FOOD INSECURITY AND CHILD LABOUR
IN ALIGARH CITY - AN ANALYSIS AT
HOUSEHOLD LEVEL

ABSTRACT

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ABSTRACT

Children are future citizens of the Nation and their proper development is utmost priority of the country. Unfortunately, child labour engulfs children across the world and required urgent attention mainly due to the fact that it is damaging to a child’s health and his intellectual growth that requires a long-term multi-pronged strategy to be carried out on a continuous basis. Perpetuation of child labour will also have adverse effects in the nation’s economy through various short term and long term effects on the labour market, growth and development through unproductive, unskilled labour force and also on social development through poor literacy rates (Subbaraman and Witzke, 2007).

Working children is a colossal problem and a serious blot on efforts to project India as a dynamic country on the move. Though, in recent years, India has been experiencing a higher economic growth yet child labour is prevalent not only in poorer states of the country but also in states with higher growth rates. As per census of India, the total number of working children in the country has declined from 1.26 crores in 2001 to 43.53 lakh in 2011 which shows 65 per cent reduction. However, according to the estimates of various non-governmental sources, the actual number of working children in the country ranges from 44 million to 100 million (Das, 2014).

Child labour is caused by hunger and poverty. It is poverty that compels poor people to send their children to work at early stages of their life. FAO’s most recent estimates indicate that globally, 842 million people (12 % of the global population) are unable to meet their dietary energy requirements in 2011–13. The vast majority of hungry people (827 million of them) are living in developing regions, where the prevalence of undernourishment is now estimated at 14.3 percent (FAO, IFAD and WFP, 2013). Nearly, a quarter of the world’s hungry, or 210 million, is in India alone. The Global hunger index, prepared by IFPRI (International Food Policy Institute), has rated 120 countries in which India has been ranked 63rd, below Sri Lanka and Bangladesh (“India’s ranking”, 2013).

No doubt, since the dawn of independence, the country has made considerable progress in the production of food grains and provision of food security to the growing population, but still food insecurity has remained as one of the major concerns of India. Though, the country has achieved self-sufficiency in food production, enhanced the nutritional level of the people and enough food is available at national level, still hunger and malnutrition persist at regional, household and even at individual level. About 35 per cent of India’s population over 350 million is food insecure, consuming less than 80 per cent of the
minimum energy requirement (Baby, 2012). The country has about 213 million undernourished people (FAO, IFAD and WFP, 2013), a large percentage among these are children and women. In addition, a close review of the factors responsible for child work reveals that indicators of malnourishment like underweight, wasting and stunting, etc. highly affect the capability of the children to concentrate on their studies. However, household food insecurity is considered to be the major deterrent to enrolment of children at the primary and secondary level. As a result, the majority of the children in these categories drop-out at an early age. Children in this age group (5-14) who are out of school either become child worker or vulnerable to become child worker (called potential child labour) (Daly et.al., 2002) and together signify a measure of deprivation among children and can be considered as a potential labour pool always being at the risk of entering the labour force.

It is disconcerting that not a single state in India falls in the “low hunger” or “moderate hunger” category defined by the GHI 2008. Four states namely, Punjab, Kerala, Andhra Pradesh, and Assam fall in the “serious” category with one state Madhya Pradesh falling in the “extremely alarming” category. Besides, most of the states for which the hunger index was estimated are in the “alarming” category such as Orissa, Uttar Pradesh, Bihar, Jharkhand, West Bengal etc. Likewise, with more than 200 million people, Uttar Pradesh is India’s most populous state and tops the list as the state with highest number of child labour cases in the age group of 10-14 years and third in terms of worst record between 10-18 years (Singh, 2013). Almost one-third of the state’s population lives below the poverty line and the state has the highest number of children who leave school to work.

Aligarh a town is famous for its renowned university (Aligarh Muslim University) and lock industry, however, there is something which is neglected for quite a long time, which is prevalence of child labour. Children constitute 24 per cent of total workforce in the lock industry. According to NGO Bharat Soshit Samaj and labour welfare ministry, around 27,000 children have been found employed at Aligarh lock industry (Saxena, P., 2011). Studies reveal that more than 60 percent of the workers in this sector are children under 14 years of age (“On Child Labour”, n.d., para 32). Children are required in the work of polishing, electroplating, spray painting and working on hand presses. They cut different components of locks for nearly 12-14 hours a day with hand presses. Exhaustion causes children accidents leading to loss of their finger tips, which get caught in the machines. Child labourer caused driven by circumstances to work and their homes are indeed the worst neglected class of city of the society.
Therefore, in this research work, an attempt has been made to assess the classic case of food insecurity and child labour at household level in Aligarh city. Aligarh is one of the child labour prone cities of India and has been selected for micro level analysis where children are engaged in various economic activities of lock industries, brassware industry, embroidery, dhaba and hotels etc.

The main thrust of the present study is to reveal and analyze the impact of food insecurity as well as its differential on the socio-economic and demographic structure of child labour population in the city. The study also highlights the socio-economic composition of food insecure and child labour households of Aligarh city. Besides, causes of food insecurity and child labour at micro level have been identified and also give due importance to the causal relationship between food insecurity and child labour.

Following hypotheses have been formulated for the present study:

1. Food insecurity exists in the poor and vulnerable section of the society.
2. There is gender disparity in terms of food and nutrition security.
3. Parental illiteracy and poverty persuade child labour.
4. Food insecurity and child labour are positively correlated.

However, to fulfill the above mentioned hypotheses, the specific objectives of the present research work, which are as follows:

1. To find out the food insecure and secure households among sampled wards of Aligarh city.
2. To examine different dimensions of food insecurity in the city.
3. To make a comparative assessment of the socio-economic characteristics of food insecure and secure households.
4. To analyse the incidence and extent of child labour in the study area.
5. To assess the socio-economic background of households belonging to child labourers.
6. To ascertain the correlation between household food insecurity and incidence of child labour in the sampled wards of Aligarh city.

The study is mainly based on the primary sources of data, generated through the comprehensive survey carried out during 2012 which comprised of 1179 households from 17 wards of Aligarh city. Household has been selected as the smallest unit of enquiry. Besides, secondary data have also been used for the contextual base of the study. In order to test the fusibility of questionnaire, two pilot surveys were conducted in the months of March and October during 2011. From the pilot survey, the vulnerable wards of child labour were
identified. The actual survey was conducted during 2012. Out of the total 70 wards, only 25 per cent vulnerable wards (17) which provide a classic case to assess the current status of food insecurity and child labour in Aligarh city have been purposively selected based on the criterions’ such as location, high illiteracy rate, low income, existence of child labour, poor housing and sanitation conditions by taken into considerations that these factors directly or indirectly influences the food insecurity and magnitude of child labour in the study area. Out of these, 17 sampled wards, 3 per cent (1179) households were systematic randomly selected for the survey. However, number of enumeration wards of outer parts of the city selected for the survey is more than the inner parts.

The obtained data through the questionnaire has been coded and entered in computer accurately for further calculation and analysis. For the analysis of data various statistical methods have been used i.e. simple percentage method, Index, Composite Index, Karl Pearson’s Correlation Co-efficient, simple linear regression technique and for the representation of data, bar diagram, pie diagram, poly line graph, choropleth, scatter diagrams and maps have been prepared with the help of SPSS-18 and Arc view-GIS 3.2.

The present thesis has been divided into eight chapters excluding introduction and conclusions. The introductory part deals with nature and the problem of food insecurity and child labour, aims and objectives of the study, research methodology and organization of thesis. The first chapter presents the conceptual framework of child labour, food insecurity, its types and dimensions and review literature. The second chapter describes the geographical setting of the study area.

The third chapter focuses on spatial dimensions of household Food Insecurity. In this chapter, data regarding food and caloric availability, food and livelihood accessibility, food absorption and nutritional status have been taken into account for analysis. The fourth chapter deals with the consumption status of food among sampled households.

The objective of chapter five is to examine the socio-economic status of food insecure and secure households in sampled Households. Socio-economic status like religion and caste composition, age composition, educational status, household size, occupation structure, income, housing and sanitation conditions etc have been considered.

The sixth chapter depicts the distributional patterns of child labour in Aligarh city. It also examines the ward wise spatial distribution of child labour, their age and sex composition, literacy and dropout status, occupational structure, work duration, paid and unpaid status, income and reason of child labour among food insecure and secure households.
Seventh chapter deals with socio-economic background of child labour households in Aligarh city.

Lastly, the eighth chapter presents an analysis of interrelationships between food insecurity and child labour for which indexing of household food insecurity, correlation and associational pattern of household food insecurity and child labour have been done.

On the basis of overall analysis of the study the following important inferences may be drawn pertaining to the spatial dimensions of food insecurity and child labour, consumption pattern of food items, characteristics of food secure, insecure and child labour households and causal relationship between food insecurity and child labour in Aligarh city:

**Spatial Dimensions of Food Insecurity and Consumption Pattern of Food Items:**

I. More than one-half of the total sampled households of the city were food insecure in which 25.87 per cent of the households were severely food insecure and remaining 26.63 per cent were found moderately food insecure. Only 47.50 per cent of the total households of the city were found food secure. There were six wards namely; Shahjamal (65.12 per cent), Bhujpura (62.64 per cent), Slaughter House (61.65 per cent), Jeevangarh (58.51 per cent), Khai Dora (58.82 per cent) and Maulana Azad Nagar (56.67 per cent) have been recorded under the category of high level of food insecurity. This high percentage of food insecure population in the vulnerable wards of the City is the result of their low income and poor purchasing power of the population.

II. The ratio of casual labourers was substantially higher than the salaried, regular and self-employed workers in the city. In casual labourer category, the share of female exceeded to the male, while, among self and regular employment, the situation was reversed.

III. The main sources of drinking water of the resident population of the city were hand pump, submersible, piped water connection and road side piped water connections, among which, nearly two-fifth of surveyed households were getting drinking water from their own hand pumps.

IV. The prevalence of Chronic Energy Deficiency (CED) among children population was significantly higher than the adult population of the sampled wards of Aligarh city in which female outnumber male population in both the cases.
V. More than two-fifth of the total population of sampled wards of Aligarh city reported for cereal consumption which was more than the standard requirement (420 g/person/day) and about two-third sampled households reported that they had low access to pulses (below 40 g/person/day) due to its high price.

VI. The consumption status of vegetables, milk and meat was quite alarming that 21.12 per cent of the total population of sampled wards could not afford to access the required amount of vegetables and less than two-third population had access to milk, but less than the standard requirement (150 g/person/day), while more than one-half of the sampled population of the city consumed meat below than the standard requirement in their daily diet.

**Socio-economic Characteristics of Food Secure and Insecure Households:**

I. The percentage share of other backward caste (71.73 per cent) and scheduled caste (2.60 per cent) population were higher in food insecure households than that of food secure households which accounted to 64.64 per cent and 9.46 per cent respectively.

II. The ratio of juvenile dependents was found relatively higher among food insecure households than that of food secure households, while, the situation was totally reversed in the age group 15-59 which is economically active and working age population.

III. The proportion of small and medium household size was found more in food secure households as compared to the food insecure households. Contrary to this, the percentage share of large household size having 8-10 members was nearly double among the food insecure households than that of food secure household.

IV. Among food secure households, the proportion of illiterates was lower i.e. 47.00 per cent as compared to food insecure population that is 66.62 per cent. In addition, the level of illiteracy in females was observed relatively higher both in food secure as well as food insecure households than that of their counterparts.

V. In food insecure households, majority of population engaged in casual works and worked as labourers (29.94 per cent) who were not regular employed followed by workers in lock industries (28.51 per cent) and worker in other household industries. On the contrary, among food secure households, majority of population i.e. 31.15 per cent engaged in lock manufacturing followed by labour class (14.52 per cent), other household industry (14.05 per cent), business (10.54 per cent) and mechanic (6.09 per cent).
VI. The percentage share of population in food secure households engaged in business activity was considerably higher as compared to food insecure households (2.65 per cent). Similarly, proportion of mechanic, retail traders, employed in any institution/Government organization were witnessed low in food insecure households than that of food secure households.

VII. It may be also inferred that moderately food insecure households involved in formal occupation were in better position than that of severely food insecure households who were engaged in informal sectors.

VIII. The monthly income of food secure households was better than the food insecure households.

IX. Among food insecure households, nearly two-fifth households were living in *pucca* house, while, in food secure households, more than three-fifth households were found living in *pucca* houses. The percentage share of food secure households using houses as residential purposes was 64.64 per cent which was higher than food insecure households (53.15 per cent) whereas, the proportion of houses used as residential with industrial, residential with commercial and mixed activity (residential with industrial and commercial) were to some extent high in food insecure households as compared to food secure households.

X. Nearly, three-fifth sampled households of the selected wards of the city do not have proper ventilation in their houses that comprising of 50.89 per cent in food secure and 65.11 per cent in food insecure households respectively. Likewise, in food secure households, proportion of households with no open spaces was 50.54 per cent which was lower in proportion as compared to food insecure households (63.49 per cent).

XI. The proportion of households having road side hand pump (44.10 per cent) and roadside piped water/public tap (13.89 per cent) was higher among food insecure households in comparison to food secure households. In addition, the ratio of food insecure households that have to fetch water beyond the premises of their houses has been naturally greater than the food secure households.

XII. The percentage of households having toilet facility outside the houses was higher in food insecure households than that of food secure households. Among food secure households, majority of households (80.71 per cent) have flush/septic type of toilets, while, among food insecure household, more than one-third of the households have reported manual type of toilets in their houses.
Child Labour Households and their Characteristics:

I. More than one-fourth (27.28 per cent) of the total sampled child population of the city was found as child labours in which the male dominates over female.

II. The share of children attending school was quite high in food secure households than the food insecure households. Contrary to this, the proportion of children who were working, working with studying and idle was high in food insecure households as compared to food secure households.

III. The highest concentration of population of working children (44.01 per cent) in the city was found in the age-group of 10-14 and their proportion was nearly two times higher among food insecure households than that of food secure households.

IV. Lock manufacturing was the prime occupation of the working children in Aligarh city that shared about 45.05 per cent of the total child labour population followed by petty retail traders, domestic workers, household industry workers, mechanic, rag pickers, workers in other’s shop, embroiders, vender, dhaba workers, handicraft workers and rickshaw pullers.

V. Masculine gender dominates over feminine gender among the paid workers and versa among the unpaid child labour households.

VI. The share of studying children was relatively higher among the sampled households of food secure as compared to the food insecure. As far as drop-out population was concerned, the maximum number of drop-out children has been registered among the food insecure households (22.52 per cent) as compared to food secure households (13.15 per cent).

VII. Child labour in food insecure households (49.64 per cent) was more economically motivated as compared to food secure households (34.94 per cent). Children working in food insecure households were more vulnerable because of their circumstantial compulsion. They were working mainly because of poverty, low income, large family size etc., while, children in food secure households were pushed to work mainly due to traditional attitudes, parental illiteracy and to save children from bad habits and company.

VIII. On an average, out of total sampled households (1179) nearly, 44 per cent households having child labours in Aligarh city. Moreover, the highest proportion of households having child labour was found in Shahjamal i.e. 67.44 per cent and lowest in Pala Sahibabad (31.18 per cent). Besides it, more than half of the households were found having child labourers in the wards, namely, Usman Para III (63.41 per cent),
Bhujpura (62.64 per cent), Khai Dora (61.76 per cent), Sarai Kaba (54.39 per cent), Maulana Azad Nagar (51.11 per cent) and Kala Mahal (50 per cent). Except, Maulana Azad Nagar, all wards with high concentration of households having child labourers were situated in the old part of the city and lock manufacturing is the traditional occupation of the people since a large span of years.

IX. The proportion of child labour among Muslim households was comparatively higher than that of Hindu households. In addition, a large percentage of child labour households were from backward classes and reflect the fact that they live in poverty.

X. More than two-fifth of the total sampled child labour households having 5 to 7 members in their family.

XI. More than one-fourth of the total sampled child labour households of the city were literate and among these literates, 17.80 per cent were educated up to primary level.

XII. The per capita monthly income of more than two-third child labour households was up to Rs. 1000 only.

XIII. Nearly, one-fourth of the total child labour households were reported as migrant population and the major difference between the migrants households of inner and outer wards of the city was the duration of migration, the inner wards migrants has been stayed in the city for more than five years, while, the outer ward migrants were the recent new comers or their period of stay in the city was less than 5 years.

**Causal Relationship between Food Insecurity and Child Labour**

I. Bhujpura, Shahjamal, Slaughter houses and Maulana Azad Nagar were the most deprived wards in terms of overall food availability index of the city, while, the wards namely SaraiGarhi, NaglaMasani, RasalGanj, NaglaJamalpur, Kala Mahal, Indira Nagar KhairRoad, Dori Nagar and Firdaus Nagar were found in better position.

II. On the basis of vulnerability score in terms of accessibility index, Slaughter houses ranked at highest position, followed by Bhujpura, Shahjamal, Khai Dora, Maulana Azad Nagar and Jeewangarh, whereas, Indira Nagar Khair Road with a composite score index (0.204) stands at the lowest position among all the sampled wards of Aligarh city.

III. The five wards viz., Shahjamal, Khai Dora, Kala Mahal, Bhujpura and Jeevangarh were most vulnerable in terms of housing condition in which Shahjamal ranks at the top and Firdaus Nagar ranks at the lowest position in the city.
IV. Considering overall sanitation index, Slaughter House, Shahjampal, Bhujpura and Pala Sahibabad were most deprived, while, five wards namely Rasalganj, Sarai Garhi, Nagla Masani, Nagla Jamalpur and Sarai Kaba were least vulnerable wards in respect of sanitation index of Aligarh city.

V. Shahjampal, Bhujpura, Slaughter Houses, Maulana Azad Nagar, Usman Para III and Sarai Kaba were most vulnerable in terms of nutritional outcome index as compared to the wards of Nagla Jamalpur, Sarai Garhi, Nagla Masani, Dori Nagar, Rasalganj, Kala Mahal and Firdaus Nagar.

VI. Bhujpura was found to be most food insecure wards that ranks as first followed by Slaughter Houses, Shahjampal and Maulana Azad Nagar. On the other hand, Sarai Garhi, Nagla Masani, Rasalganj, Nagla Jamalpur, Kala Mahal and Indira Nagar Khair Road were found to be better in terms of overall urban food insecurity index.

VII. Among all the selected indicators of food insecurity and child labour, concentration of child labour ($X_1$) was strongly positively correlated with food insecure population at 99 per cent level of confidence. In addition, the direct factors contributing and responsible for prevalence and perpetuation of child labour were continued poverty, fear of food insecurity, illiteracy, low family income, large family size, the tradition of making children to learn the family skills, un-employment/under-employment etc.

VIII. Food availability index has strong positive correlation with the food accessibility index, housing index, sanitation index and nutritional outcome index at 99 per cent level of confidence and with concentration of child labour ($r=.537$) at 95 per cent level of confidence. It means deprivation in food availability raise the issue of child labour.

IX. Likewise, food accessibility is significantly associated with housing index, sanitation index, nutritional outcome index and child labour ($r=.631$) at 99 per cent level of confidence. So, it may be noted that indicators of food accessibility such as population below poverty, casual labourers, illiteracy etc are strongly related to incidence of child labour as well as other dimensions of food insecurity- housing, sanitation and nutrition.

X. Housing index was strongly positively associated with concentration of child labour ($r=.631$), sanitation ($r=.695$) and nutritional outcome status ($r=.684$) at 99 per cent level of confidence while, sanitation index has strong positive relation to nutritional outcome ($r=.625$) at 99 per cent level of confidence and also positively correlated to concentration of child labour ($r=.288$) but not up to significant level.
XI. Nutrition outcome indicators of food insecurity i.e. chronic energy deficiency and acute and chronic illness have also positive and linear relationship, but not significantly correlated with child labour population.

XII. Food insecurity and child labour have positive and linear relationship with a regression value of (R²=0.622) means that 62.2 per cent variation in dependent variable i.e. concentration of child labour can be explained by the independent or predictor variable that is food insecure population. Nevertheless, lack of food availability (R²=0.372), food inaccessibility (R²=0.293), lack of food absorption or utilization (R²= 0.493) and deprivation in nutrition & health (R²=0.580) have also positive and linear relationship with child labour in the city.

XIII. Among all selected wards, Shahjamal comes under the high category of both food insecurity and concentration of child labour, whereas, Indira Nagar Khair, Sarai Garhi, Dori Nagar, Nagla Masani, Rasalganj, Firdaus Nagar and Nagla Jamalpur come in the category of low level of food insecurity and low child labour concentration as compared to other sampled ward of Aligarh city.
ABSTRACT

Children are future citizens of the Nation and their proper development is utmost priority of the country. Unfortunately, child labour engulfs children across the world and required urgent attention mainly due to the fact that it is damaging to a child’s health and his intellectual growth that requires a long-term multi-pronged strategy to be carried out on a continuous basis. Perpetuation of child labour will also have adverse effects in the nation’s economy through various short term and long term effects on the labour market, growth and development through unproductive, unskilled labour force and also on social development through poor literacy rates (Subbaraman and Witzke, 2007).

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minimum energy requirement (Baby, 2012). The country has about 213 million undernourished people (FAO, IFAD and WFP, 2013), a large percentage among these are children and women. In addition, a close review of the factors responsible for child work reveals that indicators of malnourishment like underweight, wasting and stunting, etc. highly affect the capability of the children to concentrate on their studies. However, household food insecurity is considered to be the major deterrent to enrolment of children at the primary and secondary level. As a result, the majority of the children in these categories drop-out at an early age. Children in this age group (5-14) who are out of school either become child worker or vulnerable to become child worker (called potential child labour) (Daly et.al., 2002) and together signify a measure of deprivation among children and can be considered as a potential labour pool always being at the risk of entering the labour force.

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Seventh chapter deals with socio-economic background of child labour households in Aligarh city.

Lastly, the eighth chapter presents an analysis of interrelationships between food insecurity and child labour for which indexing of household food insecurity, correlation and associational pattern of household food insecurity and child labour have been done.

On the basis of overall analysis of the study the following important inferences may be drawn pertaining to the spatial dimensions of food insecurity and child labour, consumption pattern of food items, characteristics of food secure, insecure and child labour households and causal relationship between food insecurity and child labour in Aligarh city:

**Spatial Dimensions of Food Insecurity and Consumption Pattern of Food Items:**

I. More than one-half of the total sampled households of the city were food insecure in which 25.87 per cent of the households were severely food insecure and remaining 26.63 per cent were found moderately food insecure. Only 47.50 per cent of the total households of the city were found food secure. There were six wards namely; Shahjamal (65.12 per cent), Bhujpura (62.64 per cent), Slaughter House (61.65 per cent), Jeevangarh (58.51 per cent), Khai Dora (58.82 per cent) and Maulana Azad Nagar (56.67 per cent) have been recorded under the category of high level of food insecurity. This high percentage of food insecure population in the vulnerable wards of the City is the result of their low income and poor purchasing power of the population.

II. The ratio of casual labourers was substantially higher than the salaried, regular and self-employed workers in the city. In casual labourer category, the share of female exceeded to the male, while, among self and regular employment, the situation was reversed.

III. The main sources of drinking water of the resident population of the city were hand pump, submersible, piped water connection and road side piped water connections, among which, nearly two-fifth of surveyed households were getting drinking water from their own hand pumps.

IV. The prevalence of Chronic Energy Deficiency (CED) among children population was significantly higher than the adult population of the sampled wards of Aligarh city in which female outnumber male population in both the cases.
More than two-fifth of the total population of sampled wards of Aligarh city reported for cereal consumption which was more than the standard requirement (420 g/person/day) and about two-third sampled households reported that they had low access to pulses (below 40 g/person/day) due to its high price.

The consumption status of vegetables, milk and meat was quite alarming that 21.12 per cent of the total population of sampled wards could not afford to access the required amount of vegetables and less than two-third population had access to milk, but less than the standard requirement (150 g/person/day), while more than one-half of the sampled population of the city consumed meat below than the standard requirement in their daily diet.

**Socio-economic Characteristics of Food Secure and Insecure Households:**

I. The percentage share of other backward caste (71.73 per cent) and scheduled caste (2.60 per cent) population were higher in food insecure households than that of food secure households which accounted to 64.64 per cent and 9.46 per cent respectively.

II. The ratio of juvenile dependents was found relatively higher among food insecure households than that of food secure households, while, the situation was totally reversed in the age group 15-59 which is economically active and working age population.

III. The proportion of small and medium household size was found more in food secure households as compared to the food insecure households. Contrary to this, the percentage share of large household size having 8-10 members was nearly double among the food insecure households than that of food secure household.

IV. Among food secure households, the proportion of illiterates was lower i.e. 47.00 per cent as compared to food insecure population that is 66.62 per cent. In addition, the level of illiteracy in females was observed relatively higher both in food secure as well as food insecure households than that of their counterparts.

V. In food insecure households, majority of population engaged in casual works and worked as labourers (29.94 per cent) who were not regular employed followed by workers in lock industries (28.51 per cent) and worker in other household industries. On the contrary, among food secure households, majority of population i.e. 31.15 per cent engaged in lock manufacturing followed by labour class (14.52 per cent), other household industry (14.05 per cent), business (10.54 per cent) and mechanic (6.09 per cent).
VI. The percentage share of population in food secure households engaged in business activity was considerably higher as compared to food insecure households (2.65 per cent). Similarly, proportion of mechanic, retail traders, employed in any institution/Government organization were witnessed low in food insecure households than that of food secure households.

VII. It may be also inferred that moderately food insecure households involved in formal occupation were in better position than that of severely food insecure households who were engaged in informal sectors.

VIII. The monthly income of food secure households was better than the food insecure households.

IX. Among food insecure households, nearly two-fifth households were living in *pucca* house, while, in food secure households, more than three-fifth households were found living in *pucca* houses. The percentage share of food secure households using houses as residential purposes was 64.64 per cent which was higher than food insecure households (53.15 per cent) whereas, the proportion of houses used as residential with industrial, residential with commercial and mixed activity (residential with industrial and commercial) were to some extent high in food insecure households as compared to food secure households.

X. Nearly, three-fifth sampled households of the selected wards of the city do not have proper ventilation in their houses that comprising of 50.89 per cent in food secure and 65.11 per cent in food insecure households respectively. Likewise, in food secure households, proportion of households with no open spaces was 50.54 per cent which was lower in proportion as compared to food insecure households (63.49 per cent).

XI. The proportion of households having road side hand pump (44.10 per cent) and roadside piped water/public tap (13.89 per cent) was higher among food insecure households in comparison to food secure households. In addition, the ratio of food insecure households that have to fetch water beyond the premises of their houses has been naturally greater than the food secure households.

XII. The percentage of households having toilet facility outside the houses was higher in food insecure households than that of food secure households. Among food secure households, majority of households (80.71 per cent) have flush/septic type of toilets, while, among food insecure household, more than one-third of the households have reported manual type of toilets in their houses.
Child Labour Households and their Characteristics:

I. More than one-fourth (27.28 per cent) of the total sampled child population of the city was found as child labours in which the male dominates over female.

II. The share of children attending school was quite high in food secure households than the food insecure households. Contrary to this, the proportion of children who were working, working with studying and idle was high in food insecure households as compared to food secure households.

III. The highest concentration of population of working children (44.01 per cent) in the city was found in the age-group of 10-14 and their proportion was nearly two times higher among food insecure households than that of food secure households.

IV. Lock manufacturing was the prime occupation of the working children in Aligarh city that shared about 45.05 per cent of the total child labour population followed by petty retail traders, domestic workers, household industry workers, mechanic, rag pickers, workers in other’s shop, embroiders, vender, dhaba workers, handicraft workers and rickshaw pullers.

V. Masculine gender dominates over feminine gender among the paid workers and vice versa among the unpaid child labour households.

VI. The share of studying children was relatively higher among the sampled households of food secure as compared to the food insecure. As far as drop-out population was concerned, the maximum number of drop-out children has been registered among the food insecure households (22.52 per cent) as compared to food secure households (13.15 per cent).

VII. Child labour in food insecure households (49.64 per cent) was more economically motivated as compared to food secure households (34.94 per cent). Children working in food insecure households were more vulnerable because of their circumstantial compulsion. They were working mainly because of poverty, low income, large family size etc., while, children in food secure households were pushed to work mainly due to traditional attitudes, parental illiteracy and to save children from bad habits and company.

VIII. On an average, out of total sampled households (1179) nearly, 44 per cent households having child labours in Aligarh city. Moreover, the highest proportion of households having child labour was found in Shahjamal i.e. 67.44 per cent and lowest in Pala Sahibabad (31.18 per cent). Besides it, more than half of the households were found having child labourers in the wards, namely, Usman Para III (63.41 per cent),
Bhujpura (62.64 per cent), Khai Dora (61.76 per cent), Sarai Kaba (54.39 per cent), Maulana Azad Nagar (51.11 per cent) and Kala Mahal (50 per cent). Except, Maulana Azad Nagar, all wards with high concentration of households having child labourers were situated in the old part of the city and lock manufacturing is the traditional occupation of the people since a large span of years.

IX. The proportion of child labour among Muslim households was comparatively higher than that of Hindu households. In addition, a large percentage of child labour households were from backward classes and reflect the fact that they live in poverty.

X. More than two-fifth of the total sampled child labour households having 5 to 7 members in their family.

XI. More than one-fourth of the total sampled child labour households of the city were literate and among these literates, 17.80 per cent were educated up to primary level.

XII. The per capita monthly income of more than two-third child labour households was up to Rs. 1000 only.

XIII. Nearly, one-fourth of the total child labour households were reported as migrant population and the major difference between the migrants households of inner and outer wards of the city was the duration of migration, the inner wards migrants has been stayed in the city for more than five years, while, the outer ward migrants were the recent new comers or their period of stay in the city was less than 5 years.

**Causal Relationship between Food Insecurity and Child Labour**

I. Bhujpura, Shahjamal, Slaughter houses and Maulana Azad Nagar were the most deprived wards in terms of overall food availability index of the city, while, the wards namely SaraiGarhi, NaglaMasani, RasalGanj, NaglaJamalpur, Kala Mahal, Indira Nagar KhairRoad,Dori Nagar and Firdaus Nagar were found in better position.

II. On the basis of vulnerability score in terms of accessibility index, Slaughter houses ranked at highest position, followed by Bhujpura, Shahjamal, Khai Dora, Maulana Azad Nagar and Jeewangarh, whereas, Indira Nagar Khair Road with a composite score index (0.204) stands at the lowest position among all the sampled wards of Aligarh city.

III. The five wards viz., Shahjamal, Khai Dora, Kala Mahal, Bhujpura and Jeewangarh were most vulnerable in terms of housing condition in which Shahjamal ranks at the top and Firdaus Nagar ranks at the lowest position in the city.
IV. Considering overall sanitation index, Slaughter House, Shahjamal, Bhujpura and Pala Sahibabad were most deprived, while, five wards namely Rasalganj, Sarai Garhi, Nagla Masani, Nagla Jamalpur and Sarai Kaba were least vulnerable wards in respect of sanitation index of Aligarh city.

V. Shahjamal, Bhujpura, Slaughter Houses, Maulana Azad Nagar, Usman Para III and Sarai Kaba were most vulnerable in terms of nutritional outcome index as compared to the wards of Nagla Jamalpur, Sarai Garhi, Nagla Masani, Dori Nagar, Rasalganj, Kala Mahal and Firdaus Nagar.

VI. Bhujpura was found to be most food insecure wards that ranks as first followed by Slaughter Houses, Shahjamal and Maulana Azad Nagar. On the other hand, Sarai Garhi, Nagla Masani, Rasalganj, Nagla Jamalpur, Kala Mahal and Indira Nagar Khair Road were found to be better in terms of overall urban food insecurity index.

VII. Among all the selected indicators of food insecurity and child labour, concentration of child labour ($X_1$) was strongly positively correlated with food insecure population at 99 per cent level of confidence. In addition, the direct factors contributing and responsible for prevalence and perpetuation of child labour were continued poverty, fear of food insecurity, illiteracy, low family income, large family size, the tradition of making children to learn the family skills, un-employment/under-employment etc.

VIII. Food availability index has strong positive correlation with the food accessibility index, housing index, sanitation index and nutritional outcome index at 99 per cent level of confidence and with concentration of child labour ($r=.537$) at 95 per cent level of confidence. It means deprivation in food availability raise the issue of child labour.

IX. Likewise, food accessibility is significantly associated with housing index, sanitation index, nutritional outcome index and child labour ($r=.631$) at 99 per cent level of confidence. So, it may be noted that indicators of food accessibility such as population below poverty, casual labourers, illiteracy etc are strongly related to incidence of child labour as well as other dimensions of food insecurity- housing, sanitation and nutrition.

X. Housing index was strongly positively associated with concentration of child labour ($r=.631$), sanitation ($r=.695$) and nutritional outcome status ($r=.684$) at 99 per cent level of confidence while, sanitation index has strong positive relation to nutritional outcome ($r=.625$) at 99 per cent level of confidence and also positively correlated to concentration of child labour ($r=.288$) but not up to significant level.
XI. Nutrition outcome indicators of food insecurity i.e. chronic energy deficiency and acute and chronic illness have also positive and linear relationship, but not significantly correlated with child labour population.

XII. Food insecurity and child labour have positive and linear relationship with a regression value of \( R^2 = 0.622 \) means that 62.2 per cent variation in dependent variable i.e. concentration of child labour can be explained by the independent or predictor variable that is food insecure population. Nevertheless, lack of food availability \( (R^2 = 0.372) \), food inaccessibility \( (R^2 = 0.293) \), lack of food absorption or utilization \( (R^2 = 0.493) \) and deprivation in nutrition & health \( (R^2 = 0.580) \) have also positive and linear relationship with child labour in the city.

XIII. Among all selected wards, Shahjamal comes under the high category of both food insecurity and concentration of child labour, whereas, Indira Nagar Khair, Sarai Garhi, Dori Nagar, Nagla Masani, Rasalganj, Firdaus Nagar and Nagla Jamalpur come in the category of low level of food insecurity and low child labour concentration as compared to other sampled ward of Aligarh city.