Chapter – VI

SUMMARY AND SUGGESTIONS

The concept of corporate social responsibility (CSR) proposed firstly by the Oliver Sheldon in 1924. Carroll (1979, 1991) presented that corporate social responsibility included economic responsibility, legal responsibility, ethical responsibility and philanthropic responsibility. Combining the definition of Carroll (1979, 1991) and stakeholder theory, the researcher provide the definition of corporate social responsibility: corporate social responsibility means the total of economic responsibility, legal responsibility, ethical responsibility and philanthropic responsibility of the corporate, and it specifically includes the stakeholders responsibility to investors, employees, consumers, business partners, natural environment, community and government etc. (Mai Ying, 2009).

This Chapter examines summary and suggestions of the study.

Since hundreds of years ago, many producers have used brands to distinguish their products. Obviously, good brands, besides strong brands adding values to companies so as to increasing the corporate benefit, can positively affect the consumers’ perception and preferences, specifying different taste in market. As a result, many international corporate brands have expended to the whole world, from the Far East to Western Europe. High reputations of the strong brands make them popular among the different regions and countries. However, the trusts of brands are threatening by social, environmental and health problems. Hence it has become imperative to measure the success of any company brand and also to identify the effects of CSR on the company’s growth. Depending on that some modifications may be suggested to the management for better organization. Hence in the first instance, it is necessary to have a model for measurement.

When people associate with corporate brands, a series of brands may be mentioned such as General Motor, Coca Cola, Pepsi, Adidas, Nike, etc. As a matter of fact, brands have become an important tool for consumers to distinguish the different products and taste. Corporate branding power has been taken more and more concern among the market leaders. Almost all market leaders believe
that ‘strong brand names can have positive effects on consumer perceptions and preferences’. Brand influence can be explained by the economic curve. Consuming in a perfect competition, if every producer produces the same product in an industry, he has to sell the product according to the same market price.

A study of microeconomics indicates that the corporate branding, as a mean of reflecting the product differentiation, has a great influence on the consumers’ perception and demand on products of the market.

The corporate branding is very important to consumers to choose their favourite products; in another words, the brand is a persona of the company, encompassing corporate qualities, values and promises; however, the brand images are being threatened by the environmental and social issues in recent years. Even many international corporate brandings with high reputation among the consumers are also confronting with casualties. Shell was criticized by the Greenpeace for its plan to dispose of a rusted and obsolete oil-storage platform; Nike was also confronted with fierce anti-corporate campaign because of the use of sweatshop labour. As a result, the images of brands are affected to the extent, and the social performance of the corporations is suspicious. Take Shell as an example, in a survey in 1996, 61% of UK respondents ‘supported’ or ‘agreed with’ Greenpeace, while 25% respondents trusted the oil company; in the MORI’s survey in 1997, when respondents were asked by the question ‘how favourable or unfavourable is your overall opinion or impression of Shell?’ more than half of people indicated ‘unfavourable’ or ‘Neither / no opinion’.

Many international brands with high reputation have become the objects of criticism for environmentalists. As a result, these brands are not being trusted by consumers. According to the MORI’s survey in 2008, only 27% consumers

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agreed that ‘the profit of large companies help make things better for everyone who uses their products and services’. Meanwhile, half of respondents opposed this opinion. However, the same survey in 1976 indicated that more than 55% respondents achieved the positive opinion comparing 27% in 2008; and only about 30% people disagreed with this idea. It is clearly that image of corporate branding, especially that of the large corporations, are deteriorating. Many consumers cannot associate the brands with trust.

Corporation may make conclusions from Shell casualties such as: it is not enough to just deal with the government policies and regulations, the corporations also should connect with environmental ‘stakeholders’, getting broader social approval; they may also get the lesson that they should keep that their decision and business performance more transparently; however, Lord Browne’ words may indicate the core problem of the corporations. Sustainable development has become one important part of the business strategies. Meanwhile, the conventional sustainability agenda focused on the attempt to harmonize the traditional financial bottom line with emerging thinking about the environmental bottom line is turning to a more complicated agenda. Corporations must consider social factors in their business development, such as labour rights, health problems. John Elkington in his book named it ‘triple bottom line’, including economic prosperity, environmental quality, and social justice.

Actually, social responsibilities has become an important topic in the boardroom in many corporations, however, getting more financial benefit is usually priority. For maximizing the benefit, corporations sometimes ignore the social and environmental factors

Large amount of external cost exacerbates social cost which induce a series of social problems such as health problems and human rights. As a result, the reputations of corporate brandings are affected badly. In the survey in 2002, 

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61 % respondents pointed that ‘large companies don’t really care about the Long-term environmental and social impacts of their action.’

It is clearly that corporations should make a contribution to improve CSR and maintain the trust of corporate brands among consumers. We have discussed that the brand is an important mean to establish the reputation of a product. Meanwhile, consumers seem to be extra critical of the corporate social responsibility performance of a company when it represents a famous brand\textsuperscript{154}. Therefore, the global brands such as Motorola, Nike, and Shell would confront with great financial and trust risks if their brand names are associated with child labour, human rights violations, or healthy problems.

For dealing with this potential risk of brands, it is possible that corporate brands improve green consumerism by setting up or utilizing a series of green brands. Because the brands are taken as a tool to specify consumers taste, green brands can be used to change their taste in favour of less polluting and healthier products. On the one hand, corporations can create their own green brands, reflecting firms social performance and gaining the reputation for firm; on the other hands, corporations may utilize the existing green brands offered by organizations and governments such as Germany’s ‘blue Angel’ eco-labeling and EC eco-labeling. The appearance of green brands not only adds values on the corporate brands, but also improving corporate social performance and strengthening consumers’ trust.

However, although the brands can help corporations to improve its social performance, green brands is focused on the products and services, which means that it gives little information in the production process. Therefore, corporate brands should strengthen the communication with public by issuing ethical and social report. For instance, General Motor published its social responsibility reports, covering issues like environmental impact, health, child labour, employee training, and technical innovation for improving environmental performance. Through the reports, the GM make public know what it did in social

responsibilities, and what its target and plan are in the social aspects.

Besides, corporations should establish advanced monitor and audit system for keeping its subcontractors and suppliers meet minimum thresholds in social justice and sustainability. The related corporate policy was discussed and established in the boardroom, which would be integrated with government policy as the basic standard and guide line in the corporate behavior. The policies will be go through the whole production process which is monitored and audited by the management system; green brands such as eco-labeling would be used to keep the trust of the corporate branding, guiding consumers’ perception and taste. The social report & ethic report, and audit report will be issued as a conclusion of corporate performance on social responsibility in a certain period, which would be useful in improving corporate performance and strengthening the communication with public.

The objective of this study was to construct a systematic, aggregate measurement of corporate social performance based on the research of Ruf (1998), and to extend that model to a novel model based on the Least Square Fuzzy-AHP (LSFAHP) to evaluate corporate social performance. This proposed method enables us to deal with problems encountered in measuring CSR with uncertainty or vagueness phenomenon and also the deterministic parameters. We also presented a case study to help explain the model. The results suggest that the LSFAHP method is applicable for developing such a measurement and can be used for both decision making and research. Of course, there are some limitations about this study. With regard to the methodology, the dimensions that we selected for evaluating corporate social performance are derived from 1) Environmental Care 2) Education 3) Health Care 4) Community Involvement and 5) Peripheral Development. Again all these are subdivided into various parameters. The first one is subdivided into Pollution control, solid waste management while the second is subdivided into support primary/secondary education, Scholarships and infrastructure to schools/colleges. The third one is subdivided into Health checkups, treated water supply and provide hospital Buildings while fourth one is subdivided into safety/quality, interaction with people and community welfare centres. The fifth criterion is subdivided into roads, water tanks and bridges etc.
When it refers to the specific results presented in this study, the limitation is that the results, which represent the judgment of a certain decision group, may generalize to other groups, only if the parameters are properly defined. The relative importance of the elements may change in different time or in different situations. In conclusion, the proposed system would be possible to predict the consequences of the decisions made based upon the information provided by this assessing model, thus providing a more accurate, effective, and systematic decision support tool. Future work for researchers may search for more commonly accepted dimensions of CSR like Artificial Neural Networks, Genetic Algorithms, Artificial Ant colony optimization, Artificial bee colony Optimization etc, that can suitable for different cultural context. Another area of interest is to explore the relationship between other organizational variables and CSR especially the certain aspect of corporate social performance, which may facilitate a meaningful corporate strategy. Furthermore, researchers can find more criteria that can influence corporate social performance in a significant way, and determine the relative importance of the new criteria, seeing its influence on other criteria’s relative importance.

The methodology adopted to achieve the objectives of study various concepts and definitions of CSR given by the experts in different dimensions. The uniformized the concept and the parameters were identified.

After identifying the parameters, divided them into two groups, namely deterministic and uncertain parameters. The uncertain parameters are modeled using fuzzy logic and the deterministic ones are modeled using the conventional logic. The fuzzy AHP method is used for measuring the level of the CSR of selected four companies. The least square fit method was used for finding the best company among those companies which have contributed for CSR.

In this study it has been proposed a model for measuring the quality of the work done towards CSR. Although model is general and useful in comparing the quality of work rendered towards CSR, it is applied to four major and similar industries in implementing the CSR initiatives. A questionnaire is developed for this purpose and it is quantified and accordingly the triangular fuzzy values are
taken. After modeling them using fuzzy logic the proposed least square Fuzzy Analytical Hierarchical Process model is applied and analyzed. However, in the process of evaluation using the proposed model, the names of the companies are mentioned in some name on order for obvious reasons although the data collected is analyzed and results tabulated. They are numbered as the company 1, company 2, company 3 and company 4, although the ordering is not necessarily in the order in which it is discussed in the following lines.

_Under CSR activities the major initiatives are taken up based on Environmental Care, Health care, peripheral development, Education and community development etc._

**Initiatives at Visakhapatnam Steel Plant:**

- ‘Jaladhara’: Environment friendly project ‘Jaladhara’, implemented providing safe drinking water to 19 tribal villages of Agency area of Vizag District. This project provides filtered, perennial drinking water by gravitation method from a rain fed source which is at heights, without using electrical power/energy. About 5500 people in 19 villages were benefited. The project was implemented through M/s D. Sarada Trust.

- Free Eye Camps: Reciprocity arrangement with Sankar Foundation for conducting free eye camps & cataract surgeries under financial aid for setting up 8 nos. Operation Theatres in their hospital near Simhachalam. Eye camps were organized since year 2007 through M/s Sankar Foundation in Rehabilitation colonies, Peripheral villages of VSP and rural areas of Vizag, Vizianagaram and Srikakulam Districts. About 22,000 people were tested and 5000 cataract surgeries were carried out to bring light.

- Supplying of treated drinking water to Rehabilitation colonies during thirst summer days.

- Construction of Community Welfare Centres (19nos.) in Rehabilitation colonies & Peripheral villages for organizing social events, functions etc. These can be served as shelters during natural calamities.
Laying of Cement concrete roads of 5.2 KM length in Vadlapudi Rehabilitation colony & peripheral villages

Construction of Function Hall for SC/ST community at Pedagantyada RH colony

Visaka Vimala Vidyalaya Schools - Free education to about 1500 children of BPL families, at Ukkunagaram & Gantyada – in house campus.

Arunodaya Special School for Differently Abled Children – RINL has constructed school building at a cost of Rs. 200.00 Lakhs, providing free education to 70 children and facilities like physio therapy, speech therapy, yoga therapy, music therapy, vocational training etc., - located in campus @ Ukkunagaram.

Additional accommodation at Hostels for SC / ST girls / boys: Additional accommodation was provided at 3 Hostels for SC/ST Girls/boys in Visakhapatnam city benefiting about 360 students.

Empowerment programmes to women & un-employed youth – Vocational training programs organized through Jan Shikshan Sansthan (JSS) in Rehabilitation colonies and Paderu (Tribal area). About 6000 people were trained in courses like Light Motor Vehicle Driving, MS Office, Two wheeler mechanism, soft toys making, Ariya work, Beautician, Dress making, Electrician and income generation programs like manufacturing/ producing Phenyl, Detergent powder etc., at Araku (Agency area of Vizag Dist.)

Initiatives at HPCL:

Important initiatives at corporate level of Hindustan Petroleum Corporation Limited:
Swavalamban: Providing free vocational training to low income group households.

Navjyot: To increase the health index of slum children.

Unnnati: Providing computer training to school children at Visakhapatnam and Vijayawada.

Nanhi kali: To support the girl child for getting quality school education in Mehaboobnagar district and Paderu region of Andhra Pradesh.
Suraksha: To prevent HIV/AIDS through training / lecturing to truck drivers at Highway retail outlets.

Global warming: Providing Knowledge to school children at Delhi and Goa through an operating partner CSR&L (Centre for Social Responsibility & Leadership). Apart from the above CSR activities specially undertaken by HPCL for specific groups, the other social development activities include associating with health care, education, environmental protection, agricultural development, rural reconstruction, water supply development etc. It can be said that HPCL has touched lives qualitatively acting as a corporate social ambassador by taking up the above activities.

National Thermal Power Corporation Limited:

NTPC has been providing quality primary and secondary schooling facilities to the children of its staff and that of neighboring community in its township located all over India. For this purpose, NTPC provides funds to schools for equipments, etc. and to also meet their recurring expenditure deficits on need basis. In all NTPC opened 45 schools in its township located all over India in which approximately 43405 students are studying. State schools run on state syllabus and as per State Government norms. Central Schools, which run as per Kendriya Vidyalaya Sangathan (KVS) norms; and Private schools run by various management such as Delhi Public School, DAV Society, Chinmaya Mission etc.

- Supporting 500 schools, 26 ITIs, 3 Polytechnics and 3 Engineering Colleges around NTPC locations benefiting about 50,000 students every year.
- Construction / Repair of class rooms, toilets, boundary walls, kitchen sheds in schools
- Scholarships, awards, solar lanterns, school bags, uniforms, books & stationeries etc.
- Benefitted close to 3 lakh students so far
- Skill upgradation programs for women (tailoring, beautician course, embroidery etc), Distribution of Sewing Machines to promote self-employment.
• Programs for village youth like welding, electrician, motor winding, motor driving, IT related training etc.
• Benefitted close to 24,000 in last three years

The organization provides comprehensive medical care to employees and their families inclusive of promotive, curative and preventive healthcare. It also provides adequate health care to the community around the project sites. With 17 well-equipped project hospitals at its project sites with 700 hospital beds and 58 empanelled hospitals located centrally and at regions, it achieves the above objectives. A fully dedicated team of 250 Doctors and around 1000 para medical staff, NTPC takes scarce quality medical care to the doorsteps of employees in the project in locations where even Govt. Primary Health Care is sadly inadequate. While 7 of the 17 hospitals, provide primary and emergency health care, the other 10 major hospitals also provide secondary health care. The empanelled hospitals provide the tertiary health care services. With the above efforts the mean employee age has increased

Steel Authority of India Limited:

The company supports around 138 schools in the peripheral areas of SAIL’s plants / units in the country. More than 80,000 children receive education in these centres, a majority of which is located within 1-2 Kms of the target population making education easily accessible. Also Special Schools have been setup for underprivileged children, who have never been to school earlier at the five Integrated Steel Plants providing free education, “Akshay Patra” mid-day meals scheme, free transport, free text-books, stationary items etc.

SAIL has been successfully operating 39 Hospitals, 40 Primary Health Centres, and 11 Reproductive & Child Health Centres. These estimates have resulted in access to improved health infrastructure and related benefits for about 2.2 million people. The four general hospitals of SAIL at Bhilai, Durgapur, Bokaro & Rourkela are the nerve centres of the company’s healthcare initiatives. Each equipped with over 700 beds, these are considered to be the apex referral institutes in respective states. The company has organized 49 Health Camps in 6 states (Bihar, Jharkhand, Chattisgarh, Orissa, West Bengal and Tamil Nadu)
providing free health checkups, pathological laboratory treatment, common medicines, immunization, etc. to over 2.5 lakh of the needy population. Also the national programme on HIV/AIDS Prevention and Control Programme is being implemented by SAIL in its capacity of an inter-sectoral collaborator of the National AIDS Control Organization under the Ministry of Health & Family Welfare, Govt. of India since 1999-2000. SAIL has covered around 6 lakh non-employees and 1 lakh employees in the AIDS awareness programmes since 1999-2000. In 2003, the International Labor Organization documented SAIL’s HIV/AIDS programme as a case study for workplace intervention.

Each SAIL plant has ensured that villages within the radius of 20 kms of its township have access to potable water. This has been done by installing 1831 water sources, including bore wells, hand pumps, overhead tanks, ponds etc. The company constructs on an average 157 water infrastructure every year for people living in far-flung area.

Objectives of the present study

The objectives of the present study are

5. To review research and literature on corporate social responsibilities.
6. To present the corporate social responsibilities in different companies.
7. To examine the models of corporate social responsibilities and corporate social responsibilities in selected companies.
8. To analyze the perceptions of employees and beneficiaries on corporate social responsibilities.

Methodology of the present study

The methodology adopted to achieve the objectives listed above is given under: The study is based on both primary and secondary sources of data. Primary data is collected through a questionnaire. About 40 employees and beneficiaries are selected from each organization. Thus, 160 responses are collected from four different organizations chosen for the study. The four organizations selected for the study are: Visakhapatnam Steel Plant, Hindustan Petroleum Company Limited, National Thermal Power Corporation Limited and Steel Authority of India Limited. The responses have been tabulated and analyzed. The corporate
social responsibilities of these companies have been measured through the fuzzy AHP method. The performance assessment has become one of the most important aspects for the industries all over the world. Developing an evaluation model to facilitate the understanding of the contribution of CSR by the industries. Analytic Hierarchy Process (AHP) is applied to formulate and prioritize the parameters of CSR for constructing the evaluation model under which the development and productive use of investments in intangible assets can be made. Here, a fuzzy approach is integrated with AHP method to make up the vagueness about the degree of importance of decision-makers on judgment. It is further enhanced with the least square fuzzy analytic hierarchy process model. The least square method is used for finding the best company among those companies which have contributed for CSR.

Secondary data have been collected through books, journals, periodicals, daily newspaper, websites and other available literature. The studies of different experts have been present as Review of Literature.

**Observations of the Study**

The selected organizations, all four are having CSR structure in their organizations at their headquarters. Whereas at Visakhapatnam level Company 3 & Company 4 not having separate CSR structure or department for the CSR activities. They have been serving the society along with human resource management department. The rest of the companies having full-fledged CSR setup in their organizations. The opinion survey also responded in the same direction. 90 per cent respondents opinioned at company 1 and 80 per cent at company 2. Whereas 50 per cent and 75 per cent respondents are agreed CSR structure having at Company 2 and 4 respectively. Overall response are more than 73 per cent respondents are satisfied with all organizations having CSR structure in their organizations and all doing CSR activities at large for the development of society according to fund allocation towards CSR activities. Below 10 per cent respondents have no idea on this concept and they are satisfied with the organizations CSR activities for their villages. 11.88 per cent respondents opined that CSR is a part of organizational activities. It present in the fast growing society, everybody is busy with their activities. In the present scenario also more
than 68 per cent respondents have been showing willingness towards CSR activities doing by their organizations to the local community. The employees also interested to make part of those activities. 75 per cent respondents are given encouragement in company 1 and company 3 followed by company 2 and 4 encouraged only 60 per cent. Overall 68.75 per cent are willing and 18.75 per cent employees are not willing towards this activity. Observed that 8.75 per cent respondents are not having idea on this activity.

For survival of companies growth and business it is must to serve the community at large. All selected companies in our study are showing interest to allocate funds to the community development. It is observed that highest 90 per cent opined company 4 supported regular financial support to the community activities at large followed by 80 per cent each by Company 1 and 3. Overall 75 per cent respondents opined positive response towards providing regular financial support to community by their companies or nearby companies followed by 8.13 per cent respondents are against the activity. 11.25 per cent responded that it was part of company’s activities. Rest of the respondents (5.72 per cent) have no idea or kept quit for this activity. For any business, trust and transparent is required for their stakeholders. It is company’s duty to communicate all their stakeholders about the enterprise values. In this filed study overall 73.75 per cent respondents are positively responded about their companies communicated enterprise values to its stakeholders by all means. 15 per cent respondents have been opposed this concept. 85 per cent opined positive response by company 1 followed by 80 per cent by company 3, 70 per cent by company 4 and 60 per cent by company 2. Companies must assess its business on their stakeholders. It is companies object to know about the opinions of the stakeholders by different surveys. In our opinion field study overall 70.63 per cent respondents responded positively that their companies are assessed their business through stakeholders and fulfilled this object regularly. 8.75 per cent respondents are opinioned that this activity is not required. 10.62 per cent respondents are agreed that it was a part of company’s objectives and rest of the respondents (10 per cent) told that there is no idea on this subject. It is observed that all our selected companies are positively responded this activity.
The era of commercial, everybody wants some benefit for their work/activity/participation. In that way all organizations have own credibility and image from society through their CSR activities. In opinion survey more than 81.88 per cent respondents are positively responded towards this activity followed by 5.62 per cent against this activity. This activity shown more impact on the stakeholders. It is observed that 92.50 per cent respondents are positively responded in company 1 and main observation was 80 per cent respondents are expressed positive attitude towards this activity in all three companies. 5.62 per cent are opposed this opinion followed by 7.50 per cent are opined this is in part of companies activities and 5.0 per cent are not responded. In any company economic objectives are play a key role. In this field study 30 per cent respondents are agreed in company 2 and 4 followed by 25 per cent at company 1 and 3 towards CSR as a strategic tool to promote economic objective of any company. Most of the respondents are against this activity. It is observed that 40 per cent opined in company 3 followed by 37.50 per cent in company 1 and 30 per cent in company 2 and 25 per cent at company 4 are responded against this activity. Most of the respondents are neutral towards this activity. 37.50 per cent in company 4, 30 per cent in company 2 followed by 25 per cent each at company 1 and 3 kept neutral towards this activity. Some respondents also disagreed towards this activity. Overall 10 per cent respondents are disagreed towards this activity. It is observed that CSR is a powerful tool to achieve not only maintains the administration objectives and it is useful for achieving the economic objectives.

Based on field study, it was observed that the most of the respondents are agreed for this activity. 30 per cent respondents are strongly agreed that CSR is an unconditionally acceptance obligation at COMPANY 1 followed by 25 per cent at Company 2 and Company 3 and 20 per cent respondents are strongly agreed at Company 4. Most of the respondents are agreed as well as the others are neutral i.e. overall 55 per cent and 27.5 per cent respectively. 17.50 per cent respondents are disagreed for this activity. Based opinion study most of the respondents are responded positively towards CSR should be the responsibility of every company. They gave two opinions. First opinion is that most of the respondents are aware of CSR and second opinion is they believed that every company should be responsible towards the activities of CSR. Based on study that 50 per cent
respondents strongly agreed at Company 1 followed 37.50 per cent responded at Company 2, 3 and 4. Highest 50 per cent respondents are agreed this view at company 2 followed by Company 3 at 40 per cent and 37.50 per cent at company 4 and least 25 per cent at company 1. In all companies on or average more than 78.76 per cent are agreed. Based on field study that most of the respondents opined Government should provide training to company personnel to implement CSR activities for community development. Highest 40 per cent respondents are strongly agreed at COMPANY 4 followed by 37.50 per cent respondents at COMPANY 2 and COMPANY 3. Whereas least 30 per cent at COMPANY 1. It was observed that overall 46.25 per cent of respondents are agreed this activity whereas 10.63 per cent respondents are kept neutral and 6.87 per cent respondents is disagreed.

If companies are involved in CSR activities, the organizations are recognized by public without any publicity. In opinion study highest 50 per cent respondents are agreed at COMPANY 2 and COMPANY 3 followed by 40 per cent at COMPANY 4 and 37.5 per cent at COMPANY 1. It is also observed that 37.50 per cent respondents are strongly agreed at COMPANY 1 and COMPANY 4, whereas 25 per cent each at COMPANY 2 and COMPANY 3. It was observed that overall 11.87 per cent respondents are neutral and 12.25 per cent respondents are disagreed this activity. Based on Opinion study observed that most of the respondents are well aware of CSR and strongly agreed about CSR activity of company should allocate the budget to CSR. 45 per cent responded strongly agreed at COMPANY 1 followed 37.50 per cent each at all three companies. Highest 50 per cent respondents are agreed at COMPANY 2 followed by 40 per cent at company 3 and 37.50 per cent respondents at COMPANY 2 whereas 40 per cent at COMPANY 3. Overall 11.88 per cent respondents are neutral and 9.38 respondents are disagreed about this activity. Based on field study 25 per cent respondents are strongly agreed regarding the geographical area of CSR activities at Company 2 followed by 20 per cent respondents each at all three companies. It was observed that overall 32.50 respondents are agreed about this activity and 31.50 per cent respondents are neutral, whereas 13.50 per cent respondents are disagreed to this activity. In this activity also respondents are responded positively. Highly 45 per cent respondents are agreed at COMPANY 3 followed
by 40 per cent at COMPANY 4, 37.50 per cent each at COMPANY 1 and COMPANY 2. It was observed that 37.50 per cent respondents are strongly agreed both at COMPANY 1 and COMPANY 4 followed by 30 per cent at COMPANY 2 and COMPANY 3. Others are neutral (13.33 per cent) and some (13.12 per cent) respondents are disagreed with this activity.

CSR is popularized in many ways. 10 per cent respondents are popularized CSR activities through News Bulletins in all companies. Highest 37.50 per cent respondents are popularized by News paper at company 1 and 3. Highest 37.50 per cent respondents are popularized by websites at company 4 followed by 25 per cent respondents at rest of the companies. Overall highest 28.13 per cent respondents are popularized by Newspaper followed by 5 per cent by weekly News, video magazine and others. Response regarding environmental care and pollution control was sought from the employees of four major PSUs. 10 per cent of the respondents has given rating Outstanding to COMPANY 1. Where maximum of 5 per cent has was given to the other PUCs like Company 3. 50 per cent of the respondents rating Commendable to COMPANY 1. 92.5 per cent has given in all a favourable rating to COMPANY 1 regarding positive environmental pollution control. 30 per cent respondents are given rating Commendable and Excellent for COMPANY 1 towards Environmental care of Solid Waste Management followed by 25 per cent rated Excellent at COMPANY 3 and 20 per cent rated Commendable and Excellent for COMPANY 2, COMPANY 3 and COMPANY 4 organizations respectively. It was observed by the study that 10 per cent overall rated Good and Very Good towards this activity. The Satisfactory rating also more i.e. overall 13.13 per cent. For this activity more respondents are given Commendable (50 per cent) and Excellent (25 per cent) rating to COMPANY 1. Because per one ton of steel producing COMPANY 1 management was planted one Tree and more than 40 per cent area of town ship was covered with green belt. The respondents may observed the activity and given this rating to COMPANY 1. Overall observations 22.50 per cent respondents given Commendable rating followed by 15.63 per cent Satisfactory, 15 per cent Excellent, 14.38 per cent Very good, 11.88 per cent Not bad, 10 per cent Good, 5.6 per cent Outstanding and each 2.5 per cent Very Poor and Poor ratings are given to companies.
According to opinion study highly 37.50 per cent respondents rating has been given to COMPANY 1 followed by 30 per cent to COMPANY 3, 25 per cent each to COMPANY 2 and COMPANY 4 towards Energy saving of environmental care. And also 25 per cent respondents has been given Excellent ratings to COMPANY 1, COMPANY 3 and COMPANY 4 organizations where 20 per cent to COMPANY 2. For this activity 10 per cent respondents are given rating Outstanding each to COMPANY 1 and COMPANY 3 followed by 7.50 per cent to COMPANY 4 and 5 per cent to COMPANY 2 for energy saving under criteria of Environmental Care. Others are rated at low level. Regarding Rain water harvesting under Environmental care 30 per cent respondents have been given ratings Commendable and Excellent to COMPANY 1 followed by 25 per cent to COMPANY 3 of Excellent, 20 per cent to COMPANY 2, COMPANY 3 and COMPANY 4. Rated Outstanding, 10 per cent respondents followed by 5 per cent each to COMPANY 2, COMPANY 3 and COMPANY 4 organizations. The observations are not much interesting. Most of the respondents are positively responded all companies positively towards improved awareness among people towards safety and environment. COMPANY 1 rated high 50 per cent respondents have been given rating Commendable followed by 37.50 per cent each to COMPANY 2 and COMPANY 4 where as 25 per cent respondents given to COMPANY 3. Coming to Rating Excellent COMPANY 3 was top followed by rest of three companies were responded by 25 per cent. 10 per cent respondents have been given rating Outstanding to COMPANY 1 followed by all other companies 7.50 per cent respondents were responded positively. Rated Very Good of 15 per cent opined to COMPANY 4, 12.50 per cent respondents were given to COMPANY 2 and 10 per cent respondents to COMPANY 3. The other respondents not responded properly. According to opinion study highly 37.50 per cent respondents rating has been given to COMPANY 1 followed by 30 per cent to COMPANY 3, 25 per cent each to COMPANY 2 and COMPANY 4 towards Greenery, Water Levels and general Environment activity. 25 per cent respondents have been given Excellent ratings to COMPANY 1, COMPANY 3 and COMPANY 4 organizations where 20 per cent to COMPANY 2 was rated. For this activity 10 per cent respondents are given rating Outstanding each to COMPANY 1 and COMPANY 3 followed by 7.50 per cent to COMPANY 4 and
5 per cent responded to COMPANY 2 for energy saving under criteria of Environmental Care. Others are rated at lower level.

30 per cent respondents are rated Commendable and Excellent for COMPANY 1 towards Support to Primary / Secondary education under education activity. Followed by 25 per cent rated Excellent to COMPANY 3 and 20 per cent rating Commendable and Excellent to COMPANY 2, COMPANY 3 and COMPANY 4 organizations. It is observed by the study 10 per cent overall rated Good and Very Good towards this activity. The Satisfactory rating also more respondents were responded i.e. 13.13 per cent overall companies. Based on field study highly 37.50 per cent respondents rating Commendable has been given to COMPANY 1 followed by 30 per cent to COMPANY 3, 25 per cent each to COMPANY 2 and COMPANY 4 towards Scholarships provided to Students for their Education development. Also 25 per cent respondents has been given Excellent ratings to COMPANY 1, COMPANY 3 and COMPANY 4 organizations where 20 per cent to COMPANY 2. For this activity 10 per cent respondents are given rating Outstanding each to COMPANY 1 and COMPANY 3 followed by 7.50 per cent to COMPANY 4 and 5 per cent to COMPANY 2 for this activity. Others are rated at low level. Based on this study highly 37.50 per cent respondents rating has been given to COMPANY 1 followed by 30 per cent to COMPANY 3, 25 per cent each to COMPANY 2 and COMPANY 4 towards Infrastructure provided by the companies to Schools/ colleges under Education development activity. 25 per cent respondents have been given excellent ratings to COMPANY 1, COMPANY 3 and COMPANY 4 organizations where 20 per cent to COMPANY 2 was rated. For this activity 10 per cent respondents are given rating Outstanding each to COMPANY 1 and COMPANY 3 followed by 7.50 per cent to COMPANY 4 and 5 per cent responded to COMPANY 2 for provided Infrastructure. Others are rated at low level. According to opinion study highly 37.50 per cent respondents rating has been given to COMPANY 1 followed by 30 per cent to COMPANY 3, 25 per cent each to COMPANY 2 and COMPANY 4 towards furniture, play equipment etc. provide to schools / colleges under Education development. 25 per cent respondents has been given Excellent ratings to COMPANY 1, COMPANY 3 and COMPANY 4 organizations where as 20 per cent responded by COMPANY 2. For this activity 10 per cent respondents are
given rating Outstanding each to COMPANY 1 and COMPANY 3 followed by 7.50 per cent to COMPANY 4 and 5 per cent to COMPANY 2 to this activity under Education. Others are rated at low level. Based on opinion study highly 30 per cent respondents rating Commendable has been given to COMPANY 3 followed by 25 per cent each to COMPANY 1, COMPANY 2 and COMPANY 4 towards Trainings providing to Students under education development activity. 25 per cent respondents have been given Excellent ratings to COMPANY 1, COMPANY 3 and COMPANY 4 organizations where 20 per cent to COMPANY 2 was rated. For this activity 12.50 per cent respondents are given rating Outstanding to COMPANY 1 followed by 10 per cent to COMPANY 3, 7.50 per cent to COMPANY 4 and 5 per cent respondents have been responded to COMPANY 2 for trainings provided to students development under education activity. Others are rated at low level.

Provided hostels and maintain them was very difficult task. May me due to that 50 per cent respondents rated Commendable to COMPANY 1 and also rated 25 per cent respondents rated Excellent to the same organization. Whereas 12.50 per cent respondents rated Commendable and Excellent to COMPANY 2. Respondents 10 per cent each rated the same to COMPANY 3 and 15 per cent respondents to Commendable rating and 12.50 per cents are responded Excellent to COMPANY 4 towards the education activity providing hostel builds to Students for their development. Regard level 37.50 per cent respondents rated Very Good to COMPANY 3 followed by 30 per cent to COMPANY 4 and 25 per cent responded to COMPANY 2. Whereas 37.50 per cent respondents are rated good to COMPANY 2 followed by 30 per cent to COMPANY 4 and 25 per cent to COMPANY 2 towards this activity. Provided such type of school buildings and maintain them was very tough task to any organizations. But COMPANY 1 is maintaining such type of school building with all amenities. This school name is Auronodaya School. For this school COMPANY 1 Management provide a special bus also to the children. Highest, 45 per cent respondents rated Commendable to COMPANY 1 and also rated 25 per cent respondents rated excellent to the same organization. Whereas 12.50 per cent respondents rated commendable and excellent to COMPANY 2. Respondents 10 per cent each rated the same to COMPANY 3 and 20 per cent respondents to Commendable rating and 12.50 per
cents are responded Excellent to COMPANY 4 towards the Special School buildings to physically challenged persons for their education development. Regard level 37.50 per cent respondents rated very good to COMPANY 3, followed by 30 per cent COMPANY 4 and 25 per cent responded to COMPANY 2. Whereas 37.50 per cent respondents are rated good to COMPANY 2 followed by 30 per cent to COMPANY 4 and 25 per cent to COMPANY 2 towards this activity.

Most of the respondents are positively responded all companies positively towards providing health checkups under healthcare activity. COMPANY 1 rated high 50 per cent respondents have been given rating Commendable followed by 37.50 per cent each to COMPANY 2 and COMPANY 4 where as 25 per cent respondents given to COMPANY 3. Coming to Rating Excellent to COMPANY 3 was top followed by rest of three companies were responded by 25 per cent. 10 per cent respondents have been given rating Outstanding to COMPANY 1 followed by all other companies 7.50 per cent respondents were responded positively. Rated Very Good of 15 per cents opined to COMPANY 4, 12.50 Per cent respondents were given to COMPANY 2 and 10 per cent respondents to COMPANY 3. The other respondents not responded properly. Based on this study highly 37.50 per cent respondents rating has been given to COMPANY 1 followed by 30 per cent to COMPANY 3, 25 per cent each to COMPANY 2 and COMPANY 4 towards treated water supply to rural areas under Healthcare development activity. 25 per cent respondents have been given excellent ratings to COMPANY 1, COMPANY 3 and COMPANY 4 organizations where 20 per cent to COMPANY 2 was rated. For this activity 10 per cent respondents are given rating Outstanding each to COMPANY 1 and COMPANY 3 followed by 7.50 per cent to COMPANY 4 and 5 per cent responded to COMPANY 2 for provided treated water supply. Others are rated at low level.

Regarding this activity 10 per cent respondents has given a rating Outstanding to COMPANY 1. No other organizations have received such a overwhelming response. This has put this organization at the forefront of hospital’s management as part of its CSR. 30 per cent each of the respondents has given ratings Commendable & Excellent to COMPANY 1. In all 90 per cent of
respondents affirmed their faithfulness regarding provision of health care centers provided by the organization COMPANY 1. In general 46.25 per cent of respondents has given the ratings Commendable & Excellent to the organizations under study. Providing blood blanks response is poor compared to other activities of the company. Highest 25 per cent respondents are given rating Commendable to Company 1 followed by 2.5 per cent respondents given rating Commendable to other three companies against health care – provided blood banks to the community. 12.50 per cent respondents are given rating Excellent to Company 1 followed by 2.50 per cent for all other companies. 10 per cent respondents are given rating Outstanding to Company 1 followed 2.50 per cent each by other companies. Overall 22.50 per cent respondents are given rating Poor to the companies. Based on the field study 12.50 per cent respondents are given rating Outstanding to company 1 followed by 10 per cent respondents given rating Outstanding to company 3 and rest of two companies are rated same by 5 per cent respondents each. Whereas rating Excellent is given by the company 1 with 37.50 per cent respondents followed by 25 per cent respondents given the same rating to company 3 and 20 per cent respondents to company 4. It is observed that 20 per cent respondents given rating Commendable to company 3 and 4 followed by 12.50 per cent respondents to company 1 and 10 per cent respondents has been given same rating to company 2. Overall 32.50 per cent respondents have been given rating Very Good whereas 10 per cent respondents are given rating Good. Based on field study 10 per cent respondents have been given rating Outstanding to company 1 followed by 5 per cent respondents has been given same rating to company 2, 3 and 4 to this activity. Rating Excellent has been given by 30 per cent respondents to company 1 followed by 25 per cent respondents to company 3 and 20 per cent each the rest of two companies 2 and 4. 30 per cent respondents have been given Commendable rating to company 1 followed by 20 per cent respondents has been given same rating to other three companies 2, 3 and 4. Overall 2.50 per cent respondents given rating Very poor and Poor. Whereas 9.38 per cent respondents given rating Not Bad and 13.13 per cent opined Satisfactory rating. Good and Very Good ratings have been given by 10 per cent respondents.

Companies paid more attention to its development as well as employees safety and Quality of life provided to them and also rural community. 30 per cent
respondents each are rated Commendable and Excellent for COMPANY 1 towards Support safety / quality under community involvement activity. Followed by 25 per cent rated Excellent to COMPANY 3 and 20 per cent rating Commendable and Excellent to COMPANY 2, COMPANY 3 and COMPANY 4 organizations. Also observed by the study 10 per cent overall rated Good and Very Good towards this activity. The Satisfactory rating also more respondents were responded ie 13.13 per cent overall companies. Based on field study highly 37.50 per cent respondents rating Commendable has been given to COMPANY 1 followed by 30 per cent to COMPANY 3, 25 per cent each to COMPANY 2 and COMPANY 4 towards regularly interaction with people to development of community involvement towards CSR activities. 25 per cent respondents has been given Excellent ratings to COMPANY 1, COMPANY 3 and COMPANY 4 organizations where 20 per cent to COMPANY 2. For this activity 10 per cent respondents are given rating Outstanding each to COMPANY 1 and COMPANY 3 followed by 7.50 per cent to COMPANY 4 and 5 per cent to COMPANY 2 for this activity. Others are rated at low level. According to field study highly 37.50 per cent respondents rating commendable has been given to COMPANY 1 followed by 30 per cent to COMPANY 3, 25 per cent each to COMPANY 2 and COMPANY 4 towards provided community welfare centers towards community involvement. 25 per cent respondents has been given Excellent ratings to COMPANY 1, COMPANY 3 and COMPANY 4 organizations where 20 per cent to COMPANY 2. For this activity 10 per cent respondents are given rating Outstanding each to COMPANY 1 and COMPANY 3 followed by 7.50 per cent to COMPANY 4 and 5 per cent to COMPANY 2 for this activity. Others are rated at low level.

According to field study respondents are responded positively towards all organizations. Based on this study highly 30 per cent respondents rating Commendable has been given to COMPANY 1 and COMPANY 3 followed by 25 per cent respondents given same rating to COMPANY 2 and COMPANY 4 towards Technical improvements under community involvement activity. 25 per cent respondents have been given excellent ratings to COMPANY 1, COMPANY 3 and COMPANY 4 organizations where 20 per cent to COMPANY 2 was rated. For this activity 17.50 per cent respondents are given rating Outstanding each to
COMPANY 1 and followed by COMPANY 3 10 per cent to 7.50 per cent respondents to COMPANY 4 and 5 per cent responded to COMPANY 2 for providing Tech. Improvements of this activity. Others are rated at low level. Any society will be developed by the education people. The organizations responsible in its CSR activities to fulfill the basic needs of the society. Organizations have been given short term trainings to the students or community. After trainings it is not useful to society. Keep this view in the minds of respondents that 37.50 per cent respondents have been given rating Excellent to COMPANY 1 followed 12.50 per cent each on Commendable and Outstanding. Respondents have been given full ratings to COMPANY 1 only. In Visakhapatnam area only COMPANY 1 haven given placement linked trainings to the community involvement activity. 30 per cent respondents are rated Commendable and Excellent for COMPANY 1 towards socio-cultural development nearby areas under community involvement activity. Followed by 25 per cent rated Excellent at COMPANY 3 and 20 per cent rated Commendable and Excellent for COMPANY 2, COMPANY 3 and COMPANY 4 organizations. Also observed by the study 10 per cent overall rated Good and Very Good towards this activity. The Satisfactory rating also more, 13.13 per cent overall companies.

Based on opinion study highly 37.50 per cent respondents rating Commendable has been given to COMPANY 1 followed by 30 per cent to COMPANY 3, 25 per cent each to COMPANY 2 and COMPANY 4 towards encouragement of self-employment schemes under community involvement activity. 25 per cent respondents have been given Excellent ratings to COMPANY 1, COMPANY 3 and COMPANY 4 organizations where 20 per cent to COMPANY 2 was rated. For this activity 10 per cent respondents are given rating Outstanding each to COMPANY 1 and COMPANY 3 followed by 7.50 per cent to COMPANY 4 and 5 per cent responded to COMPANY 2 for self-employment under criteria of community involvement CSR activity. Others are rated at low level. According to opinion study highly 37.50 per cent respondents rating Commendable has been given to COMPANY 1 followed by 30 per cent to COMPANY 3, 25 per cent each to COMPANY 2 and COMPANY 4 towards encouragement and sponsoring sports events under CSR activity of community involvement. 25 per cent respondents has been given Excellent ratings to
COMPANY 1, COMPANY 3 and COMPANY 4 organizations where 20 per cent to COMPANY 2. For this activity 10 per cent respondents are given rating Outstanding each to COMPANY 1 and COMPANY 3 followed by 7.50 per cent to COMPANY 4 and 5 per cent to COMPANY 2 for this activity under criteria of Community involvement. Others are rated at low level. Based on this study highly 37.50 per cent respondents rating commendable has been given to COMPANY 1 followed by 30 per cent to COMPANY 3, 25 per cent each to COMPANY 2 and COMPANY 4 towards providing training programmes for men and women under community involvement activity of CSR. 25 per cent respondents have been given excellent ratings to COMPANY 1, COMPANY 3 and COMPANY 4 organizations where 20 per cent to COMPANY 2 was rated. For this activity 10 per cent respondents are given rating Outstanding each to COMPANY 1 and COMPANY 3 followed by 7.50 per cent to COMPANY 4 and 5 per cent responded to COMPANY 2 for provided training facilities to rural area men and women under CSR activities. Others are rated at low level.

For any transportation roads are play a major role. Respondents are positively responded towards all four organizations for development of roads. As per field study 50 per cent respondents rating Commendable to COMPANY 1, followed by 37.50 per cent respondents given to COMPANY 2 and 20 per cent to COMPANY 4 and 27.50 per cent responded to COMPANY 3 towards the roads development under peripheral development activity. 20 per cent respondents are given same rating Excellent to three organizations, where as 25 per cent to rest organization, COMPANY 2. It is observed for all organizations given rating outstanding by 10 per cent respondents towards this activity. In same manner overall 10.63 per cent respondents are given very good rating.

Based on opinion study highly 30 per cent respondents rating Commendable has been given to COMPANY 3 followed by 25 per cent each to COMPANY 1,COMPANY 2 and COMPANY 4 towards provided water tanks under peripheral development activity. 25 per cent respondents have been given Excellent ratings to COMPANY 1, COMPANY 3 and COMPANY 4 organizations where 20 per cent to COMPANY 2 was rated. For this activity 12.50 per cent respondents are given rating Outstanding to COMPANY 1
followed by 10 per cent to COMPANY 3, 7.50 per cent to COMPANY 4 and 5 per cent respondents have been responded to COMPANY 2 for this activity. Others are rated at low level. Regarding this activity 10 per cent respondents has given a rating Outstanding to COMPANY 1. No other organizations have received such an overwhelming response. This has put this organization at the forefront as part of its CSR. 30 per cent each of the respondents has given ratings Commendable & Excellent to COMPANY 1. In all 90 per cent of respondents affirmed their faithfulness regarding provision of bridges provided by the organization COMPANY 1. The COMPANY 1 management was built a road over bridge for it’s employees as well as public at BC road near Gangavaram port. In general 46.25 per cent of respondents has been given the ratings Commendable & Excellent to the organizations under study. 30 per cent respondents are rated Commendable and Excellent for COMPANY 1 towards providing drainages under peripheral development activity, followed by 25 per cent rated Excellent to COMPANY 3 and 20 per cent rating Commendable and Excellent to COMPANY 2, COMPANY 3 and COMPANY 4 organizations. As per observations the study 10 per cent overall rated Good and Very Good towards this activity. The Satisfactory rating also more respondents were responded 13.13 per cent to overall companies.

Based on this opinion study highly 37.50 per cent respondents rating commendable has been given to COMPANY 1 followed by 30 per cent to COMPANY 3, 25 per cent each to COMPANY 2 and COMPANY 4 towards due to CSR activities overall difference has come to the society. 25 per cent respondents have been given Excellent ratings to COMPANY 1, COMPANY 3 and COMPANY 4 organizations where 20 per cent to COMPANY 2. For this activity 10 per cent respondents are given rating Outstanding each to COMPANY 1 and COMPANY 3 followed by 7.50 per cent to COMPANY 4 and 5 per cent to COMPANY 2 for overall difference to the society. Others are rated at low level.

For this activity more respondents are given Commendable (45 Per cent) and Excellent (25 per cent) rating to COMPANY 1. Because only COMPANY 1 have been provide more function halls to perform social functions at different
areas. The respondents may observed the activity and given this rating to COMPANY 1. Overall observations 21.25 per cent respondents given Commendable rating followed by each 15.63 per cent Satisfactory and Very good, 15 per cent Excellent, 11.88 per cent Not bad, 10.63 per cent Good, 5.6 per cent Outstanding and each 2.5 per cent Very Poor and Poor ratings are given to companies. The respondents responded in view of actual CSR activities have been done by the corporations. It is appreciated 40 per cent and 30 per cent respondents (5.56) have been given rating to COMPANY 1 excellent and commendable respectively. IT is also observed that 10.63 per cent respondents are given overall rating on very good, good and satisfactory. One more special observation is that overall 23.75 per cent respondents have been given rating on Commendable and excellent. Other ratings also take into considerations that 8.13 per cent respondents have been given rating on Not Bad followed by 2.5 per cent on poor and very poor.

For this activity more respondents are given Commendable (40 Per cent) and Excellent (25 per cent) rating to COMPANY 1. Because only COMPANY 1 have been provide more function halls to perform social functions at different areas of tribal youth. The respondents may observed the activity and given this rating to COMPANY 1. Overall observations 21.25 per cent respondents given Commendable rating followed by each 15.63 per cent Satisfactory and Very good, 15 per cent Excellent, 11.88 per cent Not bad, 10.63 per cent Good, 5.6 per cent Outstanding and each 2.5 per cent Very Poor and Poor ratings are given to companies. The organizations responsible in its CSR activities to fulfill the basic needs of the society. Organizations have been given facilities to the students or community to promote education. It is special focus on this activity. Keeping this view in the minds that 37.50 per cent respondents have been given rating Excellent to COMPANY 1 followed 12.50 per cent each Commendable and Outstanding and 25 per cent on very good. Respondents have been given full ratings to COMPANY 1 only. In Visakhapatnam area only COMPANY 1 haven provided accommodation to tribal youth to promote education to special focus on down trodden communities like SC / ST / BCs in the society.
The overall result shows that company 1 is the best CSR performer, followed by company 2, company 3 and company 4. It is corresponding to our assumption considering the relative importance of the five main criteria of Environmental Care, Education, Healthcare, Community Involvement and Peripheral Development.

Conclusions:

From the topics discussed above, it can be understood that there must be a model to measure the amount of work done by any organization towards the corporate social responsibility. Further it makes companies know how much they are contributing to the society through the CSR. To evaluate the CSR activity done by each organization a model based on the least square method, the fuzzy logic and the analytical hierarchical process is proposed. Although the term corporate social responsibility (CSR) may provide a general framework to describe the responsible behavior of a business and its social involvement. However, it is still problematic to find a commonly accepted definition of CSR, not to mention the evaluation of CSR. But, evaluating CSR is not only important for researchers to investigate the relationship between different organizational variables and CSR, but also crucial for stakeholders to employ social responsibility information during their decision making process. Therefore, in the first chapter an understanding to the CSR concept by reviewing the evolution of definition of CSR over time and in the second chapter a review of literature is given, whereas in chapter three the existing empirical efforts addressing the evaluation or measurement of CSR have been discussed. In chapter four examine the profile and activities of CSR in different selected organizations were discussed. A new methodology for the measurement CSR is proposed and implemented in chapter 5, the main field study observations and results have been discussed. The summary and suggestions have been presented in the sixth chapter.

All the studies have covered various aspects of CSR from different perspectives. Some are based on definitions and some based on theories and models of evaluate the measuring of CSR contributed by the organizations to the society. Studies on this topic CSR is very limited. Though several studies have been conducted, still there is a scope for further research. Different studies have
revealed the corporate experiences at various places. The comparative analysis of selected companies deserves a special attention on the environmental aspects of the companies need a further study. The sustainability of the business and CSR also need a focus for further research. This study is undertaken on measuring the CSR based on fuzzy logic of selected organizations in and around of Visakhapatnam.

As it has been observed, there is an inherent uncertainty in the parameters that are being considered for CSR for any company or organization which led to the introduction of fuzzy logic. Further, there are two more aspects which are actually being used in designing the model. They are some sort of hierarchical modeling, optimization and comparison for which the analytical hierarchical processing and the least square methods are being used. Hence in future, better models can be designed by introducing the latest modeling techniques for the above three concepts. They are Artificial Neural Networks, Game Theory, Dempster-shafer theory and measures theory. Moreover, all these can be combined using fuzzy logic as well. The term neural network was traditionally used to refer to a network or circuit of biological neurons. The modern usage of the term often refers to artificial neural networks, which are composed of artificial neurons or nodes. Thus the term has two distinct usages:

1. Biological neural networks are made up of real biological neurons that are connected or functionally related in a nervous system.
2. Artificial neural networks are composed of interconnecting artificial neurons (programming constructs that mimic the properties of biological neurons). Artificial neural networks may either be used to gain an understanding of biological neural networks, or for solving artificial intelligence problems without necessarily creating a model of a real biological system.

Artificial intelligence and cognitive modeling try to simulate some properties of biological neural networks. While similar in their techniques, the former has the aim of solving particular tasks, while the latter aims to build mathematical models of biological neural systems. Artificial neural networks have been applied successfully to speech recognition, image analysis and adaptive
control, in order to construct software agents (in computer and video games) or autonomous robots. Most of the currently employed artificial neural networks for artificial intelligence are based on statistical estimations, classification optimization and control theory. These may be used for modeling the CSR as well.

Genetic algorithms were formally introduced in the United States in the 1970s by John Holland at University of Michigan. Genetic algorithms belong to the larger class of evolutionary algorithms (EA), which generate solutions to optimization problems using techniques inspired by natural evolution, such as inheritance, mutation, selection, and crossover. Commonly, the algorithm terminates when either a maximum number of generations has been produced, or a satisfactory fitness level has been reached for the population. If the algorithm has terminated due to a maximum number of generations, a satisfactory solution may or may not have been reached. Genetic algorithms find application in bioinformatics, phylogenetics, computational science, engineering, economics, chemistry, manufacturing, mathematics, physics and other fields. A typical genetic algorithm requires a genetic representation of the solution domain & a fitness function to evaluate the solution domain. A standard representation of the solution is as an array of bits. Arrays of other types and structures can be used in essentially the same way. The main property that makes these genetic representations convenient is that their parts are easily aligned due to their fixed size, which facilitates simple crossover operations. Variable length representations may also be used, but crossover implementation is more complex in this case. Tree-like representations are explored in genetic programming and graph-form representations are explored in evolutionary programming; a mix of both linear chromosomes and trees is explored in gene expression programming. The flexibility and the three basic operations of the genetic algorithms provide a good platform for the optimization models in general and CSR in particular.

Based on the behavior of the ant, this heuristic optimization technique is developed. It is a probabilistic technique for solving computational problems which can be reduced to finding good paths through graphs. Initially proposed by Marco Dorigo in 1992 in his PhD thesis, the first algorithm was aiming to search for an optimal path in a graph, based on the behavior of ants seeking a path.
between their colony and a source of food. The original idea has since diversified to solve a wider class of numerical problems, and as a result, several problems have emerged, drawing on various aspects of the behavior of ants. This technique is being used in many problems and can also be extended for optimizing the amount spent on CSR by the companies depending on their demographic conditions, environmental issues, the conditions of their employees at the work place etc. Similar to the ant colony optimization, the artificial bee colony optimization is also an optimization algorithm based on the intelligent foraging behavior of honey bee swarm, proposed by Karaboga in 2005. It is as simple as Particle Swarm Optimization (PSO) and Differential Evolution (DE) algorithms, and uses only common control parameters such as colony size and maximum cycle number. ABC as an optimization tool, provides a population-based search procedure in which individuals called foods positions are modified by the artificial bees with time and the bee’s aim is to discover the places of food sources with high nectar amount and finally the one with the highest nectar. In ABC system, artificial bees fly around in a multidimensional search space and some (employed and onlooker bees) choose food sources depending on the experience of themselves and their nest mates, and adjust their positions. Some (scouts) fly and choose the food sources randomly without using experience. If the nectar amount of a new source is higher than that of the previous one in their memory, they memorize the new position and forget the previous one. Thus, ABC system combines local search methods, carried out by employed and onlooker bees, with global search methods, managed by onlookers and scouts, attempting to balance exploration and exploitation process. A study of applying these techniques can possibly be used for our CSR optimization modeling.

Dempster-Shafer Theory deals with two parameters, namely, belief and plausibility\textsuperscript{155,156}. This new approach considers sets of propositions and assigns to each of them an interval [Belief, Plausibility] in which the degree of belief must lie. Belief measures the strength of the evidence in favour of a set of propositions.

\textsuperscript{156} Shafer, Glenn (1976), A Mathematical Theory of Evidence, Princeton University Press, UK
It ranges from 0 (indicating no evidence) to 1 (denoting certainty). Plausibility is defined to be Plausibility(s) = 1 - Belief(¬s). It also ranges from 0 to 1 and measures the extent to which evidence in favor of ¬s leaves room for belief in s. In particular, if we have certain evidence in favor of ¬s then Bel (¬s) will be 1 and Pl(s) will be 0. This tells us that the only possible value for Bel(s) will be 0. The [Belief, Plausibility] interval, just defined above, measures not only the level of belief in some propositions, but also the amount of information they contain. As this theory measures the extent of evidence present in any system which has some uncertainty like belief, it is useful to model the parameters and the criteria that characterize the amount of utility of CSR by any company. The proposed methodology of this thesis may be extended in this direction as future work.

**Suggestions:**

Survival any business or industry is based on their activities of sale of goods and services to the subjects in the society. Different social classes of people exist in society. Hence the benefits of growth in business / industry shall necessarily reach all sections of the population in the society. Otherwise the class of people who were suffering from discrimination will resent the very existence of such businesses. CSR should mean sharing the prosperity with the Entire Community /Society at large. Following are some of researcher suggestions for good CSR:

All industry business shall have definite policy for Environmental Protection (example Energy savings to reduce Global warming). All Industry and Business shall budget for certain per cent of their earnings to the Community (example: every citizen pays a certain per cent of their earnings to the Parish / Church in UK and USA for community activities. MICROSOFT is one CORPORATE who have the Largest BUDGET in the world for community activities). As per government guidelines funds allocation for CSR is 2 % of profit. As per researcher opinion the per cent should be of their turnover. The Industries / Business which pollute the Environment for their PROFIT shall have a mandatory (as against voluntary) allocation of funds for Making good the Loss caused My suggestion is that the Government may have a separate TAX (Pollution Tax) for all such industries and use the amount for COMMUNITY
WELFARE through NGOs. More and More community participation programmes can be organized through CSR programmes especially like de-addiction programmes. Encouragement rural youth to higher studies and other equipping them to go beyond their normal place of stay in connection with employment. Any development depends on education. In my opinion CSR activities should focus more on education and its development. CSR funds can be utilized on the surrounding villages and should include on activities like sponsoring sports events, cultural activities, events aimed at heritage protection etc. In my opinion more and more monies are to be spent in tribal and rural areas. Comprehensive report of CSR activities including the impact of such activities is to be given in Annual Report of the Companies. CSR should not be just charity by the corporate but it should be the culture imbibed in every activity and every employee of the company. CSR should be embedded in the Core Values, Vision & Mission of every organisation. Corporates are to adopt the new villages after development of old villages and ensure complete focus on them. Corporates should put more focus on Healthcare i.e. constructing Hospitals and maintain them in rural and tribal areas. Trade unions should be discouraged in framing CSR policies as their perceptions are with limited focus on employee welfare. Organization should only exit from any CSR projects after a thorough impact study when the deliverables of the project with time frames are achieved or else they should continue participation till such achievement.

**Scope for further Research:**

All the studies have been covered various aspects of CSR from different perspectives. Some are based on definitions and some based on theories and models of evaluate the measuring of CSR contributed by the organizations to the society. Though several studies have been conducted, still there is a scope for further research. Different studies have revealed the corporate experiences at various places. The comparative analysis of selected companies deserves a special attention on the environmental aspects of the companies need a further study. The sustainability of the business and CSR also need a focus for further research.