

2006

Socio-Economic Correlates of Child Labour in Agriculture Sector: Some Selected Rural Areas of Rajshahi, Bangladesh

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Socio-Economic Correlates of Child Labour in Agriculture Sector: Some Selected Rural Areas of Rajshahi, Bangladesh



*A Thesis Submitted in Partial Tuffilment of the Requirements for the Degree of Master
of Philosophy in Population Science and Human Resource Development of the
University of Rajshahi, Bangladesh*

Under the Supervision of

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November 2006

CERTIFICATE

I have the pleasure in certifying that the M. Phil. thesis entitled 'Socio-Economic Correlates of Child Labour in Agriculture Sector: Some Selected Rural Areas of Rajshahi, Bangladesh' submitted by Md. Rajwanul Haque in fulfillment of the requirement for the degree of M. Phil. in Population Science & Human Resource Development, University of Rajshahi, Rajshahi, Bangladesh has been completed under my supervision. I believe that this research work is an original one and it has not been submitted elsewhere for any degree.

I wish him a bright future and every success in life.



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DECLARATION

This dissertation entitled “Socio-Economic Correlates of Child Labour in Agriculture Sector: Some Selected Rural Areas of Rajshahi, Bangladesh” submitted by Md. Rajwanul Haque in the Department of Population Science and Human Resource Development, University of Rajshahi for the award of the degree of Master of Philosophy is based on his research work carried out under the supervision of Dr. M. Nazrul Islam Mondal, Department of Population Science and Human Resource Development, University of Rajshahi and Professor Dr. M. Korban Ali, Vice Chancellor, Bangladesh Islami University, Dhaka, Bangladesh.

To the best of my knowledge, this work neither in part nor in fulfillment has been submitted to any other University or Institution for the award of any degree.



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DECLARATION OF CREATIVITY

The M. Phil. thesis does not integrate without acknowledgement any substance previously submitted for a degree or diploma in any University and to the best of my knowledge and confidence, it does not contain any material previously published or written by another person except where due reference is prepared in the text.

University of Rajshahi

November 2006

R. Haque
13/11/2006
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***Dedicated
To
My Beloved Parents***

ACKNOWLEDGEMENTS

Firstly, I consign my limitless thanks to the Almighty Allah for giving me strength, endurance and ability to complete this course of study.

It gives me a great pleasure to offer my profound gratitude to both of my reverend supervisors Dr. M. Nazrul Islam Mondal Assistant Professor, Department of Population Science & Human Resource Development, University of Rajshahi, Rajshahi and Prof. Dr. M. Korban Ali, Vice-Chancellor, Bangladesh Islami University, Gopibag, Dhaka-1203; Bangladesh, for their willingness to accept me as a research student and for introducing me into the field of 'Socio-Economic Correlates of Child Labour in Agriculture Sector: Some Selected Rural Areas of Rajshahi, Bangladesh'. The completion of the thesis has been possible only for providing me their constant support, helpful guidance, thoughtful encouragement, understanding suggestions and enlightened discussion during my entire phase of the study.

I would like to express my extreme gratefulness to my honorable Chairman and all the respected teachers, Department of Population Science & Human Resource Development, University of Rajshahi, respectively for extending necessary facilities for my research work and for their timely advices and continual encouragement that help me to go to forward.

I wish to express my heartiest thanks to all my friends, elder brothers and well wishers whose close association always kept me active throughout my work. Thanks are also due to all the children and providers who willingly gave us their time and shared personal information.

My sense of fathomless gratitude is to my venerable parents for their unmeasured sacrifices, continuous inspiration and support, that have led me to all the success.

I like to extend my thanks to the concerned authority of the University of Rajshahi for providing me with a fellowship for the purpose of completing this research work and thanks are also to the officers of this department for their excellent co-operation.

In fine, I am alone responsible for the errors and shortcomings in this study if there be any, I am sorry for that.

November 2006

The Author

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Chapter One

Introduction

1.1 Background of the Study

Child is the father of a man. Child is the wealth of a state. Child is the hope and future of a nation. Child is the pioneer of human civilization. When the child is so important in the life of a nation; he can neither be ignored nor be neglected in the onward march of the world civilization. Child should therefore be properly reared up for the sake of human civilization, for the sake of a nation and its government. Environment should be so created that a child properly grows physically; mentally as well as intellectually to play its due role in tomorrow's society.

Child is the continuation of human civilization and bears the testimony of parenthood and generation. It is the foundation of a family, a society, a nation and the world as a whole. It requires careful and effective measures for his proper nourishment by the concerned person and authority. It is to be provided with the basics he requires. But unfortunately, this does not prevail all over the world equally specially in the developing countries. A few fortunate children of these countries are provided with their basics while the rest are denied of their basic needs, physical and mental growth. They are compelled to offer labour for their livelihood before they attain majority. They work with the hammer and the spade instead of working with the book and the pencil. Sometimes circumstantially they go into the clutches of anti-social elements, create law and order problems and finally they become liability of the state instead of becoming an asset (Siddiqua, 2002). In the formal sector, garment factories topped the list to absorb the highest number of child workers. The issue of child labour in Bangladesh become most discussed and debatable in early 1990's when the United States and other foreign buyers refused to import garments from Bangladesh as long as child labour in garment factories in Bangladesh attracts most international attention.

Child labour in Bangladesh and other developing countries reveal that the vast majority of working children are employed in agriculture and domestic service sectors where children are taking part in service, small-scale manufacturing, and various agricultural occupations; they also perform household chores such as fetching water, collecting firewood, cooking and taking care of younger siblings. Although many of these children are working under supervision, full-time work can deter them from attending school, and many home-based activities can be as harmful as work performed outside the home (ILO, 1996).

1.2 Child Labour in the World

The Asian-Pacific region continued to harbour the largest number of child workers, 122 million in total. It is followed by Sub-Saharan Africa (49.3 million) and Latin America and the Caribbean (5.7 million). Due to data gaps, there is no new estimation for the Middle East and North Africa and the group of industrialized countries. The number of child workers declined in Asia/Pacific and in Latin America and the Caribbean, but not in Sub-Saharan Africa. The decline in the Latin American/Caribbean region was most significant. From 2000 to 2004, the region's number of child workers and its child activity rate dropped to about one third of their previous levels. In the Asian-Pacific region, there was a slight decrease both in relative and absolute terms. The number of economically active children was reduced by 5 million in the four-year period under review. The regional activity rate also fell. The picture in Sub-Saharan Africa is more mixed. While the number of child workers increased slightly, the incidence of work dropped by more than two percentage points. In 2004, estimated global populations of 191 million children aged 5-14 years were at work. This accounts for less than one-sixth (15.8%) of the world's population in that age group. The total economically active child population aged 5-17 years was estimated at 317 million. Overall, in 2004, 172 million boys were working compared to 146 million girls. The incidence rate was about two percentage points higher among boys (21.3% versus 19.1% for girls). The number of working children decreased among both sexes from 2000 to 2004. It is noteworthy that economic activity rates seem to have declined somewhat faster among girls than among boys. The incidence rate among girls dropped by 3.4% compared to 2.1% among boys. The regional trends from 2000 to 2004, in Asia and the Pacific, the situation among

working children has remained more or less stable, both in absolute and in relative terms. The incidence decreased slightly from 19.4% to 18.8%. The absolute number of child workers dropped by 5 million to a total of 122 million. In Sub-Saharan Africa, we discern a more mixed development. While the incidence rate declined by 2.4% points to 26.4%, the absolute number of African child workers increased by 1.3 million to a total of 49.3 million. High population growth offset the relative progress in the region. Latin America, the region with the smallest population of working children, made the biggest progress in the four years following 2000. The incidence was reduced by 11% to 5.1%, and the absolute number of working children aged 5-14 years dropped to 5.7 million. We estimate that in 2004 there were about 218 million child labourers in the world. Three quarters of them (166 million) were younger than 15 years. Child labour is by no means only a problem among older children. In fact, 108 million, almost half of all child labourers in the world were younger than 12 years. Child labour declined during the period 2000 to 2004, reflecting trends in children's economic activity. The overall number decreased by 28 million from 246 to 218 million. The indicator for employment by sector based on the International Standard Industrial Classification of All Economic Activities, Revisions 2 (1968) and 3 (1990) breaks employment down into three broad groupings of economic activity: agriculture, industry, and services.

- The agricultural sector comprises activities in agriculture, hunting, forestry, and fishing. Children's work is primarily concentrated in agriculture. More than two-thirds (69%) of all working children in the age group 5-14 years are involved in agriculture sector.
- The industry sector comprises mining and quarrying, manufacturing, construction, and public utilities (electricity, gas and water). Industry accounts for 9% of working children.
- The services sector consists of wholesale and retail trade; restaurants and hotels; transport, storage, and communications; finance, insurance, real-estate, and business services; and community as well as social personal services. Services account for 22% of working children.

The majority of working children are in hazardous work. This means they are engaged in activities that endanger their safety, health, and moral development. In 2004, 126

million children were involved in this worst form of child labour. From 2000 to 2004 the number of children in hazardous work declined by about 44 million, a significant decrease most apparent among children in the 5-14 year age group (ILO, 2006).

1.3 Child Labour in Bangladesh

Bangladesh is also experienced high incidence of child labour. Out of total population (133.4 million), about 17.5 million (13.1%) are below 5 years of age, about 35.1 million (26.3%) are 5-14 years of age, about 42.4 million (31.8%) are 5-17 years of age and the remaining about 73.5 million (55.1%) are 18 years and over. The average number of children aged 5-14 years per household is 1.3. Out of total estimated child population aged 5-14 years about 18.3 million (52.1%) are boys and 16.8 million (47.9%) are girls whereas, for 5-17 years 22.7 million (53.5%) are boys and 19.7 million (46.5%) are girls. The child labour in Bangladesh is 7.9 million out of the 42.4 million children in the age of 5-14 years, i.e., 18.64% of total child population is found to be economically active. Out of total child population for 5-14 years of age 7.6 million (21.8%) are in urban areas and 27.4 (78.2%) are in rural areas whereas, for 5-17 years of age 9.5 million (22.3%) are in urban areas and 32.9 (77.7%) are in rural areas (BBS, 2003a). Thus, child labour constitutes 10.8% of 5-14 years of age and 17% of 5-17 years of age of the total labour force of Bangladesh (BBS, 2004). The highest portion of child labour of age 5-17 years is found in agriculture, forestry & fisheries (56.3%), followed by the service workers (3.9%), production & transport (24.9%), sales workers (13.4%), clerical workers (0.7%), and professional & technical (0.5%). It also show that by broad industry out of total working children 4.5 million (56.4%) are engaged in agriculture, 1.4 million (17.7%) are engaged in industry and the remaining 2 million are engaged in service sectors (25.9%). In rural areas, out of total working children 64.6% are involved with agriculture sector whereas, only 21.7% children are in urban areas. The distribution of children aged 5-17 years 98.2% received education in formal educational institutions as against 1.8% from non-formal type of institutions (family, NGO, Govt. informal etc.) (BBS, 2003a). Since 1993 child labour issue termed into a highly sensitive issue for Bangladesh for a number of reasons. Most important reasons are i) introduction of the Harkins Bill in the US Congress; threat by the Child Labour Coalition (CLC) to boycott garments produced

by the Bangladeshi child labour, and ii) the introduction of social clause in WTO at the insistence of USA and France at the final round (Uruguay) negotiation.

1.4 Child Labour in Agriculture

Child agricultural workers frequently work for long hours in scorching heat, haul heavy loads of produce, are exposed to toxic pesticides, and suffer high rates of injury from sharp knives and other dangerous tools. Their work is grueling and harsh, and violates their rights to health, education, and protection from work that is hazardous or exploitative. According to the International Labor Organization's (ILO) new report on child labor, the number of children working in agriculture is nearly ten times that of children involved in factory work such as garment manufacturing, carpet-weaving, or soccer-ball stitching. Despite their numbers and the difficult nature of their work, children working in agriculture have received little attention compared to child labor in manufacturing for export or children involved in commercial sexual exploitation. In the investigations in Egypt, Ecuador, India, and the United States, Human Rights Watch has found that the children working in agriculture are endangered and exploited on a daily basis. Human Rights Watch (HRW, 2005) found that despite the vast differences among these four countries, many of the risks and abuses faced by child agricultural workers were strikingly similar. In rural Bangladesh, there is an abundant supply of children, who live on farms and plantation, and their labour is much cheaper than that of an adult, and they are more compliant than the adults. Due to poverty and their family requirements they have to work suffering various types' hazardous conditions. Lack of maturity and poor communication they are involved their life with agriculture sector facing long working duration and low income.

1.5 Abuses of Child Agricultural Workers

1.5.1 Ages and Hours of Work

Child agricultural workers often begin work at early ages, and may work twelve or more hours a day. In India, bonded child laborers as young as eleven often work sixteen or seventeen hours a day, typically beginning at 5 or 6 a.m., and continuing until 9 or 10 at night. Some are expected to work 365 days a year. In the United States, children interviewed by HRW began working in the fields as early as age twelve. They routinely worked twelve-hour day, and during peak harvest season,

sometimes worked fourteen hours or more (HRW, 2005). In Bangladesh, children are started their work at 5 years of age in agriculture field with their parents. Children in agriculture sector work weekly in average 28 hours and 16.4% children are working weekly more than 42 hours (BBS, 2003a). The boys are works more times than girls but sometimes girls work for longer time in comparison to boys. The reason is that the girls are engaged almost the whole day for household purpose along with agricultural activities. The child workers are normally works daily not less than adult's working duration but 82.9% child labour are getting lower amount of wages than the adults (BBS, 2003a).

1.5.2 Pesticide Exposure

One of the greatest threats to the health of child agricultural workers is exposure to pesticides. In Ecuador, Egypt and the United States, children reported working in freshly sprayed fields, and even working in fields while they were being sprayed. Children interviewed reported symptoms of exposure including headaches, fever, dizziness, nausea, rashes and diarrhea (HRW, 2005). In severe cases, pesticide exposure can lead to convulsions, coma and death. Long term effects also include cancer, brain damage, sterility or decreased fertility, and birth defects. In Bangladesh, the rural children are working with danger like exposure to poisonous or disease-carrying insects and reptiles. They are susceptibility to endemic and parasitic diseases, skin complaints and respiratory tract diseases and even fall in fatigue. Child agricultural workers are often not told of the dangers of pesticides, or how they can protect themselves. Exposure to hazardous substances used in agriculture, such as toxic chemical fertilities and pesticides is rife. Labels for these products are often inadequate and in any case, children cannot read and are thus unaware of the dangers of coming into contact with powerful chemicals, while some pesticides, such as DDT and other organochlorine compounds have been banned in industrial countries, they are regularly used in Bangladesh.

1.5.3 Injuries and Disabilities

Children working in agriculture suffer high rates of injuries. They frequently suffer cuts from sharp knives and falls from ladders. They risk back injuries from hauling heavy loads of produce. They may be crushed or maimed by tractors and other heavy

equipment. In the United States, agriculture is second only to mining for occupational fatalities. Child farm workers make up only 8% of children who work in the United States, yet account for 40% of work-related fatalities among minors. An estimated 100,000 children suffer agriculture-related injuries each year in the United States (HRW, 2005). In Bangladesh, the children in agriculture commonly suffer accidents, injuries and illness. Working children often work with farm machinery and tools that they are not always able to operate safely. Every year in Bangladesh 30000 children die from injuries. This is roughly 83 children who die everyday; or two children who die every hour (HRW, 2005). On top of these deaths are disabilities. Another one million Bangladeshi children are seriously hurt from injuries every year; that's two children who are injured every minute. Of these, 36 kids become disabled every day. These children are then more likely to be trapped in serious poverty, with a lack of treatment, services and support. The road accidents alone cause the lost about 2% of GDP in Bangladesh (BHIS, 2005).

1.5.4 Water and Sanitation

Child agricultural workers often must work in the full sun in temperatures exceeding 100 degrees Fahrenheit or 40 degrees Celsius. Under such conditions, health experts recommend that workers drink two to three gallons of water a day. Without adequate drinking water, workers run the risk of devastating dehydration and heat illnesses that can cause death or brain damage. However, many child agricultural workers do not have access to water, or are provided with water contaminated with bacteria or pesticides. In Egypt, some children worked from 7 a.m. to 6 p.m, but reported that only during two breaks during the day did their foremen allow them to drink. In both the United States and Ecuador, some children reported that a lack of potable water forced them to drink from canals that drain excess water from the fields. These canals are often contaminated with pesticides, fertilizers, bacteria and human waste. Children may also be forced to use their earnings to purchase water, soda or beer from their employers at inflated prices. In the United States, agricultural employers are required by law to provide toilet facilities, drinking water, and water for hand washing (HRW, 2005). Lack of toilet facilities contributes to the spread of parasitic infection among workers. It is particularly dangerous and humiliating for girls, who may be forced to choose between public urination-more obvious and awkward for females-and urinary

retention, which can cause severe discomfort and urinary tract infections (HRW, 2005). In Bangladesh, drinking water is often unsafe, sanitary facilities are likely to be unhealthy, and medical facilities are usually inadequate. Though 95.75% rural populations are using tube-well water but during working hour the children are deprived to drink purified water (BBS, 2003b).

1.5.5 Treatment and Sexual Harassment

Children typically gauged the leniency of a foreman by the severity and frequency of the beatings he administered. Severe maltreatment caused some children to quit work entirely or seek employment under the supervision of a different foreman. Bonded child agricultural workers in India also frequently experience physical abuse. An eleven-year old told Human Rights Watch, "I do not like work; it is hard and there is no time limit. In both the United States and Ecuador, girls working in the fields reported that they are routinely subjected to sexual advances by farm labour contractors and field supervisors (HRW, 2005). In Bangladesh, the rural agricultural children are not getting their proper even sometimes minimum level of treatment as per their requirements. So, they are living with severe diseases. The girl children in the working sector especially in the garment sectors are facing sexual harassment. Around 20% of the child prostitutes in India come from Bangladesh and Nepal (Mukherjee, 1998).

1.5.6 Impact on Education

In Egypt, cotton pest control work usually takes place during the summer months when children are not attending school. However, in other cases, agricultural work can have severe consequences for children's education. Long hours of work cause children to miss classes and leave them too tired to study. Eventually they fall behind and frequently drop out completely. In India, many bonded child laborers working in agriculture have never been to school. Once they are bonded-often at age eight or nine-their long hours of work frequently make schooling impossible (HRW, 2005). Bangladesh has passed a Compulsory Primary Education Act and also providing financial support to children so that they can carry on their study without any problem but due to proper educational institutions and family requirements they are remained illiterate.

1.5.7 Wages

Child agricultural workers work for very low wages, and are often paid less than their adult counterparts. In India, children bonded into agricultural labor are working to pay off a debt. Parents or other relatives promise the labor of the child to an employer in exchange for a sum of money. The children then spend long hours over many years in an attempt to pay off these debts (HRW, 2005). In Bangladesh, the children are earning daily in average Tk.33 but their working duration is not less than the adults (BBS, 2003a).

1.6 Country Setting

1.6.1 Geography of the Country

Bangladesh emerged as a sovereign state on December 16, 1971 following a war and struggled for liberation for a period of nine months with the army of Pakistan. Before independence, it constituted the eastern wing of Pakistan about 24 years after the termination of British rule in 1947. It is located in the northeastern part of South Asia between 20034/ and 26038/ north latitude, and 88001/ and 92041/ east longitude. The country is bounded on the north and the west by India, on the east by India and Myanmar and on the south by the Bay of Bengal. It has a total area of 147570 sq. kilometers of which 8236 sq. kilometers is riverine and 1971 sq. kilometers is under forest. Except for some hilly regions in the northeast and southeast, the country is a flat alluvial plain which comprises about 85% of the total land area. The southwestern regions consist of an older delta with numerous dead of cut off rivers. The coastal part of this region harbours the single largest stand mangrove forest in the world called the Sundarbans. The country lies on the delta of the Padma, Brahmaputra and Meghna rivers, an immense system of tributaries and distributaries draining the central and eastern Himalays in the north to the Bay of Bengal in the south. Bangladesh enjoys a subtropical monsoon climate with three main seasons, namely winter, summer and monsoon. The annual average temperature in summer is 340C and in winter 110C. Being located in the monsoon belt, it receives heavy rainfall; the annual average rainfall varies from a minimum of 47" to a maximum of 136", often resulting in heavy floods. These floods and sometimes cyclones are often the causes of devastation of human life and poverty in Bangladesh (Banglapeadia, 2003).

1.7 The Study Area and the People

1.7.1 Rajshahi District

The area of the Rajshahi district is 2407 sq. km. and population density is 945 per sq. km (BBS, 2001). It is bounded by Naogaon district on the north, the Padma River on the south, Natore district on the east and Chapai Nawabganj district on the west. The region consists of Barind tract, Diara and Char lands. Total population of this district is 2262483; 51.20% of them is male and 48.80% is female; Muslim 93%, Hindu 5%, Christian 1.5% and others 0.5%. And 2.34% of the total population is Santal who have their own language. Average literacy rate of this district is 30.61%. Male literacy rate is 37.6% and female literacy rate is 23.2%. Total child population of this district is 770000; 17.92% are involved with different working sectors and the remaining 82.02% did not work; 54.03% of total child population are in rural areas and of them 21.63% are involved with working sectors (BBS, 2003a). The district has one City Corporation, 4 thanas, 7 municipalities, 93 wards, 297 mahallas, 9 upazilas, 70 union parishads, 1678 mouzas and 1858 villages. The main occupation of rajshahi district are agriculture which is 38.73%, agriculture labourer 23.64%, wage labourer 3.50%, commerce 12.44%, service 8.81%, transport 2.36% and others 10.52%. Among the peasants, 31% are landless, 47% small, 19% intermediate and 3% rich; cultivable land is 0.07 hector per head. The main crops of this district are paddy, wheat, jute, sugarcane, turmeric, oil seed, onion, garlic, potato, betel leaf and mulberry plant. Communication facilities of this district are 896 km. roads is pucca, semi pucca is 686 km and mud road is 4726 km. and railways 70 km. and one airport. Silk mill, textile mill, flour and rice mill, cold storage etc. are main manufactories of this district. It is famous for the production of cocoon and silk fabrics. In Rajshahi district, there are one medical college, 16 other hospitals, 9 upazilla health complexes, 77 halth and family welfare centre, one maternity and child welfare centre and 88 satellite clinics (Banglapeadia, 2003).

1.7.2 Chapai Nawabganj District

The area of the Chapai Nawabganj district is 1744.33 sq. km. and population density is 3313 per sq. km. It is bounded by West Bengal of India on the north, south and west, Rajshahi and Naogaon districts on the east. The district lies under Barind tract and consists of Diaras and Char lands. The region consists of Barind tract, Diara and

Char lands. Total population of this district is 1419534; 50.12% of them is male and 49.88% is female; Muslim 94.27%, Hindu 4.68%, Christian 0.23% and others 0.82%. Average literacy rate of this district is 23.8%. Male literacy rate is 28.5% and female literacy rate is 19.1% (Banglapedia, 2003). Total child population of this district is 534000; 15.73% are involved with different working sectors and the remaining 84.27% did not work; 80.34% of total child population are in rural areas and of them 16.08% are involved with working sectors (BBS, 2003a). The district consists of 3 municipalities, 33 wards, 134 mahallas, 5 upazilas, 45 union parishads, 830 mouzas and 1136 villages. The main occupation of Chapai Nawabganj district are agriculture which is 34.07%, agriculture labourer 24.31%, wage labourer 5.39%, construction 2.57%, commerce 16.6%, service 4.01%, and others 13.05%. Among the peasants, 35% are landless, 44% marginal, 27% intermediate and 4% rich; cultivable land per head 0.07 hectare. The main crops of this district are Paddy, jute, sugarcane, wheat, betel leaf, oil seeds, and pulses. Communication facilities of this district are 286.12 km roads is pucca, semi pucca is 2006.81 km, and railways 51.20 km and waterways 69 nautical mile. Silk mill, textile mill, cold storage and aluminium factory etc. are main manufactories of this district. Main exports of this district are mango, jackfruit, betel leaf, sugarcane, date molasses, silk sari, copper, bell-metal & brass work. In Chapai Nawabganj district there are 1 sadar hospital, 5 upazila health complex, health and 45 family planning centre, 1 chest disease and TB clinic, 1 diabetic hospital (private), 1 heart foundation (private), 1 maternity care and child welfare centre (Banglapedia, 2003).

1.8 Concept and Terminology

1.8.1 Definition of Child Labour

A working child is defined as a child in the age-range of 5 to 15 who is doing labour, either paid or unpaid, and is working within or outside the family: basically, a child who is deprived of the right to education and childhood. ILO's definition of child labour refers to work that is mentally, physically, socially or morally dangerous and harmful to children, interferes with their schooling by depriving them of opportunity to attend school; by obliging them to leave school prematurely; or by requiring them to attempt to combine school attendance with excessively long and heavy work. It means work that deprives children of their childhood, their potential and their dignity

and that is harmful to physical and mental development. The dictionary defines labour as physical or mental work, especially of the hard or fatiguing kind. Child labour usually means work that is done by children under the age of 15 (14 in some developing countries) which restricts or damages their physical, emotional, intellectual, social or spiritual growth as children. The State, through the Department of Labour and Employment, defines "child labour" as "the illegal employment of children below the age of fifteen (15), where they are not directly under the sole responsibility of their parents or legal guardian, or the latter employs other workers apart from their children, who are not members of their families, or their work endangers their life, safety, health and morals or impairs their normal development including schooling (ILO, 1998a). The National Child Labour Survey (NCLS) defines child labour consists of all children under 18 years of age who are economically active except (i) those who are under five years old and (ii) those between 12-14 years old who spend less than 14 hours a week on their jobs, unless their activities or occupations are hazardous by nature or circumstance. Added to this are 15-17 year old children in Worst Forms of Child Labour (including hazardous work and/or working 43 hours and more per week) (BBS, 2003a).

Different authors and organizations have determined the age of child labour mainly categories such as 5-14 years and 5-17 years. Recently ILO, UNICEF, BBS etc. organizations have been defined the age of child labour between 5-17 years and among them 15-17 years are considered for hazardous working. Drought and several other environmental fluctuations are common phenomenon in Bangladesh and drought exists about 9 months in a year. Our study area is also under Barind tract where drought, excessive rainfall and some other common environmental unsteadiness are subsisted. Due to these types of inconsistencies children are matured earlier in Bangladesh. Considering these factors we have decided to work with children between 5 to 14 years.

1.8.2 Difference Between Child Labour and Child Worker

The children engaged in labour force are mostly from unjust society or disadvantaged families do work mainly for three reasons:

1. Earning money in exchange of labour;
2. Getting food, cloth and accommodation;

3. Learning by doing

Based on these, the disadvantaged children can be termed child labourers who are engaged in labour market in order to earn their livelihood.

Whereas, the children those who contribute their work for their family and for self interest without any financial support are considered as child worker.

1.8.3 Hazardous Work

Hazardous work by children is any activity or occupation which, by its nature or type, has or leads to adverse effects on the child's safety, health (physical or mental), and moral development. Hazards can also come from excessive work load, physical conditions of work and/or work intensity in terms of duration or hours of work even though the activity or occupation is known to be non-hazardous or safe. The following criteria are used for identification of hazardous child work: i) any child working in mining and construction was considered to be in a hazardous work: ii) beyond mining and construction a number of occupations were considered to be of hazardous nature; for example, work with heavy machinery or exposure to pesticides; and iii) any child below the age of 18 working 43 hours or more a week was considered to be in a hazardous work. (BBS, 2003a).

1.8.4 Worst Forms of Child Labour (WFCL)

The ILO Convention on the Worst Forms of Child Labour 1999 (No. 182) Article 3 identifies the worst forms of child labour (WFCL) as follows:

- a) all forms of slavery or practices similar to slavery such as the sale and trafficking of children, debt bondage and serfdom and forced or compulsory labour, including forced or recruitment of children for use in armed conflict;
- b) the use, procuring, or offering of a child for prostitution, for the production of pornography or for pornographic performances;
- c) the use, procuring, or offering of a child for illicit activities, in particular for the production and trafficking of drugs as defined in the relevant international treaties;
- d) work which by its nature or the circumstances in which it is carried out, is likely to harm the health, safety or morals of children.

In determining the types of work referred to in Article 3(d) of the Convention, accompanying Recommendation No. 190 defines the following:

- a) Work which exposes children to physical, psychological or sexual abuse;
- b) Work underground, under water, at dangerous heights or in confined spaces;
- c) Work with dangerous machinery, equipment and tools, or which involves the manual handling or transport or heavy loads;
- d) Work in an unhealthy environment which may, for example, expose children to hazardous substances, agents or processes, or to temperatures, noise levels, or vibrations damaging to their health;
- e) Work under particularly difficult conditions such as work for long hours or during the night or work where the child is unnecessarily confined to the premises of the employer.

1.8.5 Causes of Child Labour in Bangladesh

Child labour is the product of socio-economic reality of Bangladesh. The Status of Child Labour in Bangladesh, 1996 revealed three factors responsible for child labour:

- **Push Factor:** The factors that compel a child to engage in the labour force for survival is called push factor. Acute poverty, death of family earner/father, abandoned by parents and natural calamities are the major factors that lead children towards labour market.
- **Attraction:** With the increasing demand of labour force in the labour market there is a propensity of employing children as cheap labour by the factory owners or other employers. There are some gleaming things in urban areas that attract children towards labour market. Most of the employers employ children as because children are cheap and they can be easily persuaded to work long hours. In addition, they have minimal wage demands and are easily manageable.
- **Socio-psychological Factor:** Due to failure in life, socio-psychological problem i.e. being frightened of parents and deception of family members, children engage in labour force for survival and sometime prefer a nomadic life.

1.8.6 Child Laws in Bangladesh

Bangladesh is an overpopulated and one of the poorest countries on the world. Amidst of harsh reality parents are compelled to send their children in the workplace and they

become child labour. But the constitution of the People's Republic of Bangladesh ensures the rights of children. According to the constitution of Bangladesh a human being remains a child up to the age of 16 years while in the National Child Policy, the age is 14 years. After the independence in 1971, we got a Constitution. It has guaranteed rights of children and child labour as well. Some of the Articles relating to child labour are as follows: i) to emancipate the peasants, workers and backward sections of the people from all kind of exploitation there are the fundamental duties of the state, ii) providing food, clothing, shelter, education and medical care, ensuring right to work, rest, recreation, leisure and social security are the fundamental responsibilities of the state, iii) removing illiteracy from the country, free and compulsory education is guaranteed by the country, iv) in favour of women or children the state will make special provision, and v) forced labour is prohibited and considered as a punishable offence (Article 14,15,17,28, & 34(1)).

Child labour, in general, is not illegal in Bangladesh although different laws prohibit/discourage employment of children of different ages. According to these laws and legislations children up to different ages are restricted to be employed. Bangladesh ratified the United Nations Convention on the Rights of the Child of August 3, 1990 and the Convention came into force on September 2 the following year. Bangladesh attended the World Summit which was held in New York in 1990 with the assistance of UNICEF, the Government of Bangladesh formulated a National Plan of Action (NPA) for the children. Bangladesh has also ratified 5 ILO conventions related to child work condition and child rights.

1.8.7 Child Rights

All human rights apply to all boys and girls. While societies may vary in their ideas on childhood and child development, one thing that all can agree on is the importance of the well-being of children. It is well recognized everywhere that children need special care and protection for healthy development because of their special needs and vulnerability. The rights of the child as defined by the Child Right Convention (CRC) include four core principles as follows:

Equality – Like adults, children can be subject to discrimination which has a negative impact on a child's opportunities and conditions in life. Therefore, all children entitled to equal rights and governments have been obligation to uphold these. For example:

- right to birth registration
- right to a name and nationality
- right to protection from all forms of abuse, neglect, discrimination and exploitation.

Rights to survival and healthy development – Every child have a right to develop to his or her fullest potential, and are entitled to:

- right to basic needs, including food, shelter and access to health care
- right to free primary education
- right to childhood- to rest and play and to have friends
- right to protection from economic exploitation or any work that interferes with education or that is hazardous and harmful to health, physical, mental, and social development
- right to special assistance for children with special needs. For example: child refugees, displaced children, child victims of abuse and disabled children.

Participation – All girls and boys, according their age and maturity, have the right to participate in making decisions that affect them. Boys and girls should be encouraged to take part in decision making at home, in school and in their own community. Key participation rights are:

- right to express views and opinions
- right to receive and give information in an accessible and understandable form
- right to be an active member of community – to enjoy own culture, to practice own religion and to use own language
- right to be a member of a group.

Best interest of the child – The two nations of children as competent human beings on the one hand, and as children who are vulnerable and need protection on the other hand, may conflict when deciding what is best for the child. This principle provides the solution to this problem: all decisions that affect boys and girls must give primary consideration to them. In determining what is “best” for them, it is important to seek the views of the affected girls and boys (Haspels and Suriyasarn, 2002). Bangladesh

ratified the United Nations Convention on the Rights of the Child on August 3, 1990 and the Convention came into force on September 2 the following year.

1.9 Importance of the Study

The study on child labour is not only an important issue for social reasons but also for economic ones. Little research work has been done on child labour in different working sectors, which does not provide in-depth understanding of the problem. But, the impact of child labour on the economy has the great contribution and plays a vital role in GDP of Bangladesh. Of all the sectors which use child labour, the agricultural areas have been traditionally the starting point for the young rural child's life. Children are expected to follow their parents to the fields. There are no schools and if they do exist, they rarely provide appropriate education. This is why the agricultural sector is the largest recruiter of working children in Bangladesh. But there is no effective study done in Bangladesh on child labour in agriculture sector though 56% children are involved with this field (BBS, 2003a). The study of Rajshahi division is agriculture prone areas and most of the children are bound to work with this field to fulfill their poor family requirements and they have to deprive from education. With the expansion of the working sector in Bangladesh it is noticed that the nature and scope of hazardous child labour in agriculture sector is increasing gradually. At present there is no proper information of child labour in agriculture in the study areas to enable comparative analysis. To know the children's socio-economic condition of the study area, this research includes major information relating to child labour that will help engage the researchers to do in-depth study on the issue, which in turn, is expected to help development policies and to take initiatives to eliminate the child labour from agriculture sector.

1.10 Objectives of the Study

In contrast to previous research on child labour in agriculture sector in Bangladesh, this study is intended to bring out detailed information on the nature and problems of child labour in my study area. It attempts to highlight the perceptions and behaviour of these children towards education, work and society. Special focus is given to the family's economic background from which child labour originate. To accomplish every research study, the researcher has to undertake a plan preparation with one or more objectives. My research study is not out of that. I do have some special purpose

in this study. The special objectives of my study are to observe the overall situation of “Socio-economic correlates of child labour in agriculture sector: some selected rural areas of Rajshahi, Bangladesh.” This work has therefore been designed to realize the following fundamental objectives:

1. to investigate the number of child labour in agriculture sector,
2. to investigate the socio-economic correlates of child labour, and
3. to study the impact of socio-economic factors on child labour.

It is believed that the findings of this study will contribute to a holistic understanding of the problem of rural child labour in agriculture sector. It is expected that the findings will assist in developing programs for reduction and prevention of the problem by providing information to organizations that work with or on behalf of children. It is also foreseen that they will assist in raising public awareness of this social problem and will contribute to legal reform to result in more effective laws in the future.

1.11 Review of Literatures

Child labour is a pervasive problem through the world, especially in developing countries. For this, the literature on child labour is extensive and a good number of studies have been carried out in the area of child labour in agriculture during the last few decades. Some of these concentrated on the studies of demand for child labour , child labour and AIDS, causes of child labour, child labour in agriculture, child labour in garments sector, laws and practice of child labour and so on. However, only a few numbers of the studies have been presented on socio-economic factors that affecting child labour in agriculture sectors. In this connection only a brief account of the earlier relevant literatures in the context of the present study has been reviewing briefly below.

Wright, D. (2005) in his study investigated that there is an abundant supply of children in rural Bangladesh, who live on farms and plantations and their labour is much cheaper than that of an adult and they are more compliant than adults. He also investigated that poor families feel the need to supplement income in every possible way, and child work cannot be ignored. He found that the plantation industry benefits enormously from the advantage of child labour. He showed that poverty is the most

often cited reason for the use of child labour in agriculture and shortly, the employment of children increases total family income, but this may well not be the case in the longer term. He also emphasized that many children work because child labour has always been an accepted norm within the social structure, although the types of work that children have changed to some extent, especially in the urban areas. Later he observed that the lack of consistent and workable government policies also contribute to the use of child labour in agriculture and working in agriculture are exposed to many hazards that endanger their safety and health. In this field they are at risk for two reasons other than being child workers: i) They are involved one of the world's most dangerous sectors and ii) Rural areas are generally poorer than cities, although superficially they may appear to have a better quality of life in some respects. Rural children in developing countries tend to have lower weight and life expectancy at birth, higher mortality and morbidity rates, greater incidence of malnutrition, and lower school enrolment and completion rates than urban children. This combination of risks makes rural working children especially vulnerable.

Islam, M. J.A. (2003) identified the worst forms of child labour in match industries in Bangladesh and their vulnerable younger siblings. In this paper he depicted on their socio-demographic profile and attempted to find out the reasons due to why parents are impelled to send their children to workplace of match industries in Dhaka. He enthusiastically tried to show how the detrimental affects of hazardous match producing activities divest the children from their proper socialization rights and opportunities, and furthermore dragoon them into the duties of early adulthood.

Majumdar, Dolui & Banerjee (2001) observed that division of labour in agricultural operation generates some types of job in which children are equally efficient to their adult counterparts. They investigated the employment of children in such works greatly benefits the farmers. It reduces the burden of total cost on labour. Although improvement in technology provides the scope for child employment and market competition compels farmers to employ child labour, agricultural modernization in sub optimal scale encourages higher demand for child labour. They analyzed and found that small operational landholding; small and insufficient asset base, financial constraint, and uncertainty of crop prices are responsible for sub-optimal use of

modern technological package and in turn is responsible for large incidence of child labour. They argued that multiple cropping; agricultural technology and agricultural development have positive effect on child labour and fertility. Finally they found that modern technology applied sub optimally can explain the higher demand for child labour, higher fertility and higher supply of child labour in the capital using stage of agricultural modernization.

Masum, M. (1999) described in his paper child labour is simply the most severe form of child exploitation and child abuse in the world today. He observed that in any society, working children, as a socio-economic group, happens to be the most disadvantaged of all since. They are to work for a living, sacrificing their childhood as well as their future for bare survival of self and family. He found that child labour is sheer realities who are engaged in hazardous jobs, working under most unhygienic conditions in Bangladesh. Yet the prevailing socio-economic conditions do not permit outright elimination of child labour from one particular industry may culminate in an increase in child labour in another. Later, he observed that it is not possible to force the child workers to attend school full-time.

Nasim, Shahjahan and Smita (1998) have found that in Bangladesh, child labour has become more visible and controversial in recent years as structural reforms and macro-economic stabilization policies have stressed exports. They surveyed that global competition in carpets, textiles, and apparel, shoe and leather items has promoted the employment of thousands of children who often work under quite inhumane conditions. They are also in the informal sectors of agriculture, industry, prostitution, house-domestics, and then there is a large part of this informal sector comprising street children who do all kinds of miscellaneous work. They observed that domestic workers are at the mercy of their employers and the life of a bonded worker is nothing better than that of a chained animal. The system has to be informal and flexible, as only non-formal education can serve as a bridge for working children to enter the world as productive and healthy. They followed from their survey that the state, society, parents and international agencies need to play effective roles in eliminating child labour but the interests of different players in this area of course

often diametrically opposed. They found that the child labour in less developed countries especially in Bangladesh appeared to us as a burden not as a asset.

Mannan and Islam (1998) in their paper observed that majority of child labour involved in domestic work and mass poverty is primarily responsible for it but the main cause that is mainly responsible for the children to work in houses is the lack of government and private rehabilitation centers for the children. They also found that unfortunately large number of children engaging themselves in domestic work and this trend has a serious negative influence on the socio-economic condition of the country.

Thapa, Chhetry and Aryal (1996) in their study investigated that child labour in Nepal exists largely due to a lack of access to resources (poverty) and low levels of literacy. They also observed that poverty affects proportionately more female than male children. They suggested that a two-pronged policy intervention is needed: one which would make it possible for people to raise their income, and the other which would make simultaneous efforts to increase literacy. They found that the rural agricultural sector lacks legislation prohibiting the employment of children and enforcing schooling. they analyzed the data in his article provide the macro-level context to examine micro-level factors affecting specific causes of poverty and literacy towards developing specific intervention programmes.

Ahmed and Quasem (1991), in their paper found that most of the children worked within the household and in the case of family enterprises boys were largely involved in outside work. However, very poor families were often forced to send their children to work for others. They observed that wage employment among children depends clearly on poverty and underdevelopment of the villages together with the availability of job. They also found that the child work within households and family enterprises was affected by the importance of agricultural technology, non-agricultural activities, school facilities and good communication with urban areas have a strong negative influence on child labour in spite of the greater employment opportunities for children in Bangladesh. In their study observed that the work load of women and children was the highest among small farmers. They found that some boys worked as much as the adults (261 man-days), but on average, girls spent more time in productive work than

boys. They concluded that if children stop working, women can gain more than men in the labour market, but they would lose more in terms of work within the household. They found that school facilities affected the education of girls more than that of boys. They reviewed that the measures for controlling child labour there are laws but in most cases, these are inoperative and unenforceable.

Ivy (1990) found that the employers of small scale and cottage industries cannot adopt modern sophisticated technology which requires huge investment but they have to face strong competition to earn at least a minimum level of profit and thus to survive in the industry. Then it is needed to cut down cost by any means. Therefore, the employer employ child labour for reducing cost which costs more or less one third of the wage of an adult labour.

Eldeeb (1990) introduced that, for short term planning, some policies should be formulated to provide protection for those children already at work. In addition, the current educational policy has to provide children with concrete benefits and develops their attitude in order to control drop out phenomenon.

Levson (1989) analyzed the determinants of child labor force participation in Brazil. The result of logit parameter estimate was that, the 10 years old child with uneducated mother, in a family below the average income, with average family size and where mother is divorced or widowed has a predicted probability of child being employed, the association is positive and higher than if the inverse is true and of the family is nuclear.

Saga (1975) discussed that the economic value of children to their parents varies substantially by their family characteristics that influence the cost benefit ratio. He found that parent's educational, occupational and income statuses are inversely related to the probability of the child being used as a source of income. As a result of multivariate analysis for Bangladesh Fertility Survey showed the positive correlation between child labor and single parent household, rural residence, landless household, father employment in agriculture, and low parental educational achievements.

From the above mentioned several reports and journals we have found that the children are involved with various types of working sectors. In Asia and rest of the world, some organizations and the individual authors worked on child labour in

agriculture sectors. Although Bangladesh is an agriculture prone country and even more or less 70% working children are involved their life with agriculture field and they are contributing a great role for GDP but there is no specific research conducted on child labour in agriculture sector. Our working area is also the major agriculture prone area and till now which is not covered under this type of research and so there is no proper information is available on child labour in agriculture sector in our working area. Considering these circumstances we have decided to work on child labour in agriculture sector and tried to bring out a real picture on the working children. This thesis would also help to the researchers and national policy makers to find out the original situation of child labour in agriculture sectors.

1.12 Organization of the Study

This section will provide us the organization of the study. The study is organized in seven chapters. Following these chapters are-

Chapter One contains background of the study, concept and terminology, objective of the study and review of literature.

Chapter Two will provide information about data and methodology. of which introduction, selection of the respondents, nature and sources of data, preparation of questionnaire, data collection, data processing and analysis, description of the variables, description of some technique of analysis are presented in this chapter.

Chapter Three will illustrate the child labour in the study area, which includes socio-economic characteristics of child labour.

Chapter Four will illustrate age and sex distribution of child labour, which includes distribution of child labour by age & sex and other socio-economic variables.

Chapter Five contains the most important part of the present study. This will produce the logistic regression analysis to investigate the determinants of working hour burden and occupation of child labour

Chapter Six contains another most important part of the present study. This will produce the factors affecting regular working hour status and duration of involvement in agriculture sector using multiple classification analysis.

Chapter Seven contains the summary of the discoveries so far in this study and major findings and policy implication are made and giving some recommendation for further improvement of the study.

Chapter Two

Data and Methodology

2.1 Introduction

Research methodology is the philosophy of research to systematically solve the problems. In this methodology, we study the various steps that are generally adopted by a researcher in studying his research problem along with the logic behind them. It is necessary for the researcher to understand not only the research methodology but also consider the logic behind the methods which is used in the context of the research study and explain the research is conducted. The present chapter is confined to indicate a brief description of the selected population, data i.e., sources of data, sample design, development of questionnaire, fieldwork & data processing and background characteristics, analytical methodology and all other issues relevant to the study.

2.2 Selection of the Respondents

In statistics, population is an aggregate of the elements possessing certain characteristics of interest in my particular investigation, but in demography population means the human beings. Here in this study, the child labour of age 5-14 years in Chapai Nawabganj and Rajshahi districts are the selected population i.e., the unit of study with which this research is really made.

2.3 Nature and Sources of Data

The sources of data of this study were taken by purposive sampling method. The present study is based on a sample of 1764 child labours from 14 unions of 8 thanas under Chapai Nawabganj and Rajshahi districts. Some of the respondents have shown hesitation to give answers of some questions belonging to the questionnaire. It may be due to ignorance about the purpose of survey. The respondents who are not well educated could not give their exact monthly income and expenditure. Some elite persons were unwilling to give answers of the entire questionnaire. The distribution of the sources of data by selected areas is as follows:

Table 2.1: Distribution of Data by Selected Areas

Name of District	Name of Upazila	Name of Union	Sample Size
Chapi Nawabganj	Nawabganj	Jilim	208
	Nawabganj	Sundarpur	202
	Nawabganj	Baliadanga	100
	Nawabganj	Kalupur	176
	Nawabganj	Gobratola	149
	Volahat	Doldali	97
	Volahat	Zambaria	100
	Gomostapur	Radhanagr	59
	Gomostapur	Alinagar	101
	Nachal	Koshba	100
	Shibgonj	Ranihati	100
Rajshahi	Tanor	Mondamala	118
	Charghat	Anupampur	202
	Bagha	Pakuria	52
Total Sample Size			1764

2.4 Preparation of Questionnaire

According to the goal of this research problem, a questionnaire was made. Data has been collected through individual questionnaire. The questionnaire was designed considering the following characteristics:

- Number of questions in the questionnaire should be limited;
- A respondent should adequately be assumed that his identity will not be against his interest;
- Avoid long and confusing questions and formulate simple and short questions;
- Start with easy questions then slowly put the difficult ones.

Because maintaining ones of its sequences are essential in the questionnaire for the research work.

To avoid unnecessary trouble and hazardous situation, pre-testing of the schedule were done and modification of the contents of the schedule were made in the light of pre-testing. A draft questionnaire was first prepared and pre-testing of the same was completed. It was then finalized for field survey by eliminating the anomalous and inconsistencies present in the draft questionnaire. Questions are arranged in logical sequence and all questions relating to one aspect are grouped under one sub-head.

Most of the questions are close-ended and the answers chosen by the respondents were indicated by the tick mark. Some open-ended questions are included to find out

the opinions of the respondents with having space provided for writing in answers. Considering the difficulties of analysis of open-ended questions, we kept the number of open-ended to minimum. While designing the questionnaire, attention was given to the wording of the questions so that the respondents found it simple and understand easily. In certain situation local dialect of some terminology are used.

2.5 Data Collection

The data should be collected keeping in view the objectives of the study. The editing of the completed questionnaires helped in amending and recording errors or eliminating data that are obviously erroneous and inconsistent. All kinds of mistakes have been corrected where it was found in questionnaires and all answers have been observed carefully. As a result there is no irrelevant information. The tendency should not collect too many data, but the important one and some of which are never subsequently examined and analyzed. In this survey the method of direct interview was used. The enumerators were mainly responsible to collect information and recorded them properly. Attention was given to record factual and true statements made by the respondents.

In any survey, enumerator's role is the most significant with respect to coverage and reliability of data collection. The success and failure of the enumerators in eliciting relevant responses is largely and exclusively dependent on their efficiency, capability and responsibility. In August 2004, we have started our fieldwork for the collection of data. Fieldwork commenced on August 20, 2004, and was completed September 30, 2004. In this survey 6 enumerators were engaged and all of the 6 enumerators have done the work of enumeration in 3 groups. All of them are the students of 3rd and 4th year students in the department of Population Science and Human Resource Development, University of Rajshahi. Among the 3 batches, 2 were engaged to collect information in rural areas of Chapai Nawabganj district and 1 was in Rajshahi district. They visited from field to field & door to door and collected data by personal interview.

A wide discussion about the coverage and contents was made with the enumerators. They were given necessary instruction regarding ways of collecting data and in the art of putting questions in such a tactful way that maximum responses and reasonably

accurate information could be obtained under all circumstances. All concepts and definitions used were clearly explained and information actually to be collected was vividly shown to the enumerators by users of clear illustration and direct interview. The enumerators were also given the field training as well. I was occasionally guiding the enumerators in the field. In order to obtain ready solutions to the problem, which had been faced during enumeration, the enumerators were advised to contact with me, so that I could solve the problems with the consultation of my supervisors.

Before beginning the fieldwork wide discussions about the scope of the research were made with the concerned people of the Union Council and their cooperation and help were sought. They extended their cooperation whenever and wherever necessary. Sometimes the presence of any member of the Union Council was found to be useful in having actual information.

2.6 Data Processing and Analysis

The easiest procedure of analyzing the data is to use computer program. At present nobody thinks to analyze the data without a suitable computer program. No other alternative is available to analyze the data quickly, easily and correctly. So, we have selected a suitable computer program for data entry and analysis. For the data processing and analysis following stages are followed:

2.6.1 Editing

The data are edited rigorously to make collection of any existing inconsistencies in data and to minimize non-sampling error of the study. After editing, the questionnaires have been ready for coding.

2.6.2 Coding

After editing the questionnaire, the data were coded according to code plan. After the completion of coding, the data are ready for processing in the computer.

2.6.3 Computerization

Edited and coded data are next processed in the computer. Entire computerization of data has performed by a computer package named SPSS (Statistical Package for Social Sciences) for windows version 10.0 and 7.52, the convenient program for data analysis for social sciences, was used. Microsoft Excel and Microsoft Word are used for completing the research. To analyze the data all the qualitative variables were coded.

2.7 Description of Independent Variables

In this study, to investigate various aspects of the respondents of the survey, we deal with large number of predictor variables. For the suitability of this study some variables are recoded and at the same time some new variables are created by combining information of some other variables instead of the variables with the original codes. The selected demographic and socio-economic variables used for this study from chapter three to chapter six are described below.

The demographic characteristics included in this study are age and sex and so on.

This study also includes socio-economic characteristics which are religion, educational qualification, types of livelihood, condition of house, father's occupation, mother's occupation, hazardous condition, place of treatment, personal working time, main expenditure of family, causes behind child labour, loan amount of family, process of repaying loan, causes behind loan of family, number of meals taken in a day, etc.

In order to explain the dependent variable a number of independent variables were considered:

Age: There is no unambiguous theoretical prediction of the effect of age on child labour. Child labour may be expected to be increasing in age if labour productivity is increasing in age. Alternatively, child work may be perceived less harmful or more socially acceptable as the child grows older. At the same time, school participation may be positively related to age. There is some evidence that poor health delays school enrolment in developing countries (Glewwe and Jacoby, 1995). Thus the age of child labour is the important predictor variable which is justified mainly because of its broad descriptive nature. To the study of population respondent's age come at the first consideration. It gives an idea about the proportion under particular age groups, which may be associated with socio-economical activities. The variable age of respondents included into the analysis are categorized into four groups, these are 5-8 years, 9-10 years, 11-12 years and 13-14 years.

Sex: The term sex distribution systematic approaches to examine the social and economical differences. It endeavors to identify and understand the differential roles, relations, resources, benefits, constraint, needs interest of child labour. These variable

lead children into engaging in the worst forms of child labour. Sex differentials provide a solid basis for planning and implementation of research. So, sex of respondent is very important determinants.

Religion: Religion is more closely related to child labour. As the majority proportion of population Bangladesh are Muslims, the religion are categories into the following two groups, these are Muslims and non- Muslims.

Location: In most developing countries, the incidence of child labour is higher in rural than in urban area. The most likely reason for this is the predominance of self-employment in rural economics and, relative underdevelopment of both markets and infrastructure (economic and social, including schools). There are also province or region effects within rural areas, which are typically significant, reflecting the vast regional differences in productivity that characterize developing countries (Valotra, s., 2003). Location is very important factor for child labour study in agriculture sector. In the present study, location is classified into the following two categories: Chapai Nawabganj and Rajshahi.

Housing condition: It is another important factor in social studies is agriculture sector. In our present study, condition of house is divided into the following two categories: permanent and temporary.

Place of treatment: One of the important determinants of child labour in agriculture sector is treatment place. When children are fall into any severe problem, they have to take proper treatment. We have classified this variable for our analysis into three categories: government hospital, community clinic, and village doctor.

Savings: Savings is an important determinant for analyzing child labour. Children are continuing their work with hazardous condition day after day and they try to save their money for future. In our study, we have classified this variable into five categories such as no monthly savings: upto Tk.200, Tk.201-400, Tk.401-600, and above Tk.600.

Distance between working field & central town: It is very important determinant for identifying the working condition of child labour. It also indicates the actual infrastructure of child labour both in remote areas and near about thana. For proper

analysis, we have classified this variable into three categories such as upto 5 km, 6-10 km, and above 10 km.

Father's occupation: Father's occupation has been identified as one of the most important socio-economic determinants of child labour. They have to involve their job to carry on their family as a leader into five categories: Died, Agricultural labour, Non-agricultural labour, Business, and Construction.

Educational qualification: Educational qualification has a significant effect of socio-economic correlates. Education is the main factor that regulates the income, occupation, family status, and knowledge of balance diet and protection of health from severe diseases. So, the education of respondent in this study is classified into three categories such as, illiterate, class (i-iii), and class (iv-ix).

Income: Income of child labour is very important factor for socio-economic analysis in agriculture sector. Most of the children were of the view that they had no access to a sufficient and regular income for living. Such conditions have increased the indebtedness in their family, if they unable to earn regularly, they will not repay this loan and they will unable to save money for future. In our study, we have classified this variable into four categories such as upto Tk.30, Tk.31-40, Tk.41-50, and above Tk.50 per day.

Causes behind child labour: Children come in the working field due to several reasons. Among them poverty is the main cause of child labour in the world, families that are poor to a much larger extent than families that are well off, put their children to work (Persson, 2004). Some sociologists maintain that the major cause of child work is parental poverty (<http://www.globalmarch.org/cl-around-the-world/i-a-child.php>). Recently growing information about the issue has brought forward other reasons as well as exclusion, inequality and injustice. The majority of the children found in child work is from the most excluded and exploited groups of society; unregistered immigrants and refugees, the internally displaced, ethnic minorities and the very poorest families in society. That is why, causes behind child work is the important factor for explaining the condition of child labour in agriculture sector. In our study, we have classified this variable into three categories such as, poverty, parent's will, and self-will.

Table 2.2 List of Socio-Economic Variables with Their Categories and Codes

Socio-economic variables	Categories
Age	1 = 5-8; 2 = 9-10; 3 = 11-12; 4 = 13-14
Sex	1 = Male; 2 = Female
Religion	1 = Muslim; 2 = Non-Muslim
Educational qualification	0 = Illiterate; 1 = Class (i-iii); 2 = Class (iv-ix)
Types of livelihood	1 = Own house; 2 = Rented house; 3 = Others (other's house = house beside road, and boarding house)
Condition of house	1 = Permanent; 2 = Temporary
Father's occupation	0 = Died; 1 = Agricultural labour; 2 = Non-agricultural labour; 3 = Business; 4 = Construction
Mother's occupation	0 = Died; 1 = Agricultural labour; 2 = Farming 3 = Housewife; 4 = Stitching
Launch hour	1 = 12.00 A.M.; 2 = 13.00 P.M.; 3 = 13.00 P.M.
Wake-up time	1 = 5.00 A.M.; 2 = 6.00 A.M.; 3 = 7.00 A.M. 4 = 8.00 A.M.
Hazardous condition	0 = No; 1 = Yes
Place of treatment	1 = Govt. hospital; 2 = Community clinic; 3 = Village doctor
Personal working time	1 = Morning; 2 = Afternoon/Evening; 3 = Night
Main expenditure of family	1 = Unknown; 2 = Known
Causes behind child labour	1 = Poverty; 2 = Self will; 3 = Parent's will
Regularity for work	0 = No; 1 = Yes
Regular payment for work	0 = No; 1 = Yes
Working days within a month	1 = <15; 2 = 15-19; 3 = 20-24; 4 = >24
No. of meals taken in a day	1 = 1 Meal; 2 = 2 Meals; 3 = 3 Meals
Sufficient food for health	1 = Yes; 0 = No
Savings	0 = No Savings; 1 = Upto 200; 2 = 201-400 3 = 401-600; 4 = Above 600
Income (Tk.)	1 = Upto 30; 2 = 31-40; 3 = 41-50; 4 = Above 50
Expenditure (Tk.)	1 = Upto 30; 2 = 31-40; 3 = 41-50; 4 = Above 50
Father's income (Tk.)	0 = Died; 1 = Upto 30; 2 = 31-40; 3 = 41-50; 4 = Above 50
Father's expenditure (Tk. per day)	0 = Died; 1 = upto 30; 2 = 31-40; 3 = 41-50 4 = Above 50
Mother's income(Tk. per day)	0= Died; 1 = upto 30; 2 = 31-40; 3 = 41-50 4 = Above 50; 5 = Unemployed
Mother's expenditure (Tk.)	0 = Died; 1 = upto 30; 2 = 31-40; 3 = 41-50 4 = Above 50; 5 = Unemployed
Work start	1 = 6-7 A.M.; 2 = 7.3-8.3 A.M.; 3 = Above 8.3A.M.
Work finish	1 = 13-15.3 P.M.; 2 = 16-16.3 P.M. 3 = 17-17.3 P.M.; 4 = Above 17.3 P.M.
Bed time	1 = 19-20.3 P.M.; 2 = 21-21.3 P.M. 3 = 22-22.3 P.M.; 4 = Above 22.3 P.M.
Loan amount of family	0 = No Loan; 1 = Upto 2000; 2 = 2001-4000 3 = 4001-6000; 4 = 6001-8000; 5 = Above 8000 6 = Do not know the amount of loan 7 = Do not know whether family is in loan

Continue table-2.2

No. of years to repay loan	0 = Below 1 year; 1 = 1 year; 2 = 2 year; 3 = 3 year 4 = 4 year; 5 = Unknown; 6 = No loan
Process of repaying Loan	1 = Through working; 2 = Through business 3 = Taking NGO's loan; 4 = Through land sale 5 = No loan; 6 = Unknown
Causes of taking loan	1 = Agricultural land purpose; 2 = House construction; 3 = Poverty; 4 = Marriage purpose 5 = Education; 6 = Treatment
Drugs uses child labour	0 = Non-addicted; 1 = Smoke; 2 = Ganja 3 = Tari; 4 = Vang

2.8 Techniques of Analysis

In this section, for assessment of the socio-economic correlates of child labour in agriculture sector, bivariate analysis and contingency analysis for the selected socio-economic variables were undertaken to examine their interrelationship. When we examine each independent variable individually, it can only provide a preliminary idea of how important each variable is by itself. So, the relative importance of all the variables has to be examined simultaneously by some multivariate methods. Multivariate analysis such as Logistic Regression Analysis and Multiple Classification Analysis (MCA) were performed to assess main effects of the independent variables. A brief discussion of these methods together with the results obtained by using the models to our data is given below.

2.8.1 Contingency Analysis

In this section, we present contingency analysis, which is designed to test any association between different phenomena that could be useful in the socio-economic condition of the child labour. For contingency analysis, we assume the hypothesis of independence or homogeneity as the null hypothesis (Gupta and Kapoor, 1994). The expected frequency under the hypothesis is calculated as:

$$E_{ij} = \frac{O_i \times O_j}{N} \dots\dots\dots (2.9.1.1)$$

where, O_i = number of elderly at the i th row of respective contingency table,

O_j = number of elderly at the j th column of respective contingency table

N = total number of elderly.

All the contingency tables are prepared on the basis of classification of variables. From each contingency table examination of association between component and the

various segment of the component are made by computing chi-square using the formula given by:

$$\chi^2 = \sum_{ij} \frac{O_{ij}^2}{E_{ij}} - N \dots\dots\dots (2.9.1.2)$$

Which follows chi-square distribution with (r-1)(c-1) degrees of freedom.

Where, O_{ij} = The observed number of elders in (i,j)th cell

E_{ij} = the expected number of elders in (i,j)th cell

r = number of rows

c = number of columns.

2.8.2 Logistic Regression Analysis

There are a variety of multivariate statistical techniques that can be used to predict a binary dependent variable from a set of independent variables. Multiple regression analysis and discriminant analysis are two related techniques but these techniques are applicable only when the dependent and independent variables are measured in interval scale under the assumption that they are normally distributed normally with equal variances. However, in most applications, dependent variable may be dichotomous one and one or more explanatory variables are qualitative or measured in nominal or ordinal scales and the assumption of normality is violated. To overcome this problem, a very interesting and appropriate technique is the linear logistic regression method. Cox (1958) is the pioneer of logistic regression model. Subsequently this model was illustrated by Wolker and Duncun (1967) and Cox himself (Cox, 1970). More recently Lee (1980) and Fox (1984) have further illustrated the Cox's model. So, to observe the factors, which affect the dependent variable- desire for more children, we use logistic regression analysis. Here the dependent variable is desire for more children which is coded as 0 = No, and 1 = Yes. The logistic regression method does not require any distributional assumption. This regression is useful when the dependent variable is dichotomous. Since it does not require any distributional assumptions, unlike many other multivariate techniques (i.e., the variables are normally distributed with equal variances), it can appropriately handle situations in which the independent variables are qualitative or measured in nominal and ordinal scale. The logistic regression model can be used not only to identify risk factors but also to predict the probability of success. This model

expresses a qualitative dependent variable as a function of several independent variables, both qualitative and quantitative (Fox, 1984).

Let Y_i denote the dichotomous dependent variable for the i th observation and $Y_i = y_i = 1$, if the i th individual is a success and $Y_i = y_i = 0$, if the i th individual is a failure.

$$\text{So that, } p_i = E\{y_i = 1 \mid X_i\} = \frac{1}{1 + e^{-(\beta_0 + \beta_1 X_i)}} \dots\dots\dots (2.9.2.1)$$

where X_i is explanatory variable and

$$\begin{aligned} 1 - p_i &= E\{y_i = 0 \mid X_i\} = 1 - \frac{1}{1 + e^{-(\beta_0 + \beta_1 X_i)}} \\ &= \frac{e^{-(\beta_0 + \beta_1 X_i)}}{1 + e^{-(\beta_0 + \beta_1 X_i)}} \\ &= \frac{1}{1 + e^{(\beta_0 + \beta_1 X_i)}} \dots\dots\dots (2.9.2.2) \end{aligned}$$

Therefore, we can write

$$\begin{aligned} \frac{p_i}{1 - p_i} &= \frac{1 + e^{(\beta_0 + \beta_1 X_i)}}{1 + e^{-(\beta_0 + \beta_1 X_i)}} \\ &= e^{(\beta_0 + \beta_1 X_i)} \dots\dots\dots (2.9.2.3) \end{aligned}$$

Now if we take natural log of the equation (1) we obtain

$$L_i = \log_e \left(\frac{p_i}{1 - p_i} \right) = \beta_0 + \beta_1 X_i \dots\dots\dots (2.9.2.4)$$

Here, $p_i/(1-p_i)$ given in (2.9.2.3) is simply the odds ratio and L_i given in (2.9.2.4) is known as log-odds.

Instead of single explanatory variable, we can count two or more explanatory variables. Let $X_{i1}, X_{i2}, \dots\dots\dots X_{ik}$ be the vector of k independent explanatory variables for the i th response. The logarithm of the ratio p_i and $(1-p_i)$ gives the linear function of X_{ij} and the model (2.9.2.4) becomes,

$$L_i = \log_e \left(\frac{p_i}{1 - p_i} \right) = \sum_{j=0}^k \beta_j X_{ij} \dots\dots\dots (2.9.2.5)$$

Where we consider $X_{i0} = 1$ and β_j is the parameter relating to X_{ij} .

The function (2.9.2.5) is a linear function of both the variables X and the parameter β . L_i is called the logit and hence the model (2.9.2.5) is called logistic regression model.

Interpretation of the Parameters

Interpretation of the parameters in logistic model is not so straight forward as in linear regression model. So, it is relevant to present a little discussion about it. Since the logit transformation, $L_i = \log_e \left(\frac{p_i}{1-p_i} \right)$ is linear in parameters, we can interpret the parameters using arguments of linear regression. Thus, the interpretation may be described as follows:

We have, $p_i = \frac{e^{\beta_0 + \beta_1 X_1 + \dots + \beta_k X_k}}{1 + e^{\beta_0 + \beta_1 X_1 + \dots + \beta_k X_k}}$ is a linear in parameter,

$$\text{i.e., } L_i = \log_e \left(\frac{p_i}{1-p_i} \right) = \beta_0 + \beta_1 X_1 + \dots + \beta_k X_k \dots \dots \dots (2.9.2.6)$$

So, arguing analogously as in the case of linear model we can say that β_j ($j=1,2,\dots,k$) represent the rate of change in $\log_e \left(\frac{p_i}{1-p_i} \right)$ for one unit change in X_j (other variables remaining constant).

The interpretation of the parameters in logistic regression has another interesting aspect. In fact, this is the proper interpretation for the parameters of qualitative variable coefficient. To describe this, we first consider that the independent variable (X_j) is dichotomous. This case is not only simplest but also it gives the conceptual foundation for all other situations. The description is given below.

$$\text{We have } \log_e \left(\frac{p_i}{1-p_i} \right) = \beta_0 + \beta_1 X_1 + \dots + \beta_j X_j + \dots + \beta_k X_k$$

Now if X_j is a dichotomous variable taking values 0 and 1, then the odds ratio 'O' (say) for $X_j = 1$ against $X_j = 0$ is (keeping all other X 's fixed).

$$O = \frac{p_i(Y_i = 1 | X, X_j = 1) / \{1 - p_i(Y_i = 1 | X, X_j = 1)\}}{p_i(Y_i = 1 | X, X_j = 0) / \{1 - p_i(Y_i = 1 | X, X_j = 0)\}}$$

$$\begin{aligned}
&= \frac{e^{\beta_0 + \beta_1 X_1 + \dots + \beta_j + \dots + \beta_k X_k}}{e^{\beta_0 + \beta_1 X_1 + \dots + 0 + \dots + \beta_k X_k}} \\
&= e^{\beta_j}
\end{aligned}$$

$$\Rightarrow \text{LogeO} = \beta_j$$

So, we can directly estimate the coefficients of a logistic regression model as $\log_e \hat{O}$ and hence can interpret. If a qualitative independent variable has m categories, we introduce only $(m-1)$ dummy variables and the remaining one is taken as reference category.

Computation of Probability (P_i)

We can compute the probability p_i from the estimated odds ratio. This calculation is very simplest. Given a data set of X variables in equation (2.9.2.5), where of course β 's are estimated from fitted model, then we have

$$\begin{aligned}
\text{Loge} \frac{P_i}{1 - P_i} &= c \text{ (Some constant).} \\
\Rightarrow \frac{P_i}{1 - P_i} &= e^c \dots\dots\dots (2.9.2.7)
\end{aligned}$$

From this equation (2.9.2.7) p_i can be computed easily.

Estimation of the Parameters

In order to estimate the unknown parameters we cannot use the standard ordinary least square (OLS) method. Because in that case we must face some special problem as non-normality of the disturbance terms, heteroscedastic variance of the disturbance terms, non-fulfillment of the axiom i.e. $0 \leq p_i = E(Y_i | X) \leq 1$ and questionable value of R^2 as a measure of goodness of fit.

To eliminate the above problem, Cox (1970) suggested the maximum likelihood estimation method in place of standard OLS method and proposed the following function:

$$L(\beta_0, \beta_1, \dots, \beta_k) = \frac{\prod_{i=1}^n \exp(Y_i \sum_{j=0}^k \beta_j X_{ij})}{\prod_{i=1}^n \{1 + \exp(Y_i \sum_{j=0}^k \beta_j X_{ij})\}}$$

$$\begin{aligned}
&= \frac{\exp\left\{\sum_{i=1}^n \left(Y_i \sum_{j=0}^k \beta_j X_{ij}\right)\right\}}{\prod_{i=1}^n \left\{1 + \exp\left(Y_i \sum_{j=0}^k \beta_j X_{ij}\right)\right\}} \\
&= \frac{\exp\left\{\sum_{j=0}^k \beta_j \sum_{i=1}^n X_{ij} Y_i\right\}}{\prod_{i=1}^n \left\{1 + \exp\left(Y_i \sum_{j=0}^k \beta_j X_{ij}\right)\right\}} \\
&= \frac{\exp\left\{\sum_{j=0}^k \beta_j t_j\right\}}{\prod_{i=1}^n \left\{1 + \exp\left(Y_i \sum_{j=0}^k \beta_j X_{ij}\right)\right\}},
\end{aligned}$$

where $t_j = \sum_{i=1}^n X_{ij} Y_i$, $j = 0, 1, \dots, k$. Then the log-likelihood function is given by

$$\text{Log}_e L(\beta_0, \beta_1, \dots, \beta_k) = \sum_{j=0}^k \beta_j t_j - \sum_{i=1}^n \log_e \left\{1 + \exp\left(Y_i \sum_{j=0}^k \beta_j X_{ij}\right)\right\} \dots \dots \dots (2.9.2.8)$$

Now taking partial derivatives of (2.9.2.8) with respect to β_j and put them equal to zero and solving the equations simultaneously and iteratively so as to produce $\hat{\beta}_j$, $j = 0, 1, \dots, k$. Iteration would continue until certain convergence criteria are met. For simplicity, the readymade results after some iteration are obtained through SPSS for windows base 10.0 version for large sample size.

2.8.3 Determining the Worth of the Individual Regressors

In the following section we have discussed various statistics that have been suggested for assessing the worth of each individual regressor. The results can be generalized to the situation in which more than one regressor is added to an existing model.

Wald Test

In linear regression, t-statistics are used in assessing the value of individual regressors

when other regressors are in the model. In logistic regression, $W = \frac{\hat{\beta}_j}{s_{\hat{\beta}_j}}$ is called a

Wald statistic. First, it should be noted that W does not have a t-distribution, even though it does have the same form as a t-statistic. Rather, W is asymptotically

normally distributed, with a large sample size n . It should be noted that there is no agreement as to the general form of what is being called a Wald statistic. The definition given herein is that given by Hosmer and Lemeshow (1989) and Hauck and

Donner (1977). But $\frac{\hat{\beta}_j^2}{s^2 \hat{\beta}_j}$, written in a different but equivalent form, is termed as

Wald statistic by Rao (1973), Cytel Software Corporation (1993), and also by Wald (1943). If the latter definition is used, the statistic would be regarded as approximately a chi-square random variable with one degree of freedom. Also there is some criticism about Wald statistic discussed by Hosmer and Lemeshow (1989), Hauck and Donner (1977) and they found that Wald statistic performed poorly, and Jennings (1986) also

questioned the use of $\frac{\hat{\beta}_j}{s \hat{\beta}_j}$.

Likelihood Ratio Test

The likelihood ratio test is based on the ratio of two likelihood function. The comparison among the observed and predict values using the likelihood function are based on the following equation:

$$D = -2 \ln \left[\frac{L(\hat{\beta})}{L(0)} \right] \dots \dots \dots (2.9.3.1)$$

Where $L(0) = \prod_{i=1}^n Y_i^{Y_i} (1 - Y_i)^{1-Y_i}$ is known as likelihood for null model.

$L(\hat{\beta}) = \prod_{i=1}^n \hat{p}_i^{Y_i} (1 - \hat{p}_i)^{1-Y_i}$ is known as likelihood function that would result

when \hat{p}_i replaces p_i . Then equation (2.9.3.1) can be written as follows:

$$D = -2 \sum_{i=1}^n \left\{ Y_i \ln \left(\frac{\hat{p}_i}{Y_i} \right) + (1 - Y_i) \ln \left(\frac{1 - \hat{p}_i}{1 - Y_i} \right) \right\} \dots \dots \dots (2.9.3.2)$$

The statistic D in equation (2.9.3.2) is called the deviance by McCullagh and Nelder (1983) and plays a very important role in case of goodness of fit test. Under the null hypothesis the statistic D will follow approximately chi-square distribution with single degree of freedom. In 1989 they stated that the chi-square approximation is

usually quite accurate for differences of deviances even though it is inaccurate for the deviances themselves.

2.8.4 Odds Ratio

Goodman and Kruskal (1954, 1959) present a great many measures of association for 2×2 table that are not function of χ^2 and give their statistical properties in their research work named odds ratio. The odds ratio is a way of comparing whether the probability of a certain event is the same for two groups. The odds ratio takes values between zero and infinity. One is the natural value and means that there is no difference between the groups compared; close to zero or infinity means a large difference. An odds ratio larger than one means that group one has a larger proportion than group two, if the opposite is true the odds ratio of 1 implies that the event is equally likely in both groups. An odds ratio greater than one implies that the event is more likely in the first group. An odds ratio less than one implies that the event is less likely in the first group.

For more details, let us consider the following typical 2×2 table:

Table 2.4

	X⁻	X⁺	Total
Y⁻	a	b	a+b
Y⁺	c	d	c+d
Total	a+c	b+d	a+b+c+d

In the above table, the odds for row Y^- are a/b . The odds for row Y^+ are c/d . The odds ratio (OR) is simply the ratio of the two odds given by

$OR = \frac{a/b}{c/d}$, which can be simplified as $OR = \frac{ad}{bc}$, hence it is clear that if the odds are the same in each row, then the odds ratio is 1.

The odds themselves are also a ratio. To explain this will take an example with probability. Let's say that the probability of success is $p=0.8$, then the probability of failure is $q=1-p=0.2$, then the odds of success is defined as 'odds(success)'= $p/q=0.8/0.2=4$, that is, the odds of success are 4 to 1. Then the odds of failure would be 'odds (failure)'= $q/p=0.2/0.8=0.25$, that is, the odds of failure are 1 to 4. Next, let's compute the odds ratio by $OR = \text{odds (success)} / \text{odds(failure)} = 4/0.25 = 16$, the interpretation of this odds ratio would be that the odds of success are

16 times greater than for failure. Now if we had formed the odds ratio the other way around with odds of failure in the numerator, we would have gotten something like this, $OR = \text{odds}(\text{failure}) / \text{odds}(\text{success}) = 0.25/4 = 0.0625$, interestingly enough, the interpretation of this odds ratio is nearly the same as the one above. Here the interpretation is that the odds of failure are one-sixteenth the odds of success. In fact, if we take the reciprocal of the first odds ratio we get $1/16 = 0.0625$.

Relative Risk

A more direct measure comparing the probabilities in two groups is the relative risk, which is also known as the risk ratio. The relative risk is simply the ratio of the two conditional probabilities. The risk ratio takes on values between zero and infinity. One is the neutral value and means that there is no difference between the groups compared, close to zero or infinity means a large difference between the two groups on the variable concerned. A risk ratio larger than one means that group one has a larger proportion than group two, if the opposite is true the risk ratio will be smaller than one. For the Table 2.4 the relative risk for the event X^+ can be defined as

$$RR = \frac{a/(a+b)}{c/(c+d)}, \text{ similarly relative risk for the event } X^+ \text{ is given by}$$

$$RR = \frac{b/(a+b)}{d/(c+d)}, \text{ the relative risk or risk gives us the percentage difference in}$$

classification between group one and group two. For example, 8% of freezers produced without quality control have paint scratches. This percentage is reduced to 5% if quality control is introduced. The risk ratio $RR = 8/5 = 1.6$ and its interpretation as 60% more freezers are damaged if there is no quality control. In order to estimate the parameters of this function, the logit regression procedure of the statistical package SPSS for windows base 10.0 version may be used.

2.8.5 Multiple Classification Analysis (MCA)

The Multiple Classification Analysis (MCA) technique, developed by Yates (1934) and it was later expanded and detailed by Anderson and Bancrarli (1952). In 1963, the computerized MCA programme was prepared by a group of researchers at the survey research center of the University of Michigan. Since then, the MCA program has been widely used in social research. MCA is a technique for examining the interrelationship between several predictor variables and one dependent variable in

the context of an additive model. Unlike simpler forms of other multivariate methods, MCA can handle predictors with no better than nominal measurements and interrelationships of any form among the predictor variables or between predictor and dependent variable. It is however essential that the dependent variable should be either an interval-scale variable without extreme skewness or a dichotomous variable with frequencies which are not extremely unequal.

In statistical terms, the MCA model specifies that a coefficient be assigned to each category of each predictor, and that each individual's score on dependent variable be treated as the sum of the coefficient assigned to categories characterizing that individual, plus the average for all cases, plus an error term.

$$Y_{ijk} = \bar{Y} + a_i + b_j + c_k + e_{ijk}$$

Where, Y_{ijk} = The score on the dependent variable of individual who falls in the Category i of predictor A, category j of predictor B and category k of predictor C,

\bar{Y} = Grand mean of the dependent variable,

a_i = The effect of the membership in the i th category of predictor A, which is equal to the difference between Y and the mean of its category of predictor A,

b_j = The effect of the membership in the j th category of predictor B, which is equal to the difference between Y and the mean of its category of predictor B,

c_k = The effect of the membership in the k th category of predictor C, which is equal to the difference between Y and the mean of its category of predictor C,

e_{ijk} = The error term related with Y_{ijk} score of the individuals.

The coefficients are estimated in such a way that they provide the best possible fit to the observed data, i.e., they minimize the sum of squared errors. The coefficients can be estimated by solving a set of equations, known as normal equations (or least squares equations). The coefficients, which are estimated by solving the normal equation systems, are called the adjusted or net effect of the predictors. These effects measure those of the predictor alone after taking into account the effects of all other predictors. If there is no interrelation among the predictors, the adjusted and

unadjusted effects of the predictions will be the same. The following criteria can be used for assessing the importance of a predictor, i.e., the degree of relationship between an independent variable and its predictive power.

Eta Statistic

This statistic can be used for assessing the bivariate relationship between a predictor and the dependent variable. Eta squared coefficient (also called the correlation ratio) can be interpreted as the proportion of variance explained by the predictor.

Beta Statistic

This statistic is an approximate measure of the relationship between a predictor and the dependent variable, while holding constant all other predictors, i.e., assuming that in each category of a given predictor all other predictors are distributed as they are in the population at large. The rank order of these betas indicates the relative importance of the various predictors in their explanation of the variance in dependent variable, if all other predictors were held constant. The beta coefficient is compared to the partial correlation coefficient in multiple regression.

The following data analysis situations can be visualized, depending upon the measurement properties of the dependent and independent variables.

Dependent Variable One	Independent Variable Several	Statistical Techniques
Interval Scale	Interval scale	Multiple Regression
Interval Scale	Nominal	Multiple Classification Analysis
Dichotomous, Polytomous	Nominal	Multiple Classification Analysis

Some advantages of Multiple Classification Analysis (MCA) are as follows:

An important feature of MCA is its ability to show the effect of each prediction on the dependent variable, both before and after taking into account the effects of all other predictors. Multiple Regression and Discriminant Analysis can also do this, but under certain restrictive conditions. They usually require that all predictor variables are measured on interval scales and the relationships are linear or linearized. MCA is not constrained by any of these conditions. The predictors are always treated as sets of classes or categories; hence it does not matter whether a particular set represents a nominal scale (categories) or ordinal scale (ranking) or an interval scale (classes of numerical variable)

Another important feature is the format in which the results are presented. All coefficients are expressed as deviations from the overall mean, not from unknown mean of the excluded class in each set. The constant term in the preceding equation is the overall mean, not some composite sum of means are available in the same table, which can be used to detect the amount of Interco-relations between the predictors.

2.9 Software and Technical Support of the Study

Data used in this study contain information of 1764 child labour in agriculture sector. Since this is large set of data, a suitable technological support is necessary for performing these analyses. In this study, entire analysis is done in personal computer, which is now one of the most effective and wonderful technological inventions.

A well-known statistical package named SPSS (Statistical Package for Social Science) Windows version 10.0 is used for analysis. SPSS can take data from almost any type of the file and use them to generate tabulated reports, charts and plots of distributions and trends, descriptive statistics and complex analysis provides the following facilities.

- The frequencies procedure produces frequency table, measures of central tendencies and dispersions, histograms and bar charts.
- The descriptive procedure computes univariate summary statistics and saves standardized variables. Descriptive computes descriptive for continuous variables, more frequently because it does not sort values into a frequency table.
- The cross table procedure produces two-way to n-way cross tabulations and related statistics and short string variables. Cross-tabulation has done between age & sex levels and different socio-economic phenomena.
- The Logistic Regression Analysis is used to build to analysis models, the complex relationships of socio-economic preferences of child labour. It also has facilities for automatically converting categorical variables into sets of independent variables.
- MCA is used to examining the interrelationship between several predictor variables and one dependent variable in the context of an additive model.
- Besides, other well-known packages like Excel were used when needed. The entire thesis was typed in MS-word 2000.

Chapter Three

Child Labour in Agriculture Sector

3.1 Introduction

Study on the socio-economic status of child labour premises the mostly employed child labour oriented sectors. Our study area comprises some selected agricultural areas of Chapai Nawabganj and Rajshahi districts of Bangladesh. Unique questionnaire was prepared to collect information from the children employed in agricultural works.

We studied over 1764 child workers. Of whom, 1591 are males and 173 are females. Among the respondents most of the children have come from poor, destitute and broken family. Harsh reality compel them to join the labour force in the tender age when they should spend their time by learning, playing, and gathering along with all favourable opportunities. Parents do not think about the schooling of their children rather they prefer engaging in jobs.

3.2 Socio-Economic Characteristics

In this chapter, the collected data has been presented in various tables (Table 3.1, Table 3.2 and Table 3.3) to pictor out the socio-economic condition elucidating the overall situation of child labour.

Age is measures by number of completed years at last birthday. For example, a person aged 25 years, 10 months and 18 days has been recorded as 25 years (BBS, 2003). As Table 3.1 depicts the vulnerable age structure of child labour with 10% between 5-8 years. This structure is changing faster, growing upward, and more than half of them are participating in paid jobs at the edge of their childhood.

As Table 3.1 reveals that the male child labour (90.2%) are dominating the whole structure of age-sex composition.

Although there are many religious communities and minorities in Bangladesh, our study proclaims a greatest share (83.7%) of Muslim child labour (Table 3.1).

Literacy measures the job and social status that individual enjoys in a society. In our study area, around two-fifth respondents have completed their education from class four to nine. However, most perilous deed is that more than 30.2% child labours are almost illiterate (Table 3.1).

Most of the child labour in the study area live in own house but their residence's construction is very poor and unhealthy. Many working children have no own house. They live in rented house and others. The above Table 3.1 states the types of livelihood of child labour in the study area. It also reveals that the residence pattern of the child labour. In the study area, 62% child labour live in their own house and 24.9% live in so called rented house. Rest of the child labor (13.1%) live in others which included other's house, house beside road, and boarding house.

Housing condition is the effective segment for child labour. The above Table 3.1 states the condition of house of child labour in the study area. It also shows that 75.9% child labour are passing their life in permanent house and the remaining 24.1% in temporary places.

We observed that more than three-fourth child labour had enforced by the poverty. In otherwords, they are doing those jobs for their existence. No child want doing hard work but 16.3% are engaging in works with their self will (Table 3.1). This is questionable. There might have some reasons that hindering the fact. Some are also pressure of their parents which may be due to the fact that those parents invest child for their financial security. From the above table, we see that more than three-fourth respondents (77 %) mention that poverty is the main cause behind their engagement in agricultural field. A good number of respondents (16.3%) say that they working willingly and 4.3% respondents say that their parents sent them to work and the remaining 2.4 % child labour are working in various reasons.

It is a matter of regret that though the child labour are low paid, they have to work for a long time without any rest due to unavailability of jobs and their family requirements. As Table 3.1 shows that about half of the total child labour bound to continue their work between 8-9 hours and only 14.3% child labour are involved their up to 7 hours per day.

Though we have collected our data from those child labour who were involved in agricultural field, 20% child labour continue their work out of agricultural field due to unavailability of jobs as per their requirements (Table 3.1).

Table 3.1: Percentage Distribution of Child Labour According to Some Selected Socio-Economic Characteristics

Characteristics	Number	%	Characteristics	Number	%
Age			Working hours		
5-8	177	10.0	upto 7	252	14.3
9-10	239	13.5	8-9	837	47.4
11-12	439	24.9	Above 9	675	38.3
13-14	909	51.5	Major occupation		
Sex			Agriculture	1416	80.3
Male	1592	90.2	Construction	153	8.7
Female	172	9.8	Domestic	152	8.6
Religions			Others	43	2.4
Muslim	1476	83.7	Income (Tk)		
Non-Muslim	288	16.3	upto 30	677	38.4
Educational qualification			31-40	624	35.4
Illiterate	532	30.2	41-50	387	21.9
Class (i-iii)	539	30.6	Above 50	76	4.3
Class (iv-ix)	693	39.3	Expenditure (Tk)		
Types of livelihood			upto 30	975	55.3
Own house	1093	62.0	31-40	575	32.6
Rented house	440	24.9	41-50	211	12.0
Others	231	13.1	Above 50	3	0.2
Total	1764	100.0	Savings (Tk)		
Housing condition			no savings	870	49.3
Permanent	1338	75.9	upto 200	623	35.3
Temporary	426	24.1	201-400	181	10.3
Causes behind child labour			401-600	35	2.0
Poverty	1359	77	Above 600	55	3.1
Self will	288	16.3			
Parent's will	75	4.3			
Others	42	2.4			

In Table 3.1 reveals that due to poverty and lack of job opportunity, about two-fifth child labour have to carry on their work earning daily only up to Tk. 30 and this percentage is deteriorating according to their higher income.

Due to poor most of the child labour expend their income to overcome their family requirement. In average they work 20-25 days within a month but they have to expend 30 days for a month to maintain their family of their requirements. The above Table 3.1 shows that maximum (55.3%) child labour expends upto Tk. 30 daily. According to their family's and self demand 32.6% and 12% child labour have to bound to expend Tk. 31-40 and Tk. 41-50 respectively. But only 0.2% child labour can expend more than Tk.50.

Savings is an important factor for child labour, because they have no availability of job. Sometimes they have to carry on jobless moment due to rough weather, physical problem, etc. So they have to conscious regarding their savings. The above Table 3.1 states that real feature of monthly savings of respondents in this study area. It indicates that more than half (49.3%) of the total respondents have no savings for future. The remaining 48.7% child labours have their savings of various amounts and out of them most of the child labours (35.3%) have been saved upto Tk. 200 for future of their plan. But only 3.1% respondents can deposit above Tk. 600.

The life of child labour depends on their working days because if they work they manage food otherwise they have to carry on their miserable life. But most of the times they have to foil their days without any job due to illness, rough weather, and job season, etc. The above Table 3.2 shows the working days within a month of child labour. It also shows that the higher percentages of child labour (40.2%) work from 15-19 days within a month. But only 3.1% child labour can work 14 days in a month. The remaining 17.2% and 39.6% child labour involve their life in agriculture field 15-19 days and more than 24 days respectively.

Sleeping is an important factor for any children, especially who goes to the field at early morning. Without a complete bed rest nobody can continue his regular work spontaneously. The above Table 3.2 states that more than two-fifth of the child labour (40.5%) go to the bed for sleeping between 21-21.30 P.M. But only 4.5% child labours go to the bed above at 22.30 P.M. The remaining 27.5% and 27.6% respondents sleep at 19-20.30 P.M. and 22-22.30 P.M. respectively.

Table 3.2: Percentage Distribution of Child Labour According to Some Selected Socio-Economic Characteristics

Characteristics	Number	%	Characteristics	Number	%
Working days within a month			Drug uses child labour		
<15	54	3.1	Non-addicted	1408	79.8
15-19	304	17.2	Smoke	290	16.4
20-24	708	40.1	Gaja	25	1.4
>24	698	39.6	Tari	22	1.2
Wake-up time			Vang	19	1.1
5.00 A.M.	652	37.0	Regularity for work		
6.00 A.M.	986	55.9	No	162	9.2
7.00 A.M.	104	5.9	Yes	1602	90.8
8.00 A.M.	22	1.2	Regular payment for work		
Bed time			No	397	22.5
19-20.30 P.M.	485	27.5	Yes	1367	77.5
21-21.30 P.M.	714	40.5	No. of meals taken in a day		
22-22.30 P.M.	486	27.6	1 meal	13	0.7
Above 22.30 P.M.	79	4.5	2 meals	692	39.2
Launch hour			3 meals	1059	60
12.00 A.M.	41	2.3			
13.00 P.M.	1336	75.7	Yes	1035	58.7
14.00 P.M.	387	21.9	No	729	41.3
Self working time			Sufficient food for health		
Morning	141	8.0	Yes	1035	58.7
Afternoon/evening	1506	85.4	No	729	41.3
Night	75	4.3	Hazardous working		
Others	42	2.3	Yes	165	9.4
			No	1599	90.6
Father's occupation			Mother's income (Tk)		
Agricultural labour	1324	75.1	5-30	24	1.4
Non-agricultural labour	254	14.4	31-40	13	.7
Business	84	4.8	41-50	11	.6
Construction	35	2.0	Above 50	12	.7
Died	67	3.8	Unemployed	1704	96.6

The wake-up time and bed times differ greatly from individual to individual, depending on the nature of their work. A striking pattern is that there are a number of workers whose wake-up and bed times are totally different from those of other children at the same age. Comparing their working condition they do not enough time for sleeping particularly who have to do housework after and before engaging work and care for children & the elderly especially for female child labour. The above Table 3.2 reveals that more than half (55.9%) of the respondents out of the total in my study area wake-up from bed at 6.00 A.M. But only 1.2% child labour wake-up from bed at 8.00 A.M. The remaining 37.0% and 5.9% wake-up from bed and at 7.00 A.M. respectively.

Launch hour is only the rest time for child labour who works in agriculture field. But comparing others job they do no get enough time for refreshment total working hour. The above Table 3.2 represent that three-fourth of the total child labour complete their launch at 13.00 P.M. But only 2.3% respondents take their launch at 12.00 A.M. The remaining 21.9% take their launch at 2.00 P.M.

The child labour who work in the agriculture sector are totally involved with working field and for this reason they do not get sufficient time for personal and family, though they have to maintain various types of responsibility to carry on their life. The above Table 3.2 shows that the maximum number (1506) of child labour do their self work at afternoon/evening.

The occupation of fathers is important to carry on a family because they have to contribute major role earning money. The above Table 3.2 reveals the percentage of occupation of father. The above table shows that out of the total the maximum number of respondent's father 75.1% are involved with agricultural labour. The remaining 14.4%, 4.8%, and 2.0% respondents involved with non-agricultural labour, business, and construction respectively. We also found that 3.8 % respondent's fathers are died.

Drugs are a serious social problem in Bangladesh especially in my study area. If a children fall in drug addiction, he can't continue his normal life and must be out of work. The above Table 3.2 shows that the child labour using various types of drug in my study area. The above table also indicates that 20.8% child labour using several types of drugs. Out of them the maximum number of respondents (16.4%) addicted

with smoking. The remaining 1.4%, 1.2%, and 1.1%, child labours are addicted with gaja, tari, and vang respectively.

Regularity of work is important factor for child labour, because if they can't continue their work they have to confront various types of problem. The above Table 3.2 indicates the regularity of work for child labour. It also reveals that only 9.2% can't continue their regular working. But the maximum number of child labour (90.8%) can continue their regular working. So, it is clear that to continue regular working in agriculture sector is easier to child labour in the study area.

Every labour wants regular payment but due to various problems they do not get. For this reason they can't build up themselves and their families. The above Table 3.2 shows the regular payment of work for child labour. It also shows that the maximum number of child labour about three-fourth (77.5%) out of the total respondents get their regular payment and only 22.5% child labour do not get their regular payment. So, we can say that the relation between respondents and employers in agriculture sector in my study area is well.

Out of the five basic needs food is one of them. To ascertain this basic rights of a child labour several interview questions were framed so that we can realize the food situation of child labour in agriculture sector especially in the study area. The above Table 3.2 reveals that more than half (60%) out of the total respondent have take three meals in a day. But only 0.7 % child labour takes only one meal in a day. The remaining 41.8% child labours have take two meals in a day.

The above Table 3.2 represent that more than half (58.7%) of the respondents are satisfied to get their meals in a day. But 41.3% child labours are not satisfied to take their meals.

The above Table 3.2 states that a total of 9.4% child labours in agriculture sector are involved with hazardous situations. But the remaining 90.6% are out of hazardous conditions. Actually, they are habituated to work to maintain these working hazards. They don't know what type of facilities they should get from their land lord. That is why; they don't take this as a hazardous condition. Most of them are bound to do this

family's severe condition and also for themselves, because they do not get any financial support from their family.

In Bangladesh the job environment is dominated by men and women always deprived from getting expected salary against their work. But they have to carry on their job with patience to maintain their family. The above Table 3.2 shows that the daily income of mother. The above table also reveals that in the study area, out of the total respondents mother 96.6% are remain unemployed and it is clear that job environment is not favorable for women. The higher number of respondents mother (1.4%) earn between Tk. 5 and 30. The remaining 2.0% earn from Tk. 31 to more than 50.

Fathers always have to earn more than others member in any family. The following Table 3.3 shows the daily income of father. It also indicates that 3.8% fathers of child labour have been found died. Out of total most of the respondent's father 49.5% earn daily more than Tk. 50. The remaining 5.7%, 10.3%, and 30.7% respondent's father earn daily Tk. 5-30, Tk. 31-40, and Tk. 41-50 respectively.

In terms of household expenses, it was discovered that most of the respondent's father have to expense of their family requirements. Table 3.3 shows the daily expenditure of respondent's father. It also states that the maximum numbers (42.3%) of respondent's father expend between Tk. 41 and 50 daily. But only 8.9% father of child labour expend between Tk. 5 and 30. Rest of them 20.5% and 24.5% expend Tk. 31-40 and more than Tk. 50 respectively.

In our society major income and expenditure depends on father and their sons. Moreover, sometimes mother has to play major role to build up family. Table 3.3 shows the nature of mother's occupation. It also emerge that the maximum number (95.8%) of respondent's mothers are housewives without involving with any job. But only 1.1% respondent's mothers are involved in agriculture sector. Out of the total, 0.7% respondent's mothers are found died. The remaining 1.5% and 0.9% are involved with farming and stitching.

According to family requirements women have to expend money if they involved with job or not. The above Table 3.3 shows the pattern of expenditure of mother child labour. It also indicates that only 0.2% respondent's mother can expend more than Tk. 50. The higher number of women (1.4%) expend from Tk. 5-30. The remaining 1.8% respondent's mother expend from Tk. 31-50.

Table 3.3: Percentage Distribution of Child Labour According to Some Selected Socio-Economic Characteristics

Characteristics	Number	%	Characteristics	Number	%
Father's income (Tk.)			Mother's occupation		
5-30	100	5.7	Housewife	1690	95.8
31-40	181	10.3	Farming	26	1.5
41-50	542	30.7	Agriculture	20	1.1
Above 50	874	49.5	Stitching	16	.9
Total	1697	96.2	Died	12	.7
Died	67	3.8	Mother's expenditure (Tk.)		
Father's expenditure (Tk.)			5-30	25	1.4
5-30	157	8.9	31-40	19	1.1
31-40	361	20.5	41-50	12	.7
41-50	746	42.3	Above 50	4	.2
Above 50	433	24.5	Unemployed	1704	96.6
Died	67	3.8	Causes for family's loan		
Loan of family (Tk.)			Agricultural land purpose	589	33.4
No loan	885	53.4	Poverty	534	30.3
1-2000	208	25.0	House construction	250	14.2
2001-400	184	23.6	Education	236	13.4
4001-600	84	8.9	Marriage purpose	89	5.0
6001-8000	58	6.6	Treatment	66	3.7
Above 8000	19	1.1	Place of treatment		
Do not know the amount of loan	235	13.3	Govt. hospital	223	12.6
Do not know whether family is in loan	91	5.2	Community clinic	108	6.2
Years for repaying loan			Village doctor	1433	81.2
Below 1 year	23	1.3	Process for repaying loan		
1 year	219	12.4	Through working	420	23.8
2 year	153	8.7	Through business	81	4.6
3 year	83	4.7	Taking NGO's loan	16	.9
4 year	50	2.8	Through land sale	11	.6
Unknown	351	19.9	Unknown	351	19.9
No loan	885	50.2	No loan	885	50.2

In terms of household expenses, it was discovered that most of the children know and can indicate the family's major monthly expenses, such as food, electricity, cloths and education for family members remaining in school. The above Table 3.3 reveals that the condition of family's debt. The above table also represent out of the total respondents 31.3% know that their families are in loan of various amounts. Almost half of the respondent's families have no loan, while 13.3% do not know how much their families owe. The remaining child labours do not know whether there is in loan or not.

Every person takes loan when they fall in crucial problem. The above Table 3.3 shows that, most of the respondent's family (33.4%) took loan due to agricultural land purpose. Secondly, 30.3% took their loan for poverty. The remaining 14.2%, 13.4%, 5.0%, and 3.7% respondent's family took their loan because of house construction, education, marriage purpose, and treatment respectively.

The selected families who took loan they better that it would be repaid of their commitment. The above Table 3.3 represent that out of the total loan taking family only 1.3% family can be repaid loan within below one year. The remaining 12.4%, 8.7%, 4.7% and 2.8% respondent's family will be capable to repay loan within one year, two years, three years, and four years respectively. But out of the total 19.9% respondents do not know regarding their family's loan and 50.2% respondent's family didn't take any loan from others.

The respondent's family who took loan, they had a pre-plan of repaying loan. But most of the times they didn't keep their promise. Moreover, they have to repay loan through applying several strategy. The above Table 3.3 indicates that the maximum number (23.8%) of respondent's family repay their loan through working. Out of the total 4.6%, 0.9%, and 0.6% child labour's family repay their loan through business, taking NGO's loan, and through land sale respectively. But 19.9% respondents are totally unknown regarding their family's process of repaying loan.

The above Table 3.3 indicates that out of the total family members of respondents in my study area take their treatment from various places. Of them village doctors are the significant for poor people and so, 81.2% respondent's family members taking their treatment from them. Of the total 12.6% take treatment from government hospitals and the remaining 6.2% take their treatment from community clinic.

Chapter Four

Age and Sex Distributions of Child Labour in Agriculture Sector by Their Socio-Economic Characteristics

4.1 Distribution of Child Labour by Age and Other Socio-Economic Variables

We would like to study whether there is any association between different age levels of child labour and different phenomena like as sex, religion, educational qualification, types of livelihood, condition of house, hazardous working, drug uses child labour, regularity for work, regular payment for work, working days within a month, income, expenditure, savings, number of meals taken in a day, sufficient food for health, location, distance between working field & central town, causes behind child labour, place of treatment.

For this reason, we have used χ^2 tests for testing any association between the above variables. So the hypothesis

H_0 : Association between age levels of child labour and different phenomena.

H_1 : H_0 is not true.

Table 4.1: Results of Association Between Different Age Levels of Child Labour and Some Selected Attributes

Basic Characteristics	Age Levels of Child Labour				Total	Values of χ^2 , df and α
	5-8	9-10	11-12	13-14		
Sex						
Male	143	200	402	847	1592	$\chi^2 = 39.448$ df = 3 $\alpha = .000$
Female	34	39	37	62	172	
Total	177	239	439	909	1764	
Religion						
Muslim	127	180	367	802	1476	$\chi^2 = 44.452$ df = 3 $\alpha = .000$
Non-Muslim	50	59	72	107	288	
Total	177	239	439	909	1764	
Educational qualification						
Illiterate	104	100	126	202	532	$\chi^2 = 160.454$ df = 6 $\alpha = .000$
Class (I-III)	37	80	172	250	539	
Class (IV-IX)	36	59	141	457	693	
Total	177	239	439	909	1764	
Types of livelihood						
Own house	116	161	265	551	1093	$\chi^2 = 5.358$ df = 6 $\alpha = .499$
Rented house	41	50	116	233	440	
Others	20	28	58	125	231	
Total	177	239	439	909	1764	
Condition of house						
Permanent	141	191	332	674	1338	$\chi^2 = 5.011$ df = 3 $\alpha = .171$
Temporary	36	48	107	235	426	
Total	177	239	439	909	1764	
Hazardous working						
Yes	154	209	399	837	1599	$\chi^2 = 7.882$ df = 3 $\alpha = .049$
No	23	30	40	72	165	
Total	177	239	439	909	1764	
Drugs uses child labour						
Non-addicted	151	202	370	685	1408	$\chi^2 = 33.833$ df = 12 $\alpha = .001$
Smoke	19	30	55	186	290	
Ganja	3	3	5	14	25	
Tari	0	1	4	17	22	
Vang	4	3	5	7	19	
Total	177	239	439	909	1764	
Regularity for work						
Yes	165	210	397	830	1602	$\chi^2 = 7.882$ df = 3 $\alpha = .049$
No	12	29	42	79	162	
Total	177	239	439	909	1764	
Regular payment for work						
Yes	147	183	326	711	1367	$\chi^2 = 6.157$ df = 3 $\alpha = .104$
No	30	56	113	198	397	
Total	177	239	439	909	1764	
Working days within a month						
<15	8	7	11	28	54	$\chi^2 = 13.212$ df = 9 $\alpha = .153$
15-19	37	36	60	171	304	
20-24	76	96	185	351	708	
>24	56	100	183	359	698	
Total	177	239	439	909	1764	
Income (Tk.)						
5-30	135	107	167	268	677	$\chi^2 = 279.653$ df = 9 $\alpha = .000$
31-40	37	107	203	277	624	
41-50	5	23	67	292	387	
Above 50	0	2	2	72	76	
Total	177	239	439	909	1764	

Continued Table 4.1

Basic Characteristics	Age Levels of Child Labour					Values of χ^2 , df and α
	5-8	9-10	11-12	13-14	Total	
Expenditure (Tk.)						
5-30	159	180	265	371	975	$\chi^2 = 249.085$ df = 9 $\alpha = .000$
31-40	16	51	155	353	575	
41-50	2	8	19	182	211	
Above 50	0	0	0	3	3	
Total	177	239	439	909	1764	
Savings (Tk.)						
No savings	109	111	216	434	870	$\chi^2 = 27.423$ df = 12 $\alpha = .007$
50-200	56	82	160	325	623	
201-400	8	31	37	105	181	
401-600	3	9	8	15	35	
Above 600	1	6	18	30	55	
Total	177	239	439	909	1764	
No. of meals taken in a day						
1 meal	4	2	3	4	13	$\chi^2 = 8.459$ df = 6 $\alpha = .206$
2 meals	64	92	183	353	692	
3 meals	109	145	253	552	1059	
Total	177	239	439	909	1764	
Sufficient food for health						
Yes	109	150	255	521	1035	$\chi^2 = 3.018$ df = 3 $\alpha = .389$
No	68	89	184	388	729	
Total	177	239	439	909	1764	
Location						
Chapai Nawabgonj	173	228	393	598	1392	$\chi^2 = 200.535$ df = 3 $\alpha = .000$
Rajshahi	4	11	46	311	372	
Total	177	239	439	909	1764	
Distance between working field & central town (km)						
1-5	155	190	279	623	1247	$\chi^2 = 78.575$ df = 6 $\alpha = .000$
6-10	22	48	118	171	359	
10+	0	1	42	115	158	
Total	177	239	439	909	1764	
Causes behind child labour						
Poverty	141	186	342	690	1359	$\chi^2 = 6.605$ df = 6 $\alpha = .359$
self will	28	42	72	146	288	
parents will	8	11	25	73	117	
Total	177	239	439	909	1764	
Place of treatment						
Govt. hospital	10	20	42	151	223	$\chi^2 = 46.727$ df = 6 $\alpha = .000$
Community clinic	3	17	43	45	108	
Village doctor	164	202	354	713	1433	
Total	177	239	439	909	1764	

The results of contingency analysis are given below:

As Table 4.1 shows that among the total working children 10% children aged 5-8 years involved with working sector which is higher than national level (3.9%) and 9-10 years & 11-12 years are also shows more or less same difference. But the remaining 51.3% child labour are between 13 and 14 years which is simply higher

than national figure (49.3%) (BBS, 2003a). It reveals that male child labour participation is gradually increasing according to their age levels from first to the last, whereas female child labour participation do not maintain the above sequence, because third age levels is lower than second. But if we combine male and female, we may conclude that child labour participation in agriculture sector is gradually increasing according to their age levels. It also envisaged that the chi-square test indicates a very high association between sex distribution and age levels of child labour. The values of unadjusted χ^2 tests with 3 degrees of freedom are observed to be 39.448, which is asymptotically significant at zero percent level.

In Table 4.1, it is shown that both Muslims and non-Muslims child labour participation is increasing with the increase of their age levels. It also reflects that the chi-square test indicates a very high association between sex distribution and age levels of child labour. The values of unadjusted χ^2 tests with 3 degrees of freedom are observed to be 44.452, which is asymptotically highly significant.

In Table 4.1, the child labour participation in agriculture sector for illiterate children is not increasing according to their age levels, because the second age level (9-10 years) is lower than the first. But the remaining two categories (class (i-iii) and class (iv-ix)) reveal that the child labour participation is increasing with the increase of their age levels. It also envisaged that the chi-square test indicates a very high association between age levels and educational qualification of child labour. The values of unadjusted χ^2 tests with 3 degrees of freedom are observed to be 160.454, which is asymptotically significant at zero percent level.

In Table 4.1, it is envisaged that all categories of types of livelihood are increasing with the increase of their age levels. It also indicates that the χ^2 tests indicates a very high association between types of livelihood and age levels of child labour. The values of unadjusted chi-square test with 6 degrees of freedom are observed to be 5.358, which is asymptotically significant at zero percent level.

In Table 4.1, it reveals that the chi-square test indicates the association between condition of house and age levels of child labour. The values of unadjusted χ^2 tests with 3 degrees of freedom are observed to be 5.011, which is asymptotically insignificant. It also indicates that all categories of condition of house are increasing with the increase of their age levels.

In Table 4.1, it reveals that children begin to work from 5 years of age and their work participation increases with the age for categories of occupation. In Table 4.1, it is envisaged that the chi-square test indicates a very high association between occupation and age levels of child labour. The values of unadjusted χ^2 tests with 3 degrees of freedom are observed to be 9.419, which is asymptotically significant.

In Table 4.1, it reflects all categories of hazardous work for child labour are increasing with the increase of their age levels. It is also shown that the χ^2 tests indicate the association between hazardous work and age levels of child labour. The values of unadjusted χ^2 tests with 3 degrees of freedom are observed to be 7.882, which is asymptotically significant.

In Table 4.1, it is shown that non-addicted, smoker and tari user child labour is increasing with the increase of their age levels. This result is not true for ganja and vang user child labour, because the number for first and second age levels of ganja user child labour are same and the number for second age level is 3 which is lower than first age levels for vang users.

The above table also indicated that the chi-square test indicates a very high association between drugs uses and age levels of child labour. The values of unadjusted χ^2 tests with 12 degrees of freedom are observed to be 33.833, which is asymptotically highly significant.

In Table 4.1, it envisaged that both categories of regularity for work of child labour are increasing with the increase of their age levels. It also indicated that the chi-square test indicates a very high association between regularity for work and age levels of child labour. The values of unadjusted chi-square test with 3 degrees of freedom are observed to be 7.882, which is asymptotically significant.

In Table 4.1, it envisaged that both categories of regular payment for work of child labour are increasing with the increase of their age levels. It also indicated that the chi-square test indicates a very high association between regularity for work and age levels of child labour. The values of unadjusted chi-square test with 3 degrees of freedom are observed to be 6.157, which is asymptotically significant.

As Table 4.1 shows that first two categories of monthly working days are not increasing but the second two categories are increasing with the increase of their age

levels. It also pointed out that the chi-square test indicates the association between working days within a month and age levels of child labour. The values of unadjusted chi-square test with 9 degrees of freedom are observed to be 13.212, which is asymptotically significant.

In Table 4.1, it reveals that the first income level (Tk 5-30) is more in the first age level than the second age level. The second and third income categories are increasing with the increase of their age levels. The remaining income group reveals that there is no participation in the first group and the little participation in the second and third age levels, but the last two age levels (11-12 and 13-14 years) shown that the mentionable child labour participation. It also envisaged that the chi-square test indicates a very high association between income and age levels of child labour. The values of unadjusted chi-square test with 9 degree of freedom are observed to be 279.653, which is asymptotically significant at zero percent level.

As Table 4.1 shows that the expenditure of child labour reveals that the three groups are increasing with the increase of their age levels of (Table 4.1). But the last group (above 50) shown that there is no participation in first three age levels and the number of last level is only 3. It also indicated that the chi-square test indicates a very high association between expenditure and age levels of child labour. The values of unadjusted chi-square test with 9 degrees of freedom are observed to be 249.085, which is asymptotically significant at zero percent level.

In Table 4.1, mentioned that the first, second, third and fifth categories of savings of child labour shows that the child labour participation is increasing with the increase of their age levels but the fourth category is not maintaining the increasing sequence, because the third age level is lower than second. It is also shown that the chi-square test indicates a very high association between savings and age levels of child labour. The values of unadjusted χ^2 tests with 12 degrees of freedom are observed to be 27.423, which is asymptotically significant at zero percent level.

In Table 4.1, indicated that the second and third categories (2 and 3 meals) of child labour participation is increasing with the increase of their age levels but this increasing sequence do not follow the first category (1 meal) because the number of participation comparatively lower than the first age level. It is also shown that the chi-

square test indicates the association between no. of meals taken in a day and age levels of child labour. The values of unadjusted χ^2 tests with 6 degrees of freedom are observed to be 8.459, which is asymptotically insignificant.

In Table 4.1, it envisaged that both categories of sufficient food for health of child labour are increasing with the increase of their age levels. It also indicated that the chi-square test indicates the association between sufficient food for health and age levels of child labour. The values of unadjusted χ^2 tests with 3 degrees of freedom are observed to be 3.018, which is asymptotically insignificant.

In Table 4.1, it envisaged that both categories of sufficient food for health of child labour are increasing with the increase of their age levels. It also indicated that the χ^2 test indicates a very high association between location and age levels of child labour. The values of unadjusted χ^2 tests with 3 degrees of freedom are observed to be 200.535, which is asymptotically highly significant.

In Table 4.1, it is indicated that each categories of child labour are increasing with the increase of their age levels. It also envisaged that the χ^2 test indicates a very high association between working field & working town of and age levels of child labour. The values of unadjusted χ^2 tests with 6 degrees of freedom are observed to be 78.575, which is asymptotically highly significant.

In Table 4.1, it is envisaged that the chi-square test indicates the association between causes behind and age levels of child labour. The values of unadjusted χ^2 tests with 6 degrees of freedom are observed to be 6.605, which is asymptotically insignificant. It also indicated that each categories of child labour are increasing with the increase of their age levels.

As Table 4.1, indicated that each categories of treatment place are increasing with the increase of their age levels. It is emerged that the chi-square test indicates a very high association between place of treatment and age levels of child labour. The values of unadjusted χ^2 tests with 6 degrees of freedom are observed to be 46.727, which is asymptotically highly significant.

4.2 Distribution of Child Labour by Sex and Other Socio-Economic Variables

We would like to study whether there is any association between sex distribution of child labour and different phenomena like as age, religion, educational qualification, types of livelihood, condition of house, hazardous working, drug uses child labour, regularity for work, regularity for work, regular payment for work, working days within a month, income, expenditure, savings, number of meals taken in a day, sufficient food for health, location, distance between working field & working town (km), causes behind child labour, place of treatment. The above are qualitative variables and for this reason, we have used χ^2 tests for testing any association between the attributes. So we consider the hypothesis:

H_0 : Association between sex distribution of child labour and different phenomena

H_1 : H_0 is not true.

The results of contingency analysis are given below:

Table 4.2 presents child activity across gender and age levels. Out of total in the study only 9.8% girls are involved in agriculture sector which is lower than national level (26.3%) and this result is also lower than rural agricultural working girls (BBS, 2003a). It also indicates that more boys are working in the agriculture field than girls with the different age levels.

It also envisaged that the χ^2 test indicates a very high association between sex distribution and age levels of child labour. The values of unadjusted chi-square test with 3 degrees of freedom are observed to be 39.448, which is asymptotically significant at zero percent level.

Religion differentials as in Table 4.2 reflect that male children are more for both Muslims and non-Muslims than females. It also envisaged that the chi-square test indicates a very high association between sex distribution and religion of child labour. The values of unadjusted χ^2 tests with 1 degree of freedom are observed to be 192.662, which is asymptotically highly significant.

Table 4.2: Results of Association Between Sex of Child Labour and Some Selected Attributes

Basic Characteristics	Sex of Child Labour		Total	Values of χ^2 , df and α
	Male	Female		
Age				
5-8	143	34	177	$\chi^2 = 39.448$ df = 3 $\alpha = .000$
9-10	200	39	239	
11-12	402	37	439	
13-14	847	62	909	
Total	1592	172	1764	
Religion				
Muslim	1396	80	1476	$\chi^2 = 192.662$ df = 1 $\alpha = .000$
Non-Muslim	196	92	288	
Total	1592	172	1764	
Educational qualification				
Illiterate	443	89	532	$\chi^2 = 44.987$ df = 2 $\alpha = .000$
Class (I-III)	494	45	539	
Class (IV-IX)	655	38	693	
Total	1592	172	1764	
Types of livelihood				
Own house	983	110	1093	$\chi^2 = 7.315$ df = 2 $\alpha = .026$
Rented house	409	31	440	
Others	200	31	231	
Total	1592	172	1764	
Condition of house				
Permanent	1205	133	1338	$\chi^2 = .226$ df = 1 $\alpha = .634$
Temporary	387	39	426	
Total	1592	172	1764	
Hazardous working				
Yes	1442	157	1599	$\chi^2 = .090$ df = 1 $\alpha = .764$
No	150	15	165	
Total	1592	172	1764	
Drugs uses child labour				
Non-addicted	1237	171	1408	$\chi^2 = 45.458$ df = 4 $\alpha = .000$
Smoke	289	1	290	
Ganja	25	0	25	
Eari	22	0	22	
Vang	19	0	19	
Total	1592	172	1764	
Regularity for work				
Yes	1439	163	1602	$\chi^2 = 3.567$ df = 1 $\alpha = .059$
No	153	9	162	
Total	1592	172	1764	
Regular payment for work				
Yes	1228	139	1367	$\chi^2 = 6.157$ df = 3 $\alpha = .104$
No	364	33	397	
Total	1592	172	1764	
Working days within a month				
<15	51	3	54	$\chi^2 = 1.859$ df = 3 $\alpha = .602$
15-19	270	34	304	
20-24	639	69	708	
>24	632	66	698	
Total	1592	172	1764	

Continued Table 4.2

Basic Characteristics	Sex Distribution		Total	Values of χ^2 , df and α
	Male	Female		
Income (Tk.)				
5-30	613	64	677	$\chi^2 = 5.672$ df = 3 $\alpha = .129$
31-40	555	69	624	
41-50	350	37	387	
Above 50	74	2	76	
Total	1592	172	1764	
Expenditure (Tk.)				
5-30	868	107	975	$\chi^2 = 11.98$ df = 3 $\alpha = .007$
31-40	517	58	575	
41-50	204	7	211	
Above 50	3	0	3	
Total	1592	172	1764	
Savings (Tk.)				
No savings	809	61	870	$\chi^2 = 22.20$ df = 4 $\alpha = .000$
50-200	547	76	623	
201-400	152	29	181	
401-600	31	4	35	
Above 600	53	2	55	
Total	1592	172	1764	
No. of meals taken in a day				
1 meal	11	2	13	$\chi^2 = 1.734$ df = 2 $\alpha = .420$
2 meals	618	74	692	
3 meals	963	96	1059	
Total	1592	172	1764	
Sufficient food for health				
Yes	937	98	1035	$\chi^2 = .226$ df = 1 $\alpha = .634$
No	655	74	729	
Total	1592	172	1764	
Location				
Chapai Nawabganj	1238	154	1392	$\chi^2 = 12.925$ df = 1 $\alpha = .000$
Rajshahi	354	18	372	
Total	1592	172	1764	
Distance between working field & central town (km)				
1-5 km	1116	131	1247	$\chi^2 = 10.290$ df = 2 $\alpha = .006$
6-10 km	322	37	369	
10+ km	154	4	158	
Total	1592	172	1764	
Causes behind child labour				
Poverty	1226	133	1359	$\chi^2 = 1.466$ df = 2 $\alpha = .480$
Self will	257	31	288	
Parents will	109	8	117	
Total	1592	172	1764	
Place of treatment				
Govt. hospital	217	6	223	$\chi^2 = 16.616$ df = 2 $\alpha = .000$
Community clinic	92	16	108	
Village doctor	1283	150	1433	
Total	1592	172	1764	

Table 4.2 reveals that 27.8% male are illiterate is lower than national child labour (82.9%) and 51.71% females are illiterate which is also lower than national level (75.46%) (BBS, 2003a). In this study male child labour participation is more for each

categories of educational qualification (Illiterate, Class (I-III) and Class (IV-IX)) than females. It also indicates that females are comparatively more illiterate than males but male child labours are taking education (Class (IV-IX)) than the females. It also reveals that the χ^2 test indicates a very high association between sex distribution and educational qualification of child labour. The values of unadjusted χ^2 tests with 2 degrees of freedom are observed to be 44.987, which is asymptotically significant at zero percent level.

As Table 4.2 shows the maximum number of male child labour are living in their own house than rented and others house. It also reveals that male child labour participation is higher than females. It also shows that the χ^2 test indicates high association between types of livelihood and sex distribution of child labour. The values of unadjusted χ^2 tests with 2 degrees of freedom are observed to be 7.315, which is asymptotically significant.

Table 4.2 reflects that the maximum number of male and female child labour are living in their permanent house than the temporary house. The above table also reveals that the χ^2 test indicates the association between condition of house and sex distribution of child labour. The values of unadjusted χ^2 tests with 1 degree of freedom are observed to be 0.226, which is asymptotically insignificant.

As Table 4.2 shows in both categories of hazardous work, male child labour participation is higher than the female child labour. It also shows that only 348 child labour out of total says that there is no working hazard in agriculture field but the maximum number (1416) of that says that agriculture sector is too much risky working place for child labour. It also shows that the χ^2 test indicates a association between hazardous work and sex distribution of child labour. The values of unadjusted χ^2 tests with 1 degree of freedom are observed to be 0.09, which is asymptotically insignificant.

In Table 4.2 envisaged that the maximum number (1408) of child labour for both male and female are non-addicted. Among the addicted child labour the significant number for both male and female are habituated with smoking. Only 1 female smoker has been counted in our study area. It also reveals that 25, 22, and 19 male child labour are habituated with ganja, tari, and vang respectively. It also indicates the χ^2

test indicates a very high association between drugs uses and sex distribution of child labour. The values of unadjusted chi-square test with 4 degrees of freedom are observed to be 45.458, which is asymptotically highly significant.

As Table 4.2 shows the large number (1602) of child labour for both male and female work regularly but only 162 children are passing their working life with irregularity. The following table indicated that the chi-square test indicates the high association between regularity for work and sex distribution of child labour. The values of unadjusted χ^2 test with 1 degree of freedom are observed to be 3.567, which is asymptotically significant.

Table 4.2 indicates the large number (1367) of child labour for both male and female are getting their payment regularly but only 397 children are passing their working life with irregular payment. It also indicates the chi-square test which indicates the association between regularity for work and sex distribution of child labour. The values of unadjusted χ^2 tests with 1 degree of freedom are observed to be 6.157, which is asymptotically significant.

The first three categories of working days within a month show that child labour participation is increasing with the increase of the working days (Table 4.2). But the last category (>24 days) indicates the opposite sequence compared with that categories for both male and female child labour. The above table pointed out that the χ^2 test indicates the association between working days within a month and sex distribution of child labour. The values of unadjusted χ^2 tests with 3 degrees of freedom are observed to be 1.859, which is asymptotically insignificant.

As Table 4.2 reflects that child labour participation is deteriorating from lower income group to higher for male but the female child labour are taking 31-40Tk. regularly for their work, which is higher than other income categories. It also envisaged that the χ^2 test indicates the association between income and sex distribution of child labour. The values of unadjusted chi-square test with 3 degrees of freedom are observed to be 5.672, which is asymptotically insignificant.

As Table 4.2 reveals that child labour participation is deteriorating from lower expenditure group to higher for both male and female. It also shows that there is no female child labour in expenditure group of above 50Tk. Both male and female are in

the expenditure category of upto 30Tk. The above table also indicates the χ^2 test which shows a very high association between expenditure and sex distribution of child labour. The values of unadjusted chi-square test with 3 degrees of freedom are observed to be 11.98, which is asymptotically significant at zero percent level.

Table 4.2 reflects that among the total child labour (1764), the number of children who have no savings is 870. The savings is increasing with the lower amount of savings from upto 200Tk to (401-600)Tk. for male child labour except for the saving category above 600Tk, because the number for category above 600Tk is 53, which is higher than 31 of the category 401-600Tk. it also shows that the number for female child labour is increasing with the decrease of the savings amount and there is no savings of 61 female, which is lower than the 76 of upto 200Tk. It also shown that the χ^2 test indicates a very high association between savings and sex distribution of child labour. The values of unadjusted χ^2 test with 4 degrees of freedom are observed to be 22.20, which is asymptotically significant at zero percent level.

As Table 4.2 shows that each categories both for male and female child labour participation is increasing with the increase of the meals. It also shows that maximum number of male and female children is taking 3 meals in a day. The above table also shows the χ^2 test which indicates the association between no. of meals taken in a day and sex distribution of child labour. The values of unadjusted χ^2 tests with 2 degrees of freedom are observed to be 1.734, which is asymptotically insignificant.

Out of total child labour both for male and female, 1035 children says they are getting their sufficient food regularly but the remaining (729) says that they are not getting their sufficient, which is needed to carry on their regular work (Table 4.2). It also indicated that the chi-square test indicates the association between sufficient food for health and sex distribution of child labour. The values of unadjusted χ^2 tests with 1 degree of freedom are observed to be 0.226, which is asymptotically insignificant.

The number of child labour participation for both male and female are higher at Chapai Nawabganj thana at Rajshahi. It also indicated that the χ^2 test indicates a very high association between location and sex distribution of child labour. The values of unadjusted χ^2 test with 1 degree of freedom are observed to be 12.925, which is asymptotically highly significant.

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The number of child labour for both male and female are increasing with the decrease of the distance between working field & central town (Table 4.2). It also shows that maximum numbers of children are working near about their central town. It also envisaged that the χ^2 test indicates a very high association between working field & working town of and sex distribution of child labour. The values of unadjusted χ^2 tests with 6 degrees of freedom are observed to be 10.290, which is asymptotically highly significant.

As Table 4.2 reveals that the child labour participation are increasing due to parents will, self will, and poverty respectively both for male and female. It also shows that poverty (1359) is the main reason for involving with working hazards at early ages. It also envisaged that the chi-square test indicates the association between causes behind and sex distribution of child labour. The values of unadjusted χ^2 test with 2 degrees of freedom are observed to be 1.466, which is asymptotically insignificant.

In Table 4.2 shows that the number of female child labour is 6 of Govt. hospital, which is lower than others but for male child labour the number 92 of Community clinic is lower than others. It also reveals that the maximum number (1283 and 150 for male and female respectively) of rural children are taking their treatment from village doctor. The above table also emerged that the χ^2 test indicates a very high association between place of treatment and sex distribution of child labour. The values of unadjusted χ^2 tests with 2 degrees of freedom are observed to be 16.616, which is asymptotically highly significant.

Chapter Five

Determinants of Working Hour Burden and Occupation of Child Labour: Logistic Regression Analysis

5.1 Differentials of Working Hour Burden

More of the world's working children are employed in agriculture sector than any other working fields. The same fact is also true for Bangladeshi children. It is common knowledge that data on child labour are extremely scarce. The reason for this is the absence of an appropriate survey methodology for inquiring into the work of children which, for the most part, is a "hidden" phenomenon. Consequently, the ILO designed special sample survey methodologies and experimented them in four countries. These were further refined and adopted for investigating at the national level the child labour situation in a number of countries. Many children work long hours every day of the week. For example, some survey results show that more than half of the working children are toiling for 9 hours or more per day, with cases where up to four-fifths of them working seven days a week including work on public holidays, especially in the rural communities (ILO, 1998b). There are cases where children work 56 hours or more per week. Most of those working as paid employees are paid much less than the prevailing rates in their localities, even when compared with the legal minimum wages, receiving only one-sixth of the minimum rate in one survey finding. Also the younger children are working with lower wages. On average, girls work longer hours than boys and are paid less than their working brothers doing the same type of work. Comparatively larger numbers of girls work as paid domestics where the pay scale is usually low. Generally, children are not paid for overtime work although many of them work additional hours and often they are required to do so

when demand for various services reaches its peak and/or due to labour shortages. Many children work during the evenings or nights as well. In one major survey, close to two-thirds (64%) of the child labour force in the agricultural sector are found to be working during these periods - three-quarters of the boys and more than two-fifths of the girls. Being tender physically, children are susceptible to various works -related injuries and illnesses more than adults doing the same kind of work. Also because they are not yet matured mentally, they are less aware, even completely unaware, of the potential risks involved in their specific occupations or at the workplace itself. As a result, a large number of working children are affected by various hazards. Of them, more than two-thirds (69%) in some countries (ILO, 1998b). We computed working status of child labour in agriculture sector according to their selected socio-economic characteristics.

The percentages distribution of results is presented in Table 5.1. In Table 5.1 the normal working hour reveals that the percentage of child labour is increasing with the increase of their age. It also shows that at early ages, rural guardian would like send their children in schools instead of working in agricultural field. But they are being dropped out due to family requirements, self financial support, mostly for poverty etc. By this way they are involving their effective life with the hazardous working sector and even, when they understand the work is risky or harmful for them, they cannot come back because they have no alternative to maintain their family.

As Table 5.1 shows that only 9% of the child labours are continuing their working in agriculture sector maintaining normal working hour (upto 42 hours weekly). Of them female child labours have the lower percentage (0.4 %) comparing male (8.4%). That means they have to involve their life in the field more than 42 hours weekly, which is too much harmful to their health. Different types of international organizations such as ILO, UNICEF, Save The Children etc. and even Bangladesh have taken several steps to prevent hazardous working hours of child labour, but in Bangladesh still our land owner using these innocent children as per their requirements.

As Table 5.1 shows that 8.6% Muslim child labours are working with normal working hour, whereas only 0.4% non-Muslims are continuing regular working out hazardous conditions. It also indicates that agriculture sector is still now in risky field labours.

As Table 5.1 shows that 5.4% child labours are working with normal working hour by living their own house and the remaining 2.8% & 0.8% child labour are maintaining this rules living in their rented and others house respectively.

As Table 5.1 the housing condition reveals that 6.3% and 2.3% child labour living in their permanent and temporary house respectively are working agricultural field with normal working hour per week but the greatest part are passing their working life tolerating hazardous conditions. The normal land owner using these child labour as per their demand but they are not proving actual salary, that should be given to the child labour. Actually, the rural children come in the job sector at early ages mainly due to poverty. That is why; they have no alternative to come back from these types of severe working condition.

In Table 5.1, both illiterate and class (i-iii) indicates that near about same result (2.1% & 2.2% respectively) continuing their normal working hour and the last category class (iv-ix) the double percentage comparing first two categories.

As Table 5.1 shows that 6.3% shows that 6.3% child labour whose father's occupation is agriculture are working with normal working hours (upto 42 hours per week) and the remaining only 2.7% are maintaining the above working rules. But the mother's occupation shows that the different results. It indicates that there are child labours who are working with normal working hour and so, the normal working hour (upto 42 hours per week).

As Table 5.1 shows that the income of child labour are increasing with the decrease of the percentage of normal working hours. Actually, they are not getting their expected salary comparing their working, but they should have to maintain normal working duration.

Table 5.1: Percentage Distribution of Working Hour Per Week by Selected Socio-Economic Variables

Basic Characteristics	Normal Working Hour (Upto 42 hours)		Total	
	%	Number	%	Number
Age				
5-8	0.2	3	10	177
9-10	0.4	7	13.5	239
11-12	1.6	28	24.9	439
13-14	6.8	120	51.5	909
Sex				
Male	8.6	151	90.2	1592
Female	0.4	7	9.8	172
Religion				
Muslim	8.6	151	83.7	1476
Non-Muslim	0.4	7	16.3	288
Types of livelihood				
Own House	5.4	95	62	1093
Rented House	2.8	49	24.9	440
Others	0.8	14	13.1	231
Condition of house				
Permanent	6.7	119	75.9	1338
Temporary	2.2	39	24.1	426
Educational qualification				
Illiterate	2.1	37	30.2	532
Class (I – III)	2.2	39	30.6	539
Class (IV – IX)	4.6	82	39.6	693
Father's occupation				
Agriculture	6.3	111	75.1	1324
Non- Agriculture	2.7	47	24.9	440
Mother's occupation				
Agriculture	0.0	0.0	1.1	20
Non- Agriculture	9.0	158	98.9	1744
Income (Tk)				
Upto 30	7.8	137	38.4	677
31-40	0.7	13	35.4	624
41-50	0.3	6	21.9	387
Above 50	0.1	2	4.3	76
Causes behind child labour				
Poverty	6.9	121	77	1359
Self will	1.8	31	16.3	288
Parent's will	0.3	6	6.6	117
Regular payment for work				
Yes	6.2	110	77.5	1367
No	2.7	48	22.5	397

Continue Table 5.1

Sufficient food for health				
Yes	3.6	64	58.7	1035
No	5.3	94	41.3	729
Loan of family (Tk)				
No Loan	5.7	101	68.7	1211
Upto 6000	3.1	54	27	476
Above 6000	0.2	3	4.4	77
Distance between working field & central town (km)				
Upto 5	8.7	153	70.7	1247
6-10	0.1	2	20.4	369
Above 10	0.2	3	9.0	159

Poverty is the main cause for involving the working sector at early ages. This distribution shows that poverty is salient cause for working with hazardous working duration, but who will prevent them from this dangerous situation? As Table 5.1 envisaged that the percentage of poverty is 6.9, which is four and twenty times higher than those child labour who involved their life with agriculture sector are working maintaining normal working hour.

Payment is important factor for any labour, because if any labour does not get their salary of his requirements, he cannot maintain the overall situation properly. In Table 5.1 depict that only 6.2% and 2.7% child labour who get their payment regularly are working with normal working duration.

Among the five basic needs, food is the main for human being. Man cannot live a single day without food, so we have to be conscious about this. But being conscious, the rural children cannot manage their food two or three times in a day. Our following distribution shows that the child labour who are getting their sufficient food regularly, only 3.6% are working adjusting normal working hours (upto 42 hours per week) and the remaining category shows that 5.3% are continuing weekly normal working hours (Table 5.1).

In Table 5.1 reveals that the child labour participation is high with normal working hour for those child labour whose family did not take any loan than the loan taking family. As Table 5.1 shows that the participation is strongly higher (8.7 %) for those child labours whose distance of working field from their central town is upto 5 km than the remaining two categories (6-10 & above 10 km for 0.1% & 0.2% respectively).

5.1.1 Determinants of Working Hour Per Week

Understanding the situation of child labour is a complex task. Incidence of working hazards in rural agricultural sectors is affected combined by social, economic, demographic and structural factors. The main concern of this chapter is to examine the relationship between working hour per week, a dependent variable, and set of selected independent variables for explaining the existence and persistence of child working status. The main feature of this analysis is to identify the factors that affect the socio-economic factors on child labour. In order to grasp the above problem, a well-known statistical technique- the logistic regression model- is used. This technique is more preferable than that of the linear regression or discriminant analysis. In this analysis, the dependent variable is working hour per week (dichotomous variable) and independent variables are age, sex, religion, educational qualification, types of livelihood, regular payment for work, father's occupation, income, sufficient food for health, causes behind child labour, condition of house, types of livelihood, loan of family, and distance between working field & central town. All of the independent variables are described in chapter two.

Table 5.2 gives the estimates of logistic regression coefficient (β) corresponding the independent variables, partial R and relative odds calculated for each category of the categorical variables. The inference regarding statistical significance is based on chi-square statistics. The p-value is used to identify the significant effects to assess the relative importance of the selected variables in the model. The odds ratio has a clear interpretation and is straightforward. An odds ratio of greater than 1.00 suggests an increased likelihood to work upto 42 hours (normal working hour), while an odds less than 1.00 indicates a decreased likelihood to work abiding normal working hour. The category with the relative odds of 1.00 represents the reference category for that categorical variable.

5.1.2 Development of the Model

Here the dependent variable Y is dichotomous one. It indicates the working hazards of child labour. it takes on the value one ($Y = 1$) with probability p (Say) if a child labour works upto 42 hours and zero ($Y = 0$) with probability $(1 - p)$ if it is more than 42 hours. All of the explanatory variables are qualitative which includes age, location,

place of treatment, condition of house, savings, religion, sex, distance between working field & central town, father's occupation, educational qualification, income, causes behind child labour, loan of family, sufficient food for health, of father's income, and regular payment for work.

Now the expression of p_i is given by

$$p_i = E \left[Y_i = 1 \mid \begin{array}{l} X_{11} = 0, X_{12} = x_{12}, X_{13} = x_{13}, X_{14} = x_{14}, X_2 = x_2, X_3 = x_3, X_{41} = 0, X_{42} = x_{42}, \\ X_{43} = x_{43}, X_{51} = 0, X_{52} = x_{52}, X_{53} = x_{53}, X_6 = x_6, X_7 = x_7, X_{81} = x_{81}, X_{82} = 0, \\ X_{83} = x_{83}, X_{84} = x_{84}, X_9 = x_9, X_{101} = 0, X_{102} = x_{102}, X_{103} = x_{103}, X_{11} = x_{11}, \\ X_{121} = 0, X_{122} = x_{122}, X_{123} = x_{123}, X_{131} = 0, X_{132} = x_{132}, X_{133} = x_{133} \end{array} \right]$$

$$= \frac{1}{1 + e^{-\left(\beta_0 + \sum_j \beta_j X_j \right)}}$$

For 'age' category

$X_{12} = 1$, if age is 9-10 years

= 0, otherwise.

$X_{13} = 1$, if age is 11-12 years

= 0, otherwise.

$X_{12} = 1$, if age is 13-14 years

= 0, otherwise.

Now for 'educational qualification' category

$X_{42} = 1$, if the education qualification is class (i – iv)

= 0, otherwise.

$X_{43} = 1$, if the education qualification is class (iv – ix)

= 0, otherwise.

Now for 'income' category

$X_{83} = 1$, if the income is 41-50

= 0, otherwise

$X_{84} = 1$, if the income is above 50

= 0, otherwise

Hence the logit model becomes

$$\ln \frac{p_i}{1-p_i} = \beta_0 + \beta_1 X_{12} + \beta_2 X_{13} + \beta_3 X_{14} + \beta_4 X_2 + \beta_5 X_3 + \beta_6 X_{42} + \beta_7 X_{43} + \beta_8 X_{52} + \beta_8 X_{53} + \beta_{10} X_6 + \beta_{11} X_7 + \beta_{12} X_{81} + \beta_{13} X_{83} + \beta_{14} X_{84} + \beta_{15} X_9 + \beta_{16} X_{102} + \beta_{17} X_{102} + \beta_{18} X_{11} + \beta_{19} X_{122} + \beta_{20} X_{123} + \beta_{21} X_{132} + \beta_{22} X_{133}$$

5.1.3 Empirical Results and Discussions

In this section an attempt has been made to examine the relationship between a dichotomous dependent variable (working hour per week) and set of explanatory variables as selected and discussed in the previous section for explaining existence and persistence of weekly working hour. The main feature of the analysis is to identify the factors that affect working hour of child labour and to analyze the direction of their differentials between the working duration abiding rules and working duration with hazardous condition. In order to comprehend the above problem, a well-known statistical technique logistic regression model (discussed in chapter two) is used.

The regression coefficient β_j can be obtained with the help of maximum likelihood estimation from the log-likelihood function suggested by Cox (1970) and is given by

$$\text{Loge } L(\beta_0, \beta_1, \dots, \beta_k) = \sum_{j=0}^k \beta_j t_j - \sum_{i=1}^n \log_e \{1 + \exp(Y_i \sum_{j=0}^k \beta_j X_{ij})\}$$

But we utilize the ready made facility of computer package SPSS for windows 10.0 version and the logit regression parameters β_j 's are solved by the help of this package programme.

Since the dependent variable Y_i is coded as one if the i th child labour work upto 42 hours and zero if it exceed the above working line. So, positive coefficient indicates that the child labour more likely to work maintaining the rules of working hour, on the other hand negative values indicates the reverse case. To obtain how much increment is likely to be in working hazards in agriculture sector.

The explanatory variable age levels of child labour is subdivided into four groups to compare which one group is more or like than other to work more times with hazardous condition. The subgroups are (i) 5-8 years, (ii) 9-10 years, (iii) 11-12 years, and (iv) 13-14 years. So dummy variable is introduced is here because the quantitative variable cannot be used directly. Since the categorization is of more than two groups

with this regard a reference group should be chosen. In this analysis the first age group (5-8 years) is considered as reference group. Because this group is the first group and is easier to compare with others age group. The same process is taken for the explanatory variable educational qualification of child labour. This variable is subdivided into three groups as (i) illiterate, (ii) class (i-iii), and (iii) class (iv-ix). To compare the educational qualification of child labour we have taken the group illiterate as reference group. The same process is applied for the explanatory variable income of respondent. This variable is subdivided into four groups as (1) upto 30, (ii) 31-40, (iii) 41-50, and (iv) above 50. So dummy variable is introduced is here because the quantitative variable cannot be used directly. In this analysis the second group is taken as reference group for explaining the income structure of child labour. The remaining other explanatory variables are subdivided in the same way.

The estimated logit model is given by

$$\ln\left(\frac{p_i}{1-p_i}\right) = -6.316 - 1.109X_{12} - 2.337X_{13} - 3.57X_{14} + 0.135X_2 + 1.056X_3 - 0.510X_{42} - 0.654X_{43} - 0.029X_{52} + 0.9.9X_{53} + 0.270X_6 - 0.013X_7 - X_{81} + 1.129X_{83} + 0.644X_{84} - 0.722X_9 - 578X_{102} + 0.229X_{102} - 0.113X_{11} + 0.310X_{122} + 0.854X_{123} + 3.384X_{132} + 3.084X_{133}$$

Table 5.2: Logistic Regression Estimates of The Odds Ratios [Exp (B)] of Socio-Economic Variables Of Working Hour Per Week.

Basic Characteristics	ERC (β)	SE (β)	Odds Ratio
Age			
5-8 (Ref)	0.0	1.0	1.0
9-10	-1.109	.712	.330
11-12	-2.337*	.629	.097
13-14	-3.537*	.609	.029
Sex			
Male (Ref)	0.0	1.0	1.0
Female	.135	.484	1.145
Religion			
Muslim (Ref)	0.0	1.0	1.0
Non-Muslim	1.056**	.447	2.875
Educational qualification			
Illiterate (Ref)	0.0	1.0	1.0
Class (i-iii)	-.510***	.297	.601
Class (iv-ix)	-.654**	.263	.520

Continue table 5.2

Types of livelihood			
Own house (Ref)	0.0	1.0	1.0
Rented house	-.029	.297	.971
Others house	.909	.441	2.481
Regular payment for work			
No (Ref)	0.0	1.0	1.0
Yes	.270	.239	1.310
Father's occupation			
Agriculture	-.013	.234	.987
Non-agriculture (Ref)	0.0	1.0	1.0
Income (Tk)			
Upto 30	-2.638*	.317	.072
31-40 (Ref)	0.0	1.0	1.0
41-50	1.129**	.513	3.092
50+	.644	.791	1.904
Sufficient food for health			
Yes (Ref)	0.0	1.0	1.0
No	-.722*	.210	.486
Causes behind child labour			
Poverty (Ref)	0.0	1.0	1.0
Self will	-.578	.275	.561
Parent's will	.229	.468	1.257
Condition of house			
Permanent (Ref)	0.0	1.0	1.0
Temporary	-.113**	.335	.894
Loan of family			
No Loan	0.0	1.0	1.0
100-6000 Tk.	.310	.230	1.364
6000+ Tk.	.854	.684	2.349
Distance between working field & central town (km)			
1-5	0.0	1.0	1.0
6-10	3.384*	.734	29.478
10+	3.084*	.621	21.846
Intercept		-6.316	
-2 log likelihood		638.768	
Cox & Snell R²		.214	
Nagelkerke R²		.473	
Model χ^2		425.064	

Notes: ERC= Estimated Regression Coefficient.

Ref= Reference Category.

Level of significance: * p<0.01; **<0.05; ***p<0.10.

The result of respondent's age levels shows a significant effect (1% Level) with age level 11-12 years and 13-14 years. The regression coefficient for age level 9-10 years, 11-12 years, and 13-14 years are -1.109, -2.337, and -3.537 respectively. It is clear that the last three age level has negative coefficient who have comparatively more experience to involve with agricultural field. So the regression coefficient for last three age level gradually illustrate that the child labour have likelihood to involve more times in agricultural field with hazardous condition compared to the first age level 5-8 years. The odd ratios of age level 9-10 years, 11-12 years, and 13-14 years of child labour are 0.330, 0.097, and 0.029 respectively. It is indicated that the child labour aged 9-10 years, 11-12 years, and 13-14 years have $(1-0.330) \times 100 = 67\%$, $(1-0.097) \times 100 = 99.9\%$, $(1-0.029) \times 100 = 97.1\%$ respectively lower risk to work to maintain rules and regulation than that of the reference group. The finding is substantiated by the fact that child labour working with hazardous condition with the increase of their age levels (Table 5.2).

The estimated regression coefficient for sex of child labour is 0.135, which suggested that the female child labours are less likely to be involved more times with field. The odd ratio for sex of child labour is 1.145, which indicated that female child labour are more likely to work upto 42 hours per week than that of male child labour (reference group). It is also indicated that keeping the other variables fixed for a unit change in sex of child labour the odds in favor of female child labour have more likelihood to work upto 42 hours than male child labour increase by $(1.145-1) \times 100 = 14.5\%$ (Table 5.2).

Religion has a positive and significant effect (5% Level) on weekly working hour abiding rules of work for child labour. The odd ratio shows that non-Muslim child labours are more likely to work upto 42 hours than Muslim child labour. It indicates that Muslims child labours are involved with hazardous working condition (more than 42 hours) than non-Muslims (Table 5.2).

Educational qualification of child labour has negative significant effect on weekly working hour upto 42 hours. The odd ratios of class (i-iii) and class (iv-ix) are 0.601 and 0.520 respectively. It indicated that the educational qualification for class (i-iii) and class (iv-ix) have $(1-0.601) \times 100 = 39.9\%$ and $(1-0.520) \times 100 = 48\%$ respectively have lower risk to work to maintain rules and regulation than that of the reference

group. So it emerges that the educated child labours work more than 42 hours per week with hazardous condition than illiterate child labour (Table 5.2).

Considering the types of livelihood, the regression coefficient for rented house and others house are -0.029 and 0.909 respectively. So the regression coefficient for rented house illustrate that the child labour have likelihood to involve in agricultural field more times with hazardous condition compared to the own house, while the child labour who live others house have likelihood to work to maintain working rules upto 42 hours compared to the own house. The odds ratio for rented house and others house are 0.971 and 2.481 respectively. It indicated that the types of livelihood for rented house has $(1-0.971) \times 100 = 2.9\%$ lower risk to work upto 42 hours per week, while for others has $(2.481-1) \times 100 = 148.1\%$ higher risk to work upto 42 hours per week than those child labour who live in their own house. So it is clear that the child labour who work living others house involved in the agricultural field with hazardous condition (Table 5.2).

The regression coefficient of child labour who get regular payment for their work is 0.270. So the regression coefficient regular payment worker illustrate that the child labour have likelihood to involve in agricultural field more times with hazardous condition compared to others. The odds ratio of regular payment taker child labour is 1.310, which indicates that they have $(1.310-1) \times 100 = 31\%$ higher risk to work exceeding 42 hours with hazardous situation in the agricultural field than reference group who are not taking regular payment for their work (Table 5.2).

Though the regression coefficient of father's occupation is insignificant but it has shown the expected sign, which is -0.013 for agricultural worker. So it is illustrated that the child labour whose fathers work in the agricultural sector have less likely to be involved in the agricultural field maintaining job rules upto 42 hours per week compared to the non-agricultural worker of child labour. The odds ratio agricultural father is 0.987, which indicated that the child labour whose father work in the agricultural field have $(1-0.987) \times 100 = 1.3\%$ lower risk to work more than 42 hours, that is hazardous to the child labour than that the non-agricultural father of child labour (reference group) (Table 5.2).

The regression coefficient of the incomes of child labour for those who earn regular upto Tk. 30 is -2.638 , which is negative and has significant effect (1% level) on weekly working hour of child labour. It indicated that the child labour who earn regularly maximum Tk. 30 have less likely to work upto 42 hours compared to those who earn Tk. 31-40. But the regression coefficient Tk. 41-50 is 1.129 , which has significant effect (5% Level) and for Above Tk. 50 is 0.644 . Both of the income range shows that they have more likely to work more upto 42 hours than that of those who earn Tk. 31-40 (reference group). The odds ratio income of child labour upto Tk. 30 has $(1-0.072) \times 100 = 92.8\%$ lower risk to work upto 42 hours. But the income of child labour for Tk. 41-50 and Above Tk. 50 have $(3.092-1) \times 100 = 209.2\%$ and $(1.904-1) \times 100 = 90.4\%$ higher risk to work abiding job rules for child labour than that of those who earn Tk. 31-40 (reference group) (Table 5.2).

Considering the sufficient food for health, the regression coefficient is -0.722 , which shows that the child labours who don't get the sufficient food has negative effect and significantly affect (1% Level) the weekly working hour. It clarify that the child labour who get the sufficient food they are likely to be involved in agricultural field more than 42 hours per week with hazardous condition than those who get sufficient food health. The odds ratio is 0.486 , which reveal that the child labour who donot get sufficient food they have $(1-0.486) \times 100 = 51.4\%$ lower risk to work more than 42 hours with hazardous condition. So it is clear that the child labour who get sufficient food for their health, they ability to work more than 42 hours in agricultural field (Table 5.2).

Considering the causes behind work, the regression coefficient for self will and parent's will are -0.578 and 0.229 , which shows that the child labour who involve with agricultural by self will, they are likely to work more than 42 hours with hazardous condition and the child labour who involve with this working area by their parent's will, they are likely to work maximum 42 hours per week than those child labour who come in this working field by the cause of poverty. The odds ratios for child labour who involve with agricultural by the cause of self will and parent's are 0.561 and 1.257 respectively. The results shows that the child labour by the cause of self will have $(1-0.561) \times 100 = 43.9\%$ lower risk to work more than 42 hours and $(1.257-1) \times 100 = 25.27\%$ higher risk to be involved in agricultural work upto 42 hours

than those child labour who come in this working field by the cause of poverty (reference group) (Table 5.2).

The regression coefficient of condition of house for those child labour who have temporary house is -0.113 shows the significant effect (5% level) on weekly working hour. It is clear that the child labours who have temporary house are likely to involve in agricultural field more than 42 hours with hazardous condition than those who have permanent house. The odds ratio for temporary house is 0.894. It illustrates that the child labour who have temporary house have $(1-0.894) \times 100 = 10.6\%$ lower risk to work upto 42 hours than that of the child labour who have permanent house (reference group). So it is revealed that the child labour who have permanent house can work more than 42 hours with hazardous condition than those who have temporary house (Table 5.2).

The regression coefficient of loan of family for those child labours whose family have taken loan upto Tk.6000 and Tk.6000+ are 0.31 and 0.854 respectively, both which shows the insignificant effect on weekly working hour. It is clear that the child labour whose family taken loan is likely to involve in agricultural field more than 42 hours with hazardous condition than those who family didn't take any loan. The odds ratio for those child labour whose family taken loan upto Tk.6000 and Tk.6000+ are 1.364 and 2.349 respectively. It illustrates that the child labour whose family taken loan have $(1.364-1) \times 100 = 36.4\%$ and $(2.349-1) \times 100 = 134.9\%$ higher risk to work more than 42 hours than the child labour whose family didn't take any loan (reference group). So it is revealed that the child labour who taken loan are bound to work more than 42 hours with hazardous condition than the reference group, because they have responsibility to repay family's loan (Table 5.2).

The regression coefficient of distance between working field and central town for 6-10 km. and 10+ km. are 3.384 and 3.084, both of which shows the significant effect (1% Level) on weekly working hour. It is clear that the distance between working field and central town is as much as likely to more than 42 hours in the agricultural field than those child labours whose distance is 1-5 km. between field and town. The odds ratios for distance between field and town 6-10 km. and 10+ km. have $(29.478-1) \times 100 = 284.78\%$ and $(21.846-1) \times 100 = 20.85\%$ higher risk to be involved with agricultural work with hazardous condition than the reference group. So the result

indicate that the child labour who live near about central town have more possibility to work more than 42 hours than those who live near about rural areas, because the child labour who live beside central town, they get their expected salary than the rural areas (Table 5.2).

5.2 Differentials of Occupation of Child Labour

Extreme forms of poverty play a crucial role for involving working sector. Child labour is part of a vicious cycle, with poverty as a main cause as well as a main consequence. This implies that child labour cannot be addressed in isolation. In Bangladesh, there are many different kinds of work children do, most commonly:

- at home, looking after younger children, or helping in family farms and business;
- in agriculture: weeding, harvesting, looking after animals, fishing;
- as maids, cleaners and domestic servants;
- in factories and workshops: e.g. garment makings, construction, carpet weaving;
- street work such as scavenging, shoe shining and selling snacks or trinkets;
- as child prostitute or subjects of pornography.

Several researchers worked on child labour of different working sectors except agriculture sector in Bangladesh. Even there is no sufficient information on child labour in agriculture in worldwide. That is why, I am decided to work on child labour in agriculture sector who are passing their miserable life with hazardous work.

I have collected data from those child labours who were working in agriculture field in peak season and also included such types of child labour who work out of agriculture field when there is no availability of their jobs. I have categorized the child labour as agricultural labour who work only in agriculture field during whole year and as non-agricultural labour who involve their in agriculture sector just in peak season and out of that season they have to continue their work with another working sector.

We computed occupational status of child labour according to their selected socio-economic variables. The percentages of results are presented in Table 5.3. The table 5.3 shows that 80.3% of the child labours are working with their main occupation as agricultural labour.

In Table 5.3 we observed that child labour participations are gradually increasing according to their higher ages in agriculture sector. Actually, children in rural areas at early ages try to involve their life in education, parents do not agree to send their children in hazardous working sector, land owner do not like to involve children in working sector etc. But aged child labours are able to do their job to replenish their requirements to alleviate poverty and other demands and to continue their work of their land owner's requirements. Another reason is for aged child labour when they follow their family's miserable moments then they have to bound to do anything for reducing poverty without thinking others.

As Table 5.3 shows that male child labours are working spontaneously than females (75% & 5.3% for males and females respectively in agriculture sector). Actually, agriculture fields are not safe for females in my working areas, because they have to face several obstacles to work outside the home, whereas, male even female child labour carry on their work facing hazardous condition to their self and family requirements.

In Table 5.3 depicts that Muslim child labour participations are five times higher than non-Muslims in agriculture sector.

As Table 5.3 envisaged that the child labour participation for those who are living in their own house is more than two times higher than rented house and it near about two times higher than other house in agriculture sector. So, we observed that rural children getting their facilities to work in agriculture field living in their own house than other living places. Others house include relatives house, floating and near about working field etc. are not suitable for children to continue their work and these places are totally unadjusted for females.

As Table 5.3 shows that the child labour participation is increasing with the increase of their educational qualification. But the rural children cannot continue this educational speed because of working responsibilities and also to maintain their family requirements to reduce poverty.

In Table 5.3 reveals that the child labour participation in agriculture sector is about three times higher for those, whose father's occupation is agriculture labour than the non-agricultural labour. It also shows that 60.7% child labour involve their life in agriculture sector whose fathers also involved with this sector. But this feature is totally opposite for mothers, because only 0.8% child labour involved with their life whose mother's occupation is also agriculture and the greatest part (79.5%) of non-agriculture based mothers encouraged to send their children in agriculture field.

In Table 5.3 depicts that the child labour participation is high, where father's income is high (above Tk.50) and is low where father's income is Tk. 31-40. It also shows that rural children are encouraged to involve with agriculture based work observing their father's higher income.

The children have to involve in this hazardous working sectors because of their various problems and requirements. I have categorized this variable into three classes, such as poverty, self will and parent's will. In Table 5.3 indicates that poverty is the main cause participating in agriculture sector at early ages of child labour. It also shows that self and parents will also take part to involve their life with agriculture sector. Here we observed that the rural agricultural family is still now in severe poverty line. Actually the rural children have no alternative not to involve their effective life at early ages in hazardous agricultural sector. Sometimes, they involve their life not to getting any educational facilities and other environmental support.

The children have to involve their life of their various types of requirements at early ages but they are not involving themselves with addiction. As Table 5.3, it envisaged that more than three-fifth of the total child labour are non-addicted who have been taken their main occupation as agricultural labour. Among the addicted, the child labour participation is higher of smoker and later Ganja, Tari and Vang user have the little role to participate in agriculture sector. Actually, rural household head and another senior members are not aware regarding their children to protect from any types addiction. They just think that their children have to work and will earn money and this money will provide for their family to reduce poverty.

In Table 5.3 shows that child labour participation is higher for those who get their payment regularly. So we can conclude that rural child labour are still getting their regular payment from land owner, though they are working in severe conditions. The remaining 17.5% of the child labour is not getting their payment timely and for this reason they have to suffer from various types of problem. Most of times, they have to be hungry due to deficiency of money. Moreover, they are bound to continue their job, because most of the rural villages have no alternative of agriculture. That is why: they are passing their miserable condition day by day without getting their three times of proper food daily.

As Table 5.3 shows that child labour participation is higher (46.7 %) in agriculture sector WHO get their food sufficiently for their health than those who are not getting their food sufficiently. Actually, the rural children get their food just three times a day but these foods cannot fulfill their physical requirement and so they are continuing their life with severe health problems. But they have no another way to avoid these problems because there is no job availability. In off peak season in floods, cyclone, in rainy season etc. they have to carry on their miserable life without getting a confirmation of single times of food daily.

As Table 5.3 shows that near about three-fifth of the child labour whose occupation is agricultural labour are working in their field from five (5) km distance of central town. This is gradually increasing as the percentage is decreasing for child labour whose occupation is mainly agriculture. Here, we observed that child labour is more in near about thana, because in rural areas they are not getting their expected salary but in near about thana region they are getting their expected salary. That is why, they are eager to work in agriculture sector. Also in thana region they get their payment regularly and there working is lower than rural working hour.

The study areas between Chapai Nawabganj and Rajshahi reveal that more than three-fifth of the child labour has been counted from Chapai Nawabganj, though only three unions selected from Rajshahi for my study (Table 5.3). Actually, we have given main priorities to the Chapai Nawabganj district for collecting the salient feature. The agriculture land of Chapai Nawabganj is fertile and there is no another sufficient working sector, so that they involve themselves to earn money.

Table 5.3: Percentage Distribution of Working Hour Per Week by Selected Socio-Economic Variables

Basic Characteristics	Agriculture		Total	
	%	Number	%	Number
Age				
5-8	7.9	140	10	177
9-10	10	177	13.5	239
11-12	19.7	348	24.9	439
13-14	42.6	751	51.5	909
Sex				
Male	75	1323	90.2	1592
Female	5.3	93	9.8	172
Religion				
Muslim	67	1181	83.7	1476
Non-Muslim	13.3	235	16.3	288
Types of livelihood				
Own House	48.9	863	62	1093
Rented House	20.4	359	24.9	440
Others	11	194	13.1	231
Educational qualification				
Illiterate	23.8	420	30.2	532
Class (I – III)	24.1	425	30.6	539
Class (IV – IX)	32.4	571	39.3	693
Father's occupation				
Agriculture	60.7	1071	75.1	1324
Non- Agriculture	19.6	345	24.9	440
Mother's occupation				
Agriculture	0.8	14	1.1	20
Non- Agriculture	79.5	1402	98.9	1744
Father's Income (Tk)				
Upto to 30	8.0	142	9.5	167
31-40	7.7	135	10.3	181
41-50	23.9	421	30.7	542
Above 50	40.7	718	49.5	874
Causes behind child labour				
Poverty	61.8	1091	77	1369
Self will	12.9	228	16.3	288
Parent's will	5.5	97	6.6	117
Drugs uses child labour				
Non-addicted	63.1	1113	79.8	1408
Smoke	13.9	246	16.4	290
Ganja	1.2	21	1.4	25
Tari	1.2	21	1.2	22
Vang	0.9	15	1.1	19

Continue table 5.3

Regular payment for work				
Yes	62.8	1107	77.5	1367
No	17.5	309	22.5	397
Sufficient food for health				
Yes	46.7	824	58.7	1035
No	33.6	592	41.3	729
Distance between working field & central town (km)				
Upto 5	57.9	1022	70.7	1247
6-10	14.5	255	20.4	359
Above 10	7.9	139	9.0	158
Location				
Rajshahi	17.9	315	21.1	372
Chapai Nawabganj	62.4	1101	78.9	1392

5.2.1 Determinants of Occupation of Child Labour

The relative importance of all independent variables on dependent variables has to be examined simultaneously by some multivariate techniques. In this section, we have applied well-known linear logistic regression model as multivariate technique. To examine the effects of socio-economic and selected programmatic factors on the working status of child labour logistic regression model was used. In the analysis, the dependent variable was occupation (dichotomous variable) and the independent variables were age, sex, religion, educational qualification, types of livelihood, drugs uses child labour, regular payment for work, location, father's occupation, mother's occupation, father's income, sufficient food for health, causes behind work, and distance between working field & central town.

Table 5.4 gives the estimates of logistic regression coefficient (β) corresponding the independent variables, partial R and relative odds calculated for each category of the categorical variables. The inference regarding statistical significance is based on chi-square statistics. The p-value is used to identify the significant effects to assess the relative importance of the selected variables in the model. The odds ratio has a clear interpretation and is straightforward. An odds ratio of greater than 1.00 suggests an increased likelihood to work as a agricultural labour, while an odds less than 1.00 indicates a decreased likelihood to work as a agricultural labour. The category with the relative odds of 1.00 represents the reference category for that categorical variable.

5.2.2 Development of the Model

Here the dependent variable Y is dichotomous one. It indicates the occupational status of child labour. It takes on the value one ($Y = 1$) with probability p (Say) if the occupation of child labour is agriculture and zero ($Y = 0$) with probability $(1 - p)$ if it is non-agriculture. All of the explanatory variables are qualitative which includes age, sex, religion, educational qualification, types of livelihood, drugs uses child labour, regular payment for work, location, father's occupation, mother's occupation, father's income, sufficient food for health, causes behind child labour, and distance between working field & central town.

Now the expression of p_i is given by

$$p_i = E[Y_i = 1] = \frac{1}{1 + e^{-\left(\beta_0 + \sum_j \beta_j X_j\right)}}$$

$$= \frac{1}{1 + e^{-\left(\beta_0 + \sum_j \beta_j X_j\right)}}$$

For 'age' category

$X_{12} = 1$, if age is 9-10 years

$= 0$, otherwise.

$X_{13} = 1$, if age is 11-12 years

$= 0$, otherwise.

$X_{12} = 1$, if age is 13-14 years

$= 0$, otherwise.

Now for 'types of livelihood' category

$X_{52} = 1$, if the child labour is living in their own house

$= 0$, otherwise.

$X_{53} = 1$, if the child labour is living in rented house

$= 0$, otherwise.

Now for 'drugs type' category

$X_{62} = 1$, if the child labour do smoke
 $= 0$, otherwise

$X_{63} = 1$, if the child labour addicted by ganja
 $= 0$, otherwise

$X_{64} = 1$, if the child labour addicted by tari
 $= 0$, otherwise

$X_{65} = 1$, if the child labour addicted by vang
 $= 0$, otherwise

Hence the logit model becomes

$$\ln\left(\frac{p_i}{1-p_i}\right) = \beta_0 + \beta_1 X_{12} + \beta_2 X_{13} + \beta_3 X_{14} + \beta_4 X_2 + \beta_5 X_3 + \beta_6 X_{42} + \beta_7 X_{43} + \beta_8 X_{52} \\ + \beta_8 X_{53} + \beta_{10} X_{62} + \beta_{11} X_{63} + \beta_{12} X_{64} + \beta_{13} X_{65} + \beta_{14} X_7 + \beta_{15} X_8 + \beta_{16} X_9 + \beta_{17} + \\ X_{10} + \beta_{18} X_{112} + \beta_{19} X_{113} + \beta_{20} X_{114} + \beta_{21} X_{12} + \beta_{22} X_{132} + \beta_{23} X_{133} + \beta_{24} X_{142} + \beta_{25} X_{143}$$

5.2.3 Empirical Results and Discussions

In this section an attempt has been made to examine the relationship between a dichotomous dependent variable (working status) and set of explanatory variables as selected and discussed in the previous section for explaining existence and persistence of occupation of respondent. The main feature of the analysis is to identify the factors that affect working status of child labour and to analyze the direction of their differentials between the agricultural and non-agricultural labour. In order to comprehend the above problem, a well-known statistical technique logistic regression model (discussed in chapter two) is used.

The regression coefficient β_j can be obtained with the help of maximum likelihood estimation from the log-likelihood function suggested by Cox (1970) and is given by

$$\text{Loge } L(\beta_0, \beta_1, \dots, \beta_k) = \sum_{j=0}^k \beta_j t_j - \sum_{i=1}^n \log_e \{1 + \exp(Y_i \sum_{j=0}^k \beta_j X_{ij})\}$$

But we utilize the ready made facility of computer package SPSS for windows 10.0 version and the logit regression parameters β_j 's are solved by the help of this package programme.

Since the dependent variable Y_i is coded as one if the i th child labour work as agricultural labour and zero if they work as non-agricultural labour. So positive coefficient indicates that the child labour more likely to work maintaining the rules of working hour, on the other hand negative values indicates the reverse case. To obtain how much increment is likely to be working in agriculture sector. The explanatory variable age levels of child labour is subdivided into four groups to compare which one level is more or like than other to work more times with hazardous condition. The subgroups are (i) 5-8 years, (ii) 9-10 years, (iii) 11-12 years, and (iv) 13-14 years. So dummy variable is introduced is here because the quantitative variable cannot be used directly. Since the categorization is of more than two levels with this regard a reference group should be chosen. In this analysis the first age level (5-8 years) is considered as reference group. Because this group is the first group and is easier to compare with others age levels. The same process is taken for the explanatory variable types of livelihood. This variable is subdivided into three groups as (i) own house, (ii) rented house, and (iii) others house. To compare the living standard of child labour we have taken the group own house as reference group. The same process is applied for the explanatory variable drugs uses child labour. This variable is subdivided into five groups as (i) no drugs, (ii) smoke, (iii) ganja, and (iv) tari, (v) vang. In this analysis no drugs is taken as reference group for explaining the impact of drugs on child labour. The remaining other explanatory variables are subdivided in the same way.

The estimated logit model is given by

$$\ln\left(\frac{p_i}{1-p_i}\right) = 0.650 + 0.312X_{12} + 0.114X_{13} + 0.046X_{14} + 1.716X_2 - 0.647X_3 - 0.038X_{42} \\ - 0.148X_{43} - 0.053X_{52} - 0.0378X_{53} - 0.076X_{62} + 0.045X_{63} - 1.243X_{64} + 0.235X_{65} - \\ 0.152X_7 + 0.215X_8 - 0.332X_9 + 0.460X_{10} + 0.334X_{112} + 0.327X_{113} + 0.025X_{114} - \\ 0.050X_{12} + 0.066X_{132} - 0.052X_{133} + 0.479X_{142} - 0.324X_{143}$$

Table 5.4: Logistic Regression Estimates of the Odds Ratios [Exp (B)] of Socio-Economic Variables of Number of Child Labour with Agricultural/ Non-Agricultural Work.

Basic Characteristics	ERC (β)	SE (β)	Odds Ratios
Age			
5-8 (Ref)	0.0	1.0	1.0
9-10	.312	.250	1.366
11-12	.114	.237	1.121
13-14	.046	.230	1.047
Sex			
Male (Ref)	0.0	1.0	1.0
Female	1.716**	.203	5.563
Religion			
Muslim (Ref)	0.0	1.0	1.0
Non-Muslim	-.647**	.224	.524
Educational qualification			
Illiterate (Ref)	0.0	1.0	1.0
Class (i-iii)	-.038	.169	.962
Class (iv-ix)	-.148	.171	.863
Types of livelihood			
Own house (Ref)	0.0	1.0	1.0
Rented house	-.053	.151	.948
Others house	-.378***	.205	.685
Drugs uses child labour			
No Drugs (Ref)	0.0	1.0	1.0
Smoke	-.076	.186	.927
Ganja	.045	.561	1.046
Tari	-1.243	1.035	.289
Vang	.235	.591	1.265
Regular payment for work			
No (Ref)	0.0	1.0	1.0
Yes	-.152	.148	.859
Location			
Chapai Nawabganj (Ref)	0.0	1.0	1.0
Rajshahi	.215	.197	1.240
Father's occupation			
Agriculture	-.332**	.158	.717
Non-agriculture (Ref)	0.0	1.0	1.0
Mother's occupation			
Agriculture	.460	.552	1.584
Non-agriculture (Ref)	0.0	1.0	1.0
Father's income (Tk)			
Upto 30 (Ref)	0.0	1.0	1.0
31-40	.334	.316	1.397
41-50	.327	.271	1.386
50+	.025	.263	1.025

Continue table 5.4

Sufficient food for Health			
Yes (Ref)	0.0	1.0	1.0
No	-.050	.131	.952
Causes behind child labour			
Poverty (Ref)	0.0	1.0	1.0
Self will	.066	.169	1.068
Parent's will	-.052	.262	.949
Distance between working field & central town (km)			
Upto 5 (Ref)	0.0	1.0	1.0
6-10	.479**	.157	1.614
10+	-.324	.277	.724
Intercept	0.650		
-2 log likelihood	1622.082		
Cox & Snell R²	0.071		
Nagelkerke R²	0.113		
Model χ^2	129.947		

Notes: ERC= Estimated Regression Coefficient.

Ref= Reference Category.

Level of significance: * $p < 0.01$; ** $p < 0.05$; *** $p < 0.10$.

The estimated regression coefficient for age levels 9-10 years, 11-12 years, and 13-14 years are 0.312, 0.114, and 0.046 respectively. It is clear that the last three age levels has positive coefficient who have comparatively more experience to involve with agricultural work. So the regression coefficient for last three age levels gradually illustrate that the child labour have likelihood to involve more times in agricultural work compared to the first age group 5-8 years (reference group). The odd ratios of age levels 9-10 years, 11-12 years, and 13-14 years of child labour are 1.336, 1.121, and 1.047 respectively. It is indicated that the child labour aged 9-10 years, 11-12 years, and 13-14 years have $(1.336-1) \times 100 = 33.6\%$, $(1.121-1) \times 100 = 12.1\%$, $(1.047-1) \times 100 = 4.7\%$ respectively higher risk to work in agriculture field than that of the non-agriculture field (Table 5.4).

The estimated regression coefficient for sex of female child labour is 1.716, which is highly (100% level) significant and suggested that the female child labour are more likely to be involved in agricultural work than male child labour. The odd ratio of female child labour is 5.563. It is indicated that the female child labour has $(5.563-1) \times 100 = 56.3\%$ higher risk to work in agriculture field than that of the male child labour (Table 5.4).

Religion has a positive and significant effect (5% Level) on occupation of child labour. The estimated regression coefficient for non-Muslim child labour is -0.647 , which shows significant effect (5% Level) and suggested that the non-Muslim child labour are less likely to be involved in agricultural work than Muslim child labour. The odd ratio of Non-Muslim child labour is $.524$. It is indicated that the non-Muslim child labour has $(1-0.524) \times 100 = 47.6\%$ lower risk to work in agriculture field than that of the Muslim child labour (Table 5.4)..

Educational qualification of child labour has negative significant effect on occupation of child labour. The estimated regression coefficients for class (i-iii) and class (iv-ix) are -0.510 and -0.654 respectively. It is clear that the educated child labours are comparatively more interested to involve with non-agricultural work than the illiterate child labour. The odd ratios of class (i-iii) and class (iv-ix) are 0.601 and 0.520 respectively. It indicated that the educated child labour for class (i-iii) and class (iv-ix) have $(1-0.601) \times 100 = 39.9\%$ and $(1-0.520) \times 100 = 48\%$ respectively lower risk to work in agriculture field than that of the reference group (Table 5.4).

Considering the types of livelihood, the regression coefficient for rented house and others house are -0.053 and -0.378 respectively. So the regression coefficient for rented house and others house illustrate that the child labour have likelihood to work in non-agriculture sector compared to the own house. The odds ratio for rented house and others house are 0.984 and 0.685 respectively. It indicated that the types of livelihood for rented house others house have $(1-0.984) \times 100 = 1.6\%$ and $(1-0.685) \times 100 = 31.5\%$ lower risk to work in agriculture sector (Table 5.4).

The estimated regression coefficient for several drugs using child labour smoke, ganja, tari, and vang are -0.076 , 0.045 , -1.243 , and 0.235 respectively. It is clear that the two types of drugs smoke and tari have negative coefficient who have comparatively less likelihood to involve with agricultural work than the reference group who didn't use any drugs, where as the remaining two drugs such as ganja and vang have positive coefficient who have comparatively higher likelihood to work in the agriculture sector than the reference group. The odd ratios of child labour who use

smoke, ganja, tari, and vang are 0.927, 1.046, 0.289, and 1.265 respectively. It is indicated that the child labour uses ganja and vang have $(1.046-1) \times 100 = 4.6\%$, $(1.265-1) \times 100 = 26.5\%$ respectively higher risk to work in agriculture field, where as the child labour uses smoke and tari have $(1-0.927) \times 100 = 7.3\%$, $(1-0.289) \times 100 = 71.1\%$ respectively lower risk to work in agriculture work than that of the non-agricultural work (Table 5.4).

The regression coefficient of child labour who get regular payment for their work is -0.152 . So the regression coefficient for regular payment worker illustrate that the child labour have likelihood to involve with agricultural work than the reference group.. The odds ratio of regular payment taker child labour is 0.859, which indicate that they have $(1-0.859) \times 100 = 14.1\%$ lower risk to work in agricultural field than reference group who are not taking regular payment for their work (Table 5.4).

The regression coefficient of child labour who living in Rajshahi districet is 0.215. So the regression coefficient for the child labours of Rajshahi district illustrates that the child labours have likelihood to involve with agricultural work than the reference group. The odds ratio of Rajshahi district is 1.240, which indicate that they have $(1.240-1) \times 100 = 24\%$ higher risk to work in agricultural field than reference group who are living in Chapai Nawabganj district (Table 5.4).

The regression coefficient of father's occupation is -0.332 , which shows the negative significant effect (5% Level) on the occupation of child labour. So it is illustrated that the child labour whose fathers work in the agricultural field have less likely to be involved in the agricultural work compared to the non-agricultural child labour. The odds ratio agricultural father is 0.717, which indicated that the child labour whose father work in the agricultural field have $(1-0.717) \times 100 = 28.3\%$ lower risk to work in agricultural work than that the non-agricultural father of child labour (reference group) (Table 5.4).

The regression coefficient of mother's occupation is 0.460, which indicate that the child labour whose mothers work in the agricultural field has more likely to be

involved in the agricultural work compared to the non-agricultural child labour. The odds ratio agricultural mother is 1.584, which indicated that the child labour whose mother work in the agricultural field have $(1.584-1) \times 100 = 58.4\%$ higher risk to work in agricultural field than that of the non-agricultural mother of child labour (reference group) (Table 5.4).

The regression coefficient for the father's income categories Tk 31-40, Tk 41-50, and above Tk 50 is 0.334, 0.327, and 0.025 respectively. It indicated that the child labour whose fathers earn regular Tk 31-40, Tk 41-50, and above Tk 50. are 0.334, 0.327, and 0.025 have more likely to work in the agriculture sector compared to the reference group who earn daily upto Tk 30. The odds ratio of the father's income categories Tk 31-40, Tk 41-50, and above Tk 50. have $(1.397-1) \times 100 = 39.7\%$, $(1.386-1) \times 100 = 38.6\%$, and $(1.025-1) \times 100 = 2.5\%$ higher risk to work in the agricultural field than the reference group whose mothers income category is upto Tk 30 (Table 5.4).

Considering the sufficient food for health, the regression coefficient is -0.050 , which shows that the child labour who don't get the sufficient food has negative effect on the occupation of child labour. It clarify that the child labour who do not get the sufficient food they are less likely to be involved in agricultural field compared to the child labour who gets sufficient food (reference group). The odds ratio is 0.952, which reveal that the child labour who do not get sufficient food they have $(1-0.952) \times 100 = 4.8\%$ lower risk to work in the agriculture sector (Table 5.4).

Considering the causes behind work, the regression coefficient for self will and parent's will are 0.066 and -0.052 , which shows that the child labour who involve with agricultural by self will, they are more likely to work in the agricultural field and the child labour who involve with this working area by their parent's will, they are less likely to work in the agricultural sector than the reference group whose involves in this field for the cause of poverty. The odds ratios for child labour who involve with agricultural by the cause of self will and parent's will are 1.614 and 0.949 respectively. The results shows that the child labour by the cause of self will have

$(1.614-1) \times 100 = 61.4\%$ higher risk and $(1-0.949) \times 100 = 5.1\%$ lower risk to be involved in agricultural work than those child labour who come in this working field by the cause of poverty (reference group) (Table 5.4).

The regression coefficient of distance between working field and central town for 6-10 km. and is 0.479, which shows the positive significant effect and are more likely to work in the agricultural sector, whereas for 10+ km. is -0.324 , shows that the distance between field and thana is less likely to work in the agricultural field than the reference group whose distance between field and town is 1-5 km. The odds ratios for distance between field and town 6-10 km. and 10+ km. have $(1.614-1) \times 100 = 61.4\%$ higher and $(1-0.949) \times 100 = 5.1\%$ lower risk to be involved with agricultural work than the reference group (Table 5.4).

Chapter Six

Factors Affecting Regular Working Hour Status and Duration of Involvement in Agriculture Sector: Multiple Classification Analysis

6.1 Introduction

The previous chapter observed that there is a complex set of relationship among the various socio-economic and child labour related characteristics by using bivariate and logistic regression analysis, that is directly or indirectly affects the working hour of child labour. To examine the net effects of all predictor variables, it is essential to need the well known Multiple Classification Analysis (MCA).

The present chapter investigation is made of the contribution of such factors as age, location, place of treatment, condition of house, savings, religion, sex, distance between working field and central town, father's occupation, educational qualification, income, causes behind child labour, loan of family, sufficient food for health, father's income and regular payment for work on working hours of child labour in agriculture sector. The objective is to determine the socio-economic impacts on the working hour of child labour.

Therefore, there is a need to evaluate these effects in order to know the intensity of the influences of the various factors. For this reason, a well known technique of Multiple Classification Analysis (MCA) is used. The multiple classification analysis examines the relationship between several predictor variables and a single dependent variable and determines the effects of each predictor before and after adjustment for its inter-correlations with other predictors in the analysis. It also provides information about the bivariate and multivariate relationships between the predictors and the dependent variable. It also assume that the effects of the predictors are additive i.e. there is no interactions between predictors. The present chapter investigation is made of the contribution.

Multiple Classification Analysis for Daily Working Hour

6.2 Variables Considered in the Analysis

The multiple classification analysis is undertaken first to evaluate the contribution of socio-economic variables such as age, location, place of treatment, condition of house, savings, religion, sex, distance between working field and central town, father's occupation, educational qualification, income, causes behind child labour, loan of family, sufficient food for health, father's income and regular payment for work on working hours per day of child labour in agriculture sector. In this section daily working hour is taken to be the dependent variable and socio-economic variables are the explanatory variables. The dependent variable is entered on dichotomous variables whereas, the explanatory variables are either dichotomous or on ordinal scale. All the predictors and explanatory variables employed in the analysis are the following table.

Table 6.1: List of Socio-Economic Variables and Their Categories

Independent Variables	Categories
Age	1 = 5-8; 2 = 9-10; 3 = 11-12; 4 = 13-14
Location	1 = Rajshahi; 2 = Chapai Nawabganj
Place of treatment	1 = Govt. Hospital; 2 = Community Clinic; 3 = Village Doctor
Condition of house	1 = Permanent; 2 = Temporary
Savings	0 = No Savings; 2 = Upto 200; 3 = 201-400; 4 = 401-600; 5 = Above 600
Religion	1 = Muslim; 2 = Non-Muslim
Sex	1 = Male; 2 = Female
Distance between working field & central town (KM)	1 = 1-5; 2 = 6-10 ; 3 = Above 10
Father's occupation	1 = Agricultural labour; 2 = Non-agricultural labour
Educational qualification	1 = Illiterate; 2 = Class (i-iii); 3 = Class (iv-ix)
Income (Tk)	1 = Upto 30; 2 = 31-40; 3 = 41-50; 4 = Above 50
Causes behind child labour	1 = Poverty; 2 = Parent's will; 3 = Self will
Loan of Family (Tk)	0 = No Loan; 1 = Upto 6000; 3 = 6000+
Sufficient food for health	1 = Yes; 0 = No
Father's income	1 = Upto 30; 2 = 31-40; 3 = 41-50; 4 = Above 50
Regular payment for work	1 = Yes; 0 = No

The variable included in the model given above in the aforesaid fashion and the MCA is performed on our collected primary data. The analysis of data is made using statistical software SPSS 7.52 version.

6.3 Factors Affecting of Daily Working Hour

All our selected variables mentioned in section 6.1 that those variables affecting daily working hour. The present section daily working hour is taken to be dependent variable and socio-economic variables are taken as explanatory variables. As shown in table 6.2, the mean unadjusted and adjusted daily working hour by varieties socio-economic characteristics with the value of η^2 and β^2 made from MCA by our research data. The table 6.2 shows that the proportion of variance explained by MCA which result is high for daily working hour i.e. $R^2 = 0.74$.

Table 6.2: Mean Hours of Daily Working Hour by Selected Socio-Economic Characteristics (Multiple Classification Analysis)

Explanatory Variables	Predicted Mean		Correlation Ratio	
	Unadjusted	Adjusted	η^2	β^2
Age				
5-8	8.1051	8.1513		
9-10	8.1757	8.2021		
11-12	8.8109	8.8351		
13-14	8.5138	8.5514	.201	.161
Location				
Rajshahi	7.4032	7.7765		
Chapainawabgonj	9.1185	9.0188	.481	.349
Place of treatment				
Govt. Hospital	6.7534	6.5009		
Community Clinic	8.5370	8.3721		
Village Doctor	9.0851	8.9812	.532	.343
Condition of house				
Permanent	8.7773	8.7572		
Temporary	8.6925	8.7556	.025	.031
Savings (Tk)				
No Savings	8.6835	8.7323		
50-200	8.7488	8.7115		
201-400	8.9711	8.8794		
401-600	9.5161	9.4080		
Above 600	9.5926	9.6109	.140	.128
Religion				
Muslim	8.6311	8.6608		
Non-Muslim	9.5284	9.3793	.235	.188
Sex				
Male	8.7275	8.8721		
Female	9.2635	8.8542	.112	.017

Continue table 6.2

Distance Between working field & central town				
1-5 km	8.8404	8.7935		
6-10 km	8.8022	8.8664		
Above 10 km	7.9937	8.2184	.165	.118
Father's occupation				
Agricultural labour	8.7696	8.8290		
Non-agricultural labour	8.8177	8.6068	.014	.065
Educational qualification				
Illiterate	9.1560	9.0490		
Class (i-iii)	8.5083	8.5155		
Class (iv-ix)	8.6436	8.7202	.185	.144
Income (Tk)				
Upto 30	8.3087	8.5064		
31-40	8.9679	8.7270		
41-50	9.1266	9.2109		
Above 50	9.1316	8.8738	.247	.185
Causes behind of child labour				
Poverty	8.7616	8.7581		
Parents will	8.6319	8.6273		
Self will	9.0085	9.0609	.057	.065
Loan of Family (Tk)				
No Loan	8.7737	8.7127		
Upto 6000	8.6303	8.8017		
6000+	9.2727	9.1736	.087	.067
Sufficient food for health				
Yes	8.9007	8.8603		
No	8.6086	8.6661	.101	.067
Father's income (Tk)				
Upto 30	6.3000	6.3963		
31-40	8.4862	8.6012		
41-50	8.8635	8.9472		
Above 50	9.0732	8.9864	.454	.427
Regular payment for work				
Yes	8.8288	8.5452		
No	8.8288	8.8182	.092	.078

$$R^2 = 0.74$$

The Salient Features of Table 6.2 by Socio-Economic Factors are Discussed as Follows:

The current age of child labour correlates of working hour per day. The daily working hour is comparatively higher for higher age. As table-6.2, It is observed from the table that mean adjusted working hour is higher (8.5514) with higher age (13-14) and is lower (8.1513) with lower age (5-8) in agriculture sector.

The daily working hour is comparatively higher for Chapai Nawabganj than Rajshahi. It is observed in Table 6.2, the mean adjusted working hour is higher (9.0188) for Chapai Nawabganj is higher than Rajshahi (7.7765) in agriculture sector.

The place of treatment is correlates of daily working hour. The daily working hour is comparatively higher for govt hospital than community clinic and village doctor. It is observed from the table that the mean adjusted working hour is higher (8.9812) for govt hospital than community clinic (8.3721) and village doctor (6.5009).

The daily working hour is comparatively higher for those child labours who are living in their permanent house than temporary house. From the result we have followed that the mean adjusted working hour is slightly higher (8.7572) temporary house than temporary house (8.7556).

We have observed from the survey that the child labour who have no savings, they are less likely to work more times daily than those child labour who have higher amount of savings. The mean adjusted working hour shows that daily working hour is lower (8.7323) for those child labour who have no savings and is higher (9.6109) who have savings of above 600 (Table 6.2).

The daily working hour is higher for non-Muslims than Muslims child labour. From the above table we also observed that the mean adjusted daily working hour for non-Muslims (9.3793) is comparatively higher than the Muslims (8.6608) child labour in agriculture sector (Table 6.2).

As Table 6.2 shows that the male child labours are working more times in a day than the females. It is also observed that the mean adjusted daily working hour for male (8.8721) is little ahead than the female child labour.

The child labours are working more times who reside near about the central town than others. The mean adjusted daily working hour is higher for those child labours whose distance between central town and working field is 1-5 km (8.7935) than the distance above 10 km (8.2184).

The child labour whose father's occupation is agricultural labour is daily working more times than those whose fathers are involved with non-agricultural labour (Table 6.2). It also depicts that the mean adjusted daily working hour is higher for those child labours whose father's occupation is agricultural labour (8.7935) than the non-agricultural fathers (8.6068).

The illiterate child labours are working more times than the educated child labour. The mean adjusted daily working hour for illiterate child labour (9.0490) is comparatively higher than the literate child labour for class (i-iii) and classes (iv-ix) are 8.5155 and 8.7202 respectively (Table 6.2).

The daily working hours is correlates with daily income and it shows that the child labours who are earning more taka, they ability to work more times in a day than the less earning child labour (Table 6.2). The above table also shows that the mean adjusted daily working hour for upto 30, 31-40, 41-50, and above 50 are 8.5064, 8.7270, 8.2199, and 8.8738 respectively.

The child labour who involved their effective life with agricultural sector by their self decision are working more times than those child labour who come from parent's will and for poverty. The mean adjusted daily working hour for self will (9.0609) is comparatively higher than poverty (8.7581) and parent's will (8.6273) (Table 6.2).

In Table 6.2 reveals that the child labours whose family taken loan are working daily more times than those child labours whose families have no loan. The mean adjusted daily working hour for no loan taking family (8.7127) is comparatively lower than loan taking family for upto 6000 and 6000+ are 8.8017 and 9.1736 respectively.

As Table 6.2 indicates that getting sufficient food the child labour have ability to work more times in a day than the child labour who doesn't get their sufficient food of their requirements. The mean adjusted daily working hour for sufficient food taking child labour (8.8603) is comparatively higher than the child labour that doesn't get sufficient food (8.6661).

The child labour whose father's income is as high, they are working daily more times than the child labour of less earning fathers. The mean adjusted daily working hour for upto 30, 31-40, 41-50, and above 50 are 6.3963, 8.6012, 8.9472, and 8.9864 respectively (Table 6.2).

The child labour who are getting their payment irregular basis they are working daily more time than those child labour who gets their payment regularly (Table 6.2). The mean adjusted daily working hour for regular payment taking child labour (8.5452) is lower than the child labour that doesn't get their payment regularly (8.8182).

6.4 Contribution of the Variables of Working Hour Per Day

Table 6.3 also shows the contribution of the socio-economic related variables (age, location, place of treatment, condition of house, savings, religion, sex, distance between working field and central town, father's occupation, educational qualification, income, causes behind child labour, loan of family, sufficient food for health, father's income and regular payment for work) on working hour per day of child labour given by η^2 and β^2 resulted from MCA.

Place of treatment is positively associated ($r = 0.523$) with working hour per day. Among all of the included socio-economic variables, place of treatment has the strongest significant contribution factor of working hour per day. The proportion of variance explained (unadjusted) by place of treatment is $\eta^2 = 0.532$ and the proportion of variance explained (adjusted) by this variable is $\beta^2 = 0.342$.

Location shows the positive association ($r = 0.481$) with working hour per day. Among all of the included socio-economic variables, location has the second strongest significant contribution factor of working hour per day. The proportion of variance explained (unadjusted) by location is $\eta^2 = 0.481$ and the proportion of variance explained (adjusted) by this variable is $\beta^2 = 0.349$.

Father's income indicates the positive association ($r = 0.342$) with working hour per day. Income of father has the third strongest significant contribution factor with working hour per day. The proportion of variance explained (unadjusted) by income of father is $\eta^2 = 0.454$ and the proportion of variance explained (adjusted) by this variable is $\beta^2 = 0.427$.

Income of child labour has a positive association ($r = 0.224$) with working hour per day. It has the fourth strongest significant contribution factor with working hour per day. The proportion of variance explained (unadjusted) by income of respondent is $\eta^2 = 0.247$ and the proportion of variance explained (adjusted) by this variable is $\beta^2 = 0.185$.

Religion has a positive association ($r = 0.237$) with working hour per day. It has the fifth strongest significant contribution factor with working hour per day. The proportion of variance explained (unadjusted) by religion is $\eta^2 = 0.235$ and the proportion of variance explained (adjusted) by this variable is $\beta^2 = 0.188$.

Age has a negative association ($r = -0.199$) with working hour per day. It has the sixth strongest significant contribution factor with working hour per day. The proportion of variance explained (unadjusted) by age of respondent is $\eta^2 = 0.201$ and the proportion of variance explained (adjusted) by this variable is $\beta^2 = 0.161$.

Educational qualification of child labour shows the negatively association ($r = -0.137$) with working hour per day. It has the seventh strongest significant contribution factor with working hour per day. The proportion of variance explained (unadjusted) education of respondent by is $\eta^2 = 0.185$ and the proportion of variance explained (adjusted) by this variable is $\beta^2 = 0.144$.

Distance between working field & central town has a negative association ($r = -0.136$) with working hour per day. It has the fifth strongest significant contribution factor with working hour per day. The proportion of variance explained (unadjusted) by distance between working field & central town is $\eta^2 = 0.165$ and the proportion of variance explained (adjusted) by this variable is $\beta^2 = 0.118$.

Savings is positively associated ($r = 0.130$) with working hour per day. It has also the strongest significant contribution factor with working hour per day. The proportion of variance explained (unadjusted) savings of respondent by is $\eta^2 = 0.140$ and the proportion of variance explained (adjusted) by this variable is $\beta^2 = 0.128$.

Sex has a positive association ($r = 0.114$) with working hour per day. It has the strongest significant contribution factor with working hour per day. The proportion of variance explained (unadjusted) savings of respondent by is $\eta^2 = 0.112$ and the proportion of variance explained (adjusted) by this variable is $\beta^2 = 0.017$.

Sufficient food for health is negatively associated ($r = -0.107$) with working hour per day. It has the strongest significant contribution factor with working hour per day. The proportion of variance explained (unadjusted) by sufficient food for health is $\eta^2 = 0.101$ and the proportion of variance explained (adjusted) by this variable is $\beta^2 = 0.067$.

Table-6.3: Zero-order Correlation of Daily Working Hour by Selected Socio-Economic Characteristics

	Y	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇	X ₈	X ₉	X ₁₀	X ₁₁	X ₁₂	X ₁₃	X ₁₄	X ₁₅	X ₁₆
Y	1	-.199**	.481**	.523**	-.025	.130**	.237**	.114**	-.136**	-.015	-.137**	.224**	.015	.013	-.107**	.342**	.092**
X ₁		1	-.310**	-.119**	.051*	.060*	-.157**	-.143**	.162**	.011	.273**	.341**	.045	-.012	.037	-.103**	-.015
X ₂			1	.431**	-.023	.049*	.146**	.086**	.197**	.054*	-.211**	-.024	-.085**	-.030	-.159**	.333**	.014
X ₃				1	.005	.011	.158**	.073**	.108**	-.092**	-.124**	.193**	.021	-.093**	-.074**	.307**	.024
X ₄					1	-.020	-.016	-.011	.055*	-.022	-.006	-.025	-.032	.011	.029	.025	.003
X ₅						1	.085**	.053*	-.192**	.168**	.114**	.200**	.020	-.050*	-.202**	.104**	-.095**
X ₆							1	.330**	-.139**	-.127**	-.267**	.113**	-.022	-.040	.072**	.216**	.069**
X ₇								1	-.062**	-.061**	-.154**	-.021	-.013	-.029	.011	.105**	.026
X ₈									1	-.056*	.154**	-.026	-.037	-.142**	-.020	.100**	-.007
X ₉										1	.152**	-.092**	-.032	.072**	-.085**	.003	-.078**
X ₁₀											1	.104**	.036	.048*	-.013	-.031	-.101**
X ₁₁												1	.066**	-.032	-.026	.157**	.023
X ₁₂													1	.020	-.027	.017	-.034
X ₁₃														1	.022	-.052(*)	-.010
X ₁₄															1	-.067**	.000
X ₁₅																1	.034
X ₁₆																	1

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Y = Daily working hour

X₁ = Age

X₂ = Location

X₃ = Place of treatment

X₄ = Condition of house

X₅ = Savings

X₆ = Religion

X₇ = Sex

X₈ = Distance between working field & central town

X₉ = Father's occupation

X₁₀ = Educational qualification

X₁₁ = Income

X₁₂ = Causes behind child labour

X₁₃ = Loan of Family

X₁₄ = Sufficient food for health

X₁₅ = Father's income

X₁₆ = Regular payment for work

Regular payment for work has a negative association ($r = -0.107$) with working hour per day. It has the strongest significant contribution factor with working hour per day. The proportion of variance explained (unadjusted) by regular payment for work is $\eta^2 = 0.092$ and the proportion of variance explained (adjusted) by this variable is $\beta^2 = 0.078$.

Loan of family for work has the positive association ($r = 0.013$) with working hour per day. The proportion of variance explained (unadjusted) by regular payment for work is $\eta^2 = 0.087$ and the proportion of variance explained (adjusted) by this variable is $\beta^2 = 0.067$.

Causes behind child labour has a positive association ($r = 0.015$) with working hour per day. The proportion of variance explained (unadjusted) by causes behind work is $\eta^2 = 0.057$ and the proportion of variance explained (adjusted) by this variable is $\beta^2 = 0.065$.

Condition of house has a negative association ($r = -0.025$) with working hour per day. It has the strongest significant contribution factor with working hour per day. The proportion of variance explained (unadjusted) by condition of house is $\eta^2 = 0.025$ and the proportion of variance explained (adjusted) by this variable is $\beta^2 = 0.031$.

Father's occupation has a negatively association ($r = -0.015$) with working hour per day. Among all of the included socio-economic variables, occupation of father has the lowest contribution factor of working hour per day. The proportion of variance explained (unadjusted) by occupation of father is $\eta^2 = 0.014$ and the proportion of variance explained (adjusted) by this variable is $\beta^2 = 0.065$.

6.5 Factors Affecting of Years of Working

Which factors are most responsible for differentials in working years among the child labour, several explanatory variables have been identified in the literature may be broadly classified according to their socio-economic characteristics. There are varieties of socio-economic factors that may influence working years. To examine the differential patterns of working years of child labour by a set of socio-economic factors, the well known Multiple Classification Analysis (MCA) is employed (Yates, 1934; Anderson and Brancroft, 1952). The analysis requires one dependent variable

and two or more independent variables. The dependent variable can either be continuous or categorical, but all the independent variables must be categorical in nature. The Multiple Classification Analysis can be equally handle nominal and ordinal variables and can also deal with linear and non-linear relationships of predictor variables with dependent variable. Here working years is used as dependent variable and some selected socio-economic variables are used as explanatory variables. The Table 6.2 shows that the proportion of variance explained by MCA which result is low for working years i.e. $R^2 = 0.368$.

Table 6.4: Mean Years of Working by Selected Socio-Economic Characteristics (Multiple Classification Analysis)

Explanatory Variables	Predicted Mean		Correlation Ratio	
	Unadjusted	Adjusted	η^2	β^2
Age				
5-8	1.5593	1.8179		
9-10	1.9623	2.0664		
11-12	2.2403	2.3277		
13-14	2.8377	2.7178	.323	.229
Location				
Rajshahi	3.3898	2.8635		
Chapainawabgonj	2.1889	2.3296	.354	.157
Place of treatment				
Govt. Hospital	3.8432	3.4715		
Community Clinic	2.3056	2.4352		
Village Doctor	2.2378	2.2850	.382	.282
Condition of house				
Permanent	2.4391	2.4515		
Temporary	2.4519	2.4128	.004	.012
Types of livelihood				
Own House	2.4103	2.4028		
Rented House	2.5057	2.5265		
Others	2.4719	2.4681	.030	.038
Savings (Tk)				
No Savings	2.1697	2.2057		
50-200	2.5891	2.5386		
201-400	2.9420	2.8680		
401-600	2.9818	3.1796		
Above 600	3.1389	3.2126	.215	.202
Religion				
Muslim	2.4251	2.4430		
Non-Muslim	2.5295	2.4380	.028	.001
Sex				
Male	2.4589	2.5235		
Female	2.2878	2.4334	.037	.019
Distance Between working field & central town				
1-5 km	2.6014	2.5987		
6-10 km	2.1240	2.1294		
Above 10 km	1.9082	1.9177	.183	.180

Continue table 6.4

Father's occupation				
Agricultural labour	2.3799	2.3835	.078	.074
Non-agricultural labour	2.6295	2.6188		
Educational qualification				
Illiterate	2.1598	2.1917		
Class (i-iii)	2.4304	2.4581		
Class (iv-ix)	2.6681	2.6220	.152	.129
Income (Tk)				
Upto 30	2.2801	2.3022		
31-40	2.3447	2.3202		
41-50	2.8096	2.8028		
Above 50	2.8116	2.8590	.160	.159
Causes behind child labour				
Poverty	2.4636	2.4745		
Parents will	2.4573	2.3728		
Self will	2.3351	2.3176	.034	.044
Loan of Family (Tk)				
No Loan	2.3943	2.4199		
Upto 6000	2.5053	2.4496		
6000+	2.8052	2.7458	.066	.048

$$R^2 = 0.368$$

The Salient Features of Table 6.4 by Socio-Economic Factors are Discussed as Follows:

As Table 6.4 shows that the current age of child labour correlates of years of working. The working years are comparatively higher for higher ages. It also observed from the table that mean adjusted working years is higher (2.7178) with higher ages (13-14) and is lower (1.8179) with lower ages (5-8) in agriculture sector.

The working years are comparatively higher for Rajshahi than Chapai Nawabganj (Table 6.4). It is also observed that the mean adjusted working years is higher (2.8635) for Rajshahi than Chapai Nawabganj is higher (2.3296) in agriculture sector.

The place of treatment is correlates of years of working. The working years is comparatively higher for govt hospital than community clinic and village doctor (Table 6.4). It also indicates that the mean adjusted working years is higher (3.4715) for govt hospital than community clinic (2.4352) and village doctor (2.2850).

The years of working are comparatively higher for those child labours that are living in their permanent house than temporary house. From the result we have also followed that the mean adjusted working years is slightly higher (2.4515) for temporary house than temporary house (2.4128) (Table 6.4).

The types of livelihood correlates of years of working. The working years is comparatively higher for those children who are passing their life in rented house than own house and others house (Table 6.4). It is also shows that the mean adjusted working years are higher (2.5265) for rented house than own house (2.4028) and others house (2.4681).

We have observed in Table 6.4 that the child labour who have no savings, they are less likely to involve more years in working sector than those child labour who have higher amount of savings. The mean adjusted working years shows that the working years is lower (2.2057) for those child labours who have no savings and is higher (3.2126) who have savings of above 600.

As Table 6.4, it is envisaged that the years of working are higher for Muslims than non-Muslims child labour. It also emerge that the mean adjusted years of working for Muslims (2.4430) is comparatively slightly higher than the non-Muslims (2.4380) child labour in agriculture sector.

The Table 6.4 reveals the male child labours involved their life more years than the females. It is observed that the mean adjusted years of working for male (2.5235) is higher than the female child labour.

The working years are more for those child labours who reside near of the central town than those child labours who are residing in the remote ares. The mean adjusted working years is higher for that child labours whose distance between central town & working field is 1-5 km (2.5987) than the distance above 10 km (1.9177).

The child labour whose father's occupation is agricultural labour, their years of working is high than those whose fathers are involved with non-agricultural labour. The mean adjusted working years is high for those child labours whose father's occupation is non-agricultural labour (2.6188) than the agriculture related fathers (2.3835) (Table 6.4).

In Table 6.4 indicates that the working years is correlates with daily income of child labour and it shows that the child labours who are earning more money. they are since more years than the less earning child labour. The above table shows that the

mean adjusted working years for upto Tk.30. Tk. (31-40). Tk. (41-50). and above Tk.50 are 2.3022, 2.3302, 2.8028, and 2.8590 respectively.

As Table 6.4 shows that the child labour who involved in agricultural sector for poverty they have high working experience than the child labour who are involved their by the cause of parent's will and self will. The mean adjusted years of working for poverty (2.4745) is comparatively higher than parent's will (8.7581) and self will (8.6273) (Table 6.4).

The child labour whose family taken loan are working since many years than those child labour whose family have no loan. The mean adjusted years of working no loan taking family (2.4199) is comparatively lower than loan taking family for upto 6000 and 6000+ are 2.4496 and 2.7458 respectively (Table 6.4).

6.6 Contribution of the Variables of Years of Working

Table 6.5 also shows the contribution of the socio-economic related variables (age, location, place of treatment, condition of house, types of livelihood, savings, religion, sex, distance between working field & central town, father's occupation, educational qualification, income, causes behind child labour, loan of family) on working years of child labour given by η^2 and β^2 resulted from MCA.

Place of treatment is negatively associated ($r = -0.360$) with working years. Among all of the included socio-economic variables, place of treatment has the strongest significant contribution factor of working years. The proportion of variance explained (unadjusted) by place of treatment is $\eta^2 = 0.382$ and the proportion of variance explained (adjusted) by this variable is $\beta^2 = 0.282$.

Location is a negatively association ($r = -0.354$) with years of working. Among all of the included socio-economic variables, location has the second strongest significant contribution factor of working years. The proportion of variance explained (unadjusted) by location is $\eta^2 = 0.354$ and the proportion of variance explained (adjusted) by this variable is $\beta^2 = 0.157$.

Table-6.5: Zero-order Correlation of Years of Working by Selected Socio-Economic Characteristics

	Y	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇	X ₈	X ₉	X ₁₀	X ₁₁	X ₁₂	X ₁₃	X ₁₄
Y	1	.319**	-.354**	-.360**	.004	.024	.203**	.028	-.037	-.180**	.078**	.152**	.130**	-.019	.062**
X ₁		1	-.310**	-.119**	.051*	.042	.060*	-.157**	-.143**	.162**	.011	.273**	.341**	.045	-.012
X ₂			1	.431**	-.023	-.058*	.049*	.146**	.086**	.197**	.054*	-.211**	-.024	-.085**	-.030
X ₃				1	.005	.004	.011	.158**	.073**	.108**	-.092**	-.124**	.193**	.021	-.093**
X ₄					1	.680**	-.020	-.016	-.011	.055*	-.022	-.006	-.025	-.032	.011
X ₅						1	.002	-.016	.013	-.011	-.018	-.007	.002	-.012	.005
X ₆							1	.085**	.053*	-.192**	.168**	.114**	.200**	.020	-.050*
X ₇								1	.330**	-.139**	-.127**	-.267**	.113**	-.022	-.040
X ₈									1	-.062**	-.061**	-.154**	-.021	-.013	-.029
X ₉										1	-.056*	.154**	-.026	-.037	-.142**
X ₁₀											1	.152**	-.092**	-.032	.072**
X ₁₁												1	.104**	.036	.048*
X ₁₂													1	.066**	-.032
X ₁₃														1	.020
X ₁₄															1

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Y = Years of working

X₁ = Age

X₂ = Location

X₃ = Place of treatment

X₄ = Condition of house

X₅ = Types of livelihood

X₆ = Savings

X₇ = Religion

X₈ = Sex

X₉ = Distance between working field & central town

X₁₀ = Father's occupation

X₁₁ = Educational qualification

X₁₂ = Income

X₁₃ = Causes behind child labour

X₁₄ = Loan of Family

Age has the positive association ($r = 0.319$) with working years. It has the third strongest significant contribution factor with working hour per day. The proportion of variance explained (unadjusted) by age of respondent is $\eta^2 = 0.323$ and the proportion of variance explained (adjusted) by this variable is $\beta^2 = 0.229$.

Savings has a positively association ($r = 0.203$) with working years. It has the fourth strongest significant contribution factor on working years. The proportion of variance explained (unadjusted) savings of respondent by is $\eta^2 = 0.215$ and the proportion of variance explained (adjusted) by this variable is $\beta^2 = 0.202$.

Distance between working field & central town shows the negative association ($r = -0.180$) with working years. It has the strongest significant contribution factor with working years. The proportion of variance explained (unadjusted) by distance between working field & central town is $\eta^2 = 0.185$ and the proportion of variance explained (adjusted) by this variable is $\beta^2 = 0.180$.

Income has a positive association ($r = 0.130$) with working years. It has the strongest significant contribution factor with working years. The proportion of variance explained (unadjusted) by income of respondent is $\eta^2 = 0.160$ and the proportion of variance explained (adjusted) by this variable is $\beta^2 = 0.159$.

Educational qualification has a negative association ($r = -0.152$) with working years. It has the seventh strongest significant contribution factor with working hour per day. The proportion of variance explained (unadjusted) education of respondent by is $\eta^2 = 0.152$ and the proportion of variance explained (adjusted) by this variable is $\beta^2 = 0.129$.

Father's occupation has a positive association ($r = 0.078$) with working years. Occupation of father has the strongest contribution factor of working years. The proportion of variance explained (unadjusted) by occupation of father is $\eta^2 = 0.078$ and the proportion of variance explained (adjusted) by this variable is $\beta^2 = 0.074$.

Loan of family shows the positive association ($r = 0.062$) with working years. The proportion of variance explained (unadjusted) by loan amount of family is $\eta^2 = 0.066$ and the proportion of variance explained (adjusted) by this variable is $\beta^2 = 0.048$.

Sex has a positively association ($r = 0.028$) with working years. The proportion of variance explained (unadjusted) by sex of respondent is $\eta^2 = 0.037$ and the proportion of variance explained (adjusted) by this variable is $\beta^2 = 0.019$.

Causes behind child labour has the negatively association ($r = -0.019$) with working years. The proportion of variance explained (unadjusted) by causes behind work is $\eta^2 = 0.034$ and the proportion of variance explained (adjusted) by this variable is $\beta^2 = 0.044$.

Types of livelihood is a positive association ($r = 0.342$) with working. The proportion of variance explained (unadjusted) by types of livelihood is $\eta^2 = 0.0304$ and the proportion of variance explained (adjusted) by this variable is $\beta^2 = 0.038$.

Religion has the positive association ($r = 0.28$) with working years. The proportion of variance explained (unadjusted) by religion is $\eta^2 = 0.028$ and the proportion of variance explained (adjusted) by this variable is $\beta^2 = 0.001$.

Condition of house is positively associated ($r = 0.004$) with working years. It has the lowest contribution factor on working years. The proportion of variance explained (unadjusted) by condition of house is $\eta^2 = 0.025$ and the proportion of variance explained (adjusted) by this variable is $\beta^2 = 0.031$.

Chapter Seven

Conclusion

7.1 Summary and Discussion

Children are the greatest assets of a country. So, child labour should get the top priority because they have a great future for our country though they are passing miserable life tolerating various types of inhuman situation. The children in rural areas are the poorest among people of the country. They reflect the socio-economic condition of both urban and rural poor in our country. So their development in the rural agricultural sector will lead to a great impact of the next generation.

Age and sex of child labors are important variables to give a picture of the regular status of them using χ^2 test analyses. This paper also analyses the incidence and determinants of child labour in agriculture sector and their socio-economic conditions in Bangladesh especially in the survey area. The results suggest that the occupational status and their working duration are the important determinants of socio-economic conditions of child labour along with child's own characteristics. We have used logistic regression analysis to asses the socio-economic condition of child labour by their occupational status and weekly working duration. In this study an attempt also has been made to asses the overall existing working conditions and involvement of working duration by daily working hour and working years since their starting in this sector.

The empirical findings provide that the sex of child labour is significantly associated with their age and of them male child labour are strongly higher than the females as like Muslims are higher than the non-Muslims. The religious status of child labour is also highly significantly associated with their sex levels. Educational qualification is the important indicator of child labour by which can improve their life status, is

significantly associated both with different age levels and sex levels. This result shows that tolerating hazardous working condition the educational status of child labour for both sexes is increasing with the increase of their age levels. The opinion of child labour regarding their hazardous condition in the agriculture sector is significantly associated with their different age levels. Consciousness regarding hazardous working situation is significantly associated with different age levels but insignificantly associated with sex levels and this also shows that they know what types of merciless time they are passing. Drugs characteristics depicts that it is highly significantly associated both with the age and sex levels and it also explain being the child labour are below 15 years more that one-fifth of the total children are addicted with different types of drugs. The regular working and payment status forecast that most of the child labour who involved in the agriculture sectors is working regularly with the timely payment. So, we can reveal that our agriculture field is not so troublesome to earn a little bit money for the children. Also four-fifth of the total child labour have to work monthly 20 days of more to fulfill their family requirements though they are getting daily fewer amounts of money with hazardous working duration. But they have to take a great contribution in their family and the result also shows that more than half of the children are capable to save from minimum Tk.50 to above Tk.600 monthly. Because they know better that about 6 to 8 months in Bangladesh has the available environment for cultivation. The insignificant association for both age and sex levels also depicts near about 60 percent children are getting three times foods regularly. So involving in agriculture field the children in our survey area can fulfill their minimum requirements of food also 58% among them claimed that they are getting their sufficient foods though the quality of food is much poor. The distance between working field and respective town shows the significant association and it also reveals that 71% child labour are passing their working life within maximum 5 kilometers. So the children in the rural agricultural sector have the facilities to work near about house. The children who are working in the agriculture field have various reasons to involve with this hazardous situation and of them poverty is main causes. In our research area about 77% children have involved their life with working sector at early ages. The results envisaged that the treatment place is

significantly associated both the age and sex of child labour and more than four-fifth of the total children are taking their treatment from village doctors who are totally untrained about their service.(Table 4.1 and Table 4.2)

The survey findings reveals that the child labour in agriculture sector with the increase of their age levels are working weekly more than 42 hours with troublesome environment and male are the main sufferer, because the working environment is not so liberal to involve with working field and they have to maintain domestic work. Since Bangladesh is a Muslim oriented country and so our survey results shows Muslim children are working more times comparing non-Muslims and even in Bangladesh they can spontaneously adapt with other working place sectors. The literacy rate is increasing day by day and that is why the children in the survey area who covered with educational institutional are working weekly additional hours to earn more money to continue their educational expenses. The reason is that the rural households have no capacity to maintain their children's educational liabilities. Although the Bangladesh government has taken various step to literate the rural children freely for male up to primary and for female up to higher secondary level. The children who use other's house are working fewer times because most of them are floating and that is why, they are getting proper facilities to work extra times with other working field and few of days of a week have to pass leisure time due to living problem. Actually, most of the times, they have to think where they take rest and how to manage that place? According to income status of child labour it is observed that the regular worker earn more and getting sufficient food for their health. Because most of the days during the working season they try to involve them with agriculture field and it also found that those children's fathers work in agriculture field with another working sector have less possibility to involve with hazardous situations. Because in our survey areas the children's father have extra facilities to work in another sector in the off-peak agricultural season and have the flexibility to earn more money and the children get opportunity to take rest without involving working hazards. Poverty is the main problem in our country and it is one of the main indicators to measure the socio-economic status. The survey findings indicate that the

children who involve their life in agriculture sector due to poverty, they are more vulnerable than those are involved by their parent's opinion. Also the child labours have higher risk to work weekly more times with hazardous conditions who involved due to self opinion in this working sector. The children come from higher loan taking family work fewer times because their family depends on loan proprietor and NGOs. The rural communication is too much rough and also the children have to work tolerating various types of problem. The children have to start work early and come back as early as possible. That is why; they are not getting sufficient time to involve themselves with working field. It also shows that near the working field work weekly more time with hazardous conditions. (Table 5.2)

According to survey findings lower aged (9-10 years) children have selected agricultural field as their main occupation because they are getting maturity and have facilities to involve with another job in the off-peak agricultural season and it also found that in the initial working stage (5-8 years) the children are normally come to the working sector with their guardians. Actually they have no decision making power. The females are strongly involved with this job. It also shows that Muslims are more habituated with agricultural sector as their main working source and their entrance is easy comparing others. Most of our survey areas are rural and near about rural and we know that in rural areas are educationally not well comparing urban. The rural children have to remain illiterate due to various problem and family requirement. So, the rural children are bound to involve with agricultural land and survey results are also shows the equal picture. Although those children have no own house naturally they cannot take the agricultural work as a main profession. Because in rural areas have no enough facilities to rent a house for a long time. The impact of drugs is not too much serious on child labour about their selecting main occupation. A small number of children works as monthly and yearly and also life time agreement and so their payment cannot measure accurately but it sometime may play a effective role for their savings and also they can utilize that money for any important purpose. But most of the children have to work for regular earning to prompt support to their family. That is why; those are not getting regular payment are not willing to prefer the

agricultural profession as their main earning source. The location determination shows that the children have taken their main profession as an agricultural labour in three agricultural prone areas of Rajshahi district. At early ages the rural children come to the agricultural field with their fathers but when they get maturity they are not interested to involve with this sectors and so the children whose father's occupation is agriculture they are not taking agricultural field as their principal occupation but the number of children followed that the father's income is high. they normally take the agriculture field as their main earning source. The mother's occupation has not found significant impact on job selection of children because a little number of children's mothers are involved with agricultural sector though the results shows that the children who preferred agricultural field as their main occupation whose mother's main occupation is also agriculture. The children have to involve from morning to evening and even till night and to continue the working with this hazardous agriculture sector needs sufficient foods. It is that the children who are taking agriculture sector forever are taking sufficient foods. The children selected the agricultural field as their occasional profession at early ages due to poverty and parents requirements. So, the children mainly choose the agricultural field as salient job on the basis of self-decision. From the distance result it has found that those works maintaining ranges between (6-10)km has the sufficient impact to select the agriculture job forever. (Table 5.4)

In the second level multivariate analysis, the MCA indicates how socio-economic factors variably influence daily working hour of child labour. Most of the socio-economic factors show a significant impact on daily working hour. However, major contribution on daily working hour are the age, location, place of treatment, condition of house, savings, religion, sex, distance between working field and central town, father's occupation, educational qualification, income, causes behind child labour, loan of family, sufficient food for health, father's income and regular payment for work on working hours of child labour in agriculture sector.

In the MCA, it has found that among all other factors place of treatment is the second strongest influence correlates of daily working hour. Place of treatment is positively

associated with daily working hour and has the significant impact on this working categories. It has also found that the mean adjusted daily working is higher for child labour who takes their treatment from village than the community clinic and government hospitals. This implies that place of treatment is greatly impact on daily working hour, because rural children have no financial ability and even no interaction with community clinic and government hospitals.

Location is an important factor to involve more times with a working field, because the children cannot adapt with each working areas. Location of child labor shows the positive association with daily working hour and it has also the significant impact. Among all the socio-economic variables, location of child labor shows that the first strongest factors for explaining the impact of daily working status based on the value of η^2 and β^2 produced by MCA. The analysis result shows that the children are involved daily more times with working field of Chapai Nawabganj district than Rajshahi. This implies that the landowners are comparatively more dominating the rural innocent children with hazardous working condition. Father's income is an important reason to the children to work at early ages in the working field. The survey result shows that father's income has the positive significant association with the child labour daily working hour. It also explains that the children are works daily more times with the increase of their father's income. This implies that child labours are mainly encouraged to work daily more times after observing their father's higher levels of income. The rural children are mainly come to the working sector due to poor economic conditions. So, they work for earning money to support their family and for their self-dependence. The analyses result shows the positive significant association with daily working duration. It also shows that the rural children are involved daily more times in the agriculture sector with the increase of their incomes expect above Tk 50 is lower income structure than Tk (41-50) per day. This implies that more income is an important father to work in the agriculture at their early ages and work more times.

The MCA shows religion is an important significant contribution on daily working duration. This is negatively associated with the daily working duration. The proportion of variance explained by religion of child labour is $\eta^2 = 0.185$ (unadjusted)

and $\beta^2 = 0.144$ (adjusted). The result shows that non-Muslim children are involved more times in the rural agricultural sector than the Muslim children. The results of MCA analyses shows age levels of child labour are the second strongest contribution on daily working hour and it shows the negative association. The survey finding indicates that working duration increases with the increase of their ages. But it also found that the third age groups (11-12) years children are works daily more times than they're higher age levels (13-14) years. This implies that (11-12) years age groups children have enough capability to work extra times than the working rules with hazardous agricultural working environment. The educational qualification shows the seventh strongest significant contribution on daily working hour. The survey results described that illiterate children are working daily more times than the literate children in the agriculture sector. This implies that illiterate children have enough time to work more times than the school enrolled children and also the rural children have no way without to involve their life in the working sector. The savings of child labour show the strongest significant association with daily working hours. The analyses results depicts that the children are involved more times who have more savings. This implies that to increase the savings the rural children have to work more times. The sex of child labour shows the significant contribution on daily working hour and this results also shows that male child labour are works daily more times than the female. The result of MCA shows that condition of house, distance between working field and central town, father's occupation, causes behind child labour, loan of family, sufficient food for health and regular payment for work on working hours of child labour have their individual contribution in year of working. Finally, it suggests that place of treatment has the strongest significant contribution on years of working of child labour. (Table 6.2 and Table 6.3)

Again MCA indicates how socio-economic factors variably influence years of working of child labour. Most of the socio-economic factors show a significant effect on working years. However, major contribution on years of working is the age, location, place of treatment, condition of house, types of livelihood, savings, religion, sex, distance between working field and central town, father's occupation, educational

qualification, income, causes behind child labour, and loan of family on working hours of child labour in agriculture sector.

In the MCA, it has found that among all the factors place of treatment is the salient strongest influence correlates of years of working of child labour. Place of treatment is negatively associated with years of working and it has also the significant effect on this variables. The proportion of variance explained by place of treatment for years of working is $\eta^2 = 0.382$ (unadjusted) and $\beta^2 = 0.282$ (adjusted). In our study areas, we observed that the children who are working since long times, they receive their treatment from government hospitals. This implies that the treatment of government hospitals is effective to work for long time in the agriculture sector than the community clinic and village doctor.

Among included all the socio-economic factors age levels of child labour is the second strongest contribution on years of working of child labour and it has also shows the positive significant association. The survey result also depicts the working experience is high with the increase of their age levels. In our survey, we included the children between 5 and 14 years, so we normally say that the children who are comparatively higher age levels, have their long working experience and our survey results also shows the same picture.

Again MCA shows that savings is also an important significant contribution on years of working and also shows the positive association. The survey results indicate that the children have their long working involvement with agricultural environment that have higher amount of savings. This implies that the child labour have deposited their money as a savings earning money after long duration of involvement in the hazardous working sector. Another important contributing factor is the distance between working field and central town. This factor also shows the negative significant association with years of working of child labour. The survey result shows that the children who have long working experience are working near about house (1-5) km. This implies that if the working field is near about house, it is suitable for involvement with the working sector than the remote areas. Due to remote area they also have to wastage their time from their working duration.

Among the selected socio-economic factors income shows the fifth significant effect on longer working duration. The study result also shows that the years of working is high for child labour with the increase of their income status. This implies that the rural children are encouraged to involve with agriculture sector to earn higher amount of income. The location also shows the important significant contribution on years of working of child labour. The survey result also indicates that the child labour are working in Rajshahi district, they have higher duration of working involvement in the agricultural sectors than the children who are in Chapai Nawabganj district. This implies that in Rajshahi district, the rural children getting their well environment and better treatment, which is helpful to work long duration with the agricultural field. The result of MCA shows that condition of house, types of livelihood, religion, sex, father's occupation, educational qualification, causes behind child labour and loan of family have their individual contribution in year of working. Finally, it suggests that place of treatment has the strongest significant contribution on years of working of child labour. (Table 6.4 and Table 6.5)

7.2 Findings of the Study

The study has identified some selected socio-economic factors effect on working duration and occupational status of child labour in agriculture sectors. The major findings of this study are as follows:

- According to survey more than half (51.5%) of the children are working in the study areas are between 13-14 years.
- Poverty (77%) is the main reason to work in the agriculture sector at early ages.
- The higher levels of ages have the strongest effect to work more than 42 hours weekly with working field violating working rules.
- The children who are come from agriculture orientation have the strongest impact on working more times in agriculture sector with the hazardous environment.

- Illiteracy has the great impact on the selection of agriculture sector as their main earning source and also the illiterate children are working daily more times than the literate.
- Father's higher income encourages the children to work in the agriculture permanently.
- In Chapai Nawabganj district, the children are working daily more times than the Rajshahi district's children.
- Place of treatment is the important factors on both daily working hour and yearly working involvement in the agriculture sector.
- The working sustainability is more for those child labours who are taking their treatment from the doctors of government hospitals.
- The child labours who are working comparatively near the central town they are working daily more times than the long distant's children.
- Savings is more for those children who are working daily more times in agriculture sector.
- Out of total selected child labour in my study areas, 1592(90.2%) and 172(9.8%) were males and females respectively.
- Being involved in the working sectors 1301(73.8%) child labour have to satisfy getting maximum Taka 40 per day.
- Out of total sample, only 165 (9.4%) child labours said they are working with hazardous condition but the remaining 1599(90.6%) child labour said they are not facing any hazardous situations.

7.3 Limitation of the Study

Bangladesh is basically a rural based agrarian country. About 80% people live in villages. Huge child labour (81.87%) works in the rural areas. Relative poverty in comparison to urban area is another characteristic of the village. Villages in the remote area of Bangladesh are mostly affected by poverty. Our study area is also a rural area far away from the respective Thana Head Quarter. Therefore, the study may be more or less representative to any other rural areas of Bangladesh. However, there were some limitations in conducting the study. Some of these are:

- Due to provide self-finance we could not use the enough interviewers and cover all the children (5-14years) and total areas of the study areas and had to use the purposive sampling.
- Due to lack of data and shortages of time find out the overall working situation in relation with agriculture sector.
- Due to unavailability of journals and reports in relation with child labour of agriculture sectors, we could not review properly.
- Due to financial problem, it was not possible to communicate with both of the supervisors and utilize proper instructions, because they are doing their job in two separate universities.
- Due to absence of computers especially for M.Phil fellows, we could not analyze our data in proper time.
- As the rural children they have to busy with their work, we could not collect proper information as per requirements.
- Due to unconsciousness regarding research and survey, the interviewers had to face many difficulties and spend too much time to collect the in formations.
- Due to lack of proper journals and reports, we had to face too much difficulty to structure the questionnaire.
- Due to incomplete and inappropriate questionnaire, we could not analyze and represent the actual picture of the child labour in agriculture sector.

7.4 Policy Implication and Recommendations

Based on the above-mentioned findings the following policy implication and recommendation deserve consideration.

- The main underlying cause of child labour is poverty, long term strategies are needed to alleviate poverty.
- The government should take a initiative to provide extra facilities for education so that the rural children are eager to go to school instead of working in the agriculture.
- The land owner should provide proper wages against the children's work.

- The government should take a policy so that the rural landowner cannot involve the children in the working field violating working rules.]
- As agriculture is the head of the household work, the annual calendar of the school should be adjusted according to seasonal farming calendar, so that the rural children can continue their education maintaining working duration.
- Implementation of innovative and remedial educational programs and review of current policies and practices on formal education.
- Suitable operational techniques should be developed for measuring worst forms of child labour and take an initiative so that the land owner in agriculture sector and all the children are aware about this.
- A monitoring team should be built up and the team will responsible to find out the children who are working in hazardous condition and finally, submit the routine wise report to the concern authorities.
- Review of enforcement mechanisms, continuous monitoring of workplaces and improvement of the work environment through labour standards enforcement.
- Provision of health services for child labourers should construct.
- Making the child labour issue understood at the grassroots and mobilizing community support for such underlying.

Bibliography

- Ahmed, A. & Quasem, M. A. (1991):** Child Labour in Bangladesh, Bangladesh Institute of Development Studies (BIDS)
- Anderson, R.L. and Bancraft, T.A. (1952):** Statistical Theory in Research, New York, Mcgraw Hill
- Article (14,15,17,28 & 34(1)):**The Constitution of the People's Republic of Bangladesh, Article 14,15,17,28, & 34(1).
- Banglapaedia(2003)** Published by Bangladesh Asiatic Society. vol. 9.
- BBS (2001):** Preliminary Census Report 2001, Ministry of Planning, Bangladesh
- BBS (2003a):** Report on National Child Labour Survey 2002-03, Ministry of Planning, Bangladesh
- BBS (2003b):** Report of the Household Income & Expenditure Survey 2000, Ministry of Planning, Bangladesh
- BBS (2004):** Report on Labour Force Survey 2002-03, Ministry of Planning, Bangladesh
- BHIS (2005):** Bangladesh Health and Injury Survey 2005, The Daily Star, August 2006
- Cox, D.R. (1958):** The Regression Analysis of Binary Sequences (with discussion), J.R. Statist. Soc., B20, pp.215-242.
- Cox, D.R. (1970):** The Analysis of Binary Data. London: Methuen, Chapman and Hall Ltd.
- Cytel Software Corporation (1993):** Log Xact-Turbo user Guide, Cambridge, MA: Cytel Software Corporation
- Eldeeb, B. (1990):** Aspect of Child Labor in Egypt, Cairo
- Fox, J. (1984):** Linear Statistical Models and Related Methods. Wiley and Sons, New York.
- Glewwe, P. and Jacoby, H. (1995):** 'An Economic Analysis of Delayed Primary School Enrollment in a Low Income Country: The Role of Early Childhood Nutrition' The Review of Economics and Statistics, 77(1): 156-69.
- Gupta, S.C. & Kapoor,V.K. (1994):** Fundamentals of Mathematical Statistics, Sultan Chand & Sons Publishers, Eight Edition, pp 617-618, p 797.
- Haspels, N. and Suriyasarn, B. (2003):** "International Save the Children Alliance handbook", Child Rights Programming, 2002), Promotion of gender equality in action against child labour and trafficking:A practical guide for organizations, Bangkok.

- Hauck, W.W. and Donner, A. (1977):** Wald's Test as applied to hypotheses in logit analysis, *Journal of the American Statistical Association*, 72, pp. 851-853.
- Hosmer, D.W. and Lameshow, S. (1989):** *Applied Logistic Regression*, First Edition, John Wiley & Sons, Inc. New York, 1989.
- ILO (1996):** *Child Labour: Targeting the Intolerable*, International Labour Office, Geneva
- ILO (1998a):** *Working together against child labour, The Philippine Campaign 1998* Philippine.
- ILO (1998b)** *Statistics on Working Children and Hazardous Child Labour in Brief*, Revised, Bureau of Statistics, Geneva, 1998
- ILO (2003):** *Facts on Child labour in agriculture*, International Programme on the Elimination of Child Labour(IPEC), International Labour Office, March 2003.
- ILO (2006):** *Global child labour trends 2000 to 2004*, Frank Hagemann, Yacouba Diallo, Alex Etienne, Farhad Mehran, International Labour Office, Geneva, April 2006.
- Islam, M.J.A. (2003):** Worst forms of child labourers and their vulnerable siblings in Bangladesh: A study on interventions, *Journal of the Institute of Bangladesh Studies*, Vol. XXVI.
- Ivy, G. (1990):** *Child labour and Child Work*. (New Delhi: Ashish Publishing House), pp. 177-182.
- Jennings, D.E. (1986):** Judging inference adequacy in logistic regression, *Journal of the American Statistical Association*, 81, pp. 471-476.
- Lee, E.T. (1980):** *Statistical Methods for Survival Data Analysis*, Life-time Learning Publications, Belmont, CA.
- Levison, D. (1989),** *Family Composition and Child Labour*
- Majumdar, P.K., Dolui, D.K. & Banerjee, H.K. (2001):** *Agricultural Modernisation, Child Labour and Fertility: Rural West Bengal, India*, International Union for the Scientific Study of Population.
- Mannan, B. and Islam, M., R. (1998):** Child labour in household work in urban areas in Bangladesh: An analysis, *Social Science Review* Vol. XX. No. 2
- Masum, M. (1999):** *A Model for Integrated Human Resources*, UCEP-Bangladesh, cited in *Child labour in Bangladesh 1998*, Denis Wright.
- McCullagh, P. and Nelder, J.A. (1983):** *Generalized Linear Models*, Chapman and Hall, London.
- Mukherjee, K. K (1998):** Country Report on Trafficking in Children and their Exploitation in Prostitution, October 1998, citing a research publication by Dr. K.K.Mukherjee, India.
- Nasim B. Shahjahan B. & Smita S.(1998):** Child Labour in Bangladesh, *International Journal of Technical Cooperation*, 4(1), Summer.

- Persson, R. (2004):** Social mobilization and child work-with a case study of some companies and NGOs in Delhi, 2004.
- Rao, C.R. (1973):** Linear Statistical Inference and its applications, Second Edition, John Wiley & Sons, Inc. New York.
- Saga, T. (1975):** Children's work and contribution in the family value of Children in the Context of Bangladeshi.
- Siddiqua, M.R. (2002):** *Child Labour: Law and Practice in Bangladesh*, IBS, p.1.
- Thapa, S., Chhetry, D. and Aryal, R.H.(1996):** "Poverty, Literacy and Child Labour in Nepal: A District-level Analysis--Intervention programmes aimed at reducing child labour need to focus on both alleviating poverty and increasing literacy" Asia Pacific Population Journal, Vol. 11, No. 3 (1996), pp. 3-14.
- Valotra, S. (2003):** Child Labour in Asia and Africa, Background Research Paper for EFA, Monitoring Report', University of Bristol, p-27.
- Wald, A. (1943):** Test of statistical hypotheses concerning several parameters when the number of observations is large, Transactions of the American Mathematical Society, Vol. 54, pp.426-482.
- Walker, S.H. and D.B. Duncan (1967):** Estimation of the probability of an event as a function of several independent variables, Biometrika, Vol. 54, pp. 167-179.
- Wright, D. (2005):** Child Labour in Bangladesh, cited in Susan Crawford, Child Labour in South Asia, A Review of the Literature, ROSA Report No. 2 (Katmundu, UNICEF, 1995), p.29.
- Yates, F. (1934):** The Analysis of Variance with Unequal Numbers in the Different Classes, Journal of American Statistical Association, Vol. 29, pp.51-66.

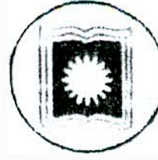
Website

- HRW (2005): Child Labour in Agriculture, Human Rights Watch
(<http://hrw.org/backgrounders/crp/back0610.htm>, August 13, 2005)
- http://www.unicef.org/soldiers/index_23602.html, June 17, 2005.
- <http://www.globalmarch.org/cl-around-the-world/i-a-child.php>, June 12, 2005.

Acronyms and Abbreviations

AIDS	Acquired Immune Deficiency Syndrome
BBS	Bangladesh Bureau of Statistic
BFS	Bangladesh Fertility Survey
BHIS	Bangladesh Health and Injury Survey
CLC	Child Labour Coalition
CRC	Child Rights Convention
DDT	Dichloro Diphenyl Trichloroethan
ERC	Estimated Regression Coefficient
GDP	Gross Domestic Product
HRW	Human Rights Watch
ILO	International Labor Organization
MCA	Multiple Classification Analysis
NGO	Non- Government Organization
NPA	National Plan of Action
OLS	Ordinary Least Square
SPSS	Statistical Package for Social Sciences
UNICEF	United Nations International Children's Emergency Fund
US	United States
WFCL	Worst Forms of Child Labour
WHO	World Health Organization
WTO	World Trade Organization

পপুলেশন সায়েন্স এন্ড হিউম্যান রিসোর্স ডেভেলপমেন্ট বিভাগ
রাজশাহী বিশ্ববিদ্যালয়



Title of the M.Phil.

**Socio-Economic Correlates of Child Labour in Agriculture Sector:
Some Selected Rural Areas of Rajshahi, Bangladesh**

গবেষকের নামঃ মোঃ রেজওয়ানুল হক

১. নামঃ
২. লিঙ্গঃ (১) পুরুষ/ (২) মহিলা । বয়স.....বছর । ঠিকানাঃ
৩. জাতি/বংশ..... । জাতীয়তা..... ।
৪. শিক্ষাগত যোগ্যতাঃ (১) অশিক্ষিত (২) নাম সই (৩) ২-৩ বছর স্কুলে পড়েছে (৪) প্রাইমারী (৫) ৬ ঠ শ্রেণী ও তার উর্দে ।
৫. বসবাসের স্থানঃ (১) পিতা/মাতার সঙ্গে (২) ভাড়া বাড়ী (৩) অন্যান্য.....
৬. বাড়ীর অবস্থাঃ (১) স্থায়ী (২) অস্থায়ী ।
৭. পরিবারের সদস্যদের আয় এবং ব্যয় (দৈনিক / মাসিক) ।

সদস্য	পেশা	আয়	ব্যয়
উত্তরদাতা			
পিতা			
মাতা			

৮. তুমি কতদিন থেকে এই কাজ করছো?বছর । এই কাজ করার জন্য তোমাকে কে উৎসাহ দিয়েছে?
(১) নিজে (২) পরিবারের সদস্য (৩) বন্ধু ঘ) অন্যান্য.....
৯. তুমি কি নিয়মিত এই কাজ কর? (০) না / (১) হ্যাঁ । হ্যাঁ হলে নিয়মিত বেতন পাও কি না? (০) না / (১) হ্যাঁ ।
১০. মাসের প্রধান প্রধান খরচগুলো কি কি? (১) জানা নাই (২) জানা থাকলে
১১. মাসের খরচ বাদে কোন টাকা জমা থাকে কি না? (০) না (১) হ্যাঁ (২) জানা নাই
১২. তোমার পরিবার কি ঋণ গ্রহণ? (০) না (১) হ্যাঁ (২) ঋণের কারণ.....
(৩) এই ঋণ পরিশোধ করতে কত সময় লাগবে..... (৪) কি ভাবে পরিশোধ করবে.....
১৩. তুমি কি মনে করো এই কাজ তোমার মানসিক ও শারীরিক ভাবে বিপদজনক ও ক্ষতিকর? (০) না / (১) হ্যাঁ ।
১৪. তুমি বা তোমার পরিবারের কোন সদস্য অসুস্থ হলে কোন চিকিৎসার ব্যবস্থা নাও কি? (০) না / (১) হ্যাঁ ।
হ্যাঁ হলে (১) সরকারী সাহ্য কেন্দ্রে (২) কমিউনিটি ক্লিনিক (৩) গ্রাম্য ডাক্তার (৪) কবিরাজী (৫) অন্যান্য.....
১৫. তোমার ব্যক্তিগত কাজ তুমি কখন করো?
১৬. তুমি কখন? (১) ঘুমাতে যাও..... (২) ঘুম থেকে উঠো..... (৩) কাজ শুরু করো.....
(৪) কাজ শেষ করো..... (৫) দুপুরে খাওয়ার সময়..... ।
১৭. তুমি কি কোন নেশায় অভ্যস্ত? (০) না / (১) হ্যাঁ
যদি হ্যাঁ হয় তাহলে কোন ধরনেরঃ (১) ধূমপান (২) গাঁজা (৩) তাড়ি (৪) ভাং (৫) অন্যান্য.....
১৮. তুমি দিনে কয় বেলা খাও?
১৯. তুমি যে খাবার খাও সেটা কি তোমার স্বাস্থ্যের জন্য যথেষ্ট? (০) না / (১) হ্যাঁ
২০. তোমার কর্ম এলাকা থেকে তোমার থানার দূরত্ব কত?