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The demographic impact of consumer green purchase intention toward Green Hotel Selection in China

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Abstract
While there have been many prior studies examining the impact of the demographic characteristics of consumers' green purchase attitudes and behavioral intention, results have, by no means, been conclusive. Furthermore, little attention has been paid to the green hotel industry in such studies. The purpose of this study is, therefore, to examine the relationship between age, gender, education, income, green purchase attitudes, and green behavioral intention toward green hotel selection. This study proposes a theoretical research model based on the theory of reasoned action and theory of planned behavior model. About 659 valid questionnaires were employed to empirically test the hypotheses using SPSS. The results imply that there is a significant positive relationship between green purchase attitudes and green behavioral intention. Age and income are shown to both significantly influence green purchase attitudes, while education and income both significantly influence green behavioral intention. Notably, results show that there is also a significant difference between male and female influenced green purchase attitudes and green behavioral intention. This paper concludes with a thorough discussion of the practical and academic implications as well as limitations of these results.

Keywords
Consumers' demographic characteristics, green purchase attitude, green purchase intention, theory of reasoned action, theory of planned behavior, green hotel selection

Introduction

Rapid economic growth, coupled with increasing worldwide consumption in the last few decades, has caused environmental deterioration through over-consumption and over-utilization of natural resources (Jaiswal and Kant, 2018). Rising environmental problems such as solid wastes, ozone depletion, air pollution, global warming, and haze have emerged urgent issues for consumers, societies, business organizations, and governments (Goh and Wahid, 2014; Vazifehdoust et al., 2013). Consumers, businesses, and governments are presently faced with one of the biggest challenges of our time; that of preserving natural resources and protecting the environment (Jaiswal and Kant, 2018). Marketing behavior has adapted to become more sensitive to this challenge as each of these bodies now realizes that their production and consumption behavior will have a direct impact on the environment (Wang et al., 2018).

Most notably, consumers now exhibit an increasingly strong motivation to join green campaigns and express their positive attitudes toward green consumption. For instance, the Nielsen's 2011 Global Online

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Environment and Sustainability Survey investigated more than 25,000 respondents in 51 countries and showed that there is an upward trend of concern for environmental issues. About 83% of respondents believe that companies should implement green strategies or environmental programs, while 77% of respondents expressed the intention to make green purchase behavior (Li-Ming and Wai, 2013). Many researchers have, in fact, indicated that consumers express that they are willing to pay a premium price in order to make green purchase selections (Choi, 2010; García-Gallego and Georgantzís, 2011; Wang et al., 2018).

In the hotel industry, more and more hotel consumers are beginning to search for hotels which claim to be taking action to protect the environment (Kim et al., 2012; Wang et al., 2018). According to Manaktola and Jauhari (2007), there is a positive significant relationship between the attitudes of hotel consumers and their behavior toward environmental practices in the hotel industry, and 22% of consumers deliberately seek out and use green information for booking a green hotel. In addition, 40% of consumers are willing to pay more for green hotels and contribute an extra 4–6% during their stay. Many consumers are also aware of the waste and environmental damage caused by hotels' excessive use of resources (Han and Kim, 2010; Wang et al., 2018).

Naturally, marketing managers have been making real efforts to understand this emerging green market and to identify the determinants of green purchase behavior during the last 30 years (Albayrak et al., 2011). Some studies have focused on micromarketing issues related to consumers' green purchase behavior, with researchers attempting to define and describe the demographic characteristics of green consumers. Such studies have aimed at the segmentation of green consumers in order to predict their behavior (Albayrak et al., 2011; Leonidou et al., 2010). However, most studies have exposed the limited value of demographic characteristics for segmenting and targeting green consumers (Ansar, 2013; Fisher et al., 2012; Sinnappan and Rahman, 2011; Teng et al., 2011; Tobler et al., 2011). Furthermore, while traditional demographic characteristics have come to be seen as an important tool in such research, inconsistent and even contradictory findings have meant that results have largely been unhelpful for identifying green consumers (Albayrak et al., 2013; Ansar, 2013; Fisher et al., 2012; Mas'od and Chin, 2014). This being said, demographics is still one of the most widely used methods for investigating consumer green purchase behavior (Albayrak et al., 2011) compared with other segmentation measures. Demographics is also more readily available, simple to understand, and can be applied easily to segmentation problems (Albayrak et al., 2011; Diamantopoulos et al., 2003). Indeed, the point has been made that if demographics have no role to play in profiling green consumers or influencing consumers green purchase behavior, then marketers should find an alternative way of predicting consumers' green purchase behavior (Akehurst et al., 2012).

Given the above, this research attempts to provide a clearer view of the role of demographics for classifying green hotel consumers and for predicting their green hotel selection behavior. There are, in fact, three reasons for this research being needed in order to update this field. First, many of the earlier studies which were published since 1996 did not review the literature on the relationship between demographics and consumers green purchase behavior (Fisher et al., 2012). Second, considering consumer green purchase behavior studies generally, there is a tendency to focus on US or western consumers, with little regard for the green purchase behavior of consumers in non-western settings or for studies not published in English (Aman et al., 2012; Shabnam, 2013). Third, most previous studies focused on general environmental behavior instead of specifically on consumers' purchase behavior regarding particular products (Wang et al., 2018). It is true that such studies may provide some insights about particular green products, but it is difficult to generalize findings to other green products or services (Ramayah et al., 2010). Especially noticeable is the scarcity of quantifiable studies related to consumers' green purchase behavior regarding green hotel selection (Chong and Verma, 2013; Kim et al., 2012).

Theoretical background and hypotheses development

The underpinning theory

This study proposes an integrative theoretical research model (see Figure 1) based on the theory of reasoned action (TRA) (Ajzen and Fishbein, 1975) and the theory of planned behavior (TPB) (Ajzen, 1991) model. In the marketing literature, these are the two most popular theories used to predict consumer purchase intention and behavior (Chen and Tung, 2014; Paul et al., 2016). Both models support the view that intention has a significant impact on behavior (Paul et al., 2016; Teng et al., 2011). According to Paul et al. (2016), intention refers to an individual's motivation in cognition to utilize the effort to implement a specific behavior. Many studies have confirmed that there is a significant positive relationship between

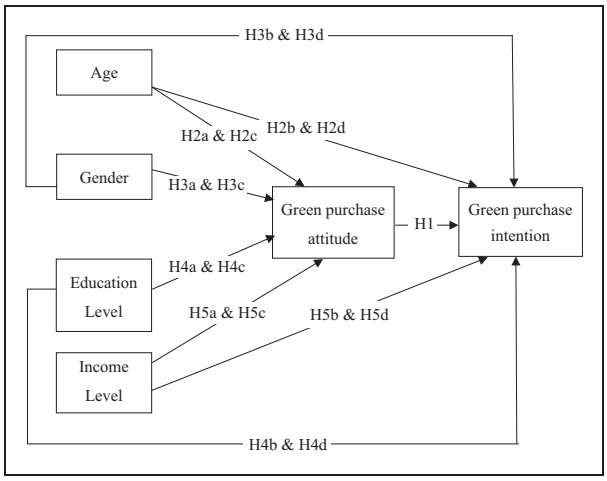

Figure 1. Theoretical research model.

consumer green purchase intention and behavior (Paul et al., 2016; Rezai et al., 2012; Teng et al., 2011).

More specifically, there are two variables which can be used to predict intention and behavior in terms of attitude and subjective norms. These two variables regarding intention have a corresponding correlation with behavior and normative foundation and belief in TRA (Han and Kim, 2010). According to Ajzen (1991), attitude is defined as the degree to which a person has a favorable or unfavorable evaluation of a behavior in question; the subjective is norm defined as the perceived social pressure to perform or not to perform the given behavior. In the TRA model, most consumer behaviors are under their control of volition and intention (Ajzen and Fishbein, 1980). Consumers, therefore, who have a high degree of control of their own volition are led to make purchase behavior among alternatives more reasonably. In contrast, the TPB model emphasizes that consumers cannot purely make purchase behavior based on volitional factors, due to perceived constraints (Paul et al., 2016). Therefore, in TPB, there is an additional variable named perceived behavioral control introduced into the model; defined as the perceived ease or difficulty of performing the given behavior (Ajzen, 1991). As postulated, the TPB model has three predictors of intention which lead to purchase behavior: attitude, subjective norm, and perceived behavioral control.

Although TRA and TPB are popularly used by researchers to investigate consumer green purchase intention (GPI) and behavior (Mohamad et al., 2014; Paul et al., 2016; Vazifehdoust et al., 2013), there remains a persistent use in the research of subjective norm and perceived behavioral control as predictors of consumer behavior. This is because, in some prior studies, results demonstrated that the subjective norm has an insignificant relationship with consumer green purchase behavior (Paul et al., 2016; Sinnappan and Rahman, 2011; Wang et al., 2018). In addition, other research has shown that perceived behavioral control cannot lead to purchase intention and behavior (Bamberg and Schmidt, 1999; Tarkiainen and Sundqvist, 2005). Furthermore, some research has shown that attitude has a mediating role between subjective norm and intention (Chen and Chai, 2010; Han et al., 2010; Wang et al., 2018). In contrast, attitude always plays the most important role in predicting GPI and behavior (Paul et al., 2016; Wang et al., 2018; M. Zakersalehi and Zakersalehi, 2012; Zhou et al., 2013). Following this finding, this study posits attitude as a single predictor influencing consumer GPI. This is encapsulated in the first hypothesis of this study:

> H1: There is a positive significant relationship between green purchase attitude (GPA) and GPI.

Age

The results of prior research which compared age groups have been complex. The development of consumer GPA and behavior, understood in terms of age, has led many researchers to argue that younger consumers are more likely to act pro-environmentally. For example, the results of Sinnappan and Rahman (2011) used a non-probability sampling of 204 Malaysia consumers to show that age has a significant relationship with all antecedent statements related to green purchase behavior. Younger consumers who are below 20 years old have stronger perceptions toward environmental factors compared to the adults. A study by Kim et al. (2012) investigated the demographics of online travelers' in terms of the influence of environmentally friendly programs on their decision to stay at environmentally friendly hotels. Their study used a random sample to argue that the green hotels should be targeted at younger consumers; particularly consumers who are in the 25–35 age group, as these are more likely to stay at green hotels than are consumers who are over 55 years of age. A study by Chen (2013) compared Chinese (200 respondents) and American (200 respondents) consumers' GPI in Shanghai, China. Using random sample, quota, and convenience sampling methods, Chen showed that for the Chinese consumers, most of the respondents who expressed interest in green purchase behavior were younger consumers and students. This age group were most likely to get information about environmental issues and take action in purchasing green products.

However, results obtained in relation to age have not always produced followed the above pattern. Many studies, in fact, disagree with the assumption that younger consumers are more concerned with environmental issues compared with older consumers (Han et al., 2009; Tobler et al., 2011). A study of Tobler et al. (2011) on the green food consumption of Swiss consumers, using a random sample of 6189 respondents, demonstrated that the older respondents have a higher probability of joining in either the pre-consideration or the action stage, rather than considering changing their behavior. A study by Han et al. (2009), using an online survey of 371 general hotel consumers in the USA. showed that the impact of image regarding green hotels on the willingness to pay more for such hotels was stronger for a higher age group than for a lower age group. In addition, some studies found that age has no significant influence on consumers' GPA and behavior (Ansar, 2013; Paul and Rana, 2012; Singh and Bansal, 2012Suki, 2013). Following the above, these hypotheses are proposed for this study:

H2a: Age significantly influences consumer GPA.
H2b: Age significantly influences consumer GPI.
H2c: Younger consumers are more likely exhibit GPA.
H2d: Younger consumers are more likely exhibit GPI.

Gender

In contrast with age, highly consistent results can be found for gender. Consumers who are female and who would like access to more information on green hotels tend to act more frequently in a pro-environmental manner than males. For example, Fisher et al. (2012) found that there is a positive relationship between the variable "gender" and environmentally friendly purchase behavior in the US. This study investigated a sample of 306 university students to show that gender has a positive relationship with the use of green products and recyclable bags. About 16.2% of females strongly agreed that they should use green products, while only 7.4% of males strongly agreed with this statement. One study by Lee (2009) examined gender differences among Hong Kong adolescents, in terms of their consumer green purchase behavior. Using a random sample of 6010 respondents, Lee showed that, compared with male adolescent consumers, their female counterparts have higher scores for environmental attitude, environmental concern, perceived seriousness of environmental problems, perceived environmental responsibility, peer influence, and green purchase behavior. Similarly, a study by Han et al. (2009) found that female hotel consumers exhibit stronger overall image on visit intention, word-of-mouth intention, and willingness to pay more for green hotels, respectively, compared with male hotel consumers in US.

Although the results of studies examining the relationship between gender and consumer green purchase behavior are generally more consistent than other demographic variables, some studies still found that the "gender" variable did not have any significant correlation with consumer GPA and behavior (Ansar, 2013; Rezai et al., 2012; Singh and Bansal, 2012). Sinnappan and Rahman (2011), for example, noted that gender did not show any relationship toward the eight antecedent factors that are affecting green purchase behavior in Malaysia. The results of Rezai et al. (2012), using a random sample of 1355 Malaysian consumers, showed that gender has no relationship with consumer awareness and perception toward green food consumption. In the study by Awad (2011), already mentioned above, the author used a snowball sample of 241 respondents at the University of Bahrain and concluded that the gender showed not even a marginal variance for defining green consumers' characteristics. Therefore, the following hypotheses are proposed.

H3a: Gender significantly influences consumer GPA.
H3b: Gender significantly influences consumer GPI.
H3c: Female consumers are more likely to exhibit GPA.
H3d: Female consumers are more likely to exhibit GPI.

Education

Unsurprisingly, the most consistent results of all are from studies on the effect of education, which generally found that education is positively correlated with environmental sensitivity. Many studies found that consumers with a higher level of education were more likely to exhibit environmentally friendly behavior (Chen, 2013; Paul and Rana, 2012; Rezai et al., 2012; Teng et al., 2011). Rezai et al. (2012) found that there is a positive relationship between the variable "education level" and consumer GPA and awareness of the concepts of green foods, green society, food safety, environmental friendliness, and animal welfare. Such heightened awareness leads to intentions to purchase green foods, ultimately influencing green purchase behavior in Malaysia. Consumers who benefit from a higher level of education tend to demonstrate a stronger relationship between consumers' awareness and perception toward green food consumption. Another study by Teng et al. (2011) was undertaken

to investigate consumer intention to purchase green food in Malaysia. The external factor of education level was one of two demographics which were shown to have a positive significant relationship with consumer GPI. Consumers who have benefitted from a higher education level are 1.847 times more likely than consumers who have a lower education level to purchase green foods.

This being said, consumer green purchase behavior was not shown to be consistent throughout all of the various studies related to the "education" variable. In some studies, there was no relationship between education and consumer green purchase behavior (Ansar, 2013; Fisher et al., 2012; Sinnappan and Rahman, 2011). The study undertaken by Fisher et al. (2012) provided empirical support for the educational effect on consumer green purchase behavior among US consumers by asserting that their level of education has no relationship with using green products such as recyclable bags, separating trash for recycling, turning off light while leaving room, and using energy-efficient light bulbs. Similar results were produced by Yin et al. (2010), using a convenience sample of 432 Chinese consumers. Their study showed that the level of education of consumers has no significant effect on consumer intention to buy organic food in China. Ansar (2013) sought to segment the green market, based on demographics, in order to understand how the segments differed in terms of consumer GPI. A convenience sample of 384 Pakistan consumers showed that the education variable is not significantly associated with GPI. Given the above research on the factor of education, for this study, the following hypotheses were established:

H4a: Education significantly influences consumer GPA.
H4b: Education significantly influences consumer GPI.
H4c: Higher education consumers are more likely exhibit GPA.
H4d: Higher education consumers are more likely exhibit GPI.

Income

It is generally believed that income has a positive influence on consumer GPA and behavior (Rezai et al., 2012). In other words, individuals who have a higher income level are better able to accept the marginal increase of costs related to supporting green products and purchasing green products (Fisher et al., 2012; Kim et al., 2012; Rezai et al., 2012). Supporting this widespread assumption, the results of Fisher et al. (2012), which used an online survey sample of university students, showed that there is, indeed, a positive relationship between income and usage of green products, e.g. separating trash at home for recycling. Yin et al. (2010) employed a convenience sample of 432 Chinese respondents and found that there is a positive relationship between consumers' income status and their willingness to purchase green food in China. A study by Rezai et al. (2012), using demographic characteristics as external variables, examined the relationship between consumers' attitude–intention–behavior regarding green food consumption in Malaysia. The authors used a seven-point Likert scale to measure consumers' awareness and intention toward green food consumption. Their results showed that income has a strong influence on consumers' awareness and intention regarding green food consumption. Consumers who benefit from a higher income have a stronger intention to purchase green foods because the price of green foods are normally 10–50% higher than traditional foods.

As expected, results of studies on income were by no means homogeneous. In some studies, there was no relationship between income and consumer GPA and behavior, or there was no variance between different levels of consumer income (Ansar, 2013;Paul and Rana, 2012; M. Zakersalehi and Zakersalehi, 2012). For instance, the study by Paul and Rana (2012) previously mentioned used Chi square test to check the difference between income factor and quantity of green food purchase. Results showed that the income factor p value (0.364) was significantly higher (i.e. than 0.05). In other words, income was negatively associated with green food purchase behavior, in terms of green food purchased. Another study by Ansar (2013) on the consumer GPI of Pakistan consumers, using convenience sampling of 384 respondents, showed that the income was found to be insignificantly associated with consumer GPI. Following on from this research on income, this paper proposes these hypotheses:

H5a: Income significantly influences consumer GPA.
H5b: Income significantly influences consumer GPI.
H5c: Higher income consumers are more likely to exhibit GPA.
H5d: Higher income consumers are more likely exhibit GPI.

Methodology

Research paradigm

The positivist philosophical paradigm has been generally adopted through the deductive approach to

empirical research in order to test hypotheses. This approach aims to search for patterns and causal relationships and to create generalizations about them (Saunders et al., 2011). The results will be either confirm or reject the relationships of behaviors, leading to the further development of knowledge. The positivist approach ensures that there is as little bias as possible in research as, ideally, researchers are objectively observing a single external reality in a value-free way, while statistical and mathematical methods are employed to ensure ultimately generalizable results (Yin, 1994; Saunders et al., 2011). This research is descriptive in nature, due to it concern to describe the characteristics of particular individuals and to portray those individuals accurately (Saunders et al., 2011). A survey is performed to answer the questions, as it has some advantages such as the collection of a large dataset from a sizable population in an acceptable way (Saunders et al., 2011). A survey is also perceived as authoritative by respondents, and the data are standardized and easily compared (Hair et al., 2010; Sekaran, 2006). In addition, due to time and cost constraints, this research is purposed as a cross-sectional study.

Data collection

The non-probability sampling method was used. In social science research, researchers usually have difficulty acquiring an accurate sampling frame from organizations and companies or difficulty locating appropriate respondents to answer research question (Saunders et al., 2011). For these reasons, non-probability sampling is an alternative technique to select samples based on subjective judgment by the researcher (Sekaran, 2006). Furthermore, the purposive or judgmental sampling technique was selected to collect samples as it allows the researcher use judgment in selecting cases that will best fit and enable respondents to answer researchers' questions (Hair et al., 2010).

A well-established, self-administered, and close-ended questionnaire format was employed for this research, because it is a formal construction which incorporates a set of verified scales (De Vaus, 2013). This method of data collection also enables a greater geographical coverage, a cost advantage, provides anonymity, involves less pressure, allows for quicker collection, and reduces levels of bias compared with the interviewer technique (Saunders et al., 2011). A pilot test with 40 samples was used to ensure that the questionnaire is usable and to reduce issues which might impact on research results. Many researchers suggest that a sample size of around 10% for the pilot survey is appropriate (Connelly, 2008; Hill, 1998). The reasonable number requirement for sample size was based on Cochran's formula of 384 detected samples. This formula is frequently used when the target population is infinite or unknown (Burstein, 2011; Cochran, 2007; Sarmah et al., 2013). To classify the product class for research, this study used information from the Shaanxi Tourism Government Bureau (2014, 2016), which revealed that there are only two green hotels operating in Xi'an city of Shaanxi Province in China: Wanda Hilton Green Hotel and the Westin Green Hotel. A total of 400 questionnaires were distributed to respondents who patronized these two green hotels between January and March, due to the Chinese New Year which usually comes between January and March. During this time, most local Chinese will undertake touristic activities, making it easier to collect data which is more representative of the population. Five hundred questionnaires were distributed by local travel agencies to customers who were patronizing and will patronize these two green hotels. The questionnaire was designed in three sections: the first section includes questions to establish age, gender, education, and income levels; the second section includes the variable of consumer GPA, and seven items were developed by Han et al. (2010), Chen and Tung (2014), and Han and Yoon (2015); the third section includes questions to establish consumer GPI, and four items were adapted from Baker et al. (2013), Chen and Tung (2014), and Han and Yoon (2015) (see Appendix). The five-point Likert scale was adopted, as a five or seven-point Likert scale will more likely produce slightly higher mean scores within the highest possible attainable score as well as making data comparison a much easier process (Dawes, 2008; Wang et al., 2018).

Data analysis and results

Statistic Package for Social Science (SPSS) 22 was utilized for the descriptive statistics and data analysis. This software package provides a vast array of programs for univariate, bivariate, and multivariate statistical analysis (Green and Salkind, 2010). Indeed, it has been considered as the most widely available and generally used comprehensive statistical calculation package available for marketing research (Malhotra and Birks, 2007). A total of 864 questionnaires were returned, with 205 of these being incomplete and thus eliminated as extreme outliers or otherwise unprocessable forms. About 659 responses were ultimately utilized for data analysis. A total of 73% of the collected response was usable.

Descriptive statistics

Table 1 shows the descriptive statistics for all demographics.

From a total of 659 respondents, 62.8% were female, while 46.3% of respondents had completed four-year bachelor's degree, and 61.9% of the respondents were in the age group of 18–30. The monthly income of most of respondents (38.5% of the respondents) was below 1700 CNY (Chinese Yuan).

Results

Table 2 displays the correlations between GPA and GPI.

A linear regression was calculated in order to predict GPI based on GPA. A significant regression equation was found (F (1,657) = 289.352, $p < 0.05$), with an R^2 of 0.306. Participants' predicted GPI was equal to 1.221 + 0.622 (attitude) points, with intention measured in points. Participants' GPI increased by 0.622 for each point of attitude. Therefore, H1 was supported, and it can be asserted that consumer GPA positively and significantly influenced intention toward green hotel selection.

Table 3 displays the chi-square test of correlations between gender, age, income education, GPA, and intention.

A chi-square test was performed, and there is a significant relationship between age and GPA, X^2 (92, $N = 659$) = 136.21, $p < 0.05$. The X^2 for income and GPA is significant at the $p < 0.05$, X^2 (92, $N = 659$) = 117.44. Furthermore, the X^2 values show that income and GPI were significant at the $p < 0.05$, X^2 (56, $N = 659$) = 79.10. The X^2 values show that education was significantly related to GPI at the $p < 0.05$, X^2 (56, $N = 659$) = 78.71. Therefore, the hypotheses H2a, H4b, H5a, and H5b were supported. Conversely, H2b, H3a, H3b, and H4a were not supported.

Table 4 displays the independent sample *t*-test for gender influence on GPA and intention.

Since $p = 0.048$ is less than our chosen significance level $a = 0.05$, the null hypothesis can be rejected, and it can be concluded that the GPA for males and females is significantly different. There was a significant difference in mean GPA between male and female ($t_{458.806} = -0.227$, $p < 0.05$). The average GPA for female was 0.01056 higher than the average GPA for males. The hypothesis H3c: that female consumers are more likely exhibit GPA toward green hotel selection, is, therefore, accepted. Similarly, since $p = 0.015$ is less than this study's chosen significance level a = 0.05, there was a significant difference in mean green behavioral intention (GPI) between

Table 1 Sample characteristic ($N = 659$).

	Characteristic	Frequency	Percentage (%)
Gender	Male	245	37.2
	Female	414	62.8
Age	Below 18	132	20.0
	18–30	408	61.9
	31–45	88	13.4
	46–60	26	3.9
	Above 61	5	.8
Income level	Below 1700	254	38.5
	1701–3000	143	21.7
	3001–4500	120	18.2
	4501–6000	89	13.5
	Above 6001	53	8.0
Education level	Middle School	33	5.0
	High School	43	6.5
	Diploma	226	34.3
	Bachelor	305	46.3
	Masters and above	52	7.9

Table 2. Correlations between GPA and intention.

Correlations	Pearson correlation			Sig. (one-tailed)		
	.553			.000		
Model summary	R square	R	Adjusted R square	Std. error of the estimate		
	.306	.553[a]	.305	.52230		
ANOVA[a]	Sum of squares		Mean square	df	F	Sig.
Regression	78.934		78.934	1	289.352	.000[b]
Residual	179.226		.273	657		
Total	258.159			658		
Coefficients[a]	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta			
(Constant)	1.221	.128			9.543	.000
Attitude	.662	.037	.553		17.010	.000

[a]Dependent variable: Green purchase intention.
[b]Predictors: (Constant), GPA.

males and females ($t_{448.502} = -1.273$, $p < 0.05$). The average GPI for females was 0.06696 higher than the average GPI for males. Hypothesis H3d: that female consumers are more likely exhibit GPI toward green hotel selection, is, therefore, accepted.

Table 5 displays the results of a one-way ANOVA, which was conducted to compare the effect of age, income, and education on GPA and intention.

An analysis of variance showed that the effect of age on GPI was statistically significant, F (4,654) = 3.959, $p < 0.05$ values. Therefore, the hypotheses H2c, H4c, H4d, H5c, and H5d were rejected. A Scheffe Alpha test was performed to classify the difference between the age groups as shown in Table 6.

A Scheffe post hoc test revealed that the age group of 18–30, regarding GPI, was statistically higher than the age group of below 18, $p < 0.05$ values. The mean difference (I–J) between the age group of 18–30 and below 18 was 0.22037. The age group of 18–30 had a higher level of GPI compared with the under-18 age group. In addition, there was no statistical difference between other age groups toward intention. Therefore, the hypothesis H2d was rejected.

Table 3. Chi-square test showing correlations between variables.

Item	Pearson Chi-square	Value	df	Asymp. Sig. (two-sided)
Green purchase attitude				
Gender		20.856	23	0.590
Age		136.206	92	0.002
Income		117.442	92	0.038
Education		100.635	92	0.253
Green purchase intention				
Gender		22.482	14	0.069
Age		60.959	56	0.302
Income		79.093	56	0.023
Education		78.714	56	0.024

Discussion

In this study, the relationship between demographic characteristics (i.e., age, gender, income level, and education level) and consumer attitude and intention toward green hotel selection was examined. This study used specific consumers' green purchase attitudinal and intentional questions related to green hotel orientation instead of general attitudinal and intentional questions used in previous research. Consequently, the results are quite different from those of previous research in the green purchase research field.

Many previous studies concluded that age has a significant impact on consumer GPA and GPI (Chen, 2013; Levine and Strube, 2012; Rezai et al., 2012). However, current results show that age has no significant impact on intention, but has a significant effect on attitude. This corresponds with some researchers who argue that age has a significant relationship with GPA (Diamantopoulos et al., 2003; Sinnappan and Rahman, 2011) while diverging from the conclusions of other researchers who argue that age has a significant relationship with GPI (Kim et al., 2012; Rezai et al., 2012). Furthermore, there is no statistically significant difference between different age groups of respondents toward GPA and GPI, with the exception of age groups between below 18 and 18–30 regarding intention. The results of this study show that the 18–30 age group has a higher level of intention compared with the under-18. This revealed that the new generations have a higher GPI compared with other age groups. However, overall, these results are controversial, as some researchers have argued that younger consumers are more likely to exhibit GPA and GPI (Chen, 2013; Kim et al., 2012; Rezai et al., 2012). These results also differ from other research which concludes that older consumers have a more positive attitude and intention toward green purchase behavior (Han et al., 2009; Tobler et al., 2011). It should be noted that other studies conclude that there is no difference among different groups of age effect on GPA and GPI (Paul and Rana, 2012; Singh and Bansal, 2012; Suki, 2013).

Table 4. Independent samples *t*-Test of gender (95% Confidence Interval of the Difference).

		Levene's test for equality of variances		t-Test for equality of means			
		F	Sig.	t	df	Mean difference	Std. error difference
GPA	Variances assumed	3.938	.048	−.235	657	−.01056	.04489
	Equal variances not assumed			−.227	458.806	−.01056	.04647
GPI	Variances assumed	6.003	.015	−1.327	657	−.06696	.05046
	Equal variances not assumed			−1.273	448.502	−.06696	.05260

GPA: green purchase attitude; GPI: green purchase intention.

Table 5. One-way ANOVA samples test.

Between groups	Items	Sum of squares	df	Mean square	F	Sig.
GPA	Age	2.439	4	.610	1.981	.096
	Income	1.104	4	.276	.891	.469
	Education	2.776	4	.694	2.258	.061
GPI	Age	6.103	4	1.526	3.959	.003
	Income	2.474	4	.619	1.582	.177
	Education	1.899	4	.475	1.212	.305

GPA: green purchase attitude; GPI: green purchase intention.

Table 6. Post hoc tests of age.

(I) Age	(J) Age	Mean difference (I–J)	Std. error	Sig.
18–30	Below 18	.22037[a]	.06216	.014
	31–45	.02624	.07297	.998
	46–60	–.13264	.12557	.892
	Above 61	.31544	.27933	.865

[a]The mean difference is significant at the 0.05 level with 95% confidence interval.

Many previous research concluded that gender has a significant impact on consumer GPA and GPI (Kim et al., 2012; Levine and Strube, 2012; Chen, 2013). Our results showed that there is no significant relationship between gender and attitude and intention. This has been complied with some research showed that gender has no significant impact on GPA and GPI (Ansar, 2013; Singh and Bansal, 2012; Suki, 2013). Furthermore, most of previous research showed that female more likely exhibited GPA and GPI (Chen, 2013; Fisher et al., 2012; Kim et al., 2012). Our results have been confirmed that female consumers have high GPA and GPI compared with male consumers.

Previous research generally showed that there is a significant relationship between education and GPA and GPI (Chen, 2013; Paul and Rana, 2012; Rezai et al., 2012). However, the current results show that education only significantly impacts on GPI, but not on GPA. This result is supported by Sinnappan and Rahman (2011) who argued that education has no statistical impact on GPA. It also falls in line with other studies which showed that there is a positive significant relationship between education and GPI (Chen, 2013; Paul and Rana, 2012; Rezai et al., 2012). It can be said that the results of this study on education are consistent with most other research on education, which concludes that there is no difference between different groups in terms of level of education regarding their GPA and GPI (Ansar, 2013; Fisher et al., 2012; Sinnappan and Rahman, 2011). It should be noted, however, that other research shows that consumers with a higher level of education exhibit more GPA and GPI compared with consumers from a lower educational background (Chen, 2013; Rezai et al., 2012; Paul and Rana, 2012).

Many previous research showed that there is a significant relationship between income and GPA and GPI (Fisher et al., 2012; Kim et al., 2012; Rezai et al., 2012), and our results were consistent with these research findings. Furthermore, there is no statistical difference among different groups of income toward GPA and GPI. This is in contrast to some researchers arguing that highly income level consumers have more GPA and GPI (Kim et al., 2012; Paul and Rana, 2012; Rezai et al., 2012). But it revealed the same results with previous research results showed that there is no difference among income groups of respondents toward GPA and GPI (Ansar, 2013; Paul and Rana, 2012; M. Zakersalehi and Zakersalehi, 2012).

The results of this study show that there is a positive significant relationship between GPA and GPI. This is supported by most previous research which showed that GPA is the most important predictor of GPI (Jaiswal and Kant, 2018; Paul et al., 2016; Wang et al., 2018). This study also establishes that relationships, as well as the TRA and TPB model, are reliable theoretical models to help explain consumer green purchase behavior (Maichum et al., 2016; Mohamad et al., 2014; Paul et al., 2016).

Implications for practice

These research findings are quite different from previous results. The unique outcomes of this study can be used by green hotels' operators to make decisions. The information can be used by marketers to select target consumers and to design appropriate marketing campaigns. Age and income have a significant impact on consumer attitude toward green hotel selection; income also has a significant impact on intention. This study particularly highlights that the young generation (age group of 18–30) has a higher level of intention and that female consumers have a more positive attitude and intention compared with male consumers toward green hotel selection. In addition, education is shown to have a significant impact on intention. Therefore, green hotel operators may need to select target consumers based on age, gender, income, and education and use advertising intermedia to reach the particular groups most likely to make green hotel selection.

Theoretical contributions

According to Albayrak et al. (2013), the explanatory power of demographic characteristics associated with environmental behaviors is weak. With its unique focus on green hotel selection, results from this study show many differences from previous research findings. Nevertheless, demographics is still considered one of the most widely used methods for investigating consumer behavior, compared with other segmentation measures, as it is more readily available and more easily applied to segmentation problems (Albayrak et al., 2011). It is also worth noting that most previous studies related to consumer green purchase behavior were written from US and other western countries' perspectives (Handique, 2014; Wang et al., 2018). Research on green hotel selection literature in China is still in its preliminary stage, lacking a unified definition and a systematic framework (Jiang and Gao, 2019). There are still problems existing in academia about green hotel selection in China, and Chinese consumers' concern and understanding of green hotels was still at a low level (Jiang and Gao, 2019). This research used demographics to investigate Chinese consumer green purchase behavior. Hence the findings provide a basic understanding of Chinese consumer green purchase behavior toward green hotel selection in this particular research field.

Limitations and future research

The respondents were only selected from Xi'an city of Shaanxi province in China. Although 659 questionnaires were utilized in data analysis, the results cannot be said to represent overall Chinese consumers' characteristics. Also, this study was only conducted in China, meaning that the conclusions will only apply to this country and area. Results may vary across other areas and countries due to cultural differences, acceptance of green conception, and many other factors. Thus, the results of this study should be replicated and tested in other areas or countries to further confirm their validity and usefulness. Furthermore, some researchers have argued that psychographic characteristics have more influence compared with demographic characteristics toward green purchase behavior (Akehurst et al., 2012; Awad, 2011; Sinnappan and Rahman, 2011). Therefore, future research should combine demographic and psychographic characteristics to predict consumer green purchase behavior.

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Appendix: The measurement scales

Table 1A

Section	Variable	Scale	Main source
A	Age	1. Below 18 2. 18–30 3. 31–45 4. 46–60 5. Above 61	Author
	Gender	1. Male 2. Female	
	Education	1. Middle school 2. High school 3. Diploma 4. Bachelor 5. Master and above	
	Income	1. Below 1700 2. 1701–3000 3. 3001–4500 4. 4501–6000 5. Above 6001	
B	GPA	For me, staying at green hotel when traveling is: 1. Extremely bad (1)/Extremely good (5) 2. Extremely undesirable (1)/Extremely desirable (5) 3. Extremely unpleasant (1)/Extremely pleasant (5) 4. Extremely foolish (1)/Extremely wise (5) 5. Extremely unfavorable (1)/Extremely favorable (5) 6. Extremely unenjoyable (1)/Extremely enjoyable (5) 7. Extremely negative (1)/Extremely positive (5)	Chen and Tung, 2014; Han and Yoon, 2015; Han et al., 2010
C	Green Purchase Intention[a]	1. I am willing to stay at a green hotel when traveling. 2. I will make an effort to stay at a green hotel when traveling. 3. I am likely to stay in a hotel implementing environmental strategies. 4. I am more likely to stay in a green hotel over a non-green hotel.	Baker et al., 2013; Chen and Tung, 2014; Han and Yoon, 2015

[a]Items of green purchase intention were measured on a five-point Likert scale from strongly disagree (1) to strongly agree (5).