A Factorial Analysis of the Antecedents of Green Purchase and the Relationship with Green Purchase Intentions and Green Purchase Behaviour

[1]M. Dhurup and [2]A. Muposhi
[1]Faculty of Management Sciences,
[2]Department of Marketing and Sport Management
Vaal University of Technology, Private Bag X021, 1900 Vanderbijlpark, South Africa

Abstract: Worldwide, companies are implementing green marketing strategies to appeal to the growing segment of green consumers. In spite of the exponential growth in popularity of green products in contemporary markets, research on green purchase behaviour has been scarce in South Africa. Given this background, the purpose of the present study was to examine the antecedents of green purchase and the relationship with green purchase intention and green purchase behaviour. A structured self-administered questionnaire was used to collect data from a random sample of 386 Generation Y students. The collected data were analysed using the Statistical Package for the Social Sciences (SPSS) 22.0 and Analysis of Moment Structures (AMOS) 22.0. Exploratory Factor Analysis (EFA) was employed to identify the antecedents of green purchase intention. The fitness of the measurement model was assessed using Confirmatory Factor Analysis (CFA). The posited hypotheses were tested using regression analysis. The findings of the study revealed that environmental attitude, environmental concern, social influence and environmental responsibility have significant positive relationships with green purchase intention. However, government influence showed no significant relationship with green purchase intention of Generation Y consumers. The study also revealed a positive significant relationship between green purchase intention and green purchase behaviour. The findings suggest that in South Africa, strategies to enhance green purchase behaviour should focus on stimulating green purchase intention by appealing to consumers' environment attitude, concern and responsibility.

Key words: Green purchase intention, green purchase behaviour, confirmatory factor analysis, regression analysis, Generation Y

INTRODUCTION

The major challenge confronting economies in the 21st century is how to balance economic growth and environmental sustainability (Smith and Perks, 2010). Green marketing is fast growing in stature as the central facet of environmental sustainability (Hume, 2010; Kotler, 2011; Nittala, 2014). Historically, the term "green marketing" came into prominence in 1975, when the American Marketing Association held its first workshop titled "Ecological Marketing" in Austin, Texas in the United States of America (Akehurst *et al.*, 2012). Polonsky (1994) succinctly defined green marketing as "all activities designed to generate and facilitate any exchanges intended to satisfy human needs or wants such that the satisfaction of these needs and wants occurs with minimal detrimental impact on the natural environment."

In green marketing literature, there are three phases that characterise the evolution and growth of green marketing (Horne, 2009). The first phase was termed "ecological green marketing" and during this phase, marketing activities were concerned with promoting the judicious use of natural resources and provision of remedies for environmental problems (Bukhari, 2011). The second phase was "environmental green marketing" where the focus was on producing environmentally friendly products (Ottman, 2011). The third phase which is considered as the current stage of green marketing is termed "sustainable green marketing" and is focused on integrating green marketing principles into the marketing strategy (Horne, 2009).

In South Africa, the 2002 World Summit on Sustainable Development, held in Johannesburg, gave impetus to the South African government to address the challenge of environmental sustainability (Death, 2011). Driven by the long-term vision of developing a green economy, the South African government's environmental sustainability response strategy is guided by principles set out in the constitution, the National Environmental

Corresponding Author: M. Dhurup, Faculty of Management Sciences, Vaal University of Technology, Private Bag X021, 1900 Vanderbijlpark, South Africa

Management Act and the Millennium Development Goals on Climate Change and the United Nations Framework Convention on Climate Change. For instance, Section 24 of the Constitution of the Republic of South Africa states that: "everyone has a right to an environment that is not harmful to their health or well-being and to have the environment protected for the benefit of present and future generations". In addition, sustainability has been addressed in the King 111 Report in terms of the triple bottom line concept of economic, social and environmental sustainability. Moreover, the greening of the 2010 FIFA World Cup and the successful hosting of the Durban Platform for Enhanced Action (COP 17) demonstrated the commitment of the South African government to environmental sustainability (Death, 2011).

The effect of the South African government's environmental initiatives is mirrored by the increase in the demand for fairtrade-branded organic products. For instance, Fairtrade International reported an increase of 220 percent in sales of organic products during the 2011/2012 financial year. In addition, leading retailers in South Africa such as Pick n Pay and Woolworths reported an increase in sales of organic products of 66.8 and 47%, respectively during the 2011/2012 financial year (Woolworths Holdings Ltd, 2012; Pick n Pay Ltd, 2013). In terms of market appeal, organic products such as natural chocolates, green coffee and fish certified by the Marine Steward Council (MSC) are proving to be more popular among young consumers in South Africa. Given this background of pro-environmental behaviour, it is worth exploring whether young people in South Africa engage in green purchasing behaviour and what motivating factors influence such behaviour.

This study's significance lies in the fact that little is known about the factors that influence green purchase behaviour, yet such knowledge is imperative in enhancing environmentality sustainability (Zhu *et al.*, 2013). In addition, Peattie (2001) notes that the intricacies involved in the formation of green purchase intentions tend to vary based on cultural orientations and the level of economic growth. It is also important to note that there have been very few studies conducted on green purchase behaviour in South Africa. Notable studies on green marketing have been largely devoted to the impact of the implementation of green practices on business functions (Smith and Perks, 2010) and attitudes of consumers towards green advertising (Synodinos *et al.*, 2013). In view of the identified research gap and asymmetric nature of green purchase intentions in diverse markets, the main purpose of the study was to examine the influence of the

antecedents of green purchase on purchase intentions and green purchase behaviour of Generation Y consumers in the context of an emerging market.

Literature review and hypotheses development
Antecedents of green purchase intention: The Theory of Reasoned Action (TRA) provided the theoretical underpinnings for the study. The TRA posited a hypothetical relationship in which intention is a proxy to behavioural actions (Fishbein and Ajzen, 1975). Green purchase intention refers to the likelihood and disposition of a consumer to prefer to buy environmentally friendly products over conventional ones (Ali and Ahmad, 2016; Kanchanapibul *et al.*, 2014). In spite of the importance of intention in the performance of pro-environmental behaviours (Aman *et al.*, 2012), a number of previous studies have omitted the construct (Lee, 2008; Sinnappan and Rahman, 2011; Wahid *et al.*, 2011). In studies where the influence of purchase intention on pro-envirhonmental behaviour is examined, contradicting findings were reported (Chan and Lau, 2000; Ali and Ahmad, 2016). Green marketing literature acknowledges that green purchase intention is prompted by a set of psychographic variables and situational factors (Aman *et al.*, 2012; Huang *et al.*, 2014). The main antecedents of green purchase intention are discussed as follows.

Environmental attitude: The seminal work by Allport (1935) defined attitude as a mental state of preparedness that is organised through experiential learning with the inherent ability to direct an individual's psychological response to environmental stimuli. When attitudes are formed with respect to an object such as the environment, they are known as environmental attitude (Singh and Gupta, 2013). Environmental attitude implies a pre-disposition behaviour that directs an individual to minimise the negative impact of behavioural actions on the natural environment (Samarasinghe, 2012). With regards to green purchase behaviour, a study by Lee (2009), Mostafa (2009) and Sinnappan and Rahman (2011) found that environmental attitude plays a significant role in shaping green purchase intentions. However, it is important to note that other studies reported contrasting views on the relationship between attitude and green purchase behaviour resulting in the now popularised "attitude-behaviour" gap (Gupta and Ogden, 2009; Barber *et al.*, 2012). Thus, the present study hypothesises that:

- H$_1$: environmental attitude will exhibit a positive relationship with green purchase intention of Generation Y consumers

Social influence: Social influence also known as interpersonal influence consists of the power of persuasion to solicit desirable behavioural outcomes (Cheah and Phau, 2011). For example, Ottman (2011) notes that consumers are strongly influenced by the recommendations of friends, family and trusted third parties when making purchase decisions. Where social influence is high, pro-environmental behaviour forms part of a social norm and individual behaviour is primarily influenced by the quest for compliance with societal norms (Jansson *et al.*, 2010). A study conducted by Kanchanapibul *et al.* (2014) revealed that social networks are effective in eliciting favourable perceptions towards environmentally friendly products. The effect of social influence explains why green purchase behaviour is considered as altruistic behaviour with pro-social norms, awareness of behaviour consequences and ascription of responsibility as its antecedents (Wan *et al.*, 2012).

However, it is worth noting that studies on the effect of social influence on green purchase behaviour largely produced fragmented results (Lee, 2008; Wahid *et al.*, 2011). In particular, Cheah and Phau (2011) note that the effect of social influence tends to vary within the cultural domains of collectivism and individualism. Drawing on these findings, it is hypothesised that:

- H_2: social influence will exhibit a positive relationship on green purchase intention amongst Generation Y consumers

Environmental responsibility: Central to the debate on green marketing is the ascription of responsibility among key stakeholders in environment management such as consumers, businesses and the government (Gadenne *et al.*, 2011). For instance, consumers have an enduring perception that the government ought to be more accountable in environmental protection, a view point that often results in negative environmental attitude and concern (Lee, 2008).

Similarly, Thogersen (2005) laid the role of environmental responsibility at the door step of national governments and companies by asserting that "governments and businesses are responsible for much of the external conditions limiting an individual consumer's freedom to choose and act and therefore they also carry part of the responsibility for sustainable consumption." The role of government in environmental protection needs to be structured around generating environmental awareness and enforcing environmental laws (Sinappan and Rahman, 2011).

Environmental responsibility is also influenced by the perceptions of self-efficacy among consumers (Cheah and Phau, 2011). Self-efficacy refers to the extent to which individuals believe that their efforts have the potential to mitigate the problem at hand (Bandura, 1977). Similarly, Sinnappan and Rahman (2011) employ the term "perceived effectiveness of environmental behaviour" to suggest that individuals believe that their individual efforts have the potential to positively contribute to protect the environment. Hence, it can be posisted that:

- H_3: environmental responsibility will exhibit a positive relationship on green purchase intention amongst Generation Y consumers

Environmental concern: Environmental concern is defined as the emotional attachment of an individual towards the welfare of the environment as measured by affective traits such as passion, apprehensions and considerations for environmental protection (Yeung, 2004). Although, environment concern is regarded as a foundation of pro-environmental behaviour it appears to have generated little discernible impact on consumers' green purchase behaviour. For instance in spite of the growth in environmental concern, empirical evidence suggests that the demand of green products remains low in major markets (Carrington *et al.*, 2010). This could be attributed to Do Paco and Reis (2012)'s observation that environmentally concerned consumers are more skeptical towards green marketing messages as compared to those who are less environmentally concerned.

In terms of purchase behaviour, a study by Bamberg (2003) found that the relationship between environmental concern and purchase behaviour tends to lie on the low-to-moderate end of the continuum. This finding underscores the importance of understanding the causes of the gap between environmental concern and purchase behaviour. To understand the underlying causes of the aforesaid gap, Stern (2000) suggests the need to define environmental behaviour from an impact-oriented approach as opposed to an intent-oriented perspective as this has the potential to unearth environmentally significant curtailment behaviours. In addition, Ginsberg and Bloom (2004) emphasised that segmentation of consumers based on their levels of environmental concern would be invaluable in enhancing the uptake of green products. The major challenge confronting green product marketers is to understand why environmental

concern does not translate in actual purchase behaviour (Irwin *et al.*, 2015). Given this background, it is hypothesised that:

- H₄: environmental concern will exhibit a positive relationship on green purchase intention amongst Generation Y consumers

Government influence: Globally, national governments influence adoption of green marketing strategies through formulation of environment regulations, environmental awareness and financial interventions such as tax concessions and incentives (Nath *et al.*, 2014). It is important to note though that there is a significant gap between developing and developed countries in terms of engaging in pro-environmental behaviours (Tantawi *et al.*, 2009). For instance, in developed countries such as United States of America sustainability is a key value among consumers whereas in developing countries consumers' are mainly motivated to perform pro-environmental actions by incentives (Caird *et al.*, 2008).

Government response to environmental problems in developing countries depends largely on the need to balance economic growth, population growth, climate change funding and availability of green technology (Lee, 2008). On a global level, it appears the main challenges confronted by environmentalists are to gain the commitment of national governments to embrace sustainability principles and to implement global environmental treaties (Hale, 2011). In addition, the apparent failure by national governments to enforce environmental regulations is singled out as one of the main deterrents to the adoption and performance of pro-environmental behaviours (Roberts and Bacon, 1997). Based on the foregoing discussion, it is hypothesised that:

- H₅: government influence will exhibit a positive relationship on green purchase intention amongst Generation Y consumers

Green purchase intention and green purchase behaviour: The gap between purchase intention and green purchase behaviour is well documented in extant literature (Young *et al.*, 2010; Zhu *et al.*, 2013). According to Zaman *et al.* (2010), scepticism and contradictions associated with green product attributes such as eco-labels negatively affect the actual purchase behaviour. In addition, Zhu *et al.* (2013) attributed the gap between green purchase intention and actual purchase behaviour to factors such as unavailability, information asymmetry, high price and the poor quality of some green products. The gap between green purchase intention and actual purchase behaviour contradicts the theoretical proposition that perceives a strong positive association between intention and behaviour (Ajzen and Fishbein, 1980). Given this background, it is hypothesised that:

- H₆: green purchase intention will exhibit a positive relationship on green purchase behaviour amongst Generation Y consumers

Research model: The present study viewed green purchase behaviour from the intent approach that seeks to understand factors that influence green purchase intention and ultimately translate into green purchase behaviour. The research model underpinning the study is illustrated in Fig. 1.
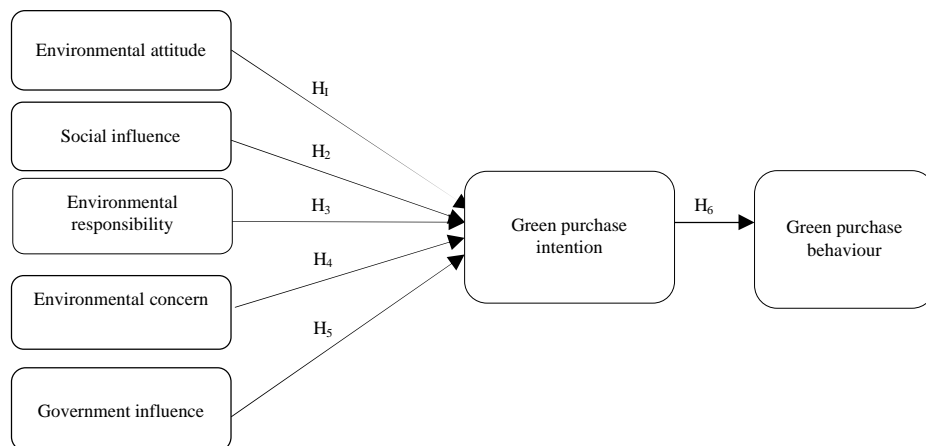

Fig. 1: Research model

MATERIALS AND METHODS

Sampling procedures and data collection: The target population for the present study consisted of Generation Y consumers between the age of 19 and 36 years that were enrolled at two universities. The Generation Y cohort was considered ideal for the present study as it is regarded as more environmentally conscious than other generations (Kanchanapibul *et al.*, 2014). Using a convenience sampling method, a sample of 420 respondents was drawn from two universities in South Africa (one public and one private higher education institution). The data were collected between March and May in 2014. The lecturers were requested to ask diploma, degree and postgraduate students to complete the questionnaire soon after their lectures. Due diligence was taken to randomise the data collection in order to obtain a fairly distributed data set in terms of gender and respondents from different faculties. The lecturers were given strict instructions that no student should be forced to complete the questionnaire. The questionnaires were completed on a voluntary basis and no incentives were offered for participation. A total of 420 questionnaires were distributed and 386 were considered complete for analysis.

Measures: In order to test the postulated hypotheses, a structured self-administered, four-section questionnaire was utilised to collect the data. Section A requested the biographical and demographic information such as gender, age, education level, membership of environmental groups and ethnicity of the respondents. Section B comprised questions on the antecedents of green purchase intention that emerged from literature review that included environmental concern, environmental attitude, environmental responsibility, social influence and government influence. The questionnaire items used to measure environmental concern, environmental attitude, environmental responsibility, social influence and government influence were adapted from similar studies conducted by Lee (2010, 2009), Lee (2008), Sinnappan and Rahman (2011). The responses to the items were measured on five-point Likert-type scales anchored by strongly disagree to strongly agree to express the degree of agreement or disagreement.

Section C consisted of on green purchase intention. Green purchase intention was assessed using a four-item scale adapted from a study conducted by Chan and Lau (2000). All the measurement items were measured on a five point Likert-type scale ranging from definitely unlikely to

definitely likely. Section D captured the green purchase behaviour of environmentally friendly products using six measurement items scale adapted from Sinnappan and Rahman (2011), Chan and Lau (2000). Green purchase behaviour was measured using a five-point Likert-type scale ranging from "not at all" (1) to "very high" (5) to express the degree of agreement or disagreement. In addition, the questionnaire was accompanied by a covering letter that explained the purpose of the study and the conduct details of the researchers.

Reliablity and validity analysis: Table 1 summarises the reliability and validity measures employed in the study. To assess reliability of the research instrument for the study, the Cronbach's alpha coefficient, the item-to-total values and composite reliability were computed. The Cronbach's alpha coefficients were satisfactory ranging from 0.881-0.905, therefore surpassing the minimum cutoff of 0.70 recommended by Zikmund and Babin (2009). The item-to-total values ranged from 0.637-0.810 which is well above the baseline value of 0.5 (Anderson and Gerbing, 1988). The Composite Reliability (CR) values for all constructs ranged from 0.885-0.906 which is above the recommended threshold of 0.70, signifying the attainment of satisfactory levels of composite reliability (Fornell and Larcker, 1981).

The validity of the survey instrument was established through content, convergent, discriminant and predictive validities. Content validity of the questionnaire was enhanced by conducting a pre-test as recommended by Malhotra (2008, 2009). Fornell and Larcker (1981)'s measure of Average Variance Extracted (AVE) was employed to ensure discriminant validity. This was done by comparing the square root of the AVEs with the correlations between the construct and other constructs that form the research model. As indicated in Table 1 the square roots of AVEs of all constructs are greater than the correlations among all constructs indicating attainment of discriminant validity. To assess convergent validity, the average variance extracted value was used. The average variance extracted of all constructs were greater than 0.5, thereby indicating the attainment of convergent validity in this study.

Finally, predictive validity was assessed by inspecting the Beta coefficients and t-values. In the regression models (Table 1). This result confirms the prevalence of acceptable levels of predictive validity in the study.

Table 1: Reliability and validity measures

Research construct	Reliability pilot study		Reliability main study		CR	AVE	AVES/root	Shared variance
	No. of items	α value	Item-total	α value				
Environ-mental Attitude (EA)								
B1	5	0.807	0.733	0.893	0.895	0.630	0.794	0.118
B2			0.741					
B3			0.729					
B4			0.727					
B5			0.753					
Social Influence (SI)								
B6	5	0.819	0.732	0.905	0.906	0.658	0.811	0.300
B7			0.757					
B8			0.755					
B9			0.754					
B10			0.809					
Environ-mental Responsibility (ER)								
B11	5	0.847	0.747	0.902	0.903	0.651	0.807	0.175
B12			0.736					
B13			0.739					
B14			0.744					
B15			0.810					
Environ-mental Concern (EC)								
B16	4	0.806	0.745	0.890	0.890	0.669	0.818	0.339
B17			0.761					
B18			0.748					
B19			0.778					
Government Influence (GI)								
B20	5	0.812	0.773	0.902	0.902	0.649	0.806	0.044
B21			0.761					
B22			0.739					
B23			0.747					
B24			0.760					
Green Purchase Intention (GPI)								
C1	4	0.720	0.765	0.881	0.890	0.670	0.819	0.339
C2			0.747					
C3			0.686					
C4			0.775					
Green Purchase Behaviour (GPB)								
APB1	6	0.704	0.684	0.886	0.885	0.564	0.751	0.024
APB2			0.669					
APB3			0.665					
APB4			0.681					
APB5			0.733					
APB6			0.770					

RESULTS AND DISCUSSION

Sample composition: The >50% of the respondents were female (52.1%; n = 201) and 47.9% (n = 185) were males. The majority age was 19-25 years accounting for 89.1% (n = 344) of the sample followed by the 26-32 category with 8.0% (n = 31) and finally 2.8% (n = 11) representing respondents aged between 33-36 years. Approximately, 51.6% (n = 199) of the respondents were diploma students, 46.4% (n = 179) were degree students and 2.1% (n = 8) were postgraduate students. Most respondents were predominantly black (Africans), 97.2% (n = 375), 2.1% (n = 8) were Coloured and 0.8% (n = 3) were Indians. Lastly, 94.6% (n = 365) of the respondents were not affiliated to any environmental club and 5.4% (n = 21) claimed membership.

Exploratory Factor Analysis (EFA): Five scales were used to measure green purchase intention (environmental attitude, social influence, environmental responsibility, environmental concern and government influence). As recommended by Pett *et al.* (2003), prior to conducting EFA, Keiser Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity were carried out to assess the suitability of the data for factor analysis. The significance level of Bartlett's test of sphericity was p<0.000 and the KMO measure of sampling adequacy was 0.862. These results fulfil the criterion for factor analysis, Bartlett's test of sphericity (p<0.05) and KMO index minimum threshold 0.6 (Aldlaigan and Buttle, 2002; Hair *et al.*, 2013, 2006), rendering the data suitable for factor analysis.

After determining the appropriateness of data, Exploratory Factor Analysis (EFA) was conducted using

Table 2: Factor loading matrix

Variables	Description	1	2	3	4	5
B1	It is important to promote green living in South Africa	0.040	0.080	0.080	0.824	0.098
B2	I believe more environmental protection work is needed in South Africa	0.140	0.031	0.081	0.824	0.047
B3	It is very important to raise environmental awareness in South Africa	0.122	0.028	0.122	0.804	0.105
B4	Environmental issues are none of my business	0.135	0.030	0.083	0.810	0.045
B5	It is unwise for the South African government to spend a lot of money in environmental protection	0.115	0.054	0.072	0.835	0.077
B6	I learn so much about environmental products from my friends	0.786	0.115	0.043	0.157	0.151
B7	I learn so much about environmental issues from my friends	0.816	0.081	0.123	0.147	0.130
B8	I often buy green/organic products with my friends	0.834	0.086	0.027	0.110	0.105
B9	I often share information regarding green/organic products with my friends	0.803	0.113	0.041	0.110	0.220
B10	I often share information about environmental issues with my friends	0.858	0.146	0.054	0.066	0.154
B11	Environmental protection starts with me	0.045	0.821	0.134	0.026	0.153
B12	I think I should have so much responsibility in protecting the environment in South Africa	0.121	0.815	0.105	0.090	0.068
B13	I have taken responsibility for environmental protection since I was young	0.128	0.811	0.072	0.016	0.126
B14	I am willing to take responsibility to protect the environment in South Africa	0.123	0.812	0.079	0.046	0.136
B15	Environmental protection is the responsibility of environmental organisations, not me 0	0.102	0.875	0.017	0.053	0.121
B16	I am worried about the worsening of the quality of South Africa's environment	0.123	0.102	0.077	0.126	0.841
B17	South Africa's environment is my concern	0.222	0.207	0.024	0.017	0.817
B18	I am emotionally involved in environmental protection issues in South Africa	0.164	0.154	0.013	0.148	0.817
B19	I often think about how environmental quality in South Africa can be improved	0.223	0.144	0.096	0.078	0.833
B20	Environmental protection is the responsibility of South African government not me	0.071	0.136	0.843	0.091	0.007
B21	Government must encourage learning institutions to offer environmentally related courses to all learners	0.059	0.088	0.836	0.116	0.060
B22	Government must subsidize green products	0.015	0.026	0.840	0.034	0.047
B23	Government should enforce environment rules	0.059	0.087	0.833	0.048	0.045
B24	Government should enforce environment regulations	0.064	0.061	0.831	0.155	0.053
	Bartlett's test of sphericity					0.000
	KMO measure of sampling adequacy					0.862
	Variance (%)	15.181	15.119	15.071	14.753	12.399
	Eigenvalue cumulative % of variance explained	28.756	42.457	55.099	64.736	72.52

Loadings above 0.50 were considered significant loadings with no significant cross loadings. Rotation method: Varimax. Rotation-principal factor analysis

Table 3: Correlations, means and standard deviations

Constructs	EA	SI	ER	EC	GI	GPI	GPB
EA	1.00						
SI	0.291**	1.000					
ER	0.145*	0.282**	1.000				
EC	0.233**	0.413**	0.343**	1.000			
GI	0.224**	0.163**	0.206**	0.148**	1.000		
GPI	0.327**	0.550**	0.452**	0.621**	0.188**	1.000	
GPB	0.174**	0.161**	0.159**	0.202**	0.145**	0.163**	1.00
Mean	3.7580	3.7824	3.6352	3.7131	3.6819	3.6639	3.5900
SD	0.72380	0.65743	0.67466	0.70339	0.72955	0.70422	0.58702

**Correlation is significant at the 0.01 level (2-tailed); *Correlation is significant at the 0.05 level (2-tailed)

varimax rotation with Kaiser Normalisation and principal component analysis. This was done to test the uni-dimensionality of the scales measuring green purchase intention. The extraction of factors was done by inspecting the percentage of variance explained, the scree plot, eigenvalues and factor loadings. Using the Kaiser criterion and the scree plot, five components were extracted accounting for approximately, 72.523% of the variance, a value which is deemed acceptable (Malhotra, 2009). As indicated in Table 2, all constructs reported factor loadings ranging from 0.680-0.793 which are well above the minimum threshold of 0.50 (Maholtra, 2008). As such, no items were removed from the scales due to low factor loadings. The eigenvalues for the extracted factors were all above 1 (6.901, 3.288, 3.038, 2.313 and 1.869). The extracted five factors were labelled social influence (Factor 1), environmental responsibility (Factor 2), Government influence (Factor 3), environmental attitude (Factor 4) and environmental concern (Factor 5). The final factor structure is reported in Table 2.

Correlation coefficients between constructs: Table 3 shows the correlation coefficients between constructs. Spearman's correlation coefficients were computed to examine the interrelationships between constructs. Environmental concern (r = 0.621, p<0.01) and social influence (r = 0.550, p<0.01) showed the highest association with green purchase intention. The study also revealed a moderate association between environmental responsibility (r = 0.452, p<0.01), environmental attitude (r = 0.327; p<0.01) and government influence (r = 0.188, p<0.01) showed a positive but weak association with green purchase intention. The study also revealed a weak but positive relationship between green purchase intention and green purchase behaviour (r = 0.163; p<0.01).

Table 4: Regression analysis

Dependent variable: green purchase intention	Beta	t-values	Sig.	Collinearity statistics	
				Tolerance	VIF
Model 1: independent variables					
Environmental attitude	0.116	3.137	0.002*	0.871	1.148
Social influence	0.289	7.313	0.000*	0.769	1.300
Environmental responsibility	0.214	5.649	0.000*	0.838	1.193
Environmental concern	0.399	10.059	0.000*	0.763	1.311
Government influence	0.011	0.317	0.751	0.914	1.093
Model 2: independent variable					
Green purchase intention	0.173	3.434	0.001*	1.000	1.000

$R = 0.737$; $R^2 = 0.544$; Adjusted $R^2 = 0.538$; R^2 change = 0.544; F change = 90.508; Sig. at $p<0.05$; $R = 0.173$; $R^2 = 0.030$; Adjusted $R^2 = 0.027$; R^2 change = 0.030; F change = 11.791; Sig. at $p<0.05$

Confirmatory factor analysis: In line with the process recommended by Anderson and Gerbing (1988) with the aid of AMOS 22.0, Confirmstory Factor Analysis (CFA) was conducted prior to hypotheses testing using the maximum estimation likelihood. This was done in order to assess the fitness of the measurement model. The measurement model fitness was examined using absolute fit indices that included the chi-square value over degree of freedom (χ^2/df), Goodness-of-Fit Index (GFI), Root Mean Square Error of Approximation (RMSEA) and incremental fit indices that is the Comparative Fit Index (CFI), Incremental Fit Index (IFI) and Tucker-Lewis Index (TLI).

The goodness-of-fit indices of CFA showed that the measurement model fitted well with the data set. Acceptable model fit are indicated by CMIN/DF<3.000, GFI≤0.800, RMSEA≥0.080, IFI≥0.900, CFI and TLI values≥0.900. The study revealed that the Chi-squared value normalised by the degrees of freedom ratio was 2.350, the GFI = 0.817, RMSEA = 0.059, CFI = 0.912, IFI = 0.913 and TLI = 0.903. All reported indices are within the recommended thresholds thereby confirming the fitness of the measurement model.

Regression analysis: Multiple regression analysis (Model1) was conducted in order to examine the relationship between environmental attitude, social influence, environmental responsibility, environmental concern, government influence and green purchase intention. Prior to multiple regression analysis, multi-co linearity tests were conducted by examining the Variance Inflation Factor (VIF) associated with each independent variable. The VIF values did not exceed 10.0 (with the highest being, 1.311) indicating that multi-co linearity did not constitute a problem in the study and the independent variables are not highly correlated (r = 0.90 and above) (Pallant, 2007). A linear regression analysis (Model 2) was also conducted to examine the relationship between green purchase intention and green purchase behaviour. The results are reported in Table 4. The adjusted R^2 in model 1 indicates that approximately, 54% of the variance in

green purchase intention can be accounted for by environmental attitude, social influence, environmental responsibility, environmental concerns and government influence. On examination of the beta weights, environmental concern ($\beta = 0.399$), social influence ($\beta = 0.286$), environmental responsibility ($\beta = 0.214$) and environmental attitude ($\beta = 0.116$) are significant contributers to green purchase intentions. The adjusted R^2 in model 2 indicates that approximately, 3% of the variance in green purchase behaviour can be accounted for by green purchase intentions implying the existence of a gap between intention and actual purchase behaviour.

Hypotheses testing results: The first Hypothesis (H_1) posited that there would be a positive relationship between environmental attitude and green purchase intention. The regression analysis results showed that environmental attitude has a significant positive yet weak influence on green purchase intention ($\beta = 0.116$, $p<0.05$). This result is consistent with the finding of the study conducted by Lee (2008) that showed a weak relationship between environmental attitude and green purchase behaviour. Bamberg (2003) attributes the weak relationship between environmental attitude and green purchase intention to the inability by marketers to distinguish between general and specific attitudes. Thus, to stimulate green purchase intention, marketers need to understand the explicit attitudes that influence the performance of pro-environental behaviours.

The second hypothesis (H_2) predicted that social influence positively influences the purchase intention of Generation Y consumers. The posited hypotheses was supported by a regression analysis result of ($\beta = 0.289$, $p<0.01$). This result is in conformance with that of Lee (2010) that found social influence as the most important factor that influences green purchase behaviour of young consumers. This finding implies that Generation Y consumers in this study are susceptible to social influence in the formation of green purchase intention.

The third hypothesis (H₃) proposed a positive relationship between environment responsibility and green purchase intention. As hypothesised, there was a positive significant relationship between environmental responsibility and green purchase intention ($\beta = 0.214$, $p<0.01$). This finding suggests that Generation Y consumers perceived a high internal locus of control and are confident of their individual efforts to address environmental problems. This finding is coherent with that by Sinnappan and Rahman (2011) who reported high levels of environmental responsibility amongst respondents.

The fourth hypothesis (H₄) predicted that there would be a positive relationship between environmental concern and green purchase intention. The empirical results revealed that environmental concern exerts significant influence on the green purchase intention of Generation Y consumers ($\beta = 0.399$, $p<0.01$), implying that hypothesis 4 was supported by the data. The relationship between environment concern and green purchase intention was also corroborated by the existence of a strong positive correlation ($r = 0.621$, $p<0.01$) between the two constructs. This result inferred that environmental concern exerts the greatest influence on the formation of green purchase intention amongst Generation Y consumers. This finding was also confirmed in a related study conducted by Lee. Thus, this finding also implied that Generation Y consumers understood the magnitude of environmental problems in South Africa and is reflected in their purchase intentions.

The fifth hypothesis (H₅) posited a positive relationship between government influence and green purchase intention. The results of the study found no significant relationship between government influence and green purchase intention ($\beta = 0.011$, $p<0.751$). This finding resonates with that of Sinnappan and Rahman (2011) that identified government role as the last predictor of green purchase behaviour. Thus, this finding suggests that the South African government needs to step-up efforts to promote the performance of pro-environmental behaviours.

The sixth hypothesis (H₆) predicted that there would be a positive association between green purchase intention and actual purchase behaviour. The study found a significant positive relationship between green purchase intentions and actual purchase behaviour ($\beta = 0.173$, $p<0.01$). This finding suggests that favourable green purchase intentions have the potential of translating into green purchase behaviour.

CONCLUSION

The main objective of the present study was to examine the antecedents of green purchase intention of Generation Y consumers. The present study identified environmental concern, environmental attitude, social influence and environmental responsibility as the antecedents of green purchase intention. Based on this finding, it is imperative for marketers to craft green marketing strategies that incorporate these dimensions.

From a theoretical perspective, it is important to note though that green marketing does not override the economic aspect of marketing. Specifically, green marketing needs to be construed as a comprehensive phenomenon aimed at balancing consumption, production and environmental sustainability. The adoption of green marketing is costly in the short run owing to the variability of demand, unfavourable consumer perceptions and massive investment in technology, research and development. In the longterm, green marketing may result in sustainable competitive advantage due to enhanced corporate image, reduction of wastage, increased market share and improved financial performance and ultimately in sustainable development. The rapid growth in environmental concern and the adoption of sustainable consumption patterns are compelling drivers for the adoption of green marketing by corporates.

IMPLICATIONS

Marketing implications: The study identified environmental concern, social influence, selection attributes, environmental attitude and environmental responsibility as the main determinants of green purchase intention among Generation Y consumers in South Africa. Thus, marketers need to structure green marketing messages around these key factors.

Implications to South African environmental policy: Finally, the study emphasises the need for the South African government to engage in more environmental initiatives in order to stimulate green purchase intention.

LIMITATIONS

Although, the present study offers valuable insights pertaining to the antecedents of green purchase intention of Generation Y consumers in South Africa, it is prone to limitations. Firstly, the results of the study are limited to the Generation Y consumers enrolled at higher education institutions in the Gauteng Province in South Africa and thus the findings of the study may not adequately represent the antecedents of green purchase intention of all Generation Y consumers and other generational cohorts in South Africa. In order to enhance the generalisation of the research findings, a broader heterogeneous sample frame that includes other generational cohorts may be utilised to collect data in a

further study. In addition, Nittala (2014) contends that a positive association may exist between educational level and green purchase behaviour. To investigate this possibility, future research may be focused on examining differences in green purchase intention between a student sample and a non-student sample within the Generational Y cohort. It is envisaged that such a study may assist in green market segmentation and formulation of green marketing strategies.

Secondly, the present study was focused on low-involvement green products in the fast-moving consumer goods category. As a result, the findings of this study may not be generalised to green products in the high-involvement category. Thirdly, the posited relations between variables in the present study were verified using a cross-sectional survey design. The cross-sectional design limits the ability of the researcher to observe the changes in antecedents of green purchase intention and green purchase behaviour of Generation Y consumers over time. To complement the findings from the cross-sectional research design, further research could employ a longitudinal research design to investigate variations in antecedent of green purchase intention of Generation Y consumers over time. Such an immersive longitudinal study may also include additional variables such as environmental values, cultural and ethical orientations, scepticism and green atmospherics to gain a detailed insight into the antecedents of green purchase intention of the Generation Y cohort.

Lastly, the unsupported hypothesised relationship between government influence and green purchase intention also provides an avenue for further study. By virtue of its role as a regulator and as a major buyer in industrial markets, a detailed understanding of the influence of government in promoting pro-environmental behaviour has the potential to promote mainstream pro-environmental behaviours.

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