



# Analysing the impact of green marketing strategies on consumer purchasing patterns in Mauritius

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## Abstract

**Purpose** – The purpose of this paper is to analyse the impact of green marketing strategies on consumer purchasing patterns in Mauritius. The present research also explores the possibility of introducing greener patterns of consumption into contemporary lifestyles in the current context where green products are increasingly available.

**Design/methodology/approach** – This paper reviews the theory of green marketing to identify how customers are persuaded to purchase greener products. It also reports the empirical results of a consumer survey on green marketing strategies by the questionnaire method. The survey questionnaires were administered to 150 respondents visiting various hypermarkets and supermarkets. The questionnaires were processed and analysed with the statistical programme SPSS, using descriptive, correlation and factor analysis.

**Findings** – The findings provide some interesting clues regarding customers' perceptions on environmental concerns and green products. Further findings suggest that most consumers have expressed a great interest in the protection of the environment and they are strongly concerned about the environment and its degradation. Hence, business executives should host workshops and seminars so as to educate customers on environmental protection and environmental-friendly products. Results also indicated an overall positive correlation between effective green marketing strategies and customers' purchasing patterns for green products. Therefore, there is a powerful urge for companies to promote green branding, eco-labelling and green packaging strategies in order to encourage a greener pattern of consumption among consumers in Mauritius.

**Practical implications** – The paper suggests a stepping approach to consumer purchasing patterns for greener products could be exploited more within consumer groups that have strong environmental concerns and beliefs in Mauritius. The results also offer precious knowledge on the effectiveness of green marketing strategies which can assist both private and public enterprises in developing and designing appealing green products that will be favoured by customers.

**Originality/value** – Although green marketing has been an important research topic for several decades, hardly any research has been focused on the impact of green marketing strategies on consumer purchasing patterns in the context of developing countries. This paper has analysed the strength of environmental concerns and beliefs and has provided some insights on green marketing strategies and the various managerial implications have been fully addressed in order to favour the consumption of greener products in Mauritius.

**Keywords** Mauritius, Developing countries, Consumer behaviour, Marketing strategy, Green customers, Green marketing strategies, Green consumer purchasing patterns

**Paper type** Research paper



## Introduction

Green marketing has been an important academic research topic for at least three decades (Peattie, 1995; Polonsky and Mintu-Wimsatt, 1995; Schlegelmilch *et al.*, 1996; Fuller, 1999; Kalafatis *et al.*, 1999; Hartmann *et al.*, 2005). Similarly, as pointed out by

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Papadopoulos *et al.* (2010), green consumers have become a driving force behind how companies do business, and these ecological customers are creating a new economy around the globe. Indeed, the “green consumer” concept was the epicentre of the environmental marketing strategies as well as a key concept, on which prominent marketing academicians and professionals focused at the end of 1980s and in the early 1990s (Diamantopoulos *et al.*, 1994; Elkington, 1994; Shrivastava, 1995; Porter and Van der Linde, 1995; Chan and Lau, 2000). Throughout the 1990s, researchers continued to aver that the “green market appeared to be real and growing” (Menon and Menon, 1997), and “expanding at a remarkable rate” (Schlegelmilch *et al.*, 1996). In a similar vein, many green products have regained consumer confidence in the 2000s (Gurău and Ranchhod, 2005).

According to Gupta and Ogden (2009), the industry for green products was estimated at over \$200 billion in 2006. Various researchers have spurred interest in issues surrounding environmental conservation and protection in the marketplace (Mintel, 2006). Together, with the continuous rise of growing global concern about the environmental quality, green marketing has picked up momentum (Stafford, 2003; Ottman *et al.*, 2006). As highlighted by Papadopoulos *et al.* (2010), green marketing is expected to strengthen and influence the market even more in Greece and the “green market” counts about \$250 billion in USA. The population of Mauritius comprising both consumers and producers has equally expressed increasing concerns about the environmental impact of products in the recent years (Juwaheer, 2005). Likewise, a wide range of green products including organic foods, recyclable paper, eco-light bulbs, eco broom, environmentally designed tyres and eco-friendly detergents amongst others are now available in Mauritius. Hence, the emergence of green products can be seen throughout the different industries in Mauritius starting from the detergents industry to the automobile industry. Similarly, different companies, like for example, Permoglaze, Mauvillac, Michelin and Toyota Mauritius Ltd are continuously engaged in the protection of the environment and are adopting green advertising strategies and practices in Mauritius. In this respect, there is considerable evidence that most markets in developing economies including Mauritius have been influenced by green consumer behaviour (Hardin, 1993; Mainieri and Barnett, 1997; Juwaheer, 2005).

The present study therefore explores green marketing strategies and its influence on consumer purchasing patterns in Mauritius. Several research works have explored the concept of green marketing and consumer buying behaviour in developed countries (Polonsky, 1994; Peattie, 1995; Welford, 2000; Kotler *et al.*, 2005). Indeed, green marketing and consumer buying behaviour have been over-researched as separate concepts in the field of marketing. Generally, there is an increase in the ecological conscience of consumers which results in the increased demand for green products, a phenomenon that is well exploited by a great number of enterprises offering green products and services (Vandermerwe and Oliff, 1990; Salzman, 1991; Ottman, 1992; Peattie and Ratnayaka, 1992; Chan, 1999). No doubt, considerable literature on green marketing and consumer buying behaviour is available worldwide, but there is limited research which sheds light on green marketing strategies and its impact on green consumer purchasing patterns in the context of developing countries. Hence, this study aims to fill the gap in the existing body of literature pertaining to both green marketing strategies and green consumer purchasing patterns by choosing Mauritius as a case study. Thus, the results of this study will give a new impetus to the findings of previous studies on green marketing and green consumer purchasing patterns in Mauritius.

### **Objectives of the study**

The primary objective of the research is to investigate the extent to which green marketing strategies influence the consumption of green products in Mauritius. The main objectives of the study are outlined below:

- To analyse the relationship between customers environmental beliefs and their environmental behaviours in Mauritius.
- To examine the extent to which green packaging and branding can promote consumption of green products in Mauritius.
- To investigate whether green advertising can introduce a greener pattern of consumption amongst consumers in Mauritius.

### **Literature review**

#### *Green marketing and strategic greening of products*

Today's marketplace is increasingly attractive for marketers of green products. Consumers are expected to double their spending on "green" products, reaching \$500 billion in 2009 (CBS News, 2008) and many consumers state that they are willing to pay a price premium for these products (Wüstenhagen, 1998; Vlosky *et al.*, 1999; Veisten, 2007). Recent studies indicate that 93 per cent of consumers stated they have participated in tremendous efforts to sustain environment (Hartmann Group, 2007), 37 per cent felt highly concerned about the environment (California Green Solutions, 2007). Kals *et al.* (1999) identified that the motivational instrument that protects the natural environment is the human feeling of nature. Green marketing includes a variety of activities such as product modification, changes in the production process, packaging changes and as well as modifying advertising (Polonsky, 1994). Likewise, Peattie (1995) and Welford (2000) described green marketing as being the management process that identifies, anticipates and satisfies the needs and wants of customers and society in a profitable and sustainable way. Corporations will have to find solutions to environmental challenges through marketing strategies to develop ecologically safer products, recyclable and biodegradable packaging, better pollutions controls and more energy-efficient operations in order to remain competitive (Czinkota and Ronkainen, 1992; Richards, 1994; Kotler and Armstrong, 1995). Environmentally friendly products are products which intend to reduce negative impacts on the environment and these products provide considerable enhancements all over the whole product life cycle (Hindle *et al.*, 1993; Shrivastava, 1995; Pujari and Wright, 1996). Various researchers in the area of green marketing have also questioned the influence of practicing environmentalism in business (Drumwright, 1994; Wasik, 1996), consequent to accelerating the number of green consumers globally, marketers have continued to grapple with the question of understanding consumer's buying intention towards green products (D'Souza *et al.*, 2006).

#### *Consumer beliefs and environmental behaviour*

The environmental problems seem to concern all active citizens, enterprises and institutions all over the world much more than 30 years ago (Papadopoulos *et al.*, 2010). International researchers show that the consumers worry more about the environment and have gradually changed their behaviour (Arbuthnot, 1977; Simon, 1992). Thus, a new market for green or sustainable products has emerged, which is further strengthened by active consumers, since it is a way to contribute to the protection of

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the environment (Cornwell and Schwegler, 1995; Cleveland *et al.*, 2005). Furthermore, consumer values and beliefs need to be thought about when exploring the influences affecting purchasing decisions (Hoyer and MacInnis, 2004). Values are considered as stable beliefs that a given behaviour is desirable or good as put forward by Pickett-Baker and Ozaki (2008) and one example of desirable behaviour is to value the environment. Environmental behaviour is entailed by the environmental values which can influence personal norms significantly and guide consumers for environmental behaviours (Stern, 2000; Reser and Bentrupperbaumer, 2005). Correspondingly, the Theory of Planned Behaviour proposed by Ajzen's (1991) demonstrates that the environmental beliefs shape attitudes towards behaviour, which in turn is translated into buying intentions. Research has also shown that the consumers who are interested in environmental matters reject excellent technical products because they are conscious of the damaging consequences in the environment (Peattie, 1995, 1999; Bernstein, 1992; Drucker, 1973).

However, Pickett-Baker and Ozaki (2008) have argued that people who are environmentally conscious do not necessarily behave in an ecological manner. Consumers purchasing decisions on environmental grounds is highly debatable as it is suspected that claims of strong views on environmental issues are not necessarily translated into direct actions relating to purchasing behaviour of green products and services (Louchran and Kangis, 1994). Empirical evidence from past studies have shown that despite pro-environmental attitudes, intention to recycle, concern about car pollution and willingness to pay more for environmentally friendly products, few consumers have translated these attitudes into regular green buying behaviour (Intel, 2006). For marketers of green products, the gap between pro-environmental attitudes and green purchase behaviour is a daunting challenge where, research in environmental consumerism has produced inconclusive evidence in support of consumer attitude theory with mixed results that support both a positive relationship between attitude towards the environment and behaviour (Arbuthnot, 1977; Kellgren and Wood, 1986) as well as weak relationships (Wicker, 1969; Webster, 1975; Mainieri *et al.*, 1997; Tanner and Kast, 2003).

#### *Understanding customers' responsiveness towards green packaging and eco-labelling*

As argued by Barber (2010), as people are becoming more aware of the damage caused to the environment, environmental concerns of the industry have been identified as a critical issue that packaging companies must contend with (Amorim, 2009; Nomacorc, 2008). The concept of being environmentally friendly or green will have an effect on all parts of the business from the conception of products to the use and subsequent disposal of the products by customers (Prahalad and Hamel, 1994). According to Delia (2010), packaging can be considered ecological depending on the degree of environment pollution. Furthermore, Morris *et al.* (1995) have stated that specific products claims on product labels like "eco-friendly", "recyclable", "biodegradable" and "ozone friendly" used by marketers enabled companies to communicate the environmental benefits of products to their customers. Packaging is one of the key components that can provide a competitive advantage in the marketplace for many consumer products and even a low investment in changing the package can drive significant gains in brand sales compared to advertising and promotion activities (Barber, 2005, 2010).

Thorgersen (2002) and Rashid (2009) have stated that eco-labels are valued as an input to purchase result and eco-labels are considered as an important factor that will

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influence consumers in their purchasing patterns. However, research has also shown that consumers expressed confusion and confused about various green terminologies which are used on product labels (Robertson and Marshall, 1987; Muller, 1985; West, 1995; Casewell and Modjuszka, 1996; Wessells *et al.*, 1999). Yet, D'Souza *et al.* (2006) affirmed that environmental labelling on products is an effective way of communicating to the customer the specific benefits and characteristics of the product and the claim of product safety. Increasingly, the ability of recycling packaging elements is of key concern to both retailers and consumers. For example, in the USA, there are more than 300 million cases of wine bottles sold each year; virtually none of those bottles is reused, with an estimated 75 per cent ending up in landfills (*Wine Business Monthly*, 2009).

Indeed, Laroche *et al.* (2001) suggested that ecologically conscious consumers will try to protect the environment in different ways, like for example, checking that a package is made of recycled material and engaging only in the purchase of green products. Certain key markets such as Canada, where distribution is controlled by government monopolies, have mandatory targets to achieve in terms of environmentally friendly packaging and glass recycling. For example, this is prompting the wine sector to respond with innovation and adopt packaging solutions that include tetra packs, cans and other sustainable alternatives to glass (CBO, 2006). Moreover, consumers have also indicated a lack of trust and growing confusion over the plethora of government, corporate and third-party eco-symbols on products (Bhaskaran *et al.*, 2006; Terrachoice Environmental Marketing, 2009). Adding to the confusion are the increasing numbers of companies developing their own proprietary labels in order to differentiate themselves in the marketplace. There is a growing call for clearer communication about consumer benefits on green products (Pickett-Baker and Ozaki, 2008). The recent State of Green Business Forum (2010) reported that green information needed to be accessible in an easily understandable manner right at the point of purchase (Mazur, 2010). However, a recent *Wall Street Journal* article entitled "As eco-seals proliferate, so do doubts" describes "the increasing confusion among consumers about the veracity of green marketing promises" (Bounds, 2009). The large number of symbols currently used, new descriptive terms such as "sustainable" and "low-carbon footprint", and the questionable validity of some green claims can only add to consumer scepticism (Borin *et al.*, 2011).

#### *The effect of green branding on consumer buying patterns*

According to First and Khatriwal (2008), the concept of green branding is almost unexplored by green marketers. Yet, several studies demonstrate that the growing environmental awareness of consumers have encouraged them to be more inclined towards brands that seemed to be environmental friendly (Eagly and Kulesa, 1997; Swenson and Wells, 1997). Brands can change consumer attitudes to greener consumption (Travis, 2000; Pickett-Baker and Ozaki, 2008). Likewise, Ottman (1998) has stated affective marketing has the power to shift passive green consumers who are keen to pay premium prices for environmental products to greener consumption patterns. Effective green positioning involves brand communication and differentiation based on functional attributes and emotional benefits (Aaker, 1996; Hooley *et al.*, 1998; Kotler, 2000; Hartmann *et al.*, 2005). According to Pickett *et al.* (1995), if green brand attributes are not well communicated, environmentally sustainable products will not be commercially successful. Similarly, other researchers have suggested that green positioning is an important element in the success of green

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branding strategies (Coddington, 1993; Meffert and Kirchgeorg, 1993). A car brand, for example, may be considered environmentally sound if the models cause significantly lower emissions than competitors.

Several studies have addressed the value perception of selected environmental product attributes (Roozen and De Pelsmacker, 1998; Wustenhagen and Bilharz, 2006) and earlier research in western countries supported that consumers have positive green perceptions on eco-branded products such as Body Shop and Green Energy in the USA and Germany (Wustenhagen and Bilharz, 2006). Furthermore, functional positioning strategies can have some general disadvantages, for example, they can often be easily imitated, they assume rational buyer decisions and they may reduce the flexibility of brand differentiation (Kroeber-Riel, 1991; Aaker, 1996). However, several studies have shown that consumers tend to have a negative response towards green products due to a perceived trade-off between functional performance of the brand and its effects on the environment (Schlegelmilch *et al.*, 1996; Fuller, 1999). Indeed, the significant factor motivating consumers to change actual purchase behaviour to buy eco-friendly products is emotional brand benefits (Hartmann *et al.*, 2005).

*The effect of green advertising on consumer purchasing patterns*

Pickett-Baker and Ozaki (2008) found that, except for cleaning products, most consumers cannot identify greener products. This may be because most green messages labels are falling flat and not making an impression in the minds of shoppers (Green Biz Staff, 2009). Hence, green communication is a major area of weakness for green marketers. Carlson *et al.* (1993) have affirmed a parallel rise in environmental advertising accompanied by greater consumer interest in the environment. In fact, advertising terms such as “recyclable, environmentally friendly, ozone safe, biodegradable” can be seen regularly in green advertisements and consumers are often exposed to such messages, whilst some of these messages also pertained to consumer resistance (D’Souza, 2005). Likewise, Kilbourne (1995) has argued that the credibility of green advertisements is relatively low. Nevertheless, Mathur and Mathur (2000) and Habib *et al.* (2010) argued that consumers are more positive towards environmental friendly products due to the fact that environmental messages in advertisements are more credible. Besides, D’Souza *et al.* (2006) have outlined that marketers have the responsibility to publicize environmental information as customers seek more concrete and authenticated product information from these advertisements to guide them in their purchasing decision (Chan, 2004). It has also been found that providing information on environmental issues does not necessarily encourage positive environmental attitudes as pointed out by Pooley and O’Connor (2000) but the emotional content in advertisements can also increase customers’ attention towards these advertisements (Hawkins *et al.*, 1998). Green branding communication strategies should be aimed at associating the brand with pleasant, emotional imagery of nature, while presenting information on environmentally sound product attributes. However, Rose (2002) has affirmed that although some manufacturing companies cannot influence consumer choice towards green products, yet, they can shape green consumption patterns in the way the products are being offered and marketed. Similarly, marketers should emphasize the ecological knowledge in their organizations, their products offerings and their advertising campaigns in order to achieve the goal of changing consumer purchasing behaviour (Mendleson, 1994).

The above literature review has provided an insightful review of green marketing and strategic greening of products. Several concepts like green packaging, eco-labelling

and green branding strategies have been fully discussed and the significance of green purchasing patterns has been stressed in the light of the changing greener consumption patterns among customers.

#### *Research methodology*

In line with this study's main objective of analysing the impact of green marketing strategies on consumer purchasing patterns in Mauritius, a questionnaire comprising of several sections was developed. The various sections of the questionnaire relates to the influence of general environmental beliefs and behaviour on green consumption patterns, customers' perceptions on green branding, eco-labelling and environmental packaging, consumers exposure on environmental advertisements and its impact on green consumption behaviour and the last part of the questionnaire has focused on the demographic characteristics of respondents. In this study, consumers' perceptions on green marketing strategies were measured on a five-point Likert Scale (1 = strongly disagree to 5 = strongly agree) and the range of responses for general environmental beliefs was never, sometimes, frequently and always (1 = never to 4 = always). Statistical techniques were used to process the data using descriptive, correlation and factor analysis with the statistical programme SPSS 16.

Factor analysis was carried out on all the statements on customers' perception on green marketing strategies found in the questionnaire relating to customer opinions on green products, pricing strategies of green products, customer opinions on eco-labelling, customers' preferences on green packaging and customers' perceptions on green advertisements. Prior to data collection for the green marketing survey, a pilot test was conducted to ensure comprehensiveness, clarity and reliability of the questionnaire. The pre-testing of the questionnaire was done among ten customers randomly chosen in one hypermarket, resulting in some minor modifications of the wordings of some survey items on eco-labelling and green advertisements. Internal consistency and reliability of the scale was measured by the use of Cronbach's  $\alpha$  (Hair *et al.*, 2000).

#### *Sampling plan*

The targeted population of the study consisted of customers who are above 18 years in Mauritius. The reason is customers above this age are familiar with purchasing of products and they are also empowered in their decisions for choosing the right products between many available choices, therefore, they are more considerate to environmental issues while engaging in their purchasing decisions. The target population sampled was the customers visiting hypermarkets and supermarkets of Mauritius. Owing to the need for a relatively large sample size while at the same time keeping the research costs down, the sample size of this study amounted to 150 customers through the judgemental sampling technique. The response rate for the present study was 77 per cent and face to face interviews were carried with the respondents in specific hypermarkets and supermarkets across the nine districts of Mauritius.

#### *Internal consistency of the questionnaire*

The Cronbach's  $\alpha$  overall value for the entire questionnaire was 0.821 and such a high figure indicates that the questionnaire is a good indicator of what the researcher wants to investigate. According to Hair *et al.* (1995), a coefficient of  $< 0.6$  indicates marginal to low internal consistency and a value of 0.60 or more indicates satisfactory internal consistency reliability (Churchill, 1979).

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## Testable hypotheses of the study

### *Customers' beliefs and green consumption patterns*

According to Reser and Bentrupperbaumer (2005), environmental behaviour is entailed by the environmental values that can influence and guide consumers for environmental behaviours. Moreover, as stated by Schultz and Zelezny (1999) and Stern (2000), environmental attitudes and environmental behaviour are related to people's values, which may provide a basis for the formation of attitudes and act as guidelines for purchasing behaviour. Krarup and Russell (2005) affirmed that strong attitudes regarding a social issue and product category can encourage sustainable buying patterns among customers (Arcury, 1990; Kollmuss and Agyeman, 2002; Barber *et al.*, 2009). Hence, the first hypothesis of the study is listed below:

- H1. There is a significant relationship between customers' beliefs and behaviours towards green consumption patterns in Mauritius.

### *Green labelling and consumer purchasing patterns*

Thorgersen (2002) and D'Souza *et al.* (2006) have stated that environmental labelling on products is an effective way of communicating the product associated benefits. Customers have also perceived eco-labelled products with positive environmental messages better than non-green product alternatives (Rex and Baumann, 2007; Rashid, 2009; Borin *et al.*, 2011). It has equally been anticipated that environmental labels can encourage ecological consumption patterns (Carlson *et al.*, 1993; Casewell and Modjuszka, 1996). Indeed, Nik Abdul Rashid's (2009) study has also shown that awareness of eco-label has positive effect between knowledge of green product and consumer's intention to purchase ecological products. Hence, the second hypothesis of the study is listed below:

- H2. There is a significant relationship between green labelling and consumer purchasing patterns in Mauritius.

### *Green branding and consumer purchase intentions*

According Travis (2000) and Pickett-Baker and Ozaki (2008), brand can change consumer attitudes to green consumer purchasing patterns. As pointed out by Ottman (1998), affective marketing could change passive green consumers who are keen to pay premium prices for environmental products to greener consumption patterns. Rahbar and Wahid (2011) have affirmed that green brands should be used to help consumers differentiate green brands from other non-green brands with the same functions and as highlighted by Hartmann *et al.* (2005), emotional brand benefits associated with green products will persuade customers to purchase eco-friendly products. In this context, the third hypothesis of the study reads as follows:

- H3. There is a significant relationship between green branding and green purchase intention of consumers in Mauritius.

### *Green advertising and green purchase intention*

According to Chan (2004), customers seek credible product information from green advertisements to guide them in their ecological purchasing decisions. Indeed, green advertisements can influence consumers' purchase behaviour by encouraging them to purchase products that do not harm the environment (D'Souza *et al.*, 2006; Rahbar and

Wahid, 2011). Similarly, according to Baldwin (1993), environmental advertisements help to form consumer's values and further translate these values into the purchase of green products. Chase and Smith (1992) and Davis (1994) have also stated that environmental messages in green advertisements can influence the consumer purchasing decisions. Hence, the fourth hypothesis of the study reads as follows:

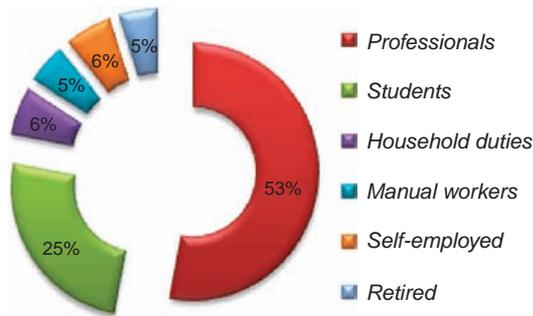
H4. There is a significant relationship between green advertisements and purchase intentions of consumers in Mauritius.

**Empirical findings**

*Part A: Demographic profile of respondents (Figures 1-4)*

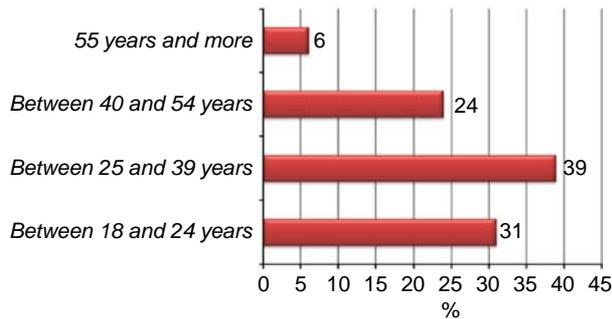
*Part B: Factor analysis and green marketing strategies impacting on consumer purchasing patterns*

A factor analysis was carried on all the statements found in the questionnaire in order to test the dimensionality of the survey instrument. A principal component analysis with Varimax rotation was conducted on 22 items. Only factors with



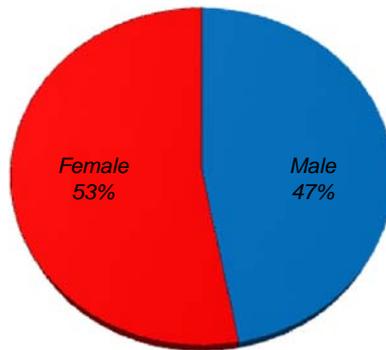
**Figure 1.**  
Occupational classification

**Notes:** In terms of occupational classification, 53 per cent of respondents representing the majority were professionals, followed by students (25 per cent), self-employed (6 per cent), household duties (6 per cent), manual workers (5 per cent) and retired (5 per cent)



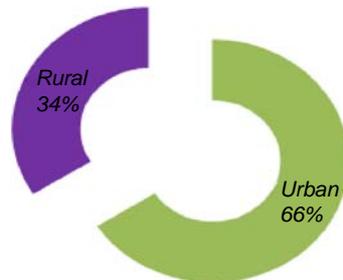
**Figure 2.**  
Age classification

**Notes:** As regards to the age classification of respondents, 39 per cent were between 25 and 39 years, followed by 31 per cent between 18 and 24 years, 24 per cent between 40 and 54 years and 6 per cent were above 55 years or more



**Notes:** From a gender perspective, 53 per cent which represent the majority are female and 47 per cent are male

**Figure 3.**  
Gender



**Notes:** In terms of geographical location, 66 per cent of respondents were from urban region and 34 per cent of respondents were from rural region of Mauritius

**Figure 4.**  
Geographical location

eigenvalue  $\geq 1$  were considered significant and chosen for interpretation. A variable with factor loadings of 0.40 was considered, that is, items  $< 0.40$  were excluded. The Kaiser-Meyer-Olkin measure of sampling adequacy is 0.686 and it can be thus deduced that the sample is adequate. In addition, the Bartlett's Test of Sphericity has a significance of 0.00. In summary, it would mean that all the variables correlates fairly well with all others and none of the correlation coefficients are particular large. Therefore, both the Keiser-Meyer-Olkin measure of sampling adequacy and Bartlett's Test of Sphericity shows that Factor analysis will be useful with the data. From the Varimax rotated matrix, five factors representing 57.76 per cent of the explained variance were extracted from the 21 statements as shown in Table I and some explanations are given regarding the labels assigned to them and one statement was eliminated due to a negative loading.

*Factor 1 – effectiveness of eco-labelling and green products identification*

Factor 1 has an eigenvalue of 4.81 and explains 21.87 per cent of variance. This factor groups six attributes pertaining to the effectiveness of eco-labelling and green products identification in Mauritius. These factors broadly evaluate the importance of eco-labels and the research has depicted that “eye-catching eco-labels” (loading = 0.862), “sufficiency of information on eco-labels” (loading = 0.796), “eco-labels are easy to

**Table I.**  
Factor items and loadings

Factor items	Loadings	Eigenvalues	% of variance explained	Cronbach's $\alpha$
<i>Factor 1 – effectiveness of eco-labelling and green products identification</i>		4.81	21.87	0.742
Eco-labels are eye catching on green products	0.862			
Sufficient information is provided on eco-labels	0.796			
I believe that eco-labels are easy to read	0.790			
Green products are marketed to me in a way which I really find engaging and relevant to my lifestyle	0.773			
Information on eco-labels is accurate for green products	0.744			
It is easy for me to identify green products in Mauritius	0.468			
<i>Factor 2 – intensity of green packaging and branding for ecological customers</i>		2.82	12.84	0.837
I acknowledge that the information on packaging is an important criterion	0.833			
It is important to reuse or recycle the packaging after use	0.831			
Biodegradable packaging is an important consideration for green customers	0.794			
I feel good about buying brands which are less damaging to the environment	0.781			
I trust well-known green branded products in Mauritius	0.518			
<i>Factor 3 – environmental advertisement and green consumption patterns</i>		2.13	9.66	0.593
Green advertisements should promote environmental friendly products in a credible manner	0.811			
The content of environmental advertisements should offer pertinent emotional relevance for green customers	0.666			
Attractive environmental advertisements will encourage me to adopt green purchasing patterns	0.595			
I acknowledge that environmental advertisements are not exaggerated for green products in Mauritius	0.415			
<i>Factor 4 – importance of green products and premium green pricing</i>		1.62	7.37	0.696
I accept as true that a portion of the price for green products goes to a worthy environmental cause	0.781			
I consider that green products are very important in the context of Mauritius	0.734			
I think that it is reasonable to pay a higher price for products that are produced in an ecological way	0.613			
<i>Factor 5 – embedding an eco-image in marketing of green products</i>		1.10	6.02	0.538
I share the opinion that the green products should bear an eco-image in Mauritius	0.541			
There should be more visibility in the way in which green products are marketed in Mauritius	0.489			
Total		12.48	57.76	

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read" (loading = 0.790), "accuracy of information on eco-labels for green products" (loading = 0.774) are important determinants to influence green purchasing behaviour in Mauritius. Similarly, "adding greater relevance to customers' lifestyles through marketing of green products in an engaging manner" (loading = 0.773) and "easy identification of green products" (loading = 0.468) are other considerations for green consumer purchasing patterns in the context of Mauritius.

*Factor 2 – intensity of green packaging and branding for ecological customers*

Factor 2 has an eigenvalue of 2.82 and explains 12.4 per cent of variance. This dimension groups five items which are related to the intensity of green packaging and branding for ecological customers in Mauritius. Consumers have acknowledged that information on packaging is an important criterion for their purchasing decisions in Mauritius (loading = 0.833), they feel it is equally important that packaging can be reused or recycled after use (loading = 0.831). "Biodegradable packaging" (loading = 0.794), "purchase of brands which are less damaging to the environment" (loading = 0.781) and "trust in well-known green-branded products" (loading = 0.518) are other factors to promote greener consumption patterns in Mauritius.

*Factor 3 – environmental advertisement and green consumption patterns*

Factor 3 has an eigenvalue of 2.13 and explains 9.66 per cent of variance. This factor groups four attributes which explains the effectiveness of environmental advertisements towards greener consumption patterns. Consumers share the view that green advertisements should promote environmental friendly products in a credible manner (loading = 0.811), they feel that the content of environmental advertisements should offer pertinent emotional relevance for green customers (loading = 0.666), they will consider attractive environmental advertisements for their purchasing decisions in Mauritius (loading = 0.595) and in turn, they strongly acknowledge that environmental advertisements should not be exaggerated for green products in Mauritius (loading = 0.415).

*Factor 4 – importance of green products and premium green pricing*

Factor 4 has an eigenvalue of 1.62 and explains 7.37 per cent of variance. This dimension groups three attributes which concerns importance of green products and premium pricing for green products. Consumers accept as true that a portion of the price for green products goes to a worthy environmental cause (loading = 0.781), they have highlighted the growing significance of green products in the context of Mauritius (loading = 0.734) and they think that it is reasonable to pay a higher price for products that are produced in an ecological way in Mauritius (loading = 0.613).

*Factor 5 – embedding an eco-image in marketing of green products*

Factor 5 has an eigenvalue of 1.10 and explains 6.02 per cent of variance. The two attributes under this dimension have an impact on green purchasing patterns in Mauritius. Consumers feel that green products should bear an eco-image in Mauritius (loading = 0.541). Moreover, there should be more visibility from various companies in the way in which green products are marketed in Mauritius (loading = 0.489) in order to promote ecological consumption patterns in Mauritius.

*Customers perceptions on environmental concerns and beliefs in Mauritius*

Survey findings have shown that respondents share favourable views on environmental concerns and beliefs in the context of Mauritius and as outlined by

Papadopoulos *et al.* (2010), environmental problems seem to concern all active citizens, enterprises and institutions all over the world much more than 30 years ago. Survey findings have shown that respondents have expressed high environmental concerns on the following: “Human must live in harmony with nature in order to survive” (mean = 4.48); “The balance of nature is very delicate and easily upset” (mean = 4.08) and “Human have to control industrial growth to maintain a healthy economy” (mean = 4.06). Thus, these empirical findings have revealed that the respondents are concerned about the environment in Mauritius. However, respondents have expressed unfavourable views on the following statements pertaining to “Human have the right to modify the natural environment to suit their needs” (mean = 2.24) and “Plants and animals exist primarily to be used by humans” (mean = 2.47) despite being environmental conscious. Likewise, Pickett-Baker and Ozaki (2008) have confirmed that people who are environmentally conscious do not necessarily behave in an ecological manner. In a similar vein, the respondents have shared favourable views on “Humans’ interference with nature often has disastrous consequences” (mean = 3.93) and “Human need to adapt to the natural environment because they can remake it to suit their own needs” (mean = 3.83). Survey findings have shown that respondents have quite favourable opinions pertaining to “The earth is approaching the limit the number of people it can support” (mean = 3.31). Therefore, it can be further implied that people are strongly concerned about the environment and its degradation in Mauritius as shown in Table II.

*Environmental behaviour of consumers in Mauritius*

It is important to note that the range of responses for this section has varied from mean 1 representing “never” to mean 4 representing “always”. Respondents have expressed favourable opinions on environmental behaviour as they usually take their own bags to supermarkets (mean = 3.97). The survey findings have also proved that respondents rarely make use of biodegradable soaps or detergents (mean = 2.66) and they rarely make financial contribution to environmental causes in Mauritius (mean = 2.66). Empirical evidence has also proved that customers will avoid purchasing products from companies that are not environmentally responsible (mean = 2.79) and they will frequently read labels to see if contents are environmentally safe (mean = 2.89). Thus, it can be deduced that respondents exhibit positive environmental behaviour in

Environmental concerns and beliefs in Mauritius	Mean	SD
The earth is approaching the limit the number of people it can support	3.31	1.06
The balance of nature is very delicate and easily upset	4.08	1.16
Human have the right to modify the natural environment to suit their needs	2.24	1.32
The humans’ interference with nature often has disastrous consequences	3.93	1.19
Plants and animals exist primarily to be used by humans	2.47	1.27
Humans have to control industrial growth to maintain a healthy economy	4.06	1.16
Human must live in harmony with nature in order to survive	4.48	1.02
Human need to adapt to the natural environment because they can remake it to suit their own needs	3.83	1.09
There are limits to which the industrialized society can expand	4.06	1.04
Mankind is severely abusing the environment	4.22	1.15

**Table II.**  
Environmental concerns  
and beliefs in Mauritius

Mauritius. Based on the survey findings, customers frequently engage in the purchase of products in packages that can be refilled (mean = 3.03), they also recycle bottles, cans or glass in Mauritius (mean = 3.03) and they avoid the purchase of aerosol products on a frequent basis (mean = 3.04) as illustrated in Table III. However, Mintel (2006) have argued that few consumers have translated pro-environmental attitudes into regular green buying behaviour despite earlier research has shown high environmental concerns from consumers on car pollution, their willingness to pay more for green products and their intention to recycle.

### Hypothesis testing 1

#### *Customers' beliefs and green consumption patterns*

*H1.* There is a significant relationship between customers' beliefs and behaviours towards green consumption patterns in Mauritius.

The present survey findings demonstrate a weak but positive relationship between customers' beliefs and green consumption patterns as regards to the use of biodegradable soaps/detergents ( $r = 0.072$ ;  $p < 0.01$ ); the purchase of products made from recycled materials ( $r = 0.132$ ;  $p < 0.01$ ); purchase of products from environmentally responsible companies ( $r = 0.138$ ;  $p < 0.01$ ); financial contribution to environmental causes ( $r = 0.034$ ;  $p < 0.01$ ) and consumers taking their own bags to supermarkets ( $r = 0.124$ ;  $p < 0.01$ ). Hence, *H1* should be accepted. However, research in environmental consumerism has also produced inconclusive evidence between attitude towards the environment and behaviour (Arbuthnot, 1977; Kellgren and Wood, 1986) as well as positive and weak relationships between attitude towards the environment and behaviour (Wicker, 1969; Webster, 1975; Mainieri *et al.*, 1997; Tanner and Kast, 2003). It can be further implied that green purchase behaviour represents a great challenge for marketers and policy makers in Mauritius.

### Hypothesis testing 2

*H2.* There is a significant relationship between green labelling and consumer purchasing patterns in Mauritius.

Environmental behaviour of consumers	Mean	SD
Use of biodegradable soaps or detergents	2.66	1.25
Avoid buying aerosol products	3.04	1.25
Read labels to see if contents are environmentally safe	2.89	1.45
Buy products made or packaged in recycled materials	2.88	1.12
Buy products in packages that can be refilled	3.03	1.24
Avoid buying products from companies who are environmentally responsible	2.79	1.28
Recycle bottles, cans or glass	3.03	1.30
Consumers taking their own bags to the supermarket	3.97	1.37
Contribute money to environmental causes	2.66	1.28

**Table III.**  
Respondents' environmental behaviour in Mauritius

The present study has established a weak correlation between customers' willingness to buy products from environmentally responsible companies and the ease of reading eco-labels ( $r = 0.212$ ;  $p < 0.01$ ). Moreover, there exists a positive relationship between the purchase of products made from recycled materials and the ease of reading the eco-labels in these specified products ( $r = 0.331$ ;  $p < 0.01$ ). In a similar vein, there is a positive association between purchase of products made from recycled materials and the accuracy of information provided on the eco-labels of products made from recycled materials ( $r = 0.421$ ;  $p < 0.01$ ). Hence, *H2* should be accepted. Likewise, as stated by Morris *et al.* (1995), specific products claims on product labels like "eco-friendly", "recyclable", "biodegradable" and "ozone friendly" can further enable companies to communicate the environmental benefits of those products to their customers. D'Souza *et al.* (2006) has also outlined that that environmental labelling is an effective way of communicating to the customer the specific benefits of green products.

### **Green branding and consumer purchase intentions**

*H3.* There is a significant relationship between green branding and green purchase intention of consumers in Mauritius.

Survey findings demonstrate a positive relationship between customers perceptions on brands that are less damaging to the environment and their green purchasing intentions ( $r = 0.410$ ;  $p < 0.01$ ). Hence, *H3* should be accepted. Similarly, marketers should take into consideration that green branding can change consumer attitudes to a more sustainable greener consumption patterns. As highlighted by Travis (2000) and Pickett-Baker and Ozaki (2008), brand can change customer attitudes towards greener consumption patterns. In a similar vein, earlier research supported that consumers engage positively towards eco-branded products (Wustenhagen and Bilharz, 2006).

### **Green advertising and green purchase intention**

*H4.* There is a significant relationship between green advertisements and purchase intentions of consumers in Mauritius.

Empirical survey findings have proved that there is a fairly positive correlation between customers level of preference towards green advertisements and their green purchase intentions ( $r = 0.213$ ;  $p < 0.01$ ) as suggested by Hawkins *et al.* (1998), the emotional content in advertisement can also increase customers' attention towards these advertisements. Hence, *H4* should be accepted. Similarly, customers seek more concrete and authenticated product information from these advertisements to guide them in their purchasing decisions (Chan, 2004). In this respect, marketers should ensure that green advertising is effective in order to encourage customers towards greener purchasing patterns by ensuring greater accuracy of information in the green product advertisements.

### **Managerial implications and recommendations**

The paper has highlighted various aspects of consumer purchasing patterns and shown that consumer preference for environmental friendly products can be influenced by effective green marketing strategies. Some major implications concerning green

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marketing strategies in Mauritius can be drawn from the findings of the present research. In order to gain green competitive advantage and achieve success, business executives and marketers should ensure that sustainable green marketing strategies are developed and implemented in both public and private companies. Likewise, empirical findings of the present study have revealed that the respondents are concerned with the environment in Mauritius. Therefore, business executives and marketers should emphasize on the importance of environmental concerns in Mauritius. Managers should organize different workshops and seminars to educate its internal and external public on environmental protection. Various exhibitions and fairs should be organized in close collaboration with non-governmental organizations to educate people on the different green products that are presently available in Mauritius and the underlying benefits associated with green consumer purchasing patterns.

Another significant implication of the study relates to the importance of eco-labels as an input for green buying behaviour. Likewise, Rashid (2009) has suggested that eco-label is an important factor that would enable consumers to make the right purchase choice. Therefore, marketers should emphasize on green product strategies and in turn, eco-labels should be viewed as an essential marketing tool in promoting green consumption as there is enough empirical evidence in the present study demonstrating that green labelling has a positive impact on consumer purchasing behaviour. In a similar vein, business executives should ensure that eco-labels are comprehensible and equally, the type and format of information provided on eco-labels should be easy to understand, which in turn, will help customers in their green product selection as empirical survey findings depicts a positive association between customers' willingness to buy products from environmentally responsible companies and the ease of reading eco-labels ( $r = 0.212$ ;  $p < 0.01$ ).

Based on the inferential survey findings, there exists a positive relationship between the purchase of products made from recycled materials and the ease of reading the eco-labels ( $r = 0.331$ ;  $p < 0.01$ ). Thus, marketers should be cautious and at the same time, they should avoid the use of chemical code names and technical terms which could lead to adverse environmental impacts. Hence, one plausible solution would be to graphically identify and devote some pertinent information on the environmental safety aspect of the green products as far as ecological product labelling is concerned. Indeed, it is important to note that over exaggeration of these terms could lead to negative attitudes towards label claims (Chase and Smith, 1992).

The survey findings have also demonstrated that green packaging is an essential factor impacting on consumer purchasing patterns in Mauritius with a positive correlation between purchase of products made from recycled materials and the accuracy of information provided on the eco-labels of products made from recycled materials ( $r = 0.421$ ;  $p < 0.01$ ). Hence, marketers should further ensure continuous improvement in packaging design. Likewise, green packaging is a strategic weapon and it is perceived as an effective marketing tool for marketers to promote green purchasing behaviour among customers in Mauritius.

As pointed out by Swenson and Wells (1997), customers are more inclined towards environmental friendly brands because of their growing environmental concerns. Therefore marketers should develop emotional green branding strategies to sell their products. Green brands can evoke positive emotions by showing the nature-related advantages stemming from sensations and feelings (Kals *et al.*, 1999). The present study has also established that customers will consider green brands as a crucial aspect while engaging in ecological purchasing decisions. Research findings have

depicted green branding as being effective to engage customers in ecological consumer purchasing patterns ( $r=0.410$ ;  $p<0.01$ ). Results of the study also underlined consumers' trust in well-known green-branded products (loading = 0.518) as a significant factor to promote greener consumption patterns and consumers feel that green products should bear an eco-image in Mauritius (loading = 0.541). Hence, green marketers should embed positive eco-image while marketing green products. The eco-image of green products should be well differentiated from non-green product alternatives in order to create a green unique selling proposition of green products in Mauritius.

Moreover, marketers should ensure that green advertisements are more pleasant, attractive and convincing in the context of Mauritius. Marketers should capitalize on creativity and originality in order to enhance the appeal of green advertisements and equally, differentiate the green advertisements from other non-green advertisements in Mauritius. Empirical findings have shown that green advertising can lead to greener consumption patterns in Mauritius and consumers have highlighted significant concerns pertaining to high credibility of green advertisements in promoting environmental friendly products (loading = 0.811), greater emotional relevance in the various contents of environmental advertisements for green customers (loading = 0.666) and attractive environmental advertisements to promote green purchasing patterns in Mauritius (loading = 0.595). Hence, green advertisements should be more effective to ensure a sustainable increase in the number of green consumers in Mauritius. Consumers are more positive towards environmental friendly products due to the fact that environmental messages in advertisements are more credible as outlined by Mathur and Mathur (2000) and Habib *et al.* (2010). In addition, marketers should emphasize on emotional appeal in the green advertisements (Hawkins *et al.*, 1998; Pooley and O'Connor, 2000) as emotional content in green advertisements can also increase customers' attention towards these advertisements.

### **Conclusion and directions for future research**

There is a powerful urge for companies to re-orient their existing marketing strategies towards greener marketing strategies. Far from having reached its pinnacle, green marketing has still a long road to travel in both research and practice. The present study has highlighted the importance of environmental concerns among customers in Mauritius. There is equally strong empirical evidence in the study concerning favourable customer values and beliefs towards the environment. Yet, it has been found that there is some degree of reluctance from the customers to engage in green purchasing patterns despite greater consideration has been given to environmental concerns. It is highly recommended that effective green marketing strategies are further developed and implemented in both private and public organizations and, in turn, marketers should capitalize on green branding, packaging, labelling and advertising to create an upsurge for the demand of green products in Mauritius. The research results will also form useful and practical tools for the policy makers who are responsible for creating and marketing green products in Mauritius.

### **Limitations of the research**

The present study has analysed the impact of green marketing strategies on consumer purchasing patterns in Mauritius. The study had some potential limitations as focus was only on perceptions of customers in Mauritius and the underlying perceptions of business executives and marketers on green marketing strategies have not yet been

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tapped. The findings need to be further validated as the empirical results have provided a broad investigation on the effectiveness of green marketing strategies. Specific constructs and predictors for promoting green consumer purchasing patterns have not been predetermined and thus, the research has some conceptual limitations in the arena of green marketing.

### Future research

In this respect, further research is clearly needed in order to enhance the understanding of green marketing strategies on consumer purchasing patterns in Mauritius. Research should extend to business executives and managers in order to allow a comparative analysis of the green marketing strategies impacting on consumer purchasing patterns in Mauritius. Future qualitative studies could focus on specific green-branded products such as energy saving light bulbs to deepen customers' understanding and their ability to compare eco-branded and non-eco-branded products in Mauritius. Moreover, supplementary qualitative research in terms of focus group discussions with green and non-green customers can provide additional evidence to support the existing findings relating to the effectiveness of green marketing strategies on consumption patterns.

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