

**YANGON UNIVERSITY OF ECONOMICS
DEPARTMENT OF STATISTICS
MASTER OF APPLIED STATISTICS PROGRAMME**

**FACTORS INFLUENCING CHILD LABOR IN
HAZARDOUS WORKING ENVIRONMENT
IN YANGON REGION**

ZIN ME ME HTET

MAS - 28

MAS 4th BATCH

JULY, 2024

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WORKING ENVIRONMENT IN YANGON REGION**

This thesis is submitted to the Board of Examination as partial fulfillment of the
requirement for the Degree of Master of Applied Statistics

Approved by the Board of Examiners

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ABSTRACT

This study examines the relationship between socio-demographic factors and hazardous child labor in Yangon Region, using data from the "Myanmar Child Labor Survey (2022-2023)" by the Central Statistical Organization. It analyzes 363 child labors, aiming to identify the prevalence of hazardous labor and its influencing factors. Descriptive statistics and chi-square tests reveal significant associations between hazardous labor and factors such as gender, place of residence, employment shifts of child labor, work hours per day and medical support. Logistic regression indicates that males, those with less experience, and those working daytime and evening shifts are more likely to engage in hazardous work. Additionally, child labors with less monthly income and those with more working hours are less likely to engage in hazardous work. The study recommends that the government focus on creating a safe environment for children's development are vital to the country's future.

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LIST OF ABBREIATION

ASEAN	Association of Southeast Asian Nations
COVID-19	Coronavirus Disease 2019
CSO	Central Statistical Organization
GDP	Gross Domestic Product
ILO	International Labor Organization
UNICEF	United Nations International Children's Emergency Fund
USD	United States Dollar
WFCL	Worst Forms of Child Labor

CHAPTER I

INTRODUCTION

Child labor remains concentrated in both lower middle-income and low-income countries, alongside poverty. Although the number of child labors decreased from 168 million in 2019 (Veerappan, 2019) to 160 million in 2023 (Reid , 2023), the rates are still high in low-income countries at 23%, 9% in lower middle-income countries, and 6% in upper middle-income countries (Veerappan, 2019). Children are especially vulnerable to injuries in early developmental years, even though physical and mental health problems may not be evident for years. Child labor is prevalent in the poorest countries and in areas of conflict and insecurity. Family poverty and inadequate schools are major reasons why children in low-income countries work. However, the issue is not exclusive to low-income countries and it also affects middle-income countries, where over half of child labors live.

1.1 Rationale of the Study

At the start of 2020, around 160 million children worldwide were engaged in child labor, accounting for nearly one in ten children globally. Of these, 79 million children were subjected to hazardous working conditions. In 2020, there were 63 million females and 97 million males involved in child labor, representing about one in ten children worldwide. A significant portion, roughly 70%, or 112 million children, worked in agriculture, primarily in farming and livestock herding. Males are more likely to work than females across all age groups. One in three children in child labor were not attending school. Sub-Saharan Africa saw 86.6 million children in child labor, followed by Central and Southern Asia with 26.3 million. The numbers have been rising, especially among 5 to 11-year-olds, and the coronavirus pandemic poses a risk of reversing years of progress (Reid , 2023).

Around 48.7 million children in the Asia Pacific region were engaged in child labor, with 67% of being males. While this number is significant, it has decreased from 62.1 million in 2016. Child labor rates in the Asia Pacific region also fell from 7.3% in 2016 to 5.6% in 2020. Despite steady economic growth, the prevalence of child labor remains high in ASEAN countries. ASEAN, with a combined GDP of 3.2 trillion USD in 2019, is one of the world's largest economies. After the pandemic, the GDP remained

at 3 trillion USD in 2020, and trade values increased in 2021. The economy was projected to grow by 5% in 2024. However, poverty, particularly in rural areas, continues to be a significant issue and the primary driver of child labor. The COVID-19 pandemic has intensified these challenges, with 4.7 million people in Southeast Asia being pushed into extreme poverty in 2022 (ibid).

The ASEAN Rapid Assessment on the Impact of COVID-19 in 2020 highlighted how school closures and learning disruptions affected school-age children. Many of these children ended up leaving school permanently. Over time, this scenario could make poor children more susceptible to child labor. Several ASEAN Member States have conducted child labor surveys in the last 10-15 years (Irena & Lukri, 2022). The surveys consistently showed that child labor rates are much higher in remote rural areas compared to urban areas, with the highest prevalence found in agriculture (including forestry and fishing), followed by services and industry. In summary, child labor is typically found in the informal sector, performing unpaid family work, keeping out of school and depriving of right to education.

Over one million children aged 5 to 17 in Myanmar are involved in child labor, with over half of them engaged in hazardous work that poses direct risks to health, safety, and moral development. Poverty and crises play a significant role in driving children into labor, while promoting fair and just working conditions can help address the root causes and keep children out of labor. The elimination of child labor is a key component of the pursuit of social justice, ensuring every worker receives an equitable share of the wealth generated. (Benaissa, 2023). As a developing country, Myanmar faces challenges with child labor, even as it strives to focus on nurturing children for future progress. Therefore, the aim of the study is to examine the state of hazardous child labor in Yangon Region, Myanmar's business hub, and identify the influencing factors.

1.2 Objectives of the Study

The objectives of this study are

- (i) To investigate the prevalence of hazardous child labor and socio-demographic characteristics of hazardous child labor in Yangon Region.
- (ii) To analyze the relationship between socio-demographic characteristics and hazardous child labor in Yangon Region.
- (iii) To find out the influencing factors of hazardous child labor in Yangon Region.

1.3 Method of Study

In this study, secondary data from Myanmar Child Labor Survey (2022-2023) are used. Firstly, descriptive statistics to outline the socio-demographic characteristics of hazardous child labors. Secondly, a chi-square test is applied to examine the association between socio-demographic variables and child labor. Finally, binary logistic regression analysis is conducted to identify influencing factors.

1.4 Scope and Limitations of the Study

This study explores child labor in the Yangon Region, which features a range of socio-economic backgrounds. The analysis utilized secondary data from a cross-sectional, quantitative study conducted among child labors in the region. Data from the “Child Labors in Food Industry, Retail and Wholesale Markets, Motor Vehicle Repair, and Maintenance Services in Yangon (2022-2023)” report, provided by the Central Statistical Organization of Myanmar (CSO), analyzed. Target population is all child labor in Yangon Business Region. The survey included a sample of 363 child labors in the Yangon Region during the fiscal year 2022-2023, collecting socio-demographic characteristics by using stratified cluster sampling method. This study analyzes the entire sample of 363 child labors. This is a quantitative study which cannot explore the details in depth of the causes of child labor and backgrounds. Being a quantitative study, the details in depth of the causes of child labor and backgrounds cannot be explored.

1.5 Organization of the Study

This study is organized into five chapters. Chapter I consists introduction which has given a detailed rationale of the study, objectives of the study, method of study, scope and limitations of the study and organization of the study. Chapter II provides a review of the literature, including theoretical and empirical perspectives and the conceptual framework. Chapter III details methodology explaining descriptive statistics, logistic regression, and binary logistic regression. Chapter IV presents the findings of the study. Finally, Chapter V discusses the study’s findings, and offers recommendations for further research.

CHAPTER II

LITERATURE REVIEW

Child labor is a global issue, particularly in developing countries. As a least-developed nation, Myanmar is caught in a cycle of child labor, weakening its future prospects. This study seeks to identify the factors influencing child labor in Myanmar. The literature review comprises an examination of both theoretical and empirical studies on child labor. It includes an overview of child labor in Myanmar. Additionally, the development of the conceptual framework and the variables for the study are outlined.

2.1 Child Labor

Child labor refers to work that is mentally, physically, socially or morally hazardous and harmful to children. (International Labor Organization 2018). Child labor is categorized by age, working hours, and working conditions. Children under 18 who are employed as child laborers are identified as engaging in hazardous work that directly risks health, safety, and emotional development. According to Article 3(b) of the Children's Rights Act, a child is defined as anyone under the age of 18. In the 2016, Shops and Workplaces Act, Section 13 Subsection (a) states, "No one under the age of 14 shall be permitted to work in any shop or workstation". Child Labor refers to those under the age of 18 who are working, including young people above the minimum legal working age. Child labor is generally prohibited under domestic laws. According to the ILO Minimum Age Convention of 1973 (No. 138) and the worst forms of Child Labor Convention of 1999 (No. 182), as well as relevant recommendations like recommendations 146 and 190, this refers to children working in socially and ethically undesirable jobs.

Children involved in child labor are defined as those aged 5 to 17 who engage in one or more of the following situations during the specified period:

- (1) Forced child labor in its worst forms.
- (2) Working below the minimum legal working age.
- (3) Receiving free housing as part of work conditions. (Myanmar Child Labor Survey Report, 2022-2023).

Child labor is the exploitation of children, depriving of childhood through work that keeps from attending school or results in physical, mental, or social harm. During early developmental years, children are especially vulnerable to injuries, although the physical and mental health issues may not become evident for years. (Reid , 2023). Not all work done by children is considered "child labor." According to ILO Convention No. 182, the worst forms of child labor (WFCL) include work that, by its nature or conditions, is likely to harm children's health, safety, or morals. (United Nations, 2024). This includes work that interferes with schooling, is excessively demanding or involves long hours, or occurs in hazardous environments. Hazardous child labor specifically refers to work performed by children in hazardous and unhealthy conditions, which can result in death, injury, or illness due to poor safety and health standards or employment conditions.

2.2 Hazardous Child Labor

Hazardous child labor or hazardous labor is a child's physical, mental (or) publication refers to the event of working in a moral issue, and at that point working long hours, hard work, working at night, including how to work at night. Workplaces that endanger the health and safety of working children, have unsafe conditions, vulnerable equipment, and involve heavy lifting are considered hazardous.

The following points must be considered in determining hazardous work. Work environments involving dust, smoke, fire, gas, loud noise, extreme cold or heat, hazardous equipment, underground, high places, immersion in water, the sea, or rivers are considered hazardous. These settings often suffer from poor lighting and ventilation. Workers may also encounter chemical substances, explosive materials, and heavy lifting tasks, adding to the risk. Endless shouting, repeated swearing, physical abuse, and being forced to do things unwillingly in the current job.

Hazardous child labor is defined by Article 3(d) of ILO Convention No. 182, concerning the Prohibition and Immediate Action for the Elimination of the Worst Forms of Child Labor, 1999, as work that, by its nature or the circumstances in which it is performed, is likely to harm the health, safety, or morals of children. (ILO, 2022). More precisely, hazardous child labor involves work in unsafe or unhealthy environments that could lead to a child being killed or injured or falling ill due to inadequate safety and health standards and work conditions. This type of labor can cause long-term harm, including permanent disabilities, health issues, and

psychological damage. Often, the health problems resulting from child labor may not appear until the child is an adult. Hazardous child labor represents the largest category of the worst forms of child labor, with approximately 79 million children aged 5 to 17 working in hazardous conditions across various sectors, including agriculture, mining, construction, manufacturing, and in hotels, bars, restaurants, markets, and domestic service. This issue exists in both industrialized and developing countries. Child Labors often begin performing hazardous work at very young ages. Children are more susceptible to workplace hazards than adults because both body and mind are still developing. As a result, the effects of hazardous work can be more severe and have lasting impacts on health and development. When discussing child labor, it's essential to move beyond the concepts of work hazards and risks that apply to adult workers. Since children are still growing, unique characteristics and needs must be considered. When assessing workplace hazards and risks, we must consider the impact on children's physical, cognitive (thinking and learning), behavioral, and emotional development. (UN, 2023).

"Hazard" and "risk" are often used. A "hazard" is anything that could potentially cause harm. A "risk" represents the chance that such harm will actually occur due to the hazard. For instance, the hazard with power-driven machinery could be the risk of getting trapped or caught in moving parts. If safety guards are not in place and workers are near the machine, the risk is high. However, if the machine is properly guarded, maintained regularly, and repaired by skilled staff, the risk is reduced. Hazardous child labor constitutes the largest category of children involved in the WFCL and can be found across sectors such as agriculture, fisheries, mining, construction, manufacturing, service industries, and domestic service. The problem of engaging children aged 15 to 17 in hazardous tasks or under hazardous conditions is a concern for marine shrimp farmers and shrimp and seafood processing factories.

This issue often stems from a lack of adequate measures to address occupational health and safety requirements for all workers in general and to implement specific protections for young workers. Both resident and migrant workers face the risk of hazardous child labor in the industry. However, since it's not uncommon for migrant children and youth to overstate age (either claiming to be older than 15 or older than 18) to gain employment, this puts at a higher risk. Such situations can result in working conditions that are inappropriate for children, including overtime and night shifts. This issue can occur at both primary processing and small or large packing factory levels.

Implementing effective human resource systems and thorough age verification processes is essential to ensure accurate age checks during hiring, maintaining legal compliance and confirming candidates meet age requirements.

2.3 Child Labor Survey in Myanmar

In most developing countries, young people lack the opportunity to complete formal education because of lack of food security, by various natural disasters, internal conflicts, poverty and migration. On December 18, 2013, Myanmar signed ILO Convention No. 182, which addresses the worst forms of child labor, and has since been cooperating with the International Labor Organization (ILO) and the United Nations Children's Fund (UNICEF) on child labor issues. In addition, due to the outbreak of the COVID-19 pandemic, the economy, it has caused a lot of damage to the society, especially in developing countries, the situation of basic families has increased, unemployment has increased, and schools have been closed, resulting in a situation where children are forced to become child labors for the family's livelihood. (Myanmar Child Labor Survey Report, 2022-2023).

To address the worst forms of child labor in Myanmar and effectively protect the rights of child labors, the Myanmar National Action Plan on Child Labor has been launched. This plan spans 15 years and is divided into three 5-year phases. During the first phase, which ran from 2019 to December 31, 2023, efforts focused on mentoring children forced into industrial production and business sectors. Surveys on child labor in the food production, wholesale and retail trade, and vehicle and motorcycle repair sectors were conducted twice in the Yangon Region. The second 5-year phase will run from January 1, 2024, to December 31, 2028. In the first year of this phase (2024-2025), a township will be selected as a pilot project to survey child labor. The results will be reviewed and reported. Throughout the project period, child labor surveys will be conducted in various regions and states, with data analyzed and verified. Annual reports will be submitted to the Myanmar National Committee on the Elimination of Child Labor. To fulfill the committee's duties, sample surveys will be conducted in the food production, wholesale and retail trade, and vehicle and motorcycle repair sectors. (Myanmar Child Labor Survey Report, 2022-2023).

2.4 Empirical Literature Review

To understand the factors influencing child labor, several empirical studies have been investigated.

Bishnu (2006) investigated factors contributing to the incidence of child labor in small scale commercial establishments. The purpose of this study is to describe the factors contributing to child labor in Delhi and provide recommendations for addressing the issue. The samples of 120 child labors and analyze in the age group of 7 to 14 employed in small scale commercial establishments. The data was collected using both qualitative and quantitative methods from both primary and secondary sources. This study revealed that most children joined the labor force due to poverty, migration, the need to supplement family income, family pressure, and lack of interest in studies.

Emine et al. (2013) studied abuse of working children and influencing factors, Turkey. The objective of this study is to determine whether working children are abused and identify factors affecting this abuse. The research conducted with a sample size of 595 children, employs a cross-sectional design and various statistical analyses, including descriptive statistics, Chi-square tests, Mann Whitney U tests, and Binary Logistic Regression. The study analyzed that the significant impact of family abuse, gender, wage, and working conditions on the likelihood of workplace abuse.

Patricia (2016) explained the determinants of child labor in Mexico. The purpose of this study is to investigate the relationship between child labor and the opportunity cost of schooling, considering other factors that influence parents' decisions about child labor and schooling. The study is based on interviews with 13,688 rural and 38,425 urban children, employs a cross-sectional design and various statistical analyses, including descriptive statistics, and Binary Logistic Regression. The research indicates that child labor is significantly correlated with well-being and income, influenced by the perceived cost of schooling, parents' education, and place of residence.

Ongoma (2017) analyzed the factors influencing child labor in the sugarcane growing projects in a Awendo sub-county, Kenya. The objective this study to establish the factors influencing child labor in the sugarcane growing projects in Awendo Sub-County, Kenya. The study adopted Krecjie and Morgan technique to obtain sample 378 from a total of 23860 household. This research revealed that socio-economic support, cultural support, psycho-social support and economic development can be held responsible for the fluctuations in child labor.

Samson (2017) studied analysis of child labor dimensions and causes in rural farm households of Ogun State, Nigeria. The study aims at understanding the dimensions and causes of child labor among rural farm households in Nigeria. The data were collected from 352 children across 128 rural households by using a cross-sectional design and a multistage sampling technique. Analytical methods included descriptive statistics, Censored Tobit model, likelihood ratio Chi-square, and multiple regression. The research found that child labor significantly interferes with children's schooling, with various socioeconomic factors influencing its prevalence. Moreover, this study focuses on improving rural infrastructure, economic empowerment, and educational accessibility to reduce child labor.

Lutfullah and Shahadat I (2018) examined factors contributing to child labor in Afghanistan. The study aimed to develop effective policies for reducing child labor. This paper empirically examines these factors using primary data collected from six sub-sectors in Jalalabad province, focusing on children aged 5-14 years. The number of sample 600 participants used in this study and data analysis techniques used multinomial logit model, which requires the assumption of the independence of irrelevant alternatives. The data sets were analyzed by diagnostic tests, including the Variance Inflation Factor (VIF), were conducted to check for multicollinearity. The study found that child labor is primarily influenced by household or father poverty levels.

Lal (2019) studied child labor in India: an investigation in socio-economic and health conditions of tribes. The main objectives of investigating the factors responsible for child labor in the study area. An altogether 200 tribal child labors were selected by adopting the purposive sampling techniques. They were selected from the ten mandals and ten villages in Warangal District for the collection of the data. In this study, descriptive statistics, correlation and Chi - square employed. The study pointed out that poverty and poor economic conditions are the root cause of child labor in rural areas of the study.

Waziri (2019) studied factors influencing persistence of child labor in Tanzania: a case study of Morogoro rural district among 228 respondents with the aim of examining factors influencing persistence of child labor in Tanzania with particular focus on Morogoro rural district. The study findings indicated a significant relationship between community awareness level and child labor, cultural norms and child labor was also established. The study revealed a significant relationship between parental

income level and child labor. A child's relations with the head of a household were also found to be significantly related to child labor.

Kidanemariam et al. (2020) studied the magnitude and causes of hazardous child labor in Addis Ababa, Ethiopia. The main objective of this study was to assess the magnitude and causes of hazardous child labor in Addis Ababa. To address this objective, a mixed method research design that tilts towards quantitative approach was employed. The result revealed that about 90% of child labors in Addis Ababa are working in hazardous working conditions, which is much higher than the Sub Saharan Africa average and ILO and CSA estimates for Addis Ababa. Accordingly, the most important factors behind child labor among children were found to be poverty, children's economic interest, and rural-urban migration.

Syeda (2020) studied determinants of child labor in Rawalpindi and analyzing existing policy. The study aims to identify the factors causing child labor to thrive in Pakistan and studied household willingness to involve children in labor. This study collected 360 samples and thematic analysis and descriptive statistics were employed by using open ended questions. The study found that low income, family size, and parental education are key determinants of child labor.

Abebe and Fikre (2021) analyzed individual, household and community level factors of child labor in rural Ethiopia. This study was aimed to develop the frameworks that child labor was influenced by number of factors arise from child themselves, household, and community level impediments. The data were collected from nationally evocative household surveys that were conducted in 2004, 2011, and 2016 by central statistical agency from 35, 827 children living in rural Ethiopia. The data were analyzed via Logit model. The result indicates that child labor as a combined product of individual, household, and community factors. The study found out that child labor as a combined product of individual, household, and community factors. At individual level the gender of child and biological relationship to the children are significant determinants of child labor. Female child engaged more in child labor than male in rural Ethiopia.

Abid, Naqvi and Alam (2021) studied factors associated with child labor in Punjab, Pakistan. The purpose this study is to analyze different demographic variables of households that are associated with child labor in Punjab Pakistan. The study is collected data from Multiple Indicator Cluster Survey (MICS) Punjab 2014 is used. The study utilized Descriptive Statistics, Chi-Square test. The research found that the

associated factors with child labor are Socio economic status of household, Education of household head, Area, Mother tongue of household, and Age of children are statistically significantly associated with child labor according to MICS (2014) Punjab data.

Jephtah et al. (2021) studied contributing factors of child labor in Nigeria and implication on SDG 8. This survey evidence from 2016 multiple indicators cluster survey among 33902 households. The results showed that child labor was still high in the country and the poorest households had more children involved in child labor. The emerging factors of child labor were child's age, sex, place of residence, school attendance, mother's education, wealth index quintile and geo-political zone.

Magdalena, Sukamdi and Rofi (2021) examined the determinant of child labor participation in Indonesia. This study aims to analyze the individual, household socio-economic, and regional contextual factors that influence child labor participation in Indonesia. The study uses data from Statistics Indonesia's National Socioeconomic Survey of March 2020, covering 345,000 sample households spread across 34 provinces and 514 districts/municipalities throughout Indonesia. Using multilevel binary logistic analysis. the results of this study indicate that individual, household socio-economic, and regional contextual factors have effects on child labor participation in Indonesia.

Saeedeh et al. (2021) analyzed child labor in Tehran, Iran, abuses experienced in work environments. This study aims to measure the prevalence of abuse among child labors in Tehran, Iran, and identify possible risk and protective factors. The cross-sectional study involved 250 children from seven child labor support centers. The study used a closed ended questionnaire consisting of a socio-demographic checklist and the Child Work-Related Abuse Scale (CWAS) to collect data from participants. This paper utilized Descriptive statistics, multivariate analysis and logistic regression identified significant risk and protective factors. The results demonstrated a relatively high rate of abuses experienced in work environments among Iranian child labors. Children experienced at least one type of abuse, with emotional abuse as the most frequently experienced abuse followed by neglect physical abuse and sexual abuse.

Hoque (2023) investigated understanding the role of structural factors and realities in normalizing child labor in urban slums of Bangladesh among 51 respondents. The results showed that a lack of access to schooling pushed many children into labor. The opportunities for children's employment in the informal sector

remained abundant, and the absence of documents complicated law enforcement. Due to inconsistent adult income, many families are involved in child labor to increase household income. Local employers chose children over adults for certain occupations due to the lower wages and easy-to-control nature. Natural disasters, climate change, and family difficulties drove a large number of families to these slums, and informal employment opportunities for both adults and children drew them there. The shortage of playgrounds and specialized schooling shaped children's tendency to work more. Altogether, child labor has become a cultural reality.

Myint et al. (2024) observed factors influencing domestic violence among child labors among 259 child labors in Myanmar. This study examines the factors influencing child labor among children aged 5-17 years in Nay Pyi Taw City. The research utilizes logistic regression, random forests, and lasso regression models to analyze data on child labors. This research indicate that family income, employment status of the parents, and regional development significantly influence child labor, collaborative efforts from government, NGOs, and international organizations are essential for education, healthcare, and better opportunities for affected children.

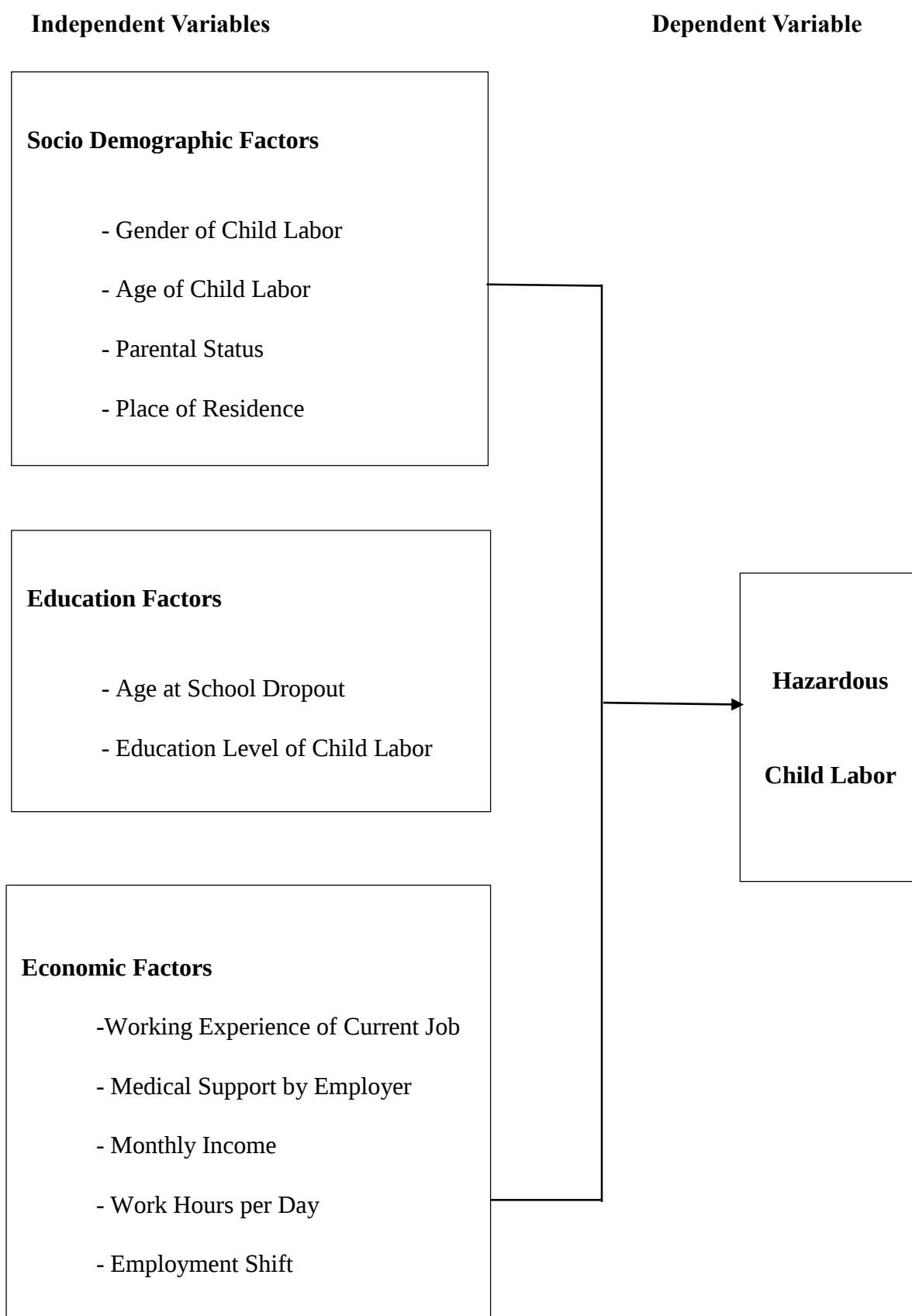
Pirkle et al. (2024) documented child labor in cocoa growing regions of Ghana and Côte d'Ivoire. This paper examines the relationship between child labor and educational attainment and explores the distinction between harmful and non-harmful agricultural cocoa work. The data used in this paper were collected by researchers at the National Opinion Research Center (NORC) at the University of Chicago and can be found in this NORC Report. This was achieved through the completion of a multi-stage stratified cluster sampling technique. This research exposed that hazardous child labor increases the odds of repeating a class and work-related injury compared to non-hazardous labor.

Weldeyesus and Alemu (2024) examined profiles of child labor: prevalence, activities, contexts, and children's harm extent in Raya-Kobo and Angot districts, Ethiopia. The study's specific objectives are to examine types of activities and prevalence of child labor, to identify the children's working contexts, and to evaluate the extent of harm children face in workplaces. Survey methodology was used to collect primary data from 431 randomly selected respondents, desk review and document analysis were also used to gather secondary data. The sampling procedures used include multi-stage purposive and systematic random sampling. Descriptive and Ordered Probit Regression model methods. This research was concluded that the children were

involved in household tasks from an early age and that gender-based roles existed for children and negative coefficient for household head education indicates that it has a contrasting effect on children's level of harm while working.

2.5 Conceptual Framework of the Study

This study investigates the factors that contribute to hazardous child labor in the Yangon region of Myanmar. After reviewing empirical studies, a conceptual framework was established. The dependent variable in this study is the hazardous child labor. The independent variables include three groups of influencing factors are considered socio-demographic factors, education factors and economic factors.



Source: Myanmar Child Labor Survey (2022-2023)

Figure 2.1 Conceptual Framework of Factor Influencing to Hazardous Child Labor

2.6 Definition of Variables Used in the Study

In this section, regarding child labors with working definition of independent variables are as follows;

Gender of Child Labor

Child labor affects both males and females, though the nature and extent of involvement can differ based on gender. Male child labors are often engaged in agriculture, construction, and various informal sectors, while female child labors are frequently involved in domestic work, garment factories, and other low-wage employment in Myanmar. Gender-specific roles and societal norms can exacerbate vulnerabilities, with girls facing additional challenges such as higher risks of exploitation and less access to education compared to male counterparts. Efforts to address child labor in Myanmar must consider these gendered dimensions to effectively protect all children from exploitation and ensure equitable access to opportunities for growth and development.

Age of Child Labor

In Myanmar, the legal framework regarding child labor is defined by both national laws and international standards. According to the Myanmar Child Law of 1993 and the Employment and Skill Development Law of 2013, the minimum age for employment is generally 13 years old. However, there are specific restrictions and regulations about the type of work and working conditions for children under 18. Internationally, Myanmar is a signatory to the International Labor Organization (ILO) conventions, including Convention No. 138 on the Minimum Age for Admission to Employment, which sets the minimum age for employment at 15 years. The country is also committed to Convention No. 182 on the Worst Forms of Child Labor, which prohibits the use of children in hazardous work.

Parental Status

The parental status of children engaged in labor can significantly influence circumstances and the nature of work in Myanmar. Children from low-income families or those with single parents are often more likely to enter the workforce out of economic necessity, as families may rely on earnings for survival. In such cases, parents may prioritize immediate financial support over educational opportunities, exacerbating the

cycle of poverty. Additionally, children whose parents are unable or unwilling to provide adequate care and supervision may face higher risks of exploitation and hazardous working conditions. Addressing child labor in Myanmar thus requires not only legal and policy reforms but also targeted support for families to alleviate the economic pressures that drive children into the workforce.

Place of Residence

In the context of child labor in Myanmar, the place of residence refers to the geographical area where child labors live and work, which can be categorized into urban and rural settings. This classification is significant because it influences the types of work children engage in the conditions and the socio-economic factors that drive into labor.

Age at School Dropout

The age at school dropout for child labor in Myanmar refers to the specific age at which children formal education and transition into the workforce, often due to economic necessity and various socio-cultural factors. This age is critical in understanding the dynamics of child labor in the country, as it highlights the intersection between educational access and labor participation.

Education Level of Child Labor

The education level of child labors in Myanmar is a critical factor in understanding the dynamics of child labor in the country. It highlights the interplay between educational attainment, economic factors, and cultural norms that contribute to the prevalence of child labor.

Working Experience of Current Job

The working experience of current job for child labors in Myanmar refers to the duration and nature of employment that children engage in within various sectors. This concept encompasses the types of jobs held, the skills acquired, the working conditions, and the amount of time spent in these roles, which collectively impact physical, mental, and social development.

Medical Support by Employer

The medical support by employers in Myanmar refers to the responsibilities and services that employers are required or encouraged to provide to employees, particularly concerning health care and medical treatment. This provision is essential in ensuring the well-being of workers, including those in vulnerable categories such as child labors.

Monthly Income of Child Labor

The monthly income of child labors in Myanmar refers to the average amount of money earned by children engaged in paid employment on a monthly basis. This provides insights into the economic circumstances and working conditions faced by child labors in the country.

Work Hours per Day

The work hours per day for child labor in Myanmar refers to the average number of hours that children engaged in labor are required to work each day. This is crucial for understanding the extent of child labor and its implications on the health, education, and overall well-being of working children. According to various reports, average daily hours defined child labors in Myanmar often work long hours. Many children in the services sector work approximately 11 hours per day, typically from 6 am to 9 pm, and work seven days a week. Weekly hours defined child labors, particularly those aged 12-14, work an average of 52 hours per week, while those aged 15-17 work about 55 hours per week. This translates to more than 7 hours per day on average, exceeding the legal limits set for younger workers. Legal Restrictions: While the legal framework allows children aged 14 and above to work, it restricts working hours to a maximum of 4 hours per day for light work, with specific conditions regarding rest periods and days off. However, many children work beyond these legal limits due to economic pressures and the informal nature of employment. Hazardous Work: A significant portion of child labors, particularly those in hazardous conditions, may work even longer hours.

Employment Shifts of Child Labor

The employment shifts of child labor in Myanmar refer to the changes and trends in the types of employment, working conditions, and sectors where children are engaged in labor over time. This concept encompasses how economic, political, and social factors influence the prevalence and nature of child labor in the country.

CHAPTER III

METHODOLOGY

This chapter describes source of data, study variables, description of variables. Logistic regression includes binary logistic regression model, assumption of binary logistic regression model and assessing the goodness of fit of the model.

3.1 Study Variables

In this study, the primary dependent variable is hazardous child labor, which indicates whether a child labor is engaged in hazardous working conditions. This binary variable distinguishes between children working under hazardous conditions (coded as 1) and those not exposed to such conditions (coded as 0). To understand the factors influencing hazardous child labor, several independent variables are examined. These include gender (male or female), age (measured in years), parental status (such as one or both passed away or both parents alive), place of residence (urban or rural), educational status (ranging from out of school education to high education), working experience of current job (under 3 months to 2 years and above), medical support by employer (no health support, supported by employer and social security plan), monthly income of child labor (below 50,000 kyats to above 200,000 kyats), work hours per day (more than 8 hours and less than 8 hours), employment shifts (flexible working hours, day and evening periods and 6 am to 6 pm period).

3.2 Description of Variables

This study used a binary logistic model because the dependent variable, hazardous child labor, has binary responses. The explanatory independent variables are gender, age, educational status, living situation, shift type, poverty status, and working experience. The categories of hazardous child labor (dependent variable) were classified as follows:

Y = 0, If the child labor is not engaged in hazardous workplace
= 1, If the child labor is engaged in hazardous workplace

X_{1i} = Gender

= 0, “Female” (reference category)

= 1, “Male”

X_{2i} = Age

= 0, If age is “>14 years” (reference category)

= 1, If age is “<14 years”

X_{3i} = Parental Status

= 0, “Both Parents Alive” (reference category)

= 1, “One or Both Passed Away”

X_{4i} = Place of Residence

= 0, “Rural” (reference category)

= 1, “Urban”

X_{5i} = Age at School Dropout

= 0, If age is “>14 years” (reference category)

= 1, If age is “<14 years”

X_{6i} = Educational Status

= 0, “High” (reference category)

= 1, “Out Of School Education”

= 2, “Primary”

= 3, “Middle”

X_{7i} = Working Experience

= 0, “24 months and above” (reference category)

= 1, “under 3 months”

= 2, “3 to 6 months”

= 3, “6 months to 12 months”

= 4, “12 months to 24 months”

X_{8i} = Medical Support by Employer

= 0, “Social Security Scheme” (reference category)

= 1, “No Health Support”

= 2, “Supported By Employer”

X_{9i} = Monthly Income

= 0, “200,000 Kyats and above” (reference category)

= 1, “Below 50,000 Kyats”

= 2, “50,000-100,000 Kyats”

= 3, “100,000-150,000 Kyats”

= 4, “150,000-200,000 Kyats”

X_{10i} = Work Hours per Day

= 0, “Less than 8 Hrs.” (reference category)

= 1, “More than 8 Hrs.”

X_{11i} = Employment Shifts

= 0, “6 Am to 6 Pm Period” (reference category)

= 1, “Other” (weekends, after 6pm)

= 2, “Flexible Working Hours”

= 3, “Day and Evening Periods”

3.3 Binary Logistic Regression Model

In logistic regression, the dependent variable is typically dichotomous, meaning it can take the value 1 with a probability of success, $P(Y = 1) = \theta$, or the value 0 with a probability of failure, $P(Y = 0) = 1 - \theta$. This type of variable is known as a Bernoulli (or binary) variable. Although less common and not the focus here, logistic regression applications can also extend to situations where the dependent variable consists of more than two categories, referred to as multinomial or polytomous. As mentioned earlier, the independent or predictor variables in logistic regression can be of any type. Logistic regression does not make assumptions about the distribution of these independent variables. Normal distribution, linear relationships, and equal variance across groups are not required. The relationship between the predictor and response variables is not a

linear function in logistic regression; instead, the logistic regression function, which is the logit transformation of π . The binary logistic regression model in the usual form is

$$Y_i = E(Y_i) + E_i \quad (3.1)$$

Since the distribution of the error term E_i depends on the Bernoulli distribution of the response Y_i .

$$E(Y_i) = \pi_i = \frac{e^{(\beta_0 + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_i x_i)}}{1 + e^{(\beta_0 + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_i x_i)}} \quad (3.2)$$

where $E(Y_i)$ is viewed as a conditional mean, given the value of X_i , β_0 = the constant of the equation and, β_i = the coefficient of the predictor variable i . An alternative form of the logistic regression equation is:

$$\text{Logit}[\pi(x)] = \log \frac{\pi(x)}{1 + \pi(x)} = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_i x_i + e_i \quad (3.3)$$

The objective of logistic regression is to predict the outcome category accurately for individual cases using an efficient model. This involves constructing a model that includes all relevant predictor variables to forecast the response variable effectively. During model construction, there are several options. Variables can be added in the order chosen by the researcher, or logistic regression can evaluate the model's fit after each addition or removal of a coefficient, a process called stepwise regression. Logistic regression has two main purposes. The first is predicting group membership. The analysis calculates the probability of success versus failure, providing results as an odds ratio. The second purpose is that logistic regression provides insights into the associations and strengths among the variables.

3.4 Assumptions of Binary Logistic Regression Model

Binary logistic regression does not make many of the key assumptions of linear regression and general linear models that are based on ordinary least squares algorithms, particularly regarding linearity, normality, homoscedasticity, and measurement level. The assumptions of binary logistic regression model are as follow;

- (1) Binary logistic regression does not require a linear relationship between the dependent and independent variables.
- (2) The dependent variable in logistic regression needs to be binary and it cannot be measured on an interval or ratio scale.
- (3) The error terms (residuals) need not be normally distributed.
- (4) Homoscedasticity is not required.
- (5) There is no multicollinearity among the independent variables.

(6) Binary logistic regression typically requires a large sample size.

3.5 Test for Single Coefficient

The following Wald Test is used to test the coefficients of the model.

Wald Test

Wald test is used to test the statistical significance of each coefficients (i.e. β 's) in the logistic regression model. Wald statistic follows a Chi-Square distribution. However, several authors have identified problems with the use of the Wald statistic. Menard (1995) has warned that for large coefficients, standard error is inflated, lowering the Wald statistic (Chi-square) value. Agresti (1996) has stated that the likelihood-ratio test is more reliable for small sample sizes than the Wald test. The test statistic is

$$W = \frac{\hat{\beta}_i}{SE(\hat{\beta}_i)} \quad (3.4)$$

where, $\hat{\beta}_i$ is the estimate of the coefficient of the independent variable x_i and $SE(\hat{\beta}_i)$ is the standard error of $\hat{\beta}_i$. The squared value of the Wald statistics as indicated below is chi-square distributed with one degree of freedom.

$$W^2 = \left(\frac{\hat{\beta}_i}{SE(\hat{\beta}_i)} \right)^2$$

The Wald statistic follows a chi-square distribution with 1 degree of freedom. The null hypothesis is rejected if the p-value of the test is less than α (significance level). A coefficient with a p-value of the Wald statistic less than α (significance level) implies that the variable is important in the model.

3.6 Test for Overall Model

It is important to examine the suitability of the logistic regression model before its implementation. Specifically, it is crucial to assess whether the estimated response function conforms to the essential characteristics of a logistic response, namely, monotonicity and sigmoidal shape. The evaluation of the model's goodness of fit is facilitated through various tests. Goodness of fit test provide an overall measure of the fit of the model.

Hosmer–Lemeshow Goodness of Fit Test

The test compares the predicted values against the actual values of the dependent variable. The method is similar to the Chi-square goodness of fit. The Hosmer–Lemeshow test is to examine whether the observed proportions of events are similar to the predicted probabilities of occurrence in subgroups of the model population. The Hosmer-Lemeshow test is performed by dividing the predicted probabilities into deciles (10 groups based on percentile ranks) and then computing a Pearson Chi-square that compares the predicted to the observed frequencies in a 2-by-10 table. The value of the test statistics is,

$$\chi^2 = \sum_{i=1}^{10} \frac{(O_i - E_i)^2}{E_i} \quad (3.5)$$

Where O_i and E_i denote the observed events, and expected events for the i^{th} risk decile group.

Omnibus Test

The omnibus test statistic is a measure of the overall model fit. The test is implemented on an overall hypothesis that the null hypothesis; all the coefficients of independent variables are equal to zero against at least one coefficient of an independent variable that is not equal to zero. The null hypothesis is rejected when the p-value is less than significance level. It implies that the logistic regression can be used to model the data.

R Square for Logistic Regression

Cox and Snell R^2 is based on the log likelihood for the model compared to the log likelihood for the base line model. The R^2 for logistic regression is estimated by Cox and Snell R^2 computed as

$$\text{Cox \& Snell } R^2 = \left(\frac{-LL_0 - LL_k}{-LL_0} \right)^{n/2} \quad (3.6)$$

CHAPTER IV

RESULTS AND FINDINGS

Data from Myanmar Child Labor Survey 2022-2023 is used to examine the determinants of socio demographic characteristics of child labor and the hazardous child labor of Yangon Region in Myanmar. According to this survey, 363 child labors were interviewed and analysis of factor influencing child labor in hazardous working environment.

4.1 Socio-Demographic Characteristics of Child Labor in Yangon Region (2022-2023)

The descriptive analysis of socio demographic characteristics of child labor and hazardous child labor is described in Table (4.1).

Table (4.1) Socio-Demographic Characteristics of Child Labor in Yangon Region (2022-2023)

Socio-Demographic Characteristics of Child Labor	Number	Percent
Gender		
Male	238	65.6
Female	125	34.4
Parental Status		
One or Both Passed Away	86	23.7
Both Parents Alive	277	76.3
Place of Residence		
Urban	107	29.5
Rural	256	70.5
Working Experience of Current Job (months)		
Under 3	151	41.6
3 to 6	50	13.8
6 to 12	47	12.9
12 to 24	65	17.9
24 and above	50	13.8

Socio-Demographic Characteristics of Child Labor	Number	Percent
Employment Shifts of Child Labor		
Other (Weekends, After 6 Pm)	129	35.5
Flexible Working Hours	25	6.9
Day and Evening Periods	96	26.4
6 Am to 6 Pm Period	113	31.1
Hazardous Workplace		
Hazardous Workplace	59	16.3
Non-Hazardous Workplace	304	83.7

Source: Myanmar Child Labor Survey (2022-2023)

According to Table (4.1), 65.6% of child labors are male and 34.4% of child labors are female. Hence, it can be said that nearly one third of the child labors are males and more than one-half of the child labors are female.

In parental status, it is found that more than three quarter of child labors are living with parents (76.3%) and one quarter of child labors are not living with parents (23.7%).

In the types of place of residence, 29.5% of child labors are living in urban areas of Yangon Region while 70.5% of child labors are living in rural areas of Yangon Region.

Regarding the work experience of the current job, it was found that almost half (41.6%) of the child labors have been working in the current job for under 3 months. It can be concluded that the most child labors have under 3 months working experience and other child labors working in the current job the range of 10% to 20%.

Based on the employment shifts of child labors, irregular working hours are common, with 35.5% of children working during "other" times, such as weekends and after 6 pm period. It can be concluded that the most child labors work for irregular working period.

In hazardous workplace, 16.3% of child labors work in hazardous workplace while 83.7% of the child labors work in non-hazardous workplace.

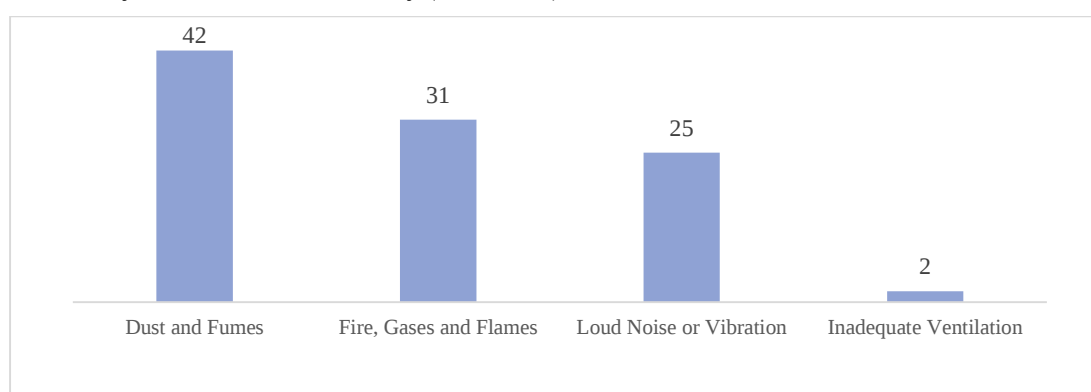
4.1.1 Hazardous Working Conditions

The distribution of hazardous working conditions are shown in Table (4.2) and presented in Figure (4.1).

Table (4.2) The Percentage Distribution of Hazardous Working Conditions

Hazardous Working Conditions	Number	Percent (%)
Dust and Fumes	154	42
Fire, Gases and Flames	111	31
Loud Noise or Vibration	92	25
Inadequate Ventilation	6	2
Total	363	100

Source: Myanmar Child Labor Survey (2022-2023)



Source: Myanmar Child Labor Survey (2022-2023)

Figure (4.1) Hazardous Working Conditions

Table (4.2) and Figure (4.1) describe, child labors are facing several of hazardous working conditions in workplace such as 42% of dust and fumes, 31% of fire, gases and flames, 25% of loud noise or vibration and 2% of inadequate ventilation.

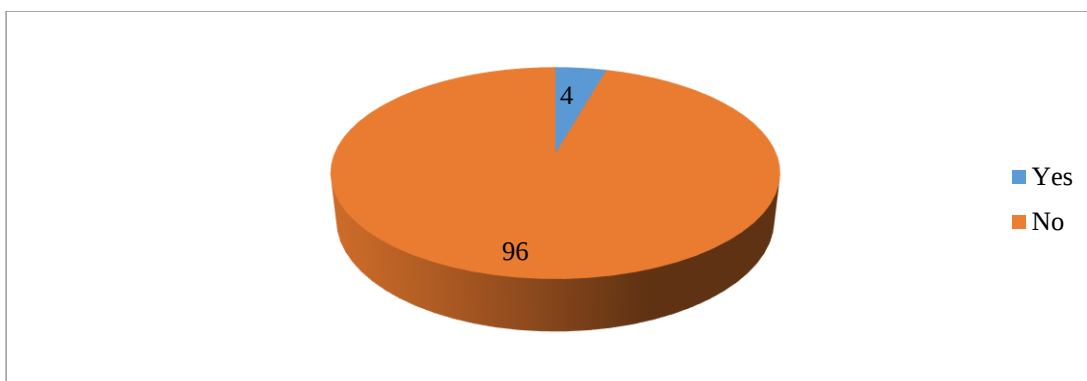
4.1.2 Workplace Abuse

The distribution of workplace abuse is shown in Table (4.3) and presented in Figure (4.2).

Table (4.3) The Percentage Distribution of Workplace Abuse

Workplace Abuse	Number	Percent (%)
Yes	16	4
No	347	96
Total	363	100

Source: Myanmar Child Labor Survey (2022-2023)



Source: Myanmar Child Labor Survey (2022-2023)

Figure (4.2) Workplace Abuse

According to Table (4.3) and Figure (4.2), 4% of hazardous child labor in this study experienced physical and mental abuse in the workplace. Hence, it can be observed that almost all child labors are not abused in hazardous workplace.

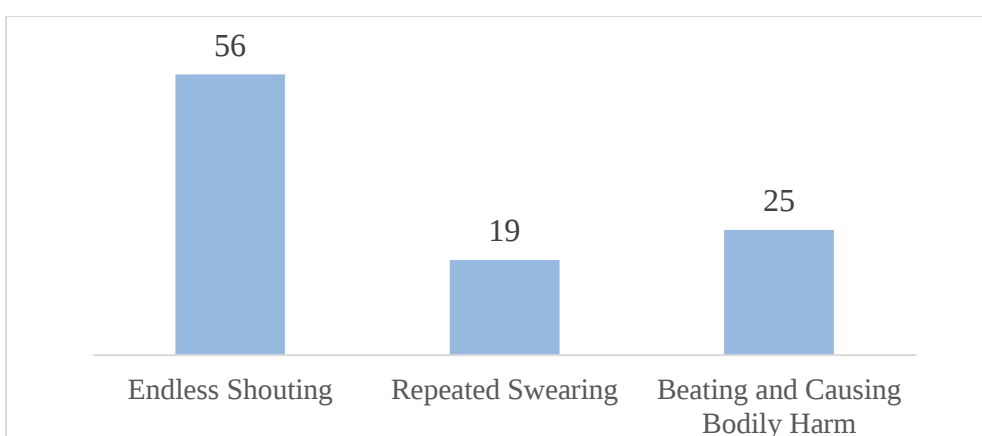
4.1.3 Types of Abuse

The distribution of types of abuse is shown in Table (4.4) and presented in Figure (4.3).

Table (4.4) The Percentage Distribution of Types of Abuse

Types of Abuse	Number	Percent (%)
Endless Shouting	233	56
Repeated Swearing	26	19
Beating and Causing Bodily Harm	104	25
Total	363	100

Source: Myanmar Child Labor Survey (2022-2023)



Source: Myanmar Child Labor Survey (2022-2023)

Figure (4.3) Types of Abuse

According to Table (4.4) and Figure (4.3), child labors are suffering various types of physical and mental abuse condition in workplace such as 56% of endless shouting, 25% of beating and causing bodily harm and 19% of repeated swearing.

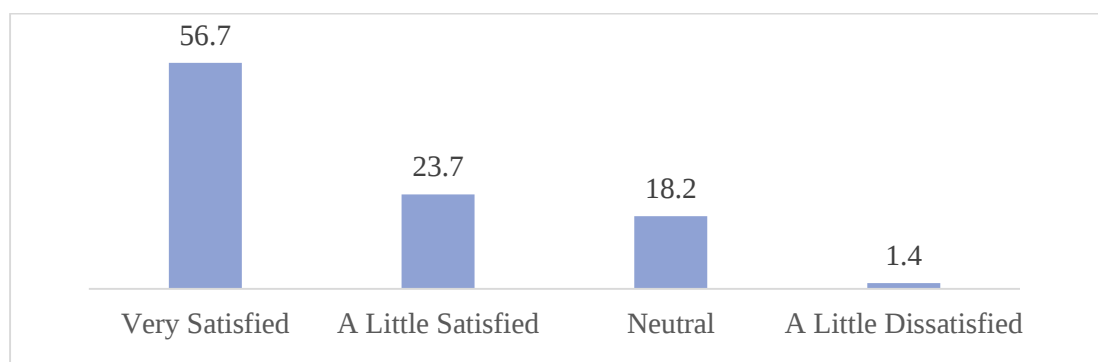
4.1.4 Employee Job Satisfaction Rate

The distribution of employee job satisfaction rate is shown in Table (4.5) and presented in Figure (4.4).

Table (4.5) The Percentage Distribution Employee Job Satisfaction Rate

Employee Job Satisfaction Rate	Number	Percent (%)
Very Satisfied	206	56.7
A Little Satisfied	86	23.7
Neutral	66	18.2
A Little Dissatisfied	5	1.4
Total	363	100

Source: Myanmar Child Labor Survey (2022-2023)



Source: Myanmar Child Labor Survey (2022-2023)

Figure (4.4) Employee Job Satisfaction Rate

According to Table (4.5) and Figure (4.4), employee job satisfaction rate of the child labors are 57% in very satisfied, 24% in a little satisfied, 18.2% in neutral and 1.4% in a little dissatisfied.

4.2 The Association between Socio-Demographic Characteristics of Child Labor and Hazardous Child Labor

The Association between Socio Demographic Characteristics of Child Labor and Hazardous Child Labor is investigated by Chi-square test and which is described in Table (4.6).

Table (4.6) The Association between Socio Demographic Characteristics of Child Labor and Hazardous Child Labor

Socio Demographic Characteristics	Chi-Square	P-Value
Gender	4.799**	0.028
Place of Residence	2.830*	0.093
Employment Shifts of Child Labor	19.759***	0.000
Work Hours per Day	3.268*	0.071
Medical Support by Employer	6.050**	0.049

Source: Myanmar Child Labor Survey (2022-2023)

*** denotes significant at 1% level, **denotes significant at 5% level, *denotes significant at 10% level

According to Table (4.6), there is positive relationship between socio demographic and hazardous child labor. Gender shows a statistically significant association, with a Chi-Square value of 4.799 and a p-value of 0.028. The place of residence exhibits a marginal significance, with a Chi-Square value of 2.830 and a p-value of 0.093. Employment shifts are highly significantly associated with the variables, as evidenced by a Chi-Square value of 19.759 and a p-value of 0.000. The association between work hours per day and the variables is marginally significant, with a Chi-Square value of 3.268 and a p-value of 0.071. Finally, the medical support by employers demonstrates a significant relationship with a Chi-Square value of 6.050 and a p-value of 0.049, highlighting the importance of this factor in the context of the study.

Table (4.7) Model Fitting Information for the Hazardous Child Labor with All Independent Variables

Model Fitting Criteria	Chi-square value	df	P-value
Omnibus Tests of Model Coefficient	51.701***	22	0.000
Hosmer and Lemeshow (H-L) Tests	5.140	8	0.743
-2 Log Likelihood	270.533		
Cox & Snell R- Square	0.133		
Nagelkerke R- Square	0.226		
Overall Correct Prediction	84.8%		

Source: Myanmar Child Labor Survey (2022-2023)

*** denotes significant at 1% level

According to the Omnibus tests of model coefficients in Table (4.7), it was found that the binary logistic regression model for hazardous child labor is statistically significant at the 1% level. Therefore, this model can explain that the contributing factors may affect the hazardous child labor. In Hosmer and Lemeshow (H-L) test, chi square value is 5.140 and p-value is 0.743, so that the model is not statistically significant and it indicates that this model fits the data well. The existence of a relationship between the independent variables and the dependent variable is supported according to the -2 log likelihood statistic (270.533). According to the results of Cox & Snell R- Square and Nagelkerke R- Square values are 13.3 % and 23% of variation in hazardous child labor can be explained by the variation of the independent variables. Overall, 84.8 % of the child labors are predicted correctly.

4.3 Parameter Estimates for the Effect of Socio Demographic Characteristics of Child Labor on Hazardous Working Condition

The parameter estimates for the effect of socio demographic characteristics of child labor on hazardous working condition in Binary Logistic Regression model are shown in Table (4.8).

Table (4.8) Parameter Estimates for the Effect of Socio Demographic Characteristics of Child Labor on Hazardous Working Condition In Binary Logistic Regression Model

Variables	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
							Lower	Upper
	Gender of Child Labor							
Male	0.821**	0.376	4.761	1	0.029	2.272	1.087	4.747
Female (ref)								
	Age of Child Labor							
Under 14 Yrs	0.022	0.384	0.003	1	0.955	1.022	0.481	2.171
Over 14 Yrs (ref)								
	Parental Status							
One or Both Passed Away	-0.436	0.406	1.152	1	0.283	0.647	0.292	1.434
Both Parents Alive (ref)								
	Place of Residence							
Urban	-0.596	0.4	2.214	1	0.137	0.551	0.252	1.208
Rural (ref)								
	Age at School Dropout							
Under 14 yrs	-0.174	0.509	0.117	1	0.733	0.84	0.31	2.281
Over 14 yrs (ref)								
	Education Level of Child Labor							
Out of School Education	0.056	1.239	0.002	1	0.964	1.057	0.093	11.985
Primary Education	0.915	0.969	0.892	1	0.345	2.497	0.374	16.68
Middle Education	0.659	0.903	0.532	1	0.466	1.932	0.329	11.334
High Education (ref)								

Variables	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
							Lower	Upper
Working Experience of Current Job (months)								
Under 3	1.396**	0.653	4.569	1	0.033	4.038	1.123	14.521
3 to 6	1.192**	0.709	2.821	1	0.093	3.292	0.82	13.222
6 to 12	0.973	0.789	1.522	1	0.217	2.647	0.564	12.424
12 to 24	0.684	0.712	0.922	1	0.337	1.981	0.491	7.994
24 and above (ref)								
Medical Support by Employer								
No Health Support	-0.728	0.532	1.876	1	0.171	0.483	0.17	1.369
Supported By Employer	-0.968**	0.488	3.937	1	0.047	0.38	0.146	0.988
Social Security Scheme (ref)								
Monthly Income of Child Labor								
Below 50,000 Kyats	-1.438	1.239	1.347	1	0.246	0.237	0.021	2.693
50,000-100,000 Kyats	-2.249*	1.179	3.641	1	0.056	0.105	0.01	1.063
100,000-150,000 Kyats	-2.317*	1.229	3.555	1	0.059	0.099	0.009	1.096
150,000-200,000 Kyats	0.247	1.383	0.032	1	0.858	1.28	0.085	19.259
200,000 Kyats and above (ref)								
Work Hours per Day								
More than 8 Hrs	1.347**	0.618	4.76	1	0.029	3.847	1.147	12.906
Less than 8 Hrs (ref)								
Employment Shifts of Child Labor								
Other (weekends, after 6 pm)	-0.013	0.455	0.001	1	0.977	0.987	0.405	2.406
Flexible Working Hours	-0.575	1.11	0.268	1	0.605	0.563	0.064	4.954
Day and Evening Periods	1.172***	0.427	7.525	1	0.006	3.23	1.398	7.464
6 am to 6 pm period (ref)								
Constant	-2.396	1.681	2.032	1	0.154	0.091		

Source: Myanmar Child Labor Survey (2022-2023)

*** denotes significant at 1% level, **denotes significant at 5% level and *denotes significant at 10% level.

The results in Table (4.8) show that, gender is statistically significant at the 5% level and positively effects hazardous child labor. It can be concluded that, males are 2.272 times higher than females to work in hazardous environment.

Regarding working experience of current job is statistically significant at the 5% level and has a positive effect on hazardous child labor. It can be inferred that, child labors with under 3 months of working experience in current job are 4.038 times more likely to work in hazardous environment than child labors with 24 months and above of working experience. Similarly, child labors with 3 to 6 months of working experience are 3.292 times more likely to work in hazardous environment than child labors with 24 months and above of working experience.

Relating to the medical support by employer is statistically significant at the 5% level and has a negative effect on hazardous child labor. It can be assumed that, child labors who received medical support from employer are 0.62 times less likely to work in hazardous environment compared to those receiving support from the social security scheme.

Concern with the monthly income of child labor is statistically significant at the 10% level, has a negative effect on hazardous child labor. It can be supposed that, child labors, whose currently earn between 50,000 and 100,000 kyats are 0.895 times less likely to work in hazardous environment than child labors whose earn 200,000 kyats and above. Similarly, child labors whose earn between 100,000 and 150,000 kyats are 0.90 times less likely to work in hazardous environment than child labors whose earn 200,000 kyats and above. It is also statistically significant at the 10% level, has a negative effect on hazardous child labor.

Regarding work hours per day is statistically significant at the 5% level and positively effect on hazardous child labor. It can be concluded that, child labors who work more than 8 hours are 3.847 times more likely to be employed in hazardous environment compared to those who work less than 8 hours.

In terms of the employment shifts of child labor is statistically significant at the 1% level and have a positive effect on hazardous child labor. It can be inferred that, child labors who currently work day and evening shifts are 3.23 times more likely to work in hazardous environment than child labors who work 6 am to 6 pm shifts.

CHAPTER V

CONCLUSION

This chapter summarizes the study's findings, emphasizing key insights and recommendations. It explains the implications of these findings, offers specific solutions for the issues identified, and suggests areas for further study explore and address these problems, improving knowledge and discussion in the field.

5.1 Findings and Discussions

This study provides a in depth analysis at the socio-demographic characteristics and job conditions related to hazardous child labor in Yangon, using data from the 2022-2023 financial year.

According to the results of the Chi-square association test, gender, place of residence, employment shifts of child labor, work hours per day, and medical support by employer are associated with hazardous child labor.

The results of binary logistic regression model show that gender, working experience of current job, medical support by employer, monthly income of child labor, work hours per day and employment shifts of child labors are influence of hazardous child labor.

It reveals several important findings, including a notable gender difference among child labors, with a higher proportion being male compared to female and males are more prone to be in child labor. This difference is statistically significant, indicating a strong relationship between gender and hazardous labor. The inequality suggests that male child labors are more frequently found in hazardous jobs, highlighting the need for gender-specific strategies.

Most child labors were permanent worker although nearly half of the child labors had been in their current job for under three months. Child labors with less than three months of experience in their current job are more likely to work in hazardous environments compared to those with over 24 months of experience because less experienced workers are often given riskier tasks or are less knowledgeable about safety procedures. In contrast, those with more extensive experience are generally more skilled, better trained, and more familiar with safer work practices, which reduces their likelihood of being assigned to hazardous roles.

Child labors supported by employers are less likely to work in hazardous workplaces compared to those supported by the social security scheme because employers may provide better conditions and oversight, while social security support might not directly impact their work environment.

Child labors, whose earn in low are less likely to work in hazardous environments than earn in high child labors because hazardous jobs typically come with higher wages as a way to compensate for the increased risks and potential harm involved. Employers may offer better pay to attract workers to more hazardous roles, whereas earn in low positions often involve less risky tasks.

Child labors who work more hours in their current job are more likely to work in hazardous environments because spending more time on the job increases their chances of being assigned to riskier tasks. Longer hours often expose them to more hazardous conditions compared to those who work fewer hours, who may have less involvement in hazardous activities.

Child labors who work day and evening shifts are more likely to be in hazardous occupations compared to those who work from 6 am to 6 pm because irregular or extended hours, such as those spanning day and evening, often involve more hazardous tasks and less supervision. These shifts can lead to increased exposure to risks and less oversight, whereas a standard 6 am to 6 pm shift typically offers more consistent supervision and safer working conditions.

In place of residence, regional differences are also evident, with the majority of child labors living in rural areas. This highlights the higher concentration of hazardous child labor in these regions, likely due to limited access to education and fewer economic opportunities, which drive families to depend on child labor for income. Interestingly, most child labors come from families with both parents alive, challenging the common belief that child labor is mainly driven by single-parent households or orphans. This suggests that family structure alone not fully explain the prevalence of child labor, highlighting the role of socio-economic factors like poverty and financial need. Most child labors face unsafe conditions, a smaller group is exposed to serious hazards like dust, smoke, fire, gases, and excessive noise, posing major health risks. This emphasizes the need for stricter regulations and enforcement to protect child labors. Additionally, a portion of child labors report physical and psychological abuse, compounding already hazardous working environments.

The findings of the study show that gender differences; it highlights the need for targeted policy changes to address unsafe working conditions and inadequate provision for child labor in Yangon. To reduce safety and hazardous child labor to improve educational opportunities. It is important to address these root causes by providing financial support to families and implementing stronger labor regulations. Based on the information obtained from the survey, the reviews and recommendations that may be useful for the development and implementation of policies to reduce child labor in the Yangon region. Poor family life is a major source of child labor. It must be considered that only by using social security scheme will the families' reliance on child labor decrease and the number of child labors decrease.

5.2 Recommendations

Family livelihoods are critical to eliminating child labor. Employment must be created to generate income for parents. In working to eliminate child labor, education is the main factor for obtaining employment opportunities in the future, so that children do not end up as child labor and anyone can continue to learn as much as possible. Commitments on legal employment to ensure that child labors who must work must have a minimum age limit to be able to work legally, benefits and opportunities; Employers must enforce minimum wages and working hour's restrictions.

5.3 Further Study

This study identifies further research in the field of child labor performance, particularly on other entrepreneurial factors that affect child labor performance. It is interesting to see how these factors enhance the studied entrepreneurship factors and overall influence on child labor in Yangon Region. To facilitate discovery generally, it is recommended that another similar study should be conducted to determine the influence of entrepreneurship factors on child labor performance in Myanmar. To explore the in-depth information of the hazardous child labor in Myanmar, qualitative study should be done.

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APPENDICES

Crosstab					
			hazardous workplace	non hazardous workplace	Total
Gender of Child Labor	male	Count	46	192	238
		Expected Count	38.7	199.3	238
		% within Gender of Child Labor	19.30%	80.70%	100.00%
		% within Hazardous Workplace	78.00%	63.20%	65.60%
		% of Total	12.70%	52.90%	65.60%
	female	Count	13	112	125
		Expected Count	20.3	104.7	125
		% within Gender of Child Labor	10.40%	89.60%	100.00%
		% within Hazardous Workplace	22.00%	36.80%	34.40%
		% of Total	3.60%	30.90%	34.40%
Total		Count	59	304	363
		Expected Count	59	304	363
		% within Gender of Child Labor	16.30%	83.70%	100.00%
		% within Hazardous Workplace	100.00%	100.00%	100.00%
		% of Total	16.30%	83.70%	100.00%

Crosstab					
			hazardous workplace	non hazardous workplace	Total
Place of Residence	urban	Count	12	95	107
		Expected Count	17.4	89.6	107
		% within Place of Residence	11.20%	88.80%	100.00%
		% within Hazardous Workplace	20.30%	31.30%	29.50%
		% of Total	3.30%	26.20%	29.50%
	rural	Count	47	209	256
		Expected Count	41.6	214.4	256
		% within Place of Residence	18.40%	81.60%	100.00%
		% within Hazardous Workplace	79.70%	68.80%	70.50%
		% of Total	12.90%	57.60%	70.50%
Total		Count	59	304	363
		Expected Count	59	304	363
		% within Place of Residence	16.30%	83.70%	100.00%
		% within Hazardous Workplace	100.00%	100.00%	100.00%
		% of Total	16.30%	83.70%	100.00%

Crosstab					
			hazardous workplace	non hazardous workplace	Total
Employment Shifts of Child Labor	other	Count	15	114	129
		Expected Count	21	108	129
		% within Employment Shifts of Child Labor	11.60%	88.40%	100.00%
		% within Hazardous Workplace	25.40%	37.50%	35.50%
		% of Total	4.10%	31.40%	35.50%
	flexible working hours	Count	1	24	25
		Expected Count	4.1	20.9	25
		% within Employment Shifts of Child Labor	4.00%	96.00%	100.00%
		% within Hazardous Workplace	1.70%	7.90%	6.90%
		% of Total	0.30%	6.60%	6.90%
	day and evening period	Count	29	67	96
		Expected Count	15.6	80.4	96
		% within Employment Shifts of Child Labor	30.20%	69.80%	100.00%
		% within Hazardous Workplace	49.20%	22.00%	26.40%
		% of Total	8.00%	18.50%	26.40%
	6 am to 6 pm period	Count	14	99	113
		Expected Count	18.4	94.6	113
		% within Employment Shifts of Child Labor	12.40%	87.60%	100.00%
		% within Hazardous Workplace	23.70%	32.60%	31.10%
		% of Total	3.90%	27.30%	31.10%
Total		Count	59	304	363
		Expected Count	59	304	363
		% within Employment Shifts of Child Labor	16.30%	83.70%	100.00%
		% within Hazardous Workplace	100.00%	100.00%	100.00%
		% of Total	16.30%	83.70%	100.00%

Crosstab					
			hazardous workplace	non hazardous workplace	Total
Work Hours per Day	more than 8 hrs	Count	55	256	311
		Expected Count	50.5	260.5	311
		% within Work Hours per Day	17.70%	82.30%	100.00%
		% within Hazardous Workplace	93.20%	84.20%	85.70%
		% of Total	15.20%	70.50%	85.70%
	less than 8 hrs	Count	4	48	52
		Expected Count	8.5	43.5	52
		% within Work Hours per Day	7.70%	92.30%	100.00%
		% within Hazardous Workplace	6.80%	15.80%	14.30%
		% of Total	1.10%	13.20%	14.30%
Total		Count	59	304	363
		Expected Count	59	304	363
		% within Work Hours per Day	16.30%	83.70%	100.00%
		% within Hazardous Workplace	100.00%	100.00%	100.00%
		% of Total	16.30%	83.70%	100.00%

Crosstab					
			hazardous workplace	non hazardous workplace	Total
Medical Support by Employer	no health support	Count	18	100	118
		Expected Count	19.2	98.8	118
		% within Provision of Medical Support by Employer	15.30%	84.70%	100.00%
		% within Hazardous Workplace	30.50%	32.90%	32.50%
		% of Total	5.00%	27.50%	32.50%
	supported by employer	Count	30	179	209
		Expected Count	34	175	209
		% within Provision of Medical Support by Employer	14.40%	85.60%	100.00%
		% within Hazardous Workplace	50.80%	58.90%	57.60%
		% of Total	8.30%	49.30%	57.60%
	social security plan	Count	11	25	36
		Expected Count	5.9	30.1	36
		% within Provision of Medical Support by Employer	30.60%	69.40%	100.00%
		% within Hazardous Workplace	18.60%	8.20%	9.90%
		% of Total	3.00%	6.90%	9.90%
Total		Count	59	304	363
		Expected Count	59	304	363
		% within Provision of Medical Support by Employer	16.30%	83.70%	100.00%
		% within Hazardous Workplace	100.00%	100.00%	100.00%
		% of Total	16.30%	83.70%	100.00%

Logistic Regression

Case Processing Summary			
Unweighted Casesa		N	Percent
Selected Cases	Included in Analysis	363	100
	Missing Cases	0	0
	Total	363	100
Unselected Cases		0	0
Total		363	100

Dependent Variable Encoding	
Original Value	Internal Value
non hazardous workplace	0
hazardous workplace	1

Omnibus Tests of Model Coefficients				
		Chi-square	df	Sig.
Step 1	Step	51.701	22	0
	Block	51.701	22	0
	Model	51.701	22	0

Model Summary			
Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	270.533a	0.133	0.226

Hosmer and Lemeshow Test			
Step	Chi-square	df	Sig.
1	5.14	8	0.743

Classification Table					
	Observed	Predicted			
				Hazardous Workplace	Percentage Correct
			hazardous workplace	nonhazardous workplace	
Step 1	Hazardous Workplace	nonhazardous workplace	5	299	98.4
		hazardous workplace	9	50	15.3
	Overall Percentage				84.8

