

MARKETING OF CHILLIES PRODUCT IN TRICHIRAPPALLI DISTRICT - AN EMPIRICAL ANALYSIS

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ABSTRACT

Chilli or cayenne is one of the major export commodity in India. It is an annual plant and comes in variety of shapes, sizes, colours and varied degrees of pungency. Both the medium pungent thin and the mild pungent thick chillies are internationally accepted as the finest in quality. These products are also available in the form of powder or oleo resins. The hot flavor in chillies is due to seven closely related compounds like capsaicinoids, but capsaicin (8-methyl-N-Vanillyl-6-nonenamide) and dihydrocapsaicinoids are responsible for approximately 90% of its pungency. The pungency of a chilli is measured in Scoville Heat Units (SHU). It was earlier a subjective measure but now, the hotness is measured in HPLC (High performance Liquid Chromatography). Its results can be correlated to traditional Scoville ratings. The generally accepted conversion is that 15 scoville units is equal to 1 ppm capsaicin in capsaicinoids. The hottest chilli, 'red savina' Habanero was tested at over 577,000 scoville units. The extremely hottest Thai Chillies barely reach 1,00,000. The most common varieties like Jalapeno or the Italian peperoncino lie below 5000 scoville units.

Since the past few decades, chilli as a natural product has been a subject in various fields like pharmaceuticals, food industry and for law enforcement. Oleoresin Capsium (OC), an extract of the cayenne pepper, is less potentially lethal than its synthetic counterparts, ortho-eco friendly chlorobenzalmalonitrile (CS) and Chloroaceto-Phenone (CN). It is eco-friendly and safer than CS or CN. Mostly, OC is dispersed by the use of aerosols. The use of OC powder is increasing. It is predicted that it will be the mainstay of control agents and dominate the future market. On this background, the present study aims to find out the marketing of chillies product in Trichirappalli district. A sample of 200 consumers selected randomly. The data collected through questionnaires have been tabulated. By using the above mentioned statistical tools. Interpretations

have been drawn based on the analysis. The findings and observations are the result and outcome of the interpretations made during the course of analysis. The results revealed that consumer differed in chillies product.

Key words: Ayurvedic, Chillies, Plants, Consumers, Brand.

Introduction

It is believed that the origin of chillies used in Mexico, is as old as 7000 B.C. It is grown and cultivated from 3500 B.C. being used by Mexicans for spicing up their cuisine, it is Christopher Columbus, who discovered America in 1493, brought it to the rest of the world. Columbus had set on navigation from his native soil, Spain to find out India to bring spices like pepper to his native land. He not only mistook America for India, the natives there for Indians, but also chilli for black pepper. Thus, chilli is newly called 'chilli pepper'. Thus chilli, taken to Spain, became the favorite spice there. From Spain, it is marketed to other European countries. From then onwards, it became the indispensable spice in European cuisines. It became popular in Portuguese and in 1498, the Portuguese explorer, Vasco-da-Gama brought the pungent spice to the Indian shores. The seeds were brought to North America and cultivated. In 1888, the experiments for cross breeding of chilli plants began and new breeds evolved. A new breed, Anaheim was grown in 1906. Mexican Chilli, a strong breed is another variety of chilli.

Wilbur L. Scoville, a pharmacist by profession, discovered a new method in 1912 to measure the pungency of chilli. This method is known as Scoville Organoleptic Test. The Scoville Test differed from the earlier methods, in being accurate and subjective. At present, nearly 400 different varieties of chillies are produced all over the world. From the early time, it was brought to India by Vasco da Gama; chilli became extremely popular in India. The world's hottest chilli 'Naga Joloka' is cultivated in the hilly terrains of a small town, Tezpur in Assam, India. It is

used in Ayurveda, the traditional Indian Medical System. According to the Ayurvedic study of the medicinal properties of chillies, it has stimulating good digestion, endorphins and serves as a natural pain killer to relieve pains.

In the present scenario, chilli has become the indispensable not spice in Indian cuisine. Not only that, chilli forms the major part in India's export. Some of the hottest chillies are grown in India. Indian chillies dominate the international market. India contributes 25% of world's total production of chilli. India is the largest producer of chilli and exports it to the USA, Canada, the UK, and the Saudi Arabia, Singapore, Malaysia, Germany and many other countries across the world.

Chilli is mostly cultivated in the Indian states like Andhra Pradesh, Karnataka, Maharashtra, Orissa and Tamil Nadu. Chillies are the excellent sources of Health as they contain Vitamins like A, B, C and E and minerals like molybdenum, manganese, foliate, potassium, thiamin and copper. It contains Vitamin C, 7 times more than in orange. Since the time of its inception in 1498, Chillies are included in Indian Ayurvedic medicine. It is used as tonic to prevent and protect from many diseases. It is good for reducing the weight as it burns down the calories fast. It stimulates the appetite and the digestive system and helps to clear the lungs. Its utility is aplenty. One among them is capsaicin. Chillies abound in vitamin C and A containing beta-carotenoids, which serve as powerful anti-oxidant. These destroy free radical bodies. Normally, they may travel in the body and cause huge damage to cells. In diabetic cases, they could damage nerve and blood vessels. The anti-oxidants in chillies wipe out the radical bodies that build up cholesterol causing major heart problems as atherosclerosis and other diseases like cataract and arthritis like osteo arthritis and rheumatoid arthritis. It also dilates the air path of lungs and reduces asthma and wheezing.

Detoxiants

Chillies act as detoxifiers by removing waste products in the body and increasing supply nutrients to the tissues. As gastro intestinal detoxiant, it helps in the digestion of food.

Pain killer

By stimulating the release of endorphins, Chillies serve as natural pain killers. It relieves pain caused by shingles (Herpes coster), bursitis, diabetic neuropathy and muscle spasm in shoulders and the extremities. It also gives relief from arthritic pains in the extremities.

Antibiotic

Chillies bring fresh blood to the infections areas and fights against it. The white blood cells lenkocytes in fresh blood fights against infections viruses.

Brain

Capsaicin stimulates the brain to excrete endorphin, which lends a sense of pleasure when excreted. This is why people become addicted to Chilli.

Cancer

This presence of Vitamin C, beta-carotone and folic acid in chilli reduces the risk of colon cancer. Red pepper chillies have cartonoid lycopene, which prevents cancer.

Heart attack

Vitamin B6 and folic acid are there in chillies. Vitamin B reduces the high level of homocysteine. High homocysteine cause damage to blood vessels and increase the risk of heart attack and stroke. Vitamin B present in chillies converts homocysteine into other beneficial molecules and high cholesterol into a lower level.

Luna disease

Chillies increase the metabolism and gives relief to nasal congestion. It dilates the air path of lungs and thus reduces the level of asthma and wheezing. In the case of heavy drinkers, it relieves chronic **congestion.**

Cigarette smokes contain benzopyrene that destroys vitamin A in the body. Due to cigarette smoking, emphysema causes inflammation of lungs. The vitamin A present in the chillis reduces the inflammation of lungs caused by cigarette smoking. For marketing, there is no recognized central theoretical base as for many other fields. The earlier definitions of marketing stressed on the of goods from the seller to the buyer. In this conventional method, marketing transfers the ownership of goods and their physical distribution. This emphasis was shifted to economic approach later economists stressed on the utilities and explained marketing in terms of creating time, place and possession utilities. Next people gave more importance to the legal aspect of marketing that is changing the ownership and possession of goods and services. Again the emphasis was shifted to the customer. This is evident from Brech's definition, which follows "Marketing is the process of determining consumer demand for a product or service, motivating its sales and distributing it to ultimate consumer at a profit".

To better on strategic marketing decisions, it is mandatory for markers to recognize and know how individuals decide their consumption patterns. When

marketers predict their consumers and their various information and environmental clues, it will help them to mould their marketing strategies accordingly. Marketers with a good understanding of consumer attitude and perception are at a great advantage in the competitive market.

Relevance of the Present Study

In the technological world, consumers are well aware of the various products and have a high and holistic knowledge about it. The marketing fields are changing very fast and new products and varieties are introduced every day. Due to the tremendous growth of marketing and the introduction of new products, almost on all days, the consumers prefer new and advanced products. Due to the changes occurring day to day, marketing of any products poses great difficulty.

The Guinness world records on March 2011, mark Trinidad Scorpion Butch T pepper with a scoville rating of 1,463,700(SHU) as the world's hottest chilli pepper. In 2007, the Guinness world records certify 'bhut jolokia' also known as ghost pepper chilli pepper as the world's hottest chilli pepper at 401.5 times hotter than Tabasco sauce. On December 3, 2010, 'Naga Viper Pepper' replaced 'bhut jolokia'. It had an average peak scoville rating more than 300,000 points higher than the average bhut jolokia. In February 25, 2011, Guinness world records awarded the title of 'World's Hottest Chilli' to that grown in Grantham, England it rate was 1,067,286 units on the scoville scale. On February 2011, Guinness world's records announced naga viper pepper as the records holder with a rating of 1,382,188. It has beaten the previous record holder by 314,832(SHU). Consumers are more aware of the food products like chillies. Hence the marketers conduct regular research and try to learn the consumer behaviour and brand loyalty. They must also know the market potential. For these reasons, the present significant study is relevant.

Objectives

1. To study the factors influence the purchase of Chillies products.
2. To find out the level of brand loyalty among consumers.
3. To ascertain the consumers opinion on Chillies products with reference to Trichirappalli District.
4. To frame some measures to increase the sales of this product.

Hypothesis

Following the above objectives certain hypotheses have been formulated:

- " Consumers differ in their opinion on the basis of their family type.
- " Consumers differ in their opinion and their brand awareness of various media.
- " Respondents differ in their opinion about the various advertising media in creating brand awareness on the basis of the number of their dependents.
- " Consumers do not differ in their opinion about the price of Chillies Product on the basis of number of dependents.
- " Consumers do not differ in their opinion about the taste of Chillies Product on the basis of Family Type
- " Consumers differ in their opinion about the quality of Chillies Product on the basis of education.

Design

This is an empirical study and primary data were collected from a random sample of 200 consumers in Trichirappalli district. The questionnaires were given to individual consumers who come under the sample and oral instruction as to answer it was given clearly. The respondents took few days to answer the questionnaire. The filled in questionnaires were obtained from their work spot and processed further. The present study has undertaken the descriptive research design in order to describe the demographic characteristics of consumers who use chilli products. The descriptive study is concerned with determining the frequency with which something occurs (or) how two variables vary together. This study is made to describe the consumers' preference and satisfaction about chillies products with respect to socio-economic characteristics which is a descriptive study.

The data collection pertaining to the study involves only on the basis of primary data. The primary data are collected by means of questionnaire and survey. The required data for the study are collected by a well-prepared, pre-tested questionnaire. Interview schedule is also adopted for gathering the required data. Questionnaires are used to collect the required data from the consumers. The questionnaire consists of Open ended, Closed ended, Ranking Schedules, and Multiple choice questions. The sampling techniques adopted for this study is convenience sampling. Statistical measures such as Mean, SD, SEM, t-tests and stepwise regression were used to interpret the obtained data. Tables and figures have been used wherever necessary to facilitate the analysis and interpretation.

Analysis and Outcome

Table 1

It is evident from the Table 1 that all the consumers irrespective of their family type give first preference to quality, second preference to taste, and third preference to availability[see Figure1]. But on the basis of their family type, there is some difference. This difference is not statistically confirmed. So the hypothesis is accepted. So both Joint family and Nuclear family consumers prefer quality followed by taste.

Figure 1**Table 2**

It is revealed from the results, that the majority of the consumers know the brand through Advertisements in TV, followed by relatives; shops and friends [see Figure2]. Therefore among the various media most of them know the brands through advertisement in TV and 59% through Radio.

Figure 2**Table 3**

Table 3 infers that most of them get brand awareness through T.V and Radio followed by Shops and relatives. But P.G qualified respondents are getting brand awareness through magazines. This difference is confirmed with the help of chi-square value, which is significant at 5% level. So the hypothesis is accepted.

Table 4

It is seen from the correlation Table 4 that all the variables are positively correlated with all the brands. But the number of dependents and educational qualification of the consumers are negatively correlated with the brands. So these two variables are influencing the brand awareness towards.

Table 5 shows that most of them get brand awareness through Magazine (31%) followed by Shops (21%) and T.V (17%) irrespective of their number of Dependents. But above 2 dependents get more awareness through T.V and Radio. This difference is confirmed with the help of chi-square value, which is significant at 5% level. So the hypothesis is accepted. Therefore consumers differ in their opinion about the media advertisements.

Table 6

Table 6 reveals that as per the consumers opinion majority of them said that, the price of the product was high (52.5%) irrespective of their number of dependents. Only 31% of them said the price was average. This is confirmed with the calculated chi-square value, which is non-significant. Hence the hypothesis is accepted. So the companies try to reduce the price.

Table 7

It is observed from the Table 7 that the majority of the consumers give very good and good opinion (53%) about the taste of the Chillies product. Only few of them (6) said poor opinion. Nearly 42% of the consumers give fair opinion about the taste. This is confirmed with the calculated chi-square value, which is non-significant. Hence, the stated hypothesis is accepted. So majority of the consumers are satisfied about the taste of chillies products. Further it is concluded that all the companies should improve their taste to attract the consumers.

Table 8

Table 8 depicts that majority of the consumers said the quality of the product was very good (37%) and good (23%) irrespective of their educational qualification. Only 22% of them said the price was average and 18% of them said poor opinion about the quality. This is confirmed with the calculated chi-square value, which is significant. Hence the hypothesis is accepted. So the companies must improve the quality of the product.

Table 9

Five variables namely, gender, marital status, professional status, family background and monthly income have significantly contributed for predicting the buying of chillies products. The variable gender predictive value of chillies products seems to 0.044, when paired with the variable dependents is 0.058, with professional status 0.072, with family type 0.087 and with monthly income 0.104. The predictive value of these variables separately is 0.01.

Concluding Remarks

To conclude, it was identified that most of the consumers purchase the Chillies products due to quality and taste. The company should try to improve the quality and taste, so that they will satisfy their consumers and also improve their market potential. Thus they can compete with other companies. Some of the consumers are not satisfied regarding the price and availability. Therefore the company must take steps to reduce the price and increase their stock. Further the companies must also take steps to change their packing and try to introduce some special schemes such as discount and free offer to attract the consumers. In order to create brand awareness among the consumers, the companies should give more advertisements in the popular media like T.V, FM, Radio and magazines.

References

Arch G. Wood side and Elizabeth J. Wilson (Aug/Sep 1985),
" Effects of Consumer Awareness of Brand

- Advertising on preference", *Journal of Advertising Research*, Vol 25, No.4, pp. 41-48 .
- Arich Goldman (Jan 1976), " Do Lower Income Consumers have a more Restricted shopping scope", *Journal of Marketing*, Vol. 40, pp. 46-54 .
- Bauer, R.A. and A.H. Bauer, (1966), "America, Mass Society and Mass Media." *The Journal of Social Issues*, 16, pp. 3-66.
- BBC News Online. 2007. Chillies heated ancient cuisine. Friday, 16 February. Available From: <http://news.bbc.co.uk/2/hi/Americas/6367299.stm>.
- Benneltt Peter D and Kassargian Hardd H (1986),"Consumer Behaviour", Prentice Hall of India .
- Bernard Berelson & G.A.Steiner, (1964), "Human Behaviour An Inventory of scientific finding".
- Bullock, H.A.(1961), " Consumer Motivations in Black and white: Part II. " *Harvard Business Review*, Vol.39, No. 4, pp. 110-24 .
- Bullock, H.A.(1961), " Consumer Motivations in Black and white: Part I." *Harvard Business Review*, Vol.39, No. 3, pp. 89-104 .
- Carman .J, (Feb 1970), " Correlates of Brand loyalty: Some positive Results ", *Journal of Marketing Research*, pp. 67-76 .
- Cayenne Pepper Diet / Sweet 16/Bonavitas (<http://www.bonavitas.com/sweet16.html>).
- Challton .P and A.C.C. Ehrenberg, (May 1976), " An experiment in Brand choice ", *Journal of Marketing Research*, Vol. XIII, pp.152-160 .
- Charlton, P., and Ehrenberg, A.S.C., "Meconnells Experimental Brand Choice Date" *Journal of Marketing Research* vol.10 (Aug.1973) p.302-307.
- Clock C.Y. and F.M. Nicosia, 1966, "The study of consumer and consumption behaviour", S.H. Bitt (Ed.), "Consumer Behaviour and the Behavioural Sciences ", New York; John Wiley & Sons - p.4.
- Cohen, J.B. (1967) "An interpersonal Orientation to the Study of Consumer Behaviour. " *Journal of Marketing Research*, Vol. 4, pp. 270-78 .
- David J. Luck Ronald S. Rabin. Prentice Hall of India Private Ltd, New Delhi, 1998.
- David J.Richman, *Marketing Today*, The Dryden Press, 1985.
- David L. Loudon And Albert J. Della Bitta (1984), "Consumer behaviour concepts and Application ", 2nd ed, Mc Grow Hill book Co., p.9 .
- Dollard. J. and N.E. Miller, (1950), "Personality and Psychotherapy". New York : McGraw - Hill Book Company .
- Evans, F.B. (Oct 1959, 32), "Psychological and objective factors in the prediction of Brand choice", *Journal of Business* .
- Fader and Mc Alister, (Aug 1989), "Reference effects of price and promotion on Brand choice Behaviour", *Journal of Marketing Research*, Vol. XXVI, pp. 229-309.
- Farley. J , (Oct 1964), "Brand loyalty and the economics of Information", *Journal of Business*, pp. 370-381 .
- Ferguson. AF (1983) - Company report - Department of Heavy Industry.
- Frank R.E, W.F. Massy and T.M. Lodahl, (Dec 1969), " Purchasing Behaviour and personal Attributes ", *Journal of Advertising*, pp. 15-24.
- George Brown, "Brand Loyalty - Fact or Fiction" *Advertising age*, (June 19, 1952, p.53-55).
- Glenn Walters (1974), " Consumer Behaviour ", theory and practice, p.6.
- Guerin, Bernard, (Jun 1994), " What do people think about the risk of driving? Implication for traffic safety Intervention ", *Journal of Applied social psychology*, Vol 24, No 11, pp. 994-1021 .
- Hottest Chilli (<http://www.guinnessworldrecord.com/Search/Details/Hottest-chilli/49118.htm>). Guinness World Records.
- <http://sfood.info/cuisine/kimchi/k35.htm>.
- <http://www.tribo.org/vegetables/dahongsilli.html> tribo.org.
- James E.Stafford. "Effect of group influences on consumer brand preferences" (*Journal of Marketing Research*) vol.3,(Feb.1966), p.68-75.
- John U.Farey, "Why does Brand Loyalty vary over products" *Journal of Marketing Research*, vol.(Nov.1964) p.9-14.
- John U.Farley, "Brand Loyalty and the Economics of Information" *Journal of Marketing Research*, vol.3 (Oct.1964) p.370-381.
- Lester Guest, "Brand Loyalty Revisited: A Twenty Year report" *Journal of Applied Psychology* vol.48 (1964) p.93-97.
- Marketing N.Rajan Nair Sultan Chand and Sons, New Delhi.
- Marketing Research (Seventh Edition)
- Philip Kotler, *Marketing Management analysis planning and Control*, Prentice Hall of India Private Limited, New Delhi 5th Edition 1985.
- The Nibble Online Specially Food Magazine. Chille Pepper Glossary. August 2008. Availability from: <http://www.thenibble.com/reviews/main/salts/scoville.asp>. Retrieved 31 August 2010.

Table 1

Chi- square test between consumers' family type and the factors that influence chillies products

Family Type	Quality	Price	Taste	Ready Availability	Others	Total
Joint family	64	6	14	16	0	100
Nuclear family	68	4	20	8	0	100
Total	132	10	34	24	0	200

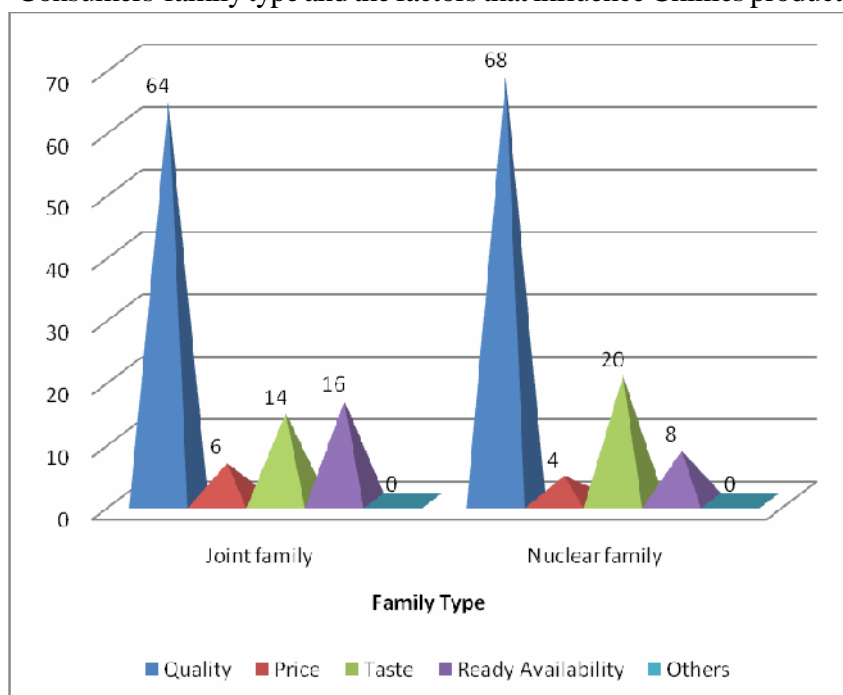
Chi square value = 5.461

DF =4

LS = 0.05

Ha: Consumers differ in their opinion on the basis of their living family type.**Figure 1**

Consumers' family type and the factors that influence Chillies products

**Table 2** - Distribution score of the media through which consumers know about the brands

Media	N	Percentage
Advertisement in TV, Radio	118	59
Magazines	12	6
Shop	24	12
Friends	20	10
Relatives	26	13
Total	200	100

Figure 2

Distribution score of the media through which consumers know about the brands

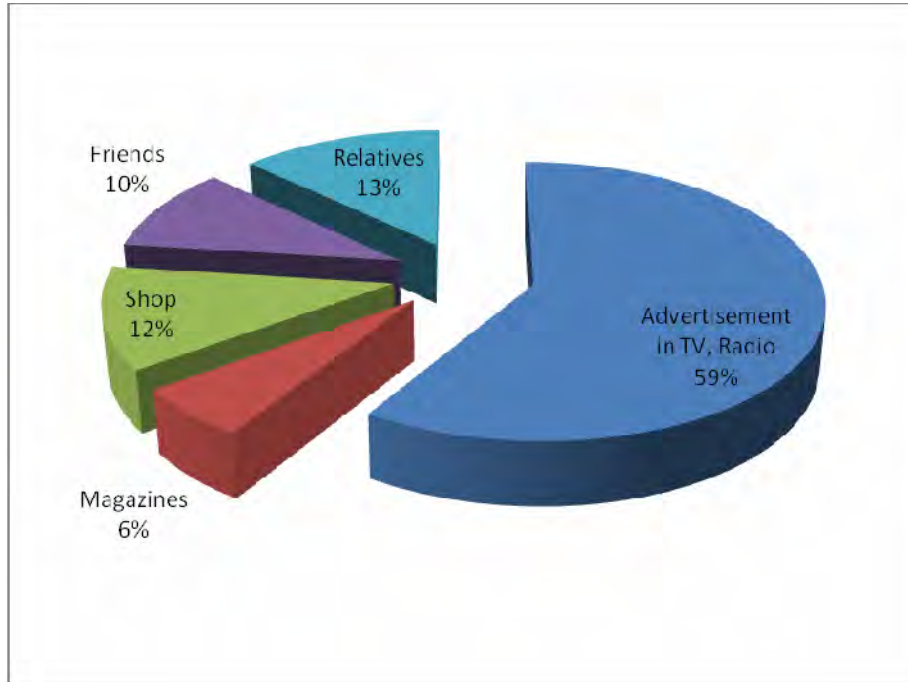


Table 3

Consumers' brand awareness on the basis of educational qualification from various advertisement media

Education qualification	TV, Radio	Magazines	Shop	Friends	Relatives	Total
Below Diploma	46	2	8	8	12	76
UG	46	2	8	6	4	66
PG	26	8	8	6	10	58
Total	118	12	24	20	26	200

Chi-square value 15.6

DF 8

LS 0.05

H_a: Consumers differ in their opinion and their brand awareness of various media.

Table 4
Correlation of various brands and their demographic variables

Variables	Sakthi chillies	Aachi chillies	Eastern chillies	Eswari chillies	Others
Family Type	0.0779	0.0253	0.1627	0.1379	0.0650
Dependents	0.0174	-0.0662	0.0462	0.0174	0.0630
Educational Qualification	0.0860	-0.0838	0.1960	0.0041	0.0216

Table 5
Chi-square test for the consumers opinion about the various media advertisements on the basis of the number of dependents

Dependents	TV, Radio	Magazines	Shops	Friends	Relatives	Total
Below 2	2	2	2	0	2	8
2 – 4	18	40	10	5	5	78
Above 4	14	20	30	25	25	114
Total	34	62	42	30	32	200

Chi square value = 18.8

DF = 8

LS = 5

Ha: Consumers differ in their opinion about the various advertisement media in creating brand awareness on the basis of the number of their dependents.

Table 6

Chi-square test for consumers' opinion about the price of Chillies Product on the basis of number of dependents

Dependents	Very High	High	Average	Low	Very Low	Total
Below 2	31	10	23	5	6	75
2 – 4	20	16	19	4	4	63
Above 4	24	4	20	10	4	62
Total	75	30	62	19	14	200

Chi square value = 15.1

DF = 8

LS = NS

Ho: Consumers do not differ in their opinion about the price of Chillies Product on the basis of number of dependents.

Table 7

Cross table for consumers opinion about the taste of Chillies Product on the basis of Family Type

Family Type	Very poor	Poor	Fair	Good	Very Good	Total
Joint family	2	2	44	32	20	100
Nuclear family	2	4	40	44	10	100
Total	4	6	84	76	30	200

Chi square value = 9.1

DF = 4

LS = NS

Ho: Consumers do not differ in their opinion about the taste of Chillies Product on the basis of Family Type.

Table 8

Chi-square test for consumers' opinion about the quality of Chillies Product on the basis of education.

Education	Very Good	Good	Average	Poor	Very poor	Total
Below Diploma	34	10	16	10	6	76
UG	64	4	10	5	3	66
PG	18	14	14	10	2	58
Total	74	46	44	25	11	200

Chi square value = 22.2

DF = 8

LS = 5%

Ha: Consumers differ in their opinion about the quality of Chillies Product on the basis of consumers' education

Table 9

Stepwise regression analysis predicting buying Chillies Product

Sl.No	Step/Source	Cumulative R ²	ΔR^2	Step t	P
1.	Education qualification	0.044	0.039*	3.078	0.01
2.	Dependents	0.058	0.054*	2.624	0.01
3.	Professional status	0.072	0.066*	2.014	0.01
4.	Family type	0.087	0.075*	2.406	0.01
5.	Monthly Income	0.104	0.088*	2.338	0.01

*P < 0.01

Constant value = 18.482