



Environmental Sustainability in Consumers' Food Choices: An Empirical Study

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Abstract: *With growing concern about ecological safety and resource optimisation, both industry and consumers are becoming conscious in making sustainable decisions. Through integrated supply chain practices, ecologically safe product attributes, lean manufacturing practices and focussed sales and marketing strategies, a sustainable Agro-Food ecosystem can be established. Out of the three spheres of sustainability, environmental factors are prioritised over economic and social/ethical parameters and it has been widely recognised by now. As role of consumer is as critical as of industry, efforts are being made on both the parts to achieve environmental sustainability. Present study has been carried out to examine consumer understanding about environmental sustainability and what priority concerns of environment are taken into consideration by consumer while making sustainable food choices. For this purpose, survey data was collected from 369 Indian consumers thorough a structured questionnaire. Results indicated lower level of concern towards among consumers' over-exploitation of marine resources whereas air pollution through carbon emission was regarded as most important concern in environmental concern parameter followed by scarcity of water. When product information is displayed, consumer purchasing behaviour showed that overall environmental friendliness of the products is preferred after single environmental attributes of recyclable and organic claim of the product. The results imply that environmental preference plays moderate role in consumer food purchasing decisions and future scope depends on the extent to which consumer general concern about environmental sustainability reflects in their actual buying behaviour. This study can support connecting the ecological concept more deeply with sustainability and can serve as a guide for environmental managers.*

Keywords: Environmental Sustainability, Environmental concerns, Consumer preference, Consumer purchasing behaviour

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INTRODUCTION:

Food processing Industry is one of the fastest growing industry in India with large consumer base. Along with growth, development should also be balanced through improving and taking in new concepts. Sustainability being one of the most discussed and priority concept at all global platforms has embarked as a sign of development. Sustainable development is defined as ‘Economic and social development that meets the needs of the current generation without undermining the ability of future generations to meet their own need.’([Brundtland, 1987](#)). Sustainability in food processing sector through environmental, economic and social approaches at the production, operations and sales and marketing level can be bearable, viable and equitable. Previous studies have largely focussed towards environmental sustainability. ([Bekmezci, 2015](#); [Diekmann & Franzen, 1999](#); [Hoek, Pearson, James, Lawrence, & Friel, 2017a](#); [Morelli, 2011](#); [Paço & Gouveia Rodrigues, 2016](#); [Urban & Govender, 2012](#); [Walker, 2008](#)). Hence, it is one of the critical aspect which is been multi-dimensionally analysed in every sector. Combination of environmental sustainability and food industry can significantly impact market if it is targeted at right time to right consumer, especially in developing nations like India. With its growing population and alarming concerns about global warming, had aroused sense of responsibility in consumers to become environmentally responsible in various ways. Such that processed food sector has the scope to introduce products offering sustainable benefits to consumers by consuming from responsible resources.

Literature Review

At the beginning of 1990's, environmental concerns had increased in European countries because of industrialisation ([Eurobarometer, 1992](#)) and the attention for the same was spread to other western industrialised nations. From past two decades, this environmental paradigm is being keenly observed in developing nations as well. Large business organisations are aware of this fact and are on a mission to embrace act of environmentalism in their corporate social and environmental responsibility credentials and disclose the same to stakeholders ([Hamel & Prahalad, 1996](#)). “Consumers who act responsibly for environmental and social problems and frame their consumption decision in moral manner than utility terms can be represented sustainable, responsible or ethical consumers”([Valor, Carrero, & Redondo, 2013](#)). A pro-environmental behaviour and attitude of consumer is impacted by knowledge about environmental issues. Further, consumer chosen action is characterized by awareness about environmental problems ([Maloney & Ward, 1973](#); [Stone, Barnes, & Montgomery, 1995](#)) yet consumer actions are dynamic and depend on several influencing factors. Sufficient research was carried out on environmentally responsible consumer behaviour, awareness, knowledge, attitude, intention and believe ([Hines, Hungerford, & Tomera, 1987](#); [Kristensson, Wästlund, & Söderlund, 2017](#); [Leire & Thidell, 2005](#); [Maloney & Ward, 1973](#); [Maniatis, 2016](#); [Paço & Gouveia Rodrigues, 2016](#); [Peschel, Grebitus, Steiner, & Veeman, 2016](#); [Stone et al., 1995](#); [Taufique, Siwar, Talib, & Chamhuri, 2014](#)). Thus, developing countries like India can contribute more significant information to business organisations as studies on Indian context are very limited. Hence it is vital to explore environmental consumerism from Indian consumer point of view and to assist policymakers providing consumer environmental information through their concerns and purchasing behaviour.

Study Objectives

The objective of the study is to gain insight of consumers for environmental concerns while making sustainable food choices while purchasing of food products. The aim of first objective is to investigate in general what environmental issues are important to consumer. Consumers were subjected to concerns that resulted in either most or least important levels for each environmental variable. Second objective was to know how consumer make sustainable food choices with respect to seven product attributes while purchasing processed food products.

Material and Methods

Cross sectional data was formed collecting responses through online and offline survey method from two metro cities, New Delhi, National Capital Region of India from northern India and Hyderabad, State Capital region of Telangana from Southern India considering the Socio-Cultural diversities of Indian population during first quarter of 2018. A valid sample of 369 respondents was obtained (Table 1). Pilot study was carried out seeking expert opinion and accordingly improvements were made in the questionnaire which consisted of three parts for this study. Considering six different aspects of environmental issues ([K. G. Grunert, Hieke, & Wills, 2014](#)), consumer concerns was measured on a 5-point scale with end points 1 being least concerned and 5 being extremely concerned to ensure optimal scale use. Consumer food purchasing behaviour with respect to product attributes of price, health, taste, quality, environment, brand, recyclable and organic claims was measured using 3-point scale to measure actual behaviour over the concerned behaviour. ([K. G. Grunert et al., 2014](#)).

Preliminary reliability checks showed that all the constructs displayed satisfactory reliability using Cronbach's alpha exceeding 0.80 for all the scales (Table 2). Age, Gender, Marital Status, Monthly income, Educational Qualification and Occupation were collected to form socio-demographic profile of consumers. The profile ratio of high qualified, middle age with higher

income group was more than other subsets of the sample. Data was analysed using Statistical software SPSS (trial version). Percentages, Mean and standard deviation was calculated to arrive the results.

Data Interpretation

The findings reported that although consumer are equally concerned for all the environmental issues, concern for air pollution due to carbon emission was out most important followed of scarcity of water resources (Table 3). From the analysis, it can be interpreted that consumers have positive attitude towards environmental safety as consumer believe that growing environmental issues will have direct impact on present and indirectly effect future. Most of the studies reported that consumers are more interested to contribute towards environment gaining potential benefits through sustainable consumption. ([Bjørner, Hansen, & Russell, 2004](#); [Tanner & Wölfig Kast, 2003](#); [Vermeir & Verbeke, 2006](#)). This positive attitude of consumer is making an impression for market to produce more sustainable products. For which market needs to be ready with the information to supply products based on consumer demand where consumer is willing to give importance to certain environmental concerns. ([Hoek, Pearson, James, Lawrence, & Friel, 2017b](#)). Following this, consumers purchasing behaviour was studied using food product information. (Table 4) It was found that overall environmental impact of product is considered after recyclable and organic claim which are also sustainable aspects of the processed food products. Price and brand of the products was as equally important as environmental friendliness of product to consumer. This positive attitude of consumer is a good starting point to stimulate sustainable consumption. Many similar findings reported that consumer perceive that sustainable products are better and are beneficial to health,

environment and economies with respect to taste, qualify and freshness. ([S. C. Grunert & Juhl, 1995](#); [Hartmann & Siegrist, 2017](#); [Hoek et al., 2017a](#); [Kassem, Trenz, Hřebíček, & Faldík, 2016](#); [Lakatos et al., 2018](#); [Peschel et al., 2016](#))

Conclusion

Climate change is result of environmental problems created by human race. Sustainable use of resources at production and consumption level can help in reducing climate change impact and for this attainment of responsible behaviour from industry and consumer is necessary. As Indian food processing industry is consumer demand driven, the demand for environmental safe products by consumers are driving industry to produce more sustainable products. Present study has addressed different environmental issues where consumers are concerned of and how their purchasing decisions are with respect to various product attributes. Results showed that consumer are equally concerned about all environmental issues. Although, air pollution due to carbon emission was what consumers were most concerned of. Consumer food purchasing behaviour was positive towards environmental friendly products. It can be concluded that as consumer behaviour is dynamic and very hard to understand, present findings reveal that consumers are positively inclined towards environmental performance of the product while make sustainable food choices.

Table 1: Socio-demographic profile of respondents (n=369)

Socio-demographic characteristics	% of total
<i>Gender</i>	
Male	57.2
Female	42.8

<i>Age group</i>	
16-25	10.8
26-35	62.1
36-45	17.6
46-55	5.4
55 and above	4.1
<i>Marital Status</i>	
Single	35.2
Married	63.1
Other	1.6
<i>Educational Qualification</i>	
Undergraduate	6.0
Graduate	17.1
Post graduate	58.0
Doctorate	16.3
Other	2.7
<i>Occupation</i>	
Student	5.4
Private /Govt. Employee	74.5
Self Employed	8.4
Home Manager/House wife	7.0
Other	4.6
<i>Monthly Income (in Rs.)</i>	
< 20,000	12.2
21,000 - 30,000	9.8
31,000 - 40,000	23.8
41,000 - 50,000	8.7
< 50,000	45.5

Source: Authors Survey

Table 2 : Reliability statistics of variables (Cronbach alpha value)

Construct	No. of Items	Alpha Values
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Consumer environmental concerns	6	0.82
Purchasing behaviour w.r.t product attributes	8	0.81

Table 3: Concern about environmental issues (n=369)

Environmental Issues	Mean	Std. Deviation
Scarcity of water	4.6818	.75892
Air Pollution due to high carbon emission	4.7110	.60207
Deforestation	4.4383	.90929
Excessive Use of pesticides	4.1331	1.17734
Use of Plastic Packing Material	3.9221	1.13879
Over exploitation of Marine Population	3.5942	1.07423

Table 4 : Information used during purchasing of processed food products

Product Information	Mean	Std. Deviation
Price of product	1.61	.489
Environment friendliness	1.69	.503
Health Benefits	1.52	.545
Taste of the product	1.49	.527
Quality of the product	1.46	.499
Brand of the product	1.67	.544
Organic claim	1.83	.527
Recyclable claim	2.04	.553

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