

Population, Economies, Sustainability, Market access

Title: Emerging shades of green marketing conscience among the population of a small island economy-a case study of Mauritius

Author: Dr (Mrs) Thanika Devi Juwaheer

Senior Lecturer & Head, Department of Management

Faculty of Law & Management

University of Mauritius

Mauritius

Email:roubina@uom.ac.mu

Tel: (230) 4541041

Fax: (230) 4656906

Author biography:

Thanika D. Juwaheer holds a PhD and she is Senior Lecturer in Marketing and Head of the Department of Management at the Faculty of Law and Management of the University of Mauritius. Dr. Juwaheer has several years of experience in tourism and hospitality in Mauritius and the Indian Ocean islands. Dr. Juwaheer has extensive teaching, industrial and consulting experience in environmental marketing across the tourism and hospitality field. She has published papers in academic journals, conference proceedings and trade journals in the field of tourism and hospitality management and on the impact of green marketing and the environmental management strategies of hotels of Mauritius. Dr. Juwaheer serves on the editorial board of several refereed academic journals. Her additional research interests include green marketing, ecotourism, service quality, customer satisfaction, CRM and healthcare management.

Abstract:

In recent decades, the population of Mauritius comprising both consumers and producers have expressed increasing concern about the environmental impact of products. Considerable attention has been directed toward green products such as organic foods, recyclable paper, phosphate-free detergents, energy-efficient lighting.

Consumer attitudes to nutrition and healthy foods and sensitivity to environmental issues have also been found to be influential in Mauritius. The present study reviews the changes and attitudes of the population toward business and the environment and explores the demand and supply characteristics of green products in Mauritius.

Two main surveys were conducted. The purpose of the first survey was to investigate the awareness and intention of the Mauritian population to purchase green products, their consumers' perceptions and attitudes toward green products, and reasons that hinder the purchase of these products. The second survey was directed at the company executives and its purpose was to examine their attitudes toward green versus conventional products, and the challenges they are facing in marketing green products in Mauritius. This research provides information on green marketing practices of firms in Mauritius. It focuses on areas where companies need to concentrate and the ways they can effectively deploy a Green Marketing strategy. It addresses a comprehensive review on the concept of green marketing among companies in Mauritius, its foundation as well as its development. The various implications of using green marketing practices by firms are also discussed.

The present research also provides information on a study, which assessed the potential of the environmental market in Mauritius. The purpose of this exploratory study was to determine the environmentally friendliness of 1000 respondents in Mauritius and establish consumer perceptions of these products. One of the main findings of the research was that 'green' products have achieved substantial awareness among consumers and they are no longer regarded as a gimmick or a fad. Looking to the future of green marketing in Mauritius, it examines the dynamic nature of ecologically conscious consumer behavior. Making a substantial long-term commitment to the environment in Mauritius can dramatically improve the public's attitudes towards the business community as well. The paper concludes with the managerial implications of the findings and addresses both companies' and consumers' perceptions of the future of green marketing in Mauritius.

Keywords: *green marketing, Mauritian population, supply & demand, environmental management, green policy*

INTRODUCTION

An awareness of environmental degradation has been a long time coming in Mauritius. In the recent years, environmental issues in Mauritius have received much attention, reflecting rising public concern and awareness of environmental problems. Pressure groups have been campaigning vigorously for the environment; media reporting on environmental issues has increased dramatically, the environment has moved up on the agenda in political decision making; numerous regulations and laws for the protection of the environment have been passed, and through the Earth Summit in Rio de Janeiro in 1992 and its follow-up summits in Berlin in 1995 and in New York in 1997, targets have been set for international co operation and action (Hutchins *et al.*, 1997).

Concern over environmental degradation has led to increased worldwide interest in alternative production systems that make less use of synthetic pesticides and inorganic fertilisers (Lockeretz, 1989). Green Marketing emerged as a promising alternative and a profitable marketing practice. In addition to the general environmental concern, fairly radical changes in consumer perceptions about food safety have occurred over the last few decades. Consumers are concerned about the many additives mentioned on food product labels and suspicious of the need for modern food-processing technologies such as genetic engineering and irradiation (e.g. Grunert and Kristensen 1990; Sachs *et al.*, 1987).

There is considerable evidence that most markets in developing economies like Mauritius have been affected by green consumer behaviour, that means by behaviour that reflects concern about the effects of manufacturing and consumption on the natural environment. Besides legal changes over the past decade, many companies began to feel the impact of market forces such as changing buying habits of environmentally oriented consumers and boycotting behaviour that resulted from media reporting and pressure group activity. Whether there has been a reversal over the years regarding the occurrence of green consumer behaviour in Mauritius is hotly debated. Green product options have stayed on the shelves of many retailers, which indicated that green consumers on Mauritius remain at least a niche market that is

worth catering for. But in general, the Mauritian consumer can still be considered a “sleeping giant”.

It is clear that, like any other country, Mauritius is at a crossroads. The environment cannot be taken for granted any longer. There is an urgent need to manage the impacts of development and population growth on the local environment in view of achieving sustainability. (Mauritius Forum, Institute For Environmental and Legal Studies, 15 Sept, 2003). Environmental marketing and green marketing programmes have gained momentum since the 1970's as consumers, manufacturers, and distributors became environmentally conscious of their actions in the production and consumption of goods and services. Green marketing is a style of marketing, which has arisen in response to increasing concern about the state of the global environment and the life that it contains. Strategies for green marketing must be at the heart of the company's forward planning since consumers and the public will often assess the company's environmental performance from the marketing point of view.

Although the environmental movement has been underway for years, marketers in Mauritius have been typically slow to adopt this innovation. Consumers apparently find it difficult to assess the environmental friendliness of a product. Consumer confusion and skepticism about the 'greenness' of product is reported to be widespread. This is thought to present an important (cognitive) barrier to the adoption of green products, which, in turn, prevents the market mechanism from developing an ethical impact on companies. Also the failure of green marketing communication in Mauritius, both corporate and non-corporate, has been related to a lack of understanding of green consumer behaviour at a cognitive level. This highlights the need for cognitive research into green consumer behaviour. As the new millennium has emerged, key questions remain unanswered. What is the nature of the ecologically conscious consumer of the future? Do these consumers differ from the ecologically conscious consumer of the past, and if so, how do they differ? A discussion of these results will attempt to shed light on the state of green marketing as we prepare for the challenges of the present millennium.

Nevertheless, as systematic empirical investigation of green consumers in Mauritius is virtually nonexistent, how far the anecdotal evidence really reflects reality is yet to be verified. As such, marketers who plan to invest aggressively in the green market of Mauritius based solely on this limited information may do so at great peril. How "green" are Mauritian consumers? To attempt to provide businesses with more

information on assessing the potential of the environmental market in Mauritius, a survey was conducted among 1000 respondents in the nine districts of Mauritius. It is hoped that the findings can also help the Government of Mauritius to fine-tune its nationwide environmental strategies.

The purpose of this paper is to explore the challenges and opportunities in green marketing in Mauritius, by examining both the demand and supply characteristics. It also reports on an empirical analysis of the marketing strategies of firms in Mauritius and their influence on consumer demand for green product. According to the Mauritian managers, firms' marketing strategies highly influenced consumer demand by marketing green technologies available. Managers emphasized that, in the absence of clarity of green products' environmental benefits, product preference and attributes, other than green benefits remain crucial for product performance and choice in Mauritius. The results also reveal the lack of support of green innovation from public authorities in Mauritius. Firms deplore the cost of generating and promoting desirable green technologies as barriers to diffusion in the immediate future.

In the remainder of this paper, relevant literature review on green marketing is provided. Next, the research questions are presented and the methodology used to examine these questions empirically is described. The last part of the paper presents the findings and discusses their managerial implications.

LITERATURE REVIEW

Research on the demand of green products

The earth's environment has undergone major destructive changes: depletion of natural resources, damage to the ozone layer, and loss of agricultural land (Mainieri *et al.*, 1997). Traditionally, people have relied on technological innovations, such as development of alternative fuels, to resolve such dilemmas, rather than changing their behavior patterns and lifestyle choices. Though such innovations have made remarkable gains in conserving resources and reducing pollution, many scientists and environmentalists hold that solutions to environmental problems do not lie in technology alone (Gutfield, 1991; Stern, Young & Druckman, 1992). Consumers must adopt environmentally sound behaviours, such as reliance on public transportation and recycling of household wastes, in order to sustain the environment.

Through such conscious choices, consumers can take steps to protect the earth's natural resources and to prevent further environmental damage.

During the last decade, a great deal of research has focused on green marketing focusing mainly on: (a) demand aspects, such as consumers' attitudes and purchasing behaviour; and (b) supply aspects, such as availability and the problems associated with marketing. Research on the demand of green products Jolly *et al.*, (1989) report that, although the majority of consumers have a positive attitude towards green produce, this does not translate into purchasing behaviour. The main reasons are the price premiums and limited availability. The authors also point out that consumers only moderately or occasionally purchase these products. In another study, Grunert and Kristensen (1990) attempt to determine the factors that motivate Danish consumers to prefer green products.

The results of their study suggest that life values, environmental consciousness, food consciousness and product-specific attributes are the most important factors. A series of other studies (Ekelund and Froman 1991; Sparks and Shepherd 1992; Thimm *et al.*, 1992) point out that product attributes such as quality, freshness, taste, nutritional value, physical appearance and price are the most important attributes in encouraging consumers to buy organic and go green.

Homer and Kahle (1988) report a high correlation between consumption of organic foods and consumers' sensitivity to diet issues in developed countries. In the same vein, Grunert and Juhl (1995) report a positive correlation between Danish consumers' environmental attitudes and buying frequency of organic produce.

Research on the supply of green products

The term "green marketing" describes an organization's efforts at designing, promoting, pricing and distributing products that will not harm the environment (Pride and Ferrell, 1993). Clearly, there are a vast number of diverse considerations that may be addressed by companies that choose to pursue a green marketing agenda.

Among these are concerns such as: developing offerings that conserve energy and other natural resources in their production process (Porter, 1991); creating advertisements and other promotional messages that accurately reflect a company's commitment to the environment (Kangun *et al.*, 1991); setting prices for green products that balance consumers' sensitivity to cost against their willingness to pay more for environmental safety (Chase, 1991; Jay 1990); reducing pollutants and

conserving resources in the transportation of products to market (Bohlen referred to as the "3 R's formula for environmental management". These practices are aimed at controlling the amount of natural resources waste that often accompanies organizations' marketing pursuits. by reusing packaging (e.g. offering products in refillable containers), recycling materials (e.g. reclaiming elements from used products) and reducing and a host of other marketing-related decisions (Bohlen *et al.*, 1993).

In another study, Jolly and Norris (1990) present the results of their surveys among Californian supermarket chains, which suggest that green products have captured a niche in chain-store food marketing and that there is room for expansion and growth. Although managers of supermarkets tend to be less keen on organic lines, attitudes appear to be changing. They believe that organic products have a positive environmental impact, low chemical residues, good flavour and high nutritional value, but a poorer appearance and shorter shelf-life than conventionally grown products. The authors point out that increased availability, a better co-ordinated distribution system and more competitive prices will lead to greater market penetration. Baillieux and Scharpe (1994) provide the same reasons to explain limited demand in European Union countries.

Green marketing conditions in northern Europe (i.e. Denmark, Germany, the UK and the Netherlands) are described by Thimm *et al.*, (1992). The authors point out that, in various regions and on various marketing levels, demand and supply for green products often fail to match. They highlight that distribution channels are underdeveloped or too expensive for the limited supply. Furthermore, the authors underline the importance of alternative marketing channels, such as health food shops and natural food shops.

Objectives of the study & Research questions

The purpose of this paper is to explore the demand and supply characteristics of green products in Mauritius. Specifically, the author attempts to answer the following questions:

Demand side

1. What drives the Mauritian green consumer? What are the values, motives, desires and needs behind green consumer behaviour?
2. Are consumers aware of the meaning of 'green'?
3. Do consumers buy green produce? What type of green products do consumers buy?
5. How do consumers perceive organic products?
6. What are consumers' attitudes toward the consumption of organic produce in general?
7. Why are consumers reluctant to buy organic products?

Supply side

1. To assess management's view of the key pressures that affects the firm's development of 'green' products and the firms' response to green pressure;
2. To review the firm's marketing objectives for 'green' products, their marketing mix and strategies, commitment to R&D and their influence on the demand for green products;
3. To identify management's perception of the barriers to future 'green' product uptake and diffusion in Mauritius and the challenges that managers face when marketing green products.

Methodology

Demand side

The respondents were asked to answer 35 five-point attitude statements (1 = strongly disagree; 5 = strongly agree), which were specifically developed to study the population of a developing country on its way to industrialization. A personalized letter explaining the purpose of the research and the importance of each response was included along with each survey. Of the 1200 mailed surveys in December 2003, 1000 were returned useable, a return rate of 83%. Therefore, the respondents in 2003 (as in other years of the study) represent a stratified random sample from a population of individuals who have contracted to complete a number of different surveys during the course of a year.

Demographic measures

Nine key demographic variables were investigated: age, family income, gender, occupation, ethnic grouping, location, household size, district weightage and academic classification.

The survey instrument

A draft questionnaire was prepared with the information from the literature review and the focus group results.

Supply side

50 firms in Mauritius were selected for the study. Data were collected through focus-group interviews with senior managers, based on a semi-structured questionnaire in June 2003. Initially the questionnaire was pre-tested on five company managers to ensure questions and their wording was appropriate. A semi-structured instrument was used to broaden the scope of the information gathered and it was possible to elicit valuable qualitative information as well as quantitative measures that moved be comparable across companies. In all focus-group interviews, a senior executive responsible for marketing decisions was present or technical managers who have demonstrated familiarity with the green technologies in their organizations. The interviews lasted around two-2_ hours

Data Analysis and Results

Demand side

Data were analyzed to determine the extent to which consumer attitudes and beliefs covary with interest in buying environmentally safe products. The socio-demographic profile of the respondents include the district weightage, occupational groupings, gender, age bracket, location, educational background, monthly household income, ethnic group and household size.

The district of Plaine Wilhems accounted for nearly one third of the sample population (32.4%), followed by Port Louis (11.1%) and Flacq (10.9%). The male and the female respondents of the survey represented 49.8% and 50.2% respectively. This distribution is in line with the gender distribution of the true population in Mauritius.

30.7% of the respondents were aged between 16 and 25 years, 23.8% between 34 and 44 years and 19.4% between 26 and 34 years. The others were aged between 45 and 55 years or more. 56.1% of the respondents were from the rural areas as compared to 43.9% who were from the urban ones. As regards the academic level, 32% of the respondents have studied up to School Certificate (Form V) followed by 27.1% who have attended 'primary schooling'. Only 2.8% had no schooling. 17.5 % of the respondents had pursued the Higher School Certificate (Form VI) and 13.9% had attended diploma and degree programmes.

More than half (58.9%) of the sample population were of "Hindu" origin. 28.1% were of Muslim origin, followed by 10.4%, from the General Population and 2.5% from the Sino-Mauritian ethnic group. The 'Hindu' bias is due to the ethnic composition of the Mauritian population. The majority (67.5%) of the Mauritian family consists of 4-6 members followed by 27.7% with 1-3 family members, 5.5% with 7-9 members and only 1.1% with 10 or more members.

Research findings

Demand side

From Table 1 below, it is seen that nearly one third (31.7%) of the respondents are of the opinion that the environment in Mauritius will stay the same in the next five years. 34.7% of the respondents fall on the 'worse' side and 33.6% on the better side. Further analysis of this dependant variable revealed that there were no significant differences across the demographic profile (independent) variables of the respondents.

ENVIRONMENT RELATED CONCERNS OF THE RESPONDENTS

	Mean Score	Standard Deviation
What will be the state of the environment in Mauritius in the next 5 years?	3.05	1.25

Table 1: State of the Environment in the next 5 years

(n=1000)

Worse	Slightly Worse	Same	Slightly Better	Better

Scale	1	2	3	4	5
-------	---	---	---	---	---

What will be the state of the environment in Mauritius in the next 5 years?

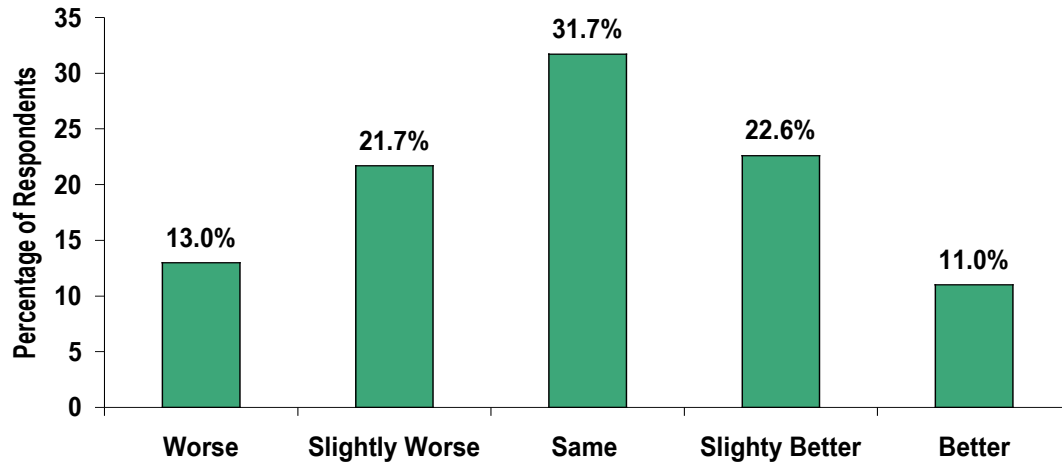


Figure 1: State of the Environment in Mauritius over the next 5 years

(n=1000)

From the Table 2, it is found that respondents have rated variables related to industrial air pollution, industrial water pollution, auto air pollution, destruction of ozone, pesticides on food among other with a mean greater than 4 as serious environmental concerns in Mauritius. Factors related to rainforest, oil spills, ocean contamination have score means less than 4 and are nevertheless viewed as environmental concerns equally.

	How serious do you think are the following environmental concerns?	Mean Score	Standard Deviation
7	Industrial air pollution	4.26	0.87
1	Industrial water pollution	4.26	0.89
10	Auto air pollution	4.22	0.88
12	Pesticides on food	4.21	0.92
2	Destruction of ozone	4.14	0.97
17	Indoor air pollution from household cleaners, tobacco smoke, asbestos, etc.	4.01	1.05
14	Solid waste	4.01	1.88
5	Hazardous waste	4.01	0.99

8	Drinking water contamination	4.01	1.12
13	Warming up of the earth	3.99	1.05
4	Industrial accidents	3.93	0.99
9	Ocean contamination	3.91	1.10
11	Endangered species	3.89	1.07
3	Destruction of rain forest	3.86	1.13
6	Oil spills	3.84	1.12
15	Destruction of wetlands	3.65	1.13
16	Genetically Modified Products	3.64	1.11

Table 2: Seriousness of Environmental Concerns

(n=1000)

As shown in Table 3, the Ministry of Environment has scored the highest rating in terms of doing a good job for the environment (mean=3.77), followed closely by Local Government (mean=3.45). In respect of the contribution of the other stakeholders to the environment, the respondents tend to be towards neutral.

	Whom do you think is doing a good job on the environment?	Mean Score	Standard Deviation
1	Ministry of Environment (MoE)	3.77	0.93
2	Local Government (Municipality or District Councils) (LG)	3.45	0.98
3	NGO's	2.86	1.02
4	The Mauritian Public (MP)	3.24	0.95
5	Large Businesses of Mauritius (LBz)	2.84	1.03
6	Small Businesses of Mauritius (SBz)	2.75	1.00
7	Others (Please Specify) (n=151)	3.43	0.93

Table 3: Stakeholders and the Environment (n=1000)

The chi-square test has also revealed that there are significant differences in respect of the concern for the environment by the stakeholders across 'occupational group', 'location', 'educational background', 'monthly household income' and 'ethnic group'. 41% of the respondents agree that non-governmental organisations (NGOs) are doing a good job in respect of the environment. This opinion is greater amongst those living in the urban regions of Mauritius (48.3%) as compared to those living in the rural regions (35.7).

		NGOs					
		Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree	Total
		%	%	%	%	%	%
LOCATION	Urban	5.0	12.3	34.4	39.4	8.9	100.0
	Rural	2.9	21.0	40.5	29.8	5.9	100.0
	Total	3.8	17.2	37.8	34.0	7.2	100.0

Table 4: Role of NGO'S across Location in Mauritius (n=1000)

Figure 2 depicts the fact that only 10% of the respondents have heard of green products (n=702). The majority of the respondents with the awareness of green products in terms of occupational group are 'Legislators, senior officials and managers' (25.0%), gender-wise are 'Male' (11.6%) with age bracket between 16 and 25' (14.7%). Furthermore they are mostly 'Degree' holders (25.0%) with monthly household income between Rs 29,999- Rs 49,999' (Euro 1000-1300) (20.4%) and consist of the 'general population' ethnic-wise (13.5%).

Have you ever heard of "Green"/Environment Friendly products?

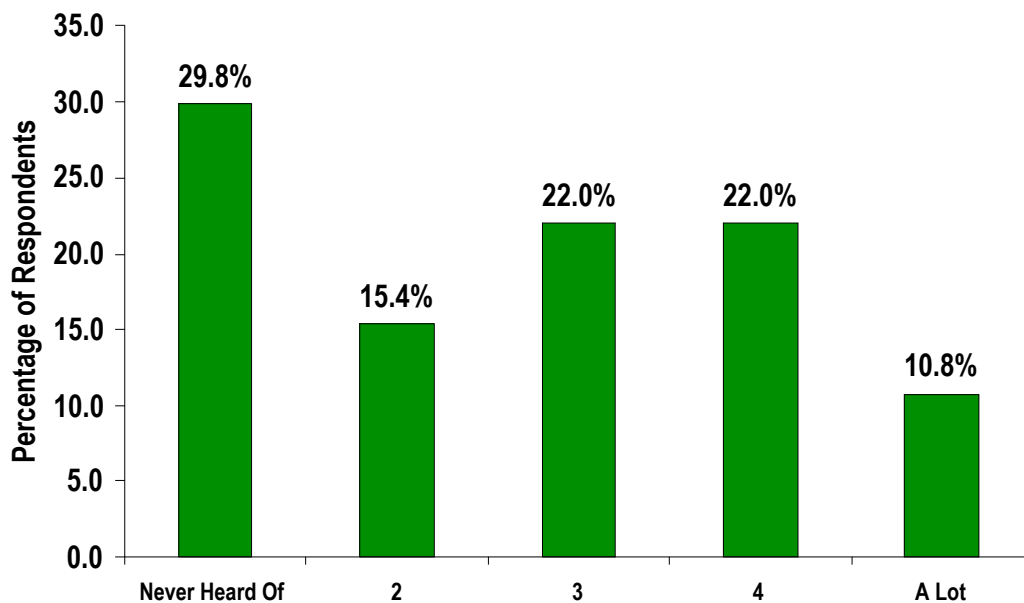


Figure 2: Awareness of green products (n=702)

In terms of awareness of green products in Mauritius, television has been stated as the prime source of information about green products (61.8%), followed by newspapers and magazines (55.3%), and Radio (35.9%) School/University (27.9%) and Supermarkets (16.2%).

As shown in Figure 3, 30.5% of the respondents acknowledge that ‘whenever there is a choice’, they will prefer green product as against 33.7% who will prefer green products only ‘sometimes’.

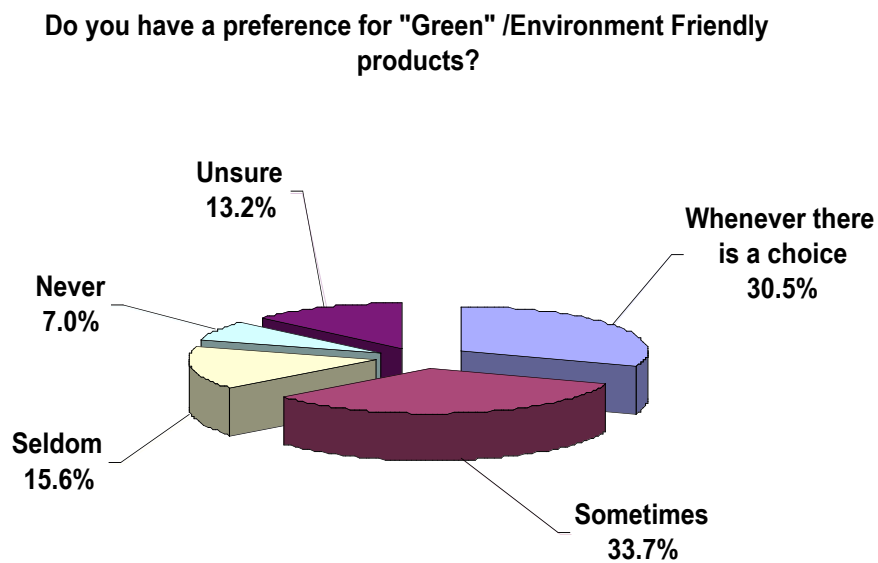


Figure 3: Preference for Green Products

(n=983)

	Whenever There is a Choice	Sometimes	Seldom	Never	Unsure
Scale	1	2	3	4	5

ORGANIC PRODUCTS

		Only Organic		Both		Only Non-Organic		Total	n=
		100%	75%/25%	Equally - 50%/50%	25%/75%	100%			
What percentage (Organic or Non-Organic) of the following products do you use?	Vegetables	15.1	20.9	34.7	12.1	17.2	100.0	989	
	Fruits	13.1	22.7	34.9	11.7	17.6	100.0	988	
	Eggs	17.7	17.7	33.1	12.3	19.3	100.0	985	
	Milk	13.7	18.4	33.4	16.1	18.4	100.0	988	
	Cheese	10.0	17.6	34.4	17.1	20.8	100.0	987	
	Bread	15.3	17.8	31.3	14.7	21.0	100.0	988	
	Cereals	12.6	19.9	31.7	15.9	19.9	100.0	986	
	Butter	8.5	17.9	33.7	18.6	21.3	100.0	985	
	Average	13.3	19.1	33.4	14.8	19.4	100	987	

Table 4: Organic v/s Non-organic Products

As it can be depicted from Table 4, on average, 19.4% of the respondents use 100% ‘only non-organic’ products as compared to an average of 13.3% for 100% ‘only organic’ products.

ORGANICALLY PRODUCED PRODUCTS....	Mean Score	Standard Deviation
...taste nice	3.25	1.54
...are healthy	3.33	1.60
...are expensive	3.08	1.51
...are easily available	2.56	1.44
...are associated with an alternative lifestyle	2.80	1.85
...have an attractive appearance	3.06	1.49
...are environmentally friendly	3.20	1.56

Table 5: Attributes of Organic Products

(n=1000)

Strongly	Disagree	Neither	Agree	Strongly
----------	----------	---------	-------	----------

	Disagree		Agree Nor Disagree		Agree
Likert Scale	1	2	3	4	5

In addition, as it can be seen in Table 5, for the respondents, organically produced products are ‘healthy’ (mean=3.33, ‘taste nice’ (mean=3.25) and are ‘environment friendly’ (mean=3.20). However, the respondents are neutral (mean=2.80) in regards to the consumption of organically produced products being ‘associated with an alternative lifestyle’.

Supply side

PROFILE OF THE PARTICIPANTS

Half of the participants were from the Manufacturing Industry (50.0%). The second in the row was the Financial Intermediaries, Real Estate & Business Activities Industry (18.0%). Other industries were, the Educational, Health and Social Work (10.0%), Agriculture, Hunting & Forestry (6.0%), Transport, Storage & Communication (6.0%), Hotel & Restaurants (4%), Wholesale & Retail Trade & Repair (4.0%) and the Construction Industry (2.0%).

Nearly all the participants are of the opinion that the environment plays a fundamental role in today’s business world (mean = 4.68). In addition to the importance of the environment in the world, in respect of companies, the following issues were also raised:

- ❑ Mauritius is market driven; the business must try to push green products;
- ❑ Businesses should emphasise on the environment in their mission statements;
- ❑ Business is more concerned about the profit-making motive. Green efforts should be economically viable; if they are profitable first then only businessmen would be interested in doing social work;
- ❑ Banks and other financial institutions can encourage green marketing practices

On an overall basis, nearly all the participants are of the opinion that promoting green marketing remains the responsibility of all the three main stakeholders - Consumers and/or Government and/or Businesses - and should be pushed and/or pulled by all three bodies (mean=3.40). In addition, the results demonstrate that it is the

responsibility of the whole organisation and not only that of the marketing department to be green conscious. This has been confirmed by using the Pearson Bivariate Correlation Coefficient which shows a relatively weak but positive correlation between the two statements, $r=0.334$ ($p < 0.01$ level).

There may be various motives and/or pressures that can push a company to make green decisions. In this respect, the motives for Environmental Standards Adoption of the ISO 14000 certification have been used to find out about their relevancy to the industries represented by the participants. The findings are shown in Figure 4 below.

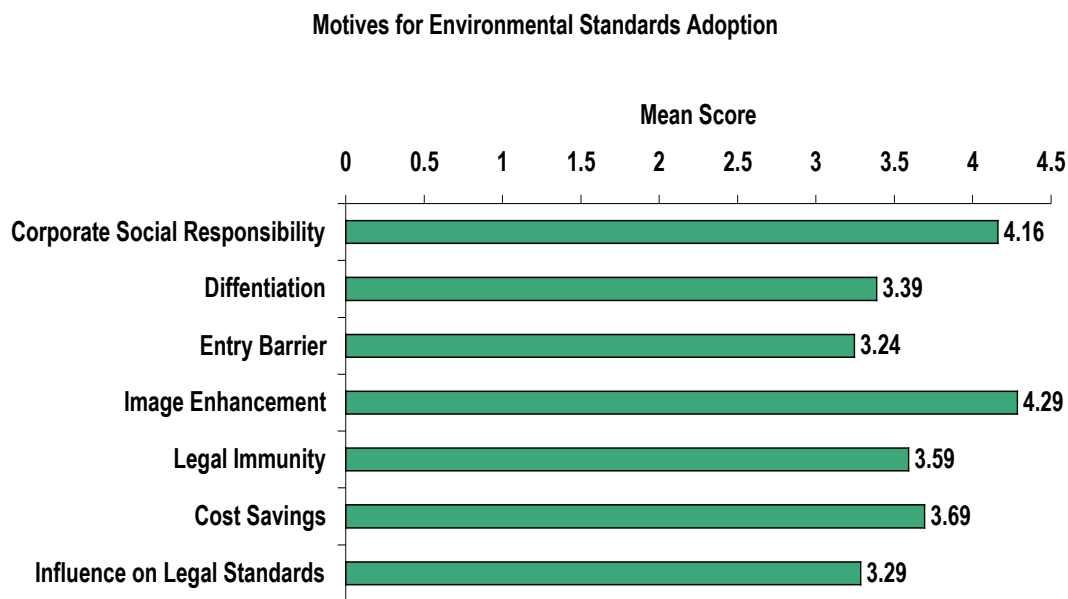


Figure 4: Motives for Environmental Standards Adoption

(n=49)

Key

Not Relevant at all	1,
2	2
3	3
4	4
Very Relevant	5

As per Figure 4 above, it is clear that “Image Enhancement” is the first motive/pressure to become green with a mean score of 4.29 in a 5-point scale. The second motive/pressure is “Corporate Social Responsibility” with a mean score of

4.16. Hence, businesses in Mauritius view green decisions to be mostly linked with the overall corporate strategy.

In terms of green marketing strategies, participants were asked to record their views on the importance to their company's packaging decision in relation to green marketing. The participants tend to disagree with the statements on 'Green packaging is not necessarily less aesthetically pleasing to consumers' (mean = 2.31) and 'Environmentally friendly package being less convenient for consumers to handle' (mean = 2.29).

In addition, the following issues about green packaging were raised:

- The use of paper bags can cause more harm to the environment in the long run;
- The Mauritian consumer must carry his own bag when shopping in supermarket; just the way things were before the advent of heavy industrialization in Mauritius;
- By increasing the micron used in plastic bag, the new initiative of the government, can be more harmful in the long run in terms of pollution control
- There is a need to have a sensitisation campaign on the part of producers so as to instigate the consumers to read the information on the package.

In the case of conventional products, their pricing strategies have to be redefined as the product "grows" along its life cycle. They were asked to rate the price for these stages along a five-point scale where 1 = low price and 5 = high price. The participants have responded to this pricing question with the most logical answer possible in relation to increasing and declining sales, that is a price low price to start with, then increasing the price with growth in sales and then finally lowering the price with declining sales.

However, the following issues were also raised concerning pricing:

- The buying power of Mauritians is low compared to developed countries. Green products are generally more expensive and the Mauritian is not yet ready to spend on these products;
- Mauritians are price driven and pricing strategy can even be to the detriment of the environment; and
- In Mauritius, the high-income earners are not the ones who are more pro environment. It is often seen that they are the real polluters; throwing waste papers from their cars without being bothered about the damage of pollution to the environment.

In respect of green promotion, the participants argue that promotion must be “actively undertaken” (mean = 4.52) and should be “allocated a higher budget than conventional products” (mean = 4.10). However, concerning the target for the green promotion in respect of end users or intermediaries, they “neither agree nor disagree”. From this it is inferred that in order to promote green products, both a pull and a push strategy will have to be adopted by potential green product manufacturers in Mauritius. Given the existence of various communications tools to transmit a message, the participants were asked their opinion about the most effective communication tool to pass a green message. As shown in Table 6, “Publicity and Public Relations” has been rated as the most effective means for promoting green products with a mean of 4.08.

	Promotional Tools for Green Communication	Mean Score	Standard Deviation
1	Publicity and Public Relations	4.08	0.92
2	Mass Advertising	3.90	1.02
3	Sales Promotion	3.70	1.07
4	Personal Selling	3.24	1.08
5	Direct Mail	2.78	1.09
6	Internet Advertising	2.46	1.11

Table 6: Promotional Tools for Green Communication

(n=50)

In respect to green distribution strategies, four statements were set so and rated on a five-point scale where 1 = “disagree strongly” and 5 = “agree strongly”.

	Statements Related to Distribution	Mean Scores	Standard Deviation
1	Distribution outlets generally influence the availability of new green products to consumers.	4.0	0.73
2	Channel acceptance of new green products is the key to securing required distribution for these products.	3.98	0.62

3	Good dealer/retailer margins are important in securing required distribution for new green products.	3.90	0.68
4	Perceived consumer demand is important in achieving required distribution for new green products.	3.92	0.75

Table 7: Statements Related to Distribution

Green products have to be pushed down the distribution channel for final consumption as all the three statements have scored nearly an “agree” rating of mean value of 4.0, 3.98 and 3.90 respectively. However, the fourth statement, related to a pull marketing strategy, has also scored this same rating. In other words, the findings confirm that both a pull and a push strategy have to be used to distribute green products in Mauritius.

As regards the opinion that the participants have about the Mauritian consumer in respect of their readiness to accept green products, their compliance to read labels prior to purchase, their willingness to pay more for green products, their eagerness to dispose of their waste in an environmentally friendly manner and their concern for the environment when effecting purchases, responses are shown in Table 8. A five-point scale has been used to rate these issues where 1 = “disagree strongly” and 5 = “agree strongly”.

		Mean Scores	Standard Deviation
1	Mauritian consumers are not ready to engage into Green Marketing.	3.24	1.06
2	Mauritian consumers do not read labels on products before their purchase decision.	3.36	1.06
3	Mauritian consumers will not accept to pay more for environmental friendly products.	3.62	1.10
4	Mauritian consumers do not dispose of their waste in an environmentally friendly manner.	4.16	0.77

- 5 Mauritian consumers do not take the environment as a factor when purchasing. 3.90 0.93

Table 8 The Mauritian Consumer (n=50)

For the participants, the Mauritian consumers did not consider the environment as a predicting factor when purchasing products (mean = 3.90). These consumers will not also accept a higher price for green products (mean = 3.62) and do not usually read labels for their purchase decision (mean = 3.36). The Mauritian consumer definitely does not dispose of their waste in an environmentally manner (mean = 4.16). Then, according to the participants, the Mauritian consumer is not ready to engage in green marketing (mean = 3.24).

In addition to the above statements, the participants were asked to suggest means to increase the awareness of the Mauritian consumer towards green. The results are depicted in Table 9 below:

	How to increase the awareness of the Mauritian consumer towards green.	% of Participants
1	Educating consumers (from early childhood so that they turn into “green adults”)	40.0
2	Advertising campaigns (informative through the media)	34.0
3	Government support (Legislation)	10.0
4	Invest in infrastructure (Recycling plants)	6.0
5	Setting up national award for green organisation	4.0
6	Provide incentive to use green products	4.0
7	Show consequences of not going green	2.0
	Total	100.0

Table 9: How to increase the awareness of the Mauritian consumer towards green practices

The most popular suggestion was the impending need of educating the Mauritian population (40%). In addition the participants have strongly recommended that education must be more targeted to children so that they turn into “green” adults.

Furthermore, on the overall, the participants were asked how they foresee green consumption evolving in Mauritius over the next ten years. The results are shown in Table 10 below:

	How do you foresee Green Consumption evolving in Mauritius in the next 10 years	% of Participants
1	People will become more aware of importance of going green	23.3
2	More companies will go green (environment friendly) as response to consumer demand (world market demand)	16.7
3	Level of education & cultural heritage of the people might be quite important	13.3
4	Only a minority will be conscious about green consumption (Insignificant percentage)	13.3
5	Depend on the stance taken by the government concerning green products (properly channelled or not)	13.3
6	Waves of organic products will reach the island	10.0
7	Successful in the future	6.7
8	Needs more studies about the topic of green marketing	3.3
	Total	100.0

Table 10: How do you foresee Green Consumption evolving in Mauritius in the next 10 years

(n=30)

On the overall, the participants believe that in the next ten years, people will become more aware of importance of going green (23.3%). They also believe that more companies will go green (16.7%) in the future. However, 13% believe that only an insignificant percentage of the Mauritian will go green and 13% believe that in order to go green, the government must play an important role. Activities by the Ministry of

Environment denote that the Government is conscious about the environmental problems in Mauritius. However, much action is taken only on a one off basis.

Discussion of results and Managerial implications

This paper provides managers and producers with useful insights for green marketing in Mauritius. Overall, the findings of this research indicate that both consumers and marketing managers had a positive attitude toward green produce. More specifically, the results of the first part of this research, focusing on the demand side, suggest that consumers perceive green products to be healthy, environmentally friendly and to taste nice. Furthermore, their overall attitude toward green products was very positive. This positive attitude, however, was not translated into demand. On the other hand, consumers were primarily concerned by the limited availability.

In order to increase demand, considerable efforts are needed to increase availability and improve the distribution systems. Making green produce an essential part of the product lines of conventional supermarkets will increase availability, thus improving distribution and reducing price differentials (Jolly et al. 1989). Furthermore, as more green produce arrives in the marketplace, prices are likely to drop. More demand will lead to more supply and more competition, and, as a result, lower prices (Lindsley 1996).

The results of the second part of this research, focusing on the supply have revealed that company executives are concerned about the environment. However, in order to fully integrate green marketing practices in their daily activities, these executives have insisted on three main issues, namely, the government must be more proactive, the importance of educating the Mauritian population by starting with the young ones and that reforms must be on a continuous basis. Hence, one possible solution could be the introduction of a national reform relating to the implementation of environmental clubs in all the schools around the island.

The study's findings indicate that although firms initially responded to consumer pressure, many felt that their decision to develop and supply green products depend on legislation and government support and assistance in green technologies. Managers have also claimed that consumer demand pressure has been increasing very slowly in Mauritius. Emerging evidence suggests a curious paradox-many green products have

not achieved the level of success which might be expected in a society which claims to be sympathetic to the environment. Furthermore, the evidence thus seems to suggest that environmental consciousness is evident but ecological decision-making is not. This incongruence between spending on green products and consumers' 'overwhelming' environmental concerns provides the trigger for the current study. In the majority of firms, managers have indicated that offering green products was important but greenness alone was insufficient to sustain consumer demand for the product. Green promotion was cited by a fair number of firms, but still remain secondary to firms' emphasis on getting performance and quality right. Looking to the future, firms were almost universal in their perception of a slow increase in green consumption patterns in Mauritius. The main argument for barriers in the greening of consumer spending emerge when managers' views and perceptions are explored.

Government policies related to the provision of market information to marketing decision-makers and consumers could also improve the performance of the organic marketing system (Hall *et al.*, 1989).

Promotional efforts will have to focus on 'educating' consumers on the relationship between organic produce, health and the environment. Lifestyles of Mauritian consumers are changing and, given the increased interest in nutrition and exercise, organic sensibility is likely to be well received by consumers.

Furthermore, given managers' concern about the lack of production standards for organic produce, government legislation on standards and labelling would increase their willingness to stock such products. Governmental support, such as the assignment of special farming zones for organic produce, subsidies, and the reorganisation of the certification system will facilitate the growth of organic fanning. Establishing comprehensive national standards will also help the export of organically produced products (Shapiro 1998; Sugarman 1997), thus providing new opportunities.

Conclusions

The present research has indicated that successful green marketing entails much more than simply modifying the size of a package, recycled packages in place of virgin ones, or substituting natural ingredients for synthetic. Unlike conventional marketers who often react to consumers' immediate needs, the most successful green marketing

companies in Mauritius must lead their customers and other stakeholders rather than accept being led by them. They must anticipate emerging environmental issues and address them before being forced to do so. A green future is now being created by visionaries in Mauritius with a competitive spirit and social activism in their hearts. Legislation is usually the kick-start the launch of new green product and generate consumer demand. There are some complex issues on both the supply and the demand side, which suggest that the greening of consumer spending is a challenge, which may only be met effectively by providing a legislative push in the right direction. Without legislation in the Mauritian context, the take up of green seeds is unlikely to gather momentum. It must be remembered that greening is most successful where cost incentives or regulation are involved. Once given a regulatory push, firms tend to have the momentum to achieve further green developments without additional legislation. Producers must be the key to further green innovation, which is needed to improve performance, but this assumes that they must be capable of innovating. It seems that further Governmental Financial incentives in Mauritius are necessary if the market for green products is to improve and grow, or for future really radical green innovations to come to fruition.

Common sense suggests that the use of green appeals by marketers can be productive. However, recent research on green marketing and the green consumer, including the present study, indicates that the concepts will not be easy to apply. Green consumers must be treated carefully and, in particular, with respect. They appear to be careful and thoughtful consumers. Treated fairly, they may be receptive; treated poorly, they may not only switch brands, but also take others with them.

Limitations of the study & Directions of Future Research

The limitations of the present research provide anchors for future research. The research is generalisable only to the extent that the theoretical dimensions are captured in the study. During the focus group discussions with Mauritian executives, not all firms involved in environmental concerns had participated and hence only some industries and company effects have been controlled. Secondly, the study was limited to Mauritius only because of the researcher's interest in investigating specific concerns pertaining to the green context. If other cultural context within the Indian

Ocean Island region or East African countries had been chosen, richer insights might have been generated.

It is important to note that due to limited resources, the present study is only confined to Mauritius with 1000 respondents across the island. The result may not be representative of all the inhabitants of Mauritius and other neighbouring islands. Whilst it is believed that the present survey has contributed to a more in-depth understanding of the underlying factors accounting for the performance of eco-friendly purchasing acts in a developing economy such as Mauritius, the results so viewed is a foundation for more thorough follow-up research.

REFERENCES

Aaker, D.A. and Bagozzi, R.P. (1982), "Attitudes toward public policy alternatives to reduce air pollution", *Journal of Marketing*, Vol. 1, pp. 85-94.

Arbuthnot, J. (1977), "The roles of attitudinal and personality variables in the prediction of environmental behavior and knowledge", *Environment and Behavior*, Vol. 9, pp. 217-32.

Baillieux, P., and A. Scharpe (1994) 'Organic Farming', in *Green Europe* (European Commission, February 1994).

Berger, I.E. and Corbin, R.M. (1992), "Perceived consumer effectiveness and faith in others as moderators of environmentally responsible behaviors", *Journal of Public Policy & Marketing*, Vol. 11 No. 2, pp. 79-88.

Berry, L.L. (1980), "Services marketing is different", *Business*, Vol. 30, May-June, pp. 24-9.

Bohlen, G., Diamantopolous, A. and Schlegelmilch, B. (1993), "Consumer perceptions of the environmental impact of an industrial service", *Marketing Intelligence & Planning*, Vol. 11 No. 1, 1993, pp. 37-48.

Brooker, G. (1976), "The self-actualizing socially conscious consumer", *Journal of Consumer Research*, Vol. 3, September, pp. 107-12.

Bureau of Economic Analysis (1988), US Department of Commerce.

Camp, R. (1989), *Benchmarking: The Search for Industry Best Practices That Lead to Superior Performance*, Quality Press, Milwaukee, WI.

Ekelund, L., and E. Froman (1991) *Consumer Attitudes towards Vegetables: A Study of Conventional and Organic Products* (Report 60; Stockholm: Swedish University of Agricultural Sciences, Department of Horticultural Sciences [Swedish language]): 3-60.

Farshad, A., and J.A. Zinck (1993) 'Seeking Agricultural Sustainability', *Agriculture, Ecosystems and Environment* 47: 1-12.

Fierman, J. (1991), "The big muddle in green marketing", *Fortune* 123, 3 June, pp. 91-101.

Garfield, J. (1991), "Beware: green overkill", *Advertising Age*, 29 January, p. 26.

Gronroos, C. (1982), "An applied service marketing theory", *European Journal of Marketing*, Vol. 16, No. 7, pp. 30-41.

Grove, S.J. and Fisk, R.P. (1992), "Observational data collection methods for services marketing: an overview", *Journal of the Academy of Marketing Science*, Vol. 20 No. 3, pp. 217-24.

Grunert, C.S., and J.H. Juhl (1995) 'Values, Environmental Attitudes and Buying of Organic Foods', *Journal of Economic Psychology* 16: 39-62.

Grunert, C.S., and K. Kristensen (1990) 'On Some Factors Influencing Consumers' Demand for Organically Grown Foods', in R.N. Mayer (ed.), *Enhancing Consumer Choice* (Columbia, MI: American Council on Consumer Interests): 37-48.

Gutfield, R. (1991), "Eight of ten Americans are environmental, at least they say so", *Wall Street Journal*, 2 September, Section A, p. 1.

Hall, D.C., B.P. Baker, J. Franco and D. Jolly (1989) 'Organic Food and Sustainable Agriculture', *Contemporary Policy Issues* 8.4: 47-71.

Homer, M.P., and R.L. Kahle (1988) 'A Structural Equation Test of the Value-Attitude-Behaviour Hierarchy', *Journal of Personality and Social Psychology* 54.4: 638-46.

Hutchins, R.K., and L.A. Greenhalgh (1997) 'Organic Confusion: Sustaining Competitive Advantage', *British Food Journal* 99.9:336-38.

Ishikawa, K. (1985), *What is Total Quality Control? The Japanese Way*, Prentice-Hall, Englewood Cliffs, NJ.

Jay, L. (1990), "Green about the tills: markets discover the eco-consumer", *Management Review*, Vol. 79, June, pp. 24-9.

Jolly, D.A., and K. Norris (1991) 'Marketing Prospects for Organic and Pesticide Free Produce', *American Journal of Alternative Agriculture* 6.4: 174-79.

Jolly, D.A., H. Schutz, J. Johal and K. Diaz-Knauf (1989) *Marketing Organic Foods in California: Opportunities and Constraints* (Report of research funded by University of California, Sustainable Research and Education Program; Davis, CA: University of California).

Kaldis, P., and C. Gardelli (1996) 'Market and Marketing Aspects of Organic Farufing Products of Greece', in K. Mattas, E. Papanagiotou and K. Galanopoulos (eds.), *Agro-Food SMEs in a Large Integrated Economy* (Kiel: Wissenschaftsverlag Vauk): 124-31.

Karra, G., M. Koniari and M. Nomikou (1994) *Ecological-Biological Agriculture and Marketing of Organic Products* (Athens: Agricultural University of Athens [Greek language]).

Kangun, N., Carlson, L. and Grove, S.J. (1991), "Environmental advertising claims: a preliminary investigation", *Journal of Public Policy and Marketing*, Vol. 10, Fall, pp. 47-58.

Kirkpatrick, D. (1990), "Environmentalism: the new crusade", *Fortune*, Vol. 121, 12 February, pp. 44-51.

- Lempert, P. (1997) 'Good Eating', The Chicago Tribune, May 1997: 8.
- Lindsley, K. (1996) 'Organic Food: Health or Hype', Gannett Rochester Newspaper, July 1996.
- Lockeretz, W. (1989) 'Problems in Evaluating the Economics of Ecological Agriculture', *Agriculture, Ecosystems and Environment* 27: 67-75.
- Lovelock, C.H. (1983), "Classifying services to gain marketing insights", *Journal of Marketing*, Vol. 47, Summer, pp. 9-20.
- McCullough, J. (1993), "Hotels cash in on conservation", *USA Today*, 13 April, Section E, p. 5.
- McDonald's Corporation (1990), *McDonald's and the Environment*, Oak Brook, IL.
- Ministry of Environment, Mauritius (1998): survey of public awareness and attitude towards environment, Central Statistical Office, Port-Louis.
- Nutrition Week (1991) 'Consumer, seller surveys show barriers to organics', *Nutrition Week* (Washington, DC: Community Nutrition Institute) 21 (5 April 1990: 2-3).
- Ortega, B. (1993), "Wal-Mart store comes in colors, but is all green", *Wall Street Journal*, Vol. 221, 11 June, Section B, p. 1.
- Ottman, J., and V. Terry (1998) 'Strategic Marketing of Greener Products', *Journal of Sustainable Design*, April 1998: 15-21.
- Ottman Jacquelyn A. (1998), *Green Marketing: Opportunity for Innovation* (NTC-McGraw-Hill, New York).
- Ottman, J. 1998, *Green Marketing*, 2nd edn, Lincolnwood, IL: NTC Business Books.
- Park, T.A., and L. Lohr (1996) 'Supply and Demand Factors for Organic Produce', *American Journal of Agricultural Economics* 78 (August 1996): 647-55.
- Polonsky, M.J. (1991), "Australia sets guidelines for 'green marketing'", *Marketing News*, Vol. 25 No. 21, pp. 6, 18.
- Porter, M.E. (1991), "America's green strategy", *Scientific American*, Vol. 264, April, p. 168.
- Roberts, J.A. (1996a), "Will the real socially responsible consumer please step forward?", *Business Horizons*, January-February, pp. 79-83.
- Roper Organization (1990), *The Environment: Public Attitudes and Individual Behavior*, Commissioned by S.C. Johnson and Son, Inc.
- Roper Organization (1992), *Environmental Behavior, North America: Canada, Mexico, United States*, Commissioned by S.C. Johnson and Son, Inc.

- Sachs, C., D. Blair and C. Richter (1987) 'Consumer Pesticide Concerns: A 1965 and 1984 Comparison', *The Journal of Consumer Affairs* 21: 11-18.
- Samdahl, D.M. and Robertson, R. (1989), "Social determinants of environmental concern: specification and test of the model", *Environment and Behavior*, Vol. 21 No. 1, pp. 57-81.
- Schwartz, J. and Miller, T. (1991), "The earth's best friends", *American Demographics*, Vol. 13, February, pp. 26-35.
- Shapiro, L. (1998) 'Is Organic Better?', *Newsweek*, June 1998: 54.
- Shostack, G.L. (1987), "Service positioning through structural change", *Journal of Marketing*, Vol. 51, January, pp. 34-43.
- Shrum, L. J., Tina M. L., & McCarty, J.A. 1994, Recycling as a Marketing Problem: A Framework for Strategy Development, *Psychology & Marketing*, 11 (July/August), 393-416.
- Shrum, L.J., McCarty, J.A. 1995, Buyer characteristics of the green consumer and their implications for advertising strategy, *Journal of Advertising*, Summer, vol. 24, no. 2, pp.71-83.
- Simon, F. L. 1992, Marketing Green Products in the Triad, *Columbia Journal of World Business*, vol. 27, pp. 268-85.
- Smith, E.T. (1991), "Why AT&T is dialing 1 800 GO GREEN", *Business Week*, 25 October, p. 49.
- Sparks, P., and R. Shepherd (1992) 'Self-Identity and the Theory of Planned Behaviour: Assessing the Role of Identification with Green Consumerism', *Social Psychology Quarterly* 55-4: 388-99.
- Stern, P. C. & Oskamp, S. 1987, Managing scarce environmental resources, in Stokols, D. & Altman, I., (ed.), *Handbook of environmental psychology*, vol. 2, pp. 1043-1088, Wiley, New York.
- Stern, P.C., Dietz, T. and Kalof, L. (1993), "Value orientations, gender, and environmental concern", *Environment and Behavior*, Vol. 25 No. 3, pp. 322-48.
- Strother, S.G. (1992), "More tourists expect 'greener' vacations", *The Orlando Sentinel*, 23 August, Section D, pp. 1-2.
- Sugarman, C. (1997) 'Organic? Industry is way ahead of government', *The Washington Post*, December 1997.
- Symonds, W.C. (1992), "Getting rid of paper is just the beginning", *Business Week*, 21 December, pp. 88-9.

Thimm, C., C. Karst, and J. Schart (1992) *New Marketing Opportunities for Organic Produce in Northern Europe* (Study for the EU Commission).

Wasik, J.F. (1996) *Green Marketing and Management: A Global Perspective* (Cambridge, MA: Blackwell).

Wong V, Turner W and Stoneman P., (1996): "Marketing Strategies and Market Prospects for Environmentally-Friendly Consumer Products", *British Journal of Management*, vol. 7, pp 263-281, British Academy of Management

Zangwill, W.I. (1993), *Lightning Strategies for Innovation*, Lexington Books, New York, NY.

Zimmer, M.R., Stafford, T.F. and Stafford, M.R. (1994), "Green issues: dimensions of environmental concern", *Jo*.

Zoulakis, K. (1996) 'Organic Farming Perspectives in Greece', *Kathimerini*, 1 September 1996.