

Employee's perception on impact of corporate social responsibility by exploratory factor analysis

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Abstract

Objectives: The study aims to find different areas which have impact of corporate social responsibility also to determine appropriate relationship between latent variables and CSR so that its validity and reliability can be tested.

Methods/Statistical analysis: For collection of data, a close-ended structured questionnaire has been sent to the employees working in companies through e-mail and 300 responses were received. The study focuses primarily on the areas which are affected because of corporate social responsibility activities performed by corporate sector. For this purpose, Exploratory Factor Analysis technique has been used to identify the significant factors on which CSR is having more impact.

Findings: The factor analysis was conducted on 26 items with orthogonal rotation (varimax). The KMO measure is found to be 0.947. An initial analysis was run to obtain Eigen value for each component in the data. Total four factors have Eigen value over Kaiser Criterion of 1 and in combination explaining 80.423% of the total variance. The study has identified 4 major factors for studying the impact of CSR activities performed by the companies. These factors are: Social impact, Economic Impact, Environmental Impact and Company impact. Out of all the factors explored, Social impact emerged as the most important factor having the highest Eigen value of 10.962 and explaining maximum variance of 54.810%. After new Companies Act, 2013, the scope of spending in CSR activities has increased and companies are now coming up with new and innovative ideas to make an impact of their CSR initiatives.

Application/Improvements: The study may help companies to function their CSR activities in more structured way so that it may have a balanced impact of CSR on different areas other than health and education.

Keywords: Corporate social responsibility, Exploratory Factor Analysis, Reliability, Validity, Variance.

1. Introduction

The term "Corporate Social Responsibility" (CSR) has gained a lot of attention in recent years not only in India but also in the whole world. CSR is considered a necessary factor for enabling businesses to meet the demands of the changing times as well as achieve sustainable growth [1]. Many companies had constantly been performing their responsibility towards its society in the form of philanthropic activities for past many years. Tata, Reliance, Wipro, Infosys, HUL are the companies which fall in this list. But after the New Companies Act, 2013, there has been huge increment the number of companies falling in such list as after making norm for CSR activities to be mandatorily, for such companies that are having net worth of ₹500 crore or more, or the companies having turnover of ₹1000 crore or more or companies having net profit of ₹5 crore or more have to spend at least 2% of its average net profit for immediately preceding three years mandatorily. As a result of this, many companies have now started performing CSR activities more attentively. Collectively when so many companies are taking initiatives, it is supposed to have positive impact not only on development society but also on economic growth, green and clean environment and contributing increase in goodwill of the company. This is the reason why, CSR is gaining so much popularity because it is a win-win case for the companies. The companies are able to benefit its stakeholders along with its own benefits of like increase in sales, high return on investment, greater retention ratio of employees, higher net profit, better working environment, association of employees towards their companies, more customers and better utilization of resources.

2. Literature survey

After new Companies Act, 2013, a good number of authors have tried to focus on shareholders' satisfaction towards the benefits of CSR for this purpose he applied factor analysis in which he had come up with four major factors for CSR benefits that focus more on eradication of child labor, customer health and safety considerations, CSR disclosure and reports and community care and welfare [2]. Another paper tried to understand and draw the factors which may directly or indirectly affect financial performance of the company. They further examined the relation between CSR and various other factors which some or the other way affect financial performance of the company [3]. A different study examined the antecedent and consequence variables of corporate social responsibility. Their study ultimately focused on finding a significant relationship between CSR activities performed by the company and the performance of the same company in different aspects. For this purpose, they opted structural equation modeling for getting the idea of the relationship. After analysis, they made conclusion and further suggested that public listed companies should strategically leverage the key antecedents of CSR [4]. One more study technically explored the applicability of factor analysis in the evaluation of corporate social responsibility by SPSS software for essentially analyzing and evaluating the result. The comprehensively calculated factor score determined three aspects namely, the economic responsibility, the internal environment responsibility and the external environment responsibility [5]. Another study identified and empirically tested the CSR factors influencing the responsiveness of SMEs in Uganda. The intension behind the study was to assist SMEs to effectively and responsibly manage their activities to increase their competitiveness [6]. A new study examined corporate social responsibility practices in Malaysian automotive suppliers by using confirmatory factor analysis. Further, structural equation modeling technique was utilised to perform the required statistical analysis of the data survey. Further, the measurement model for CSR had a good fit [7].

3. Data analysis and Interpretation

1. Exploratory factor analysis

Exploratory factor analysis is a complex statistical method of factor analysis which is integral to many fields of research [8]. It is a statistical technique which is used to reduce data into subsets of the variables so that a basic theoretical structure of phenomena can be explored. EFA helps to identify the structure of relationship between the variables and the outcome of respondents' perception. In this study, the EFA method has been applied as a measurement tool for identifying different dimensions of measuring the impact of CSR. For this purpose, total twenty-six dimensions were selected after having intense review of literature. The information for further analysis the sample was collected by 300 respondents on a 5-point Likert Scale ranging from 1- Strongly Disagree to 5-Strongly Agree as shown in Table 1.

Table 1. Dimensions of measuring Impact of CSR

Enhance brand image and reputation	CSR1
More ability to attract and retain employee	CSR2
Pollution Control	CSR3
Increase in sales and customer loyalty	CSR4
Inclination of people towards social benefits	CSR5
Easy to access any product	CSR6
Increase in per capita income	CSR7
Increase in production of recycled products	CSR8
Reduction in greenhouse gas emission	CSR9
Work force diversity	CSR10
Increase productivity and quality product	CSR11
Increase of Financial Level & Growth	CSR12
Reduction in energy consumption, natural gas consumption and fuel usage	CSR13

Increase the GDP growth	CSR14
Increase in social status of under privilege group	CSR15
Increases employment Rate	CSR16
Increase in capacity building of people	CSR17
Reduction in poverty	CSR18
New job creation in the country	CSR19
Decrease in water consumption	CSR20
Easy availability of safe drinking water	CSR21
Control in communicable diseases by providing free vaccination	CSR22
Increase in level of productivity	CSR23
Attracting and retaining customers	CSR24
Pollution control by plantation of trees	CSR25
Increase in standard of Living	CSR26

The specific conditions that must be ensured before executing the Exploratory Factor Analysis were met. A five point likert scale had been used for collecting the data through questionnaire. It was observed that all the variables were correlated fairly well and none of the correlation coefficient was particularly large.

Table 2. Results of KMO and Barlett test of sphericity

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.947
Bartlett's Test of Sphericity	Approx. Chi-Square	6952.798
	df	190
	Sig.	.000

The Kaiser-Meyer-Olkin (KMO) Test is used for measuring sampling adequacy for the study. This test signifies correlations and partial correlations of the variables. The KMO index ranges from 0 to 1, and the suggested minimum value for a good factor analysis is 0.60[9]. In this study the value of test static is .947 (Table 2) which clearly suggests that factor analysis for the selected variables is found to be very suitable to the data. Bartlett's Test of Sphericity[10]. In concise, it is used to test whether the correlation between all the variables is 0. The test value (6952.798), $p < .001$ (i.e., a significance level of less than .01) given above indicates that correlation between items were sufficiently large for PCA, Hence, it is confirmed that the exploratory factor analysis may be used for further study.

After putting variables in SPSS, the outcome of EFA showed that out of twenty-six measures, some of them did not represent their respective constructs satisfactorily and because of which those measures were removed from the process of further analysis and the final rotated component matrix was used and drew results. The variables which were not retained for analysis were CSR3 (Reduction in energy consumption), CSR7 (Increase in per capita income), CSR10 (Work force diversity), CSR16 (Increases employment Rate), CSR22 (Control in communicable diseases by providing free vaccination), CSR25 (Pollution control by plantation of trees).

2. Rotated component matrix

The factor model is then rotated to transform the factors and make them more interpretable. The rotation phase transforms a factor matrix in which most factors are correlated with many variables into one in which each factor has no zero loadings for only some of the variables. The varimax rotation is the generally used method for rotation and it seeks to reduce the number of variables that have higher loadings on a factor thus permitting the factors to be differentiated from one another is performed to assess the underlying structure for 20 variables relating to impact of CSR initiatives taken by the company on different areas. The variances for consecutive factors are summarized as follows:

Table 3. Total variance explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	10.962	54.810	54.810	10.962	54.810	54.810	4.979	24.897	24.897
2	1.906	9.532	64.342	1.906	9.532	64.342	4.310	21.549	46.445
3	1.728	8.638	72.981	1.728	8.638	72.981	3.503	17.515	63.960
4	1.489	7.443	80.423	1.489	7.443	80.423	3.293	16.463	80.423
5	.887	4.436	84.859						
6	.334	1.671	86.530						
7	.305	1.525	88.055						
8	.300	1.500	89.555						
9	.296	1.479	91.033						
10	.278	1.388	92.421						
11	.237	1.186	93.607						
12	.220	1.101	94.708						
13	.205	1.023	95.731						
14	.195	.974	96.705						
15	.193	.965	97.670						
16	.179	.894	98.564						
17	.153	.763	99.327						
18	.091	.455	99.782						
19	.032	.161	99.943						
20	.011	.057	100.000						

Extraction Method: Principal Component Analysis

The second column of Table 3 explains Initial Eigen Values which depicts successive extraction of new factors. In the study, those Eigen values which are above 1 have been taken as total number of factors. On this ground, four factors (components) have been identified which have Initial Eigen Values above 1. The second column of the table identifies percentage of variance and the third column provides information about the cumulative percentage of percentage of variance.

Table 4. Rotated Component Matrix^a

	Component			
	1	2	3	4
SOC1				.826
SOC2				.838
SOC3				.828
SOC4				.841
SOC5				.818
ECO1		.819		
ECO2		.815		
ECO3		.796		
ECO4		.852		
ECO5		.820		
ENV1			.800	
ENV2			.824	
ENV3			.801	
ENV4			.836	
COMP1	.797			
COMP2	.792			
COMP3	.813			
COMP4	.828			
COMP5	.844			
COMP6	.794			

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.^a^a. Rotation converged in 5 iterations.

Since only four components have been allocated as factors so cumulative percentage of fourth component gives idea about the total coverage of the study. In this study, the cumulative percentage of fourth component is 80.423 which suggest that these four components in themselves cover more than 80% of the area of study which is quite good. From the table it is also observed that the first component itself covers 54.810% of variance which is also very appropriate for the study. As expected, the sum of the Eigen values is equal to the number of variables. It must be noted that the variances extracted by the factors are called the Eigen Values. In this study, four factors/Principal components have been retained using this criterion. These four factors have Eigen values over Kaiser's criterion of 1 and in combination explained over 80% of the variance.

Since the idea of factor analysis is to identify the factors that meaningfully summarize the set of closely related variable, the rotation sum of squares column of the table attempts to transfer different variables into a meaningfully summarizes the set of closely related variables, which makes it easier to interpret. It is called the rotation of the factor matrix. There are several methods available for rotating matrix. The one used in this analysis is Orthogonal (Varimax) rotation, the commonly used method, which attempts to minimize the number of variables that have high loadings on a factor. This should enhance the interpretability of the factors. The rotated factor matrix using varimax rotation has been given in Table 4 where each factor identifies itself with a few set of variables. The variables which identify with each of the factors were sorted in the table.

Table 4 shows the factor loadings after rotation. The items that cluster on the same factor suggest that factor 1 represents social concerns, factor 2 represents economic concerns, factor 3 represents environmental concerns and factor 4 represents company concerns.

4. Conclusion

Out of 26 dimensions table in the original set of indicators, 20 were used in the subsequent SEM and these were renamed as per their name of factor.

- 1- The dimension CSR5, CSR15, CSR17, CSR18, and CSR21 were clubbed under the head "SOC" which included the dimensions indicating the effect of CSR initiatives taken by the companies on social aspect and these dimensions were renamed as SOC1, SOC2, SOC3, SOC4 and SOC5 respectively. The cronbach's alpha value was found to be .915 which is an acceptable value of reliability.
- 2- The dimensions CSR6, CSR14, CSR19, CSR23, and CSR26 were grouped under the head "ECO" which comprised of the economic dimensions of the CSR initiatives taken by the companies and renamed as ECO1ECO2, ECO3, ECO4, and ECO5 respectively. The cronbach's alpha value was found to be .876, which is an acceptable value of reliability.
- 3- The dimension CSR8, CSR9, CSR13, and CSR20 were named as "ENV" which included the environmental dimensions of the CSR initiatives taken by the companies and these dimensions were renamed as EVN1, ENV2, ENV3, and ENV4 respectively. The cronbach alpha value was found to be .864 which is an acceptable value of reliability.
- 4- The dimensions CSR1, CSR2, CSR4, CSR11, CSR12 and CSR24 got clubbed under the head "COMP" which comprised all the indicators of impact of CSR initiatives taken by the companies and renamed as COMP1, COMP2, COMP3, COMP4, COMP5, and COMP6 respectively. The Cronbach alpha value was found to be .911, which is acceptable value of reliability.

5. Suggestions and Recommendations

Corporate Social Responsibility is an emerging activity which is at the initial stage and will grow more in the coming times. Companies Bill which is a good initiative by the Government of India for various companies to allocate certain budget for this activity but it is unclear that how much amount has to be spent on this activity. On the international front, CSR has been accepted as an important concept for image building and for the successful conduction of the business.

But in India, it has to be taken up on a more serious note than a mere tax benefiting activity. The amount projected to be spent on CSR activities should be fixed by government. Social and environmental development programmes must be taken up by various companies as a part of this activity. Companies can take up various issues happening in the society and work on that under CSR. Ideally, the companies should not and cannot work on CSR activities alone, if cooperation and contribution from employees is absent. Stakeholders should be encouraged to contribute in the promotion of CSR activities. Conferences, seminars, workshops and training sessions should be conducted by various companies in order to spread knowledge and awareness in this sector. It is also important to review the existing policies which are being laid by various companies and implementation must also be put in that way so that the desired result could be achieved.

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