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Child Labour in Indonesia: Supply-Side Determinants

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Abstract

This study analyses the determinants of working among 10–17 years' children and to investigate the presence of Luxury Axiom. Child tends to work as they gets older, has biological ties to the household head and lives in a rural area. The higher levels of household head's education lead to the children's been less likely to work. With regard to the Luxury Axiom, household income is negatively impact the work decision. Birth order is positively related to working and the probability of working decreases by the presence of employed adult. Finally, the impact of the child's activities varies by provinces.
Keywords: Child Labour; Human Capital; Employment

Abstrak

Kajian ini menganalisis faktor-faktor penentu bekerja di kalangan anak-anak yang berusia 10–17 tahun dan untuk menyelidiki keberadaan Luxury Axiom. Anak-anak cenderung untuk bekerja seiring dengan bertambahnya usia mereka, adanya hubungan biologis dengan kepala rumah tangga, dan tempat tinggal mereka di pedesaan. Selain itu, semakin tingginya tingkat pendidikan kepala rumah tangga mendorong ke arah pengurangan kecenderungan anak-anak untuk bekerja. Terkait dengan Luxury Axiom, pendapatan rumah tangga memiliki dampak negatif terhadap keputusan untuk bekerja dan kemungkinan untuk bekerja menurun seiring dengan adanya orang dewasa yang bekerja. Terakhir, besarnya dampak aktivitas anak bervariasi adalah berdasarkan daerah.
Kata kunci: *Pekerja Anak; Modal Manusia; Lapangan Kerja*

JEL classifications: J13; J21; O15

1. Introduction

Child labour remains a serious problem in Indonesia. An estimated 6 to 8 million children exceeded the legal 3-hour day limit and worked in the informal sector[1]. The majority of children found working in Indonesia are in rural areas. They usually worked in agriculture, construction projects, brick kilns, in the fishing and farming industries, and in mines and quarries. Some children worked in large factories and they usually has similar tasks to adults.

The condition of child labour worsened after the tsunami of December 26, 2004 and the Yogyakarta earthquake of May 27, 2006 hit Indonesia. They left thousands of children orphaned or separated from their families (United States Department of Labor 2008). Consequently, 32,735 children have lost either one or both parents, which aprroximately 7,722 children have lost both parents after the catastrophes. In Aceh, approximately 2,500 children were placed in orphanages at a high risk of exploitation. Poverty is undoubtedly a dominant factor in the use of child labour. The 1997–1998 economic crises were found to contribute to poverty among families, forcing more and more children in Indonesia to work to earn enough money to survive. In other words, poverty produces child labour, while child labour

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[1] NCBuy.com. Indonesia Human Rights Report: Status of Child Labour Practices and Minimum Age for Employment. Retrieved Dec 15, 2011 from http://www.ncbuy.com/reference/country/humanrights.html?code=id&sec=6d.

perpetuates poverty, which leads to future poverty (Wahba 2001). Since these children have no bargaining position, they suffer worse conditions than the adults. In addition, the cost of child labour is low and the children would not protest or strike, unlike adult labourers (Dursin 2000). Therefore, companies prefer to hire children compared to adults.

According to the Ministry of Social Affairs in 2005, which is reported by ILO (2011), there were 46,800 street children across 21 provinces in Indonesia. Large numbers of street children were also found in Jakarta and other major urban centres. These children still live with their parents and some of them live in shelters. A literature study conducted by Bina Mandiri Foundation and commissioned by UNESCO in 2005 also found that more than 50% of these street children are still in school. According to Manning (2000), activities undertaken by child laborers include the sale of numerous drinks, food and newspapers, street singing and shoe polishing and these are primarily apparent in larger cities throughout the country, especially in Java and in Jakarta. It is also estimated that more than 1.5 million children aged 10–17 years are working in the agricultural sector in Indonesia.

The largest incidence of the child labourers in agricultural sectors are in the province of North Sumatera (155,196 children), Central Java (204,406 children) and East Java (224,075 children). These children are more likely to work in tobacco plantations, rubber plantations and palm oil plantations. In tobacco plantations, children work for 9 hours a day on watering, planting tobaccos and preparing lands. Children in rubber plantation work as adults do, which is to make incision in rubber trees to tap rubber sap and put vinegar in rubber sap to make it fluid. To complete the task, they spend 4–6 hours of their time per day. In addition, children in palm oil plantations spend almost 4 hours per day on palm picking, collecting loose palm fruits and carrying a load with an average of 10 kilograms over a distance of 250 metres. They were paid in cash; however, 84% of the children's earnings are given to their parents.

The recent child labour survey in Indonesia reports that about 4.05 million or 6.9% of children aged 5 to 17 years are considered as working children[2] and almost 43.3% of them were child labour[3]. Most of them are more likely to be male than female (Central Board of Statistics (BPS); ILO-IPEC 2010). Working children are more common in the informal sector. About two-thirds of these children work as unpaid family workers. In particular, 24% of working children were employees, only 10% were self-employed and 65% were unpaid family workers with the ratio of 146 boys for every 100 girls. In terms of occupation, about 53% of working children were engaged in agricultural-related work such as animal husbandry, forestry,fishing and hunting (Central Board of Statistics (BPS); ILO-IPEC 2010). The survey further reports that school participation rates are still high, at about 80% for almost all children aged below 15 years. In particular, the rates are higher in urban areas than in rural areas and are almost the same for boys compared to girls.

1.1. Defining Child and Child Labour

International Labour Organization (ILO) Minimum Age Convention, 1973 (No. 138) and United Nations Convention on the Rights of the Child (United Nations Children Fund/UNICEF n.d.)[4] define children as a person below the age of 18 years old. Generally, they have less right compared to adults and being identified as those who are not able to make serious decisions (UNICEF n.d.), and therefore, they legally should be under the responsibility of an adult. The definition of a child in Indonesia is changed from time to time. Article 1 of Act Number 12 Year 1948 stated that a child is a male or female person aged less than or equal to 14 years old. Article 1 of Act Number 25 Year 1997 concerning manpower specified that a child is a male or female person aged less than 15 years old. In addition, Act Number 13 Year 2003 concerning manpower defined a child as every person who is under 18 years old. The first two Acts are no more applicable. Thus, according to Indonesian law (Act Number 13 Year 2003), a child is considered as every person who is under 18 years old (Budiyono 2013).

[2]'Working children' is refer to a positive participation of children in the economics activities which is not detrimental to their health or mental and physical development (a beneficial work that encourages the child development).

[3]'Child labour' is refer to all the kinds of work which occur in violation of the international conventions.

[4]Definition of the Child. Retrieved November 11, 2011 from https://www.unicef.org/crc/files/Guiding_Principles.pdf.

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According to the Article 2 of Act Number 12 Year 1948, a child is not allowed to work and entrepreneurs are not allowed to hire a child. This is constituted in the Article 95 Subsection (1) of Act Number 25 Year 1997 and Article 68 of Act Number 13 Year 2003. However, there is exemption for children aged between 13 to 15 years old to do light work that does not stunt or distract their physical, mental and social developments. Based on the definition given by ILO of Convention 138, child labour is considered as a child aged below 15 years old that actively participates in economic activity. Economic activity itself involves any productive activities by children such as casual, unpaid and illegal work, including work in the informal sector. However, this does not cover household chores in the child's own household. Technically, the term child labour refers to 'children in employment' for at least one hour during the reference period. On the other hand, child labour is described as the participation of school-aged children on a regular basis in the labour force in order to earn a living for themselves or to supplement household income (Canagarajah and Coulombe 1997).

However, not all type of employment is considered as child labour. ILO[5] define child labour as work done by children that deny them of their childhood, potential and dignity, and that is damaging to their health, physical and mental development. The work also refers to any activity that interferes with their schooling[6], requiring them to combine schooling with excessively long and heavy work. According to UNICEF[7], the term child labour covers the worst forms of child labour including prostitution, pornography, slavery and other illicit activities that is likely to harm children's health, safety and morals. Children are classified in child labour when they are in employment below the age of 15 and are involved in hazardous unpaid household services for long hours, in an unhealthy work environment, in a dangerous location with unsafe equipment or heavy loads.

However, child labour in 'hazardous work' and 'worst forms' are hard to identify in reality by a household survey. Therefore, child labour covers working children who are engaged in any kind of work as indicated by who are reported working during survey. As reported in Statistics Indonesia's publication of 'Working Children in Indonesia 2009' based on the age group and type of work, child labour consists of components as in the Table 3-1. It clearly shows that child labour[8] consists of all working children aged 5 to 12, regardless of their working hours, children aged 13 to 14 working more than 15 hours per week (they are allowed to engaged in light work) and children aged 15 to 17 working more than 40 hours per week (40 hours as an indicator for hazardous work). Nevertheless, hazardous works remains difficult to measure by the survey.

A cut-off age 10–17 years is selected for this analysis. Because of data limitation, the lower age limit is 10 years since information on employment is collected only from individuals age 10 and above in both data sets. This study includes those children above age 14 as well (15–17 years), for the main purpose of the analysis to determine the factors of their involvement in non-leisure activity. In addition, those children above the age of 14 are still considered as school-age children and their time allocation is associated with household's decision-making process. The justification for selecting 17 years as the maximum age cut-off since the data suggest that there are some children in these age group of 10–17 years are still in primary school. According to the education system of Indonesia, student at the age of 17 years should be at the end of secondary school. However, a few children having a late enrollment, especially in rural areas, and this is common in Indonesia. Thus, inclusion of children aged 17 years allows us to consider late entry, grade repetition and misreporting of age. Normally, children under aged 18 years never leave home, except daughter's that join their husband's family after marriage.

[5] 'What is child labour'. International Labour Organization. Retrieved Dec, 13 2011 from http://www.ilo.org/ipec/facts/lang--en/index.htm.

[6] The work deprives children of their opportunity to attend school and requiring them to leave school earlier than others.

[7] 'Child Protection from Violence, Exploitation and Abuse'. UNICEF. Retrieved Dec, 14 2011 from http://www.unicef.org/protection/57929_58009.html.

[8] The definition of child labour and age-group limits may differ across countries depending on the national circumstances. In Indonesia, 5 years is the official age in countries for entry to compulsory primary level schooling, 12–14 years are allowed to do light work that is permissible by legislations and 15 years reflects the age at entry to labour market.

1.2. Child Labour in Indonesia

According to the Child Labour Survey 2009, overall labour force participation rates from 2004 until 2009 has slightly increased.

As Figure 1 shows, in overall, labour force participation rate for children aged 10–17 has slightly increased over time. Between 2004 and 2009, for example, the increase was from about 11 to 12.1%. However, these numbers are considered low since most of the children are still of school-going age level. The figure also shows a high increase in the number between 2005 and 2007 compared to other years. Thus, this study is aimed to investigate the factors which may reflects the trend among child labour in Indonesia.

2. Literature Review

Studies in Indonesia show that older children are more likely to work, and boys are also found to be more likely to work than girls (Priyambada, Suryahadi, & Sumarto 2005; Chang 2006; Triningsih & Ichihashi 2010). Employed children below the age of 15 are found in small and medium-scale factories, working the same hours as adults (8 to 10 hours per day) and being paid either by piece rates or a daily wage. Pitriyan (2006) reports that the number of labouring children in district[9] levels in Indonesia are more than those in municipalities[10], due to having better access to education. The majority of working children in district level are boys, while, in municipalities, girls dominate the proportion of working children.

In terms of the parents' education, a mother's educational attainment has a greater impact than that of father's. In particular, there exists a negative relationship between parents' years of schooling and a child's likelihood to work, with a statistical significance level of 1% (see also Priyambada, Suryahadi, & Sumarto 2005). Triningsih & Ichihashi (2010) find similar results when comparing the education of the father to the mother. Mother's education is more significant, which means mothers with higher education are less likely to send their children to work. This finding is also supported by Chang (2006). In particular, in rural areas, mothers have more bargaining power because they are more likely to stay at home, and consequently are closer to their children.According to (Chuta 2017), women usually stay home and take care of the household and the children. However, in urban areas, fathers have more bargaining power in deciding the status of their children, since they are household heads and since both mother and father are usually working. As a study by Kambhampati (2009) in India, mother's education and employment significantly affect child work, however, the bargaining impact is not visible in mother wage earnings compared to the fathers.

The sector of parental employment correspondingly plays a significant role in determining the likelihood of a child's work. According to Priyambada, Suryahadi, & Sumarto (2005), household heads who work in the agricultural sector are more likely to send their children to work than those who work in the non-agricultural sector (see also Pitriyan 2006). In addition, household-heads, who work as family workers, are also more likely to require their children to work than those who are self-employed or work as wage labourers.

The initial reason why children are involved in the labour market was to support their families, contribute to overall household income and to earn a living for themselves, which, in turn, can help to pay for their own education (Wahba 2001). Poverty plays a major role in the vulnerability of children and child labour in Indonesia (see Chang 2006; Priyambada, Suryahadi, & Sumarto 2005). Using the Indonesia Family Life Survey (IFLS) 1997 and 2000, Chang (2006) found that as income increases, children's work likelihood will fall at a diminishing rate. In particular, for per capita expenditure greater than US$32.40 per month, the likelihood of boys working will increase with income. However, the impact from having a higher income is not significant in mitigating the likelihood of girls' work. Bessell (1999) showed that among the poorest 20% of households, about 10% of household expenditure was spent on children in primary schools. Additionally, about 18.5% and 28.4% were spent on children in junior secondary school and senior secondary school, respectively.

[9]The main sector of employment is in agriculture. For socio-cultural aspects, population in district area has low level of education and low level of health with a lower GDP value compared to the municipality.

[10]Opposite to the district level.

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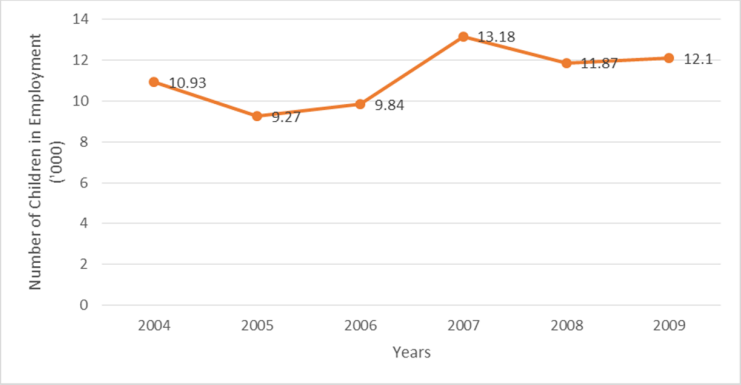

Figure 1: Number of Children in Employment (in thousands), 2004-2009 in Indonesia
Source: Indonesia Child Labour Survey, 2009.

Chang (2006) also found that land ownership was positively associated with child labour. This positive correlation entails the fact that land ownership offers readily available work for children who serve as an inexpensive source of labour, thus dominating the wealth effect from asset ownership. As in the study by Triningsih & Ichihashi (2010), land ownership is significant for child labour, which implies that children in rich-lands households are more likely to be child workers than the children in land-poor households.

Evidence on the trade-off between work and school reveals that working does not always completely eliminate a child's opportunity to obtain a formal education, as only a half of child workers do not attend school. On the other hand, children who work have a 30% lower probability of attending school than those who do not work (Priyambada, Suryahadi, & Sumarto 2005). Manning (2000) studies the economic crisis and child labour in Indonesia and provides evidence of high dropout rates from primary schools and low continuation rates from primary to lower secondary schools. According to Amin, Quayes, & Rives (2004), gender differences in attendance rates among children are statistically significant at the aggregated level and show that girls are more likely to remain enrolled in school and perform schoolwork compared to boys (see also Hsin 2007).

Focusing on the effects of child market work on the long-term growth of human capital, Sim, Suryadarma, & Suryahadi (2012) used the outputs of the human capital function such as numeracy skills, cognitive skills and pulmonary function as measures of human capital among working children in Indonesia over a 7-year period. They implement 2SLS estimation on the National Labour Force Survey (SAKERNAS) 1986–2007 and two waves of Indonesia Family Life Survey (IFLS) 2000–2007 and find a strong negative effect on child labour in terms of numeracy skills and cognitive skills. In particular, the probability of children who participated in market work in 2000 is reduced by 3.4% and 3.3% in numeracy skills and cognitive skills, respectively, compared to children who did not participate in market work in 2000. The adverse effects were found to be larger for girls than boys. Moreover, boys experience much smaller growth in pulmonary function (significantly affected) since they are mostly found working in areas with higher levels of air pollution. This study also confirmed that children who were working outdoors for a wage have a much lower growth in skills and pulmonary function compared to those who were working in the family business because of the longer working hours allocated while working outside the family.

3. Data

This study uses data of The Indonesia National Socioeconomic Survey[11] (SUSENAS), 2005 and

[11] Estimations are run for the National Labour Force Survey (SAKERNAS) as well. However the results are not much different from the SUSENAS data sets. The SUSENAS data sets were chosen since they have information on the presence of children aged below 10 years and on land ownership compared to SAKERNAS.

2007. SUSENAS is a series of large-scale multipurpose socioeconomic surveys, first conducted in 1963. The general objective is to gather complete, accurate and timely data on important characteristics of the population which are closely related with measurement of well-being in various categories of the Indonesia population. In particular, SUSENAS provides raw data about people's welfare which is important to make policies and as a tool to evaluate development. Although SUSENAS contains all levels of children age, children's activities are only collected for children with the age of 10 years and above. In particular, SUSENAS records data on individual household members characteristics including activities during previous week such as working, temporarily not working, looking for work, attending school, doing housework and others. For those who were working, questions are asked about the total hours of work (this information is not provided in SUSENAS 2007), as well as occupation and sector of employment including monthly earnings for all wage earners in the household. Therefore, our sample consists of 155,660 children comprising 82,639 boys and 73,021 girls in 2005. In 2007, the sample consists of 156,248 children with 85,026 boys and 71,222 girls.

3.1. Dependent and Independent Variables

3.2. Child Characteristics

According to Priyambada, Suryahadi, & Sumarto (2005), labour market participation of children is influenced by their age. In particular, the probability to enter the labour market is higher as the child gets older, so older children are more likely to work. Child's gender also plays an important role on explaining their participation in the labour market. Generally, child labour incidence is significantly more prevalent among boys than girls. However, according to Canagarajah and Coulombe (1997), boys are found more likely to go to school compared to girls in Ghana. Hence, dummy variables for girls are created to investigate the participation of females compared to males in working.

Furthermore, the blood-bond between parents and children shows the basis for parental altruism towards their children. Therefore, the dummy variable of a "biological child to the household head" is included to investigate the parent's favouritism towards their own children compared to other children in the household. In a study by Moyi (2011) of child labour in Kenya, a biological child of the head of the household was found to have a lower probability of working compared to a non-biological child of the head (see also Ndjanyou & Djiénouassi 2010).

3.3. Household Characteristics

The head of the household's characteristics such as age and gender is related to the child labour phenomenon. Child labour is more prevalent among households headed by females than by males. As found by Priyambada, Suryahadi, & Sumarto (2005), in Indonesia the incidence of child labour among female-headed households was 9% to 10%, which is 2% to 3% higher than the prevalence of child labour among male-headed households.

In the case of a household head's education, empirical studies show that the level of parents' education is negatively associated with the probability of child working. Nwaru, Odoemelam, & Egbulefu (2010) finds that the education of household head was negatively associated with child labour in Abia State of Nigeria, and it was significant at 1% level (see also Fafchamps & Wahba 2004; de Carvalho Filho 2008; Okurut & Yinusa 2009). According to Priyambada, Suryahadi, & Sumarto (2005), the choice of the employment sector of children in the labour market is affected identically by the employment sector of their household heads (basically their parents). A study by Parikh & Sadoulet (2005) finds that children are more likely to work if their parents are working as self-employed or employees compared to children of employers, regardless of the sector of parent activity. Furthermore, they also concluded that children are more likely to work in areas with high average adult employment rates.

Generally, large households have more labour availability to cover insufficient capital to send all children to school and cover expenses (Kamga 2010). In addition, the probability that children go to work is higher with a larger household size since the high number of individuals in the household decreases income per capita which increases the dependency ratio (Jeong 2005). Hence, household size is positively related to work. Furthermore, child's birth

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order was found to be an important factor on child labour decisions of a family. Empirical studies found that sons who are first-borns are more likely to work than later-born sons. According to Emerson & Souza (2008), early born children could command relatively higher wages than their later-born siblings. Thus, they are more likely to be sent to work as child labourers. On the other hand, when the households are financially constrained, earned income by older children might be used to finance the education of younger children.

Incidence of child labour is often related to poverty. Hence, it is often argued that child labour is a function of family income (Grootaert 1998). In particular, low-income households may send their children to work to be able to accumulate sufficient household income, meaning that the probability to work increases as household income decreases. Furthermore, according to Rickey & Jayachandran (2009), higher family income raises current consumption that raises the maximum amount that the head of the household will be willing to pay for an extra unit of human capital. Therefore, household income (excluding the child's wage) is used as a proxy of household wealth to examine its effect on the probability of child working. However, based on a study by Rogers & Swinnerton (2003), upsurges in parental income do not always lead to upsurges in the probability to go to school and decreases the probability to work. Another negative income effect was found by Cartwright & Patrinos (1999) in rural Columbia, Cigno, Rosati, & Tzannatos (2001) in rural India, Ilahi (2001) for rural girls in Peru, Rosati & Tzannatos (2006) in Vietnam, Ray (2000) in Peru, and Ersado (2005) for rural children in Nepal, Peru, and Zimbabwe. It is therefore important to consider this effect on child labour in Indonesia.

3.4. Community characteristics

In many countries, child labour is mostly found to be a rural phenomenon (see also Canagarajah & Coulombe 1997; Chang 2006; Nyyssölä 2007). Working children are mostly concentrated in rural areas. The survey provides information on household location in rural or urban areas. Thus, the rural dummy variable is equal to 1 for a household that is located in rural areas and 0 otherwise. Furthermore, the location (province) of the household residence should also be used. Since provinces are not homogenous in terms of employment opportunities or the capacity, quality and distribution of school infrastructure, this factors might have an impact on the pattern and intensity of child labour. Therefore, dummy variables representing provinces in Indonesia are also included in the estimation. There are 33 provinces in Indonesia, officially grouped into 7 geographical units. Each province has its own local government, which is headed by a governor and has its own legislative body. The governor, members and local representative bodies are elected by popular vote every 5 years (*factsanddetails.com* n.d.)[12]. However, five provinces have a special status. Firstly, Aceh is implementing Sharia Law as the regional law of the province. Special Region of Yogyakarta is the only province with a sovereign monarchy within Indonesia. Papua and West Papua are implementing sustainable development. Finally, the Special Capital Region of Jakarta is known as the capital and largest city of Indonesia and one of the most populous urban agglomerations in the world. Therefore, by listing all the provinces in this study, it can provide a clear picture of incidence of child labour for the whole country. SUSENAS 2005 included 31 of the 33 provinces. West Sulawesi and Papua were not included in the survey, while SUSENAS 2007 reported all the provinces.

3.5. Econometrics Specification

We estimate a model of child labour using a probit model, which is a baseline estimation model to find out in a more generic sense, factors explaining the participation of children in the labour market. The purpose of the coefficients obtained in probit estimation provide a sense of the direction of the effects of the covariates on child's participation in the labour market and their significance. Therefore, the results cannot be used for magnitude of impact analysis. Hence, the marginal effects are presented to examine the magnitude of impact.

The probit model assumes that there is a latent variable Y_i^* that can be expressed as a linear function of variables that affect the probability of participation in child labour.

[12]Elections in Indonesia. Retrieved May 7, 2014 from http://factsanddetails.com/indonesia/Government_Military_Crime/sub6_5a/entry-4062.html.

Thus, the probit estimation is of the following form:

$$\mathrm{Y_i^*} = \mathrm{X_i}\beta + \mathrm{u_i}, \;\; \mathrm{i} = 1, ..., \mathrm{n} \qquad (1)$$

Where, $\mathrm{X_i}$ is a set of explanatory variables (including child, household and community characteristics) for child i, β is the vector of coefficients that is estimated and $\mathrm{u_i}$ is the error term (is distributed according to the cumulative normal distribution function). The latent variable $\mathrm{Y_i^*}$ is unobservable and instead a dummy variable is defined as $\mathrm{Y_i} = 1$ if a child participates in child labour and zero otherwise:

$$\mathrm{Y_i} = \begin{cases} 1 & \text{if } \mathrm{Y_i} > 0 \\ 0 & \text{otherwise} \end{cases}$$

As mentioned earlier, the estimated coefficients provide an indication of the significance and the direction of the effect of an explanatory variable on this probability. In order to determine the probabilities in percentage point, we need to calculate the marginal effects. Firstly, the probability of child labour force participation can be expressed as:

$$\mathrm{P(LFP} = 1|\mathrm{X_i}) = \int_{-\infty}^{\beta'\mathrm{x}} \theta(\mathrm{z(dz)} \qquad (2)$$

Where, z is the probability density function of a standard normal variable and θ is the cumulative normal distribution. Since most of explanatory variables are dichotomous dummy variables, the average effect of $\mathrm{X_i}$ on the probability of labour force participation is given as:

$$\frac{\partial \mathrm{P(LFP} = 1)}{\mathrm{dX_i}} = \theta(\beta'\mathrm{X_i})\beta_\mathrm{k} \qquad (3)$$

Thus, these effects may be interpreted as the change in probability of labour force participation resulting from a change in one category of a variable to another. The average effects for discrete variable are calculated as:

$$\mathrm{P(y_i} = 1|\mathrm{x_i} = 1) - \mathrm{P(y_i} = 1|\mathrm{x_i} = 0) \qquad (4)$$

These effects captures the marginal change in probability of a child working from an infinitesimal change in each independent, continuous variable, and by default, the discrete change in the probability for dummy variables[13].

[13]STATA Help Manual.

4. Findings

The age dummies of the child are statistically significant on the probability of working (Table 1 and Table 2), hence children are more likely to work as they get older. In other words, the grown up children give more time to economic work (Chang 2006; Ndjanyou & Djiénouassi 2010). Age square is significantly positive (U-shape relationship) which signifies that the probability of children joining workforce does increase or may it may rise as they grow up (Table 1A and 2A). In terms of gender, girls are almost 3% less likely to work compared to boys in 2005. The figure for 2007 is 4%. The absence of biological ties with the household head increases the working probability of the child. In particular, biological children are 6.9% less likely to work compared to other children in the household in 2005 and 2007. The same findings were also observed in Ethiopia by Bhalotra (2003) and in Nigeria by Badmus & Akinyosoye (2008).

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Table 1: Marginal Effects of Probit Estimation of Work Choices of All Children, SUSENAS 2005

Variables	All	Gender		Region	
		Boys	Girls	Urban	Rural
Age Groups					
10 to 12 years	-0.0582*	-0.0721*	-0.0429*	-0.0322*	-0.0743*
	(0.0015)	(0.0022)	(0.0019)	(0.0017)	(0.0021)
15 to 17 years	0.0960*	0.1159*	0.0721*	0.0544	0.1197*
	(0.0021)	(0.0031)	(0.0027)	(0.0027)	(0.0029)
Child Characteristics					
Girls	-0.0298*	-	-	-0.0065*	-0.0474*
	(0.0010)	-	-	(0.0010)	(0.0016)
Biological Child	-0.0692*	-0.0365*	-0.0925*	-0.0955*	-0.0341*
	(0.0035)	(0.0045)	(0.0050)	(0.0053)	(0.0043)
Household Head's Characteristics					
Age	-0.0003*	0.0001	-0.0005*	-0.0005*	0.0001
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Female Headed	0.0155	0.0074	0.0252	0.0360**	-0.0187
	(0.0189)	(0.0259)	(0.0269)	(0.0251)	(0.0212)
Household Head's Education					
Completed Primary	-0.0337*	-0.0383*	-0.0288*	-0.0130*	-0.0452*
	(0.0019)	(0.0029)	(0.0023)	(0.0023)	(0.0028)
Junior Secondary	-0.0493*	-0.0602*	-0.0376*	-0.0244*	-0.0637*
	(0.0012)	(0.0018)	(0.0014)	(0.0015)	(0.0017)
Senior Secondary	-0.0621*	-0.0773*	-0.0461*	-0.0399*	-0.0721*
	(0.0012)	(0.0018)	(0.0015)	(0.0022)	(0.0015)
Tertiary Education	-0.0502*	-0.0706*	-0.0330*	-0.0263*	-0.0685*
	(0.0010)	(0.0013)	(0.0014)	(0.0013)	(0.0014)
Household Head's Employment					
Employer	0.0364*	0.0479*	0.0227*	0.0105*	0.0483*
	(0.0016)	(0.0025)	(0.0020)	(0.0019)	(0.0021)
Employee	-0.0113*	-0.0112*	-0.0103*	-0.0099*	-0.0060***
	(0.0018)	(0.0029)	(0.0021)	(0.0015)	(0.0033)
Casual Worker	0.0196*	0.0283*	0.0110*	0.0083*	0.0274*
	(0.0027)	(0.0042)	(0.0032)	(0.0027)	(0.0040)
Unpaid Worker	0.0585*	0.0727*	0.0436*	0.0085	0.0857*
	(0.0103)	(0.0162)	(0.0124)	(0.0092)	(0.0147)
Others	0.0174*	0.0238*	0.0105**	0.0022	0.0345*
	(0.0036)	(0.0056)	(0.0043)	(0.0027)	(0.0064)
Income (Rp.)					
Household Income	-0.0179*	-0.0187*	-0.0156*	-0.0136*	-0.0092***
	(0.0031)	(0.0048)	(0.0038)	(0.0028)	(0.0055)
Square of Household Income	0.0042**	0.0031	0.0041***	0.0042**	0.0006
	(0.0016)	(0.0024)	(0.0021)	(0.0016)	(0.0028)
Household Characteristics					
Birth Order	0.0177*	0.0242*	0.0110*	0.0087*	0.0238*
	(0.0011)	(0.0018)	(0.0014)	(0.0013)	(0.0017)
Number of Children	-0.0013	-0.0027	0.0001	-0.0008	-0.0022
	(0.0012)	(0.0019)	(0.0015)	(0.0013)	(0.0018)

Continued on next page

Table 1 Continued

Variables	All	Gender		Region	
		Boys	Girls	Urban	Rural
Household Size	-0.0055*	-0.0078*	-0.0029*	-0.0017**	-0.0082*
	(0.0005)	(0.0008)	(0.0007)	(0.0005)	(0.0008)
Rural	0.0234*	0.0332*	0.0139*	-	-
	(0.0012)	(0.0019)	(0.0015)	-	-
Province					
NAD	-0.0414*	-0.0437*	-0.0357*	-0.0023	-0.0058*
	(0.0015)	(0.0031)	(0.0014)	(0.0074)	(0.0022)
North Sumatera	-0.0086**	0.0030	-0.0156*	0.0173***	-0.0083
	(0.0033)	(0.0063)	)0.0031)	(0.0112(	(0.0049)
West Sumatera	-0.0340*	-0.0295*	-0.0329*	0.0080	-0.0491*
	(0.0020)	(0.0044)	(0.0016)	(0.0098)	(0.0028)
Riau	-0.0394*	-0.0416*	-0.0340*	0.0020	-0.0562*
	(0.0017)	(0.0035)	(0.0014)	(0.0088)	(0.0024)
Jambi	-0.0337*	-0.0355*	-0.0292*	0.0117	-0.0491*
	(0.0021)	(0.0041)	(0.0020)	(0.0119)	(0.0029)
South Sumatera	-0.0355*	-0.0340*	-0.0330*	0.0085	-0.0518*
	(0.0019)	(0.0039)	(0.0015)	(0.0100)	(0.0025)
Bengkulu	-0.0371*	-0.0345*	-0.0345*	0.0084	-0.0539*
	(0.0019)	(0.0042)	(0.0014)	(0.0118)	(0.0025)
Lampung	-0.0297*	-0.0236*	-0.0308*	0.0195***	-0.0449*
	(0.0024)	(0.0050)	(0.0018)	(0.0133)	(0.0031)
Bangka Belitung	-0.0096**	0.0158***	-0.0241*	0.0324**	-0.0147**
	(0.0044)	(0.0095)	(0.0030)	(0.0166)	(0.0064)
Riau Islands	-0.0243*	-0.0173***	-0.0261*	0.0243**	-0.0422*
	(0.0039)	(0.0080)	(0.0031)	(0.0147)	(0.0056)
DKI Jakarta	-0.0158*	-0.0349*	-0.0099**	0.0277**	-
	(0.0039)	(0.0051)	(0.0043)	(0.0136)	-
West Java	-0.0247*	-0.0244*	-0.0228*	0.0234**	-0.0389*
	(0.0025)	(0.0046)	(0.0025)	(0.0120)	(0.0033)
Central Java	-0.0288*	-0.0334*	-0.0232*	0.0181**	-0.0433*
	(0.0023)	(0.0038)	(0.0025)	(0.0111)	(0.0030)
DIY	-0.0372*	-0.0413*	-0.0309*	0.0117	-0.0566*
	(0.0026)	(0.0051)	(0.0023)	(0.0125)	(0.0034)
East Java	-0.0305*	-0.0265*	-0.0304*	0.0145	-0.0443*
	(0.0022)	(0.0043)	(0.0019)	(0.0104)	(0.0030)
Banten	-0.0303*	-0.0360*	-0.0245*	0.0134	-0.0444*
	(0.0025)	(0.0043)	(0.0026)	(0.0114)	(0.0036)
Bali	0.0019	-0.0011	0.0028	0.0438**	0.0021
	(0.0050)	(0.0080)	(0.0058)	(0.0188)	(0.0074)
West Nusa Tenggara	-0.0264*	-0.0206**	-0.0272*	0.0248***	-0.0411*
	(0.0028)	(0.0057)	(0.0022)	(0.0144)	(0.0037)
East Nusa Tenggara	-0.0180*	-0.0103***	-0.0210*	0.0044	-0.0251*
	(0.0029)	(0.0056)	(0.0026)	(0.0094)	(0.0041)
West Kalimantan	-0.0207*	-0.0161**	-0.0222*	0.0168***	-0.0303*
	(0.0028)	(0.0054)	(0.0025)	(0.0123)	(0.0039)
Central Kalimantan	-0.0338*	-0.0353*	-0.0296*	0.0072	-0.0489*
	(0.0020)	(0.0039)	(0.0019)	(0.0102)	(0.0028)
South Kalimantan	-0.0187*	-0.0100	-0.0227*	0.0296**	-0.0300*
	(0.0032)	(0.0062)	(0.0027)	(0.0155)	(0.0042)

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Table 1 Continued

Variables	All	Gender		Region	
		Boys	Girls	Urban	Rural
East Kalimantan	-0.0325*	-0.0275*	-0.0319*	0.0165***	-0.0511*
	(0.0023)	(0.0049)	(0.0017)	(0.0118)	(0.0029)
North Sulawesi	-0.0323*	-0.0266*	-0.0316*	0.0342**	-0.0527*
	(0.0026)	(0.0056)	(0.0019)	(0.0171)	(0.0030)
Central Sulawesi	-0.0207*	-0.0021	-0.0299*	0.0184	-0.0313*
	(0.0031)	(0.0069)	(0.0020)	(0.0141)	(0.0041)
South Sulawesi	-0.0247*	-0.0064	-0.0331*	0.0208*	-0.0372*
	(0.0025)	(0.0056)	(0.0016)	(0.0124)	(0.0033)
Southeast Sulawesi	-0.0233*	-0.0108***	-0.0281*	0.0046	-0.0315*
	(0.0028)	(0.0060)	(0.0020)	(0.0095)	(0.0040)
Gorontalo	-0.0192*	-0.0011	-0.0268*	0.0234***	-0.0301*
	(0.0040)	(0.0090)	(0.0027)	(0.0160)	(0.0055)
Maluku	-0.0427*	-0.0466*	-0.0354*	-0.0091	-0.0596*
	(0.0015)	(0.0034)	(0.0013)	(0.0067)	(0.0022)
North Maluku	-0.0421*	-0.0499*	-0.0330*	-0.0081	-0.0585*
	(0.0016)	(0.0029)	(0.0016)	(0.0066)	(0.0023)
Number of Observations[1]	155,66	82,639	73,021	54,816	100,844
Pseudo R^2	0.2309	0.2471	0.2047	0.2455	0.2205
Log Likelihood	-39.502.403	-23.588.280	-15.486.651	-9.724.564	-29.400.064

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Table 2: Marginal Effects of Probit Estimation of Work Choices of All Children, SUSENAS 2007

Variables	All	Gender		Region	
		Boys	Girls	Urban	Rural
Age Groups					
10 to 12 years	-0.0739*	-0.0922*	-0.0520*	-0.0387*	-0.0961*
	(0.0017)	(0.0026)	(0.0023)	(0.0021)	(0.0025)
15 to 17 years	0.1052*	0.1225*	0.0811*	0.0567*	0.1325*
	(0.0023)	(0.0033)	(0.0030)	(0.0028)	(0.0032)
Child Characteristics					
Girls	-0.0405*	-	-	-0.0038*	-0.0675*
	(0.0013)	-	-	(0.0015)	(0.0019)
Biological Child	-0.0685*	-0.0357*	-0.0885*	-0.1041*	-0.0322*
	(0.0034)	(0.0046)	(0.0046)	(0.0051)	(0.0043)
Household Head's Characteristics					
Age	-0.0003*	0.0001	-0.0006*	-0.0007*	0.0001
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Female Headed	-0.0181	-0.0240	-0.0163	-0.0150	-0.0112
	(0.0218)	(0.0312)	(0.0269)	(0.0197)	(0.0363)
Household Head's Education					
Completed Primary	-0.0398*	-0.0446*	-0.0338*	-0.0231*	-0.0482*
	(0.0026)	(0.0038)	(0.0033)	(0.0034)	(0.0037)
Junior Secondary	-0.0570*	-0.0648*	-0.0423*	-0.0333*	-0.0707*
	(0.0018)	(0.0028)	(0.0024)	(0.0023)	(0.0028)
Senior Secondary	-0.0744*	-0.0905*	-0.0542*	-0.0517*	-0.0854*
	(0.0018)	(0.0027)	(0.0024)	(0.0030)	(0.0026)
Tertiary Education	-0.0626*	-0.0871*	-0.0404*	-0.0377*	-0.0842*
	(0.0018)	(0.0024)	(0.0025)	(0.0020)	(0.0030)
Household Head's Employment					
Employer	0.0549*	0.0576*	0.0411*	0.0368*	0.0501*
	(0.0026)	(0.0036)	(0.0030)	(0.0034)	(0.0033)
Employee	0.0031	0.0075**	-0.0019	-0.0016	0.0112**
	(0.0022)	(0.0034)	(0.0027)	(0.0020)	(0.0036)
Casual Worker	0.0324*	0.0468*	0.0164**	0.0094	0.0467*
	(0.0072)	(0.0113)	(0.0086)	(0.0066)	(0.0112)
Unpaid Worker	0.0659*	0.0605*	0.0606*	0.0437*	0.0594*
	(0.0093)	(0.0128)	(0.0124)	(0.0144)	(0.0594)
Others	0.0247*	0.0189**	0.0251*	0.0061	0.0330*
	(0.0051)	(0.0073)	(0.0066)	(0.0043)	(0.0083)
Income (Rp.)					
Household Income	-0.0105*	-0.0256*	-0.0025***	-0.0026**	-0.0324*
	(0.0015)	(0.0021)	(0.0013)	(0.0008)	(0.0023)
Square of Household Income	0.0004**	0.0009*	0.0002**	0.0001**	0.0019*
	(0.0001)	(0.0002)	(0.0001)	(0.00004)	(0.0002)
Household Characteristics					
Birth Order	0.0199*	0.0270*	0.0117*	0.0092*	0.0272*
	(0.0013)	(0.0021)	(0.0016)	(0.0016)	(0.0019)
Number of Children	0.0009	-0.0031	0.0036**	0.0036**	-0.0034
	(0.0014)	(0.0022)	(0.0017)	(0.0016)	(0.0021)

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Table 2 Continued

Variables	All	Gender		Region	
		Boys	Girls	Urban	Rural
Household Size	-0.0074	-0.0072*	-0.0058*	-0.0044*	-0.0080*
	(0.0007)	(0.0011)	(0.0009)	(0.0007)	(0.0010)
Rural	0.0389*	0.0532*	0.0225*	-	-
	(0.0015)	(0.0023)	(0.0020)	-	-
Province					
NAD	-0.0641*	-0.0663*	-0.0554*	-0.0213**	-0.0901*
	(0.0020)	(0.0039)	(0.0017)	(0.0051)	(0.0028)
North Sumatera	0.0195*	0.0308*	0.0092	0.0168***	0.0360*
	(0.0054)	(0.0088)	(0.0059)	(0.0107)	(0.0077)
West Sumatera	-0.0441*	-0.0371*	-0.0436*	0.0085	-0.0674*
	(0.0031)	(0.0060)	(0.0027)	(0.0102)	(0.0040)
Riau	-0.0479*	-0.0352*	-0.0500*	0.0033	-0.0708*
	(0.0031)	(0.0065)	(0.0022)	(0.0101)	(0.0041)
Jambi	-0.0501*	-0.0417*	-0.0499*	0.0211***	-0.0779*
	(0.0029)	(0.0061)	-0.0279*	(0.0022)	(0.0135)	(0.0036)
South Sumatera	-0.0362*	(0.0066)	-0.0383*	0.0101	-0.0564*
	(0.0035)	-0.0382*	(0.0031)	(0.0108)	(0.0046)
Bengkulu	-0.0462*	(0.0064)	-0.0468*	0.0118	-0.0708*
	(0.0032)	0.0129	(0.0025)	(0.0124)	(0.0040)
Lampung	-0.0112**	(0.0093)	-0.0310*	0.0252**	-0.0254*
	(0.0050)	0.0654*	(0.0041)	(0.0139)	(0.0064)
Bangka Belitung	0.0180**	(0.0149)	-0.0154**	0.0351**	0.0294**
	(0.0079)	-0.0345**	(0.0067)	(0.0163)	(0.0119)
Riau Islands	-0.0427*	(0.0089)	-0.0426*	-0.0019	-0.0629*
	(0.0046)	-0.0440*	(0.0039)	(0.0092)	(0.0076)
DKI Jakarta	-0.0143**	(0.0080)	-0.0091	0.0159***	-
	(0.0059)	-0.0620*	(0.0062)	(0.0109)	-
West Java	-0.0504*	(0.0042)	-0.0378*	0.0022	-0.0820*
	(0.0027)	-0.0498*	(0.0031)	(0.0085)	(0.0032)
Central Java	-0.0453*	(0.0048)	-0.0377*	0.0050	-0.0717*
	(0.0029)	-0.0146	(0.0031)	(0.0089)	(0.0036)
DIY	-0.0098	(0.0122)	-0.0049	0.0263***	-0.0212***
	(0.0082)	-0.0392*	(0.0099)	(0.0171)	(0.0117)
East Java	-0.0412*	(0.0054)	-0.0395*	0.0012	-0.0611*
	(0.0031)	-0.0716*	(0.0030)	(0.0084)	(0.0041)
Banten	-0.0583*	(0.0040)	-0.0435*	-0.0053	-0.0897*
	(0.0026)	0.0600*	(0.0030)	(0.0082)	(0.0030)
Bali	0.0758*	(0.0138)	0.0878*	0.0939*	0.0935*
	(0.0100)	-0.0135	(0.0136)	(0.0233)	(0.0140)
West Nusa Tenggara	-0.0111***	(0.0085)	-0.0078	0.0228**	-0.0211**
	(0.0054)	-0.0087	(0.0063)	(0.0134)	(0.0075)
East Nusa Tenggara	-0.0158**	(0.0073)	-0.0202*	-0.0102	-0.0213**
	(0.0042)	-0.0185**	(0.0043)	(0.0075)	(0.0058)
West Kalimantan	-0.0272*	(0.0071)	-0.0304*	0.0053	-0.0394*
	(0.0039)	-0.0011	(0.0037)	(0.0105)	(0.0054)
Central Kalimantan	-0.0176*	(0.0083)	-0.0276*	0.0366**	-0.0340*
	(0.0045)	-0.0142***	(0.0041)	(0.0156)	(0.0058)
South Kalimantan	-0.0187*	(0.0077)	-0.0202*	0.0210***	-0.0317*
	(0.0046)	-0.0559*	(0.0049)	(0.0131)	(0.0061)

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Table 2 Continued

Variables	All	Gender		Region	
		Boys	Girls	Urban	Rural
East Kalimantan	-0.0580*	(0.0051)	-0.0523*	-0.0167**	-0.0812*
	(0.0025)	-0.0097	(0.0020)	(0.0059)	(0.0036)
North Sulawesi	-0.0357*	(0.0086)	-0.0492*	0.0153	-0.0576*
	(0.0040)	0.0576*	(0.0025)	(0.0128)	(0.0051)
Central Sulawesi	0.0066	(0.0120)	-0.0311*	0.0410**	-0.0023
	(0.0060)	0.0467*	(0.0042)	(0.0183)	(0.0076)
South Sulawesi	0.0023	(0.0097)	-0.0306*	0.0222***	0.0002
	(0.0049)	0.0858*	(0.0036)	(0.0123)	(0.0066)
Southeast Sulawesi	0.0348*	(0.0126)	-0.0086	0.0232***	0.0425*
	(0.0069)	0.0171	(0.0059)	(0.0142)	(0.0091)
Gorontalo	-0.0128**	(0.0111)	-0.0316*	-0.0044	-0.0179**
	(0.0056)	0.0215**	(0.0045)	(0.0101)	(0.0078)
West Sulawesi	-0.0121***	(0.0115)	-0.0350*	-0.0087	-0.0160***
	(0.0059)		(0.0045)	(0.0097)	(0.0081)
Maluku	-0.0359*	-0.0335*	-0.0335*	0.0072	-0.0515*
	(0.0042)	(0.0074)	(0.0041)	(0.0091)	(0.0057)
North Maluku	-0.0266*	-0.0155	-0.0308*	0.0399**	-0.0463*
	(0.0049)	(0.0090)	(0.0046)	(0.0188)	(0.0062)
West Papua	-0.0417*	-0.0442*	-0.0354*	-0.0223**	-0.0537*
	(0.0046)	(0.0081)	(0.0046)	(0.0068)	(0.0068)
Number of Observations[1]	156,248	85,026	71,222	54,188	102,06
Pseudo R2	0.2155	0.2392	0.1823	0.1998	0.2095
Log Likelihood	-47.326.712	-28.299.247	-18.338.929	-11.030.348	-35.669.386

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Children are less likely to work as the age of the household head increases. Decreases in the probability of working children may be due to the working experience gained by the household head to higher accumulated resources over time, thereby increasing income so there is less need for income from child labour. There is no significant effect for female headed household on the probability of working for both years. However, in terms of age, being younger has 2.8% more likeliness to work if the household is headed by female, but insignificant effects are shown among older children. The head of the household plays an important role in household decision-making process on the decision to send children to work.

Therefore, the dummy of household head's education levels and employment status is included in the analysis. The findings show that the incidence of child labour decreases as the head of the household's educational levels increases. These effects are significant at 1% level for all educational levels over time. Our result shows that the educational level of the head of the household significantly decreases the probability of child labour and their intensity of work in all estimates. This finding strengthens the widely known view that parental education is the most reliable determinant of child employment decisions (Kamga 2010).

According to Canagarajah & Coulombe (1997), the nature of parents' employment can lead to the decision of putting children in the labour market. In addition, the socioeconomic group of the household heads may have a significant effect on the decision of sending children into the labour market. The decision of mobilizing children based on the mode of organisation of the family economy is more likely when the household head is employed, compared to the situation when the household head is jobless. From our results, the effect is higher when the household head works in the informal sector as casual worker and unpaid worker. This finding was also found in Cameroon by Ndjanyou & Djiénouassi (2010).

The most common factor determining the phenomenon of child labour is household's poverty. Basu & Van (1998), supporting the causality relation between poverty and child labour, focus on the living conditions of the household. They have built up a model on two strong hypotheses: luxury axiom and substitution axiom. Our focus in this study is the luxury axiom which assumes that parents decide to send their children to work if the family income (excludes the contribution of children) falls below the subsistence threshold. Children are therefore sent to work if the household is facing an income constraint and the income contribution of the child is necessary to make ends meet. This is shown by the negative relationship association between household income and child labour in 2005 and 2007. Children are 1.8% less likely to work (with an increasing rate) if the household income increases in 2005 (Table 1) and the figure is 0.7% in 2007 (Table 2). This clearly shows that the factor of sending older children to work is to supplement income to the household. In addition, the U-shape relation between household income and working may be attributable to the fact that household heads or parents who engaged as unpaid or casual workers especially in agricultural sector may affects their children to be employed as well. Since older children are able to generate higher income compared to younger children, parents will send older children more than younger children to work.

An increase in birth order is positively associated with the probability of child labour. This finding is similar to the finding of Ilahi, Orazem, & Sedlacek (2000) in Peru indicating that children are more likely to work as the sibling rank increases. In other words, first-born children may have fewer opportunities than their later-born siblings in terms of household resources. This is particularly true since workload (tasks) and resources are already divided among the older sisters and brothers, therefore, later-born children have the advantage when they grow up (Edmonds 2005). Our results show that older children are 1.8% more likely to work than younger children in 2005 (Table 1). This probability is 2.0% in 2007 (Table 2). This may be due to the fact that older children have higher earning abilities so they are more likely to work (Emerson & Souza 2008). The interactions between birth order and age shows a significant and negative effects on the probability of working (Table 1A and 2A). This findings suggest that the older the child (in terms of age and sibling's rank), will decrease their probability of working. However, this is contradict to the earlier findings above. This may be due to the higher number of younger children aged 10 to 12 years old in the sample, where the probability of working is negatively related to their age (Table 1 and 2).

An increase in the number of children in the house-

hold means a greater number of younger siblings. The significant effects are given in 2007. Household size has a negative impact on the child's working indicating that an increase in household size (in terms of more older siblings and adults) leads to less requirement of child labour. More older siblings in the household means more brothers and sisters who can provide more helping hands, and allows for a division of responsibilities at home (Webbink, Smits, & de Jong 2010). Our results are significant at 1% level in both years. Regarding the living areas, the probability of working is higher in rural areas compared to urban areas. As noted by Ndjanyou & Djiénouassi (2010), children in rural areas tend to work more compared to children in urban areas. In particular, the probability of working in rural areas is 2.3% in 2005 and 3.9% in 2007 (Table 1 and 2). Children's participation in economic activity is varied between provinces. Children that reside in the province of Bali show a higher probability of working and children are found less likely to work in the province of Banten (higher reduction) in 2005.

According to the report of The United Nations Children's Fund (SMERU, Bappenas, & UNICEF 2013), more than 50% of poor children reside in Java and Bali. This has likely contributed to the high probability of working among children in Bali. In 2007, compared to Papua, children in almost all provinces are less likely to work except those children who reside in Bali, Central Sulawesi, South Sulawesi and Southeast Sulawesi who are more likely to work.

5. Conclusions

The main purpose of this study is to analyse the determinants of working among children using a probit model. The main objective is to examine the role of head of household in the decision-making process, and to investigate the presence of Luxury Axiom proposed by Basu & Van (1998). We define children as economically active if they reported working during the time of survey, regardless of other activities. We tested the model on the SUSENAS (The National Socioeconomic Survey, 2005 and 2007) of children with the age of 10 to 17 years within the sampled households. A child tends to work as he or she gets older, and working children are mostly found in rural areas compared to urban areas. Furthermore, biological child of the head of the household tend to be less engaged in the labour market. That is, the head of the household is found less likely to send his/her own child to work. These effects are much higher for boys in urban areas and for girls in rural areas. The age of the household head negatively affects the probability of working and children are more likely to work if the household is headed by a female rather than a male. This significant result is shown in urban areas in 2005; however the effect is not significant in 2007.

Household head's characteristics have a significant impact on the probability of working. Children are found to be less likely to work if the head of the household is well educated. Household heads with higher levels of educational attainment are less likely to send their children to work. We also find a positive relationship between the head of the household who are employers and the probability of working. This is due to the fact that Indonesian families are likely to own household enterprises or own the land which may employ their own children. Moreover, those families are more likely if their own children to inherit their family businesses. A similar findings also observed among the head of the household who are casual workers and unpaid workers and the probability of working over the survey periods. The effects are significantly higher in rural areas compared to urban areas. However, the probability of working in urban areas decreases if the head of the household work as employees.

With regards to the Luxury Axiom, household income has a negative impact on work decision. This finding reflects that participation of children in economic activities is to support family in financial needs, especially in rural areas. Birth order is positively associated with the probability of working. First born children are more likely to be sent to work. According to Emerson & Souza (2008), first born children may have higher abilities which may mean that they are able to command higher wages as children in the labour market compared to their later born siblings. Tenikue & Verheyden (2008) also state that older children are the only source of additional income when constraints get tighter in poor families; they will work more compared to younger children. Thus, the earned income by older siblings can be used to cover the costs of schooling of their younger siblings. However, having more children in the household did not show any significant effect on the probability of working in both years of survey. In contrast, the probability of working decreases by

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the presence of employed adults in the household. These three findings are significantly higher in rural areas compared to urban areas. Finally, the magnitude of the impact of the child's activities varies from province to province according to the geographical locations and socioeconomics characteristics of the provinces.

Evidence found in this study indicates that the working probability of a child decreases as household wealth increases. Moreover, as household head characteristics are highly significant in mitigating the incidence of child labour, more policy efforts should be targeted at increasing education levels of both parents and children, in making the children more valuable in society. This study uses simple analysis to analyse the determinants of child labour. Other factors such as trade liberalisation, bargaining power and imperfect capital market are not included in our analysis. Such analysis requires panel data, which is beyond the scope of the available data.

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