International Journal of Research in Social Sciences

Vol. 9 Issue 9, September 2019,

ISSN: 2249-2496 Impact Factor: 7.081

Journal Homepage: http://www.ijmra.us, Email: editorijmie@gmail.com

Double-Blind Peer Reviewed Refereed Open Access International Journal - Included in the International Serial Directories Indexed & Listed at: Ulrich's Periodicals Directory ©, U.S.A., Open J-Gage as well as in Cabell's

Directories of Publishing Opportunities, U.S.A

Magnitude and Nature of Child Labour in Odisha

Ipsita Priyadarsini Pattanaik*

Dr. Sinil Kumar Padhi**

Abstract: Objective of the paper is to examine the status and nature of child labour in India and inter district variation in Odisha. This study is based on secondary data collected from census of India, child labour cond ILOmmission in India a. For our analysis summary statistics, tabular and graphical representation are used. The number of child labour who economically active in the age-group of 5 — 14 years was 1.07 crores in the 1971 census which increased to 1.26 crores in 2001 and reduced to 1.01 in 2011. Rural child labour is 90.62 % where as urban child labour is only 9.38 %. Since the landless labourers and marginal farmers are poor they send their children agriculture fields. So child labour are more concentrated in rural area. If gender wise composition of child labour is analysed, the female child labour is 92.26percent where as male child labour is 89.06 percent. Among the child labourers main workers are 18.36 percent where as female workers is 14.97 percent. The average child labour in a district is 11147 with higher percentage of male child labour(53.56 %) than female child labour(46.45 %). In India number of schools sanctioned is 3820 and financial projects are 100 which help for the child labour. In Odisha, there are 18 child labour projects with 614 child labour schools. The important finding of the study that less developed districts have more percent of female child labour than male child labour. If we can ensure the pragmatic educational program and vocational training to make them skilled, then the negative effects of child labor on later age can be reduced significantly. The Government may provide income generating activity in the area which will curtail the child labor.

Keywords: Child labour, Income, Living Condition, Unorganized Sector, Working Informal Sector.

^{*} Ph.D Scholar in Economics, Fakir Mohan University, Balasore, Odisha

^{**} Reader in Economics, Fakir Mohan University, Balasore, Odisha

Introduction

The Child is usually considered to a person who is less than 18 years of age and less developed. According to UNICEF, A child involved in child labour activities if between 5-11 years of age, he/she did at least one hour of economic activity a day or at least 28 hrs. of domestic work in a week & in case of children between 12-14 yrs. of age, he/she did at least 14 hrs. of economic activity or at least 42 hrs. of economic activity & domestic work per week. India's Census 2001 defines child labour as participation of a child less than 17 yrs. of age in any economically productive activity with or without compensation, wages or profit. According to ILO, Children who participate in work that doesn't affect their health & personal development or interference with their schooling, is not child labour, rather it may generally be regarded as being something positive. The study of child labour is vital not only for social causes but also for economic ones. The effect of child labour on the economy works through its debilitating consequence on education which is main component of human capital. According to UNO there are 217 million child labour worldwide and 12.6 million children are child labours in India below 14 years of age as per 2001 census. The position of India in terms of child labour is not an appreciable one with a credible estimates ranging from 60 to 115 million, India has the largest number of working children in the world. Whether they are sweating in the heat of stone quarries, working in the fields 16 hours a day, picking rags in the city streets, or hidden away as domestic servants, these children endure depressed and difficult lives. They earn little and are made to work more. They fight to make enough to eat and perhaps to help feed their families as well. The child labour is the result of high dropout in India where 47 out of 100 children enrolled in It is also to note that the dropout rate at 52.79% for students from class I to class VIII Approximately 16.64% of villages in the country do not have facilities for primary schooling. (UNICEF) 42 million children in the age-group 6-14 years do not attend school in India.

The child labour is very high in Odisha which is a less developed state in the country. The present paper is mainly based on secondary data on Child labour in Odisha. The whole population in Odisha is 4.195 crores out of which 3.5 crores live in rural area 0.69 crores live in urban area. The child population in the age group 0-6 male are 27, 44,552 and female are 26, 14,258 A total increase of 181 million in the country's population has been registered during the decade 2001-2011. The children are bound to do hazardous toils because of poverty. More than 1.3 million children work in dangerous condition. Child labour is at the present a social trouble, where children are been abused and forced to work at a young age. Children always had worked either at home or later in industrial companies. Uttar

Pradesh has highest number of child labour cases in India. West Bengal has performed worst in NCLP. Reports say during 2010-2013 only 12,788 children were brought to mainstream whereas in Odisha 38,500 and in M.P. 38,000 children were brought to the main stream.

Literature Review

Basu and Van (1998) examined the child labour in India between the time periods (1997-1998), the major variables used in poverty, illiteracy, income, standard of living, unemployment, method used in only secondary data. He found that parents only allow the child to engage in when the family cannot otherwise meet its subsistence needs. However, Kumar (1999) in his study had observed the negative correlation between poverty ratio and proportion of children attending school in the age group of 5-9 years. According to him where is poverty is there, children are not allowed to go to school and rather expected to support their parents economically. Further he writes that education has become part of the economic foundation of modern society a major avenue of social mobility, a central agency of social distribution, and consequently an object of political debate and social policy as important as poverty. Anker (2000) examined that "Conceptual and research frameworks for the economics of child labor and its elimination". The major variable used in income, nutrition, size of family, adult education, method used in anthropometric data on 410 children over a 17 year period in a rural area in India. He found that in developing countries, child work is frequently hard on children, however recognized fundamental for family survival.

Jain and Saraswat(2004) explained that India was home to 9.33 million child labourers of the age group of 5-14 in 1999-2000, which constitutes 4.12 percent of the total children's population. The age composition reveals that more than 93 per cent of the child labour exists in the age group of 10-14. A comparison with 1991 census of India database estimates reveals that there is an all-round (both in rural and urban sectors) fall in number of child labourers in India from 11.28 million to 9.33 million. Das, S and Mukherjee (2007) used household data level from National Sample Survey Organization (NSSO) of India, the 55th round (1999-2000), to show that for urban male children there exists significant wage incentive for schooling, though school drop out rate and child labour incidence are not so small. The parent's level of education plays an important role in reducing this tendency; thus establishing the linkages between social and human capital outcomes in the family. Ghosh (2008) examined the geographical review of child labour between the time periods of 2005 to 2007. The major variables or indicators used in income, poverty, unemployment, dependency

load etc. the method is used in the 2001 census of child labour. He found that economic growth leads to an increase in child labour rather than decrease.

Nafees et al. (2010) examined the Situation analysis of child labour in Karachi, Pakistan between the time periods 2009-2010. The major variable used in education, income, mentality of family member, backwardness, over population, unemployment etc. method used both secondary and primary data though interview questionnaire. They found that lack of basic education of parents, norms and culture, large family size and physical and verbal abuses by family members were the major factors identified to send their children to work Mohapatra and Dash (2011) examined the socio-economic problem of child labour between the time periods (2009-2010). The major variables used in poverty, illiteracy, unemployment, low wages, ignorance, social prejudice, regressive tradition, poor standard of living, backwardness, superstation, low status of women have combined to give birth to the terrible practice of child labour of women have combined to give birth to the terrible practice of child labour. Method used in growth rate sample data through investigation or interview, they found that the migrant's family form various district of Odisha their social economic condition is very poor which make them to go for labour. Kabita K. Sahu(2013) studies in her paper named "An Empirical Study of Determinants of Child Labour" that to analyse the nature and magnitude of the problem and determinants of child labour and their participation in the workforce at an early age in Cuttack City of Odisha on the basis of primary data. The regression results reveal that family income has significant negative impact on the working hour of the child labour. Family size is a non economic factor which affect the working hour of child labour significantly. M. Rama Satyanarayana, P.Srinivasa(2017), their study examines the root causes of child labour in Krishna dist of Andhra Pradesh. 300 sample respondents were taken on convenience random sampling technique for the study. Descriptive research design was adopted for present study and both primary and secondary data was used. Statistical tools like chi-square test were used to test the statistical significance of the proposed hypothesis. The study reveals that there exists a relation between the root causes of child labour and the Socio-economic conditions.

Objectives of study and Sources of Data

Objective of the paper is to examine the status and nature of child labour in India and inter district variation in Odisha. This study is based on secondary data collected from census of India, child labour commission in India and ILO. For our analysis summary statistics, tabular and graphical representation are used.

State Wise distribution of Child labour in India

The problem is large and acute in absolute numbers, The number of child labour who economically active in the age-group of 5 — 14 years was 1.07 crores in the 1971 census which increased to 1.26 crores in 2001 and reduced to 1.01 in 2011. Table-1 shows percentage of child labour in all states in 2011.

Table-1 State Wise Distribution of Working Children in India 2011 (In %)

State	%	State	%	State	%
Andhra Pradesh	10.83	Maharastra	6.13	Uttaranchal	0.56
Assam	2.79	Manipur	5.78	West Bengal	6.81
Bihar	8.87	Meghalaya	0.43	A and N Island	0.01
Chhatisgarh	2.89	Nagaland	0.74	Ar. Pradesh	0.04
Gujurat	3.85	Orissa	3	Chandigarh	0.04
Hariyan	2.01	Punjb	1.41	D and N Havel	0.04
Нр	0.85	Rajasthan	10.03	Delhi	0.33
J&k	1.39	Sikim	0.14	Daman Diu	0.01
Jharkhan	3.29	Tamilnadu	3.33	Goa	0.03
Kerala	0.21	Tripura	0.17	Mijoram	0.21
MP	8.46	Uttarpradesh	15.31	Pondichery	0.01

Source- Census of India

The table-1 shows that the percentage of child labour in different states of India. It is found that there is highest percentage of child labour in Uttar Pradesh (15.31) followed by . Odisha constitutes 3% of the total percentage of child labour in India. The percentage of child labour is 5.97 % in 1981, 5.66 % in 1991, 4.72 % in 2001 and 4.50 % in 2011 as per census reports.

Nature of Child Labour in India

Children in India are employed in almost all type of activities from agriculture to industry. Children are mostly found working in the agricultural sector or in jobs closely related to agriculture. According to a survey of 1989, about 80 percent of child labours are employed in agriculture and allied occupations. But in 2001 census the trend somehow slightly changed. Due to migration of people from rural to urban area and the cost of living in urban area being more costlier compared to rural area, the concentration of child labour here is more compared to earlier period. In urban area mostly these types of work are found where children are engaged. In Rag Picking or Scavenging, there is the child faces extreme risk. As many of them work with bared, they get cuts; they are also exposed to extreme weather

conditions, pneumonia, influenza and malaria. They have to carry heavy loads, which stunts their physical growth. They face digestive disorders and food poisoning as they eat thrown away or leftover food. Dog bites are quite common among these children. In manufacturing sector there is glass factories where almost 50,000 children below the age of 14 work. In match and firework factories also around 2 Iakh children are employed. The Indian Govt. has recognized that Sivakasi is an area with a high concentration of child labour and tries to rehabilitate them through various programmes. However, child labour is still very much alive in this sector. According to an ILO study they are almost 300,000 children working in the Carpet Industry in 1990's. Carpet belt is found mostly in Uttar Pradesh. Since, the carpet industry is labour intensive, entrepreneurs try to reduce labour costs by employing child labour. Lock industries of Aligarh also employs child labour for polishing work. It includes all other kinds of work which we all can observe. They are household work, vendor, hotel boys, garage workers etc. In the domestic work category, cleaning, cooking, child care and other domestic chores are undertaken by the children. Mostly girl children are found working in this sector. Most children work on farms and plantations or houses far from the media scrutiny and the reach of a labour inspector. There is no product that has not been scented by the sweat of a child labourer.

Thus, there is evidence across our country that large number of children work in agriculture, fishing, mining manufacturing, cottage industries, as well as in domestic services. In agrarian economy like India, children spend a great deal of time in activities like tending livestock, Protecting crops from animals, weeding and other tasks associated with subsistence production. Another important category of child activity is tied or bonded labour. Poor labourers pledge a child of the family against loans taken from the landlord, money lender or employer. The situation of child labours in India is desperate. Children work for eight hours at a stretch with only a small break for meals. Most of the migrant children who cannot go home, sleep at their work place. Particularly children in rural families who are ailing with poverty perceive their children as an income generating resource to supplement the family income.

Child Labour in Odisha

Odisha is a less developed coastal state of India situated in eastern part of the country. The incidence of child labour is very high in the state. Table-2 shows child labour in Odisha in 2011. The table-2 highlights that rural child labour is 90.62 % where as urban child labour is only 9.38 %. Since the landless labourers and marginal farmers are poor they send their children agriculture fields.

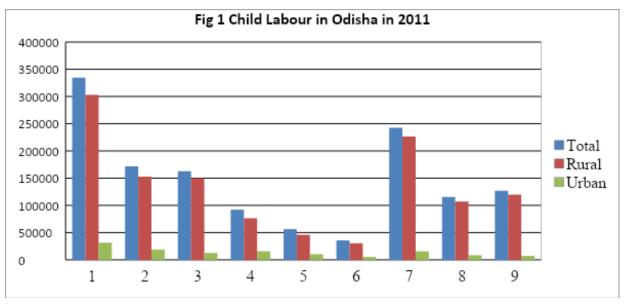
Table-2 Child Labour in Odisha as per 2011 Census

		Total	Rural	Percent	Urban	Percent
Total	Persons	334416	303042	90.62	31374	9.38
Workers	Males	171764	152978	89.06	18786	10.94
	Females	162652	150064	92.26	12588	7.74
Main	Persons	92087	76388	82.95	15699	17.05
Workers	Males	56325	45981	81.64	10344	18.36
	Females	35762	30407	85.03	5355	14.97
Marginal	Persons	242329	226654	93.53	15675	6.47
Workers	Males	115439	106997	92.69	8442	7.31
	Females	126890	119657	94.30	7233	5.70

Source- Census of India, 2011 and Authors Calculation

So child labour are more concentrated in rural area. If gender wise composition of child labour is analysed, the female child labour is 92.26percent where as male child labour is 89.06 percent. Among the child labourers main workers are 18.36 percent where as female workers is 14.97 percent.

Fig-1 shows the distribution of child labour in Odisha.



The graph 1 illustrates that total ,rural and urban child labour in Odisha in 2011. The landless labourers and marginal farmers are poor they send their children agriculture fields. This graph indicate that three phase of workers are total workers, main workers, marginal workers. Both comparatively male and female labours are participated different type of works. Among rural child labour highest percentage in different workers.

Inter District Analysis of Child Labour in Odisha

Odisha has 30 districts out of which some districts are situated in the coastal area and others in interior parts of the state. The child labours are more concentrated in less developed districts than developed districts. Table-3 provides male and female child labour in coastal developed districts of Odisha.

Table-3 Child Labour in Central Districts(Developed) of Odisha

Sl	Districts	Persons	Males	Percent	Females	Percent
No						
1	Baleswar	16986	9445	55.60	7541	44.40
2	Bhadrak	5113	3402	66.54	1711	33.46
3	Kendrapara	4380	2710	61.87	1670	38.13
4	Jagatsinghapur	3027	1851	61.15	1176	38.85
5	Cuttack	9522	5788	60.79	3734	39.21
6	Jajapur	4071	2646	65.00	1425	35.00
7	Dhenkanal	5470	3056	55.87	2414	44.13
8	Anugul	8122	4309	53.05	3813	46.95
9	Khordha	9814	5951	60.64	3863	39.36
10	Puri	5398	3335	61.78	2063	38.22

Source- Economic Survey, Odisha and Authors calculation

Balaswar has highest number of child labours in coastal districts followed by Khorda. Jagatsinghpur has lowest number of child labour which is only 3027. Jajpur has highest 65 % of child labour and Anugul has 53.05 % of child labour. The descriptive statistics are given in table-4.

Table-4 Descriptive Statistics of Central Districts (Developed) of Odisha

	Persons	Males	Percent	Females	Percent
Mean	7190.30	4249.30	60.23	2941.00	39.77
Median	5434.00	3368.50	60.97	2238.50	39.03
S.D	4144.50	2259.10	4.23	1914.56	4.23

Kurtosis	2.90	2.29	-0.52	3.30	-0.52
Skewness	1.61	1.50	-0.34	1.69	0.34
Range	13959.00	7594.00	13.49	6365.00	13.49
Minimum	3027.00	1851.00	53.05	1176.00	33.46
Maximum	16986.00	9445.00	66.54	7541.00	46.95
N	10.00	10.00	10.00	10.00	10.00

Source- Authors calculation

The average child labour is 7190.30 in above districts with average of 60.23 % male child labour. The standard deviation is high among male child labour than female child labour. Other detail statistical measures can be seen from table-4. Western Odisha is relatively developed and magnitude of child labour is given in table-5.

Table-5 Child Labour in Western(Relatively Developed) of Odisha

Sl No	Districts	Persons	Males	Percent	Females	Percent
1	Bargarh	15807	8327	52.68	7480	47.32
2	Jharsuguda	2914	1586	54.43	1328	45.57
3	Sambalpur	8366	4228	50.54	4138	49.46
4	Debagarh	3575	1818	50.85	1757	49.15
5	Sundargarh	13625	7350	53.94	6275	46.06
6	Kendujhar	12814	6480	50.57	6334	49.43
7	Mayurbhanj	26427	12344	46.71	14083	53.29
8	Subarnapur	3562	1945	54.60	1617	45.40
9	Balangir	13061	6732	51.54	6329	48.46
10	Baudh	4886	2444	50.02	2442	49.98

Source- Economic Survey, Odisha and Authors calculation

The child labour is highest that is 15807 in Bargarh district and Subarnpur has lowest child labour of 3562 only. Gender analysis shows that there is almost uniform distribution of male and female child labour in these districts. Subarnpur has 54.60 % of child labour and Mayurbhanj has lowest of 46.71 % only.

Table-6 Descriptive Statistics of Western(Relatively Developed) of Odisha

	Persons	Males	Percent	Females	Percent
Mean	10503.70	5325.40	52.59	5178.30	48.41
Standard Error	2340.99	1120.02	4.94	1230.34	0.77
Median	10590.00	5354.00	50.71	5206.50	48.81
S.D	7402.87	3541.81	15.61	3890.68	2.42
Kurtosis	1.05	-0.07	9.36	2.23	0.44
Skewness	1.01	0.71	-3.03	1.32	0.57
Range	23513.00	10758.00	51.92	12755.00	7.89
Minimum	2914.00	1586.00	2.68	1328.00	45.40
Maximum	26427.00	12344.00	54.60	14083.00	53.29
N	10.00	10.00	10.00	10.00	10.00

Source- Authors calculation

Descriptive statistics in Table-6 shows average child labour of 10503.70.Standard deviation is high in female child labour than male. Child labour in tribal dominated southern districts given in table-7 shows highest in Koraput(29227) and lowest in Nayagarh(3835) only.

Table-7 Child Labour in Southern(Least Developed) of Odisha

Sl No	Districts	Persons	Males	Percent	Females	Percent
1	Ganjam	25665	13777	53.68	11888	46.32
2	Gajapati	10991	4935	44.90	6056	55.10
3	Nuapada	9878	4680	47.38	5198	52.62
4	Kalahandi	16218	7176	44.25	9042	55.75
5	Rayagada	14733	6805	46.19	7928	53.81
6	Nabarangapur	26717	13013	48.71	13704	51.29
7	Koraput	29227	13752	47.05	15475	52.95
8	Malkangiri	12890	6158	47.77	6732	52.23
9	Nayagarh	3835	2449	63.86	1386	36.14
10	Kandhamal	7322	3272	44.69	4050	55.31

Source- Economic Survey, Odisha and Authors calculation

Nayagarh has highest percent of male child labour (63.86 %). It is interesting to note that except Nayagarh, other district have higher percentage of Female labour than male. The descriptive statistics in table-8 shows highest average child labour of 15747.6 with higher average percent of female child labour. The important finding of the study that less developed districts have more percent of female child labour than male child labour.

Table-8 Descriptive Statistics

	Persons	Males	Percent	Females	Percent
Mean	15747.6	7601.7	48.848	8145.9	51.152
S.D	8690.81	4334.45	5.928833	4434.605	5.928833
Kurtosis	-1.12141	-1.2927	4.914364	-0.66844	4.914364
Skewness	0.448923	0.61591	2.156782	0.323794	-2.15678
Range	25392	11328	19.61	14089	19.61
Minimum	3835	2449	44.25	1386	36.14
Maximum	29227	13777	63.86	15475	55.75
Count	10	10	10	10	10

Source – Source- Authors calculation

The Table-9 shows that comparison between gender wise compositions of child labour is analyse all district. male child labour is 60.64 percent in Khurda district and female labour is 39.36 percent. Bhadrak district has male child labour is 66.54 percent and female child labour is 55.31 percent in Kandhamala. Child labour is 46.12 percent in Rayagada and female child labour is 33.46 percent in Bhadrak district. The study intended to find descriptive statistics of all 30 districts togather and results are given in table-8. The average child labour in a district is 11147 with higher percentage of male child labour(53.56 %) than female child labour(46.45 %). The standard deviation is same for male and female(6.53).

Table-9 Descriptive Statistics of Child labour in all 30 districts of Odisha

Statistical	D	Malas	Percen	El	Percen
Measure	Persons	Males	t	Females	t
Mean	11147.20	5725.47	53.56	5421.73	46.45
S.D	7656.27	3650.76	6.53	4079.22	6.53
Kurtosis	0.31	0.21	-0.89	0.46	-0.89
Skewness	1.06	1.03	0.44	1.09	-0.44
Range	26313.00	12191.00	22.29	14299.00	22.29

Minimum	2914.00	1586.00	44.25	1176.00	33.46
Maximum	29227.00	13777.00	66.54	15475.00	55.75
N	30.00	30.00	30.00	30.00	30.00

Source-Computed by the Author

Number of child labour schools in Odisha and India

Parents are illiterate and daily wager. Parents can't afford education. Many Government school has situated but no fee collected from children in 6-14 ages. Education is more important for child awareness programme of Govt. / N.G.O. Table-10 shows number of child labour schools in the country and state of Odisha

Table-10 Number of Child Labour Schools in Odisha and India

State	No. of Projects	No. of Schools/Centres sanctioned
Odisha	18	614
India	100	3820

Source-Economic survey, Odisha

The table-10 provides the number of child labour school in 2000-2001. In India number of schools sanctioned is 3820 and financial projects are 100 which help for the child labour. In Odisha, there are 18 child labour projects with614 child labour schools.

Conclusion

The prevalence of child labour is more or less seen in all periods of time, it varies in nature and dimension depending on the existing socioeconomic structure of the society. Children are the blooming flowers of the garden of a society and valuable asset of a nation. Childhood has been considered as a most important period of life. During this period molding and shaping of the life take place and the behavior, behaviour and sentiments are developed. Unexpectedly, it is unfortunate to say that tragically most of the child life is lost due to child work. Child labour is mainly necessitated by economic forces of the parents in many cases of the children. The main reasons which give rise to child labor are widespread of income poverty and unemployment. Child labour's life is characterized by low education, poor living, bad working and living conditions, insecurity of jobs ,low income, long hours of work etc. adult workers, large families, lack of educational facilities, illiteracy and ignorance of parents about the importance of education as well as about the impact of labor on the health of their children are some of the reasons which breed child labor.

Children are found working under hazardous conditions such as mining, auto repair, battery recharging, saw milling, welding, and rickshaw pulling, garments manufacturing and working with dangerous machinery. It is clear from this study that child labor has higher probability to create negative impacts on future life. Since child worker does not get opportunity to get better education, they cannot get better job opportunities in future life. Consequently, their income remains low which only ensure low standard of living. So, poverty and illiteracy are the main causes for leading child labor. Consequently, the vulnerable socio-economic status at adulthood is caused by hazardous child labor. If we can ensure the pragmatic educational program and vocational training to make them skilled, then the negative effects of child labor on later age can be reduced significantly. The Government may provide income generating activity in the area which will curtail the child labor. The Government should control the high population growth in the area. Family planning should be widely introduced in the area. Illiteracy ranks second to poverty and leads to child labor, therefore the Government must implement its literacy programs more effectively so that more people become literate and educated.

References

Basu, K. and et al. (2010). Child Labor and Household Wealth: Theory and Empirical Evidence of an Inverted-U. Journal of Development Economics, 91 (1),pp. 8-14.

Das, S. and Mukherjee (2007). Role of women in schooling and child labour decision: The case of urban boys, India, Social Indicators Research, 82(3), 463-486.

Jain, Mahaveer and Sangeeta Saraswat (ed. 2004), Child Labour from Different Perspectives, Delhi: Manak publications.

Kumar, Anand, C. (1999), Child Labour: Issue and Solutions, *Kurukshetra*, Vol.12. pp.11-18 Mohapatra and Dash, (2011). Child Labour- A product of socio-economic problem for India, findings and preventives-A case of Bhubabaneswar (a state capital of India), Educational Research, vol-2, issue-6, pp-1199-1209.

M. Rama Satyanarayana, .P. Srinivasa(2017), An Empirical Study on Root Causes of Child Labour in Krishna District of Andhra Pradesh, SSRG International Journal of Economics and Management Studies (SSRG-IJEMS) – volume-4 issue-5.

Sahu K., Kabita(2013), International Journal of Science, Environment ISSN 2278-3687 (O) and Technology, Vol. 2, No 3.

Sumitra Sengupta, Shovan Ghosh(2013), Poverty, Child Labour and Access of Schooling in India: Finding the gaps, Journal of Asian Research Consortium, Volume 3, Issue 1.