



Opportunity Cost of Child Labor in Mica Mines of Koderma

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ABSTRACT

Child labour in the mica mining region of Koderma, Jharkhand, remains a critical socio-economic issue despite existing legal frameworks and policy interventions. In this study, the opportunity cost of child labour is explored by considering what children give up when they work in mines rather than attend school and engage in good health and development. The research methodology used is doctrinal and secondary research that support the data obtained from academic literature, government reports, and online databases that are considered reliable. It emphasises that poverty, ignorance, an inadequate legal framework and a shortage of livelihood opportunities are the major factors driving children into dangerous mining activities. The findings show that although child labour offers a family an instant source of income, it also has considerable longer-term costs such as missed educational opportunities, sub-optimal health of the children, and lost earning potential in the future. The children who work in mica mines frequently experience school absences, poor levels of basic skills and unsafe working conditions, with a negative impact on their physical and mental health. The study also pinpoints the informal mining sector and policy weaknesses as drivers of the existence of child labour. The research shows that the impact of child labour is expressed in indirect ways, including by reducing the ability of children to create human capital and intergenerational poverty, thereby hindering the

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development of this economy. The study concludes that tackling this problem would need increased policy enforcement, better access to education, and socio-economic assistance for vulnerable families to enable sustainable development and protection of children's rights.

Introduction

The child labour is a well-known problem in the mica mining area of Koderma in Jharkhand, where poverty, unemployment and poor quality education are prevalent. Children are involved in early child labour and engage in risky activities, including informal mining, as part of their family's livelihood. Even though the law is in place and government efforts are underway to address the issue, enforcement is inadequate and economic pressures persist. This creates a large number of learning and development opportunities that are missed out on by children. The opportunity cost of child labour is studied to enable understanding of the long term social and economic effects of missing out on education for immediate income in this region (Raj, 2025).

Child labour is a true social and economic problem in India particularly in mica mines in Koderma district in Jharkhand. Koderma is reputed as one of the biggest producers of mica, a mineral used in painting, electronics and cosmetics industry. Although mining of Mica is providing livelihood to the local community, it is also concealing a grim fact that many children are employed in the mining industry rather than in the school. These children are usually working in unsafe conditions, where they are at risk to physical and mental health damage, and physical injury. The issue is not simply child labour, but also the opportunity cost of child labour, that is, what those children miss out on (Das & Goel, 2021).

Opportunity cost is the value of the next best alternative that is sacrificed in making a choice. For child labour, when children are working in mica mines they are not given the chance to receive education, build up skills, and enjoy healthy childhood. Education is very important for molding a child's future, enabling them to acquire knowledge, increase their employability and improve their quality of life. But because of poverty, being uneducated and not having access to a proper school many families send their kids to work in mines to help support the household income. This short-term profit is very expensive in the long-term.

It is not only the child who suffers from the opportunity cost of child labour in the mica mines, it is also families, communities and even the development of the country. Without education children have a greater likelihood of staying in low-paying, low-skilled jobs in the future, perpetuating the cycle of poverty.

This also limits the availability of skilled human resources that are vital for promoting economic growth and social development. Furthermore, child labour deprives children of enjoying their fundamental rights such as the right to education, health and protection from exploitation (Bhowmik, 2025).

It is important to understand the opportunity cost of children's labour in the mica mines of Koderma, in order to appreciate the urgency of child labour in the state. It helps policy makers, researchers and society to think beyond short-term economic gains and work towards long-term development objectives. Poverty, low educational attainment, and low law enforcement are all key issues that can be mitigated, which will help to curb child labour and provide children with greater opportunities. This cycle can be broken and a future can be envisioned where children are not forced to choose work over learning and growth through ensuring proper education, social support and awareness (Terredeshomme, 2025).

Significance of the Study

This study is important because it brings into the limelight the other cost of child labour in mica mines of Koderma, Jharkhand. Child labour is a short-term solution for poor families' incomes but has long-term consequences in terms of education, health and employment. The study emphasizes the opportunity cost and consequently aids in understanding of the costs incurred by children who enter into the labour force at an early age. It also highlights the wider social and economic ramifications, such as impoverishment and ongoing cycles of poverty. The results of this study can help policy makers, researchers and social organizations to come up with an effective action plan to get rid of child labor and encourage the schooling of the children involved in the process, thus paving the way for sustainable development and better future for the children involved in child labor.

Problem of the Statement

Although legal measures have been taken and government has started measures against child labour in mica mines at Koderma, it is still a serious problem. The basic issue is the economic need of poor families for the 'earnings' from their children that leads them to opt for work rather than education. This results in substantial opportunity cost for children due to loss of access to school, skill building and healthy growth. This is compounded by lack of awareness and limited awareness of enforcement of labour laws, and limited livelihood opportunities. Children are consequently locked into low-paying, dangerous jobs, with implications for their future income and well-being. Child labour is not only a problem of child labour but also the long-term social and economic losses experienced when children are unable to exercise their rights and opportunities for development.

Research Objectives

- To understand the concept of opportunity cost in child labour
- To examine the socio-economic conditions of child workers in mica mines
- To analyse the impact of child labour on education, health, and future income
- To identify factors responsible for the persistence of child labour in Koderma

Research Methodology

This study is based on a secondary research methodology. Various sources of information like research papers, academic journals, books and government reports are used as existing sources for data collection. To find relevant literature on child labour and opportunity cost, literature search has been conducted on reliable online databases namely PubMed, Research Gate, Scopus, Sodhganga and Google Scholar. Sources from government, international and non-governmental organisations (NGOs) have also been cited as authoritative sources for facts and statistics. The study is also based on the policy documents and census data, as well as some earlier studies on mica mining and child labour in Jharkhand. This approach aids in examining and interpreting the information already available to gain a deeper understanding of the problem. Secondary data source approach is chosen to ensure comprehensive and cost-effective study of long-term socio-economic impact of child labour.

Scope of the Study

This is a limited study that focuses on the opportunity cost of child labour in the mica mining area of Koderma, Jharkhand. It addresses the socio-economic situation of child workers, and the long-term effects of child work on education, health and future employment. The study also examines the role of informal mining, poverty and policy gaps in pushing up child labour. The study, however, is a secondary study, as there is no fieldwork or contact with the affected people. The results are primarily relevant for the mica mining areas and for other informal activities. Nevertheless, the study is of some interest in the context of the wider debate on the subject of child labour and its effect on their development.

Limitation of the Study

This study is secondary data source only and without field studies. It is limited to the Koderma mica mining region, which may limit generalizations. The findings may also be biased due to the lack of updated data or because existing literature was used.

- Only uses secondary data
- There is no primary field survey done.
- Areas where it is available.
- Information that is missing and information that is not recent

Conceptualizing Opportunity Cost in the Context of Child Labor

Opportunity cost is, in a nutshell, the loss of value of the next best alternative that is forgone when a specific option is selected. It is relevant to child labour in terms of the loss of children's opportunities for learning and growth when they are working. Children can earn extra money for the family by working in certain sectors such as work in mica mining. The cost, however, is far more significant because children miss out on school, skills and personal growth.

One of the most significant options that is lost is education. If children are not educated, they are likely to be trapped in low skilled and low paying jobs in the future. This impacts not just their own livelihoods, but it also restricts their ability to work and enhance their condition. Furthermore, child labour endangers the physical and mental health of children, since they are subjected to risky working conditions, working long hours and stress. All these factors make them even less productive and live in their future (Ezeh, 2025).

On a more macro level, the opportunity cost of child labour is experienced by society, too. Lower levels of education translates to a less productive population, slow economic growth, and greater inequality. It also puts a strain on social security systems. Therefore, the concept of opportunity cost in child labour can play a role in changing the paradigm from the short-term focus on money to long-term focus on human development. It highlights the need for quality education and child welfare, and allows children to have an opportunity to create a better and secure future for themselves (Lawson & Hedges, 2015).

Socio-Economic Profile of Child Workers in Koderma's Mica Sector

The child labour in the mica industry in Koderma is mostly from the families of the poor and marginalized sections of society. The majority of them are from rural communities where poverty, unemployment, and non-availability of livelihood opportunities push families into the informal mining sector (Verma, 2023). Poor school facilities and lack of funds are the main reason why these children have poor access to education. Many of them begin to work at a very tender age, adding to their daily income, to help their families. They are involved in the collection, segregation and processing of mica in unsafe

conditions. They are also vulnerable because of social factors like low level of parental literacy, large family size and awareness of children's rights. In this way, child labour becomes a means of survival, rather than an option, entrenched in socio-economic conditions (P., 1945).

Family and Economic Conditions of Child Workers

The mica mined by child workers typically originate in very poor, rural and tribal communities. They are often engaged in activities such as irregular daily wages, agriculture or forestry, which do not generate regular income for their families. Parents are unable to provide for their basic needs of food, education and health care due to poverty. More family members and without any earning members make it even harder to make a living. Most parents are unable to read and write and are not aware of its importance, leading to children being allowed to work very young. Unpaid labour is also a source of survival for families due to debt and financial insecurity. Financial insecurity and indebtedness also compel families to make a living off children's earnings. This means that child labour is not an option but an alternative to economic hardship, and keeping families in poverty and out of choiceful opportunities (Lebasic, 2023).

- **Poverty and Low Household Income** - Most child workers come from poor families (Low Household Income) they lack a financially sustainable income to cover daily needs and children have to contribute financially too.
- **Large family size and dependency** - families may be large with limited earning members this puts more work and responsibility upon each child to do work and support the family.
- **Lack of Education and Awareness** - Parents are mostly illiterate and do not know about the importance of education in long term. They are less inclined to invest in education for future returns.
- **Emergency Loans and Debt** – Loans taken for emergencies are leading many families into cycles of debt. Children are also sent to mica mines to help repay these debts and family survival (Hassan Mahboob, Sadaf, & Azhar, 2024).

Reasons Why Children Enter Mica Mining

The prime reason why children enter into the mica mining is their poverty and lack of alternative livelihood options. Mining is one of the few sources of income in the areas where mica is found; and employment opportunities are limited. Children are urged to work by the members of the family as they feel that it does not need special skills and it can fetch them money in a short time. The lack of schools, inadequate infrastructure and distance to the schools also deters children from continuing their education. In some instances, children are influenced by other children or the normal practices in the community where

child labour is common and accepted. Also, the poor enforcement of child labour laws enables the continuance of child labour unchecked. Other middlemen and contractors are also involved, using children as cheap labour. Consequently, children are employed in the mines at a young age, forgoing education, health, and future prospects, in order to survive economically (Somo, 2018).

Educational Deprivation and Long-Term Human Capital Loss

Children involved in mica mining in Koderma face high cost of human capital loss due to educational deprivation. Without proper education, children are unable to acquire the basic literacy, numeracy and life skills needed for personal and professional development. This not enough educated them to join the skilled job and they have less chances to social mobility. It leads to a large number of unskilled and less productive workforces in the long term, impacting overall economic development. Furthermore, lack of education also undermines critical thinking, awareness and decision making skills. This means that these children continue to be trapped in poverty, passing it from one generation to the next, and consequently they are not able to make headway in their lives or in the country's development (van Zon, Reijneveld, Mendes de Leon, & Bültmann, 2017).

Loss of Education and Future Opportunities

Child labour deprives children of valuable opportunities to improve their lives. Education is important in developing knowledge, skills and confidence, required for a stable employment. Children miss opportunities for careers when they don't receive schooling and they are stuck in low-paying jobs. This makes it less likely for them to have a better living situation. Moreover, their lack of education is a problem in terms of awareness of their rights, health, and social aspects. This perpetuates a cycle of poverty and opportunity over generations, hindering people's ability to escape economic and social disadvantages (Bharti, 2025).

School Dropout and Lack of Basic Education

Dropout from school is one of the prevalent problems facing child labourers in the mica industry of Koderma. Poverty and family responsibilities are among the major causes of children leaving school, or not being enrolled. With the necessity to make money, they make the decision to choose work over education. Consequently, they are deprived of their basic education like reading and writing, and the skills of calculation. The poor school infrastructure, the distance to school, the lack of teachers too are other factors that affect the regular school attendance leading to school dropouts. Children who lack these basic skills have a problem in daily life and in their future career. This educational deficit not only affects their personal

growth, but it also prevents them from functioning in a satisfactory manner within society (Majeed & Ali, 2025).

Effect on Future Jobs and Earning Capacity

The lack of education has a direct impact on the kind of future careers the child could pursue. They frequently are limited to unskilled and low-paying jobs without the right skills and qualifications. This restricts their earning potential and the ability to become financially stable. They persist in the same economic situation as their families and have little opportunity for change over time.

- Restricted opportunities for skilled and formal sector employment, lack of qualifications.
- A lack of a steady income or low earnings throughout a person's career.
- Lower opportunities of career progression and promotion
- Current reliance on informal and informal employment areas (Chen, Guo, Li, & Wang, 2025)

Health Risks and Their Economic Impact for Child Labourers

The health issues of the child labourers engaged in mica mining in Koderma have long term economic impact. Children are exposed to dust, sharp objects, unsafe mining conditions and often suffer from injuries and chronic illnesses as a result of this. Continuous exposure to mica dust can damage their lungs, causing respiratory problems such as coughing, breathing difficulty, and even long-term diseases. Because of lack of rest and poor nutrition their physical condition is further weakened and they are more susceptible to illness (Roggero, Mangiaterra, Bustreo, & Rosati, 2007).

These health risks have an economic impact. Children's health and physical fitness is also impaired by frequent illness, which has a negative impact on their family's income. Later in life these untreated health problems can cause permanent disabilities or a loss of physical strength, reducing the ability to do physically demanding work. This has a significant impact in their working life. Additionally, medical treatment can be a significant cost of families' small budgets. This means not only that ill health has an impact on the health of child labourers, but that it also has a negative impact on the economy, which over time increases poverty as a result of reduced productivity and higher health care expenses (Webster, 2022).

Physical Risks and Diseases from Mining Work

The children involved in the mica mining are vulnerable to different physical hazards and ill health. Mining workplaces are dangerous with the possibility of rock falls, a risk of deep holes, and a risk of sharp

objects, which can all cause serious injuries. Exposure to dust and dirt results in respiratory problems such as asthma and chronic cough. Fatigue and dehydration are caused due to long working hours in extreme climatic conditions. Poor hygiene and exposure to contaminated materials also leads to many children experiencing skin infections. These risks are increased without protective equipment. These health issues make them weaker with time, and impact their growth and development (War, Ghule, Vats, & Jain, 2026).

- **Respiratory Problems** - Inhaling the dust of mica continuously causes difficulty in breathing, chronic cough and diseases related to the lungs. Kids have underdeveloped lungs and can suffer more and more long-term impacts.
- **Injuries and Accidents** - Mining is a challenging process that involves digging and operating sharp tools in unsteady conditions, which can lead to injuries and accidents. This means that cuts, fractures and accidents like cave-ins or falling into pits become more likely, and can cause injury or death.
- **Skin and Eye Infections** - Allergies, rashes and infections of skin and eyes can occur due to prolonged exposure to dust and chemicals. Dust particles also irritate the eyes, leading to redness, itching and vision problems eventually.
- **Malnutrition and Weak Immunity**-Children are also vulnerable to malnutrition and weak immunity due to poverty and they work long hours. This damages their immune system and increases their susceptibility to disease and delays their physical and mental growth (Hashemi Habybabady et al., 2018).

Medical Costs and Reduced Work Ability in Future

Health problems experienced by child labourers during the process of working in mica mines often lead to high medical costs and lower labours potential in the future. Low-income families already face a difficult financial burden and must pay for treatment of injuries and illness, adding to their burden. However, because of the lack of adequate facilities for providing health care, in many cases, diseases are not treated or get aggravated (Schwartz, Lee, & Darrah, 2021).

The long term consequences of ill-health become more apparent as these children get older. They have a lower ability to engage in vigorous activities due to chronic respiratory disease and physical weakness and untreated injuries. This has a direct impact on their productivity and income. May not be able to work regularly or efficiently, which can result in irregular income. In serious instances, they may find it impossible to ever go back to work. Hence, working in hazardous conditions at an early age affects their

health as well as having a negative impact on their economic security, leaving them in a vicious circle of poverty and bad housing (Ibrahim, Abdalla, Jafer, Abdelgadir, & De Vries, 2019).

Intergenerational Poverty and Lost Future Earnings Potential

Child labour in the mica mines of Koderma is a significant contributor to the ongoing intergenerational poverty. Early work deprives children of a good education and skills development, which are crucial for their future employment. Accordingly, they have little knowledge and are confined to low-skilled, low-paying jobs. This condition continues to keep them poor and unable to increase their living standards.

As adults, these kids are likely to experience the same financial problems their parents had. They are not able to provide the proper education and healthcare to their children, because of their low income, so they have to let their children go to work early. Thus poverty perpetuates itself from generation to generation and without much improvement.

Loss of future earning ability is a big worry. People can acquire greater employment potential and higher earning potential through education and skills. But child labour denies this opportunity, and lowers life-time income. This has an impact on the personal and family lives of individuals, but also on the country's economy, as it restricts the development of a skilled workforce. To break the cycle, attention needs to be focused on education, awareness and economic assistance to vulnerable families (Mahendra Pol, 2023).

Cycle of Poverty and Future Income Loss

Child labour is deeply entrenched in the cycle of poverty among mica mining communities such as Koderma. Children have to leave school and take on work, because their families are deprived of their income. These children lack education and are unable to find better paying jobs. When they grow up, they still have financial problems and aren't able to make their lives better. This results in forcing their children to make ends meet to support the family. Thus, poverty continues across generations, with no significant change. Education, health and limited opportunities all take a toll on income loss, and halt long-term economic development.

- **Child Dependence** - Poor families depend on the income of children for living. Although the money is meager, it is crucial to cover basic needs such as food and housing. This dependence discourages

families from sending children to school, as immediate financial needs are given more importance than future benefits.

- **Lack of Education and Skills** - When children are not educated in a proper manner, they are not getting the skills required for improved employment. This gap in skills reduces their employment opportunities in adulthood and they stay in informal, low-paying jobs, thus lacking financial security.
- **Limited Employment Opportunities** - This is because the people who were child labourers have less employment opportunities because they lack education and skills. They may be particularly lacking access to conventional employment with regular wages, benefits and career prospects, which can contribute to a lack of long-term income security.
- **Inherited Poverty** - low income and lack of opportunities to invest in children's education and well-being. This means that the next generation enters the workforce similarly to their poorer, less productive peers, and the cycle of poverty and poor growth continues (Unicef, 2022).

Loss of Better Income Opportunities in Adulthood

Child labour in mica mines markedly diminishes employment prospects in the future. Children who engage in labor rather than in education will not have the opportunity to acquire knowledge, technical skills, and professional training. They are crucial components for securing employment with a good salary in areas like private industries, government services, and skilled occupations. These qualifications have the potential to enable former child labourers to enter the organized sector, with better wages and job security, but without them, they may be restricted to less productive sectors such as agricultural daily wage labour, mining or manual labour.

Also, uneducated impact on their adaption to the changing job market. Most employment today demands basic literacy, communication and technology proficiency. Without education, child labourers are not able to compete with others and thus employment opportunities are further diminished. If they do manage to find a job, they will still earn a low salary because they are not specialized and do not have a lot of bargaining power(Nesbitt, 2014).

One of the other major points is the lack of career development. Over time, educated people have the opportunity to progress to promotions, skill development and earn more. In contrast, those who started working as children remain stuck in the same type of work with little or no improvement in income. This leaves a large wage disparity between educated and uneducated labourers.

Furthermore, adults with low income have a reduced overall quality of life. It constrains their family's access to adequate housing, health and education. This not only impacts people, but it also helps drive the broader economic inequity. Hence, the lack of the better income opportunities associated with child labour is a big concern and it shows the economic drawbacks of affected persons in long term (Wawin, 2020).

Household Survival Strategies versus Development Trade-offs

In the mica fields of areas such as Koderma, the ill-equipped poor families resort to certain survival strategies such as sending kids to work to earn a living. Poverty, unemployment and inadequate stable sources of income are the primary determinants of these strategies. For many families, the income that children bring in can be critical for feeding themselves, paying debts, or even for covering basic family needs. In these contexts, long-term planning is less important than immediate survival; in fact, education is sometimes considered a luxury rather than a necessity (Kempers, 2023).

But, there are development trade-offs in these short-term survival strategies. Child labour denies children education, skills and development. It directly impacts their earning potential and their ability to better their socio-economic condition in the future. This results in a vicious circle of poverty that is passed down through generations. The short-term economic gains of child labour might be significant for families, but they give up on the long-term development and stability.

Besides, reliance on child labour decreases the interest in pursuing education and other livelihood activities. It also affects human capital development which is a key to economic development. Child labour therefore can provide a temporary solution to families' survival, but can have long-term negative consequences on the development of children and on the social and economic development of society in general (Xu et al., 2026).

- **Short-Term needs vs Long-Term Gains** - Families do not consider long-term benefits when making short-term financial decisions. Child labour is a means of generating income to ensure immediate needs such as food and shelter but affects children's education and future opportunities.
- **High dependence on Informal Work** - Households are dependent on unstable and low-paid informal activities like mica mining. Children are forced into early work as a result of this dependency, limiting the opportunities for children to participate in the cycle of poverty.
- **Poor Investments in Education and Skills** - Families are compelled to invest in children's education either by limited investments or by being unaware of the need. This restricts skills

development and diminishes the likelihood of accessing improved employment opportunities in the future, all of which bolsters economic vulnerability (-, 2024).

Role of Informal Mining in Increasing Child Labor

Child labour in mica producing areas like Koderma is greatly contributed by informal mining. The informal mining lacks formal registration, monitoring and does not comply with labour laws. This unregulated nature provides a place where child labor may exist undetected and unknown. The children are easily available as labour as they are paid less and are seen as a convenient source of labour, while poverty-stricken families rely on these informal mining operations for survival (Kutscher, Notté, & Anderson, 2025).

In these types of facilities, there are no regulations on minimum age, working hours, or health and safety standards. Children are easier to be hired, because they can be paid less, and are less likely to protest about rights or better conditions, which is preferred by contractors and middlemen. Furthermore, the mica mining activity itself, like picking and separating the mica flakes, doesn't require any formal skill to perform and this makes it easier for the children to carry out the activity.

This is further reinforced by lack of quality education institutions and awareness. Children not attending school are more likely to participate in these activities. Therefore, the informal mining has not only created jobs but also indirectly also encouraged kids to take part in dangerous work and thus the overall issue of child labour (Das & Goel, 2021).

Lack of Regulation in Mica Mining Sector

The mica industry in these areas such as Koderma is informal and in formalized. Labour laws are not always enforced, monitored and approved for many mining operations. Consequently, children's employment is not subject to any rigorous constraints, working conditions are not adequately regulated and safety is not ensured. Employers will commonly disregard legal limitations for child labour because there is limited risk of punishment. Such unregulated environment makes it possible for exploitation to be commonplace. If not supervised, children can easily be caught up in a mining activity and find themselves in dangerous situations without any protection. Hence, weak regulation is important in facilitating the continuation of child labour in this sector (Swamidurai & D'Andriole, 2022).

- **Weak Enforcement of Child Labor Laws** - Laws to prohibit child labour are in place, but their implementation in informal mining areas is weak. The laws with their limited effectiveness due to lack of regular inspections and corruption enable the illegal employment of children.

- **Lack of Government Officials or Labor Inspectors** - Government personnel and/or labour inspectors may not be present in remote mining areas. The lack of this makes it hard to monitor illegal activities and mining activities go on without accountability.
- **Illegal and Unregistered Mining Operations** – There are numerous unregistered mines of mica. These unlawful arrangements can easily permit the employment of children without any legal obligations such as compliance with child labour and safety regulations.
- **No Safety and Welfare Measures for Workers** - If it is not regulated then there are no safety guidelines nor any welfare facilities for workers. Children are not provided with suitable protection and they are placed in unsafe surroundings, which puts them at health risk and at risk of exploitation (Veer & Zwart, 2014).

Impact of Informal Mining Economy on Child Labor Persistence

In the informal sector, especially in areas such as child mining in Koderma, the informal sector is a major contributor to the survival of child labor. This sector is not regulated by the existing laws, thus provides opportunities for child employment to become readily available and widespread. A family that relies on the income from mining may engage in the work of their children to improve the family's income, particularly if the adult is not able to earn income regularly and the wages are low. This trend is further reinforced by lack of monitoring, weak enforcement of laws and lack of alternative livelihoods. This leads to the acceptance of child labor in the local economy instead of it being something “out of the ordinary.” It is not only having an impact on the children's education and health but also causing problems for the eradication of child labour in the region (Adom & Simatele, 2025).

- **Informal Mining as a Way of Life** - Many families are dependent on informal mining for living. With low wages among the adults, children earn becomes an important support. This interdependence poses problems for families to break the cycle of sending children to work, despite their knowledge of the harmful consequences.
- **Low Wages and Income Instability** - Mining is informal and pays low wages, and there is no predictable income, which means that families need to make other sources of income. Children are perceived as a source of income, making them continue to engage in farming activities.
- **Few alternative employment opportunities** - There are little to no other employment opportunities in the mining regions. This restricts opportunities of families to changing to safer and more stable livelihoods. This means that adults and children are still involved in mining operations.

- **Social Acceptance of Child Labor** - As more children engage in child labour activities, the practice of child labour becomes socially accepted within a community over time. Children who participate in mining activities in the majority of families are considered normal, which makes it unlikely that much will change and allows the issue to carry on from generation to generation (André & Godin, 2014).

Policy Gaps and the Economic Cost of Inadequate Intervention

The prevalence of child labour in mica mining areas such as Koderma indicates some serious policy gaps and lack of effective enforcement of existing policy. The government has enacted laws prohibiting child labor and encouraging children to receive education, but this is not consistently being implemented in the informal sector. A significant lack is the failure to effectively monitor and enforce in remote and unregulated mining zones, where visits are infrequent and non-compliance is not detected. This, therefore, means that employers are still using children without worrying about criminal liability (Kathi, 2026).

A lack of collaboration between various government departments like labour, education and rural development is also a key challenge. Policies can be implemented in isolation, the effect of which is less than optimal. Further, there are limited and inadequate child labour rehabilitation programmes, which hamper the ability of children to re-join school or society following their rescue. Poor families' access to financial support also suffers from corruption, lack of awareness or administrative inefficiency.

These inadequate interventions come with a very high economic cost. Educational impacts on the nation when children are not educated are the loss of potential skilled labourers; it means the reduction in productivity and economic growth of the country. It also raises the costs of future public expenditures on health care, poverty relief, and social welfare. Furthermore, child labour impedes sustainable development and heightens inequality. Hence there is a need to plug policy gaps by strengthening enforcement, coordination and implementing effective welfare programmes for child labour reduction, and to achieve long-term economic and social gains (Rozani, 2022).

Conclusion

In conclusion, the opportunity cost of child labour in mica mines of Koderma is clearly evident from the study that though short term financial benefits may help the families who are economically weaker it causes huge social and economic losses in the long term. The research achieves its goals by providing an understanding of what opportunity cost is and how it is experienced in the context of child labour, and how children give up education, health and skill development by engaging in work for immediate income. It also

focuses on the unfavourable socio-economic situation of child workers, revealing how poverty, lack of awareness and restricted livelihood opportunities drive families to recruit their children for child labour in the mining sector. Furthermore, the study examines the negative effects of child labour on education, health and employment prospects in terms of obtaining low skill jobs, health issues and loss of income in adulthood. It also pinpoints the underlying causes of the child labour situation, including informal mining, insufficient legislation enforcement and policy gaps. Finally, the study finds that child labour in mica mining is not only an economic problem but a developmental problem that negatively impacts human capital formation and perpetuates intergenerational poverty, and thus needs attention through effective policy intervention, education and social awareness.

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