

Impact of Environmental Issues on Consumer Senses Leading to Ecofriendly Buying Decisions

Hannah Fredrick, J. Salomi Backia Jothi

Abstract: *Inducing Sustainable consumption in individuals is one of the important challenges in the path to Sustainability. Buying decision can be influenced by Consumer Perception. Sensory Marketing practices are effective tools for influencing Consumer Perception. This paper introduces sensory marketing as a new replica in the field of Sustainable Consumption. Senses stimulate cognitive thinking which is the need of the hour for global environmental change. Sensory marketing may be a new tool in the field of solving Environmental issues, as it influence buying decisions of consumer and also encourage consumer to pay more through perception. This study tries to analyse the impact of environmental Issues on consumer senses which influences to Eco friendly buying decisions..*

Keywords : *Environmental Issues, Sensory Marketing, Eco Friendly Buying Decisions.*

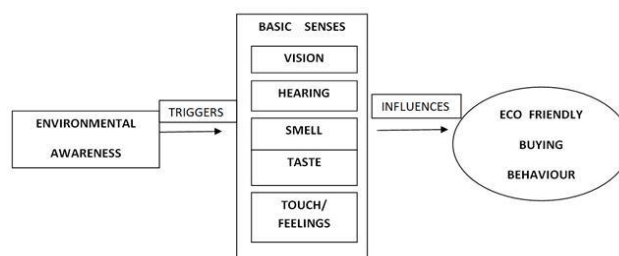
I. INTRODUCTION

Environmental issues have gained more importance in the society now-a-days. Environmental consciousness of individual has also grown. Purchase of environmentally friendly consumables product has to be encouraged to have more environmental benefits. Triggering the subconscious of the consumer may influence a change in consumer perception and buying behavior. Sensory Marketing engages the basic senses of consumer to influence their perception and behavior. So the main aim of this paper is to analyse the impact of sensory marketing in the field of sustainable consumption

A. Need for the study

Sensory marketing may be a new tool in the field of solving Environmental issues, as it influence buying decisions of consumer and also encourage consumer to pay more through perception. Seeing, Hearing, tasting, smelling and touching plays an important role in satisfying day to day needs.

B. Conceptual Frame work of the Study



C. Research Gap

Sensory Marketing practices are effective tools for influencing Consumer Perception. This paper introduces sensory marketing as a new prototype in the field of Sustainable Consumption.

II. REVIEW OF LITERATURE

Individual Concern for the environment is the basic necessity. Environmental concern have direct impact on green buying behavior Kim and Choi(2005)...Many studies reveals that influencing consumer perception have an impact on purchasing decisions of the consumer. Sensory marketing means studying the basic senses and consumer behavior. Environmental stimuli lead to an emotional reaction of the consumers which brings out consumer behavioural response.(Mehrabian and Russell 1974). Vision- Edwards and Shackley, 1992 says due to effective exterior store window the sales have been increased. In Marketing research vision is an important sense (Krishna, 2012; Schroeder, 2006). Sound has impact on many consumer behavior. According to Yoon and Park, 2011, Sensory marketing is related with a favourable emotional response in the consumer's shopping behavior. Consumer's senses, experience and emotions have been emerging as important paradigm (Achrol and Kotler, 2010). The environmental stimuli in the store influences consumer behavior (Farias et al. 2014)

III. RESEARCH METHODOLOGY

A. Sampling design

The sample for this research was taken from the youth in Chennai, Tamil Nadu. Every segment of the population is responsible for maintaining the Environmental Integrity. Youth are having special responsibility as they will be the ones to inherit it.

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A questionnaire was framed and tested for its suitability and applicability to this research study. After testing its reliability, the questionnaire was administered to 280 youths. After discarding questionnaires that were incomplete, 220 questionnaires were selected for the study.

B. Objectives

1. To identify impact of environmental issues influencing the 5 basic senses of the youth
2. To find the relationship between environmental issues influencing the senses and purchase of eco friendly products.

C. Hypothesis

1. Environmental issues influencing the senses leads to purchase of eco friendly products

IV. DATA ANALYSIS

A. Application of Structured Equation Model (SEM) on the influence of environmental issues on 5 basic senses of the youth

The environmental issues influence the 5 basic senses (Sight, Hearing, Smell, Touch and Taste) of the youth. Sight and hearing senses are combined and taken as Audio visual senses as both are related. Touch senses is related to feelings and Taste senses is related to food. 10 variables of environmental issues influencing the 5 basic senses of the youth was taken for the study.

a) Factor Analysis on the variables of environmental issues influencing the 5 basic senses of the youth

Factor analysis was adopted on the 10 variables of environmental issues influencing each of the 5 basic senses of the youth. Factor analysis was applied using SPSS 21 on these variables.

4.1.1(a) Factor Analysis on the variables of environmental issues influencing the Audio Video senses of the youth

The researcher identified the 10 variables taken from previous research studies that constitute the variables of environmental issues that influence the Audio Video senses of the youth as land slide, earth quake, global warming, water scarcity, deforestation, wasting fuels, plastic usage, co2 emission, industrial waste and ocean pollution. Principal Component method and Varimax rotation with showed Kaiser-Meyer-Olkin Statistic to be 0.922 (>0.7) and Barlett's test of Sphericity ($\chi^2=1400.549, p=0.000$) significant with a cumulative % as 69.879, thereby confirmed the feasibility of factor analysis. As 9 variables fell within the 1st factor and 1 variable landslide fell in the 2nd factor, the 9 variables constituting the 1st factor was taken for the study as they were considered important variables of environmental issues that influence the Audio Video senses of the youth.

4.1.1(b) Factor Analysis on the variables of environmental issues influencing the Touch/ Feelings senses of the youth

The researcher identified the 10 variables taken from previous research studies that constitute the variables of environmental issues that influence Touch/ Feelings senses of the youth as fear of natural calamities, fear of global warming, fear of future of environmental degradation, fear of survival, fear of health issues, fear of industrial explosions, fear of safety to life, fear of accidents, fear of non availability of resources and fear of future generation survival. Principal Component method and Varimax rotation with factor showed Kaiser-Meyer-Olkin Statistic to be 0.921 (>0.7) and Barlett's test of Sphericity ($\chi^2=1334.858, p=0.000$) significant with a cumulative % as 60.091, thereby confirmed the feasibility of factor analysis. As all the 10 variables fell within one factor, all the variables were considered as important variables of environmental issues influencing the Touch/ Feelings senses of the youth.

4.1.1(c) Factor Analysis on the variables of environmental issues that impact the Smell senses of the youth

The researcher identified the 10 variables taken from previous research studies that constitute the variables of environmental issues that influence the Smell senses of the youth as water pollution smell, air pollution smell, plastic burning smell, land pollution smell, garbage smell, drainage leakage smell, Industrial smoke smell, fast food odor smell, chemical smell, and junk food odor smell. Principal Component method and Varimax (orthogonal) showed Kaiser-Meyer-Olkin Statistic to be 0.857 (>0.7) and Barlett's test of Sphericity ($\chi^2=1434.310, p=0.000$) significant with a cumulative % as 69.347, thereby confirmed the feasibility of factor analysis. As 8 variables fall within the 1st factor and 2 variable fall in the 2nd factor, the fast food odor smell and junk food odor smell, 8 variables constituting the 1st factor was take for the study as they were considered important variables of environmental issues influencing the Smell senses of the youth.

4.1.1(d) Factor Analysis on the variables of environmental issues influencing the Taste/ Food senses of the youth

The researcher identified the 10 variables taken from previous research studies that constitute the variables of environmental issues that influence the Taste/ Food senses as avoiding nutritious food, unsaturated fatty food, preservatives in food, adulterated food, chemicals in food, unhygienic food, junk food, avoiding traditional food, canned food and fast food. Principal Component method and Varimax (orthogonal) showed Kaiser-Meyer-Olkin Statistic to be 0.861 (>0.7) and Barlett's test of Sphericity ($\chi^2=1500.904, p=0.000$) significant with a cumulative % as 71.364, thereby confirmed the feasibility of factor analysis. As 8 variables fall within the 1st factor and 2 variables junk food and avoiding traditional food fall in the 2nd factor, 8

variables constituting the 1st factor was taken for the study as they were considered important variables of environmental issues influencing the Taste/ Food senses of the youth.

B. Confirmatory Factor Analysis

After the completion of Exploratory Factor Analysis, the variables in each factor for each senses obtained through Factor Analysis was confirmed by Confirmatory Factor

Analysis (Amos 21.0). Using a maximum likelihood estimation method, the results of CFA signifies if the Senses model fits the data well or not. As taste/ food senses did not fit into the model, taste/ food senses was removed assuming that environmental issues influence on taste/ food senses is insignificant.

Table - I: Reliability and Validity for relation between environmental issues impacting the senses

	Reliability	Validity				
		AVE>0.5	Composite Reliability>0.7	Discriminant Validity		
				Audio Visual	Touch	Smell
Audio Visual	.930	.612	.934	.782		
Touch	.926	.552	.931	.280**	.743	
Smell	.911	.560	.923	.312**	.287**	.748

Alpha >0.70 Nunnally&Berstein 1994), AVE >0.50(Ahmad et.al. 2016),CR >0.70(Fornell and Bookstein, 1982)** Correlation is significant at 0.01 level.

Source: Analysis of survey data

The data used in the model are found to be reliable and valid. The Fitness of Data was tested using the Model fit data in Amos and is shown in Table –II.

Table – II: Fit Statistics for the Measurement Model for relation between environmental issues impacting the audio visual senses, touch/ feeling senses and smell senses

Name of the Index	Index Value	Acceptance level	Outcome
RMSEA	.049	≤ 0.08 (MacCallum et al, 1996)	Good fit
CFI	.962	≥ 0.95 (Hulland et.al, 1991)	Good fit
SRMR	.0515	≤ 0.08 Hu & Bentler	Good fit
χ^2/df	1.530	< 5 (Marsh et.al, 1985)	Good fit

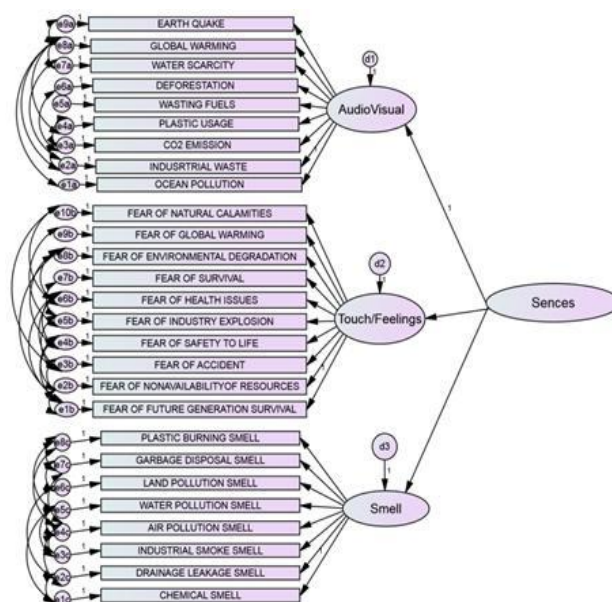
Source: Analysis of survey data

The values of χ^2/df , CFI, SRMR and RMSEA indicated a perfect fit.

4.1.3 Structural Equation Model showing the environmental issues influencing the senses

The following Figure - I shows the Structural Equation Model showing the environmental issues influencing the senses

Figure – I



4.2 Application of Structured Equation Model (SEM) for relationship between environmental issues influencing the senses and purchase of eco friendly products.

4.2.1 Factor Analysis on the purchase of eco friendly products

10 eco friendly products was identified from previous research and factor analysis was applied. The 10 eco friendly products are organic foods, five star gadgets, vehicles with less co₂, recycled goods, reusable goods, less chemical products, non plastic goods, renewable energy products, energy conserving products and water saving products. Principal Component method and Varimax (orthogonal) rotation showed Kaiser-Meyer-Olkin Statistic to be 0.911 (>0.7) and Barlett's test of Sphericity ($\chi^2=1669.325, p=0.000$) significant with a cumulative % as 65.264, thereby confirmed the feasibility of factor analysis. As all the 10 variables fell into the same construct, all were considered important variables of purchase of Eco friendly products influenced by senses.

2=1669.325, $p=0.000$) significant with a cumulative % as 65.264, thereby confirmed the feasibility of factor analysis. As all the 10 variables fell into the same construct, all were considered important variables of purchase of Eco friendly products influenced by senses.

4.2.2 Confirmatory Factor Analysis

After the completion of exploratory Factor Analysis, the variables of purchase of Eco friendly products was confirmed by confirmatory Factor Analysis using Amos 21.0..

Table – III: Reliability and Validity for purchase of Eco friendly products

	Reliability	Validity	
	Alpha>0.7	AVE>0.5	Composite Reliability>0.7
Eco friendly products	.940	.605	.944

Alpha >0.70 (Nunnally & Bernstein 1994), AVE >0.50 (Ahmad et.al. 2016), CR >0.70 (Fornell and Bookstein, 1982)**

Source: Analysis of survey data

The data used in the model are found to be reliable and valid.

Table – IV: Fit Statistics

Name of the Index	Index Value	Acceptance level	Outcome
RMSEA	.048	≤ 0.08 (MacCallum et al, 1996)	Good fit
CFI	.999	≥ 0.95 (Hulland et.al, 1991)	Good fit
SRMR	.0165	≤ 0.08 Hu & Bentler	Good fit
χ^2/df	1.142	< 5 (Marsh et.al, 1985)	Good fit

Source: Analysis of survey data

The values of χ^2/df , CFI, SRMR and RMSEA indicated a perfect fit.

4.2.3 Path Model showing the relationship between environmental issues influencing the senses and purchase of Eco friendly products.

The relationship between environmental issues influencing the senses and purchase of Eco friendly products is established by the Path diagram.

4.2.3.1 Evaluation of Path diagram

Table – V: Fit Statistics for the relationship between environmental issues influencing the senses and purchase of eco friendly products.

Name of the Index	Index Value	Acceptance level	Outcome
RMSEA	.051	≤ 0.08 (MacCallum et al, 1996)	Good fit
CFI	.944	≥ 0.95 (Hulland et.al, 1991)	Good fit
SRMR	.0508	≤ 0.08 Hu & Bentler	Good fit
χ^2/df	1.574	< 5 (Marsh et.al, 1985)	Good fit

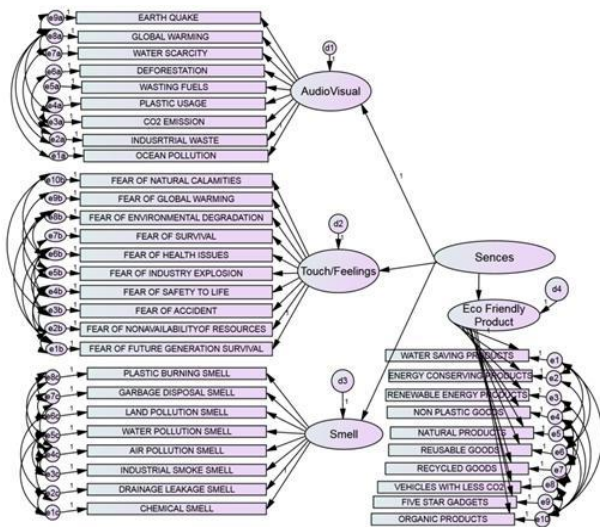
Source: Analysis of survey data

The values of χ^2/df , CFI, SRMR and RMSEA indicated a perfect fit.

4.2.3.2 Path Model

SPSS Amos Graphics has specified the path-diagram in Figure 4.3.1 which shows the relationship between the independent variable (environmental issues influencing the senses) and dependent variable (purchase of Eco friendly products).

Figure – II: Relationship between environmental issues influencing the senses and purchase of eco friendly products.



As the model indicates an acceptable fit shown in Table 4.3.2 an examination of the regression weights estimate can be done for the structural model to establish the relationship between the environmental issues influencing the senses and the purchase of eco friendly products.

After evaluating the model fit, the research Hypothesis Ha3“environmental issues influencing the senses leads to purchase of eco friendly products” was tested using the results of the Path analysis.

4.2.3.3 Hypothesis Testing based on Standardized Regression estimate

Table – VI: Regression coefficients of environmental issues influencing the senses and purchase of eco friendly products.

			Standardized Estimate	S.E.	C.R.	P	Results
Purchase of eco friendly product	<---	Environmental issues influencing the Senses	.518	.186	3.911	***	Ha is supported

Source: Analysis of computed data

Inference

As the p-value is less than 0.05, the Hypothesis Ha is accepted.

V. CONCLUSION

Out of the 5 basic senses, environmental issues are found to influence the audio visual senses, touch/ feeling senses and smell senses. Taste/ food senses though influenced by environmental issues, compared to audio visual senses, touch/ feeling senses and smell senses its contribution is seen insignificant. Hence, the youth must be made more conscious of environmental issues regarding taste/ food senses. It is found that audio visual senses, touch/ feeling senses and smell senses when triggered by environmental issues, lead the youth to purchase eco friendly products. This proves that the youth have a positive outlook towards environmental issues which leads them to purchase eco friendly products.

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Dr. (Mrs) Hannah Frederick , M Com, M Phil, Ph.D is working as Associate Professor in Commerce, at the Deptment of Commerce, Madras Christian College. Her has a total teaching experience of 28 years. Her area of specialisation is Finance and Human resource management. She has produced one research scholar and is at present guiding five research scholars towards Ph.D. She has also produced 7 M.Phil scholars. She has published 14 research articles in 3 National journals, 4 International journals , 6 UGC approved journals and 1 scopus Journal of which some were awarded the best paper. She is specialised in applying the latest statistical tools in research. She has chaired a session at a conference held by XIME, Bangalore. She has also delivered a lecture on Research Methodology at WCC. At present she is the member of the College Senatus and has held different positions at the college.



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