

Assessing the significance of environmentally friendly mall from Malaysian mall visitors' perspective

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(Received 7 October 2015; accepted 8 January 2016)

Measuring mall visitors' experience in an environment-friendly mall is important in determining the performance of the mall. In order to assess the significance of the environment-friendly mall in a developing country, this paper aims to examine the patronage response of mall visitors in terms of patronage satisfaction towards environment-friendly mall attributes. The results showed that Malaysian mall visitors place importance on green mall features such as high ceilings, lush and landscaped greenery, low emission windows and doors, escalators using energy reduction technologies, and solar panel system. The implications of these results are that Malaysian mall visitors somehow perceive the environment-friendly mall differently from the conventional shopping mall. Thus, the government should look into ways to offer incentives to promote green practices among mall developers to construct sustainable buildings in the country.

Keywords: environmentally friendly mall; green features; patronage satisfaction; Malaysia

1. Introduction

Shopping malls in Malaysia are currently faced with a competitive business environment as there has been an increased in the number of malls in the past 20 years (Tan & Waheed, 2011). The homogeneity of shopping mall in terms of merchandise offering, coupled with an increasingly well-informed mall visitors, in fact, have increased the level of competition among mall operators further. The retail boom was due to the rapid expansion in the Malaysian economy accompanied with external economic and social influences. In 2015, there were 901 malls in Malaysia offering 13 million square meter of retail space in total. Of these malls, more than 26% are located in Klang Valley Malaysia which have offered 5.62 million square meter of space and enjoyed an average occupancy of 85% (Valuation and Property Service Department, 2015). Klang Valley is suitable for the purpose of this research because it has the highest concentration of shopping malls in the country. Furthermore, the valley, also known as the Kuala Lumpur conurbation, is the country's fastest growth area with a total population of 6 million as of 2010.

A mall's success rests on mall visitors' patronage; therefore, mall operators need strategies to increase traffic inside the mall by enhancing the visitors' shopping experience. Recently, mall operators in Malaysia are beginning to construct environmental-

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friendly malls to differentiate their facilities from others and to develop a positioning strategy that communicate to create a clear image in mall visitors' minds. Malaysian consumers begin to pay more attention to environmental concerns and are increasingly going green (Tan, 2012, 2013, 2014). It may seem that mall visitors are conscious of what and where they are shopping as there are shoppers who may not just patronize a typical shopping mall, but a mall that does not compromise the environment.

Recently, there has been ever increasing media coverage of issues relating to sustainability in the built environment. The environmental impacts of the built environment are crucial as it accounts for an estimated 30% of greenhouse gas emissions (United Nations Environment Programme, 2008). As pointed out by Bond (2010), the consumption of electricity in commercial buildings is responsible for the majority of emission, particularly in cooling, air handling, lighting, and heating. For the past few years more stringent environmental laws have increased the requirement for builders to use energy-efficient construction methods and upgrade the existing building to be more sustainable (Junnila & Ristimäki, 2012; Kuronen, Junnula, Majamaa, & Niiranen, 2010).

Developing environmentally sustainable buildings has been identified as the most effective way of reducing greenhouse gas emission as green buildings contribute less to global environmental degradation by making best use of the sun, wind, and rainfall to help supply the energy and water needs of occupants (Carswell & Smith, 2009; Edward & Naboni, 2013; United Nations Environment Programme, 2008). Furthermore, constructing green buildings could improve the energy efficiency of new buildings through better site location, design, construction, operation, maintenance, and deconstruction (Green Building Index, 2013).

The mall visitors generally consider the attributes of mall in their shopping trips. Therefore, this paper has been motivated by the need to attain greater understanding of green mall attributes in the mall visitors' patronage responses. In consideration of identifying those attributes linked to patronage response, the concept of patronage satisfaction has been used in evaluating the significance of the mall. Even though patronage satisfaction is evidently stated from empirical studies, little studies in Malaysia have been investigated the satisfaction level of the environmentally friendly mall. It is reasonable to believe that greater knowledge of the underlying determinants of patronage satisfaction of the environment-friendly mall could provide a basis for building a successful strategy to attract mall visitors and fulfill their requirements.

2. The state of knowledge

2.1. Environment-friendly mall features

Baker, Parasuraman, Grewal, and Voss (2002) explained that the building features and designs of retail stores have important effects on store patronage responses. It is interesting to find out what meaning does environmental-friendly malls signify in the minds of mall visitors. There is ambiguity as to how prevalent environment-friendly mall characteristics could generate shopping responses; therefore, this study could provide a useful case study for best green development practices in a developing country.

Mall designs have evolved from simpler to become architecturally rich with lavish materials and sophisticated design elements, such as multi-level atriums and curve escalators (Gregorson, 1988). With the recent move to go green, several mall developers have incorporated green and sustainable features in the mall design. Green mall features

are attributes that could lead to energy and water efficiency and better indoor environment quality (Fisk, 2000; Miller, Spivey, & Florance, 2008). However, it is not known which of these attributes are welcomed by patrons.

Despite the similarity of both conventional and environment-friendly malls, the latter does have its distinguishing features. The environment-friendly mall generally synchronizes with the local culture, weather, and the surrounding environment which allows it to improve indoor air quality of the mall. Malls are considered green when they use environment-friendly materials for construction. Green malls use water conservation devices, solar panels, and rainwater harvesting system. Additionally, environment-friendly malls consider the climatic and environmental factors by incorporating environmentally sustainable design for low electricity consumption. The environment-friendly mall could be designed to promote better cross ventilation by incorporating high roofs (ceiling), and save energy and resources using double-glazed glass window and door panels that could reduce heat transmission into the building (Figure 1(a) and (b)). The layout of the green mall is designed in a way that there would be more sunlight coming in to light up the building instead of relying on bulbs; therefore, glass doors and windows are placed at appropriate places of the mall to allow the daylight to enter the mall.

Furthermore, green features found in the mall include rainwater harvesting system and solar panel system, which are installed to take advantage of renewable energy resources. Additionally, low-flow water fixtures, such as water-efficient sanitary appliances and tap fittings are also being fitted to reduce potable water usage (Figure 1(c)). In addition, energy-efficient escalators are used to conserve and reduce energy while enhancing convenience and comfort of mall visitors in the mall (Figure 1(d)). The environment-friendly mall also encourages patrons to use hybrid cars, as there are parking lots with electric car charging stations specifically built for hybrid cars (Figure 1(e)). These malls are also accompanied by lush and landscaped greenery as the trees and shrubs surrounding environment-friendly mall can act as the natural shades to cool down the temperature and reduce the need for cooling system.

There are a growing number of literatures that demonstrate the relationship between environmentally sustainable building designs and financial returns. In addition to savings in energy costs, the commonly cited financial benefits of living and working in environmentally sustainable buildings are price and rent premiums (Eichholtz, Kok, & Quigley, 2008; Fuerst & McAllister, 2009; Raisbeck & Wardlaw, 2009). There is also evidence that environment-friendly buildings could lead to non-financial returns. Studies show that ecologically conscious construction and design of a building could assist in improving health of occupants, increasing worker productivity, promoting staff attraction, and retention and reducing absenteeism (Bond, 2010; Fisk, 2000; Gunderson, 2006; Miller et al., 2008; Pitts & Jackson, 2008).

2.2. Retail format variables

Shopping malls function within a specific and changing geographic environment. Mall operators cannot control these external environmental factors, but are only restricted to controllable factors such as retail format variables. The most common retail format variables for shopping centers include a large variety of high-quality merchandise and stores, quality of service personnel, store atmosphere, and tenant mix and placement.

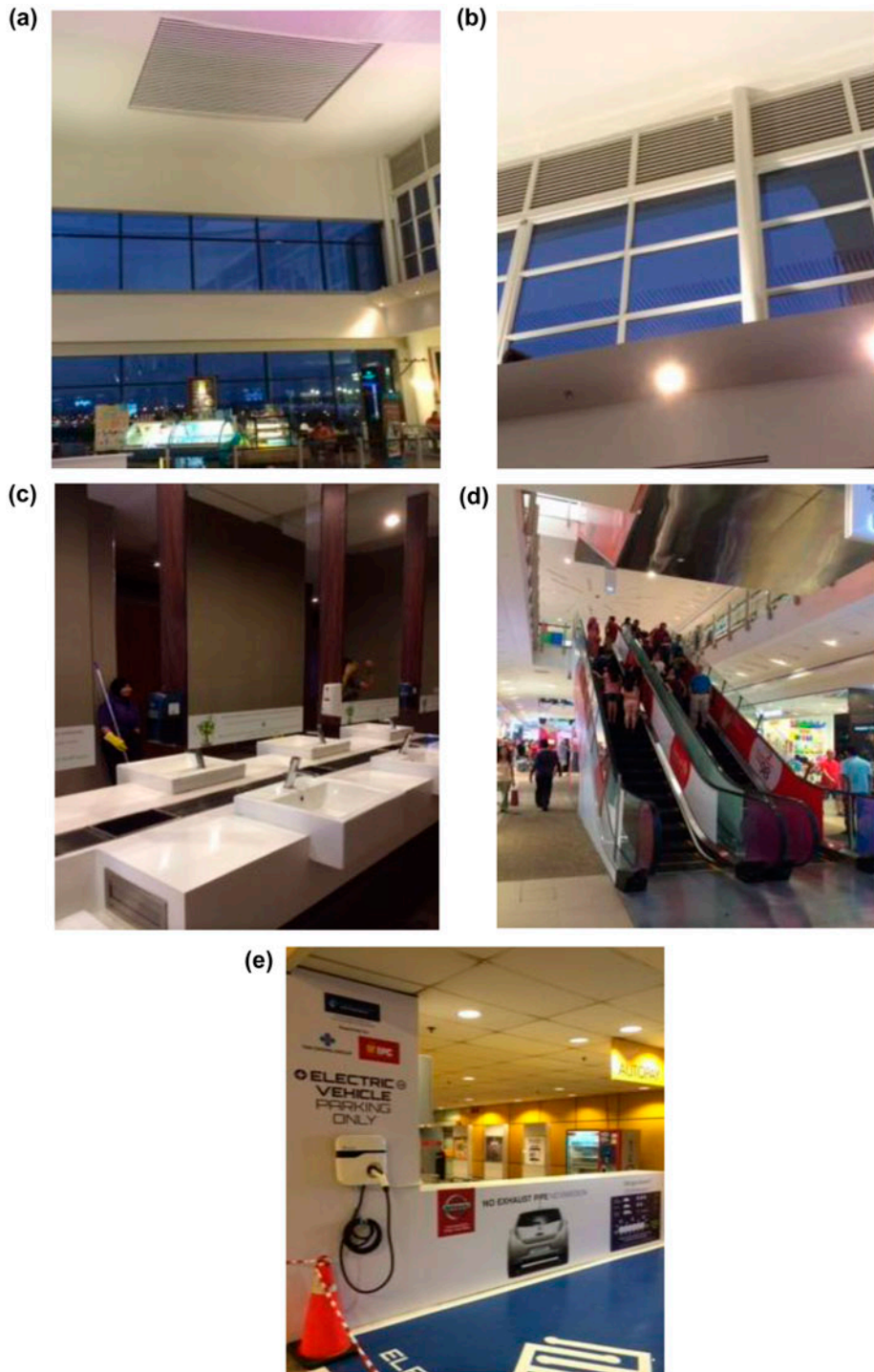


Figure 1. (a) High ceiling (b) double-glazed glass panel (c) low-flow water features (d) energy-saving escalator (e) hybrid car parking lot.
Source: Author.

Several researchers have examined how these retail format variables impact patronage responses.

Mall developers attract visitors to malls through the promise of a large variety of merchandise available in the mall as the wider the choices are, the more varying consumer segments would the mall be able to target (Ogle, Hyllegard, & Dunbar, 2004; Pan & Zinkhan, 2006). The selection and assortment of products contributes to convenience, which could influence shoppers to visit the mall (Wong, Yu, & Yuan, 2001). As explained by Ibrahim (2002), convenience is one of the key factors consumers seek in shopping. By having a wide assortment of products in the mall, the perceived costs such as travel time and effort related to each shopping trip can be minimized because shoppers could complete all of their essential shopping needs and wants at one location (Ahmed, Ghingold, & Dahari, 2007; Dellaert, Arentze, & Bierlaire, 1998; Farquhar & Rowley, 2009; Mittal & Prashar, 2010).

Over the years, shopping malls have grown larger and their one-stop convenience has expanded to include service outlets. Services provide a mean of meeting target market wants and needs as well as creating a positive image and added value (Alexander & Muhlebach, 1992; Karl & Peluchette, 2006). Frequently, malls offer services such as staffed information counter, baby stroller and wheelchair rental, and frequent shopper programs. The quality of service in the mall has an effect on patronage intentions (Baker et al., 2002; Sirohi & McLaughlin, 1998; Zeithamal & Berry, 1996). Salespeople that offer good services will usually be considered by shoppers (Lee, Ibrahim, & Hsueh-Shan, 2005; Miller, 2011). The interaction between sales persons and mall visitors could contribute to the mall visitors' assessment of service quality as friendly and communicative salespersons could enhance mall visitors' social experience and motivation (Pan & Zinkhan, 2006). Also, mall visitors generally prefer to trade with store personnel who are more approachable and friendly (Chang & Luan, 2010; Loudon & Bitta, 1993).

There have been many past studies that have been able to show the importance of mall patronage to store atmosphere as store atmosphere creates arousal which increases time spent in the store (Donovan & Rossiter, 1982; Donovan, Rossiter, Marcolyn, & Nesdale, 1994; Ibrahim, 2002; Jones, 1999). Furthermore, shoppers who view shopping as a leisure activity may prioritize store décor as they are seeking for stimulation of the senses (Bellenger & Korgaonkar, 1980; Byun & Sternquist, 2011). Factors such as smell, sight, and sound are thought to be entailed into store atmosphere (Arnold & Reynolds, 2003; Babin, Darden, & Griffin, 1994; North, 2000).

Tenant mix and placement may produce optimum sales and rental income to the shopping mall (Arakawa, 2006; Carter & Vandell, 2005; Yuo & Lizieri, 2013). There have been various methods suggested for tenant mix and placement, and the most popular is to spread complementary tenants throughout the mall so shoppers could be exposed to the maximum number of store fronts as they wander from one end of the mall to the other to complete their shopping. Other placement strategies include grouping tenants with similar types of merchandise together to facilitate cross-shopping and grouping tenants that appeal to targeted segment together (Alexander & Muhlebach, 1992; Carter, 2009; Carter & Haloupek, 2002; LeHew & Cushman, 1998). The placement pattern is important to time-poor consumers seeking convenience (Carter & Vandell, 2005). If shopping malls continue to require customer to walk the entire length of the mall just to complete a shopping trip, customers may leave in frustration and patronize a more convenient mall.

2.3. *Mall facilities*

According to Wong et al. (2001), facilities provided by the mall can influence mall patronage as convenience is a key factor to shoppers who want to be able to get as many things done within the shortest time period. These facilities include availability of entertainment facilities, restaurant and food court, and parking area. According to Bloch, Ridgway, and Dawson (1994), malls are frequently used to relieve boredom. Visitors view malls as a place not only for shopping but also for other activities, such as entertainment, socializing with friends, or browsing with no intentions of buying (Jones, 1999). Malls have gone beyond its initial role as an economic entity to become important meeting places for social and recreational activity (Bloch et al., 1994). As pointed by Wilson, Choy, and Tan (2015, Chapter 6), the most significant satisfaction obtained from shopping are the opportunity to receive sensory stimulation from the retail environment and enjoy social interaction and activities outside the home. Additionally, availability of eating outlets provide a boost to sales per square foot figures because they do not require a lot of space and sell high volume products (LeHew & Fairhurst, 2000). The presence of food retailers can also induce customers to stay longer in the mall by providing refreshment and a place to rest. Past studies have also indicated that the ease of finding car-parking spaces, ease of maneuvering and security in the parking area have important effects on store patronage responses (Ibrahim, 2002; Lee et al., 2005). The recent increase in crime rate has put the mall visitors on high uneasiness mode because lately criminal offences related to robbery have been seen to shift into the parking area of the malls in Malaysia.

2.4. *Store patronage response*

In order to assess the significance of the environmentally friendly mall, it is interesting to examine the responses of mall visitors towards mall attributes. There are various measurement variables being established in the literature of measures of store patronage responses. Nevertheless, the commonly cited measure of patronage responses is patronage satisfaction. As pointed by Khalaf Ahmad (2012), patronage satisfaction is said to be a common research variable due to its culminating effect on mall visitor's future behavior such as repeat patronage and spreading positive word of mouth to others regarding about a product or service.

Patronage satisfaction is thought to affect store patronage decision and it has been used as an evaluative measure for judging the success of mall development constructed by mall developers. In this study, patronage satisfaction can be conceptualized as the feeling of contentment when a mall visitor has or achieves what his needs or desires in the mall. Satisfaction with visitors' mall conditions and attributes indicates the absence of any complaints and a high degree of congruence between actual and desired situations, whereas dissatisfaction is due to incongruence between needs and aspirations.

Several researchers found a varying assortment of retail features and attributes to be significant to patronage satisfaction ranging from store structure, store atmosphere, convenience location, and store facilities (Anselmsson, 2006; Khalaf Ahmad, 2012; Léo & Philippe, 2002). There are literatures to study mall characteristics relating to the satisfaction level of a conventional shopping center. However, less empirical work has been conducted to examine retail features relating to the satisfaction level of an environmentally friendly mall. The mall attributes related to patronage response of mall visitors are numerous and their relationships are complex. Consequently, this study is focused on a

selected green mall attributes that are relevant to the environmentally friendly mall in a developing country such as energy-saving escalator, hybrid car parking lot, low-flow water features, double-glazed glass panel, and high ceiling.

2.5. *Controlled variables: socio-demographic characteristics*

The degree of mall patronage response may tend to vary by life cycle attributes, such as gender, age, and monthly income (Erkip, 2005; Ozudura, Varol, & Ercoskun, 2014; Prasad & Aryasri, 2011). As pointed by Auger, Burke, Devinney, and Louvierre (2003) and Eves and Kippes (2010), higher income groups and the elderly show a strong concern or awareness about environmental issues than those from lower income groups. In the context of environment-friendly mall, this awareness may reflect in the patronage responses. Thus, these demographic descriptors are controlled in this study to identify whether there is a statistically significant relationship between environment-friendly mall attributes and patronage satisfaction. Given the preceding discussion, the research questions of this paper are as follows:

To what extent does the importance of environmentally friendly mall characteristics relate significantly to patronage satisfaction after controlling for socio-demographic characteristics of mall visitors?

3. Methods

3.1. *The respondents*

The unit of analysis in this paper does not limit any ages nor race, but the only criteria that the respondents of this study have to be mall visitors who have visited the first Green Building Index-rated shopping mall in Greater Kuala Lumpur, Malaysia. The data were generated by a survey of mall visitors selected on a systematic basis (every fifth shopper to pass a designed neutral site) at the mall for six months. In order to get reliable and valid participant's views about the environment-friendly mall, a description of environmentally friendly mall was provided in the questionnaire and an oral explanation of environment-friendly mall was given to each respondent before conducting the survey. In this study, 600 shoppers were intercepted and asked to complete a questionnaire at the mall. Responses with significant missing data were excluded, leaving 424 usable questionnaires for the analysis. Furthermore, in-depth interviews were also conducted in this study to determine mall visitors' perceptions about the environment-friendly mall and to highlight issues concerning environment-friendly mall attributes.

3.2. *Variables used in this study*

In order to examine the patronage satisfaction level of mall visitors towards the environment-friendly mall attributes, a self-administered questionnaire was used in this study. A survey item was developed to ascertain the level of personal satisfaction as experienced by mall visitors. The outcome variable in the analysis was a categorical variable as respondents were asked to indicate their satisfaction levels of the mall on a binary code (1 = yes; 0 = otherwise).

Next, the respondents were asked to indicate the importance of environment-friendly mall attributes in contributing to their shopping enjoyment. Respondents were required to provide a numeric judgment of the level of importance they typically

experienced in the shopping mall with an emphasis on environment-friendly mall features (1 = yes, 0 = otherwise). Eight environment-friendly mall features related to green buildings were considered in this study. These variables were used based on the literature of past studies of Edwards and Naboni (2013) and the interview with the mall manager. Considering the evidence from the previous studies of traditional shopping malls, seven additional questions related to retail format variables and mall facilities were included in this study.

As mentioned in the literature review, demographic attributes of interest, such as gender, age, and income level of the respondent were related to patronage satisfaction. Therefore, these variables were controlled in this study. With reference to the average monthly gross household income of top 20%, middle 40%, and bottom 40% of Malaysians by the Departments of Statistics Malaysia, three categories of household income were used in this paper. Table 1 showed a summary of mall attributes and demographic variables used in the study.

In this study, logistic regression analysis was used because the objective of this research is to estimate the likelihood of reporting higher patronage satisfaction with the

Table 1. Definition of mall attributes and social-demographic variables.

Variables	Definition
<i>Environment-friendly mall features</i>	
Energy-saving escalator	Energy-saving escalator is an important mall attribute (1 if yes, 0 otherwise)
Hybrid car parking lot	Parking lot with an electric car charging station is an important mall attribute (1 if yes, 0 otherwise)
Low-flow water fixtures	Low-flow water fixture in the toilet is an important mall attribute (1 if yes, 0 otherwise)
Greenery	Lush and landscaped greenery is an important mall attribute (1 if yes, 0 otherwise)
Double-glazed glass panel	Low-emission double-glazed window and door glass panel are an important mall attribute (1 if yes, 0 otherwise)
Rainwater harvesting system	Rainwater harvesting system is an important mall attribute (1 if yes, 0 otherwise)
High ceiling	High ceiling is an important mall attribute (1 if yes, 0 otherwise)
Solar panel system	Solar panel system is an important mall attribute (1 if yes, 0 otherwise)
<i>Retail format variables</i>	
Product Variety	A large variety of high-quality merchandise is an important mall attribute (1 if yes, 0 otherwise)
Quality of personnel	Quality of service personnel is an important mall attribute (1 if yes, 0 otherwise)
Store atmosphere	Store atmosphere is an important mall attribute (1 if yes, 0 otherwise)
Tenant mix and placement	Tenant mix and placement is an important mall attribute (1 if yes, 0 otherwise)
<i>Mall facilities</i>	
Entertainment facilities	Entertainment facilities are important mall attributes (1 if yes, 0 otherwise)
Eating outlets	Eating outlet is an important mall attribute (1 if yes, 0 otherwise)
Security	Security of the parking area is an important mall attribute (1 if yes, 0 otherwise)
<i>Demographic characteristics of respondents</i>	
Female	1 if the respondent is female, 0 otherwise
Age	Under 24 (reference), 24–45, Above 45
Monthly income	Under RM3000 (reference), RM3000–RM7000, above RM 7000

environment-friendly mall, given a set of conditions. Since patronage satisfaction is a nominal variable, the logistic regression equations have the following forms:

$$\text{logit(PS)} = a + b_1G_i + b_2R_i + b_3F_i \text{ (Model1)}$$

$$\text{logit(PS)} = a + b_1G_i + b_2R_i + b_3F_i + b_4D_i \text{ (Model2)}$$

where PS = Patronage satisfaction (1 for yes and 0 for no); G = Environmental-friendly mall features; R = Retail format variables; F = Mall facilities; D = Demographic descriptors; i = represents cross-section; a = constant; b_1, b_2, b_3, b_4 = the coefficients to be estimated.

4. Results and discussion

4.1. Descriptive analysis

The descriptive analysis results in Table 2 showed that the majority of respondents participating to the survey were lower to middle income (75.3%) females (51.5%) between the ages of 24–45 years (49.6%). Additionally, 46.7% of the respondents were found to patronize the mall less than four times per month and the average time spent per visit was 1–3 h (56%).

4.2. Logistic regression analysis

In the following analysis, two logistic regression equations were examined. The first equation was to assess the effect of malls attributes on the likelihood of being highly satisfied with the environmentally friendly mall and the second model was to evaluate the effect of mall attributes on patronage satisfaction while controlling for differences in socio-demographic characteristics of respondents, such as gender, monthly income, and age. As shown in Table 3, the Nagelkerke R^2 (Cox and Snell R^2) values of the first and second logistic regression equations explained about 65.9% (47.2%) and 67.3% (48.2%) of variation in the likelihood of patronage satisfaction, respectively. There was not much difference in the explanatory power of two models, indicating retail factors and green features influenced more strongly than socio-demographic

Table 2. Demographic profile of respondents.

Demographic variable	Details	Frequency	Percentage (%)
Gender	Female	234	51.5
	Male	220	48.5
Age	Under 24	20	4.4
	24–45	225	49.6
	Above 45	209	46
Monthly income	Under RM (Ringgit) 3000	155	34.1
	RM 3000–RM 7000	187	41.2
	More than RM 7000	112	24.7
Mall frequency	Less than 4 times	212	46.7
	4–6 times	179	39.4
	More than 6 times	63	13.9
Time spent in the mall	Less than 1 h	90	19.8
	1–3 h	254	55.9
	More than 3 h	110	24.2

Table 3. Logistic regression results.

	Model 1		Model 2	
	<i>B</i>	Exp (<i>B</i>)	<i>B</i>	Exp (<i>B</i>)
High ceiling	.721*	2.057	.757*	2.132
	(.336)		(.348)	
Hybrid car parking lot	.144	1.155	.074	1.077
	(.356)		(.365)	
Low-flow water fixture	.079	1.082	-.051	.951
	(.393)		(.395)	
Greenery	1.101**	3.007	1.034*	2.813
	(.391)		(.407)	
Solar panel system	.762*	2.148	.778*	2.178
	(.326)		(.366)	
Double-glazed glass panel	1.012**	2.751	1.087**	2.964
	(.382)		(.395)	
Energy-saving escalator	1.052**	2.862	1.056**	2.883
	(.393)		(.388)	
Rainwater harvesting system	.096	1.101	.089	1.094
	(.363)		(.378)	
Entertainment facilities	.723*	2.060	.798*	2.220
	(.325)		(.335)	
Eating outlets	.081	1.084	.093	1.097
	(.356)		(.366)	
Security	1.163**	3.201	1.266**	3.545
	(.380)		(.398)	
Store atmosphere	.885*	2.423	.735	2.086
	(.362)		(.382)	
Tenant mix and placement	1.212**	3.359	1.193**	3.298
	(.339)		(.352)	
Product variety	.942*	2.564	.959*	2.608
	(.422)		(.443)	
Quality of personnel	.600	1.822	.335	1.398
	(.339)		(.359)	
Age <24 (ref)				
Age 24–45			.963	2.619
			(.801)	
Age >45			.394	1.483
			(.883)	
Income <3000 (ref)				
Income 3000–7000			-.009	.991
			(.455)	
Income >7000			.281	1.324
			(.506)	
Female			.316*	1.371
			(.150)	
Constant	-5.182**		-7.952**	
	(.608)		(1.390)	
Cox and Snell R^2	.472		.482	
Nagelkerke R^2	.659		.673	
Hosmer and Lemeshow test (Chi-square; <i>p</i> -value)	(11.677; .166)		(10.789; .214)	

Note: Figures in parenthesis are standard errors.

**Significance at .01 levels.

*Significance at .05 levels.

characteristics. Only the results in the second model were emphasized and examined in details in the following analysis. In this study, the results of the chi-square values for the Hosmer and Lemshow Goodness of Fit test supported all models as being meaningful (sig $p > .05$).

The results in Model 2 revealed that all other things being equal, the likelihood of reported higher satisfaction with the environmentally friendly mall was 2.132, 2.178, 2.813, 2.883, and 2.964 times higher for mall visitors who value “high ceiling,” “solar panel system,” “lush and landscaped greenery,” “energy saving escalator,” and “double-glazed panel glass door and window” as main predictors than mall visitors who do not have these preferences yet. However, preferences for “hybrid car parking lots,” “low-flow water fixtures,” “rainwater harvesting system,” and “energy saving escalator” were not significantly related to the probability of reporting higher satisfaction with the environmentally friendly mall.

It may seem that respondents appreciate the mall incorporating passive design such as high ceilings. The benefit of this feature is that the building has good natural ventilation inside, and this could lead to better indoor air quality without losing thermal comfort (Edward & Naboni, 2013). These viewpoints were supported from the in-depth interview with few mall visitors explained: “Having higher ceilings make the building easier to cool.” Some mall visitors added further: “High ceilings give building a more spacious feeling.” In this survey, respondents generally agreed that solar power would appear to be a good source of renewable energy particularly in Malaysia as this country is bathed in sunlight. Several respondents further pointed out: “In view of rising of gas and oil prices, we should focus on energy and resource savings by constructing more solar power buildings to provide an endless supply of energy.” The other significant green feature was lush and landscaped greenery surrounding the mall. It seems that respondents generally agree that extensive greenery at the building envelope could act as a biological filter to improve ambient air quality, reduce indoor temperature and glare, improve sound insulation for buildings, and increase biodiversity. Also, the mall with low emission double-glazed panel glass doors and windows is generally welcomed by respondents in this survey. One respondent in the interview explained: “By taking advantage of daylight coming through the window and opening of the building, the usage of electricity can be reduced.” The results of Table 3 also showed that the preference for escalators using energy reduction technologies was significantly related to patronage satisfaction.

Holding all other factors constant, this study did not support the hypotheses that the preference for parking lot with an electric car charging station was a significant predictor of the likelihood of patronage satisfaction of environmentally friendly mall. It could be due to the fact that car users in Malaysia show little interest in electric vehicles even though various incentives are provided to promote the usage of electric vehicles under the National Automotive Policy. Low-flow water fixtures being installed in the environment-friendly mall to lessen the consumption of water is negatively related to patronage satisfaction. In line with the findings of Tan (2014), Malaysians generally believe that low-flow water fixtures cannot function as good as the normal high-flow water fixtures if all other variables remained constant. Rainwater harvesting system generally is installed in the mall to capitalize on nature’s offering by collecting rainwater. However, the results showed that the renewable water source system that utilizes rainwater was not significant predictors of patronage satisfaction even though this system could result in a significant reduction of mains water requirements.

As for retail format variables and mall facilities, the results were consistent with those observed in previous findings of traditional shopping malls. For example, the entertainment facility in the mall was statistically significant predictor of patronage satisfaction. These results revealed that the probability of reporting mall satisfaction was 2.22 times higher for mall visitors who agree that the entertainment facility of the mall is an important mall attribute in making the shopping experience as enjoyable one than for mall visitors who did not agree, when control for demographic descriptors. These findings reinforce the proposition that consumers view the shopping mall as a place not only for shopping but also entertainment activities (Carter, 2009). As mentioned earlier, malls have expanded to include many entertainment outlets. However, this study did not support the relationship between eating outlets and patronage satisfaction, holding other things constant.

According to this study, mall visitors are more likely to gravitate to a mall offering a perceived freedom from safety concern (3.545 times higher). Therefore, the mall operators are required to install CCTVs monitoring its car park area in addition to frequent patrols from appointed auxiliary policemen. It was also interesting to notice from the results in Table 3 that the likelihood of reported higher satisfaction with the store environment of the green mall was statistically significant in Model 1 (odds ratio = 2.423). After controlling demographic characteristics of respondents, Model 2 (odds ratio = 2.086) did not support the hypothesis that store environment is a predictor of patronage satisfaction, suggesting a pleasant retail store atmosphere is not an important determinant of patronage responses. As shown by Baker, Grewel, and Levey (1992) and Wilson (2003), there is a relationship between store environment, the affective states of pleasures and arousal and behavioral intentions. It is because the more encompassing store environment of the mall could influence the affective state if the store level environments influence emotions and responses of mall visitors.

Shopping mall success stems from income generated by selling an assortment of merchandises and services. Mall operators attracted consumers to malls through the promise of a wide assortment of merchandise available in a single location. Similar to the findings of Jones (1999) and Ogle et al. (2004), this finding has supported the significant relationship between a variety of merchandise and the shopping enjoyment at the .01 level, while holding demographic descriptors constant (odd ratios = 2.608). In addition to the assortment of products, mall visitors were generally satisfied with the placement and mix of retail tenants in the mall (odd ratios = 3.298). In this study, mall operators adopted the placement strategy that spread complementary merchants throughout the mall and increase the selection of tenant to raise the amount of customer exposure per shopping trip. In this survey, quality of service personnel, on the other hand, was not a significant predictor of patronage satisfaction.

Many studies showed that the mall visitors of different income levels may view the shopping experience differently. As explained by LeHew and Fairhurst (2000), the most successful and productivity mall is located in an area inhabited by households with higher levels of disposable income as they have a higher purchasing power as compared to low-income groups. However, in the context of environment-friendly mall, the influence of the increase in monthly income of the respondent was not an important predictor of patronage satisfaction. Similarly, age did not show significant effect on patronage satisfaction, all other thing being equal. The sign of the effect of female on patronage satisfaction was consistent with previous studies, and the relationship was statistically significant. It is reasonable to believe that female shoppers are more likely

to be satisfied with the environmentally friendly mall as she could derive satisfaction from the mall with a pleasant atmosphere with a large variety of high-quality merchandise.

5. Conclusions and recommendation

Environmentally friendly malls generally make best use of the sun, wind, and rainfall to help supply the energy and water needs of occupants and mitigate climate change and conditions. In order to determine the significance of the environmentally friendly mall in Malaysia, this paper is to determine mall visitors' responses for mall attributes with a special focus on environment-friendly building features and examine the relationship between these features and shoppers' patronage responses in terms of patronage satisfaction. It is observed that green features, to some extent, are any of the main predictors for patronage satisfaction.

From these results, the general public somehow perceive the environmentally friendly shopping mall differently from the conventional mall and thus, developers might be motivated to build an environmentally friendly mall if they are valued by the public. Green mall features were initially thought of as having a competitive edge in comparison to conventional shopping malls but as shown from the recent statistics, only few environment-friendly malls have been built in the country. Developed countries, such as America, Australia, and Europe have never failed to instill the importance of going green to their people. Perhaps Malaysia is still a developing country and the mall developers have yet to know much about the significance of environmentally friendly mall. In order to tackle this problem, the government should monitor regularly the progress towards the goals of awareness about the impact of buildings on climate change and revise actions as needed to instill green values into the minds of the general mall developers. As explained earlier, builders are part of key agents in encouraging sustainable practices when planning a new property development.

One way to demonstrate on-going commitment at government level to encourage mall developers is to provide more incentives, such as subsidies to mall developers for the adoption of the green building certification such as GBI. These incentives come in the form of tax exemption for building owners that achieve the green building certification. Certain examples of subsidies are solar panel subsidies, hybrid car subsidies, and so on; these subsidies could be designed for shopping mall operators to develop their eco-friendly credibility as financial incentives are identified as major motivational factor to encourage builders to go beyond the minimum requirement under the rating system.

Disclosure statement

No potential conflict of interest was reported by the author.

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