Economic Analysis of Child Labor Based Households

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Abstract

The purpose of this study was to analyze the influence of father characteristics, mother characteristics, household characteristics, child labor characteristics, and community, on work time of child labor in Bengkulu City. This research uses primary data. Sampling was done by incidental method. Data are collected through interviews and questionnaires. The analytical method uses PLS-PM (Partial Least Square-Path Modeling). The results showed that the variables of father characteristics, mother characteristics, household characteristics and community had a negative and significant effect on the working hours of child labor. While the variable child labor characteristics had a positive and significant influence on working hours of child labor. If the father characteristics, the mother characteristics, the household characteristics, and the community are getting better, then the working hours for child labor will be reduced. While, if the child labor characteristics are getting better (the more it fits the criteria, namely male sex, the lower the education, and not going to school), then the work time of child labor will increase. The indicators on the father characteristic variables that most determine are father's income and father's education. Indicators on the mother characteristics that most determine are mother's income, mother's education and mother's occupational status. The most determine indicators of household characteristics are household assets, number of family members, number of children, number of working family members, and parents' income. Indicators on the most determine characteristics of child labor are the gender of child labor, the education of child labor and the status of child labor. The most determine indicators in the community are market availability and school availability.

Keywords: child labor, household, working hours, Indonesia, Bengkulu.

1. Introduction

In preparing qualified and competitive human resources, Indonesia and various other developing countries are faced with the phenomenon of underage or child labor, which is a national problem that needs to be resolved immediately and sustainably. The ILO reported that at least 152 million children were classified as child labor in the world in 2016, a figure which is still quite large although it has been reduced from 2012 (168 million children). Of these, nearly half (73 million children) do hazardous work. Meanwhile Asia Pacific still has the largest number of nearly 62 million children or 7.4% of the child population in the Asia Pacific. This also means that around 41% of the world's child labor population is in the Asia Pacific including Indonesia (ILO, 2017).

The existence of child labor will have an impact on the economic situation of a

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country, although at the micro level child labor has a positive effect which is to contribute to increasing income and family survival, especially poor families (Basu & Van, 1998), but at the macro level the existence of child labor will provide negative effects on the labor market namely reducing wage rates and employment opportunities for adult labor. In the long-term child laborers who do not have good skills and knowledge because most of their time is used for work will affect long-term economic growth (Amao et al., 2010).

Children and adolescents are a major factor in investment in human resources. Becker (1965) provides a thought that assumes that humans are a form of capital or capital goods such as other capital goods, namely land, machinery, buildings, etc., which produce a return. Every expenditure made in order to develop the quality and quantity of capital is an investment activity. In this concept, humans are also assumed to be productive resources.

Investment in human capital aims to obtain a better level of productivity in the future. The most important investment in human capital is education. Educating children and adolescents means the country prepares quality human resources as an important component of economic growth (Hanushek & Kimko, 2000). Therefore, the state must ensure that every child has the best chance to grow up healthy, get access to proper education so that he can be a productive citizen in the future.

The survey results showed that there were 58.8 million children aged 5-17 years, some 4.05 million or 6.9 percent of them included in the category of working children. What is quite alarming is that of the total number of working children, 1.76 million or 43.3 percent are child laborers, meaning that children who do work that has the nature and intensity can disrupt and endanger the health and safety of children and optimally grow and develop children, both physical, mental, social, and intellectual. Meanwhile 20.7% of child laborers (364,320 people) do the worst forms of work such as prostitution, drug trafficking, mining, deep sea fisheries, and household sector work. Furthermore, About 50 percent of child laborers (880,000 people) work at least 21 hours per week and 25 percent of child workers (440,000 people) work at least 12 hours per week. On average children who work 25.7 hours per week, while those who are classified as child laborers work 35.1 hours per week (BPS, 2010).

Based on literature search results, research in several regions / countries related to the causes of child labor, some are partial, some are more comprehensive. Comprehensive research tends to include many variables such as examining the causes of child labor in terms of parents, as well as examining the influence of other factors such as children's preferences, environment, culture and other external factors. However, analysis tools that are carried out generally are regression (as in Siddhanta et al., 2003; Choudhury, 2006; Sahu, 2013), logistic regression (as in Amin et al., 2004; Fitdiarini & Sugiharti, 2008; Mudzongo & Whitsel, 2013; Webbink, 2013; Ariyanti, 2016), probit, logit, and sequential probit (as in Dayioglu's research, 2006; Ukoha & Emea, 2007; Tharmmapornphilas, 2008; Ota & Moffatt, 2007; Kambhapati, 2009; Omomona et al., 2010; Murad & Kalam, 2013; Subanti et al., 2016).

This study also examines more comprehensively the factors that cause child labor but uses a more relevant data analysis tool that uses PLS-PM (Partial Least Square-Path Modeling). Causative factors (which are also called variables) are analyzed as variables that have been declared significant in previous studies. This is used as a basis for determining variables, because based on literature studies, theories have not been found about the factors (variables) that cause child labor with certainty, so the determination of variables including indicators is based on empirical findings.

The lack of supporting theories about the factors causing child labor, is the right thing in using the PLS-PM analysis tool. Because this analysis tool is more suitable to be used for predictive analysis namely to develop theories (Hair et al., 2014) although it can also be used to confirm / test theories (Hair et al., 2014).

2. Literature review

Children are regarded as something very valuable both as themselves and as human resources that will determine the future of a country. Preparing them with education and skills means that the state prepares quality human resources as an investment as well as an important component of a country's economic growth (Hanushek & Kimko, 2000). Therefore, the state, society, parents and the environment must protect and guarantee that every child has the best opportunity to grow up healthy and get access to proper education so they can become productive citizens in the future.

Each individual will maximize his satisfaction through consumption and leisure with income and time constraints (Becker, 1965). Consequently, individuals will allocate their free time by working for income (wages). Individuals have the freedom to make decisions regarding the allocation of their free time. Because an individual is in a household, and the household is the smallest unit in decision making (Becker, 1965), then in making decisions related to working hours, the individual will be influenced by the situation and condition of his household.

In the unitary household model (Becker, 1981), households act as a unit, the members agree in determining the allocation of resources and expenditures, including decisions in the allocation of working hours for household members. Children are also household members involved in the agreement. In the theory of labor supply, if a unitary person or household has achieved satisfaction with a certain level of income, then they will reduce working hours and increase their leisure time, including reducing their working children.

Household members including their children are human, humans are considered as productive resources or capital or capital goods (Human Capital Theory), and thus the household makes the decision to offer family members including their children as labor to get wages or income (Theory) Labor Offer. The supply of child labor is carried out especially if family income from non-children is very low or the family is a poor family (Basu & Van, 1999). Households make decisions in allocating time for each household member including children (Time Allocation Theory) by making a tradeoff between work and non-work.

It has been mentioned earlier that this household decision aims to maximize utility, where utility is a function of the number of children, number of children going to school, child time, parent time and consumption of goods (Brown et al., 2003).

It has been explained before that the household is the smallest unit where children live and develop in that environment and interact directly in it. Households that are one unit, contain elements: the child himself, parents, family members and the community. A child's activity is greatly influenced by these elements, as well as in economic activities, the decision of a child to work is largely determined by all these elements.

Variables that affect child labor (outflow of child labor time) in terms of supply of child labor at (micro level), based on literature studies can be classified into five (5) variables, namely child characteristics variables, father characteristics variables, mother characteristics variables, variables household characteristics and community variables.
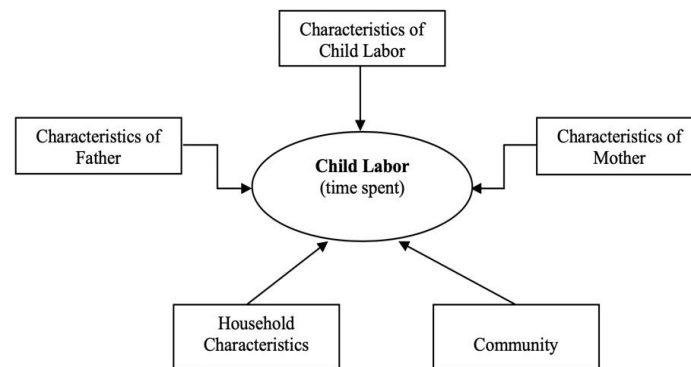
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Figure 1. Research framework

Figure 1**.** These variables are latent variables, they are variables that cannot be measured directly but must be measured based on the indicators. Each element can be described in the analysis framework in the Figure 1.

3. Methods

Creswell (2009) mentions that there are three types of research designs namely quantitative design, qualitative design and mixed design. In accordance with the problems that will be examined in this study, the research design that will be used is quantitative design, which follows the Postpositivist paradigm with the traits mentioned by Creswell namely determinism and reductionism by narrowing and focusing on selected variables, measuring variables, and verifying the theory. Hence, in this study, the approach used is a deductive approach, which is an approach that starts from a theory/concept related to the problem, followed by data collection and analysis process. The selection of indicators of each variable that influences the outpouring of child labor time is based on the theory and empirical evidence that has been stated previously.

In studies that use quantitative designs, data collection techniques that are prevalent / in accordance with the design, according to Creswell (2009) are through surveys by distributing questionnaires and conducting in-depth interviews with respondents. Accordingly, based on the opinion of Creswell, the use of primary data through direct surveys in the field is relevant for use in this study.

The analytical method used to identify child laborers and analyze variables that influence the flow of working time for child laborers in Bengkulu City is descriptive analysis and Partial Least Square-Path Modeling (PLS-PM) analysis, which is a nonparametric statistical analysis approach that has high flexibility in analyzing complex problems consisting of many variables and many indicators and can accommodate abnormal data (Hair et al., 2014). Furthermore Hair et al. also mentioned that the PLS-PM analysis is a flexible analysis method of large-dimensional data and is able to analyze patterns of relationships between variables including latent variables (variables that cannot be measured directly). The PLS-PM method is a SEM (Structural Equation Modeling) method. There are two kinds of SEM methods, namely covariant-based SEM (CBSEM) and variance-based SEM (PLS-PM).

The choice of this method is because the characteristics of this study are identical to the PLS-PM specifications that have been mentioned. Besides this PLS-PM analysis tool has never been done by researchers before in analyzing the determinants of child labor. The use of PLS-PM in analyzing determinants of child labor should be a methodological contribution in the realm of science specifically related to research on child labor.

Furthermore, the illustration of reflective or formative determination in PLS-PM can be described as follows, for example the latent variable "stress", due to stress is headache, insomnia, increased blood pressure and others (reflective measurement). While the causes of stress are lack of money, many problems, education has not been completed and others (formative measurement).

4. Result and discussion

This research was conducted by taking a sample of 100 (one hundred) child laborers. Determination of the sample is done by accidental sampling. In general, respondents were first met, doing their work activities, for example selling on the highway, carrying groceries at the market, collecting used goods in landfills, pulling toil on the coast, printing bricks at the brick business, serving buyers / working at home-based businesses such as sweets shops, satay shops, cake shops, cake making businesses, salted fish making businesses and others.

The existence of child labor is veiled, especially child laborers who work in home-based businesses, they work sometimes without pay and know no time. There was even a respondent who was still 11 years old, when found to say, every three o'clock in the morning he had to get up and help parents produce cakes. When confirmed with his parents, his parents said they had no choice, hiring other people they could not afford to pay his salary.

Table 1. Descriptive statistics respondents

Category	Total (People)	Percentage	
Children Occupation			
Work in a Household Business	19	19	%
Trade	49	49	%
Services	15	15	%
Others	17	17	%
Total	100	100	%
Father Occupation			
Home business	26	26	%
Trader	29	29	%
Fisherman	33	33	%
Others	12	12	%
Total	100	100	%
Gender			
Boy	80	80	%
Girl	20	20	%
Total	100	100	%
Age			
≤ 12	64	64	%
13-14	25	25	%
15-17	11	11	%
Total	100	100	%

Source: The results of primary data processing with SmartPLS.

R Square test results used to determine the significance of the ability of exogenous variables in explaining endogenous variables.

Table 2. Coefficient of determination (R2)

Endogenous Variables	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Characteristics of Child Labor	0,673	0,433	0,106	6,335	0,000*
Household Characteristics	0,714	0,710	0,066	10,891	0,000*
Child Labor	0,671	0,592	0,089	7,555	0,000*

Source: The results of primary data processing with SmartPLS.

The test results show that all P values <0.05. This means that the ability of the father's variable characteristics, household characteristics, mother's characteristics, and community in explaining the characteristics of child labor is 67.3% is significant, the ability of the father's variable characteristics and mother's characteristics in explaining household characteristics is 71.4% is significant. The variable ability of father characteristics, household characteristics, mother characteristics, child labor characteristics, and community in explaining child labor is 67.1%, also significant.

According to Hair et al. (2011), there are three criteria based on the prediction model R2, namely a strong prediction model if R2 is more than 75%, a moderate prediction model if the R2 value is not less than 50%, and it is said that the prediction model is weak if the R2 value is below 25%. The prediction model in the study, which is a determinant of the outflow of working time for child laborers in the city of Bengkulu, is moderate, namely 67.1% and significant.

Figure 2. PLS-PM diagram and results of PLS-PM tests of child labor working hours
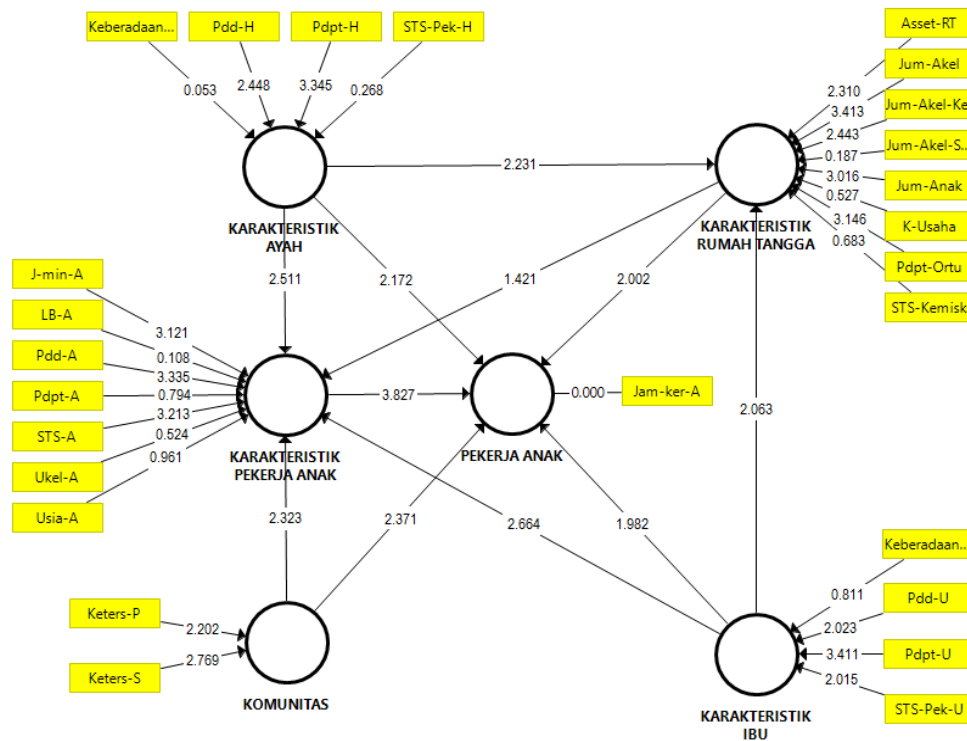
Source: The results of primary data processing with SmartPLS.

The PLS-PM measurement results (Figure 2) and the PLS-PM test results (Figure 2) to analyze the variables that affect the workload of workers, all of them meet the outer model and

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inner model criteria, so these results can be used to determine the structural model in predict variables that affect the flow of work time of workers while answering research problems. The structural model consists of the outer model (the relationship between indicators and their latent variables) and the inner model (the influence between the latent variables determining the time flow of child labor). Insignificant indicators are no longer included in the outer model and adjustments are made to the names of the indicators.

The results of the outer model and inner model testing to determine the variables that affect the outpouring of child labor time are depicted as a whole in Figure 2.

Outer Models

1. $KA = 0{,}693 \, X_1 + 0{,}950 \, X_2$
2. $KI = 0{,}550 \, X_3 + 0{,}804 \, X_4 + 0{,}776 \, X_5$
3. $KRT = 0{,}578 \, X_6 - 0{,}679 \, X_7 - 0{,}626 \, X_8 + 0{,}787 \, X_9 - 0{,}535 \, X_{10}$
4. $KPA = 0{,}639 \, X_{11} - 0{,}802 \, X_{12} - 0{,}701 \, X_{13}$
5. $K = 0{,}668 \, X_{14} - 0{,}619 \, X_{15}$

Inner Models

1. $KRT = 0{,}739 \, KA^* + 0{,}677 \, KI^*$

2. $KPA = (-0{,}187) \, KRT + 0{,}648 \, KA^* + 0{,}571 \, KI^* + 0{,}643 \, K^*$

3. $PA = (-0{,}530) \, KRT^* + 0{,}510 \, KPA^* + (-0{,}417) \, KA^* + (-0{,}757) \, KI^* + (-0{,}793) \, K^*$

Based on the results of testing the inner model in the PLS-PM analysis, the answers obtained from the formulation of the problem are, the characteristics of fathers have a negative and significant effect on the outpouring of child labor in Bengkulu City. Mother's characteristics have a negative and significant effect on the outpouring of child labor time in Bengkulu City. Household characteristics have a negative and significant effect on outpouring of child laborers' working time in the city of Bengkulu. The characteristics of child labor have a positive and significant effect on the outpouring of child labor in Bengkulu City. The community has a negative and significant effect on the outpouring of child labor in Bengkulu City.

Has previously been mentioned about the concept put forward by Webbink et al. (2013) which states there are three (3) things that are the basis for the emergence of child labor, namely resources, structure and culture. The most important resources are income / wealth, work status and parental education. Household structure is how the composition of household members varies, for example the age structure of household members, birth order, the presence of parents, and the composition of household members who work. While culture is the norms adopted, for example, boys must be more responsible for the household economy or girls do not need to go to school and others. The empirical evidence described previously shows that there are no studies that use the composition of household members who work as variables or indicators in analyzing child labor. For this reason, the composition of working household members constitutes a theoretical gap in this study. The composition of household members who are then proxied by the number of working family members (used as an indicator of the latent variable of household characteristics) in analyzing the outpouring of child labor time.

The findings show that the indicator of the number of working family members gives a significant correlation between the latent variables of household characteristics. The severity of the relationship is negative. This gives the meaning that the more the number of family members who work, the more it will increase the outpouring of child labor. There is a tendency that children will follow what the adults around them do. For example, some interviews with child laborers in the coastal areas, that at first they worked only because they joined in, but over time it became a habit because they got money from work.

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In the literature study related to child labor, there has not been found a journal / research that uses the PLS-PM analysis tool in examining the factors that cause child labor, so this study tries to use PLS-PM as a tool to analyze the causes or factors that influence the emergence of child labor, which household based. The use of PLS-PM analysis tools is a methodological gap as well as methodological contributions in coloring the results of previous studies. The results of the analysis by PLS-PM, give different meanings and meanings from the results of previous studies as described in the discussion.

In the literature study, most of the analyzes of child labor are carried out in broader areas such as countries such as Vietnam, Thailand, Indonesia, the Philippines, Latin America and others. As is known that a country usually consists of areas that often have customs and cultures that are different from one another. Hence, the possible causes of child labor are also different. Accordingly, this research takes a narrower scope of research, which is conducted in the city of Bengkulu (in addition to considerations of poverty data and data on the number of child workers previously mentioned). Research by taking a narrower scope of research area in Bengkulu City is one of the elements of originality of this research. Some findings give different results, for example some indicators in previous studies give significant results, but in this study, have not shown significant results as has been explained in the results and discussion. It is hoped that the findings in this study can provide academic and practical benefits in the scientific realm.

To reduce child labor effectively, various policies are needed. Policies made must be based on a thorough understanding of the causes, their roles and implications. Based on the results of the study, the main factor in the emergence of child labor from the supply side is sourced from the family and related to economic problems. Thus, to reduce the negative impacts of child labor, solutions to problems faced by families and children, especially those of an economic nature. For example, parents must be given motivation, encouragement and advice so they can start income-generating activities. The existence of credit facilities that are truly for underprivileged families must be regulated effectively and transparently, with a system of return that is as light as possible. Care and guidance are needed for them to be effective in using these facilities, so that parents can make a better income contribution for their children. Thus, parents can meet their basic needs, so that their children do not need to allocate time to work and generate income.

Although so far, the government has made efforts to provide direct assistance to the community, but it can still be said to be less effective, because giving in the form of assistance tends not to motivate to develop more towards independence. The level of education of parents has an influence on their children's time allocation decisions. Providing training to adults both formally and informally can be a potential way to mitigate child labor. In addition, there must be efforts to eradicate the erroneous assumption in the community, that boys must be more responsible for the family economy, so that many boys must work to help their parents and neglect their school. Though all children should be treated the same, that is, they must prepare themselves to become educated human beings and have skills for their future.

The compulsory education program for every Indonesian citizen is a form of government efforts to provide knowledge and education to children. By going to school, it is hoped that children will spend their time on learning thereby reducing the chances of a child becoming child labor. However, for various reasons there are still children who do not heed this compulsory education, sometimes even some of the children do not complete the required school or may not want to go to school at all. So, the role of the government in asserting children to be obliged to go to school and raising parents' awareness about the problem of sending children to school needs to be increased. Giving skills courses to children who have dropped out of school or to children who have difficulty studying in formal schools is a potential choice to make. Parental supervision of children's activities must be increased so that children do not go along with work, because if children are accustomed to getting money / wages from work, then they tend to always work and even neglect education in order to get money / wages.

Eradicating child labor must be carried out comprehensively, many factors are related to this. Parents, families and the environment and the government, are important elements to interact with one another and work together to "fight" child labor. The better the situation of parents (mother and father), the better the family and the environment (community) and the existence of government regulations and policies in the economic and non-economic sectors, which support efforts to alleviate child labor, it is expected to further reduce child labor in Indonesia, including in the city of Bengkulu.

5. Conclusion

Based on the results of research on Analysis of Household-Based Child Labor in the City of Bengkulu, several conclusions are obtained, namely that the characteristics of fathers have a significant negative effect on the outpouring of child labor time in the city of Bengkulu. If the characteristics of fathers get better, the time spent working for child labor will decrease. Indicators that have a significant correlation with father's characteristic variables are father's income and father's education.

Mother's characteristics have a significant negative effect on the outpouring of child labor time in the city of Bengkulu. If the characteristics of mothers are getting better, then the time spent working for child labor will decrease. Indicators that have a significant correlation with mother's characteristics are mother's income, mother's education and mother's employment status. Household characteristics have a significant negative effect on the outpouring of child labor in Bengkulu City. If the characteristics of the household get better, then the working hours of child labor will decrease.

Indicators that have a significant correlation with household characteristics are household assets, number of family members, number of children, number of working family members and parental income. The characteristics of child labor have a significant positive effect on the outpouring of child labor in Bengkulu City. If the characteristics of child laborers are getting better (the more in line with the criteria, namely male sex, the lower the education, and not attending school), then the outpouring of child labor will increase. Indicators that have a significant correlation with the characteristics of child labor are the gender of child labor, the education of child labor and the status of child labor.

The community has a significant negative effect on the outpouring of child labor in Bengkulu City. If the community is getting better, then the working hours of child labor will decrease. Indicators of the most significant relationship with the community are market availability and availability of schools.

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