Changes in Consumers Decision Making Process Led by Environmental Information

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Abstract

To be able to make environmentally aware decisions, consumers must have both information and certain practical skills and knowledge. They must also have individual and collective competencies for decision-making to engage in public debate on environmental protection. Governments and other stakeholders must make progress in better targeting environment and consumption information and communicating it more effectively. Given both the challenges and opportunities consumers face in finding and using information to reduce their environmental impacts, it is important to improve the effectiveness of measures and policies to stimulate action from individuals and communities. Information is clearly one of the most important tools to stimulate consumers to make environmentally sustainable consumption decisions.

Environmental consciousness has been increasing, whereas environmentally friendly behaviour has not. To reduce the gap between them, better understanding of various factors and providing appropriate information on the environment are needed. The questionnaire surveys emphasizing environmental sustainability and the trade-off between risk and benefit were conducted to collect the data of environmental consciousness. That revealed that people had different consciousness and knowledge depending on their gender and age. Information on environmental assessment changed behaviour of housewives more than that of students. Especially concern about environmental impact on the next generation was found to affect housewives' behaviour. An analysis for carbonated containers showed the important factors in purchasing decision differed among responders but the information on global worming nevertheless affected the decision. Consumers are most receptive to, and most apt to act on, environmental information where there is a general level of environmental awareness. It is important to reinforce the link between individual information campaigns on specific environmental issues and longer-term initiatives to improve environmental education and public awareness and decision-making skills.

Ensuring accurate and reliable information in the market and prioritising public environmental information strategies will be important in reducing the outlay of time and resources required of households to adopt more sustainable consumption patterns. One of Government's most important roles, however, is to create a policy and regulatory framework that encourages sustainable behaviour and stimulates the provision of sustainable goods and services in the market. In the absence of these stronger signals to consumers, discrete information campaigns will have little effect in promoting more sustainable consumption. Governments have a range of tools they can use to promote more sustainable consumption patterns, including regulatory measures.

Decision making processes undertaken by consumers in regard to a potential market transaction before, during, and after the purchase of a product or service. According to Myers (1962), a person's decision making process depends to a significant degree on their cognitive style. It is a construction that imputes commitment to action. In general there are three ways of analysing consumer buying decisions. They are economic models, largely quantitative and based on the assumptions of rationality and near perfect knowledge, psychological models, concentrate on psychological and cognitive processes such as motivation and need reduction and consumer behaviour models, or practical models typically blend both economic and psychological models. Simon (1947) sees economic decision making as a vain attempt to be rational. The assumption of a perfectly rational economic actor is unrealistic. Often we are influenced by emotional and non-rational considerations. When we try to be rational we are at best only partially successful. Study of the complexity of buyer decision processes Nicosia, (1966); builds a comprehensive model

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involving five modules. The encoding module includes determinants like "attributes of the brand", "environmental factors", "consumer's attributes", "attributes of the organization", and "attributes of the message". Other modules in the system include, consumer decoding, search and evaluation, decision, and consumption.

Indian Marketing is undergoing a significant metamorphosis because of economic liberalization and globalisation. In this new market scenario households are transiting from low income to high-income categories. The prices of consumer goods have either come down or stayed low. This implies that a consumption boom is in the offing and will become a key trigger of economic growth. Many analysts are positive on the role of private consumption in shaping the future growth trajectory in India. However, societies based on mass production and mass consumption have brought benefits to many people, but they have caused large scale waste, depleted resources and global warming.

Households affect the environment through their day-to-day decisions on what goods and services to buy and how they use them, and their decisions on where to live and work, what kind of dwelling to have, and where and how to go on vacation. The combined impact of many households is an important contributor to a number of environmental problems, including air and water pollution, habitat alteration and climate change. In areas such as household energy use, travel, and waste generation, material and energy efficiency gains have been outweighed by the absolute increase in the volume of goods and services consumed and discarded. Environmental impacts from household consumption are set to grow in these areas over the next few years.

In the context of the role of consumption vis-à-vis other drivers of growth in the economy, it would be useful to examine the behaviour of the components of GDP from the aggregate demand side. An analysis of National Accounts data provides that on the average, private consumption has improved its growth performance in the 1990s vis-à-vis the 1980s. For the 1990s, there are two phases: the high growth phase (1993-94 to 1996-97) and slowdown (1997-98 to 2001-02). Viewed from the production side, all the three sectors -- agriculture, industry and services -- witnessed deceleration in the slowdown phase vis-à-vis the high growth phase. The demand components of GDP, however, show differential growth patterns. The growth in overall consumption expenditure declined marginally from 6 to 5.8 per cent between the high growth phase and the slowdown. The National Accounts provide disaggregated data for 37 consumption categories. Some consumption categories like white goods, beverages, transport equipment, communication witnessed double-digit growth rates and maintained their growth resilience from 1993-94 onwards (Joshi & Gulati, 2003).

Consumers are facing a barrage of communication from wide diversity of sources. Information can be a powerful tool for promoting more sustainable household consumption patterns. Nearly every government, private sector, or NGO initiative for the environment calls for a better informed and more active public. However, there are a number of barriers to effectively providing information to consumers and linking information to action. These barriers are related to the growing volume and complexity of environmental information, consumer scepticism vis-à-vis the credibility of most information sources, and "free-rider" decision-making dilemmas -- all in the context of a broader information and media environment that generally encourages indiscriminate consumption.

To be able to make environmentally aware decisions, consumers must have both information and certain practical skills and knowledge. They must also have individual and collective competencies for decision-making to engage in public debate on environmental protection. Governments and other stakeholders must make progress in better targeting environment and consumption information and communicating it more effectively. Given both the challenges and opportunities consumers face in finding and using information to reduce their environmental impacts, it is important to improve the effectiveness of measures and policies to stimulate action from individuals and communities. Information is clearly one of the most important tools to stimulate consumers to make environmentally sustainable consumption decisions.

For long time business looked upon environmental conservation efforts as a financial burden, despite the benefits in terms of corporate image. Recently, however, an increasing number of business engaged in environmental activities have come to realize that environmental efforts can be linked to increase profitability. Environmental consciousness has been increasing whereas environmentally friendly behaviour has not. To reduce the gap between them, better understanding of various factors and providing information are needed.

Consumer Decision Making Process

One basis for integrating human behaviour, consumer behaviour and decision making models is the dimension of information, where man is a problem solver. (Sommers, 1970). A complete model of the consumer choice process must explicitly consider three components: task characteristics, individual difference, and elemental behavioral response analysis (Punj, 1983).The classificatory approaches rampant in marketing and consumer behaviour have the basic assumption that 'concepts can be derived from data'. There is a tendency to resort to probability statistics to represent this data and develop generalizations. These will only give a probability estimate of aggregates of individual consumers and cannot, methodologically, predict individual consumer responses on the basis of these generalizations (Kassarjian, 1970). It is argued that models that posit constructs that represent and measure the cultural nature of evaluative and normative latent constructs will best model intention formation in a culture. Behavioural intention framework is applicable across cultures, yet must be operationalized with the distinctive thought processes of each culture in mind (Malhotra, 2001).

Consumer Behaviour as a Model of Adoption Behaviour

There are three reasons for the choice of consumer behaviour theory as a theoretical framework. First, the theory recognises that purchase (adoption) decisions may be made using a variety of styles of decisions. Second, the theory contains criteria for inferring which decision style is invoked in a particular purchase (adoption) situation. Third, consumer behaviour theory also recognises that consumers purchase a product to meet different needs. Differences in needs form the basis of market segments for a product (Assael, 1998).
Consumers make purchase decisions in a variety of ways depending on circumstances. One of the key factors which influences the way in which a purchase decision is made is the level of consumer involvement in the product. Consumer behaviour theory suggests that complex decision-making is associated with investing a high level of effort. It is a systematic, often iterative process in which the consumer learns about the attributes of products and develops a set of purchase criteria for choosing the most suitable product. The benefit or purchase criteria represent the key benefits sought by the consumer and generally reflect their usage situation. In the case of consumer goods the usage situation is often a function of the consumer's past experiences, their lifestyle and their personality (Assael, 1998). Having settled on a set of purchase criteria for deciding between products, the consumer then evaluates the products against the criteria and makes a choice.

The Information-Processing Model

Although many models of messages processing and response have been developed, McGuire was one of the first to propose that the consumer mind operated like an information processor (Barry, 1987). McGuire's information processing model (IPM), is an example of a hierarchy of effects and pertinent to the field of consumer behaviour, as they provide an outline of the attitude change process. Hierarchy of effects can be defined as "a set of consumer responses that moves from the least serious, involved, or complex up through the most serious, involved, or complex" (Wells et. al, 1998). McGuire has observed the "psychology of consumer choice from three perspectives: the external factors influencing consumer choice, the internal directive factors, and the internal dynamic factors" (McGuire, 1976). In addition to the hierarchy of stages, his theory contains

three major postulates, deals with input and output factors, and presents a communication matrix. The steps toward attitude change, known as information-processing in consumer decision-making, have six steps - presentation, attention, comprehension, acceptance, retention, and behaviour change. The information-processing model is most thorough of the hierarchy of effects models. However, the use of multiple theories and models in the construction and evaluation of messages, would be more comprehensive. Negative word of mouth communication significantly reduces the perceived credibility of advertising as well as brand attitudes and purchase intentions, and the effect of attitude toward the advertising on brand attitude becomes non-significant when subjects process both types of information (Smith, 1995).

Methodology

To solve problems of the global environment, consumers need to understand them properly and act properly in everyday life when, for example, selecting goods. However, they seem to concern more about safety and health than about a risk-benefit trade-off although their environmental awareness is improving (Suzuki et. al, 2004). Therefore, we surveyed people's consciousness towards the environment and investigated its change by information provided. There was two stage multiple choice questionnaire surveys using personal interview and one telephone survey were conducted to collect the data of environmental awareness and consciousness of 100 (55-Male, 45- Female) people at three localities of Bhopal city in Madhya Pradesh from April to August 2006. Selection of participants was purposive and based on convenience sampling procedure. Participants were asked questions on surrounding living environment in last 5 years, environmental pollution (air, water) and health (infant mortality, stillbirth rate and life expectancy), reduce, reuse and recycle of resources, purchase of mineral water bottles, utilization of vehicles, and use of energy efficient appliances. Topics on reduce, reuse and recycle of resources, purchase of mineral water bottles, utilization of vehicles, and use of energy efficient appliances, they were provided with each information, asked whether they had known it and whether they would live up to it, and then they selected the answer from the following: (a) Yes, I did and I will, (b) Yes, I did but I am not confident, (c) No, I did not but I will, (d) No, I did not and I am not confident. And at second stage after giving information on the environmental impact of a carbonated soft drink -container (bottle or can) was selected as the target item to respondents to investigate the change in consciousness and behaviour due to the information. The respondents were provided with information on market share, manufacturing and recycling, market price of drink, recycling costs, problems of the global environment, and life cycle assessment of containers. Than they were asked two questions, (a)Which do you think is better? and (b) Which would you buy?. They selected one from the following choices respectively; (a) Can is strongly favourable, (b) Can is generally favourable, (c) Uncertain, (d) Bottle is generally favourable, (e) Bottle is strongly favourable, and wrote down the reason and comments in a free form.

Results

It was found that participants' answers to the questions relating to environmental surrounding, pollution and health had a tendency to vary according to their gender, age and occupation. The answers to the questions on environmental surrounding and pollution revealed that the ratio of men was higher than that of women who have correct recognition of the current situation where the problems of environmental pollution have been being identified or solved recently. As for the occupation, students and teachers had the higher ratios of correct recognition.

Table 1. Percentage of respondents on various environmental issues

Variables	Male	Female
Environmental Surrounding	0.56	0.42
Pollution	0.54	0.38
Health	0.38	0.62

The answers to the question on health revealed that the ratio of women was higher than that of men who have correct recognition of the current situation where the health problems have been being identified or solved recently. Only teachers had the higher ratio of correct recognition on the contrary to the results mentioned above. Throughout the results mentioned earlier, the ratio of correct recognition increased in proportion to the age and the environmental consciousness of the responders. In terms of the occupation, university teachers had the higher ratios of correct recognition whereas schoolchildren had the lower ratio.

Table 2. Distribution of respondent as per age classes

Location/ Age Classes	-15	15-25	26-35	36-45	46-55	56+	Total
A	3	8	11	9	3	5	39
B	2	4	12	8	1	2	29
C	2	4	5	9	4	8	32
Total	7	16	28	26	8	15	100

The answers for question on reduce, reuse and recycle of resources, purchase of mineral water bottle, utilization of vehicle and use of energy efficient appliances were analyzed to investigate whether the environmental information is effective to change responder's behaviour to environmentally conscious. We considered it as effective if the answer was Yes, I did and I will or No, I did not but I will and as ineffective if the answer was Yes, I did but I am not confident or No, I did not and I am not confident. Overall results indicated that the effectiveness was constant irrespective of topics while the ratio of correct recognition varied from topic to topic. The relation between the effectiveness of information and the attributes of responders was analyzed. Information was more effective to those who have higher environmental consciousness of the topics on reduce, reuse and recycle of resources, purchase of mineral water bottle, utilization of vehicle and use of energy efficient appliances and less effective to those who have lower environmental consciousness of these issues.

Table 3. Response frequency for consumption behaviour of respondents

Responses / Variables	3R's Resources	M. Water	Vehicle	E. Appliances
Yes, I did and I will	44	38	51	29
No, I did not but I will	25	29	27	27
Yes, I did but I am not confident	20	26	16	28
No, I did not and I am not confident	11	7	6	16
Total	100	100	100	100

There were gaps between their replies to "Which do you think is better?" and "Which would you buy?" for both student and working people group. The environmental information led them towards the choice of a bottle which was considered to be more environmental friendly, but did not reduce the gaps. Students' choices moved to the bottle side after providing more information on, while working peoples' choices was also moved, however, the gap between them was remains same. Their replies to telephonic questionnaire after the personal interview, which is considered to be related to their behaviour, went back to those before first stage questionnaire stage.

Table 4. Effectiveness of information on product level by group of respondents

Response	Teachers	Farmers	Students	Managers	Businessmen	Housewife	Professors	Total
Effective	12	4	21	18	7	7	8	77
In-effective	3	1	8	4	2	2	3	23
Total	15	5	29	22	9	9	11	100

Table 5. Average of response to cognitive and behavioural component

	Which is better			Which would you buy		
Stage	1st (a)	1st (b)	2nd	1st (a)	1st (b)	2nd
Students	3.3	3.8	4.1	2.6	2.45	2.67
Working	3.1	3.7	4.4	2.0	2.2	2.6

Keywords were picked up from comments throughout all stages and then classified into 14 items. Table- 6 shows the frequencies of the keywords at main stages in a way that an affirmative description to the bottle counted + 1 and one to the can counted - 1. The choices of students gradually moved to the bottle side in terms of "environmental impact" at every stage, especially at second stage when environmental information was provided. Students appreciated bottles in terms of "product cost" and "impression", while working people greatly appreciated them in terms of "environmental attitude". On the other hand, they both appreciated cans in terms of "convenience", "easy purchase" and "easy recycle". Especially working people attached higher importance to "convenience" and "easy purchase" at every stage.

Table 6. Content analysis for 'bottle versus can'

Variable- Stage	Student Group		Working Group	
	1st	2nd	1st	2nd
Taste	0	2	6	10
Safety/health	-1	1	0	1
Convenience	1	-28	-6	-20
Price	1	1	0	-5
Product cost	3	11	4	5
Environmental impact	26	30	2	14
Impression	4	11	0	0
Specific occasion	1	8	1	2
Environmental attitude	2	9	4	28
Custom	-1	-7	1	-6
Easy purchase	-1	-9	1	10
Easy recycle	0	-8	1	26
Cost burden	1	-1	0	1
Information effect	-1	-6	1	20

Conclusions

To be able to make environmentally aware decisions, consumers must have both information and certain practical skills and knowledge e.g. to be able to identify environmental characteristic of a product or service, to sort waste. They must also have individual and collective competencies for decision-making to engage in public debate on environmental protection. Currently, Indian consumers suffer somewhat of an "information dilemma", which can be defined as consumer access to an abundance of information, but which often is not very useful to them for identifying environmentally sustainable actions. Governments and other stakeholders must make progress in better targeting environment and consumption information and communicating it more effectively.

The questionnaire surveys revealed that the effectiveness of environmental information was dependent on its content and the occupation and environmental consciousness of the responder. The analysis for soft drink containers showed the important factors in purchasing decision differed among responders but the information on global worming nevertheless affected the decision. It was found that development of appropriate contents of environmental information for individuals is needed investigating consumer's selection behaviour. One of Government's most important roles, however, is to create a policy and regulatory framework that encourages sustainable behaviour and stimulates the provision of sustainable goods and services in the market.

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