

Role of SPSS in Social Sciences

Sankalp Kohli

Education & Research in Computer Networking India, Ministry of Electronics and Information Technology
Government of India

Abstract: *SPSS is a combined package of software which is a set of statistical package for the social science research. The primary application of this program is to explore the technical data which have relevance with social science. These data can be utilised for survey research, market analyzation etc. The benefits of the package area unit its relative simple use, its familiarity to several applied math consultants and its practicality. Statistics is that the body of mathematical techniques or processes for gathering, describing, organizing and decoding numerical information. With the use of SPSS, the researcher can properly analyse the activities and views of people in a analytical method. Presently, various educational institution, medical Sciences institutions, academicians, import-export organizations etc have been using SPSS for fulfilling different objectives. The researcher can easily understand the demand for a product in the market with the help of statistical analyzation which can change their strategy. Primarily, SPSS is a useful package which is designed in such a way to handle the large quantum of variables within a short period of time by using different technical commands to produce a set of suitable outputs. All forms of statistical analysis can be easily taken up in the full package software which can convert the quantitative data into qualitative analysis. The primary purpose of this proposed work is to explore the utilization and significance of SPSS in the field of social science. SPSS is software which is widely used for quantitative research method specially to develop the explanation of social science research in to an analytical way. The SPSS Corporation initially created the SPSS software system package in the early 1980's and has recently discharged version eleven. It is presently one among the foremost usually used applied math packages in Australian analysis establishments and is obtainable in any respect of Australian universities. The benefits of the package area unit its relative simple use, its familiarity to several applied math consultants and its practicality. The package is developed for variety of in operation systems together with Windows and UNIX operating system. Data concerning SPSS product is obtainable on-line at web.SPSS.com.*

Keywords: Social Science, Statistics, SPSS

1. Introduction

SPSS is a useful software program which is basically used by the social science researcher to explore the critical data by some simple methods. The task of data analyzation is a very complicated and time consuming process, but with the help of SPSS it can be easily handled and operated by using various technical methods. These technical methods are utilised for the easy analyzation and transformation of data which are very helpful for the researcher to explain the features of different variables. Hence, the output result can be formulated through the representation of graphs and diagrams so that a user can easily understand the outcome of it.

In the present day context various computer softwares have been able to play a crucial role in the field of social science research. In today's world, it has turn out to be an obligatory means of research. To analyse the complicated activities of common people and society, SPSS is the most fruitful software which help the social scientist to upgrade their research work. "It is a full package software program which can provide a simple solution for the researcher to explore the complex statistical data in a descriptive method through the presentation of data in numerical forms such as scatter plots, pie diagrams, histograms etc." (Bala, Jyoti, 2016). Various data which are collected by the researcher from the field survey, interview method, experimentation and observation can be properly explained with the use of this applied software in a quantitative and analytical way. This software can easily convert huge data in to brief analisation which help the social science researchers to develop their research into an organised manner.

What is SPSS?

SPSS Statistics is a software package used for statistical analysis. The software was released in its first version in 1968 as the Statistical Package for the Social Sciences (SPSS) after being developed by Norman H. Nie, Dale H. Bent, and C. Hadlai Hull. Those principals incorporated as SPSS Inc. in 1975. Early versions of SPSS Statistics were designed for batch processing on mainframes, including for example IBM and ICL versions, originally using punched cards for input. From version 10 (SPSS-X) in 1983, data files could contain multiple record types. SPSS Statistics versions 16.0 and later run under Windows, Mac, and Linux. The graphical user interface is written in Java. The Mac OS version is provided as a Universal binary, making it fully compatible with both powerpc and Intel-based Mac hardware. Prior to SPSS 16.0, different versions of SPSS were available for Windows, Mac OS X and Unix. The Windows version was updated more frequently and had more features than the versions for other operating systems. Long produced by SPSS Inc., it was acquired by IBM in 2009. The current versions (2015) are officially named IBM SPSS Statistics. Companion products in the same family are used for survey authoring and deployment (IBM SPSS Data Collection), data mining (IBM SPSS Modeler), text analytics, and collaboration and deployment (batch and automated scoring services). SPSS consists of an integrated series of computer programs which enable the user to read data from questionnaire surveys and other sources (e.g. Medical and administrative records) to manipulate them in various ways and to produce a wide range of statistical analyses and reports, together with documentation.

Role of SPSS in Social Sciences Research

In research, data collected is analysed to test the hypothesis assumed. In research process, maximum amount of data is collected so that the researcher can draw a concrete and error free conclusion. Undoubtedly, the analysis of a large quantum of data is a very critical task, so software is used to analyse the data collected. The software Statistical Package for the Social Sciences (SPSS) is a widely used program for statistical analysis in social Science. It is also used by market researchers, health researchers, survey companies, government, education researchers, marketing organizations, data miners, and others. Practical knowledge of SPSS in the research field, knowledge of the commands (data view and variable view, compute, select cases-filtering data, Split file, sorting data, visual binning, recode variables, merge files, commands for import and export of data in SPSS) of this software is required. There would be wastage of resources and efforts in collecting the data, if data is not analysed efficiently. There are some statistical tools for analysing data.

Statistics included in the base software:

Descriptive statistics: cross tabulation, frequencies, descriptives, explore, descriptive ratio statistics

Bivariate statistics: means, t-test, anova, correlation (bivariate, partial, distances), nonparametric tests

Prediction for numerical outcomes: linear regression

Prediction for identifying groups: factor analysis, cluster analysis (two-step, k-means, hierarchical), discriminant

Inferential applied math analysis which involves the method of sampling, the choice for study of a tiny low cluster that's assumed to be associated with the massive cluster from that it's drawn.

In addition to statistical analysis, data management (case selection, file reshaping, creating derived data) and data documentation (a metadata dictionary was stored in the data file) are features of the base software. There is a fully detailed guide to SPSS tutorials containing all the contents of all the main menus, but this may not be up-to-date. There are more than 600 pages (90 mb) of downloadable tutorials and supporting materials. While using SPSS in research, the researcher with mathematical skills is not required, but the researcher should be proficient in understanding research - or more accurately, the statistical concepts underlying research. Learning statistical concepts is no different to learning about any other concepts (such as learning to use the internet).

Research Elaborations:

Applications of SPSS Programme in the Field of Social Science Research

SPSS: As a tool for scientific analysis in the field of Social science:

The verification of hypothesis assumption is an important task of Social science research to test the gathered data and resources. But it is very complex to explore the massive amount of data within a short period of time. Hence the social science researcher can use the SPSS package to analyse the gathered data in an organised manner. Presently, various educational institution, medical Sciences institutions, academicians, import-export organizations etc have been using SPSS for fulfilling different objectives. 'To run the SPSS program some realistic understanding and training about this software is much essential for the user in the field of social science research. Some technical knowledge is required to formulate commands to the system such as recoding, computing variable view and merging of files etc. Hence, there are several statistical tools for the analyzation of data in an efficient manner under the SPSS program.' (Bala, Jyoti, 2016).

SPSS software arranges the data by using computerized programming which not only minimises the burden of analyzation of large quantum of data but also reduces technical error.

However, a minimum understanding of this software is obligatory for researcher to use it. SPSS package also contains a 'tutorial file' which makes this software a user friendly for the researcher.

2. Results or Findings

SPSS programme is extensively used software for statistical analyzation of data in social science research. The SPSS is a potential tool which is able to give an outstanding performance in the field of social science research. SPSS provides proper analysis of the data and the procedure of data entry can be easily done within a short span of time. Through this software various types of data can be properly analysed in a short period of time. SPSS also has a student pack version which encloses the usual graphic analysis to the advanced multifaceted analysis. 'The proprietary 4GL command syntax language is another part for the utilization of this software.' (Bala, Jyoti, 2016). The complex information can be simplified with the use of this command syntax language. This language command has many shortcuts like copy, paste etc button which can execute the research work very fast. As such analyzation of huge data file can be completed within a few seconds.

Impact of Cause Related Marketing on Consumer's Behaviour: With Special Reference to Karunya Lottery in Thrissur, Kerala, India:

A Case Study

Dhanya K. M.¹ and Dr. Sr. Rosa K. D.²
¹Research Scholar, Research and PG Department of Commerce, St. Joseph's College Irinjalakuda, Thrissur, Kerala-680121
²Associate Professor and Research Guide, Research and PG Department of Commerce and Management Studies.

Preface

The lotteries department is ramping up its publicity machinery to spread the message that buying a lottery ticket is a philanthropic activity. The department has in association with Kerala's film fraternity launched a high-profile advertisement campaign to make lotteries appealing even to the higher income groups. Cause Related Marketing (CRM) allows companies to satisfy this rise in consumer expectations by aligning their marketing objectives with the social objectives of a charitable cause. CRM is one of the fastest growing ways for companies to form partnerships with charities, such as Karunya, to the benefit of both parties. 'Karunya Benevolent Fund' implemented with income from a lottery, the cancer programme, will draw on voluntary contributions from mobile phone subscribers, corporates, public sector undertakings and rich individuals. The study based on survey method was conducted with an objective to study consumer buying behaviours of lottery products after the introduction of CRM on Karunya Lottery business in Kerala and also to find out the growth of lottery business by introducing cause related marketing. Simple percentage method and correlation analysis are used for data analysis. The research participants (N=50), selected based on a convenient sampling process comprised of consumer who had purchased lottery ticket from retail outlets of Thrissur, Guruvayoor and Kunnankulam.

Keywords: Corporate Social Responsibility, Cause Related Marketing, Consumer Behaviour

With the passage of the Companies Act, 2013 the mandate for Corporate Social Responsibility (CSR) has been formally introduced to the dashboard of the Boards of Indian Companies. The industry has responded positively to the reform measure undertaken by the govt. with a wide interest across the public and private sector, Indian and multinational companies.

Today, people have become more aware about problems in the society and profit making companies are taking more and more responsibility for their actions. Corporate Social Responsibility (CSR) is something that they more commonly incorporate in their business strategy. Philanthropic actions are not always required from the society, however it is expected. Cause-Related Marketing (CRM) is one way for companies to implement and show responsibility. The concept is regarded as a process where the company, through marketing activities, contribute an amount to a non-profit organization or a cause. Cause marketing or cause-related marketing refers to a type of marketing involving the cooperative efforts of a for-profit business and a non-profit organization for mutual benefit. The term is sometimes used more broadly and generally to refer to any type of marketing effort for social and other charitable causes, including in-house marketing efforts by non-profit organizations. Cause marketing differs from corporate giving (philanthropy), as the latter generally involves a specific donation that is tax-deductible, while cause marketing is a marketing relationship not necessarily based on a donation.

Cause Related Marketing

Cause-related marketing first became popular in the United States in the early 1980s as a marketing strategy, but more recently it has been adopted by a broad range of companies throughout the world. For instance the American Express Company launched a cause-related marketing program (CRMP) in support of the renovation of the Statue of Liberty (1983). American Express promised to donate a penny to the renovation for each use of its charge card and a dollar for each new card issued in the U. S. American Express had a 28% increase in card usage over the same period in 1982 and a sizable increase in the number of new cards issued. This \$6 million national promotion campaign resulted in a \$1.7 million contribution by American Express to the Statue of Liberty-Ellis Island Foundation (Wall 1984). Recently research has woken up the corporates to the possibility that consumers are drawn to Cause-Related Marketing (CRM) programs. For instance, in a study conducted by IES 2011, 37 percentage of customer purchased a product associated with a cause and 75 percent purchased a brand because they supported a cause. In the same study it was further revealed that most of the customers would try a new brand if it is associated with a cause especially one they care about.

In India Cause Related Marketing has been widely used by many companies as a marketing strategy. For example Novartis India Ltd., in a cause-related marketing scheme, donated 2% of the value of sales of Ovaltine Plus towards CRY's Gujarat rehabilitation operations. The total amount raised was approximately Rs. 40, 000. Oberoi Hotels had specially designed and printed envelopes placed in all Oberoi properties, wherein their guests could contribute to CRY which was a huge success, collecting more than Rs. 6.50 lakhs in 18 months (source: CRY website). The greatest successes story in recent time has been the CRM strategy adopted by Kerala State Lottery Department.

The Kerala government decided to go ahead with the new scheme named Karunya Lottery launched in 2011 by the Ooman Chandy government. The 'Karunya Benevolent Fund' has so far funded the medical expenses of around 22, 000 patients to the extent of Rs. 286 crore. The fund is providing financial assistance to underprivileged people suffering from cancer, haemophilia, kidney and heart diseases. This was highlighted as the greatest success story of cause related marketing (CRM) effort in India. This success is considered important in the context of a high court ruling which said daily lottery should be banned in Kerala as it was doing more harm than good to the society. The introduction and success of CRM strategy by Kerala State Lottery Development has made the high court to have a different view from the earlier thinking.

3. Objectives of the Study

The specific objectives formulated for the study are:

- To study the concept of Cause Related Marketing.
- To find the consumer buying behaviour of Karunya Lottery in Kerala.

- To analyse the perception and awareness regarding Cause related activities done by the Karunya Lottery in Kerala.

Hypothesis

The hypothesis for the study is set as:

H10: Income has effect on the frequency of lottery purchase.

H20: Education has effect on lottery purchase.

H30: Age has effect the frequency of lottery purchase.

4. Research Methodology

The study analysed the response of 50 lottery customers from the selected three retail outlets situated in Thrissur, Guruvayoor and Kunnankulam. The stores were selected based on the convenience. These outlets at Thrissur, Guruvayoor & Kunnankulam are fixed outlets. Both secondary and primary data are used for analysis. The descriptive research design has been used to achieve the objectives, based on survey method. A well-structured questionnaire as a means of gathering information with questions in a predetermined order has developed. Most of questions being closed or fixed choice response. The purpose of this research is to highlight the influences that cause related marketing has upon consumer's attitudes. Likert's 5 point scale [5-Strongly agree-1 strongly disagree] used to measure, construct and identify the degree of involvement of respondents.

Data Analysis and Interpretation Secondary Data Analysis

Net Profit Analysis

Effect of cause related marketing (CRM) on the sales is analysed by studying the net profit of the industry for last 10 years.

During last 2 years the data shows a hyper growth in revenue and profit, this is the time when Karunya lottery was introduced. From the Table 1 it is very much clear that during last 2 years there was a rapid growth in the industry.

Table 1: Profit and Revenue for Past 10 Years

Year	Revenue	Profit
2003-04	135.0	19.87
2004-05	156.6	30.02
2005-06	237.2	55.65
2006-07	236.3	36.36
2007-08	333.9	48.28
2008-09	484.8	104.20
2009-10	625.7	114.70
2010-11	557.7	92.02
2011-12	1287.1	394.87
2012-13	2778.8	681.76

Source: Kerala state lottery department

In the Year 2010-11 a downward movement was seen, the profit was reduced from 114.7 crore in 2009-10 to 92.02 cores. This was because of many scam which was brought up during this time and many products were withdrawn because of the intervention of high court. But after the introduction of Karunya in September 2011 this scenario has changed dramatically. The government started using advertisements and public relations activities to promote the lotteries. Seeing the huge growth and lesser interventions from public it is very well clear that it has created a good image in the minds of the people.

Primary Data Analysis

Primary Data collected from 50 lottery customers from the selected three retail outlets situated in Thrissur, Guruvayoor and Kunnankulam. Their demographic details are as follows:

Table 2: Demographic Distribution of the Sample

Particular	Percentage
Gender	
Male	92%
Female	8%
Age	
Below18	6%
18-25	36%
26-40	16%
41-55	20%
Above55	22%
Qualification	
10thStd.	32
+2	12%
Degree	13%
Post Graduate	30%
Employment Status	
Employed	12%
Retired or Unemployed	4%
Daily wages earns	36%
Students	32%
Individual business owner	10%
Others	6%
Monthly Income	
Below10000	58%
10000-30000	32%
Above30000	10%

Source: primary data (Survey)

Interpretation: From the above Table 2; it is clear that most of the respondents (82%) had said that the awareness regarding Karunya was through advertising and public relation. In the case of reason for lottery purchase most of them purchased the lottery for the windfall gain or trying of luck (42%). The respondents attracting towards windfall gain and subsequent purchase showed an addiction effect. This study also observed that most of the respondents belong to the first two category of income level which amounts to (90%). This shows that the higher income group are not highly involved in lottery purchase.

5. Research Results

The questionnaire includes fictional situations that are designed to familiarize respondents with the concept of

Cause Related Marketing. Likert's 5 point scale [5-Strongly agree-1 strongly disagree] has used to measure constructs and to identify the degree of involvement of respondents in the campaign presented below and to what extent it influenced their purchasing intention. The number of new cancer cases in Kerala is estimated at 50, 000.

The number of people seeking cancer treatment annually in the state is estimated at 100, 000. Under 'Sukrutham', (Scheme of Karunya lottery) cancer patients below the poverty line will be given free treatment at Regional Cancer Centre, Thiruvananthapuram; Malabar Cancer Centre; medical college hospitals in Thiruvananthapuram, Alappuzha, Kottayam and Kozhikode and Ernakulam General Hospital.

Table 3: Cause Related Marketing and Perceived Image

Question	5 Strongly Agree	4 Agree	3 Neutral	2 Disagree	1 Strongly Disagree
Because of this cause related initiatives, it's worth buying Karunya lottery.	21%	39%	16%	17%	7%
I would buy the lottery anyway; I'm not interested in the campaign.	10%	11%	27%	34%	18%
I would buy the product both for its cause and source of income	28%	35%	18%	12%	7%
I feel the company is making this cause to increase the sales.	15%	71%	11%	4%	3%
I believe 'Karunya' has social value.	5%	48%	28%	12%	2%
I believe lottery linked 'Karunya Benevolent Fund' introduced beneficial to the society.	6%	28%	38%	13%	15%
I believe treatment provided to cancer patients below the poverty line under the scheme 'Sukrutham'.	5%	38%	32%	12%	13%

Source: Primary survey

Interpretation: Regarding the extent to which respondents agree that it would be worth buying from Karunya because of this cause related marketing initiatives, 39% consumers agreed with this statement, while 21%, expressed total agreement (Table: 3). Initiate the campaign of this kind draw attention to the company and in consumer's mind it creates the perception that buying the products is justified in order to help the cancer patients.

As the analysis highlights, regarding the situation in which the consumers would buy from the lottery both for cause and source of income (35%) of then agree with the statement and only 7% of them disagree the statement.

As research showed, (71%) of the respondents believe that the campaign aim to increase sales, 15% expressed total agreement. In this context, it is evident that consumers truly believe the main objective for the company is to maximise the profit, rather than genuinely support the charity and ultimately the society. Results outlined that 48% of them are agree that Karunya Lottery has social value and most of the consumers believe the benefit of Karunya lottery scheme beneficial to the society.

Table 4: Consumers Preference towards Source of Awareness

Source	Response	
	Frequency	Percentage
Advertisement and public relation	41	82%
Friends and relatives	5	10%
Sellers	4	8%
Total	50	100

Source: Primary Data

Interpretation: From the table No: 4, it is clear that most of the respondents (82%), getting aware from the source of

Advertisements and public relation, (10%) of them from friends and relatives and rest of the 8% of them from sellers.

Table 5: Frequency of Purchase

Particulars	Frequency	Percentage
Rarely	14	28%
occasionally	11	22%
Weakly	6	12%
Regular	19	38%
Total	50	100

Source: Primary Data

Interpretation: From the table it is clear that 38% of the customers purchase the lottery regularly. 28% of them purchase rarely and only 6% of them purchase weakly.

Table 6: Reason for Purchase the Karunya Lottery

Reason	Frequency	Percentage
Trying the luck	21	42%
Cause related initiatives	15	30%
Cost is minimal	3	6%
Seller's insistence	10	20%
Total	50	100

Source: Primary Data

Interpretation: Above table reveals that 42% of them taking lottery for trying luck, 30% of them for cause related marketing, 20% of them for seller's insistence and rest of the 6% respondents for cost minimal.

For understanding the relation of demographic variables like age, income and qualification on the frequency of purchase a correlation test was conducted. The income level below 10, 000 was coded as 1 and 10, 000-30, 000

was coded 2 and above 30, 000 was coded 3. The qualification was coded as below 10th-1, +2-2, Degree-3, Post-Graduation-4. The coding for frequency of purchase was done using as 1, 2, 3, 4 and 5 for never, rarely, occasionally, weekly, and frequently (daily) respectively.

Table 7: Correlation of Income, Age and Qualification with Frequency of Lottery Purchase

Correlation	Pearson's Correlation	Sig. 2 Tailed
Age	1.000	.000
Qualification	-.025	.867
Monthly income	0.025	0.866

Source: Survey

Inference:

The Table 7 shows the correlation of age, qualification and monthly income with frequency of purchase. From that table it is clear that Sig. value for age (.000) and qualification (0.867) and for monthly income (0.866) the value is more than the required sig. value of 0.05. It shows that age has significant relation with frequency of purchase but monthly income has no significant relationship with frequency of purchase but qualification and monthly income have no significant relationship with frequency of purchase. The correlation coefficient for age i.e. 1.000 shows a high positive correlation with frequency of purchase whereas the coefficient for Qualification i.e. -0.025 shows a negative correlation with frequency of purchase. That means when the age increases, the frequency of purchase also increases and when qualification increases the frequency of purchase decreases. The scenario is much similar to the past studies conducted in different in Kottayam (Tijo Thomas, Dr. Johnney Johnson 2015). The income has no significant impact on the frequency of purchase but it is found that most of the respondents belong to the first two classes which mean that the purchasing of lottery is high among the low income groups.

6. Findings of the Study

The study has revealed that after introduction of CRM the lottery business in Kerala has seen a higher growth.

The study has revealed that most (82%) of the customer aware about the concept cause related marketing from the source of advertisement.

Most of the (48%) customer are aware about Karunya lottery cause related activities initiated by using Karunya Benevolent Fund.

Respondents got awareness from advertisement and Public relation activities conducted by lottery department.

[4] John, W. Pracejus., and G. Douglas, Olsen. (2004). The role of brand/cause fit in the effectiveness of

The study also found that age had a positive correlation whereas the qualification had a negative correlation. That means the age increase the frequency of purchase also increases and when qualification increases, the frequency of purchase decreases.

The income has no significant impact on the frequency of purchase but it is found that most of the respondents belong to the first two classes which mean that the purchasing of lottery is high among the low income groups.

Cause related marketing-CRM, as part of companies CSR, is a type of program in which a company commits to donate an amount that depends on the sales they achieved in certain period time for a cause. Typically, a CRM campaign involves an offer that is valid for a period of time refers to a specific product of the company and performs for the benefit of non-governmental organisations, or another partner who has legitimacy in the selected cause and ability to manage money.

In this context the importance of social responsibility becomes obvious. Reputation is the most competitive advantage a company has. That organisation that enjoys a positive image will obtain higher price for their products and will have the ability to change consumer buying behaviour.

7. Conclusions

SPSS is very useful software in the field of social science research as the researcher can smoothly execute large quantities of data in a simplified process.

It is mathematical and statistical purposive software which can easily represent the collected data in an analytical way within a short period of time which is very helpful for the user. The analysis of collected data cannot be executed manually. Hence with the emergence of several data analysis programmes like SPSS, various critical tasks of social science research have become simplified.

References

- [1] Donald, J. Dale., (2004). Charitable Lottery Structure and Fund Raising: Theory and Evidence. *Experimental Economics*, 7: 217-234.
- [2] Gordon, Liu., (2012). Impacts of Instrumental versus Relational Centered Logic on Cause-Related Marketing Decision Making. *Journal of Business Ethics*, 113: 243-263.
- [3] Joe'lle, Vanhamme., Adam, Lindgreen., Jon, Reast., and Nathalie, van. Popering. (2011). To Do Well by Doing Good: Improving Corporate Image Through Cause-Related Marketing. *Journal of Business Ethics*, 109: 259-274.
- cause-related marketing campaigns. *Journal of Business Research*, 57, 635-640.

- [5] Rajeswari, S. P. (2007). Cause Related Marketing A Conceptual Paradigm. International Marketing Conference on Marketing and Society, IIMK, 215-218
- [6] Michael J. Barone, Anthony D. Miyazaki, Kimberly A. Taylor (2000). The Influence of Cause-Related Marketing on Consumer Choice: Does One Good Turn Deserve Another?. Journal of the Academy of Marketing Science, 28 (2), 248-262
- [7] Peter, G. Moore. (1997). Gambling and the UK National Lottery. A European Review, 6 (3): 153-158
- [8] Korbkul, Jantarakolica., Hatairath, Kaweewitayawong., and Tatre, Jantarakolica. (2005). Factors Determining Decision on Purchasing Lottery: A Case Study in Greater Bangkok. Procedia-Social and Behavioral Sciences, 40: 746-750
- [9] Sanjeela, Mathur., and Aditi, Midha. (2012). Impact Of Corporate Social Responsibility Through Cause Related Marketing On Consumer Perception: A Comparison With Traditional Marketing Tools. GianJyoti E-Journal, 2 (3): 144-154.
- [10] Tijo Thomas and Dr. Johnney Johnson (2015). Impact of Cause Related Marketing in lottery business: A study on Karunya Lottery in Kottayam, Kerala, India, Volume 4 issue 1 (January 2015) Page 1 to 6.
- [11] Bala. Jyoti (2016); Contribution of SPSS in Social Sciences Research, International Journal of Advanced Research in Computer Science, Volume 7, No.6 (SpecialIssue), <https://www.semanticscholar.org/paper/Contribution-of-SPSS-in-Social-Sciences-Research-Bala/db4aeb8fad1766f416731fe00e7fe62bbf70c4>
- [12] Devare. Suresh (2015); Important of SPSS for Social Sciences Research, accessed from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2663283
- [13] Puteh. Fadilah (2017), Quantitative Data Analysis: Choosing Between SPSS, PLS and AMOS in Social Science Research, International Interdisciplinary Journal of Scientific Research, Vol.3/322885790_Quantitative_Data_Analysis_Choosing_Between_SPSS_PLS_and_AMOS_in_Social_Science_Research https://www.researchgate.net/publication/322885790_Quantitative_Data_Analysis_Choosing_Between_SPSS_PLS_and_AMOS_in_SocialScience_Research
- [14] Corston, R. and Colman, A. (2000), A Crash Course in SPSS for Windows, Blackwell, Oxford.
- [15] Freeman, Frank S. (1962), Theory and Practice of Psychological Testing, New Delhi, Oxford and B. H. Publishing Company, 697 pp.
- [16] Garrett, H. E. (1969). Statistics in Psychology and Education, Bombay, Vakils Fethers and Simons, Pvt. Ltd., 491 pp
- [17] Mcguigan, F. J. (1960), Experimental Psychology, New Delhi, Prentice Hall of India (P) Ltd., 400 pp.
- [18] Russell, J. and Booth, B. (2005) Quantitative Data Analysis Using...SPSS12. University of Sheffield resource produced by the Corporate Information and Computing Services, last accessed 8 February 2008.
- [19] Thorndike, r. L. & Elizabeth Hegan (1979), Measurement and Evaluation in Psychology and Education, New Delhi, John Willey Eastern Ltd., 693 pp.
- [20] www.dummies.com/how-to/.../how-SPSS-statistical-package-for-the-social-scienc.html. Accessed on 15th July, 2016