

Evaluation of Sustainability of Singareni Collieries Company Limited using Triple Bottom Line Approach

Dr. Suresh Chandra Ch
Visiting Faculty
ITM Business School, Warangal

Article Info**Volume 82****Page Number: 5770 - 5776****Publication Issue:****January-February 2020****Article History****Article Received: 18 May 2019****Revised: 14 July 2019****Accepted: 22 December 2019****Publication: 28 January 2020****Abstract:**

The sustainability of the Company in terms of its contribution to People (the stakeholders of the company), Planet (concerned with the environment) and Profit (the financial growth) can be evaluated by applying the Triple Bottom Line Approach. The Triple Bottom Line Approach one of the earlier models that highlights the social responsibility of the companies. The research paper deals with evaluating the sustainability of Singareni Collieries Company Limited (SCCL), the oldest coal mining company in India and its progress in meeting the three Bottom lines such as People, Profit and Planet to achieve the overall sustainability. The study is based on the Approach developed by Elkington (1994). The study is based on the annual reports of SCCL and evaluates the relationship between select dimensions and more specifically concentrates on the production, production per man shift, net profit, Corporate Social Responsibility activities adopted by the company.

Keywords: CSR, People, Planet, Profit

I. INTRODUCTION

The significance of Triple Bottom Line Approach is been explained by John Elkington (1994). According to him, the companies performing business must look into the aspects such as Corporate Profit which signifies the growth and purpose of the company. Secondly, the companies must look into the 'people' who are part of the society and the companies' business practices should not create harm to the well being of the people. And the final measure is the 'planet', which is very crucial for the survival of the company and the people who directly or indirectly associated with the company. Companies performing continuous measures to meet these three bottom line measures will survive and sustain in the long term. Further, the social(people), environmental (planet) and the growth (profit) are crucial for the organization which wants to be a perfect Corporate citizen. The Triple Bottom Line gives the evidence of social sustainability of the companies and sends the message to the society that companies are not meant for profit, they are meant for the social development by bridging the strong foundation for Environmental and People well being. The Triple Bottom Line approach is one the of core foundations for the development of Corporate Social Responsibility.

II. REVIEW OF LITERATURE

Amnesty International Report highlighted the human right violations by select subsidiaries of Coal

India Limited in India. The report highlighted about the excess production of coal especially in the last 5 years and the goal of Coal India in doubling the output by 2020. The report on mining has explained about the consequences of excessive mining and its supporting industries towards the violation of Environment. The Amnesty report has also highlighted the current law system and in efficient enforcement of existing safeguards and violations to Adivasi communities in the open cast affected areas. Despite the Government's argument over consumption of less Green House Gas emission in comparison with other countries, it is proven that, the excess production is causing seivour harm to livelihood of Adivasis and environment violation.

Monjezi M et al.(2009) have studied the significance of environmental impact pertaining to Open pit mining in Iran. The study more specifically related to effects of open-pit mining and consequences in the form of land degradation, dust, water pollution. The author has highlighted the studies of Adriano (1997). Author has narrated the outcomes of the studies of Franandez Galvez et al.(2007), chalupnik and Wysocka(2008) which have highlighted the Water pollution as one of the serious impacts of mine operations. Drebenstedt C(2015) has studied the consequences of Open-cast mining and the need for restoring the land after usage of mining. The author has studied the legal sanctions, geotechnical safety, and balance to air, water and surface after mining.

According to the reports of Amnesty International, certain measures are been neglected such as India's Panchayat (Extension to Scheduled Areas) Act (PESA Act) requires authorities to co-ordinate with the Gram Sabhas for mutual cooperation and consent before the mining activities are adopted in the Adivasi regions and further, the Gram Sabha along with district Magistrate should assess the rehabilitation and resettlement(R&R) measures adopted to them. The flaws in the existing acts have become sources for violation of environment through unauthorized mining and excess mining. What the benefit that the companies get through mining and how much of value in return they are sharing to the environmental balance show a massive gap.

III. OBJECTIVES AND SCOPE OF THE STUDY

The paper concentrates on the detailed discussion on the following objectives.

1. to study the performance of Singareni Collieries Company Limited in terms of evolution, growth and business operations.
2. To analyze the Sustainability of SCCL in terms of People, Planet, Profit and CSR spent.
3. To examine the critical observations on the performance of the SCCL in meeting the Triple Bottom Line Approach
4. To suggest suitable measures for the betterment of performance of SCCL.

The study is based on the secondary data focusing on the reports of SCCL, MOEF, Amnesty International and the research studies made by the authors on Environment and mining. The primary data is limited to observations at the mining areas and the physical visit to the mining affected areas. The study is based on the Annual reports of SCCL in between 2009-10 to 2017-18. For select dimensions, the monthly and performance reports are used for evaluation.

The statistical tools such as mean, standard deviation, Compound Annual Growth Rate, Growth percentages are used for the analysis of secondary data obtained from survey.

IV. RESULT AND DISCUSSION

This section presents the detailed analysis of three bottom lines and the progress of Singareni Collieries Company Limited in the management of the People, Profit and Planet.

A. Brief Overview of Singareni Collieries Company Limited

The company is the oldest coal mining company in India. The company was started in the year 1920 and presently owns 48 mines which include 30 underground and 18 opencast mines. The company has the authorized capital of Rs.1800 crores and the paid-up capital of Rs.1733.20 crore, the Government of Telangana has the share holding of 51.09 percent, 48.90 percent by Government of India and 0.002 percent by the Public Shareholders. Company has the man power of 48271 working as on 30th June, 2019. The company owns mines in 9 districts of Telangana. The CSR activities are been implemented through project mode and the company has created Singareni Seva Samithi to conduct CSR activities and the promotion of activities.

B. Evaluation of 'People Bottom Line'

The contribution of people, i.e., manpower towards the sustainability is measured by analyzing the year wise manpower and the year wise productivity per man shift. Further, the relationship between manpower and productivity is analyzed to view the efficiency of manpower. Further, the table also presents the growth and growth rate, mean, standard deviation and Compound Annual Growth rate for the select period of study.

Table-I: Productivity per manshift

Sl. No.	Year	Productivity (per manshift in tonnes)	Growth	Growth Rate	Manpower	Growth	Growth rate
	2009-10	2.73			69043		
2	2010-11	2.9	0.17	6.23	67615	-1428	-2.07
3	2011-12	2.9	0	0	66466	-1149	-1.7
4	2012-13	3.14	0.24	8.28	64600	-1866	-2.81
5	2013-14	3.08	-0.06	-1.91	61778	-2822	-4.37
6	2014-15	3.33	0.25	8.12	58837	-2941	-4.76
7	2015-16	3.77	0.44	13.21	58491	-346	-0.59
8	2016-17	4.74	0.97	25.73	56282	-2209	-3.78
9	2017-18	4.89	0.15	3.16	54043	-2239	-3.98
10	2018-19	6.23	1.34	27.4	48942	-5101	-9.44
	Mean	3.771			60609.7		
	SD	1.150309			6475.557		
	CAGR	8.601			-3.382		
Correlations							
				manpower		productivity	
manpower		Pearson Correlation				-.936**	
		Sig. (2-tailed)				.000	
		N				10	

Source: Compiled from Annual Reports of SCCL during 2009-10 to 2018-19

The productivity is calculated on the basis of manpower working and the production achieved. The productivity is measured by output per manshift in number of tones. Year wise manpower and the productivity per manshift is collected from the Annual Reports of SCCL. The reports show the evidence that the productivity per manshift has increased continuously since 2009-10, there is a positive growth in the productivity per manshift which gives the evidence that the 'people' element in the company has provided a good contribution to increase in the productivity. The manpower in the select period has been showing the downward trend. The growth in the manpower is been negative as the manpower continuous to decrease in the last 10 years. The Compound Annual growth rate is been negative and there has been 3.38 percent decrease rate in the manpower where as the productivity is been grown to 8.6 percent in the 10 years period. The average productivity for the period of the study is 3.7 tons per worker in comparison with the average manpower of

60610 workers. This gives clear evidence that, despite the manpower decreased in the period, the productivity has been increased. Though the presence of machinery has been increased, the manpower productivity has shown more growth rate in comparison with the growth rate of manpower. Hence, it is an indication that the 'people' have been contributing significantly to the growth of the company.

The Karl Pearson correlation coefficient between productivity and manpower has shown negative relationship as Correlation coefficient is -0.936. The correlation is significant in between manpower and productivity.

C. Evaluation of 'Profit Bottom Line'

To evaluate the Profit Bottom Line, the net profit after tax is collected from the period 2009-10 to 2018-19. The growth and growth rates are calculated and presented in table-II.

Table-II: Net profit after tax for the period in between 2009-10 to 2018-19

Sl.No.	Year	Net Profit after tax	Growth	Growth Percentage
1	2009-10	268.01	--	--
2	2010-11	351.37	83.36	31.1
3	2011-12	358.27	6.9	1.96
4	2012-13	401.14	42.87	11.97
5	2013-14	418.74	17.6	4.39
6	2014-15	490.44	71.7	17.12
7	2015-16	616.54	126.1	25.71
8	2016-17	490.56	-125.98	-20.43
9	2017-18	1212.75	722.19	147.22
10	2018-19	1766.08	553.25	45.62
Average		637.382		
Standard Deviation		477.0472		
Compound Annual Growth Rate		20.749		

Source: Annual Reports of SCCL, 2011-12 to 2017-18

The net profit after tax has been increased from Rs.268 crore to Rs.1766.08 crore during 2009-10 to 2018-19. The growth lies in the range of a negative growth of Rs.125.98 crore to 553.25 crore. Highest growth can be observed during 2018-19. The growth percent lies from 31.1 percent to 45.62 percent. The compound annual growth rate is 20.75 percent. The average net profit is Rs.637.38 crore. The standard deviation is Rs.477.04 crore. The statistics reveal that the net profit remained highly positive and the growth has been consistent and rapid growth in the net profit can be observed during 2017-18 and 2018-19. The profit bottom line clearly reveal that despite the manpower has decreased the net profit has been highly positive, which is a good sign and an indication about the growth of the company in terms of net profit.

D. Evaluation of 'Planet Bottom Line'

To evaluate on Planet Bottom Line, an attempt is made to understand the activities conducted by SCCL for production, the evaluation of Corporate Social Responsibility activities for the benefit of the mining affected areas and the evaluation of type of CSR activities conducted for the betterment of the society.

E. Mine wise production in Million tonnes

The production scenario in both Open cast and Underground mines has been observed for the period in between 2009-10 to 2017-18 period. The gap is calculated by taking the deviation in between actual production and the target production which is shown in table-3. SCCL is been operating in both Underground and Open Cast mines. The production from the period in between 2009-10 to 2017-18 is observed and presented in table-3.

The results show that the gaps is been negative for Under Ground mines production as the target production has been consistently higher than the actual production. Company is not able to extract coal as prescribed in the target for all the 10 years. Highest gap of 4.37 million tonnes can be observed during 2014-15. The proportion of underground mines on total production lies in the range of 13.40 percent to 23.74 percent.

The production scenario in Opencast mines proving more worthy to the company as the production has been continuously exceed than the target production. The gap has been positive and this gives an indication

that, the company has been able to extract more than the target production. The proportion of Open cast mines on total production lies in the range of 76.26 percent to 86.60 percent.

The overall target production and the actual production show the evidence that, except for the period 2014-15, the total production has been consistently increased than the target production for the total period. To summarize the gap in achieving the target for Underground mines is more than the production target made for Opencast mines. Hence, it is clear that, the SCCL has been more focused on Open cast mining.

Table-III: Mine wise production during 2009-10 to 2017-18

Sl.No.	Year	Production in Under Ground Mines			Proportion of Total Production	Production in Open Cast Mines			Proportion of Total Production	Total	
		Target	Actual	Gap		Target	Actual	Gap		Target	Actual
1.	2009-10	12.80	11.97	-0.83	23.74	31.7	38.45	6.75	76.26	44.50	50.42
2.	2010-11	12.48	11.60	-0.88	22.60	34.6	39.72	5.12	77.40	47.08	51.32
3.	2011-12	12.50	10.64	-1.86	20.38	38.5	41.57	3.07	79.62	51.23	52.21
4.	2012-13	13.00	11.59	-1.41	21.81	40.1	41.55	1.45	78.19	53.10	53.14
5.	2013-14	12.00	10.54	-1.46	20.89	38.3	39.92	1.62	79.11	50.30	50.46
6.	2014-15	14.57	10.20	-4.37	19.41	40.43	42.34	1.91	80.59	55.00	52.54
7.	2015-16	13.27	10.65	-2.62	17.64	42.73	49.72	6.99	82.36	56.00	60.37
8.	2016-17	13.55	9.51	-4.04	15.51	45.46	51.82	6.36	84.49	59.01	61.33
9.	2017-18	12.50	8.31	-4.19	13.40	49.5	53.7	4.2	86.60	62.00	62.01

Source: Annual Reports of SCCL, 2011-12 to 2017-18

F. Average Net profit of the company and CSR

The provisions of CSR are applicable to SCCL as its net profit is much ahead than the minimum limit prescribed under Companies Act, 2013. Though the SCCL has been implementing the CSR practices much before the mandate clause, the expenses are recorded

under Social heads which include the benefits to employees and families and also mining affected areas. From the period 2014-15, the company has shown results of CSR spent separately in the annual reports. Table-IV presents the status of CSR spent by SCCL.

Table-IV: CSR spent by SCCL

Sl. No.	Year	Net profit	Average net Profit	2% of net profit	CSR budget allotted	Actual CSR spent	Amount unspent
1.	2011-12	562.94	518.90	10.38	15.56	3.85	11.71
2.	2012-13	541.31					
3.	2013-14	452.46					
CSR spent during 2014-15							
1.	2012-13	541.31	537.73	10.75	40.00	12.31	27.69
2.	2013-14	452.46					
3.	2014-15	619.44					
CSR spent during 2015-16							

	2013-14	452.46	574.35	11.48	39.50	12.45	27.05
	2014-15	619.44					
	2015-16	651.15					
CSR spent during 2016-17			719.56	14.39	40.00	19.42	20.58
1.	2014-15	619.44					
2.	2015-16	651.15					
3.	2016-17	888.08					
CSR spent during 2017-18			917.32	18.34	--	--	--
1.	2015-16	651.15					
2.	2016-17	888.08					
3.	2017-18	1212.75					
CSR spent during 2014-15							

Source: Annual Reports of SCCL, 2011-12 to 2017-18

Table-IV presents the performance of SCCL towards Corporate Social Responsibility. The table presents the statistics of the average net profit for the 3 preceding years, the amount required to be spent under 2% of net profit. The statistics clearly reveal that, for the 3 preceding years, i.e., 2011-12 to 2013-14, the average profit value is Rs.518.90, where the company is to spend Rs.10.38 crore in the financial year 2014-15, i.e., 2 percent of net profit for CSR activities, the company has made a budget of Rs.15.56 crore towards CSR spent but the company is able to spend Rs.3.85 crore. There is an unspent amount of Rs.11.71 crore, which is a noticeable remark. The company was not able to spend even 2% of net profit during the period.

During 2015-16, the company has earned an average of Rs.537.73 crore net profit and as per CSR mandate, the company is required to spend Rs.10.75 crore for CSR activities. The Company has allotted Rs.40 crore for CSR activities. But, the company is able to spend Rs.12.31 crore for CSR activities. The unspent amount is Rs.27.69 crore. However, the company has spent Rs.2.31 crore more than the required CSR amount. For the period 2016-17, the company has spent Rs.12.45

crore for the CSR activities out of the total budget of Rs.39.50 crore. An unspent amount of Rs.27.05 crore is carried for the next financial year. For the period, 2017-18, the company has earned Rs.719.56 crore. The company is required to spend Rs.14.39 crore and the company has allotted Rs.40 crore from CSR budget. The company is able to spend Rs.19.42 crore and the company's unspent amount is Rs.20.58 crore. However, the company is able to manage more than 2 percent required CSR budget for CSR activities. For period 2018-19, the company has earned Rs.917.32 crore net profit, hence 2 percent contribution, i.e., 18.34 crore need to be spent for the CSR activities. Apart from this, a value of Rs.20.58 crore worth unspent amount is yet to be spent for the CSR activities.

G. CSR Activities

As per the Companies Act, 2013, the companies which are under the purview of CSR need to spend 2 percent of the average net profit of the preceding 3 years on the activities prescribed under Schedule VII of Section 135 of Companies Act, 2013. The activities under each item are shown in table-V.

Table-V: CSR activities of SCCL

Type of CSR activities prescribed under Schedule-VII	2014-15	2015-16	2016-17	2017-18
Schedule-VII, Item-1 <i>Helping to eradication of hunger and poverty</i>	15	7	13	18
Schedule-VII, Item-2 <i>Promotion of Education to needy people</i>	4	6	8	3
Schedule-VII, Item-3 <i>Promoting Gender equality and women empowerment</i>	0	1	2	1
Schedule-VII, Item-4 <i>Reduction of Child Mortality and improving Maternal Health</i>	0	1	3	1
Schedule-VII, Item-5 <i>Combating seivour diseases including Malaria and other diseases</i>	0	9	8	9
Schedule-VII, Item-6 <i>Environmental Sustainability</i>	0	0	0	0
Schedule-VII, Item-7 <i>Vocational Skills enhancement</i>	3	1	6	17
Schedule-VII, Item-8 <i>Social Business Projects</i>	0	0	0	0
Schedule-VII, Item-9 <i>Contribution to PMNR Fund or any other funding for BC,SC,ST, minorities and women</i>	0	0	0	1

Schedule-VII, Item-10 Development Projects	10	35	37	39
---	----	----	----	----

Source: Compiled from the Annual Reports of SCCL

The data shown in table-V show that, as part of the CSR activities which are prescribed under Schedule VII of CSR provisions, the company has been active in providing assistance to the beneficiaries under various provisions. Data show the number of beneficiary assistance programs organized by SCCL under CSR activities. The data clearly reveal that, the year wise total number of CSR activities have been increased from 2014-15 to 2017-18. The results shown clearly reveal that, SCCL is highly concentrating on Development works where highest number of activities is organized under this item. Apart from these, company is concentrating on the eradication of extreme hunger and poverty alleviation activities, combating with high risk diseases, malaria and other diseases and promotion of education.

H. Critical observations on 3 dimensions of Triple Bottom Line Approach

From the study on 3 dimensions such as People, Planet and Profit, the critical observations noticed from the analysis is presented here.

a. Critical observations on People Bottom Line

The survey results clearly show that, the people dimension is clearly providing worth to the progress of the Company. From the recent statistics, it is also noticed that a value of Rs.1.08 lakh is been given to the employees of SCCL as bonus incentive. This is a clear mark of significance given to the contribution of the people to the growth of the company. However, it is also to notice that, during the process of production, the company has made the production higher than the prescribed target.

b. Critical observations on Planet Bottom Line

As part of production, the company has produced more coal from Open cast mines and is been concentrating over 80 percent of the production from Open Cast mines. Though the Open Cast mines have been rich source for production, during the process of production, the company has produced more than the target. From one side of the coin, this is benefited for the company to earn more profit but from the other side, there is a clear evidence of lack of vision on tomorrow and the violation of the morality in the form of violation to environment. The reports of Ministry of Environment and Forests (MoEF) have reported that the SCCL has produced more than the prescribed target by violating the environmental clearances especially in Medipalli, Jawahar Khani-5 open cast mines. The report also clarified that over 26.2 million tonnes of coal has been produced excessively without seeking the clearance from the Ministry. Further, this is also a clear worrying factor

that, the company is more concentrated on present profits leaving the fruits for next generation. The evidences are identical to the report of Amnesty International report(2018).

The second noticeable fact is that, the company has failed to utilize the CSR grants that is been granted under CSR budgets, the 3 financial years after the enforcement of mandate CSR under Companies Act, 2013 proving that the company has not able to utilize the CSR funds for the betterment of the mining surround areas where it operates. The third noticeable fact is that, in the last 3 financial years, the company has not adopted any Social project to reduce the wastage that is been happening in the form of excess wastage of Fly ash. As submitted to Ministry of Environment and Forests, the fly ash available is 1520 metric Ton. Though the company has received National Award for Fly Ash Utilization in the year 2005, the company has excess stock of Fly ash which is been contaminating Air, Water and soil pollution in mining areas. The Expert Appraisal Committee of Ministry of Environment and Forest has issued stern action against SCCL for the violation of environment through excess mining in 8 coal mines.

I. Critical Observations on Profit Bottom Line

The table-2 shown above gives the status of net profit scenario of the SCCL for the last 10 financial years. Despite the profit has been improving year by year, the production in Open Cast mining is the primary dependence to earn profits. The reports of Amnesty, MOEF and the studies of Drebenstedt Monjezi M et al.(2009) further makes the evidence that, excess mining through open cast mining will seriously cause much danger to environmental sustainability by seriously damaging the eco balance by polluting air, water and soil pollution. The covering of Open cast mines after complete mining is so expensive and most of the open cast mines remained unfilled by SCCL. This situation is seriously causing much danger to the mining affected areas with the high probability of earth quakes and spoil to the culture and livelihood of Adivasis.

V. CONCLUSIONS

In the present study, an attempt is made to understand and evaluate the situation of SCCL in the management of People, profit and planet. Results have clearly shown the evidence that despite the company has been successful in managing people and profit, there is a huge concern for the safety of planet as the production especially in the Open cast is too high and resulting in rising questions about what we give for Tomorrow. There is a clear need for maintenance of strict mechanism in controlling of excess spoil to the environment.

The role of Directorate General of Mines Safety is very crucial in dealing the matters related to permissions to Open cast mines. Further, the Coal Mines Regulations under various acts are to be strictly monitored while sanctioning permission to the coal production with special reference to Open Cast mines. There is a desperate need for the mining companies to provide promise and ensure its implementation by guaranteeing the society that the activities performed under open-cast mining and underground mining will not be stopped after the extraction of coal and they must be made effective for after-use when mines are closed.

References:

1. Annual Reports of Singareni Collieries Company Limited, 2009-10 to 2017-18
2. Barbara Fischbach(2011), 'Triple Bottom Line: The Pillars of CSR', Journal of Corporate Social Responsibility and Leadership, Vol.4, Issue 3, pp.95-110.
3. Chandra SC and Rekha K(2017), 'Changing Dimensions of Environmental Ethics of PSEs through CSR practices – A Case Study of SCCL', International Journal of Academic Research, Vol.4, Issue 1(4), pp.78-87.
4. Chandra SC(2016), Corporate Social Responsibility in Public Sector Enterprises- A Case Study of Singareni Collieries Company Limited, International Journal of Entrepreneurship and Development Studies, Vol.4, Issue 2, pp.13-17.
5. Drebenstedt C(2015). Negative impacts of Open-cast Mining on the Environment and their mitigation, The exploitation of Natural Resources and the Consequences, Thomas Telford Limited, accessed from ICE Virtual Library extracted from <https://www.icevirtuallibrary.com/doi/abs/10.1680/teonratc.30046.0062>
6. Monjezi M, Namin F.S. and Dehghani H., Environmental impact assessment of open pit mining in Iran, Environmental Geology, Springer Publications, July, 2009, pp.205-216.
7. Rani B.U and Sarala M, 'A Study on Corporate Social Responsibility in Singareni Collieries Company Limited', International Journal of Research in Management, Vol.1, Issue 3, January, 2013, pp.31-38.
8. Singh P.K. and Mishra A.K.(2016), 'Analysis of the Contribution of Corporate Social Responsibility (CSR) initiatives of Indian Coal Mining Industry in Sustainable Development', International Journal of Innovative Research in Science, Engineering and Technology, Vol.5, Issue 4, April, 2016
9. Slaper T.F.(2011), 'The Triple Bottom Line: What is it and How Does it work?', Research paper submitted to Indiana University Kelley School of Business, Indiana University Kelley School of Business, Indiana Business Research Center, accessed from <https://www.ibrc.indiana.edu/ibr/2011/spring/article2.html>
10. Report of Amnesty International on 'When Land is lost, Do we eat Coal?: Coal Mining and violations of Adivasi Rights in India, News paper report cited from The Economic Times, July 13, 2016.
11. Report of Department of Public Enterprises on Guidelines for CSR expenditure of CPSES, dated 10th December, 2018, accessed from dpe.gov.in
12. Report of Ministry of Corporate Affairs, Government of India on Section 135, Schedule-VII activities under Corporate Social Responsibility.
13. Report of Ministry of Environment and Forests, Government of India on Environment Impact Assessment, 2019.
14. The Hans India Report on 'Diverting 1000 Cr CSR funds: SCCL refutes Charge', Dated 2nd October, 2017.
15. News paper Report of Indian Express on 'Singareni Collieries in a spot after EAC finds green violations', dated 13th April, 2019.
16. Progress Report of SCCL, June, 2019

AUTHORS PROFILE

Dr Suresh Chandra Ch has completed his Bachelors in Kakatiya University with a specialization in Statistics and done his MBA, M.Phil, Ph.D from Kakatiya University, Warangal. He is specialized in Marketing Management and he is the recipient of UGC NET Junior Research Fellowship and UGC Dr S Radhakrishnan Post Doctoral Fellowship. His areas of interest are Business Research Methodology, Marketing Analytics, Statistics for Management, Services Marketing and Consumer Behaviour. He got over 13 years of Research and teaching experience and is been Visiting Faculty to several Business Schools. He is a SEBI registered Resource person for Investor Awareness and got registered to IICA as Resource Person for Investor Education. He published over 40 papers in National and International journals and has attended and presented 45 papers in State, National and International Conferences and Seminars.

