



**DISCRIMINANT FUNCTION ANALYSIS OF FACTORS
INFLUENCING BUYING BEHAVIOUR OF URBAN AND
RURAL CONSUMERS OF SELECT PERSONAL HYGIENE
CARE PRODUCTS IN COIMBATORE REGION, TAMILNADU**

Dr. K. Ramamurthi* & A. Arun**

* Professor & Principal, Coimbatore Institute of Management and Technology,
Coimbatore, Tamilnadu

** Ph.D Research Scholar, Coimbatore Institute of Management and Technology, Coimbatore, Tamilnadu

Cite This Article: Dr. K. Ramamurthi & A. Arun, "Discriminant Function Analysis of Factors Influencing Buying Behaviour of Urban and Rural Consumers of Select Personal Hygiene Care Products in Coimbatore Region, Tamilnadu", International Journal of Applied and Advanced Scientific Research, Volume 2, Issue 1, Page Number 71-75, 2017.

Abstract:

This article is based on the data collected for Ph.D Research. It examines the details of consumer behaviour of the Urban and Rural respondents in respect to application of Discriminant Function Analysis on four dimensions - Factors Influencing Buying Preference, Factors Determining Buying Behaviour, Factors Affecting Buying Behaviour and Factors Influencing Consumer Satisfaction. The study covered 823 urban respondents and 277 rural respondents selected by applying statistical formula for selecting representative sample for undefined population. The data for the four dimensions of the study were collected by using a structured questionnaire on a five point Likert type scales and the discriminant function analysis was carried out by calculating the mean score of the scales and determining the most discriminating independent variable age, education and income. The paper, further highlights the differences observed in the discriminant function analysis between the urban and the rural respondents.

Key Words: Purchasing Format, Rural & Urban

Introduction:

Consumer behaviour in general and consumption related to Personal Hygiene Care Products in particular is of paramount importance in market research studies. Four dimensions of the study are - Factors Influencing Buying Behaviour, Factors Determining Buying Behaviour, Factors Affecting Buying Behaviour and the Factors Influencing Consumer Satisfaction have been analysed by data collected from the respective scales. The scale on Factors Influencing Buying Preference had identified 11 factors - Reliability, Choice of Options, Cordial Service, Free Home Delivery, Self Service, Preset Purchase, Competitive Price, Credit Facility, All under One Roof, Choice of Variety and Visual Merchandising. The scale on Factors Determining Buying Behaviour considered 13 factors - Income, Family Needs, Special Occasions, Neighbour Opinion, Beliefs and Attitudes, Children's wish, Visual Media, Others buying, Print Media, Word of Mouth, Price, Product Features and Celebrity brands. The scale on Factors Affecting Buying Behaviour covered 10 factors - Cost of the Product, Multiplicity of Brands, Addiction to particular brand, Genuineness of product, Spurious / Duplicate Product, Too many Choices, Lack of product knowledge, Offers, Situational factors, and Seasonal Discounts. The scale on Factors Influencing Consumer Satisfaction listed 12 factors - Brand Image, Product Quality, Visual Appeal, Value for Money, Personal experience, Social Status / Self Esteem, Approval of Family Members, Adherence to traditional family customs, Product Certification, Go Green Products, Competitive Price, Endorsement by Others.

Review of Literature:

Review of Literature for the study mainly focused on contemporary research papers. A brief description of the reviews is given below.

A. Abdul Brosekhan, Dr. C. Muthu Velayutham recount in their paper on "Consumer – Literature Review" states that in the field of consumer behaviour research different streams of thought have emerged. These include: Consumer Personality Factors, Promotion, The Traditional Perspective, The Rational Perspective, Behavioural Perspective, Cognitive Perspective, Consumer Decision Making Models, Personality Perspective, Motivational Perspective, The Attitudinal Perspective, Situational Perspective, Positivist Perspective and The Non-Positivist Perspective.

Donthu and Gilland (2002) had taken into account two factors – "Risk aversion and innovativeness" as those that mainly influence consumers for decision making. Risk awareness is a measure how much consumers need to be certain and sure of what they are purchasing. In terms of risk those who are high risk takers they need to be very certain what they are buying or intended to buy. The less risk adverse consumers tolerate some amount of risk and uncertainty in their purchases. The second variable innovativeness is a global measure which takes into account the degree to which consumers are willing to take chances and experiment new ways of buying.

Jeff Bray in his paper "Consumer Behaviour Theory: Approaches and Models" describes the different approaches under: Economic Man, Psychodynamic, Behaviourist, Cognitive and Humanistic.

iResearch Sciences, Applied intellect, has listed five common factors influencing buying preference - marketing campaigns, economic conditions, personal preferences, group influences and purchasing power.

Statement of the Problem:

Consumer behaviour in respect of buying Personal Hygiene Care Products has the interplay of several dimensions like those that influence buying preference, those that determine buying behaviour, those that affect buying behaviour and those that influence consumer satisfaction. There are certain factors like age, education and income have discriminating impact on consumers' behaviour. This study has examined these factors by applying discriminant function analysis for the dimensions.

Research Design:

The research design for this study is descriptive.

Objectives:

- ✓ To identify the dimensions influencing consumer behaviour
- ✓ To find out the most discriminant variable influencing the various dimensions that constitutes consumption behaviour.

Dependent Variables:

The following are the dependent variables in the study:

- ✓ 11 factors governing a particular purchase format - Reliability, Choice of Options, Cordial Service, Free Home Delivery, Self Service, Preset Purchase, Competitive Price, Credit Facility, All Under One Roof, Choice of Variety and Visual Merchandising.
- ✓ 13 factors that accounted for factors influencing buying behaviour - Income, Family Needs, Special Occasions, Neighbour Opinion, Beliefs and Attitudes, Children's wish, Visual Media, Others buying, Print Media, Word of Mouth, Price, Product Features and Celebrity brands.
- ✓ 10 factors affecting buying behaviour - Cost of the Product, Multiplicity of Brands, Addiction to particular brand, Genuineness of product, Spurious / Duplicate Product, Too many Choices, Lack of product knowledge, Offers, Situational factors, and Seasonal Discounts.
- ✓ 12 factors influencing consumer satisfaction - Brand Image, Product Quality, Visual Appeal, Value for Money, Personal experience, Social Status / Self Esteem, Approval of Family Members, Adherence to traditional family customs, Product Certification, Go Green Products, Competitive Price, Endorsement by Others.

Independent Variables:

The following independent variables were used for carrying out discriminant function analysis:

- ✓ Age
- ✓ Education and
- ✓ Income

Tool of Data Collection:

Questionnaire was used as a tool for data collection.

Results and Discussions:

The data collected for responses to the dimensional scales of the study was coded, and analysed using SPSS 23.0 version. The following section presents the results of:

- ✓ The Discriminant Function Analysis for Factors Influencing Particular Purchase Format.
- ✓ The Discriminant Function Analysis for Factors Determining Buying Behaviour
- ✓ The Discriminant Analysis for Factors Affecting Buying Behaviour
- ✓ The Discriminant Function Analysis for Factors Influencing Consumer Satisfaction.

Discriminant Function Analysis for the Reasons for Choosing a Particular Purchase Format:

The following presents the Discriminant function analysis for the reasons for choosing a particular purchase format by the urban and the rural respondents. The following table gives the standardized canonical discriminate function coefficients for arriving at the Discriminant Function Equation for the Urban and the rural respondents.

Table 1: Standardized Canonical Discriminant Function Coefficients for the reasons for choosing a particular purchasing format for the respondents.

Respondents by Their Domicile		Function
		1
Urban	Age	.271
	Educational Qualification	.614
	Monthly Income	.738
Rural	Age	.934
	Educational Qualification	-.412
	Monthly Income	-.120

From the structure of the standardized Discriminant Function (DF), the equation for the urban respondents is:

$$Y = a_1 + b_1 + c_1$$

Where Y is the Discriminant Function Equation,

a₁= age

b₁= education

c₁ = income

The Discriminant function coefficient for age = 0.271, education = 0.614 and income= 0.738. The Discriminant Function equation for the Urban Respondents = 0.271 + 0.614 + 0.738.

Of the three Discriminant function variables, income had the highest coefficient value of 0.718 as compared to 0.614 for education and 0.271 for age. Thus, in the case of the urban respondents the most Discriminant Function Variable is the income.

In respect to the Discriminant Function Analysis for Rural Respondents from the structure of the standardized Discriminant Function (DF), the equation for the rural respondents is:

$$Y = a_1 + b_1 + c_1$$

Where Y is the Discriminant Function Equation,

a₁= age

b₁= education

c₁ = income

The Discriminant function coefficient for age = 0.913, education = - 0.412 and income= - 0.120. The Discriminant Function equation for the Rural Respondents = 0.271 + 0.614 + 0.738.

Of the three Discriminant function variables, age had the highest coefficient value of 0.913 as compared to - 0.412 for education and - 0.120 for income. Thus, in the case of the rural respondents the most Discriminant Function Variable is age. .

Interpretation of Discriminant Function Analysis:

The results of Discriminant Function Analysis showed that there is difference in the Discriminant variable between the urban and the rural respondents. Income was the major Discriminant variable for the Urban respondents, whereas, the age was the major Discriminant variable for the rural respondents

Discriminant Function Analysis for the Factors Determining Buying Behavior:

The following presents the Discriminant function analysis for the factors determining buying behaviour the urban and the rural respondents. The following table gives the standardized canonical discriminate function coefficients for arriving at the Discriminant Function Equation for the urban and the rural respondents

Table 2: Standardized Canonical Discriminant Function Coefficients For The Factors Determining Buying Behaviour The Respondents.

Respondents by Their Domicile		Function
		1
Urban	Age	.532
	Monthly Income	-.576
	Educational Qualification	.528
Rural	Age	.882
	Monthly Income	.385
	Educational Qualification	.054

From the structure of the standardized Discriminant Function (DF), the equation for the urban respondents is:

$$Y = a_1 + b_1 + c_1$$

Where Y is the Discriminant Function Equation,

a₁= age

b₁= income

c₁ = education

The Discriminant function coefficient for age was = -0.532, income= -0.576., education = 0.525

The Discriminant Function equation for the Urban Respondents = 0.532 - 0.576 + 0.525

Of the three Discriminant function variables, age had the highest coefficient value of 0.532 as compared to - 0.576 for income and 0.525 for education. Thus, in the case of the urban respondents the most Discriminant Function Variable was age.

In respect to the Discriminant Function Analysis for Rural Respondents from the structure of the standardized Discriminant Function (DF), the equation for the rural respondents is:

$$Y = a_1 + b_1 + c_1$$

Where Y is the Discriminant Function Equation,

a₁= age

b₁= education

c₁ = income

The Discriminant function coefficient for age = 0.882, income = 0.385 and education = 0.054. The Discriminant Function equation for the Rural Respondents = $0.882 + 0.385 + 0.057$. Of the three Discriminant function variables, age had the highest coefficient value of 0.882 as compared to 0.385 for income and 0.057 for education. Thus, in the case of the rural respondents too, the most Discriminant Function Variable was age.

Discriminant Function Analysis for the Factors Affecting Buying Behavior:

The following presents the Discriminant function analysis for the factors affecting buying behaviour the urban and the rural respondents. The following table gives the standardized canonical discriminate function coefficients for arriving at the Discriminant Function Equation for the Urban and the Rural respondents

Table 3: Standardized Canonical Discriminant Function Coefficients For The Factors Affecting Buying Behaviour The Respondents.

Respondents by Their Domicile		Function
		1
Urban	Age	-0.552
	Monthly Income	0.734
	Educational Qualification	0.374
Rural	Age	0.784
	Monthly Income	0.133
	Educational Qualification	0.658

From the structure of the standardized Discriminant Function (DF), the equation for the urban respondents is:

$$Y = a_1 + b_1 + c_1$$

Where Y is the Discriminant Function Equation,

a_1 = age

b_1 = income

c_1 = education

The Discriminant function coefficient for age was = -0.552, income = 0.734, education = 0.374

The Discriminant Function equation for the Urban Respondents = $-0.532 + 0.734 + 0.374$

Of the three Discriminant function variables, income had the highest coefficient value of 0.730 as compared to -0.552 for age and 0.374 for education. Thus, in the case of the urban respondents the most Discriminant Function Variable was income.

In respect to the Discriminant Function Analysis for Rural Respondents from the structure of the standardized Discriminant Function (DF), the equation for the rural respondents is:

$$Y = a_1 + b_1 + c_1$$

Where Y is the Discriminant Function Equation,

a_1 = age

b_1 = education

c_1 = income

The Discriminant function coefficient for age = 0.784, income = 0.133 and education = 0.698. The Discriminant Function equation for the Rural Respondents = $0.133 + 0.698$

Of the three Discriminant function variables, age had the highest coefficient value of 0.784 as compared to 0.133 for income and 0.658 for education.

Discriminant Function Analysis for the Factors Influencing Consumer Satisfaction:

The following presents the Discriminant function analysis for the factors determining buying behaviour the urban and the rural respondents. The following table gives the standardized canonical discriminate function coefficients for arriving at the Discriminant Function Equation for the Urban and the rural respondents

Table 4: Standardized Canonical Discriminant Function Coefficients for the Factors Influencing Consumer satisfaction.

Respondents by Their Domicile		Function
		1
Urban	Age	-0.432
	Monthly Income	0.867
	Educational Qualification	0.241
Rural	Age	0.342
	Monthly Income	-0.773
	Educational Qualification	0.592

From the structure of the standardized Discriminant Function (DF), the equation for the urban respondents is:

$$Y = a_1 + b_1 + c_1$$

Where Y is the Discriminant Function Equation,

a1= age

b1= income

c1 = education

The Discriminant function coefficient for age was = -0.432, income= 0.867, education = 0.241

The Discriminant Function equation for the Urban Respondents = $0.432 + 0.867 + 0.241$

Of the three Discriminant function variables, income had the highest coefficient value of 0.867 as compared to -0.432 for age and 0.241 for education. Thus, in the case of the urban respondents the most Discriminant Function Variable was income.

In respect to the Discriminant Function Analysis for Rural Respondents from the structure of the standardized Discriminant Function (DF), the equation for the rural respondents is:

$$Y = a1 + b1 + c1$$

Where Y is the Discriminant Function Equation,

a1= age

b1= education

c1 = income

The Discriminant Function equation for the Rural Respondents

The Discriminant function coefficient for age = 0.342, education = 0.592 and income = 0.054.

The Discriminant Function equation for the Rural Respondents = $0.342 + 0.592 - 0.054$

Of the three Discriminant function variables, education had the highest coefficient value of 0.592 as compared to 0.342 for age and 0.054. The most Discriminant Function Variable was education.

Conclusion:

The paper presented the Discriminant Analysis for the four dimensions scales of the study. It is significant to highlight that most Discriminant Variable for influencing consumption behaviour varied between the urban and the rural respondents. Income was the major Discriminant variable for the Urban respondents, whereas, the age was the major Discriminant variable for the rural respondents as for as choosing a particular purchase format. As regards factors determining buying behaviour Age was found to be the most discriminant variable for both the urban and rural respondents. In respect of Factors Affecting buying behaviour income was a major discriminant variable for urban respondents and educational qualification was the most discriminant variable for rural respondents. In respect of factors influencing consumer satisfaction income was the most discriminant variable for urban respondents and education was the most discriminant variable for the rural respondents. This study selected only three independent variables - age, education and income for carrying out the Discriminant Function Analysis. Other factors like family composition, family size, personal preferences and social factors can be covered in an in-depth study.

References:

1. Abdul Brosekhan, Dr. C. Muthu Velayutham, Consumer Buying Behaviour – A Literature Review, OSR Journal of Business and Management e-ISSN : 2278- 487X, p-ISSN : 2319-7668, p.8
2. Donthu, N. and Gilliland, D.I, "The single consumer", Journal of Advertising Research, November December, pp. 77-84. Ebenkamp, B. (2002), Solitary iResearch Sciences, Applied intellect
3. Jeff Bray Consumer Behaviour Theory: Approaches and Models retrieved from http://eprints.bournemou.uth.ac.uk/10107/1/Consumer_Behaviour_Theory-Approaches.
4. Kothari, C.R. (2004) "Research Methodology", Methods and Techniques, New age International (P.Ltd. Publishers) ISBN (13): 978-81-224-2488-1
5. K. Veerakumar (2016) article titled "A Research on Quality Factors Influencing Online Shopping" International Journal of Engineering Research and Modern Education, Vol-I, Issue-II, July – 2016. P.No.1-5.
6. Dr. S. Shanmugapriya & G. Gnanaselvi (2015) article titled "Happiness and Enjoyment at work Place" International Journal of Multidisciplinary Educational Research, Vol-IV, Issue-3(3), March-2015. P.No.77-89.
7. Dr. Raja Talluri (2016) "A Study on Buyers Behaviour towards Complan with Special Reference to Vijayawada" International Journal of Multidisciplinary Research and Modern Education, Vol-II, Issue-I, 2016.
8. S. Jayashanthi & Dr. B. Kanagaraj (2015) "Consumers Purchase Intention With Respect to Attributes and Subjective Dimensions in the Hyper Market at Coimbatore City" Vignettes of Research, Vol-III, Issue-IV, October-2015. P.No.5-13.
9. Dr. K. Ramamurthi & A. Arun, —Factors Influencing Buying Behaviour of Rural and Urban Consumers of Select Personal Hygiene Products in Coimbatore Region, Tamilnadu, International Journal of Multidisciplinary Research and Modern Education, Volume 3, Issue 1, Page Number 11-17, 2017.