. To nurture the green attitude, hoteliers should convey a message that stresses the beneficial aspects of green practices and educate Muslim hotel guests on the environmental problems that green practices can solve.

Implications for other relevant stakeholders

The findings of the study not only provide managerial implications for hoteliers but are also of potential benefit to other stakeholders, namely, the tourism council, government and NGOs. As the findings of the study demonstrate that environmental advertising inculcates the green attitude, which eventually leads to frugality, it may serve as a panacea in addressing the problem of overconsumption not only for the hotel industry but also for the country and other relevant/related stakeholders. Specifically,

- (1) For the tourism council
 - The tourism council could execute a specified campaign for designing a more effective and targeted set of environmental advertisements to promote the notion of frugality or "waste not, want not" principle amongst tourists, especially the frugal ones. For example, the message of the campaign or advertisement should emphasise how the positive impact of frugal consumption, specifically, reducing the consumption of unnecessary goods and services; reusing bottles, storage containers and towels; and participating in recycling programmes while travelling may address the problem of overconsumption in the tourism industry.
- (2) For the government
 - Government could design a message and campaign to encourage frugal behaviour in the community and nation. For instance, by designing a green message/campaign to generate awareness and focus on the what, when, why

and who and how of 3Rs practice in daily life. Also, these messages and campaign should stress the need for preservation and protection. Eventually, it may contribute to the development of a community and nation that habitually practises less consumption in their lives.

(3) For the NGOs

- By better understanding the frugality concept, NGOs could better design the message and embed more precise information in the media encouraging less consumption for a better world. This may increase environmental stewardship and promote frugality by inculcating the green attitude in the community and nation.

Limitations and future research directions

Although the study offers significant insights into the promotion of frugality amongst Muslim hotel guests, it is not without certain limitations. However, the limitations may serve as a direction for future research. For example, the study used a quantitative method, and hence, future studies may consider a mixed-method approach to gain a better understanding of frugality amongst hotel guests. Moreover, the study used the cross-sectional survey design, whereas future studies can consider the use of the longitudinal design to better understand behavioural change. Furthermore, the study adopted the non-probability sampling technique, whereas future research may consider the use of a probability sampling technique such as stratified random sampling or cluster sampling to understand the phenomenon of interest in other groups of people or population. Additionally, price consciousness was considered as the moderator, whereas future research can consider including demographic variables such as age and gender as the moderators. Finally, a cross-cultural study can be conducted to compare and contrast the frugality pattern of hotel guests from developed and developing country perspectives.

References

- Adrita, U.W. and Mohiuddin, M.F. (2020), "Impact of opportunity and ability to translate environmental attitude into ecologically conscious consumer behaviour", *Journal of Marketing Theory and Practice*, Vols 1/14.
- Ajzen, I. (1991), "The theory of planned behavior", *Organizational Behavior and Human Decision Processes*, Vol. 50 No. 2, pp. 179-211.
- Ahn, J. and Kwon, J. (2019), "Green hotel brands in Malaysia: perceived value, cost, anticipated emotion, and revisit intention", *Current Issues in Tourism*, Vols 1/16.
- Akehrst, G., Afonso, C. and Gonçalves, H.M. (2012), "Re-examining green purchase behaviour and the green consumer profile: new evidences", *Management Decision*, Vol. 50 No. 5, pp. 972-988.
- Anderson, J.C. and Gerbing, D.W. (1988), "Structural equation modeling in practice: a review and recommended two-step approach", *Psychological Bulletin*, Vol. 103 No. 3, pp. 411-423.
- Asadi, S., Pourhashemi, S.O., Nilashi, M., Abdullah, R., Samad, S., Yadegaridehkordi, E. and Razali, N.S. (2020), "Investigating influence of green innovation on sustainability performance: a case on Malaysian hotel industry", *Journal of Cleaner Production*, Vol. 258, p. 120860.
- Awais, M., Samin, T., Gulzar, M.A., Hwang, J. and Zubair, M. (2020), "Unfolding the association between the big five, frugality, E-Mavenism, and sustainable consumption behaviour", *Sustainability*, Vol. 12 No. 2, p. 490.
- Becker, J.M., Klein, K. and Wetzels, M. (2012), "Hierarchical latent variable models in PLS-SEM: guidelines for using reflective-formative type models", *Long Range Planning*, Vol. 45 Nos 5/6, pp. 359-394.

- Campbell, J., DiPietro, R.B. and Remar, D. (2014), "Local foods in a university setting: Price consciousness, product involvement, price/quality inference and consumer's willingness-to-pay", *International Journal of Hospitality Management*, Vol. 42, pp. 39-49.
- Cavana, R., Delahaye, B. and Sekaran, U. (2001), *Applied Business Research: Qualitative and Quantitative Methods*, 3rd ed., John Wiley and Sons, Australia.
- Chan, K. and Han, X. (2014), "Effectiveness of environmental advertising for hotels", *Services Marketing Quarterly*, Vol. 35 No. 4, pp. 289-303.
- Chang, H.J. and Jai, T.-M.(C). (2015), "Is fast fashion sustainable? The effect of positioning strategies on consumers' attitudes and purchase intentions", *Social Responsibility Journal*, Vol. 11 No. 4, pp. 853-867.
- Chin, W.W. (2010), "How to write up and report PLS analyses", *Handbook of Partial Least Squares*, Springer, pp. 655-690.
- Chin, C.H., Chin, C.L. and Wong, W.P.M. (2018), "The implementation of green marketing tools in rural tourism: the readiness of tourists?", *Journal of Hospitality Marketing and Management*, Vol. 27 No. 3, pp. 261-280.
- Churchill, G.A. (1995), *Marketing Research: Methodological Foundations*, The Dryden Press, Fort Worth.
- Cohen, J. (1988), *Statistical Power Analysis for the Behavioural Sciences*, 2nd ed., Lawrence Erlbaum Associates, Publishers, Hillsdale, NJ.
- Demangeot, C. and Broderick, A.J. (2016), "Engaging customers during a website visit: a model of website customer engagement", *International Journal of Retail & Distribution Management*, Vol. 44 No. 8, pp. 814-839.
- Department of Statistics Malaysia (2020), "Domestic tourism survey by state 2018", available at: www.dosm.gov.my/v1/index.php?r=column/cthemByCat&cat=472&bul_id=czFJNExb0RpaGdFS001bk1CbJQvUT09&menu_id=b0pIVIE3RW40VWRTUkZocEhyZ1pLUT09 (accessed 28 February 2019).
- Eldesouky, A., Mesias, F.J. and Escribano, M. (2020), "Perception of Spanish consumers towards environmentally friendly labelling in food", *International Journal of Consumer Studies*, Vol. 44 No. 1, pp. 64-76.
- ElHaffar, G., Durif, F. and Dubé, L. (2020), "Towards closing the attitude-intention-behavior gap in green consumption: a narrative review of the literature and an overview of future research directions", *Journal of Cleaner Production*, Vol. 275, p. 122556.
- Ellison, B., Duff, B.R., Wang, Z. and White, T.B. (2016), "Putting the organic label in context: examining the interactions between the organic label, product type, and retail outlet", *Food Quality and Preference*, Vol. 49, pp. 140-150.
- Evers, U., Gruner, R.L., Sneddon, J. and Lee, J.A. (2018), "Exploring materialism and frugality in determining product end-use consumption behaviors", *Psychology and Marketing*, Vol. 35 No. 12, pp. 948-956.
- Falk, R.F. and Miller, N.B. (1992), *A Primer Soft Modeling*, University of Akron Press, Akron, OH.
- Follows, S.B. and Jobber, D. (2000), "Environmentally responsible purchase behaviour: a test of a consumer model", *European Journal of Marketing*, Vol. 34 Nos 5/6, pp. 723-746.
- Fornell, C. and Larcker, D.F. (1981), "Structural equation models with unobservable variables and measurement error: algebra and statistics", *Journal of Marketing Research*, Vol. 18 No. 3, pp. 382-388.
- Gatautis, R., Vitkauskaitė, E., Gadeikiene, A. and Piligrimiene, Z. (2016), "Gamification as a mean of driving online consumer behaviour: SOR model perspective", *Engineering Economics*, Vol. 27 No. 1, pp. 90-97.
- Gil-Soto, E., Armas-Cruz, Y., Morini-Marrero, S. and Ramos-Henriquez, J.M. (2019), "Hotel guests' perceptions of environmental friendly practices in social media", *International Journal of Hospitality Management*, Vol. 78, pp. 59-67.

-
- Hair, J.F., Ringle, C.M. and Sarstedt, M. (2011), "PLS-SEM: Indeed a silver bullet", *Journal of Marketing Theory and Practice*, Vol. 19 No. 2, pp. 139-152.
- Hair, J.F., Sarstedt, M. and Ringle, C.M. (2019), "Rethinking some of the rethinking of partial least squares", *European Journal of Marketing*, Vol. 53 No. 4, pp. 558-566.
- Hair, J.F., Hult, G.T.M., Ringle, C.M. and Sarstedt, M. (2017), *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*, 2nd Edition, Sage, Thousand Oaks, CA.
- Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E. and Tatham, R.L. (2010), *Multivariate Data*, 7th ed., Prentice Hall, Upper Saddle River.
- Han, H., Lee, S., Al-Ansi, A., Kim, H.C., Ryu, H.B., Kim, J.J. and Kim, W. (2019), "Convention tourism and sustainability: exploring influencing factors on delegate green behavior that reduce environmental impacts", *Sustainability*, Vol. 11 No. 14, p. 3903.
- Hassan, M.H., Hosseinpour, M., Nezakati, H. and Jofreh, M. (2015), "Highlighting influential factor to inculcate green behaviour", *Journal of Applied Sciences*, Vol. 15 No. 3, pp. 405-410.
- Henseler, J. and Chin, W.W. (2010), "A comparison of approaches for the analysis of interaction effects between latent variables using partial least squares path modelling", *Structural Equation Modeling: A Multidisciplinary Journal*, Vol. 17 No. 1, pp. 82-109.
- Henseler, J., Ringle, C.M. and Sarstedt, M. (2015), "A new criterion for assessing discriminant validity invariance-based structural equation modelling", *Journal of the Academy of Marketing Science*, Vol. 43 No. 1, pp. 115-135.
- Holmes, M.R., Dodds, R. and Frochot, I. (2019), "At home or abroad, does our behaviour change? Examining how everyday behaviour influences sustainable travel behaviour and tourist clusters", *Journal of Travel Research*, pp. 1-15.
- Jagannathan, S., Bawa, A. and Rai, R. (2020), "Narrative worlds of frugal consumers: Unmasking romanticized spirituality to reveal responsabilization and de-politicization", *Journal of Business Ethics*, Vol. 161 No. 1, pp. 149-168.
- Jayasingh, S. and Eze, U.C. (2012), "Analyzing the intention to use mobile coupon and the moderating effects of price consciousness and gender", *International Journal of E-Business Research (IJEER)*, Vol. 8 No. 1, pp. 54-75.
- Joshi, Y. and Rahman, Z. (2019), "Consumers' sustainable purchase behaviour: modeling the impact of psychological factors", *Ecological Economics*, Vol. 159, pp. 235-243.
- Juvan, E. and Dolnicar, S. (2014), "The attitude-behaviour gap in sustainable tourism", *Annals of Tourism Research*, Vol. 48, pp. 76-95.
- Hair, J.F., Risher, J.J., Sarstedt, M. and Ringle, C.M. (2019), "When to use and how to report the results of PLS-SEM", *European Business Review*, Vol. 31 No. 1, pp. 2-24.
- Karlsson, L. and Dolnicar, S. (2016), "Does eco certification sell tourism services? Evidence from a quasi-experimental observation study in Iceland", *Journal of Sustainable Tourism*, Vol. 24 No. 5, pp. 694-714.
- Kasser, T. (2005), "Frugality, generosity, and materialism in children and adolescents", in Moore, K.A. and Lippman, L.H. (Eds), *What Do Children Need to Flourish?*, Springer, pp. 357-373.
- Kim, W.H., Malek, K. and Roberts, K.R. (2019), "The effectiveness of green advertising in the convention industry: an application of a dual coding approach and the norm activation model", *Journal of Hospitality and Tourism Management*, Vol. 39, pp. 185-192.
- Kline, R.B. (2011), *Principles and Practice of Structural Equation Modelling*, 3rd ed., Guilford Press, New York.
- Kock, N. (2015), "Common method bias in PLS-SEM: a full collinearity assessment approach", *International Journal of E-Collaboration*, Vol. 11, pp. 1-10.
- Kumar, P.K. and Anand, B. (2015), "The impact of innovation, green advertising and perceived behavioral control on green consumer behavior", *Scholars Journal of Economics, Business and Management*, Vol. 2, pp. 182-190.

- Lastovicka, J.L., Bettencourt, L.A., Hughner, R.S. and Kuntze, R.J. (1999), "Lifestyle of the tight and frugal: Theory and measurement", *Journal of Consumer Research*, Vol. 26 No. 1, pp. 85-98.
- Lichtenstein, D.R., Ridgway, N.M. and Netemeyer, R.G. (1993), "Price perceptions and consumer shopping behavior: a field study", *Journal of Marketing Research*, Vol. 30 No. 2, pp. 234-245.
- Lita, R.P., Surya, S., Maruf, M. and Syahrul, L. (2014), "Green attitude and behavior of local tourists towards hotels and restaurants in West Sumatra, Indonesia", *Procedia Environmental Sciences*, Vol. 20 No. 1, pp. 261-270.
- Malaysian Investment Development Authority (2020), "Hospitality", available at: www.mida.gov.my/home/hospitality/posts/ (accessed 11 January 2020).
- Marzouk, O.A. and Mahrous, A.A. (2020), "Sustainable consumption behavior of energy and water-efficient products in a resource-constrained environment", *Journal of Global Marketing*, Vol. 33 No. 5, pp. 1-19.
- Mehrabian, A. and Russell, J.A. (1974), *An Approach to Environmental Psychology*, MIT Press, Cambridge, MA.
- Min, J.H.J., Chang, H.J.J., Jai, T.M.C. and Ziegler, M. (2019), "The effects of celebrity-brand congruence and publicity on consumer attitudes and buying behavior", *Fashion and Textiles*, Vol. 6 No. 10, pp. 2-19.
- Mohammad, J., Quoquab, F., Idris, F., Al Jabari, M. and Wishah, R. (2019), "The mediating role of overall fairness perception: a structural equation modelling assessment", *Employee Relations: The International Journal*, Vol. 41 No. 3, pp. 614-636.
- Muniandy, K., Rahim, S.A. and Ahmi, A. and Rahman, N.A.A. (2019), "Factors that influence customers' intention to visit green hotels in Malaysia", *International Journal of Supply Chain Management*, Vol. 8 No. 3, pp. 994-1003.
- Mytourismdata (2019), "Malaysia hotel guests January - March 2018/2019", available at: <http://mytourismdata.tourism.gov.my/wp-content/uploads/2019/07/AOR-HG-JAN-MAR-2019.pdf> (accessed 5 May 2020).
- Naderi, I. and Van Steenburg, E. (2018), "Me first, then the environment: young millennials as green consumers", *Young Consumers*, Vol. 19 No. 3, pp. 280-295.
- Nguyen, N., Greenland, S., Lobo, A. and Nguyen, H.V. (2019), "Demographics of sustainable technology consumption in an emerging market: the significance of education to energy efficient appliance adoption", *Social Responsibility Journal*, Vol. 15 No. 6, pp. 803-818.
- Paul, J., Modi, A. and Patel, J. (2016), "Predicting green product consumption using theory of planned behaviour and reasoned action", *Journal of Retailing and Consumer Services*, Vol. 29, pp. 123-134.
- Philp, M. and Nepomuceno, M.V. (2020), "When the frugal become wasteful: an examination into how impression management can initiate the end-stages of consumption for frugal consumer", *Psychology and Marketing*, Vol. 37 No. 2, pp. 326-339.
- Piligrimienė, Ž., Žukauskaitė, A., Korzilius, H., Banytė, J. and Dovalienė, A. (2020), "Internal and external determinants of consumer engagement in sustainable consumption", *Sustainability*, Vol. 12 No. 4, pp. 1-20.
- Preacher, K.J. and Hayes, A.F. (2008), "Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models", *Behavior Research Methods*, Vol. 40 No. 3, pp. 879-891.
- Quoquab, F. and Mohammad, J. (2020c), "Cognitive, affective and conative domains of sustainable consumption: scale development and validation using confirmatory composite analysis", *Sustainability*, Vol. 12 No. 18, pp. 1-22.
- Quoquab, F., Mohamed Sodom, N.Z. and Mohammad, J. (2020a), "Driving customer loyalty in the Malaysian fast food industry: the role of halal logo, trust and perceived reputation", *Journal of Islamic Marketing*, Vol. 11 No. 6, pp. 1367-1387.
- Quoquab, F., Jaini, A. and Mohammad, J. (2020b), "Does it matter who exhibits more green purchase behavior of cosmetic products in Asian culture? A multi-group analysis approach", *International Journal of Environmental Research and Public Health*, Vol. 17 No. 14, p. 5258.

- Quoquab, F., Mohammad, J. and Sukari, N.N. (2019), "A multiple-item scale for measuring 'sustainable consumption behaviour' construct: development and psychometric evaluation", *Asia Pacific Journal of Marketing and Logistics*, Vol. 31 No. 4, pp. 791-816.
- Rahbar, E. and Abdul Wahid, N. (2011), "Investigation of green marketing tools' effect on consumers' purchase behaviour", *Business Strategy Series*, Vol. 12 No. 2, pp. 73-83.
- Rafikov, I. and Akhmetova, E. (2019), "Scarcity in the age of abundance: paradox and remedies", *International Journal of Ethics and Systems*, Vol. 35 No. 1, pp. 119-132.
- Ringle, C.M. Wende, S. and Becker, J.-M. (2015), "Smarts 3. SmartPLS GmbH", Boenningstedt, available at: www.smartpls.com
- Sahin, S., Baloglu, S. and Topcuoglu, E. (2019), "The influence of green message types on advertising effectiveness for luxury and budget hotel segments", *Cornell Hospitality Quarterly*,
- Saleki, R., Quoquab, F. and Mohammad, J. (2019), "What drives Malaysian consumers' organic food purchase intention? The role of moral norm, self-identity, environmental concern and price consciousness", *Journal of Agribusiness in Developing and Emerging Economies*, Vol. 9 No. 5, pp. 584-603.
- Sekaran, U. and Bougie, R. (2016), *Research Methods for Business: A Skill Building Approach*, John Wiley and Sons.
- Shaw, D., McMaster, R. and Newholm, T. (2016), "Care and commitment in ethical consumption: an exploration of the 'attitude-behaviour gap'", *Journal of Business Ethics*, Vol. 136 No. 2, pp. 251-265.
- Shoham, A. and Brenčić, M.M. (2004), "Value, price consciousness, and consumption frugality: an empirical study", *Journal of International Consumer Marketing*, Vol. 17 No. 1, pp. 55-69.
- Shoham, A., Gavish, Y. and Akron, S. (2017), "Hoarding and frugality tendencies and their impact on consumer behaviours", *Journal of International Consumer Marketing*, Vol. 29 No. 4, pp. 208-222.
- Singh, A. and Verma, P. (2017), "Factors influencing Indian consumers' actual buying behaviour towards organic food products", *Journal of Cleaner Production*, Vol. 167, pp. 473-483.
- Sivadasan, R., Quoquab, F., Mohammad, J. and Basiruddin, R. (2020), "Residential properties with green living concept: what drives consumers to buy?", *International Journal of Ethics and Systems*, Vol. 36 No. 3, pp. 427-447.
- Statista (2019), "Perceived and actual percentage of Muslim population in Malaysia as of 2018", available at: www.statista.com/statistics/953765/malaysia-perceived-and-actual-share-of-muslim-population/ (accessed 9 July 2020).
- Statista.com (2018), "Number of hotel hotels in Malaysia in 2018 by state", available at: www.statista.com/statistics/1004784/number-of-hotels-by-state-malaysia/ (accessed 28 February 2020).
- Sung, Y.-A. (2017), "Age differences in the effects of frugality and materialism on subjective well-being in Korea", *Family and Consumer Science Research Journal*, Vol. 46 No. 2, pp. 144-159.
- Taufique, K.M.R., Vocino, A. and Polonsky, M.J. (2017), "The influence of eco-label knowledge and trust on pro-environmental consumer behaviour in an emerging market", *Journal of Strategic Marketing*, Vol. 25 No. 7, pp. 511-529.
- Thestar.com (2014), "Half of three to five-star hotels in country are green", available at: www.thestar.com.my/news/community/2014/11/13/half-of-three-to-five-star-hotels-in-country-are-green (accessed 28 February 2020).
- Tiago, F., Gil, A., Stemberger, S. and Borges-Tiago, T. (2020), "Digital sustainability communication in tourism", *Journal of Innovation and Knowledge*, doi: [10.1016/j.jik.2019.12.002](https://doi.org/10.1016/j.jik.2019.12.002).
- Troudi, H. and Bouyoucef, D. (2020), "Predicting purchasing behavior of green food in Algerian context", *EuroMed Journal of Business*, Vol. 15 No. 1, pp. 1-21.
- United Nations World Tourism Organization (2019), "Goal 12: ensure sustainable consumption and production patterns", available at: www.un.org/sustainabledevelopment/sustainable-consumption-production/ (accessed 28 October 2019).

- Vergura, D.T., Zerbini, C. and Luceri, B. (2020), "Consumers' attitude and purchase intention towards organic personal care products. An application of the SOR model", *Sinergie Italian Journal of Management*, Vol. 38 No. 1, pp. 121-137.
- Wai, Y.S. and Bojei, J. (2015), "Proposed conceptual framework on cohesive effect of extrinsic and intrinsic factors on sustainable behaviours", *Procedia - Social and Behavioral Sciences*, Vol. 172, pp. 449-456.
- Walia, S.B., Kumar, H. and Negi, N. (2019), "Consumers' attitude and purchase intention towards 'green' products: a study of selected FMCGs", *International Journal of Green Economics*, Vol. 13 Nos 3/4, pp. 202-217.
- Wang, S., Wang, J., Li, J. and Zhou, K. (2020), "How and when does religiosity contribute to tourists' intention to behave pro-environmentally in hotels?", *Journal of Sustainable Tourism*, Vol. 28 No. 8, pp. 1-18.
- World population review (2020), "Malaysian population 2020", available at: <https://worldpopulationreview.com/countries/malaysia-population> (accessed 8 July 2020).
- Yeniaras, V. and Akarsu, T.N. (2017), "Frugal doesn't mean ordinary: a religious perspective", *Journal of Islamic Marketing*, Vol. 8 No. 2, pp. 204-217.
- Yusof, Z.B. and Jamaludin, M. (2013), "Green approaches of Malaysian green hotels and resorts", *Procedia - Social and Behavioral Sciences*, Vol. 85, pp. 421-431.
- Yusof, Y., Awang, Z., Jusoff, K. and Ibrahim, Y. (2017), "The influence of green practices by non-green hotels on customer satisfaction and loyalty in hotel and tourism industry", *International Journal of Green Economics*, Vol. 11 No. 1, pp. 1-14.
- Zhu, B., Kowatthanakul, S. and Satanasavapak, P. (2019), "Generation Y consumer online repurchase intention in Bangkok", *International Journal of Retail and Distribution Management*, Vol. 48 No. 1, pp. 53-69.

Further reading

- Chua, K.B., Quoquab, F. and Mohammad, J. (2020), "Factors affecting environmental citizenship behaviour: an empirical investigation in Malaysian paddy industry", *Asia Pacific Journal of Marketing and Logistics*, Vol. 32 No. 1, pp. 86-104.
- Ham, S. and Han, H. (2013), "Role of perceived fit with hotels' green practices in the formation of customer loyalty: impact of environmental concerns", *Asia Pacific Journal of Tourism Research*, Vol. 18 No. 7, pp. 731-748.
- Jarvis, C.B., MacKenzie, S.B. and Podsakoff, P.M. (2003), "A critical review of construct indicators and measurement model misspecification in marketing and consumer research", *Journal of Consumer Research*, Vol. 30 No. 2, pp. 199-218.
- Klar, S. and Leeper, T.J. (2019), "Identities and intersectionality: a case for purposive sampling in survey-experimental research", *Experimental Methods in Survey Research: Techniques That Combine Random Sampling with Random Assignment*, pp. 419-433.
- Rahahleh, A., Moflih, M., Alabaddi, Z. and Al-Nsour, S. (2020), "The moderating effect of psychological factors on consumer of electric and hybrid vehicles' response purchase decisions", *Management Science Letters*, Vol. 10 No. 8, pp. 1649-1658.
- Tiamiyu, T., Quoquab, F. and Mohammad, J. (2020), "To switch or not to switch: the role of tourists' psychological engagement in the context of airbnb Malaysia", *International Journal of Tourism Cities*, Vol. 6 No. 1, pp. 175-196.

Construct	Items
Frugality	<i>Resource minimisation</i>
	1. 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)
	2. 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)
	3. 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>Care for money</i>
Environmental advertisement	1. 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)
	2. I believe in being careful in how I spend my money while staying at the hotel (e.g. eat food in cheaper restaurant instead of buying food at hotel)
	3. 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)
	4. 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.)
	5. While staying at the hotel, there are things I resist buying (e.g. expensive food and laundry services), so I can save for tomorrow
Green attitude	1. Environmental advertisement enhances my knowledge about hotels green practice
	2. I enjoy watching broadcast environmental advertisement broadcasted by hotels (e.g. posted on social media, company website, poster and banner, etc.)
	3. Environmental advertisement by hotels guide customers to making an informed purchase decision
Price consciousness	1. I like the idea of staying at hotels that follows green practices
	2. Staying at hotels that follows green practices is a wise choice
	3. I have a favourable attitude towards staying at hotels that follows green practices
Price consciousness	1. When it comes to hotel, I rely heavily on price
	2. I am a price-conscious traveller
	3. I choose the lowest priced hotels that will suit my needs

Table A1.
Measurement items

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