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Research Article

Investigating the Determinants of Child Labor in the Automobile Sector in District Peshawar

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Abstract

Child labor is a significant issue in the automobile sector in District Peshawar, particularly in workshops along the Dalazak Ring Road. Many children work in unsafe and challenging environments, often at the cost of their education and well-being. Demographic factors, such as family size, age, and educational background, play a key role in determining why children enter the labor force. Similarly, economic factors like household income, poverty levels, and parental unemployment are critical in pushing children into work to support their families. This research builds on existing studies but fills a gap by focusing specifically on the automobile sector in District Peshawar. Data collection for this study was conducted using a questionnaire, ires, and primary data obtained through convenience sampling. The questionnaire, designed by the author, is structured to reflect the research objectives, ensuring a logical flow of questions aligned with the study's goals. The study's results suggest that child labor depends on factors such as demographic and economic factors in the local auto industry.

Keywords: Child labor, Automobile, Peshawar, and workshops

Introduction

One of the most critical factors obstructing sustainable development and violating basic human rights is child labor. It is one of the issues that come under Sustainable Development Goal 8 (SDG 8) by the United Nations. Goal eight is towards achieving inclusive and sustainable economic growth, full employment, and decent work for all. In its specific target, Target 8.7, immediate and effective measures shall be taken to eradicate forced labor, end modern slavery and human trafficking, and eliminate the worst forms of child labor, including the recruitment and use of child soldiers. Their ambitious end-of-child-labor-in-all-forms-by-2025 goal is that economic growth must accompany social protection and equitable labor practices. Addressing child labor is the pathway to breaking the pernicious cycle of poverty and opening doors for children's potential for development into a just and fair society. According to the ILO, child labor refers to a form of hazardous occupation or task performed by a child below 18 years in the whole market or in the household. It can include work that significantly hampers education and working children who are less than 15 years old and employed full time, plus those who are less than 13 years and are partially employed. Many experts have developed definitions of child labor. The United Nations Convention on the Rights of the Child (1989) presents that a child is anyone less than 18 years of age (Herath & Sharma, 2007). The definition of a child and hence the maturity level at which he or she attains maturity has been extensively influenced by factors such as race and climatic and socio-economic conditions, social norms, and educational systems. The activities in which a child engages have either positive or adverse effects, depending on the age as well as the kind of work in which the child is engaged accompanied by the environment related to that work. It is significant to mention that in a particular socio-cultural environment, Children mature quicker than some others. Nature of activity, age of child working, conditions, and environment determine the negative/positive impact (Herath & Sharma, 2007).

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Previous studies have expressed that nearly 19 million children are into labor throughout Pakistan, while many of this number are exposed to fatal working conditions which are beyond their ability to develop methodologies, both physically and mentally (UNICEF, 2020; ILO, 2018). Significant among the factors motivating child labor is economic pressure because families tend to fan out their income by getting extra jobs, particularly among low-income households. In almost all instances, children are taking up the available vacancies because they are preferred by employers since they are cheaper than adult workers. Grossly, these factors have made education less accessible because of the costs attached to high schools and poor facilities, arising mostly from the fact that children have to work rather than go to school. Although there are laws that intend to curb child labor, they are not as effective. The penalties inflicted on employers who use child labor are beyond minimum standards, while enforcement mechanisms are grossly inadequate, especially in the informal sector. An effective removal of child labor would attract stronger laws, enforcement, improvements in the educational system, concerted efforts to raise awareness about children's rights among employers and families, said Khan (2001). It is therefore imperative to complement that with sound legislation and enforcement by economic safety nets to the poor families so that they cannot depend on their children's income. It may be coupled with targeted social initiatives that would improve access and quality of education, having the potential of encouraging families to send their children to school rather than to work (Khan, 2001).

Within the context of Dera Ismail Khan City in Pakistan, Chaudhary and Khan (2002) worked on a survey to identify economic and social determinants of child labor using gross-roots level data. They identified poverty as the major cause of child labor, among other factors such as fertility rates, family size, adult illiteracy and the schooling system. The study has focused on children who work more conspicuously; as revealed in their findings, they stated that, it being a patriarchal society, most child laborers are male, as females are prevented by tradition from working outside the home. Findings also revealed that working conditions for child labor come up with serious health hazards which include bone deformities, lung disease, and in some instances, death. The analysis emphasized the need for effective policies to eliminate poverty, improve education, and control population growth. They criticized national surveys for incorrect representation of measure child labor trends by gender at regional level and bring out the importance of data at local level to understand the issues better. Lastly, the paper threw much light on the need for broad-based efforts in eliminating child labor addressing the root cause, namely poverty and education deprivation. Khan (2001) examined the socio-economic aspect of child labor in the automobile workshops of Pakistan and asserted that about 18% child labor is involved in the establishment.

Problem Statement

This study investigates the persistent issue of child labor in Peshawar’s auto industry, where many minors are employed in small repair shops and large commercial establishments under hazardous conditions. Despite existing regulations, child labor remains widespread due to economic hardships, lack of educational opportunities, and weak labor enforcement.

Peshawar, the capital of Khyber Pakhtunkhwa, has a rapidly growing population, with many low-income families struggling to meet basic needs such as food, housing, and healthcare. Due to financial difficulties, children are often forced to work to support their families, as their parents cannot afford their education. Many of these children work long hours in auto repair shops, performing dangerous tasks such as handling heavy machinery, cleaning hazardous materials, and assisting in repairs without proper training or safety measures. This exposure to unsafe working conditions puts their physical health and overall well-being at serious risk.

The study examines various demographic and economic factors contributing to child labor, including poverty, unemployment, lack of access to quality education, and poor implementation of child labor laws. Additionally, many auto workshops in Peshawar operate outside the formal regulatory framework, making it easier for employers to exploit children as cheap labor. The research also considers the role of government policies in addressing child labor and explores public attitudes that may perpetuate this issue.

By analyzing these trends, the study seeks to develop a deeper understanding of child labor in Peshawar's auto industry and identify practical solutions to mitigate it. The findings aim to assist govt. (legislation, enforcement, education, and social welfare policies) in implementing stronger regulations, promoting education, and providing economic support to vulnerable families. Ultimately, this research aspires to contribute to the broader effort of combating child labor in Pakistan, ensuring that all children have the right to a safe and supportive environment where they can grow, learn, and thrive without exploitation or harm.

The main objectives of this study are:

1. To analyze the key characteristics and economic factors influencing children's involvement in the automobile sector in Peshawar.

Hypothesis

Based on the cited literature, we formulate the following hypotheses:

H_1: There is a significant relationship between demographic factors and child labor among children employed in the automobile sector in Peshawar.

Significance of the Study

These children are future landmarks for forthcoming prosperity. The research looks into current child labor in the Dalazak Ring Road Kamboh area of Peshawar. It attempts to discover the reasons or driving forces compelling children to work. Hence, the findings would help local authorities understand the plight of child laborers in this region. More importantly, it recommends a review of already established labor laws. Implementation of these recommendations can reduce the negative impacts of child labor dramatically.

Review of Literature

The literature review is a crucial part of any study as it helps build a foundation by summarizing past research, interpreting findings, and identifying gaps in knowledge. This chapter reviews existing studies on child labor, particularly in the automobile sector, focusing on its economic, social, and cultural causes and its impact on education, health, and long-term development. It also highlights hidden issues and provides a theoretical basis for understanding the problem. This review aims to offer insights and context for further research by examining related studies.

Iqbal et al. (2024) investigated how social norms might explain child labor in trades like automobile workshops. Their study found that in many of the low-income communities in Peshawar, manual work is viewed as a rite of passage for boys; hence, families are perceived to be proud of children who, while young, contribute financially to it. Such social acceptance constitutes a significant barrier to the eradication of child labor. It also showed that most employers would prefer children because they can put up with worse working conditions and that unionization among the youth is scant, making them obedient.

In another study, Ahmad and Khan (2023) consider the role of parental education in the patterns of child labor. Their results show that children from uneducated parents tend to enter labor markets at an early age. The less educated parents emphasize short-term economic gains rather than invest in the long-term education of their children. Ahmad and Khan stated that one of the primary reasons for child labor is the lack of awareness programs to educate parents about the benefits of schooling. As cited by them, "Government interventions at the level of families need to offer counseling as well as financial incentives to parents to encourage them towards sending their children to schools.".

Siddiqui (2023) examined the psychological consequences of the child laborers who work in the workshops. Siddique also maintained that when children are exposed continuously to very long hours of work in an extremely harsh environment, they often exhibit symptoms of chronic stress, low self-esteem, and depression. In his research, he interviewed children working in Peshawar's automobile shops, revealing that many showed hopelessness for their future. He said, "Unless there is comprehensive psychological support and educational rehabilitation, the children are likely to continue in this vicious circle of poverty and exploitation."

Khyber Pakhtunkhwa Child Labor Survey carried out by the provincial authorities in 2023 provided significant quantitative insights into trends relating to child labor. It reported that about 20% of child laborers dealt with automobile-related activities in Peshawar. Most workshops prefer to employ children over any other age group, as children are paid much lesser salaries than adult workers, and they would barely ask for better working conditions. Thirdly, the survey outlined a dangerous trend in that children are often exposed to hazardous substances, such as engine oils and exhaust fumes emanating from motor vehicles, ultimately resulting in long-term diseases of the respiratory system. While relevant labor legislation exists, enforcement is still weak, particularly in the informal sector, and therefore, practices of child labor have not been stopped.

The findings are further supported by Malik et al. (2022), who investigated the influence of indebtedness at the household level on child labor. Families drowning in loans or informal debts have children sent out to find employment as a source of money for paying back installments. Malik emphasized that in urban cities like

Peshawar, children employed in workshops are usually the only breadwinners in their families. This is exacerbated by seasonal unemployment among adults, thus leaving children more vulnerable to labor exploitation. His findings show that many children suffer from verbal and physical abuse in the workplace but are forced to hold on to it due to fear of losing their jobs, which would directly impact the survival of their families.

Gul and Colleagues (2022) have focused on bonded and informal sectors, such as automobile workshops in Peshawar. It adds to the interrelation between poverty and education, in which families force children to work to help meet basic family needs. Children, who usually start working between the ages of 10 and 15, end up in manual labor since they either do not get a chance to attend school or their families cannot afford the school costs. Indeed, the study showed that many of these children work about 12 hours a day and hence have little energy or time to attend even informal education centers. The authors indicate that the absence of strict enforcement regarding child labor, along with cultural acceptance of children working in trades, has contributed to the problem.

Further evidence from these trends is extracted from the Labor Force Survey, Pakistan, 2022. In this survey, it has been depicted that child labor is a significant problem, more so in Khyber Pakhtunkhwa than in comparison to the other provinces. Conclusions from the survey show that children in rural areas tend to become laborers due to the lack of educational facilities and a compulsion to contribute to the family budget. Besides, boys are more often employed than girls since boys are, by cultural norms, breadwinners since their tender years. The data also reveals that child labor use decreases with increased education among household heads. The probability of children being employed is lower in a family whose father has acquired at least a secondary level of education. In contrast, for families where the head of the household has not received any formal education, child labor becomes all but inevitable once again, bringing into sharp focus the role of parental education in helping break this vicious cycle.

Research gap

Child labor remains a pressing issue in the automobile sector in District Peshawar, particularly in workshops along the Dalazak Ring Road. While previous studies have explored child labor in broader contexts, there is a significant research gap in understanding the specific dynamics of child labor within the automobile sector in District Peshawar. Previous research, such as Zarif & Nisa's (2013) study on child labor in Tehkal Payan, has examined the issue in general terms but has not explicitly addressed the automobile sector. This study fills this gap by narrowing its focus to the automobile workshops along Dalazak Ring Road, providing a more detailed and localized analysis. Additionally, while some studies have touched on demographic factors like family size and educational background, there is limited research on how these factors influence child labor in the automobile sector. This study delves deeper into how family size, age, and educational background contribute to children entering the labor force in this sector.

Furthermore, economic factors such as household income, poverty levels, and parental unemployment are critical in pushing children into labor. However, existing research has not adequately explored how these factors operate within the automobile sector in District Peshawar. This study comprehensively analyzes these economic drivers, offering new insights into their role in perpetuating child labor. Another gap lies in the weak enforcement of laws like the Employment of Children Act (1991), as there is a lack of research on why enforcement remains weak, particularly in informal sectors like automobile workshops. This study highlights the gaps in enforcement mechanisms and suggests policy interventions to address these shortcomings. Finally, while the International Labour Organization (ILO) and the United Nations Sustainable Development Goals (SDGs), particularly SDG 8, aim to eradicate child labor by 2025, there is limited research on how local contexts like District Peshawar can contribute to achieving these goals. This study bridges this gap by providing actionable insights that align with global objectives.

Methodology

To achieve the research goals and test the research hypotheses, the study adopts both the descriptive and analytical approaches. The primary data was gathered through questionnaires. The methodology is structured to present data collection methods, sampling techniques, and the overall research process for gathering the data.

Theoretical Framework

Child labor has numerous determinants, from demographic variables to working conditions and maternal and socioeconomic factors. The literature demonstrates that the issue of child labor is substantially inherited, i.e., intergenerational. The determinants of child labor are structured in Figure 1. Specifically, this study includes

standard variables that are either directly or indirectly associated with child labor, which correspond to child age, education level, family size, birth order, work experience, physical discipline, necessities (food, shelter, water, etc.), lunch breaks, injuries during work, availability of protective equipment, father's occupation, father's income, father's education, substance abuse, livelihood sources, number of earning family members, family income per month, contributions to family income, reasons for school attendance, and reasons for work (Khan, 2001).

Based on the above literature, the conceptual framework is depicted in Figure 1.

Conceptual Framework: Determinants of Child Labour

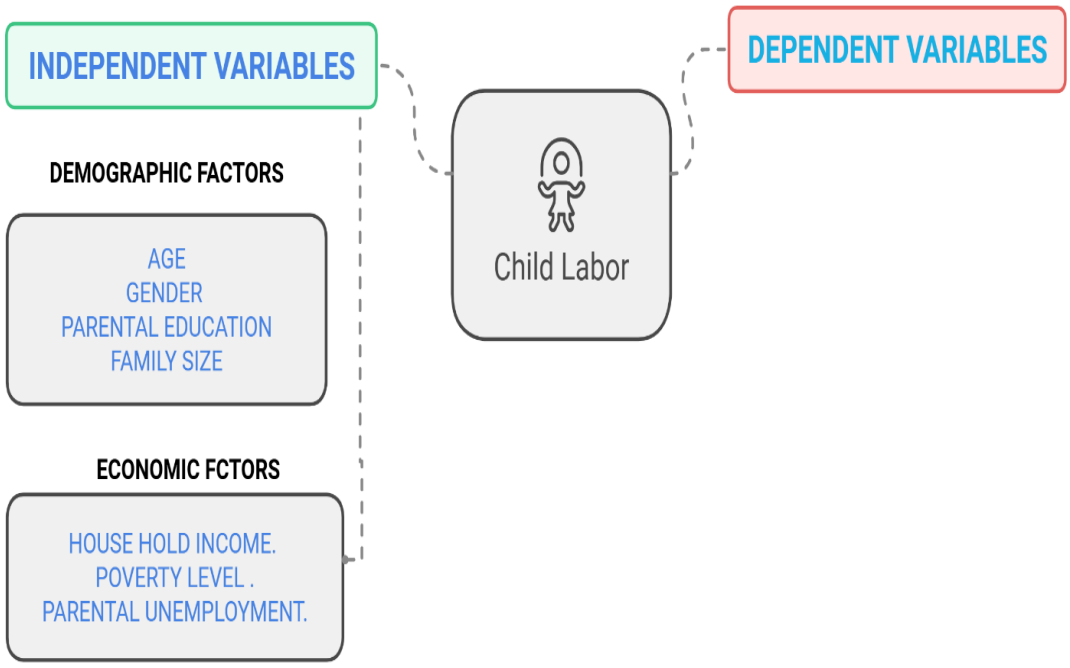

Figure 1: Conceptual framework: Determinants of Child Labour

Source: Constructed by the author based on the literature review

In this study, child labor in the automobile sector is studied, and research typically focuses on identifying the determinants (factors influencing child labor) and classifying them into dependent and independent variables.

Sampling Technique

Data collection for this study was conducted using questionnaires, and primary data was obtained through convenience sampling. A non-probability sampling method, convenience sampling, selects participants based on their accessibility and ease of availability. Despite the limitations of this sampling technique, convenience sampling was chosen for the research of child labor in the automobile industry because it can be challenging to reach child laborers and their families for a variety of socioeconomic reasons, including fear of legal repercussions. Convenience sampling allows researchers to speed the participant recruitment process by selecting people who are conveniently accessible, such as those who work in specific auto industries or community centers. Moreover, convenience sampling is less expensive than probability sampling techniques, which take time and money to carry out correctly. Convenience sampling is a good way for researchers on a limited budget to collect data without paying extra costs. The questionnaire, designed by the author, is structured to reflect the research objectives, ensuring a logical flow of questions aligned with the study's goals.

Data Collection Process Divided into Two Phases

PHASE 1: This phase focuses on gathering information about labor-related children. Questions will explore the children's age, gender, education level, family size, and household structure. This section will also collect data about the children's living conditions to understand how these demographic factors influence the decision to work. By examining these aspects, the study aims to identify how demographic characteristics, such as age and family structure, are linked to child labor in the automobile sector of District Peshawar.

PHASE 2: In this phase, the focus shifts to the children's and their families' economic circumstances. Questions will cover the parents' education and occupations, family income, and household poverty levels. The study will also explore the impact of unemployment within the family and how financial pressures contribute to the need for children to work. Furthermore, this section will inquire about reasons for children leaving school, the number of working hours, and wages received. By exploring these economic factors, this phase aims to establish a connection between financial hardships and the prevalence of child labor in the automobile sector."

3.4 Sample Size

The researcher uses Cochran's formula to calculate the sample size, which is as follows:

$$n0 = \frac{Z2 \cdot p \cdot (1-p)}{e2}$$

n0= the sample size you want to find.

Z= Z-score, representing the number of standard deviations a point is from the mean for the desired confidence level (e.g., 1.96 for 95% confidence).

p= estimated proportion of the population (for unknown population, use 0.5 as this gives the maximum sample size).

e= margin of error (desired precision level, often expressed as a decimal, e.g., 0.05 for 5%).

$$n0 = \frac{(1.96)2 \cdot 0.5 \cdot (1-0.5)}{(0.05)2}$$

$$n0 = 3.8416 \cdot 0.5 \cdot 0.5 = \frac{0.9604}{} = 384.16 = 385 \text{ sample size}$$

The researcher uses Cochran's formula to determine the appropriate sample size of 385 participants for a reliable and valid study. This formula is designed to help researchers calculate the minimum number of participants required to achieve a specific confidence level—in this case, 95%—and a margin of error of 5%. Cochran's formula considers the Z-score for the desired confidence level (1.96 for 95%) and an estimated population proportion (p), which is set to 0.5 when the proper proportion is unknown. This value maximizes the sample size, providing the most conservative estimate, ensuring that a sample of 385 participants will be sufficient for accurate results.

Reliability and Validity of the Study

The internal consistency method is used for reliability by using the inter-item consistency approach to ensure that the answers provided are accurate and correct. This study uses Cronbach's Alpha to analyze the reliability of the SPSS software. The construct validity used for validity by using a convergent approach to ensure the measurement tools have the required validity for the research. The survey instrument was tested with appropriate reliability analysis comprising the computed value of Cronbach alpha, and the alpha value for all the study variables taken up in the instrument was well above the suggested value of 0.7 (Nunnally, 1978). The specific details of the alpha value for each of the study variables constituting the present work are shown in Table 1.

Table-1: Reliability Statistics

Factor	Cronbach's Alpha	N of Items
Demographic Profile	.790	5
Economic Factor	.881	5
Child Labor	.821	5

Effect of Demographic Profile, Economic Factor on Child Labor in Auto Industry

Proposed Regression line:

Regression Results

CL= B0 + B1 (AG) + B2 (P. Ed) + B3 (FS) + B4 (HI) + B5 (PL) + B6 (PU)
CL= 12.095 + 0.149 (AG) + (-0.092) (P. Ed) + (0.036) (FS) + (-0.161) (HI) + (0.178) (PL) + (0.168) (PU)

This indicates a 1 unit change in AG, P. Ed, FS, HI, PL, and PU will bring about 0.149, -0.092, 0.036, -0.161, 0.178, and 0.168 units' positive and negative changes in CL, respectively. Moreover, for every one standard deviation increase in Age, Family size, Poverty level, and parent unemployment, child labor increases by 0.063, 0.007, 0.133, and 0.123 standard deviations, respectively, with a positive relationship. For every one standard deviation increase in parent education and income, child labor decreases by 0.039 and 0.069 standard deviations, respectively, with a negative relationship.

The dependency effects of child labor on factors like age, parental education, family size, income, poverty level, and parental unemployment in the local auto industry are defined in hypothesis 1, taken up, and its results are shown in the table-2 as an outcome of the regression model conceptualized. From the results, it can be inferred that the F value is significant at the 5 percent level. Hence, hypothesis 1 is rejected. These results suggest that child labor depends on age, parental education, family size, income, poverty level, and parental unemployment in the local auto industry. Further, the adjusted R square value of 0.541 from Table 2 indicates that 54 percent of child labor in the auto industry is significantly dependent on these factors. Also, the 't' values of 1.215, -0.767, 0.133, -1.341, 1.642, and 1.444, corresponding to age, parental education, family size, income, poverty level, and parental unemployment, significantly affect the model conceived.

Furthermore, the positive Age coefficient implies that as a child's age increases, so does the risk of child labor. This could imply that older children are more likely to enter the workforce, possibly due to increased demand for their services or less federal or parental monitoring. The negative coefficient for Parent Education indicates an inverse link with child labor. As parental education increases, the chance of child labor drops. This means that better-educated parents may value education more and invest in their children's education rather than sending them off to work. According to the positive coefficient for family size, greater family sizes are linked to a higher rate of child labor. This may result from financial necessity, wherein additional children in a household might have to help support the family. The negative coefficient for household income suggests that the prevalence of child work declines as household income rises. Increased income may lessen the need for youngsters to work, freeing them up to concentrate on their education. According to the positive coefficient for poverty level, higher poverty levels and higher rates of child labor are directly correlated. Families in poverty could have to depend on the contributions of their kids to cover necessities. A higher probability of child labor is linked to increased parental unemployment, as indicated by the positive coefficient for parental unemployment. This implies that when a parent loses their job, the family may experience more financial strain, which may drive children to work to survive.

Table 2: Results of Regression for hypothesis-1

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Adjusted R Square
		B	Std. Error	Beta			
1	(Constant)	12.095	.864		13.996	.000	.541*
	Age	.149	.123	.063	1.215	.000	
	Parent Education	-.092	.120	-.039	-.767	.002	
	Family size	.036	.269	.007	.133	.001	
	Household Income	-.161	.120	-.069	-1.341	.000	
	Poverty Level	.178	.122	.133	1.642	.000	
	Parental Unemployment	.168	.153	.123	1.444	.002	

a. Dependent Variable: Child Labor

All things considered, the model shows intricate connections between socioeconomic variables and child labor. While factors like age, family size, poverty level, and parental unemployment are associated with greater rates of child labor; other factors like parental education and household income are associated with lower rates of child labor. Developing efforts to prevent child labor through focused social and educational interventions can be aided by understanding these processes.

Conclusion

Demographic reasons and economic aspects induce child labor in auto industries. Such aspects must be understood and dealt with in this study. Age, gender, the number of siblings, family income, and opportunities were some of the focal areas for understanding the contribution of child labor. Understanding how these aspects connect may help develop targeted solutions for different groups. The second objective focuses on establishing the link between demographics and economic impediments toward child labor. This moves beyond patterns and causation to identifying how all these aspects cause child labor. It helps policymakers draft better plans to address society or economy-making families send some of their children to work. It lays bare how these working teenage requirements differ from those of younger children, thus emphasizing the need for age-specific support. Child education serves yet another area of concern in the report. Children with less education often fall into the trap of poverty; therefore, they are likely to work at an early age. Campaigns to eliminate child labor should also be culturally and linguistically sensitive to make them much more effective. Ultimately, a detailed blueprint incorporating diverse social and economic factors is required to eradicate child labor in the auto industry. It, of course, comes to the point of poverty, urging people to involve their children in work. It also helps guide the positive approach to formulate policies and programs that support families while at the same time protecting children's rights and securing their future.

Recommendations

- In places where children are exploited in the motor vehicle industry, governments must put up specialized schemes to improve households' economic status in those areas.
- Efforts to enhance access to education by children from various socioeconomic backgrounds, especially those with poorer families should be initiated in order to decrease the dependency on child labor.
- Awareness campaigns targeting various sections of society, including the appropriate language community that deals with the auto industry, should be initiated, and child abuse consequences should be ces demonstrated.
- Capturing data on an ongoing basis is crucial to study the trends in the demographic and economic characteristics of the populations that practice child labor.
- The partnership of the authorities, the NGOs, and the local communities is indispensable in devising robust strategies to eliminate child labor through a broad-based approach that combines meeting the basic economic requirements with providing educational opportunities.
- Because there are distinctions among children working in the sector in terms of age group and level of education, there is a need to tailor the interventions so that they are likely to succeed in many spheres.
- In rural areas, invest in sustainable agricultural methods and technologies to boost production, improving family income while minimizing dependency on child labor.
- Also, encourages the growth of rural crafts and local manufacturing to provide extra income opportunities for families.
- Urban societies offer financial support and training opportunities for small and medium-sized enterprises (SMEs) to generate adult employment, reducing reliance on child labor.
- Implement job training initiatives for urban youth and adults to improve their employability in formal job markets.

These recommended strategies, which advocate for effective policies and measures, are designed using the results of extensive research carried out on the economic and demographic aspects of child labor in the automobile industry, and if carried out, can help to create a better environment for children engaging in or being subject to such activities.

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Conflict of Interest

The authors affirm that no conflicts of interest are linked with this publication. The research was conducted autonomously without financial or non-financial assistance from external entities.

Author Contribution Statement

The study was conceived, the methodology was devised, and the formal analysis was conducted by Mr. Ahmed Umair. Data curation, validation, and visualization were all contributed by Dr. Suleman Amin. Mr. Ahmed

Umair authored the initial draft, while Dr. Suleman Amin reviewed and edited it. Both authors were involved in the manuscript preparation process. The final version of the manuscript was authorized by both authors.

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