The influence of child, households, and villages/sub-districts characteristics on the working status of children in East Nusa Tenggara Province 2024

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Abstract. The percentage of the poor population in East Nusa Tenggara Province is being the fourth highest in Indonesia in 2024, but the highest percentage of child labor in Indonesia. The purpose of this study is to find out the picture, influencing factors, and trends of factors affecting child labor in East Nusa Tenggara Province in 2024. The unit of analysis was children aged 10-17 years who were unmarried and not as head of household with a sample of 9,117 children from 6,123 households and 1,165 villages/sub-districts. The data used are Susenas Kor and Modules March, as well as Podes 2024 sourced from BPS. The analysis method in this study is multilevel binary logistics regression. The results of the study show that children who work are boys aged 15-17 years. The child lives in households with a low level of head of households' education and household work in the agricultural sector, a small number member of productive age, and have micro and small enterprises, and live in villages/sub-districts with many micro and small industries and the main source of income for most of the population in the agricultural sector.

Keywords: Child Labor, East Nusa Tenggara Province, Hierarchy, Multilevel Binary Logistics.

1. Introduction

Poverty is a condition of a person who is unable to meet the minimum basic needs for a decent and dignified life [1]. Meanwhile, people are said to be poor when they are hungry, lack shelter and clothing, are sick and untreated, illiterate, and do not go to school [2]. This shows that one of the causes of poverty is a lack of income and assets in meeting basic needs so that an indicator of a person's poverty status by comparing their individual income or consumption [3].

Poverty alleviation has been the goal of Sustainable Development Goals (SDGs) in the social development pillar precisely in the first goal. In this goal, the government strives to end poverty in all forms. One of the targets is to reduce at least half the proportion of men, women and children of all ages living in poverty in all dimensions, according to the national definition [1]. In Rencana Pembangunan Jangka Menengah Nasional (RPJMN), Indonesia targets the percentage of poor people in Indonesia to

be 6.00-7.00% [4]. Unfortunately, the percentage of poor people in East Nusa Tenggara Province is relatively high. The province is in the fourth highest position in Indonesia with a value of 19.48%. In fact, this value exceeds the target percentage of the poor population in the RPJMN and the national value (figure 1).

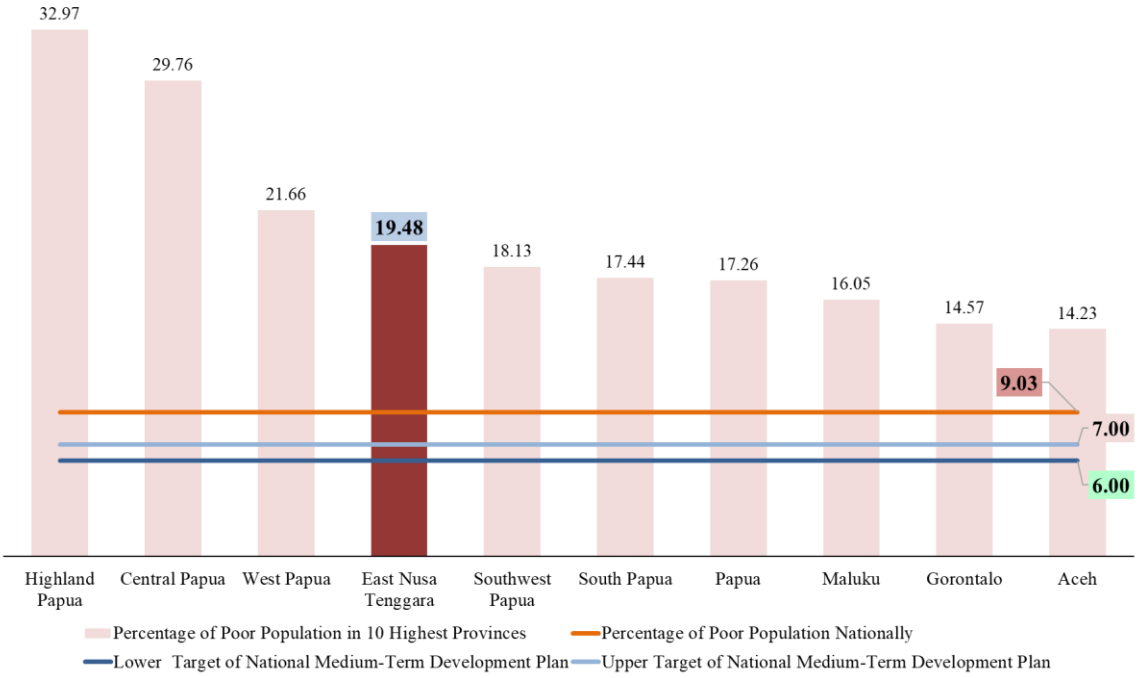

Figure 1. Ten provinces with the highest percentage of poor people in Indonesia in 2024.

Poverty is a major factor in the emergence of the child labor phenomenon [5]. Child labor is a child who works and whose activities have a nature and intensity that interferes with education, play activities, play time, endanger health and safety, and hinders their growth and development [6]. In addition, child labor is also defined as the exploitation of children through forms of work that are harmful to their physical and mental safety [7]. The children who work are able to get wages so that their living needs are met [8]. Although East Nusa Tenggara Province is not the province with the highest percentage of poor people in Indonesia, it is the province with the highest percentage of child labor in Indonesia (figure 2). This phenomenon results in an anomaly that poverty is not the main factor in the phenomenon of child labor in East Nusa Tenggara Province, so it is important to explore the factors that affect workers in the region.

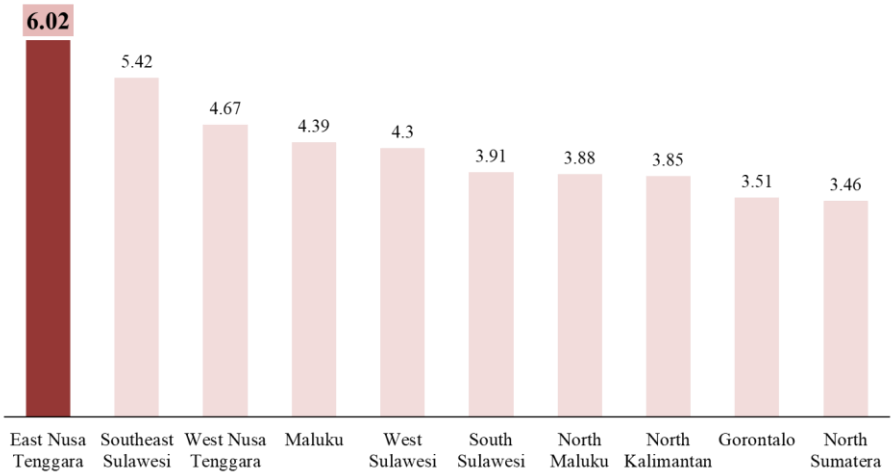

Figure 2. Percentage of child laborers in the ten provinces with the highest percentage of poor people in Indonesia in 2024.

The phenomenon of child labor has a negative impact both in the short and long term. Children who work and are active in the economy often sacrifice their education [9]. This results in the child not being able to develop his or her thinking potential because the child cannot learn to read, write, and count [10]. This situation causes the quality of human resources of the child to be low so his/her productivity will be low. This causes the child to grow and develop into an adult who is trapped in untrained jobs and very poor wages [11]. In addition, when the child is a woman and decides to get married, the child will have children with low-income conditions. Not only that, girls are also more likely to lose their jobs because of their high competitiveness with children who are younger and more competent so that there are fewer opportunities to work. This situation causes the child to be poor in the future and demands that his children work and not be able to go to school. The impact of this phenomenon is that the next generation will experience the same thing and always spin until it forms a cycle of poverty in the long term [10].

Another impact is in the form of low regional economic growth. A society with a high rate of child labor causes them to be easily trapped in a condition of low economic balance. This happens because children who are not educated produce goods and services with low quality and relatively low productivity levels so that the goods and services produced will not provide large profits. This phenomenon hinders economic growth in the region so that the region will have many poor people. Thus, the purpose of this study is to find out the picture, influencing factors, and trends of factors affecting child labor in East Nusa Tenggara Province in 2024. The limitation in this study is that children used as the unit of analysis are only children aged 10-17 years.

2. Research Method

2.1. Literature Review

A child is someone who is not yet 18 years old, including a child who is still in the womb [12]. Then, working is people who work at least one hour cumulatively in one week to earn wages or benefits and

people who temporarily do not work in the enumeration period [13]. The factors that cause child labor are very diverse and vary from one country to another and from one economic sector to another [8]. Child labor is not only caused by internal factors of the child, but there are other factors, such as household and region [14]. This means the analysis method used is a multilevel binary logistics regression model.

Children from poor families tend to be asked to work or told to work in family businesses or family farms to increase family income. In addition, the lack of equitable development in the field of education, the low cost of child labor, the absence of child labor organizations, customs, and the social attitudes of the local community are factors that cause child labor [15]. Other factors that cause child employment are older children in the family, wars, political situations, social problems that disrupt the economy, natural disasters, migration, economic recession or depression, inability to increase credit, large number of household members, and illness or death of parents or siblings [10].

Factors that affect child labor in the form of resources (income/wealth, parental education, parental employment, economic development at the local level, transportation and road infrastructure, state influence, motivation, and regional education level), structural (number of siblings, birth order, child age, child gender, foster child status, regional employment sector, urbanization, and educational facilities), and culture (women's empowerment and patriarchal cultural status family) [14].

2.2. Scope of Research

This study examines child labor in East Nusa Tenggara Province in 2024 with an analysis unit in the form of unmarried children aged 10-17 years and not the head of household. The number of samples in this study was 9,117 children unmarried and not as head of household. They from 6,123 households and 1,165 villages/sub-districts in East Nusa Tenggara Province.

Variables related to the characteristics of children and households were obtained from secondary data from the results of Sosial Ekonomi Nasional Survey (Susenas) Kor and Module in March 2024 with a sample of 345,000 households from 34,500 census blocks spread across 514 districts/cities in Indonesia. Susenas March 2024 sample withdrawal uses *two stages* with *the Primary Sampling Unit* (PSU) in the form of a census block and *the Ultimate Sampling Unit* (USU) in the form of households. Meanwhile, information about villages/sub-districts is obtained from the 2024 Potensi Desa data which was collected in all villages/sub-districts in Indonesia. Meanwhile, the variables used in this study are as follows.

Table 1. List of variables, notation, and measurement scales of research variables.

Variable	Notation	Measurement scale	Operational definition
(1)	(2)	(3)	(4)
Dependent Variable			
Child's employment status	SKA	Nominal	Work is the activity of doing work with the intention of obtaining or helping to obtain income or profit for at least one hour in the last week. Working for one hour can be done consecutively/uninterruptedly or cumulatively in

Variable	Notation	Measurement scale	Operational definition
(1)	(2)	(3)	(4)
			one week. In addition, working people also include people who are temporarily unemployed in the enumeration period [13]. Category of this variable: 1 : Working 0 : Not working*
		Independent Variables	
Gender of the child	JKA	Nominal	Category of this variable : 1 : Female 0 : Male*
Child's age	UMA	Ratio	The age is calculated in units of years rounded down or age at the time of the last birthday [13].
Gender of the head of household	JKK	Nominal	The head of the household is the member of the household who is responsible for the needs of daily life [13]. Category of this variable : 1 : Female 0 : Male*
The head of household's work status	SKK	Nominal	The agricultural sector is a business field that works in rice and secondary crops agriculture, horticulture, plantations, fisheries, livestock, and forestry and other agriculture [16], while the rest is classified as a non-agricultural sector. Other condition as unemployment. Category of this variable : 1 : Not working 2 : Working in the agricultural sector 0 : Working in the non-agricultural sector*
The head of household's education level	TPK	Ratio	The level of education of the head of households is closer to the description of the diploma he has. A diploma in this study is in the form of a sheet or proof of graduation given to a person who has completed all academic requirements at a certain level of education [13]. The level of education is in the form of scores consisting of a score of 1 when you do not have an elementary school diploma, a score of 2 when you have an elementary school diploma, a score of 3 when you have a junior high school diploma, a score of 4 when you have a high school diploma, and a score of 5 when you have a minimum diploma of D1.
Number of household members of productive age	JAP	Ratio	Members of productive households are household members aged 15-64. The age range is referred to as an economically productive population which means economically active and working so as to generate income that can help the household

Variable	Notation	Measurement scale	Operational definition
(1)	(2)	(3)	(4)
			economy. However, the productive age of household members is limited from 18-64 years old because children aged 15-17 years are included in the analysis unit and should still be educated so that they are not required to work [17].
Ownership status of household micro and small enterprises	UMK	Nominal	Micro businesses are businesses that have a maximum of one billion rupiah excluding land and business buildings, while small businesses have a business capital of more than one billion rupiah to a maximum of five billion rupiah excluding land and buildings where the business is located. In addition, micro businesses have an annual sales revenue of at most two billion rupiah, while small businesses have a minimum of two billion rupiah and a maximum of fifteen billion rupiah [18]. Category of this variable : 1 : Owning micro and small enterprises 0 : Doesn't have micro and small enterprises *
Status of household poverty	SMR	Nominal	Poor households are households that have those that are unable to meet the minimum basic needs. The calculation of the minimum needs is through the poverty line [19]. Category of this variable : 1 : Poor 0: Not Poor*
The main source of income for most villagers/sub-districts	SPU	Nominal	Villages/sub-districts that are the main source of income for most of the population are in the agricultural sector while most of the population works in agriculture, forestry, and fisheries [16]. Category of this variable : 1 : Agricultural sector 0 : Non-agricultural sector*
Number of micro and small industries in villages/sub-districts	IMK	Ratio	IMK is an industry that has a workforce of less than 20 workers. Micro industry is an industry that has a maximum of four workers, including entrepreneurs, while small industries are industries with a minimum of 5 workers and a maximum of 19 people, including entrepreneurs [20].

Description: *) reference category

2.3. Analysis Method

This study uses descriptive analysis and inferential analysis. Descriptive analysis uses five numbers summaries and graphs, such as boxplots, pie charts, and stacked bar charts. Meanwhile, inference analysis used a three-level multilevel binary logistics regression analysis method with a significance level (α) of 5%. This method is used because the factors that cause the phenomenon of child labor do

not only come from internal factors of children but also come from other factors, such as household characteristics and regional conditions [14]. In addition, the data used is hierarchical data so that the estimate will not be spurious. Importance of using this method is shown by the random effect testing each level [21]. Furthermore, an unbalanced distribution of classes can indeed cause large errors, but the effect will be reduced if the amount of training data is large enough. With large datasets, information about minority classes is increased so that the model can learn better. This statement means that class imbalance is not always a major problem when the data size is sufficient [22] so that three-level multilevel binary logistics regression can still be used. This study used a random intercept model and had no interaction. The estimation method using Full Maximum Likelihood (FML) with the Penalized Quasi-Likelihood (PQL) approach.

Inferential analysis begins with testing random effects to explore its importance random effect at each level with the decision to reject H_0 when $LR > \chi^2_{0.05;1}$. This test was performed on the model intercept only. When the random effect testing is significant, the use of multilevel models is better than simpler models. Test statistics : Hox et al. [21]

$$LR = -2\ln\left(\frac{likelihood\ model\ without\ random\ effects}{likelihood\ second\ level\ random\ effect\ model}\right) \sim \chi^2_{(1)} \tag{11}$$

$$LR = -2\ln\left(\frac{likelihood\ second\ level\ random\ effect\ model}{likelihood\ third\ level\ random\ effect\ model}\right) \sim \chi^2_{(1)} \tag{12}$$

Next, calculate Intraclass Correlation Coefficient (ICC) As a diversity of children's work status due to differences in characteristics at that level with variance at the lowest level is $\frac{\pi^2}{3} \approx 3.293$. ICC Formula [21] :

$$\rho_{second\ level} = \frac{\sigma^2_{u_0}}{3.293+\sigma^2_{u_0}+\sigma^2_{v_0}} \tag{13}$$

$$\rho_{third\ level} = \frac{\sigma^2_{v_0}}{3.293+\sigma^2_{u_0}+\sigma^2_{v_0}} \tag{14}$$

Then, the test of model compatibility with the addition of independent variables at each level aims to determine the effect of adding independent variables at each level to further improve the model's goodness. A reject H_0 decision when $LR > \chi^2_{0.05;4}$, $LR > \chi^2_{0.05;6}$, and $LR > \chi^2_{0.05;3}$ for the first, second, and third levels. Test statistics with $i = 1,2,3$ [21] :

$$LR = -2\ln\left(\frac{likelihood\ model\ with\ independent\ variables\ at\ level\ (i-1)}{likelihood\ model\ with\ independent\ variables\ at\ level\ i}\right) \sim \chi^2_{(v)} \tag{15}$$

Then, estimate the best model with the following model.

$$\begin{aligned}\log\left[\frac{\pi(SKA_{ijk})}{1-\pi(SKA_{ijk})}\right] = {} & \theta_{000} + \beta_1 JKA_{ijk} + \beta_2 UMA_{ijk} + \gamma_{01} JKK_{jk} + \gamma_{02} SKK_{Not\ working\ _{jk}} + \\ & \gamma_{03} SKK_{Working\ in\ the\ agricultural\ sectore\ _{jk}} + \gamma_{04} TPK_{jk} + \gamma_{05} JAP_{jk} + \\ & \gamma_{06} UMK_{jk} + \gamma_{07} SMR_{jk} + \theta_{001} SPU_k + \theta_{002} IMK_k + \varepsilon_{ijk} + u_{0jk} + \\ & v_{00k}\end{aligned} \tag{16}$$

Next, the parameter significance tester partially tested the influence of each variable with a decision to reject H_0 when $Z_w < -Z_{0.05}$ or $Z > Z_{0.05}$ adjusted to the research hypothesis. Test statistics [23] :

$$Z_W = \frac{\hat{\beta}_p}{SE(\hat{\beta}_p)} \sim N(0,1) \tag{17}$$

$$Z_W = \frac{\hat{\gamma}_{0q}}{SE(\hat{\gamma}_{0q})} \sim N(0,1) \quad (18)$$

$$Z_W = \frac{\hat{\theta}_{00r}}{SE(\hat{\theta}_{00r})} \sim N(0,1) \quad (19)$$

Furthermore, the interpretation of the model uses odds ratio by exponentially estimating the estimated value of each parameter and interpreting it as the tendency of each variable.

Then, estimate the accuracy of the model. The accuracy of the model was obtained from the comparison between the number of incidents of working and non-working children classified correctly in each category to the number of all children. Each estimated chance of observation in the model is compared to the most used threshold value of 0.5. If the value is greater than the threshold value, the child is classified as working and vice versa [24].

Lastly, estimate the area under the curve the receiver operating characteristic (ROC). The ROC curve is a curve that visualizes the chance of a true detected signal (sensitivity) and a chance of a false-detected signal (1-specificity) for all possible thresholds. This is the indication of goodness of fit for model. The area of the territory under the ROC is 0.5 (no discrimination) shows that the model used cannot classify observations precisely. Meanwhile, the model is not good at classifying observations precisely (poor discrimination) when the area below the ROC is in the interval of 0.5 to 0.7. When the area below the ROC is at intervals $0.7 \leq \text{ROC} < 0.8$ (acceptable discrimination) shows that the model used is sufficiently able to classify observations precisely. The area under the ROC is at intervals $0.8 \leq \text{ROC} < 0.9$ (excellent discrimination) which means that the model used is good at classifying observations precisely. The model used is very good at classifying observations precisely (outstanding Discrimination) when the area is below the ROC of at least 0.9 [24].

3. Result and Discussion

3.1. Overview of child labor in East Nusa Tenggara Province

Child labor is an interesting phenomenon and should be a concern for every country. Working children are dominated (62.71%) by children aged 15-17 years and the percentage increases with the age of the child (figure 3). This means that 6-7 to 10 child labor are children aged 15-17 years. Besides that, the percentage of child labor increases as their age increases. There is a tendency that the older the children are, the higher their probability of becoming child laborers.

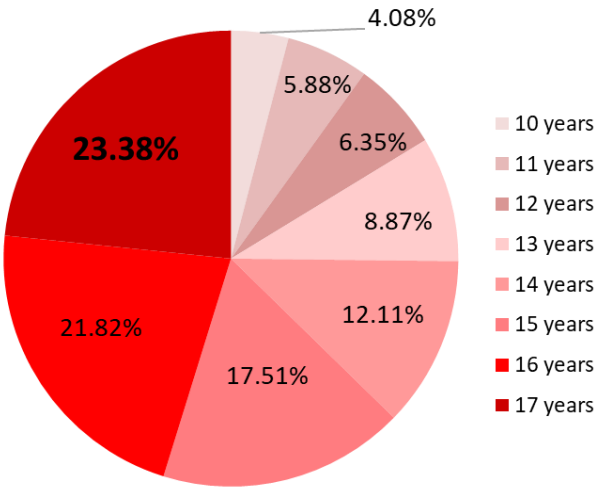

Figure 3. Percentage of child labor by age of children.

More than 50% of working children live in households who the head of households only have a maximum elementary school. One to two child labor is child who their head of households only have a maximum elementary school. Furthermore, the higher the head of households education, the lower the percentage of children who work (figure 4). Higher education is also often associated with greater awareness of the importance of schooling for children, making parents more likely to encourage them to stay in school.

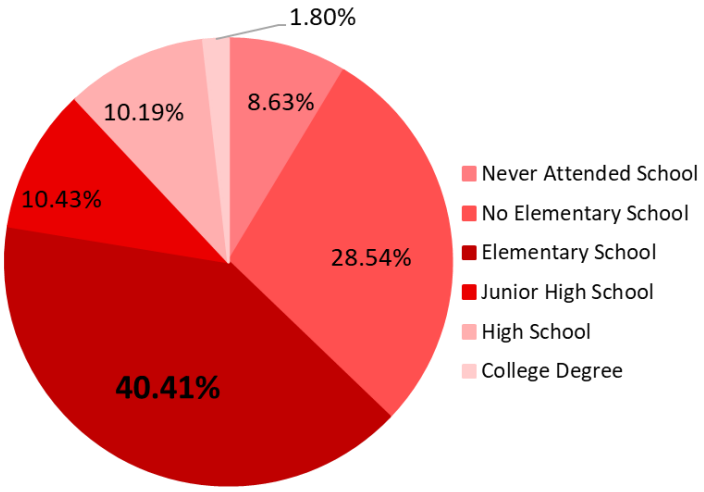

Figure 4. Percentage of child labor by the head of household's education level.

The child lived in a household which of the number of household members of productive age with an average around 2.36 (figure 5). This information implies that working children come from households

where the number of household members of productive age isn't enough to support the family's economic needs. So, there is no one to replace the role of breadwinners other than the child.

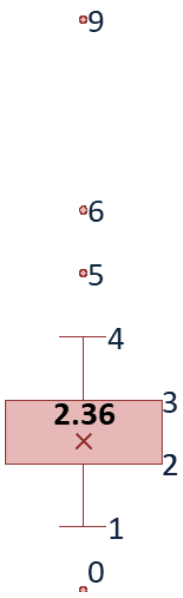

Figure 5. Distribution of the number of household members of productive age from child labor households.

Another interesting information is that most of the children who work live in villages/sub-districts that have micro and small industries. This is shown by average number of micro and small industries of their villages/sub-districts around 85.46 units (figure 6). This phenomenon indicates that the presence of micro and small industries may be a factor driving children's involvement in work, as these industries provide informal job opportunities that are easily accessible to children.

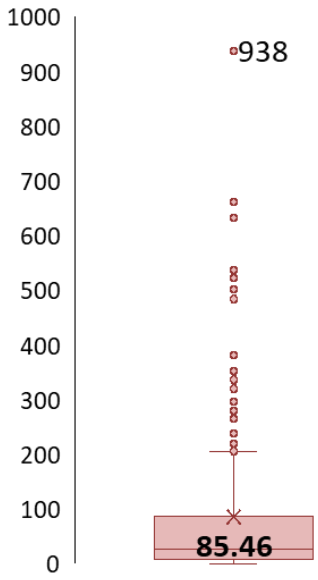

Figure 6. Distribution of the number of micro and small industries in villages/sub-districts with child labor.

Working children are predominantly boys (table 2). They live in a household who the head of household is female, does not work/work in the agricultural sector, has micro and small enterprises, and is poor. Not only that, they also live in villages/sub-districts which are the main source of income for most of the population in the agricultural sector. **Table 2.** Percentage of children based on employment status and characteristics in East Nusa Tenggara Province in 2024.

No.	Variable	Category	Employment status	
			Work	Not working
(1)	(2)	(5)	(3)	(4)
1.	Gender of the child	1 : Female	6.57%	93.43%
		0 : Male*	11.57%	88.43%
2.	Gender of the head of households	1 : Female	12.51%	87.49%
		0 : Male*	8.63%	91.37%
3.	The head of household's work status	1 : Not working	6.23%	93.77%
		2 : Working in the agricultural sector	12.19%	87.81%
		0 : Working in the non-agricultural sector*	4.28%	95.72%
4.	Ownership status of household micro and small enterprises	1 : Owning micro and small enterprises	13.84%	86.16%
		0 : Does not have micro and small enterprises *	5.77%	94.23%

No.	Variable	Category	Employment status	
			Work	Not working
(1)	(2)	(5)	(3)	(4)
5.	Status of household poverty	1 : Poor	9.72%	90.28%
		0 : Not poor	8.96%	91.04%
6.	The main source of income for most villagers/sub-districts	1 : Agricultural sector	9.81%	90.19%
		0 : Non-agricultural sector*	4.92%	95.08%

Source: data processing results

Description : *) reference category

3.2. Trends of factors affecting child labor in East Nusa Tenggara Province

The first step in this study is to test the existence of random effects at each level used. The results of the test are as follows.

Table 3. Random effect test.

No.	Testing	Statistics	Degrees of freedom	p_{value}
(1)	(2)	(3)	(4)	(5)
1.	Second-level random effect test	359.4418	1	0.0000*
2.	Third level random effect test	529.0242	1	0.0000*

Source: data processing results

Description: *) significant at the significance level of 5%

The calculation statistics obtained when conducting random effect testing at the second and third levels are 359.4418 and 529.0242 (table 3). The value is greater than the critical point used, which is $\chi^2_{0,05;1}$ = 3.8415 so the decision in this test is reject H_0. Based on this decision, the sample used in the study was able to show the existence of random effects at the second and third levels which means that there is a diversity in children's employment status both between households and between villages/sub-districts. The results show that the three-level multilevel binary logistics regression model is better than simpler model, so final model is a three-level multilevel binary logistics regression model. Furthermore, the findings suggest that child labor is a multilevel issue, and thus, it cannot be effectively resolved at only one level. A collaborative effort involving all levels–the individual, household, and village/sub-district–is required to achieve a comprehensive solution.

Then, the ICC at the second and third levels was 10.4840% and 45.9120% respectively, which means that the diversity of children's work status was caused by differences in characteristics at the household level of 10.4840% and villages/sub-districts of 45.9120%. The next stage is to test the model's compatibility by adding independent variables at each level. The test results are as follows.

Table 4. Test the goodness of the model with the addition of independent variables of each level.

No.	Testing	Statistics	Degrees of freedom	p_{value}

(1)	(2)	(3)	(4)	(5)
1.	Model fit test with first level independent variable addition	549.1218	2	0.0000*
2.	Model fit test with first and second level independent variable addition	134.9183	7	0.0000*
3.	Model fit test with the addition of first, second, and third level independent variables	13.2491	2	0.0013*

Source: Data Processing Results

Description: *) significant at the significance level of 5%

The calculation statistics obtained consecutively are 549.1218; 134,9183; and 13.2491 (table 4). The value is greater than the critical points used consecutively, $\chi^2_{0,05;2}$ = 5.9915 and $\chi^2_{0,05;7}$= 14.0671 so the decision in this test is a rejection H_0 on all tests. Based on these results, the sample used has shown that the three-level multilevel binary logistics regression model with third-level independent variables is better than the simpler model (model without independent variables, with first or second level independent variables) at the significance level of 5% so that the best model used is a multilevel binary logistics regression model with independent variables at all three levels. The next stage is to estimate the parameters in the model and partial test. The results are as follows.

$$\begin{aligned}\log\left[\frac{\hat{\pi}(SKA_{ijk})}{1-\hat{\pi}(SKA_{ijk})}\right] = {} & -10.0283^{*} - 0.7843^{*} JKA_{ijk} + 0.40602^{*} UMA_{ijk} + \\ & 0.3375^{*} JKK_{jk} + 0.4478 SKK_{Not\ working\ _{jk}} + \\ & 0.6663^{*} SKK_{Working\ in\ the\ agricultural\ sectore\ _{jk}} - 0.1478^{*} TPK_{jk} - \\ & 0.1338^{*} JAP_{jk} + 0.7927^{*} UMK_{jk} + 0.1333^{*} SMR_{jk} + 0.357^{*} SPU_{k} + \\ & 0.2010^{*} IMK_{k} + \hat{\varepsilon}_{ijk} + \hat{u}_{0jk} + \hat{v}_{00k}\end{aligned} \quad (10)$$

Description: *) significant at the significance level of 5%

Table 5. Partial test.

Parameters	Parameter estimation	Error standards	Statistics	Odds ratio
(1)	(2)	(3)	(4)	(5)
Constant	-10.0283	0.5896	-17.0089*	0.0000
First level (individual characteristics)				
Gender of the child				
Female (1)	-0.7843	0.1110	-7.0680*	0.4565

Male (0)				
Child's age	0.4602	0.0263	17.4701*	1.5844
Second level (household characteristics)				
Gender of the head of household				
Female (1)	0.3375	0.1607	2.1009*	1.4015
Male (0)				
The head of household's work status				
Not working (1)	0.4478	0.3145	1.4238	1.5648
Working in the agricultural sector (2)	0.6663	0.1616	4.1239*	1.9470
Working in the non-agricultural sector (0)				
The head of household education level	-0.1478	0.0562	-2.6278*	0.8626
Number of household members of productive age	-0.1338	0.0574	-2.3319*	0.8747
Ownership status of household micro and small enterprises				
Owning micro and small enterprises (1)	0.7927	0.1529	5.1852*	2.2093
Doesn't have micro and small enterprises (0)				
Status of household poverty				
Poor (1)	0.1333	0.1492	0.8935	1.1426
Not Poor (0)				
Third level (villages/sub-districts characteristics)				
The main source of income for most villagers/sub-districts				
Agriculture (1)	0.6357	0.3204	1.9839*	1.8883
Non-agricultural sector (0)				
Number of micro and small industries in villages/sub-districts	0.2010	0.0936	2.1480*	1.2226

Source: Data Processing Results

Description: *) significant at the significance level of 5%

The statistical calculation of all variables on individual characteristics is in the reject H_0 region so that the decision in the test is reject H_0 at a significant level of 5% (table 5). Based on these decisions, the sample used in the study was able to show a significant influence of age on the employment status of children with positive values and female gender on the work status of children with negative values.

Statistics calculated all variables on household characteristics, except the head of household's work status especially the category of not working and the status of household poverty was in the reject H_0 area, so the decision in the test was reject H_0 at the real significance of 5% (table 5). Based on these decisions, the samples used in the study have been able to show a significant influence of female head of household, the head of household who working in the agricultural sector, and households whose has micro and small enterprises towards the work status of children with positive values. Not only that, the decision also shows that the education level of the head of household and the higher number of household members of productive age have a significant influence on the work status of children with negative values.

Furthermore, the statistics of all variables in the characteristics of the village/sub-district are in the reject H_0 area so that the decision in the test is rejected at significance level of 5% (table 5). Based on these decisions, the sample used in the study has been able to show the main source of income for the most of the population in the agricultural sector and the increasing number of micro and small industries has a significant influence on the positive employment status of children.

Odds ratio from the influence of the child's sex (reference category male) to the child's employment status of 0.4565 (table 5). Thus, odds ratio from the influence of the child's sex (reference category female) against the employment status of children by 2.1906. This figure means that boys' tendency to work is 2.1906 times greater than that of girls assuming other independent variables are constant. This is in line with a descriptive analysis that states that boys are more dominant at work and therefore have a greater tendency to work. These findings are not in line with the statement ILO [10] that certain parents' decisions were more likely to employ their children especially their daughters, and Webbink et al. [14] that girls are more often involved in homework. However, these findings are in line with Magdalena's research et al. [25], Aman et al. [26], Giang et al. [27], Cummings [28], Abador & Ayesu [29], and Abador [30].

Odds ratio from the influence of the child's age of 1.5844 (table 5) which means that the child's tendency to work is 1.5844 times greater when his age increases by one year assuming other independent variables are constant. This is in line with a descriptive analysis that states that the increasing age of children is accompanied by an increase in the percentage of child labor. This phenomenon is in line with the statement ILO [10] that families often consider gender and birth order to decide which child to work. Edmonds as cited in Webbink et al. [14], Magdalene et al. [25], Aman et al. [26], Das [31], Giang et al. [27], and Abebe & Fikre [32] state that older children are more likely to work to pay or help around the house, while younger children will attend school when they live in a household.

Odds ratio from the influence of the sex of the head of household of 1.4015 (table 5) which means that the tendency of children who female head of household is 1.4015 times greater to work than males head of household assuming that other independent variables are constant. This phenomenon is in line with the descriptive analysis that children whose heads of household are women are more dominant to work. In addition, Magdalena's research et al. [25], Cummings [28], Cunningham et al. [33], and Sikandar et al. [34] support these findings. Gündüz Hoşgör and Smits and Huisman and Smits as cited in Webbink et al. [14] stating that mother's work outside the home that aims to increase income in the household is considered a resource for child labor. In addition, Francavilla and Gianelli also Bhalotra as cited in Webbink et al. [14] state that mothers who work productively result in their children also working more because their children often participate in work. Not only that, many children are also asked to work or told to work in family businesses, on family farms, or family shops whose survival depends on family members who are willing to work without pay [15].

Odds ratio from the influence of children whose the head of household s do not work and work in the agricultural sector of 1.5648 and 1.9470 (table 5), which means that the tendency of children whose the head of household doesn’t work and work in the agricultural sector, respectively, 1.5648 and 1.9470 are greater to work than children whose head of household works in the non-agricultural sector, assuming other independent variables are constant. This phenomenon is in line with the descriptive analysis that children whose the head of households do not work or work in the agricultural sector are

more dominant to work than those whose the head of households work in the non-agricultural sector. Many children work for their parents, while their parents do other jobs to reduce or avoid labor rental costs [10]. The child works on the family's farm or shop without pay [15]. These findings are also in line with Magdalena's research et al. [25], Das [31], and Abebe & Fikre [32].

Odds ratio from the influence of the head of household's education level of 0.8626 (table 5). In other words, the child's tendency to work was 1.1593 times greater when the head of household's education level was one level lower assuming that other independent variables were constant. These findings are in line with a descriptive analysis that the lower the education level of the head of household, the higher the phenomenon of child labor at that level of education. Webbink et al. [14] stating that parental education is another socio-economic source that causes child labor. The low quality of the head of household's resources results in relatively low income, so the poor and their children are asked to work to meet their daily needs [10]. This research is also in line with Cummings' research [28], Gebregziabher et al. [35], Dayıoğlu et al. [36], and Sikandar et al. [34]. In addition, Breen and Goldthrope as cited in Webbink et al. [14] states that parents who have higher education hope that their children will have at least the same level of education so that the phenomenon of child labor can be reduced.

Odds ratio from the influence of the number of household members of productive age of 0.8747 (table 5). In other words, the child's tendency to work was 1.1432 times greater when the number of working-age household members in the household decreased by one person assuming other independent variables were constant. Patrinos and Psacharopoulos as cited in Webbink et al. [14] and Cunningham et al. [33] declaring a child who has many siblings more helping hands to allow the child to go to school. Not only that, Buchmann as cited in Webbink et al. [14], Das [31], and Cummings [28] state that children who have many siblings can allow the equal distribution of resources not to occur evenly so that some children work and the rest go to school because the family has more workers, especially of productive age, means that they are economically active and work to increase income or take care of the house.

Odds ratio from the influence of household micro and small enterprises ownership status of 2.2093 (table 5) which means that the tendency of children whose households have micro and small enterprises to work is 2.2093 times greater assuming other independent variables are constant. This phenomenon is in line with the descriptive analysis that child labor occurs more often in children living in households that have micro and small enterprises. ILO [10] stated that many children work for their parents, such as working on family land, in micro-businesses, or working for others to reduce or avoid rental labor costs. Children also work on family farms or shops without pay [15].

Odds ratio from the influence of household poverty status of 1.1426 (table 5) which means that the tendency of children whose households are poor to work is 1.1426 times greater assuming that other independent variables are constant. The influence of this household poverty status is not in line with ILO [15] that children from poor families tend to be asked to work or told to work in family businesses or family farms to increase family income. This can be seen from the percentage of children who work based on household poverty status is almost the same. This information implies that the decision of children working in East Nusa Tenggara Province is significantly not influenced by household poverty status, but is influenced by other factors.

Odds ratio from the influence of the main source of income of most villagers/sub-districts amounted to 1.8883 (table 5) which means that the tendency of children to work when living in villages/sub-

districts where the main source of income for most of the population is in the agricultural sector is 1.8883 times greater than that of the non-agricultural sector assuming other independent variables are constant. This phenomenon is according to the descriptive analysis that most of the children work in the village/sub-district. Webbink et al. [14] The agricultural sector accounts for the largest child labor worldwide because working children are usually low-skilled or do not have high skills because they are not in school and have little experience. This causes rural areas with many large agricultural lands or the mining industry to have a high demand for child labor, so the phenomenon of child labor increases.

Odds ratio from the influence of the number of micro and small industries in villages/sub-districts on children's employment status of 1.2226 (table 5) which means that the tendency of children to work when the number of micro and small industries in the village/sub-district they live in increases by one unit by 1.2226 times greater assuming that other independent variables are constant. This phenomenon is in line with the descriptive analysis that many working children live in villages/sub-districts that have micro and small industries, thus giving them access to work. Nkamleu and Kielland as cited in Webbink et al. [14] stating that the demand for child labor will be higher in regions where wealth increases as it increases internship opportunities in those regions. On this occasion, children are more likely to work because they are considered part of the training before entering the workforce. In addition, labor laws aren't usually implemented in small-scale informal companies, so employing children is their attraction [15].

Then, the accuracy of the modeling used in this study is 0.9588 which means that the classification accuracy value of the constructed model is 95.88% with a classification error value of 4.12%. In addition, the area below the ROC is 0.99. This value is greater than 0.9 so it is considered outstanding discrimination. This means that the model is very good at classifying observations accurately. Thus, the binary logistics regression of multilevel random intercept with three levels in this level is already good.

4. Conclusion

This study concluded that child labor is a multilevel issue. The characteristics that affect the employment status of children in East Nusa Tenggara Province in 2024 are the gender and the age of the child at first level. Children who work are generally 15-17 years old. The older the child is, the more likely he is to work. The gender of the head of household, the head of household's work status especially in the agricultural sector, the level education of the head of household, the number of household members of productive age, and also the ownership status of household micro and small enterprises are indicators that affect child labor at second level. In addition, the child usually lives in households who's the head of households are women with a maximum level of elementary education, and work in the agricultural sector, the number of household members of productive age is small, and also has micro and small enterprises. The lower the education level of the head of households and the less the number of household members of productive age, the more likely their children are to work. Meanwhile, the main source of income for most of the population and the number of micro and small industries in villages/sub-districts are indicators that affect child labor at third level. Then, the location where children work is generally in villages/sub-districts where most of the population works in the agricultural sector and many micro and small industries. More micro and small industries in villages/sub-districts cause children to be more likely to work. Poverty isn't the main factor that causes the phenomenon of child

labor in East Nusa Tenggara Province, but gender of the child because it gives the highest tendency for child labor phenomenon in East Nusa Tenggara Province.

The recommendation in this study is that the government provides free school programs or scholarships for high school and equality education programs (B/C package) for children who have dropped out of school, especially boys aged 15-17 years. In addition, the government established a job training center for residents who are at least 18 years old in the area closest to their residence and Perkreditan Rakyat Bank (BPR) facilitates the process of borrowing capital for households that have micro and small enterprises. Then, another suggestion is to make a draft law related to the prohibition of child labor in micro and small industries and a campaign to protect children from child labor.

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