PURCHASE INTENTION TOWARDS ENVIRONMENTALLY FRIENDLY PRODUCTS AMONG CONSUMERS IN SOUTH AFRICA. APPLYING THE THEORY OF PLANNED BEHAVIOUR

HA Koloba

University of the Free State

E-mail: Kolobaha@ufs.ac.za

Orcid ID: https://orcid.org/0000-0002-0025-6300

–Abstract–

The effects of global warming and the changing climatic conditions have increased the need for environmentally friendly products. South Africa, as a developing nation, has not developed sufficient infrastructure for sustainable behaviour and for this reason its consumers have little exposure to sustainability practices compared to the developed countries. The purpose of this study was to investigate the purchase intention of South African consumers towards environmentally friendly products using the Theory of Planned Behaviour. A self-administered questionnaire was distributed among South African consumers and a total of 200 questionnaires were deemed legible (Comment to author: do you mean valid ?) for analysis. Factor analysis was used to identify the factors that influence purchase intention of environmentally friendly products. Correlation analysis was used to establish the relationship among variables. Regression analysis was used to investigate the predictive influence of independent variables on the dependent variable. A statistically significant correlation between the factors that influence purchase intention of environmentally friendly products and purchase intention was found. Regression analysis indicated that attitudes and subjective norms had an insignificant influence on the purchase intention of environmentally friendly products. Conversely, perceived behavioural control, environmental concern and environmental knowledge contributed significantly towards the intention to purchase environmentally friendly products. Tangible action is required to encourage everyone to know and understand the significance of purchasing environmentally friendly products.

Key Words: Purchase intention, environmentally friendly products, South Africa, consumers, theory of planned behaviour,

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1. INTRODUCTION

The effects of global warming and the changing climatic conditions have increased the need for environmentally friendly products. In view of this phenomenon of global warming, it would be in the best interests of everyone that future purchasing decisions of consumers should be based on the consideration of the environment (Ali & Ahmad, 2012). This shift in purchasing decision is demonstrated by a growing awareness regarding the sustainability of the environment where businesses and consumers are searching for alternative methods to mitigate the impact of global warming on natural resources (de Medeiros, Ribeiro & Cortimiglia, 2014). One way of doing this is for the 21st century consumer to choose environmentally friendly products instead of the more traditional ones (Haws, Winterich & Naylor, 2014). This type of consumer, known as 'green consumers', would avoid products that could harm people and the environment. It came as no surprise that recently the focus shifted to green marketing and many industries such as food, energy, construction and automobile manufacturing, among many, started developing environmentally friendly products (Goh & Balaji, 2016). However, it is prudent to note that consumers' decision-making regarding the purchase of environmentally friendly products depends to a large extent on accurate and detailed labelling (Harmann & Apaolaza-Ibáñez, 2012). According to Cheah and Phao (2011), one method of improving green marketing communication is through sponsorships.

Anvar and Venter (2014) posited that green marketing came into effect due to the degradation of the environment which was caused by the abundance of natural resources. Accordingly, a growing number of consumers are becoming conscious of the problems resulting from environmental degradation and, therefore, purchase environmentally friendly products (Leonidou, Leonidou & Kvasona, 2010). Environmentally friendly products are products that "have little or no negative impact on the environment" (Haws et al., 2014). Some consumers are even prepared to pay a premium price for environmentally friendly products due to their concern for the natural environment (Harmann & Apaolaza-Ibáñez, 2012). This assertion is supported by the 2008 Eurobarometer which showed that up to 75% of European consumers indicated their readiness to purchase these products even if they would have to pay more (Brécard et al., 2009). <<On first mention, all the author names should be given >>

Sadly, a myriad of barriers exist between consumers and environmentally friendly products, which may cause the promotion of these products difficult to realise (Shao, Taish & Ortega-Mier, 2016). Nevertheless, the overwhelming view is that businesses and consumers alike should embark on different means to protect and preserve the Earth's natural resources and the environment (Gan, Wee, Ozanne & Kao, 2008). Some companies heeded the call and shifted their focus towards the implementation of environmentally friendly supply, production and distribution (Cambra-Fierro, Hart & Polo-Redondo, 2008).

2. LITERATURE REVIEW

The principle of sustainable development has the potential to help companies to achieve the highest quality of products and services (Banytė, Brazionienė & Gadeikeinė, 2010). However, empirical evidence points to the fact that, among others, excess garbage, pollution, energy and material wastage happen as a result of consumers' consumption behaviour and, therefore, are responsible for the great majority of our environmental problems (Gan et al., 2008). It is against this background that the signed Kyoto Protocol, which came into force in 2005 to fight climate change and global warming, became a point of reference (Cambra-Fierro et al., 2008). This, in turn, has raised consumers' interest in environmental issues such as recycling, energy saving and so on (Leonidou et al., 2010). For this reason, the issue of environmental ethics is prominent in the agendas of organisations and consumers alike (Yadav & Pathak, 2017).

Based on this declaration, it is clear that the environment has become an essential issue that shapes how products are developed, packaged, marketed and disposed of (Gan et al., 2008). One can, therefore, argue that the purchase of environmentally friendly products by consumers can be an effective way to minimise the degradation of the environment (Yadav & Pathak, 2017). The purchase of environmentally friendly products is not only relevant to environmentalists and ecologists, but also to social, economic, political as well as managerial scientists and practitioners (de Medeiros et al., 2014). The reduction of air pollution has the beneficial prospect of improving the health of the ecosystem and individuals, while simultaneously the decrease in carbon dioxide emissions would significantly slow global warming (Harmann & Apaolaza-Ibáñez, 2012). It is encouraging to note a steady increase in the purchase of environmentally friendly products (Ali & Ahmad, 2012).

2.1. Consumer behaviour and purchase intention of environmentally friendly products

Paul, Modi and Patel (2016) describe environmentally-friendly purchase intention as the extent to which consumers show their willingness/readiness to buy environmentally friendly products or adopt what they call 'green choices/alternatives'. Another perspective regarding environmentally friendly purchase intention is the probability and willingness of a consumer to prefer products that are viewed as possessing eco-friendly features over the more traditional ones (Ali & Ahmad, 2012). Harmann and Apaolaza-Ibáñez (2012) stated that consumers may consume environmentally friendly products to show that they have a favourable attitude towards these products. Similarly, Cheah and Phao (2011) posit that altruism and motivation of the individual play an important role in the purchase intention of environmentally friendly products.

However, one must be cognisant of the fact that not all consumers who manifest a positive attitude towards environmentally friendly products necessarily purchase them (Shao et al., 2016). Scott and Vigar-Ellis (2014) found that notwithstanding the fact that consumers had knowledge and believed in the benefits of environmentally friendly products, their behaviour reflected limited action because less than 50 percent of them reused packaging and one in three recycled packaging. The above findings affirm the view of Gan et al. (2008) that being environmentally concerned does not necessarily manifest an association with a change in consumption behaviour towards environmentally friendly products. Plausible reasons could be the low income of consumers or the unavailability of the products (Paul et al., 2016) <<On first mention, all the author names should be given >>. However, there is evidence that concern for the natural environment plays a vital role when consumers decide to purchase or not to purchase environmentally friendly products (Harmann & Apaolaza-Ibáñez, 2012).

2.2. Theory of planned behaviour

The Theory of Planned Behaviour (TBP) contends that intentions precede the behaviour of a person (Ajzen, 1991). According to the TBP, the formation of intentions is described through an individual's attitude towards the behaviour, the subjective norms such as the views of friends and family, and the individual's perception of behavioural control. In support of the TBP, Paul et al. (2016) are of the view that when there is an expectation of a shift in attitude towards environmentally friendly products, the likelihood is that the intention to purchase them would increase. Similarly, when consumers are of the view that someone

important to them endorses the purchase of environmentally friendly products, they are more likely to adopt the behaviour. Young, Hwang, McDonald and Oates (2010) caution that when consumers adopt an environmentally friendly lifestyle which is sustainable, they engage in an increasing decision-making process that is very complex and difficult. Previous research on consumer behaviour has shown that intention is the best predictor of behaviour. This study, therefore, used the elements of TPB, namely attitudes, subjective norms and perceived behavioural control to investigate the purchase intention of environmentally friendly products among consumers in South Africa. In addition, environmental knowledge and environmental concern are also known to influence the purchase intention of environmentally friendly products.

Paul et al. (2016) pointed out that empirical evidence indicated that consumers in the developed world tend to be more concerned about the environment than those in the developing world. It therefore came as no surprise that most studies on consumers' purchase intentions regarding environmentally friendly products were conducted mainly in the developed world (Yadav & Pathak, 2017). South Africa, as a developing nation, has not developed sufficient infrastructure for sustainable behaviour and, for this reason, its consumers have little exposure to sustainability practices compared to the developed countries (Scott & Vigar-Ellis, 2014). This situation occurs even though South Africa is one of the biggest polluters of the planet regarding greenhouse gas emission, being ranked 14th in the world (Borel-Saladin & Turok, 2013). The purpose of this study was to investigate the purchase intention of South African consumers towards environmentally friendly products using the Theory of Planned behaviour.

3. METHODOLOGY

The researcher embarked on an intensive literature review to collect secondary data. Furthermore, to collect primary data, this study adopted a quantitative approach which is systematic and uses statistical techniques to analyse data. The researcher distributed self-administered questionnaires among South African consumers. The Statistical Package for Social Sciences (IMB Version 25) was used to analyse data. Descriptive statistics was used to analyse the demographic data of participants. Factor analysis was used to identify the factors that influence purchase intention of environmentally friendly products. Correlation analysis was used to establish the relationship among variables. Regression analysis was used to investigate the predictive influence of independent variables on the dependent variable.

3.1. Sample

The sample comprised consumers in South Africa. A probability sampling technique, which gives respondents an equal chance of participating in a study, was used to gather data.

3.2. Measuring instrument

The questionnaire was developed after taking items from previous similar studies. Section A of the questionnaire comprised statements requesting the demographic information of participants. Section B comprised statements regarding factors influencing purchase intention of environmentally friendly products, whereas Section C comprised statements measuring purchase intention for environmentally friendly products. In Sections B and C, a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) was used.

3.3. Data collection

The researcher distributed the questionnaires in shopping malls in one province of South Africa. A random invitation of participants was followed. The participants completed the questionnaires in the presence of the researcher and in this way increased the response rate. A total of 200 questionnaires were deemed legible *(Comment to author: do you mean* valid *?)* to use.

3.4. Reliability and validity analysis

Cronbach's alpha test was used to determine the reliability of the measuring instrument. According to Nunnally (1978), the reliability is acceptable when the value is 0.7 or above. The reliability values of the constructs, namely attitude (0.885), subjective norms (0.917), perceived behavioural control (0.817), environmental concern (0.719), environmental knowledge (0.800) and purchase intention (0.924) were above the recommended 0.7 value. Furthermore, the face, content and convergent validity of the measuring instrument were established. Two experienced researchers checked the instrument for errors and ensured that the construct items measure what they are intended to. Factor analysis was used to check whether the items loaded on the factors. The individual item loading for the constructs ranged between 0.415 and 0.905, thus above the recommended 0.4 value (Pallant, 2013). Table 1 provides the Cronbach's alpha values and item loadings.

4. ETHICAL CONSIDERATIONS

In line with the guidelines of academic research, the researcher complied with several ethical considerations. Before the participants participated in the study, the researcher explained the purpose of this research. Among others, it was explained that participation was voluntary and that they may withdraw at any time without repercussions. Furthermore, the researcher assured them that they would remain anonymous, as the study was for academic purposes only. The participants were also informed that the results would be reported in an aggregate format.

5. RESULTS

5.1. Sample profile

Out of the 200 questionnaires analysed, 61.5% (n=123) of participants were females and 38.5% (n=77) males. The participants' age ranged between 18 and 73 years. In terms of race, the majority of those who participated were black, comprising 87.5% (n=175) of the total, followed by whites, comprising 8%, and lastly coloureds, comprising 4.5% (n=9). Furthermore, in terms of qualifications, the majority of participants had a degree, comprising 55.5% of the total.

5.2. Factor analysis

To establish the factorability of data, the Kaiser-Meyer-Olkin measure of sampling adequacy and Bartlett's test of sphericity were performed on Section B and C of the questionnaire. In Section B, the KMO value of 0.841 indicated that the data were acceptable (Pallant, 2013) and Bartlett's test of sphericity was significant at 0.000, supporting the factorability of the data (Malhotra, 2010). Five factors that may influence purchase intention of environmentally friendly products were extracted and labelled attitude, subjective norms, perceived behavioural control, environmental concern and environmental knowledge. The five factors accounted for 61.238% of the variance explained. Table 1 provides a detailed report on the factor structure. Similarly, in Section C of the questionnaire the KMO value of 0.909 indicated that the data were acceptable (Pallant, 2013) and Bartlett's test of sphericity was significant at 0.000, supporting the factorability of the data. One factor, labelled purchase intention of environmentally friendly products, was extracted and accounted for 65.429% of the variance explained.

Table 1: Scale reliability

Research constructs		Descriptive		Cronbach's test		Factor
		Mean	SD	Item-total	α value	
Perceived behavioural	PBC1	3.846	0.89	0.820		0.757
	PBC2			0.816		0.743
	PBC3			0.822		0.710
	PBC4			0.810		0.691
	PBC5			0.826		0.501
	PBC6			0.830		0.466
	PBC7			0.832		0.452
Subjective norms	SN1	3.236	0.99	0.890	0.917	-0.905
	SN2			0.891		-0.902
	SN3			0.905		-0.848
	SN4			0.899		-0.818
	SN5			0.906		-0.768
Attitudes	ATT1	3.580	0.95	0.749	0.811	0.830
	ATT2			0.810		0.730
	ATT3			0.754		0.702
	ATT4			0.758		0.616
	ATT5			0.800		0.415
Environmental concern	EC1	4.285	0.73	0.660	0.719	0.817
	EC2			0.657		0.706
	EC3			0.649		0.686
	EC4			0.664		0.679

Environmental	EK1	3.289	1.00	0.760	0.807	0.889
	EK2			0.755		0.885
	EK3			0.799		0.503
	EK4			0.748		0.448
	EK5			0.781		0.418
Purchase intention	PI1	4.07	0.77	0.913	0.924	0.843
	PI2			0.915		0.833
	PI3			0.912		0.828
	PI4			0.915		0.814
	PI5			0.912		0.800
	PI6			0.911		0.800
	PI7			0.915		0.796
	PI8			0.919		0.755

PBC: Perceived behavioural control items; SN: Subjective norms items; ATT: Attitudes items; EC: Environmental concern items; EK: Environmental knowledge items; PI: Purchase intention items

5.3. Correlation

Correlation analysis was conducted to establish whether there was any significant relationship between the factors that may influence the purchase intention of environmentally friendly products. A statistically significant correlation between the factors that influence purchase intention of environmentally friendly products and purchase intention was found. The correlation matrix in Table 2 revealed a strong correlation (0.542) between attitudes and purchase intention of environmentally friendly products at p<0.001. A moderate correlation (0.363) between subjective norms and purchase intention of environmentally friendly products existed, whereas a strong correlation (0.665) between perceived behavioural control and purchase intention of environmentally friendly products was found. These are all factors that describe the Theory of Planned Behaviour (TPB). This finding is consistent with Paul et al. (2016) when they state that a shift in individuals' attitude towards environmentally friendly products and an indorsement by someone that they regard as important may influence the purchase

of environmentally friendly products. This finding is a step in the right direction. Furthermore, correlation analysis in Table 2 revealed a moderate relationship (0.452) between environmental concern and purchase intention of environmentally friendly products. These results support the findings of Harmann and Apaolaza-Ibáñez (2012) that when people are concerned about the environment, they tend to purchase environmentally friendly products. On the other hand, correlation analysis revealed a strong relationship (0.544) between environmental knowledge and purchase intention of environmentally friendly products. Consistent with the findings of Mostafa (2007), these results confirm that people's knowledge of the environment, attitude and concern for the environment influence the purchase of environmentally friendly products.

Table 2: Correlation analysis

		ATT	SN	PBC	EC	EK	PI
Attitudes	Pearson correlation	1					
	Sig. (2-tailed)						
	N	200					
Subjective norms	Pearson correlation	0.486**	1				
	Sig. (2-tailed)	0.000					
	N	200	200				
Perceived behavioural control	Pearson correlation	0.675**	0.382**	1			
	Sig. (2-tailed)	0.000	0.000				
	N	200	200	200			
Environmental concern	Pearson correlation	0.370**	0.189**	0.373**	1		
	Sig. (2-tailed)	0.000	0.008	0.000			
	N	200	200	200	200		
Environmental knowledge	Pearson correlation	0.563**	0.391**	0.540**	0.294**	1	
	Sig. (2-tailed)	0.000	0.000	0.000	0.000		
	N	200	200	200	200	200	
Purchase intention of environmentally friendly products	Pearson correlation	0.542**	0.363**	0.665**	0.452**	0.544**	1
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	
	N	200	200	200	200	200	200

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

5.4. Regression

Multiple regression analysis was conducted to establish whether attitudes, subjective norms, perceived behavioural control, environmental concern and environmental knowledge influence purchase intention of environmentally friendly products among South African consumers. As depicted in Table 3, multi-collinearity issues were met. The tolerance values ranged between 0.431 and 0.827, which is not less than 0.10, and the variance inflation factor (VIF) ranged between 1.209 to 2.322, which is not more than 10 (Pallant, 2013). The results of the regression analysis indicated that attitudes (Beta = 0.039) and subjective norms (Beta = 0.063) had an insignificant influence on the purchase intention of

environmentally friendly products among South African consumers. Conversely, perceived behavioural control (Beta = 0.423), environmental concern (Beta = 0.196) and environmental knowledge (Beta = 0.210) contributed significantly towards the intention to purchase environmentally friendly products. This finding was in line with what Young et al. (2010) found. Their study revealed that while consumers were aware of environmental issues, they found it very difficult to translate that into purchase decision. This could be interpreted as suggesting that even though they were environmentally aware, their attitude did not force them to purchase environmentally friendly products. Table 3 provides the results of multiple regression analysis.

Table 3: Multiple regression analysis with purchase intention of environmentally friendly products as dependent variable

Model Independent variables	Unstandardised coefficients		Standardised coefficients			Collinearity statistics	
	B	Std error	Beta	t	Sig.	Tolerance	VIF
(Constant)	0.925	0.267		3.472	0.001		
Attitudes	0.039	0.075	0.039	0.513	0.609	0.431	2.322
Subjective norms	0.045	0.042	0.063	1.089	0.277	0.490	2.040
Perceived behavioural control	0.345	0.057	0.428	6.047	0.000*	0.740	1.351
Environmental concern	0.227	0.063	0.196	3.602	0.000*	0.827	1.209
Environmental knowledge	0.167	0.050	0.210	3.345	0.001*	0.621	1.610

*$p<0.05$ Dependent variable: Purchase intention of environmentally friendly products. F = 43.17; R = 0.727; R^2 = 0.529; Adjusted R^2 = 0.517

6. DISCUSSION

There is an unprecedented need to purchase environmentally friendly products. The status quo cannot remain. The survival of future generations depends on how the current generation preserves the natural resources. The results of this study indicated that the consumer in South Africa regards this issue as very serious. As indicated by the mean score (x = 4.07) in Table 1, consumers in South Africa manifest intention to purchase environmentally friendly products. This could be

the beginning of good things should they follow up on their intention and purchase these products. This assertion is made since the market share for environmentally friendly purchases is a measly 5% (Young et al., 2010). South Africa, like other countries around the world, is vulnerable to natural disasters. In the recent past we have observed the devastations brought by drought, floods and rising sea levels. The recent phenomenon being the floods that claimed the lives of many people in the KwaZulu-Natal and Eastern Cape provinces of South Africa. Past studies have revealed a direct correlation between the degradation of the environment and the consumption of products harmful to the environment.

The results of the study through correlation analysis indicated a positive direct relationship between the factors and the purchase intention of environmentally friendly products. Furthermore, regression analysis shows that perceived behavioural control, environmental knowledge and environmental concern had a predictive influence on purchase intention of environmentally friendly products. In line with this, Mostafa (2007) found that environmental knowledge, environmental concern and attitude had a predictive influence on purchase intention of environmentally friendly products. However, in the case of attitude, the South African consumers' attitude showed an insignificant predictive influence on intention to purchase environmentally friendly products. One plausible reason could be cultural differences between the two nations. (*Comment to author: which two nations? State* South Africa and ...) Young et al. (2010) referred to this as the "attitude-behaviour gap" or values and action gap. This is when consumers indicate that they are very much concerned about the environment but lack the courage to translate it into purchase of environmentally friendly products. Nonetheless, it is encouraging to observe that South African consumers are knowledgeable and concerned about the environment. One could only hope that the prospects for purchasing environmentally friendly products will improve.

7. LIMITATIONS AND FUTURE RESEARCH

Limitations are a hallmark of all research. Therefore, like other studies, this study has limitations. Firstly, the survey was conducted in only one province of South Africa and, therefore, the views of the participants do not necessarily represent those of consumers in South Africa in entirety. It is recommended that future studies should broaden the scope and include participants from other provinces. Furthermore, the study only used selected factors that may influence the purchase intention of environmentally friendly products. Purchase intention can be influenced by a myriad of factors that did not form part of this study. Therefore,

future research should include factors such as income level, education level and many others.

8. RECOMMENDATIONS AND CONCLUSIONS

The findings revealed that consumers in South Africa have the intention to purchase environmentally friendly products. The question is whether they will walk the talk? Perhaps environmentally friendly products are beyond the means of the majority of South Africans, since they are perceived as expensive. Therefore, government and business should devise means to ensure that these products are affordable for many South Africans. Based on the result of this study, future research should investigate other reasons that cause consumers to not change their attitudes, even though they are aware of the environmental issues and being concerned about them. Tangible action is needed to encourage everyone to know and understand the significance of purchasing environmentally friendly products. Government should intensify compliance with the laws regulating the usage of harmful products. These laws are meaningless without enforcement.

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