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The 2013 Update of Multidimensional Child Poverty in Indonesia

Luhur Bima

Cecilia Marlina

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SMERU WORKING PAPER

The 2013 Update of Multidimensional Child Poverty in Indonesia

Luhur Bima

Cecilia Marlina

The SMERU Research Institute

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ABSTRACT

The 2013 Update of Multidimensional Child Poverty in Indonesia

Luhur Bima and Cecilia Marlina

This paper attempts to explore deprivations experienced by children. Utilizing national survey dataset collected by BPS and the MODA methodology developed by UNICEF, it shows that children may or may not suffer from deprivation in many dimensions and monetary poverty at the same time. One of the advantages of the MODA approach is the child-focused analysis. Unlike other approaches which estimate deprivation at household level, this methodology allows us to go deeper into children's individual information. Moreover, the life-cycle approach used in the MODA proves to be very useful to explore variation of deprivations across life periods.

The findings provided in this paper provide evidence that even children who live in better financial condition can also suffer from multidimensional deprivations. Although the deprivation rates for these non-poor children are relatively lower than the rates for poor children, this fact encourages us to have a broader perspective in thinking about how to improve children's welfare. Deprived children, regardless their financial condition, need help from others to make their life better. However, poor children require greater attention since additional assistances such as financial grants are needed to help them to move out of both poverty and deprivations. This paper also presents the fact that children in different age groups are facing different issues. Opportunity to access adequate basic social needs may not be equal across life periods. Therefore, policymakers and relevant stakeholders should have a comprehensive understanding on children's deprivation problems in order to provide appropriate assistance policies in improving children life quality.

Keywords: Children, Poverty, Deprivation.

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2PPL		Two times provincial poverty line
BPS	*Badan Pusat Statistik*	Statistics Indonesia
CRC		Convention on the Rights of the Child
LIPI	*Lembaga Ilmu Pengetahuan Indonesia*	Indonesian Institute of Sciences
MODA		Multiple Overlapping Deprivation Analysis
PPL		Provincial poverty line
Susenas	*Survei Sosial Ekonomi*	National Socioeconomic Survey
UNICEF		United Nations Children's Fund

I. INTRODUCTION

1.1 Background

After recovering from the Asian Financial Crisis and political instability in 1998, Indonesia has experienced positive economic growth and increasing trends in other macroeconomic indicators. This solid economic growth had positive influence on poverty reduction. The poverty rate fell from about 24% in 1999 to around 10% in 2013. Nevertheless, the rate of the poverty reduction has slowed down and inequality has increased in recent years. Although a large amount of money has been spent on various poverty alleviation programs over the years, the impact on the reduction of poverty remains under expectation. Therefore, there is an urgent need to study poverty more comprehensively in order to understand the causes of poverty and the aggravating factors.

Discussion on how poverty is measured has been growing since the influential paper by Sen (1979) and the discourse has been expanded and covers various perspectives. Hence, monetary indicator such as income or expenditure measurement is the most common method used in identifying poor people. An individual whose per capita consumption is below a chosen threshold is defined as poor. Nevertheless, in recent years, many studies have suggested a move beyond monetary measure. For example, Bourgignon and Chakravarty (2003) argued that the use of the single-dimensional income approach as the sole poverty measurement indicator is debatable due to its limitations; thus, to give a broader and better picture of poverty condition, the multidimensional framework is required.

One of the critical issues in tackling poverty problem is that poverty reduction effort should put more attention on children since they are the most severely affected by poverty. In addition, intervention on early stage of individual's life will be critical to his or her future wellbeing. Children have basic needs which differ from adults, but resource distribution within a household may not be equal and children are more likely to have less access to the household's resource compared to adults (Miliano & Handa, 2014; Tsui, 2002). Moreover, basic needs also vary across childhood. Children at an early stage of life will have different dimension of basic needs compared to those of adolescents (Neuborg et al, 2012; Chzhen & Neuborg, 2012).

In Indonesia, there is a growing interest on child poverty and disparities during the last decade. Setboonsarng (2005) studied child malnutrition measurement as an alternative indicator to assess poverty and found a connection between child malnutrition and poverty in Indonesia. Moreover, SMERU-Bappenas-UNICEF (2012) reported that more than 80 percent of Indonesian children were deprived in at least one dimension of education, labor participation, health, shelter, sanitation, and water. Similar results was also presented by Hadiwidjaja, Paladines, & Wai-Poi, (n.d), which concluded that housing and sanitation are the dimensions in which most children are deprived. In addition, Yusrina (2014) concluded a weak correlation between monetary poverty and multidimensional deprivation.

This paper presents the findings from an exploratory study on poverty and multidimensional deprivation among children in Indonesia. By adopting the Multiple Overlapping Deprivation Analysis (MODA) methodology developed by UNICEF Office of Research, we analyze children's conditions and their deprivation against various dimensions based on children's life cycle. This methodology is useful in capturing deprivations that children suffer from simultaneously and provides better understanding on the complexity of deprivation faced by children. Furthermore, the analysis also explores the characteristics of children that are categorized as poor on monetary measure and those that are suffer from multidimensional deprivation.

The paper is structured as follows: After the background and literature review on poverty and multidimensional deprivation of children in Chapter 1, Chapter 2 presents the approach and methods used in this paper. Then, Chapter 3 discusses the findings and analysis where the complexity of and overlapping between monetary poverty and multidimensional deprivation is presented. Finally, Chapter 4 provides brief conclusions.

1.2 Poverty and multidimensional deprivation of children

Over several decades, poverty issue has attracted researchers in many countries to explore the numerous aspects that influence human's wellbeing. Various studies on poverty have been conducted to learn what factors may affect poverty (e.g., Aliber, 2002; Acemoglu, 2003; and Krishna, 2007) and how the poverty itself could influence other outcomes (Ferguson et al., 2007; Berzin & De Marco, 2010; and Baland et al., 2010). Furthermore, there is a growing interest in understanding poverty in children. Early childhood is a critical period since any deprivation in this stage, such as infant's health deprivation, will have an impact on a child's future life. Children suffering from accumulated deprivations might grow up as less productive adults. Therefore, poverty eradicating efforts should start with children. As deprivation on children have lingering effects on their development in the long term (Brooks-Gunn & Duncan, 1997).

As the concern over the limitation of monetary approach in measuring individual's wellbeing grows, many researchers support a perspective that poverty should be understood as a multidimensional concept (Bourguignon & Chakravarty, 2003). Human's wellbeing is influenced by many attributes of life such as health, education, and living environment in which there is a minimum standard should be achieved. Thorbecke (2007) explained that markets of some non-monetary attributes do not exist or operate very imperfectly. Due to the circumstances, he argued that the use of income or any monetary indicators may not appropriately reflect such key dimensions of poverty.

Multiple deprivation analysis looks beyond household income because it focuses directly at the household's ability to access and benefit of these goods and service. In the context of children's well-being, the basic needs of children comprises both monetary and non-monetary dimensions. Poor children are less likely to fulfill their basic needs decently due to financial constraints. Nevertheless, it does not mean that children with better financial condition could obtain all their basic needs. Children, regardless of their wealth level, may suffer from one or more dimensions deprivation due to various factors (Bastos & Machado, 2009). Children are deprived when their basic needs and rights—such as access to proper sanitation facilities and health services—are not fulfilled. The lack of access could be because either their households do not have financial capability or there is no supply in their environment.

Literature on multidimensional child poverty at cross-country level has been growing in the current years with UNICEF being one of the leading organizations which encourage research on this matter (see . (Chzhen, de Neubourg, Plavgo, & de Milliano, 2015; De Milliano et al., 2014; de Milliano & Plavgo, 2014). This also applies for the Asia region, like in China (Qi & Wu, 2015) and Vietnam (Roelen, Gassmann, & de Neubourg, 2010). In Indonesia, however, the topic on multidimensional child poverty is still underresearched. One of the main reasons is the available data in Indonesia is too limited and cannot cover dimensions of children's basic rights and needs quite comprehensively.

A prior study focusing on child poverty and disparities in Indonesia only provides a brief analysis on the multiple dimensions of deprivation among children, namely education, labor participation, health, shelter, sanitation, and water. The finding is that only approximately 18.3% of Indonesian

children are free from deprivation in all those dimensions. Most children were deprived in sanitation and access to clean water source (SMERU-Bappenas-UNICEF, 2010). Moreover, research from Hadiwidjaja, Paladines, & Wai-Poi (n.d.) on the association of poverty across specifically selected dimensions concluded that the most common deprivation suffered by Indonesian children are housing and access to sanitation.

Therefore, this paper aims to provide a deeper understanding on the current multidimensional child poverty situation in Indonesia and to provide new insights for policymakers to make better targeted policy aimed at a greater child development in Indonesia. Furthermore, the use of the National Socioeconomic Survey (Susenas) allows us to explore the links between poverty and dimensions of deprivations. This could also help us to obtain more information on the relation between the monetary poverty and other dimensions of children outcomes.

II. METHODOLOGY

2.1 Approach

A growing interest in multidimensional poverty triggers researchers to develop approaches to measure poverty from various aspects, particularly using non-monetary indicators, more comprehensively. Some methods such as the Bristol method (Gordon and Nandy, 2012) and the Multidimensional Poverty Index (Alkire and Foster, 2011) are developed in order to capture poverty condition from multiple perspective comprehensively.

The method employed in this study, however, is the Multiple Overlapping Deprivation Analysis (MODA)—developed by UNICEF—for it has some advantages compared to other methods. First, it uses children, rather than households, as the analysis unit. This allows us to obtain deeper information on the living condition of children. MODA uses the international framework of child rights principle to construct indicators and dimension of children's well-being. It not only counts the number of children deprived in each indicator, but also analyzes the profile of children suffering from monetary poverty and several deprivations simultaneously (Chzhen & De Neubourg, 2014).

Second, this method uses children's life-cycle approach, which means that it distinguishes between the needs of children at different age levels. Compared to other multidimensional measurement tools, this approach can accommodate the variation of basic needs across age groups in measuring children's well-being. In this study, children are grouped into five categories: (i) infancy (0–1 year), (ii) 2–4 years, (iii) 5–11 years, (iv) 12–14 years, (v) 15–17 years.

In addition, the utilization of MODA is quite flexible as it accommodates country-specific needs in regard to data availability and quality. The number of indicators or dimensions in MODA can be altered to the information availability in national datasets. Moreover, specific threshold, age group can also be adjusted to meet national objectives related to child development.

Several steps of analyses involved in MODA methodology are explained in more detailed in Neubourg et al. (2012). It starts with single deprivation analysis on which the percentage of children deprived in each of selected dimensions is calculated. Each dimension can consist of either one or several indicators. If a dimension is constructed based on several indicators, a union approach is used to aggregate those indicators. Moreover, multidimensional deprivation is estimated to examine the deprivations a child experiences simultaneously. A child is considered deprived in

multidimensional aspects if the number of dimensions in which she or he is deprived exceeds the selected deprivation cut-off point. The methodology used allows the deprivation cut-offs to be arbitrarily chosen. An alternative option in choosing an appropriate cut-off is by looking at the results using different cut-off points; it provides information on the breadth of child deprivation.

Indicators and dimensions constructed in this study are based on the Convention on the Rights of the Child (CRC). Nevertheless, there may be limitations in the available dataset used in the study. Some indicators can be used as appropriate proxies of children's rights but they may not properly reflect those rights. Therefore, some indicators and dimensions will not be included in the calculation of multidimensional deprivation due to this reason. For example, the dimension of information is needed to provide an overview of the condition of children's well-being. Nevertheless, this dimension is excluded from the calculation of multidimensional deprivation. In addition, some indicators which show very high or very low deprivation rates will also be excluded from the multidimensional deprivation measurement.

After the headcount ratio of multidimensional deprivation is estimated, deprived children are profiled according to their household compositions and characteristics, so children with the most vulnerable condition can be recognized. Profiling deprived children can be very useful to help the government to design policy in improving children's well-being. An overlap analysis between monetary poverty and different well-being's dimensions can also be conducted. This analysis can provide more information on the nature and depth of multidimensional child deprivation.

To sum up, the implementation of MODA to the Indonesian Susenas aims to measure child deprivation in Indonesia with reference to its target on child development, providing profile of deprived children based on household composition and characteristics. Moreover, the significance of applying MODA to Susenas dataset lies in the fact that the overlapping analysis between several dimensions on well-being aspects and monetary poverty condition presents useful and comprehensive information on children's living condition. Therefore, it might help policymakers to make better targeted policy to tackle multidimensional child poverty.

2.2 Dataset and Scope of Analysis

The Susenas data from Statistics Indonesia (BPS) is used in this study. The national survey had been conducted twice a year up to 2010 and has been carried out quarterly since 2011. Susenas dataset comprises information on the characteristics of household and their individual household members, which can be used to construct indicators and dimensions. BPS usually produces an annual aggregate dataset that contains all of the data collected in the four quarters of each year. The advantage of this annual dataset is that it has more observations to explore and is representative at the *kabupaten* (district) level. Nevertheless, it has limitations since the poverty calculation using annual dataset is not replicable. The weighting variable in the dataset is not the same with the weighting used by BPS to estimate poverty rate using this annual dataset[1]. Therefore, the analysis presented in this paper uses only the first quarter of the 2013 Susenas, because we want to observe the profile of poor children and the overlap between monetary poverty and other non-monetary deprivation dimensions.

[1]For the annual Susenas dataset, the weighting variable is adjusted to the second quarter survey activity. However, BPS has readjusted the weight variable to the third quarter (September) dataset in calculating poverty rate using this annual dataset.

Table 1. Dimensions and Indicators by Age Group

Dimension	Indicators	Age Group				
		0–23 Months	2–4 Years	5–11 Years	12–14 Years	15–17 Years
Water	Drinking Water	v	v	v	v	v
Sanitation	Sanitation facility	v	v	v	v	v
Housing	House materials	v	v	v	v	v
	House ratio	v	v	v	v	v
Information	Internet access				v	v
	Information device				v	v
Health	Birth attendance	v	v			
	Vaccination	v	v			
	Medical treatment	v	v	v	v	v
Registration	Birth registration	v	v	v	v	v
	Birth certificate	v	v	v	v	v
Education	Preschool			v, (5–6 y.o)		
	School enrollment			v, (7–11 y.o)	v	v
	Grade for age			v	v	v
Child labor	Child labor				v	v

The age-group specific dimensions included in the analysis is presented in Table 1. Child's well-being is highly attached to their household. Several dimensions which are at the household levels are water, sanitation, and housing. Children are deprived in water indicator if they access water from unprotected dug well, unprotected spring, or river. For sanitation indicator, they are deprived if they have no access to proper toilet facilitation or are only able to access public toilet. Dimensions of housing consist of two indicators, house materials and the ratio of house size to the number of household members. Children are considered to suffer from deprivation if they live in a house which is not built from a solid material or at an overcrowded house. A more detailed explanation on each indicator is available in Appendix 1.

The other dimensions apply only to certain age groups. The information dimension consists of two indicators, namely access to the internet and information devices. Both indicators are applicable only to the two oldest age groups because children from younger age groups might not necessarily need to access the internet or any information devices. Although one can argue that the internet is important and relevant for children's future, but this study only measures the current deprivation situation and not the children's future need.

The health dimension consists of three indicators, namely skilled birth attendant, vaccination, and medical treatment. For the first two indicators, it is applicable only to the two youngest age groups while the medical treatment indicator is applicable to all age groups. Children are deprived if they were born without the help of a professional medical helper.

Child registration have two indicators which are practically interrelated. The first indicator is birth registration which is used to show whether or not a child has been registered. The second indicator is birth certificate, which indicates whether parents or children can show the birth certificate at the enumeration time.

The education dimension consists of several indicators, namely preschool, enrollment rate, and grade for age. For enrollment rate, children are deprived if they do not attend school in the current school year. There are only three age groups examined in this indicator because the children in the groups are considered in the school age according to the education system in Indonesia (primary school, junior high school, and senior high school). Grade-for-age indicator is applied to show whether children are one year or more behind the standard level-specific-age of schooling.

A very common approach to measuring monetary poverty in Indonesia is by applying poverty line calculated by BPS. Nonetheless, Indonesia's poverty line is considered too low, compared with the international poverty line, for a country whose development stage has been on the middle-income level since early 2000s. The current official poverty line is not proportionally estimated based on the actual consumption pattern (Asra, 2000). Hence, the poverty estimation could be considered as an underestimate compared with the actual poverty condition.

Findings from other studies (i.e., Dartanto & Nurkholis, 2013; Dewi & Suryahadi, 2014) show that there is a fraction of population who live above the poverty threshold, but they are in a similar living condition as those who are poor. Moreover, these people are also vulnerable to shocks which can cause them to easily fall into poverty. Therefore, a higher poverty line will be used in this study to capture those who are not living below the official poverty line—categorized as nonpoor—but who actually experience the same conditions as those who live below that line.

The World Bank just recently introduced an updated global poverty line, equivalent to PPP USD1.9. This international poverty line is derived from the poverty lines of the 15 poorest countries in the world. Furthermore, a study on the subjective poverty line using a self-rated approach conducted by Indonesian Institute of Sciences (LIPI) in 2013 suggested that poverty threshold should be raised, based on respondents' feedback, to at least Rp500,000 (around USD 42) per capita per month or nearly two times the official poverty threshold that year, which was around Rp302,000 (around USD 25) per capita per month (Firdausy, 2014).

In order to have a better reflection of poverty status of children in Indonesia, this study will use two different poverty thresholds, namely the official poverty line (PPL) and twice the poverty line (2PPL). In the next sections, children who live below the PPL will be defined as poor children, while those who are just above the official poverty threshold but still below the 2PPL are defined as vulnerable. Thus, all children who are below the 2PPL are henceforth categorized as poor and vulnerable children.

III. FINDINGS AND ANALYSIS

3.1 Children in Monetary Poverty

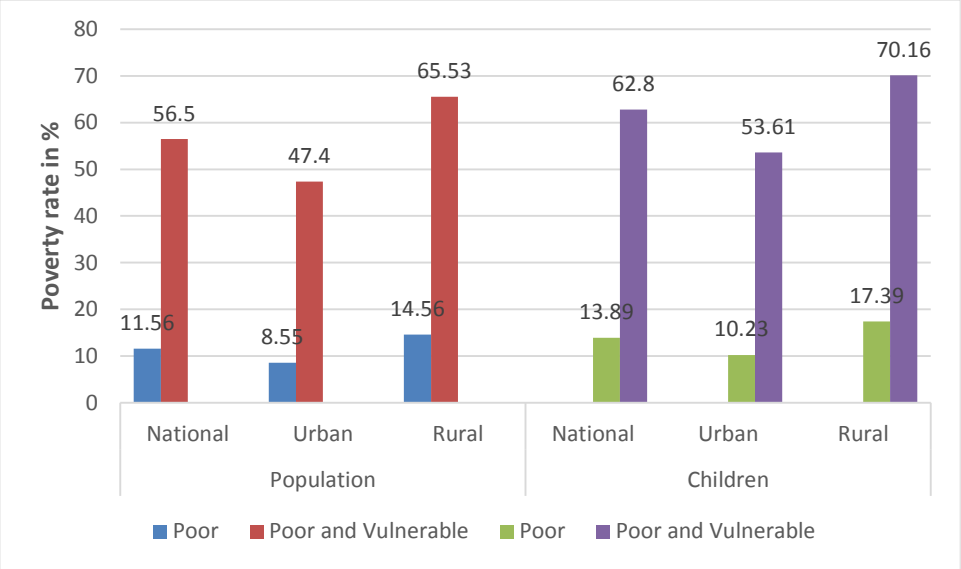

Figure 1. Poverty rates of total and children propulation by urban-rural

Having look at the monetary poverty condition in Indonesia, as shown in Figure 1, the poverty rates of children tend to be higher than the rates of the whole population. Using the PPL to measure poverty based on the household capital expenditure, about 14% children in Indonesia are defined to be poor. This rate is slightly higher than the rate of the total population (12%). If the threshold of monetary poverty is doubled, the proportion of children who live in poverty significantly increases to more than 60%. This can be interpreted that only about one third of children in Indonesia live with at least decent financial condition to support their needs. The rest of the children struggle in their daily life to obtain decent life condition.

Children who live in rural areas are more likely to have insufficient life support and fall into poverty, compared with those who live in urban areas. In rural areas, about 70% of children are either poor or vulnerable when measured with the 2PPL as the poverty threshold; this rate is 17 percentage points higher than the rate in urban areas. Nevertheless, the fraction of poor children in urban areas is also relatively large; more than half of the children population in urban areas are in poverty. Compared with the poverty rates of the total population, children seem to be more vulnerable than adults since the proportion of children who fall into poverty is slightly larger than that of the total population.

Table 2. Household Composition of Poor Children by Age Group

	0–23 Months				2–4 Years				5–11 Years			
	Poor (%)	Poor and Vulnerable (%)	Share of poor and vulnerable children (%)	Share of all children (%)	Poor (%)	Poor and Vulnerable (%)	Share of poor and vulnerable children (%)	Share of all children (%)	Poor (%)	Poor and Vulnerable (%)	Share of poor and vulnerable children (%)	Share of all children (%)
Gender of Head of Household												
Male	14.21	62.4	90.1	91.41	14.31	60.41	92.54	93.02	13.85	62.9	91.84	92.56
Female	18.6	73.02	9.9	8.59	16.55	64.9	7.46	6.98	20.19	69.57	8.16	7.44
Marital status of HH												
Never married	0.42	71.74	0.18	0.16	27.76	78.01	0.13	0.1	14.71	66.22	0.18	0.17
Married	14.32	62.63	89.61	90.58	14.17	60.22	91.68	92.45	13.78	62.79	91.33	92.21
Separated/divorced	15.19	65.9	1.15	1.11	18.9	59.31	1.44	1.47	23.39	67.64	1.88	1.77
Widowed	17.77	70.35	9.06	8.15	17.71	68.63	6.76	5.98	20.09	71.52	6.61	5.86
Age of Youngest Child												
0	14.31	63.66	51.68	51.39	20.77	65.42	8.35	7.75	18.42	72.52	9.32	8.15
1–5	14.88	62.94	48.32	48.61	13.94	60.33	91.65	92.25	18.16	67.08	45.61	43.1
6–11	0	0	0	0	0	0	0	0	10.24	58.61	45.07	48.75
12–14	0	0	0	0	0	0	0	0	0	0	0	0
Number of Children in Household												
1–3	12.49	60.87	83.21	86.54	12.35	57.7	82.45	86.78	11.55	59.31	76.06	81.3
3+	28.08	78.97	16.79	13.46	28.34	80.62	17.55	13.22	26.39	81.16	23.94	18.7

	12–14 Years				15–17 Years			
	Poor	Poor and Vulnerable	Share of poor and vulnerable children	Share of all children (%)	Poor	Poor and Vulnerable	Share of poor and vulnerable children	Share of all children (%)
	(%)				(%)			
Gender of Head of Household								
Male	13.74	62.86	88.97	89.87	11.87	58.33	88.74	88.34
Female	14.84	69.15	11.03	10.13	11.45	56.06	11.26	11.66
Marital status of Head of Household								
Never married	9.64	74.07	0.77	0.66	0.61	40.9	1.27	1.81
Married	13.88	62.87	88.19	89.06	12.03	58.27	86.56	86.26
Separated/divorced	11.56	66.44	2.26	2.16	9.55	50.88	2.12	2.41
Widowed	14.52	68.72	8.78	8.11	12.67	61.29	10.04	9.52
Age of Youngest Child								
0	19.97	76.68	6.97	5.77	20.47	70.28	8.39	7.75
1–5	19.56	72.22	34.9	30.69	18.29	70	36.88	34.17
6–11	13.41	63.03	29.49	29.71	12.16	61.18	40.04	42.45
12–14	8.02	46.26	28.63	33.83	10.23	39.1	14.68	15.64
Number of Children in Household								
1–3	10.57	58.95	71.35	76.85	8.5	52.58	69.34	76.57
3+	24.75	78.58	28.65	23.15	22.69	75.99	30.66	23.43

	0–17 Years				All Population			
	Poor	Poor and Vulnerable	Share of poor and vulnerable children	Share of all children (%)	Poor	Poor and Vulnerable	Share of poor and vulnerable children	Share of all people (%)
	(%)				(%)			
Gender of Head of Household								
Male	13.64	61.68	90.82	91.39	11.51	56.66	89.83	89.57
Female	16.55	66.22	9.18	8.61	12	55.1	10.17	10.43
Marital status of Head of Household								
Never married	5.37	53.73	0.44	0.5	2.44	22.32	0.53	1.34
Married	13.65	61.63	89.95	90.6	11.63	57.04	88.26	87.43
Separated/divorced	16.94	62.51	1.83	1.82	11.86	53.65	1.86	1.95
Widowed	16.8	68.2	7.78	7.08	12.19	56.98	9.36	9.28
Age of Youngest Child								
0	17.1	67.85	13.28	12.35	15.88	66	12.86	11.95
1–5	16.54	65.14	51.04	49.44	15.28	63.16	49.17	47.76
6–11	11.09	59.78	28.91	30.51	10.49	58.87	29.6	30.85
12–14	8.55	55.46	6.77	7.7	8.82	54.34	8.37	9.45
Number of Children in Household								
1–3	11.18	58.1	76.08	81.29	9.66	53.41	81.74	86.48
3+	25.67	79.35	23.92	18.71	23.7	76.28	18.26	13.52

Table 2 presents the profile of monetary poor children based on the composition of household to obtain an overview about the condition of those children and to identify which sub-groups of children are in higher risk for being poor. In addition, the shares of poor children across sub-groups are also compared with the share of the children population. This may help us to understand the pattern of poor children's living condition and whether there are some specific aspects of poor children that significantly differ from the life of all children in general.

In general, only about 10% of poor children live in female-headed households, which is very similar with the pattern in the whole children population. Based on the PPL threshold, the poverty rate of children who live in female-headed households is slightly higher than that of children living in male-headed households. Among all age groups in female-headed households, the highest poverty rate is in the group of children aged 5–11 years old, while the lowest rate is the eldest age group (15–17 years old). In general, the poverty rates between male- and female-headed households across age groups are relatively similar. Nevertheless, there is an exception for children aged 5–11 years where the gap between those two sub-groups is about 6%. The poverty rates of children aged 15–17 (for both sub-groups) are the smallest across age groups and very close to the rates of the total population. Using the 2PPL, the proportions of children who are defined as either poor or vulnerable increase to more than 60%. Children in the youngest group have the largest poverty rate gap between male and female-headed households where the poverty rate of children who live in female-headed households is 73% and the rate of those who live in male-headed household is 62%. Furthermore, unlike the other age groups, children aged 15–17 years old are more likely to be in poor household if the household head is a male.

The majority of children in Indonesia live with married parents (about 90%), while a small proportion of them (about 9%) have single parents—either separated/divorced or widowed (either the father or the mother has passed away). There is no clear pattern that can associate particular type of marital status of household head to poverty condition of the children. For the group of poor and vulnerable children, the sub-group of children living with married parents has the lowest poverty rate in age groups of 0–23 months, 5–11 years, and 12–14 years. Nevertheless, in the eldest age group, the poverty rate of children with married parents is about seven percentage points higher than that of children whose parents are separated/divorced; while the rates of those sub-groups of marital status in children aged 2–4 years old are relatively similar. In terms of age, there is also no evidence that poverty rate decreases as age increase although the eldest age group seems to have the lowest poverty rates compared with other groups.

The wealth level of a household can also be affected by the age of the youngest child in the household since younger children may require more attention from parents. It is very common that the mother will be the one who is responsible for taking care of young child—which implies that she is not optimally able to work and earn additional income for the family. Data on Table 2 shows that households with child under six years old as the youngest child in the household have bigger risk to be poor. Looking at the children population, the sub-group of household with child under one year old has poverty rate of 68%, which is the highest among all sub-groups. There are about 55% of household with children aged 12–14 years old as the youngest child in the household. Furthermore, the table also reveals a decreasing trend of poverty rates in all age groups as the age of the youngest child in the household increases. In the eldest group (15–17 years), there is a big gap between the first sub-group (the youngest child is under one year old) and the last sub-group (the youngest child is between 12 and 14 years old) where the proportion of poor children who are in the last sub-group is almost half of that who are in the first sub-group.

Household size is another important aspect which influences children's life quality. A bigger number of children in a household could cause lower household's per capita expenditure if the available

income is unchanged. In the sub-population of poor children, around 24% of children live in a household with more than three children. That proportion is quite higher than the proportion of the same category in the population of all children, which is about 19%. Children in this category are also more likely to be poor than those who live in a household with children fewer than four people. The poverty rate (using the PPL) of children in a household with fewer than four children is around 11%, slightly less than half of the poverty rate of children in the sub-group of household with more than three children, which is almost 26%. The poverty rates of children in the household that have more than three children are relatively similar across age groups. The highest poverty rates are in the group of younger age—under-five children—and the trend is negative as the age increases. As the poverty line is doubled, the poverty rates of both sub-groups in all age groups increase to more than 50%. Children aged 2–4 years have the largest difference of poverty rate between those two sub-groups. About 81% children who live in household with bigger size of children are in poverty, while 58% of children in the other sub-group also suffer from similar condition.

Table 3. Household Characteristic of Poor Children by Age Group

	0–23 Months				2–4 Years				5–11 Years			
	Poor	Poor and Vulnerable	Share of poor and vulnerable children	Share of all children (%)	Poor	Poor and Vulnerable	Share of poor and vulnerable children	Share of all children (%)	Poor	Poor and Vulnerable	Share of poor and vulnerable children	Share of all children (%)
	(%)				(%)				(%)			
Location												
Urban	10.21	54.1	41.21	48.22	10.21	51.57	42.01	49.48	10.53	55.01	42.14	48.56
Rural	18.67	71.89	58.79	51.78	18.64	69.7	57.99	50.52	17.97	71.31	57.86	51.44
Number of Working Adults												
0	20.89	71.28	2.75	2.44	18.07	64.41	2.43	2.29	16.74	63.55	2.52	2.52
1	14.15	64.41	45.91	45.12	13.67	61.41	42.4	41.93	14.49	63.78	39.86	39.62
2+	14.67	62	51.34	52.43	14.92	60.06	55.17	55.78	14.11	63.13	57.61	57.86
Highest Educational Level Among Females (16-59) in the Household												
No formal education	25.71	84.83	8.78	6.52	25.61	82.26	10.47	7.66	22.19	79.9	13.35	10.49
Primary education	21.55	80.94	32.31	25.13	21.68	77.15	35.37	27.58	19.53	75.98	36.77	30.36
Secondary education	12.02	60.04	54.52	57.18	10.71	56.52	50.9	54.18	10.37	58.41	47.15	50.66
Tertiary/vocational education	2.1	24.78	4.39	11.17	1.53	18.5	3.25	10.58	1.55	20.18	2.73	8.49
Employment Sector of Head of Household												
Primary sector	22.35	77.37	43.25	35.39	23.02	77.17	43.41	34.16	22.37	77.57	43.52	35.57
Secondary sector	12.71	61.15	17.35	17.97	12.77	58.49	19.09	19.83	11.67	61.87	18.77	19.23
Tertiary sector	8.04	50.69	29.79	37.21	7.13	46.84	30.06	38.97	7.66	50.83	31.15	38.85

	12–14 Years				15–17 Years			
	Poor	Poor and Vulnerable	Share of poor and vulnerable children	Share of all children (%)	Poor	Poor and Vulnerable	Share of poor and vulnerable children	Share of all children (%)
	(%)				(%)			
Location								
Urban	10.95	56.4	43.65	49.14	8.83	49.27	41.52	48.93
Rural	16.66	70.35	56.35	50.86	14.69	66.49	58.48	51.07
Number of Working Adults								
0	11.17	69.57	3.52	3.22	9.9	50.75	3.81	4.36
1	14.3	62.4	34.01	34.6	10.82	55.42	30.87	32.34
2+	13.74	63.79	62.47	62.18	12.47	59.91	65.31	63.3
Highest Educational Level Among Females (16-59) in the Household								
No formal education	19.33	76.63	15.48	12.73	17.72	73.34	13.01	10.22
Primary education	17.4	74.78	38.03	32.05	16.35	71.22	31.22	25.27
Secondary education	11.03	58.86	44.39	47.52	9.8	54.44	53.46	56.61
Tertiary/vocational education	1.43	17.16	2.1	7.7	1.28	16.89	2.31	7.9
Employment Sector of Head of Household								
Primary sector	20.24	75.73	44.94	37.68	17.96	71.87	45.72	36.94
Secondary sector	11.89	62.29	18	18.35	9.98	57.88	17.24	17.29
Tertiary sector	8.16	51.27	29.79	36.89	6.55	45.39	28.89	36.95

	0–17 Years				All Population			
	Poor	Poor and Vulnerable (%)	Share of poor and vulnerable children	Share of all children (%)	Poor	Poor and Vulnerable (%)	Share of poor and vulnerable children	Share of all children (%)
Location								
Urban	10.23	53.61	42.18	48.84	8.55	47.4	41.8	49.82
Rural	17.39	70.16	57.82	51.16	14.56	65.53	58.2	50.18
Number of Working Adults								
0	14.59	62.31	2.9	2.88	-	-	-	-
1	13.77	62.07	38.58	38.59	-	-	-	-
2+	13.94	62.07	58.52	58.53	-	-	-	-
Highest Educational Level Among Females (16-59) in the Household								
No formal education	21.58	78.81	12.65	9.88	16.66	71.58	13.11	10.37
Primary education	19.26	75.76	35.41	28.77	16.58	70.86	33.89	27.07
Secondary education	10.62	57.64	49.1	52.43	9.44	53.65	49.89	52.63
Tertiary/vocational education	1.57	19.57	2.84	8.93	1.31	17.69	3.11	9.94
Employment Sector of Head of Household								
Primary sector	21.37	76.21	44.05	35.88	17.82	71.29	45.4	35.98
Secondary sector	11.75	60.65	18.31	18.74	9.8	54.76	16.97	17.51
Tertiary sector	7.51	49.32	30.25	38.07	6.12	43.77	27.91	36.02

Table 3 provides information on household characteristics of poor children such as location, education, and employment. The data shows that total children (aged 0–17 years old) in rural area has higher poverty rate compared with those in urban area. Using the national poverty threshold, the poverty rates are 10% and 17% for urban and rural areas, respectively. The three youngest age group face eight percentage points higher risk of being poor if they live in rural area instead of urban area, while for the other two groups the gap difference between living in urban area and rural area is slightly lower which is six percentage points difference. When the vulnerable children are included, it increases the poverty rates significantly. The children poverty rate in urban area is now about 54%, while the rate in rural area is 16 percentage points higher. These numbers are higher than the rates for the whole population, which are about 47% and 66% in urban and rural areas, respectively. Children aged 15–17 years old have the lowest poverty rates, in both areas, among all age groups. Nevertheless, the difference between urban and rural areas in this age group is quite large, which is about 17 percentage points. In addition, the share of poor children aged 0–17 years old who live in rural areas (58%) is slightly higher compared with the share of the total children population who live in the same area (51%).

The association between child monetary poverty and the number of working adults in household is also examined in order to understand whether more breadwinners in the household can positively affect children's wealth. From the information of children aged 0–17 years old on Table 3, it can be seen that more than a half of children (58%) live in household with more than one adult who works, while only about 3% of them are in household that does not have any working adult. Nevertheless, there is no significant difference on the poverty rates between those sub-groups in total children population. The poverty rates are around 14% if measured by the PPL; and those numbers increase to around 62% when 2PPL is used. Looking at the variation across age groups, the pattern is different among those groups. In younger age groups (children aged below 12 years old), the poverty rates are higher in the sub-groups of children live in household without working adult. The opposite occurs in the groups of older age.

Female members of a household commonly has a bigger role in caring for children. In addition to assuming responsibility for taking care of children at home, they can also earn additional income for their household. Looking at the composition of children population based on the highest education level of females aged 16–59 in the household, about half of the children live in household with female carers whose highest education level is at secondary education. Moreover, there are 10% of children who still live in household in which the females do not have formal education. In households in which the female carers have secondary education, the share of poor children is quite similar to that of the children population. However, the share of poor children in the sub-groups of household in which the female carers have either elementary education or no education at all is slightly higher compared with that of children population. Evidence shows that higher education level of female is associated with lower level of poverty. About two out of ten children live in poor condition, measured with the PPL, if females in their household only have primary or lower education level. In contrast, only one out of ten children has the same status of poverty if there is secondary level educated female in the household. When the poverty line is doubled, more than 75% of children who live with primary level or non-educated female are poor. The poverty rate is lower (58%) for children in the sub-group of household with secondary level-educated female. The rate is even much lower if the highest education level is tertiary education, at which only 20% of children are defined to be poor. This pattern consistently occurs across age groups which implies that the education level of female is another important aspect in the wealth of children.

Lastly, the income source of household is influenced by the sector of household employment. People who work in primary sector (agricultural sector), in general, earn less income compared with those who have job in secondary or tertiary sectors (manufacture and service, respectively). Looking at the children population, the majority of children live in household where the head works in either primary or tertiary sectors. It is clear that households which depend on primary sector are more vulnerable compared with households in other sectors. About 21% of children whose

household head is in the primary sector are poor, while only around 12% and 8% of children live in poverty if they are in household where the head works in secondary and tertiary sectors, respectively. All age groups have the same trend, where children the second and third categories are better off compared with those who are in the first category. Nevertheless, there is no trend which shows that poverty rates go down as children become older.

3.1 Child's Single Dimensional Deprivation and Monetary Poverty

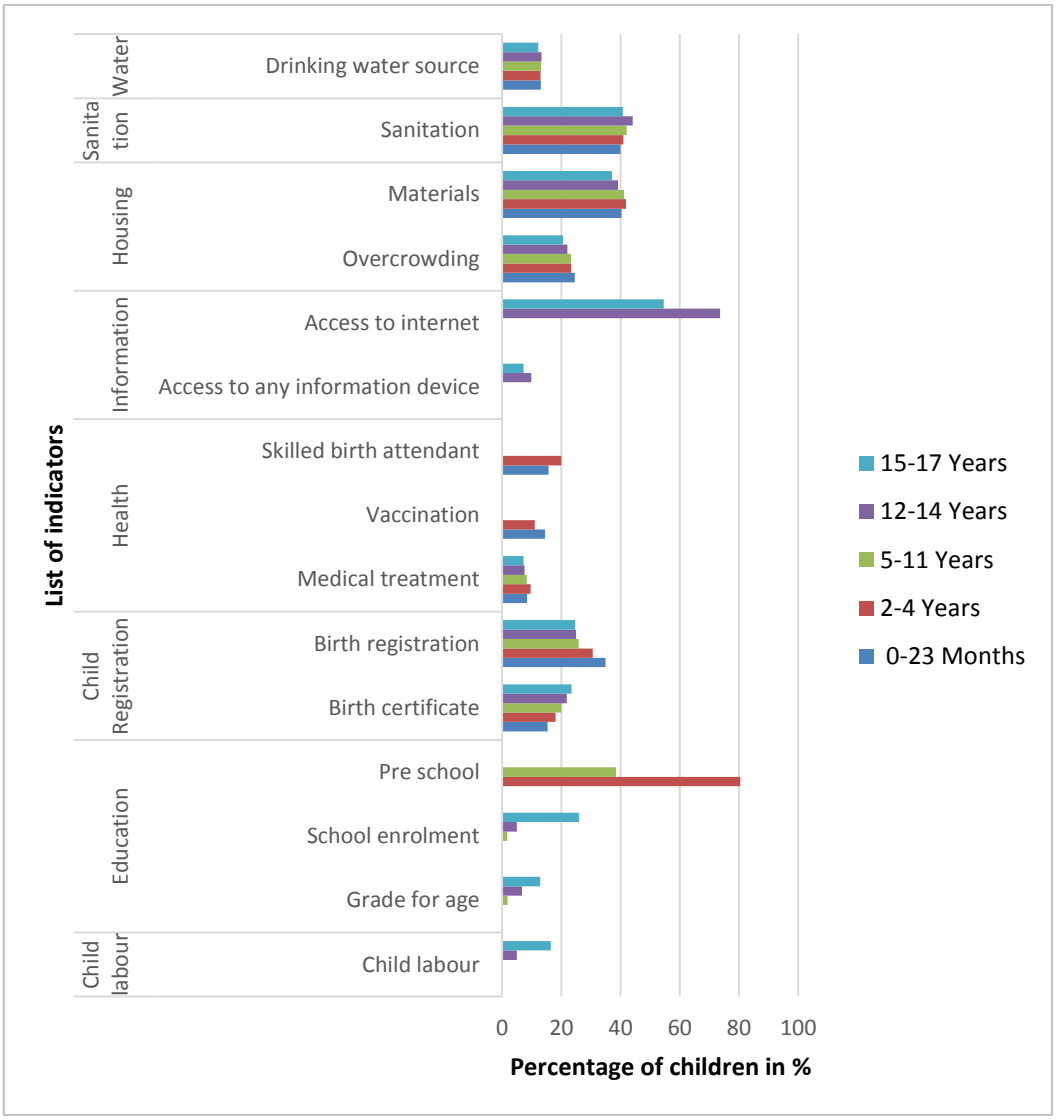

Figure 2. Deprivation rates by indicators and age group

Figure 2 shows the deprivation rate on each indicator that children deprived on. Around thirteen percent of all children have no access to a drinkable water source. Approximately four out of ten

Children do not have access to a proper sanitation. Similar deprivation rate also observed if the indicators for housing dimension are used. Around a quarter of children in the population living in a house with no proper material, and around one in five children living in an overcrowded house.

For all indicators observed in the household levels, there is no significance different rate observed across age groups. It means all children suffered approximately the same deprivation rate on each indicators.

Access to internet contribute a higher portion of child's deprivation in information because almost seven in ten children do not have access to internet in the last three months, while for the oldest age group the ratio is one out of two children. For the indicator of access to any information devices, only ten percent of all children from both age groups are having no access to any information devices like telephone, cell phone or laptop.

Another important dimension is health dimension. Approximately around 16%–19% children aged 0–23 months and 2–4 years are deprived in skilled birth attendant indicator. Vaccination indicator is use to know whether children have received complete vaccination before their fifth birthday. The deprivation rates are 14% and 11% for the two groups. Medical treatment indicator has the lowest deprivation rate compared to the other indicators in health dimension, in which the deprivation rate is less than 10% across age group.

A different trend is observed between birth registration and birth certificate indicator. In the birth registration indicator, the deprivation rate is getting lower as the age group increased. For example, the deprivation rate for the youngest age group is around 35% while it is gradually decreased to 25% at the oldest age group. On the other hand, the deprivation rate for birth certificate for older group is higher compared to the younger group.

The deprivation rate for school enrollment is higher for the older child compare to the younger one. For children aged 12–14 years (junior high school), the deprivation rate is around 5%, whereas it then soared to 26% for children aged 15–17 years (senior high school). A similar trend also observed in the grade for age indicator, although the deprivation rate is much lower. Child labor dimension has similar trend with enrollment rate and grade for age. The deprivation rate for children aged 12–14 years is around 5%, while the rate is tripled to 16% for children aged 15–17 years.

Group 1: 0–23 months old

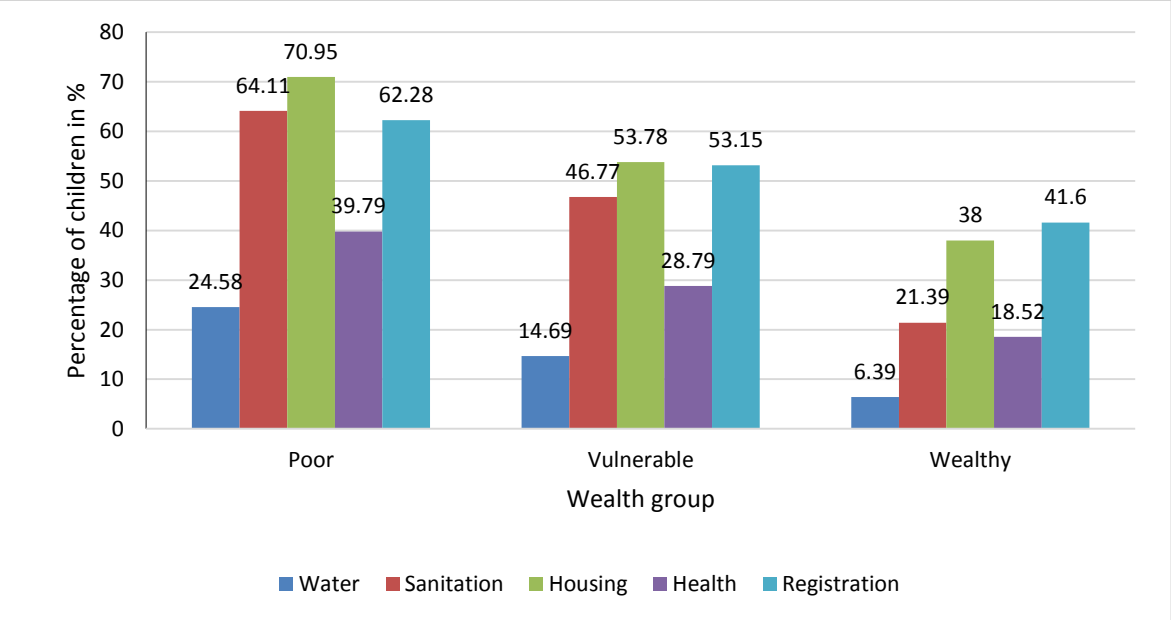

Figure 3. Deprivation rates by dimension and wealth level, 0–23 months

Figure 3 shows the deprivation characteristic among children with different economic background; children are categories into three wealth groups: (i) poor, (ii) vulnerable, and (iii) wealthy. Overall, children from a more resourceful household have the lowest deprivation rate compare to the other two groups. Three dimensions which have the highest deprivation rate are housing, sanitation and birth registration.

The significance difference between poor and vulnerable children and wealthy children living above 2PPL can be seen from water and sanitation dimension. For example, the water deprivation rate is around 25% for poor children, while it drop to only 6.4% for wealthy children. Although water dimension appears to have the lowest deprivation rate suffer across all age group.

The highest deprivation rate occurs among poor and vulnerable children is the housing dimension. Around 7 out of 10 poor children reside in house with a poor condition. This condition becomes even worse because most probably they have no appropriate sanitation in their residence as well since the deprivation rate for sanitation also appears to be the second highest. The deprivation rate for sanitation on poor children is 64%.

Children who are wealthy have the highest deprivation rate on birth registration, which is around 41%. This number is lower compare to the other children who are either poor or vulnerable which are 62% and 53%, respectively. The high deprivation rate on birth registration which occurred in all groups indicate that the problem may not directly affected by financial constraint alone.

Group 2: 2–4 years old

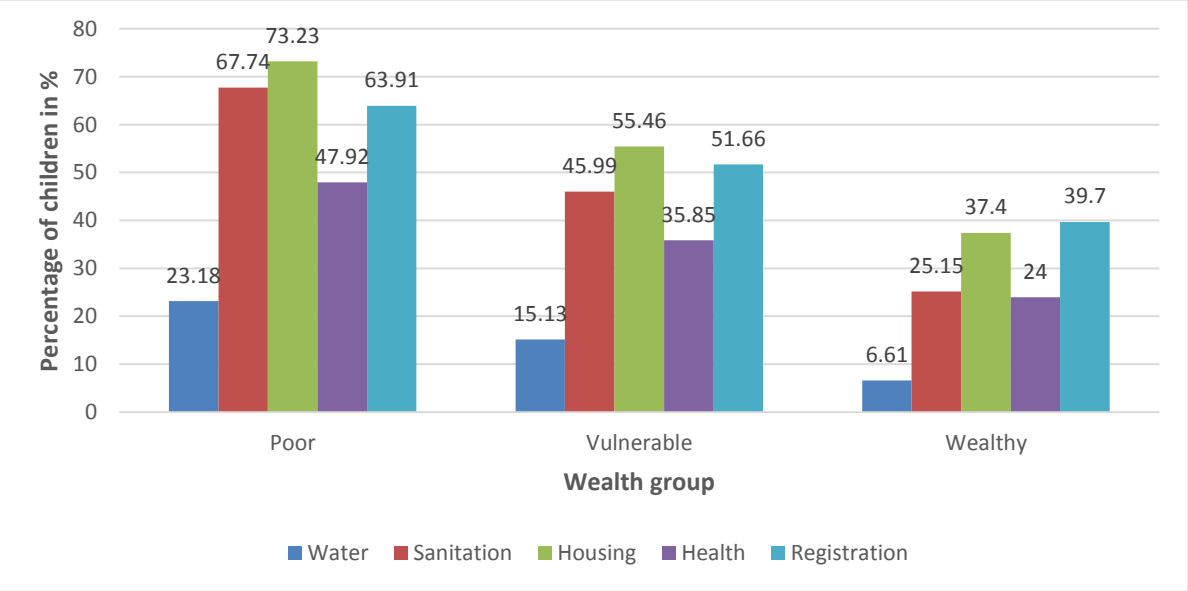

Figure 4. Deprivation rates by dimension and wealth level, 2–4 years

Around 70% poor children aged 2–4 years live in a house with bad condition. Moreover, they also likely to deprive on sanitation dimension because the deprivation rate for sanitation is stood at 67%. Sanitation and housing dimension also appears quite high in vulnerable children, the deprivation rate for those dimensions is more than 40%.

Moving to birth registration dimension, around 64% poor children aged 2–4 years have not been registered, while the deprivation rate is decreased to around 50% and 40% for vulnerable children, respectively. The deprivation rate for health dimensions for all children stood below 50%, with wealthy children having the lowest deprivation rate which is just above 20%.

Similar with the 0–23 month age group, dimension with the lowest deprivation rate on all economic group is water. The water deprivation rate for wealthy children is around 7%, but the rate is tripled for poor children. Hence, there is a big gap on the access to clean water between the have and have not.

Group 3: 5–11 years old

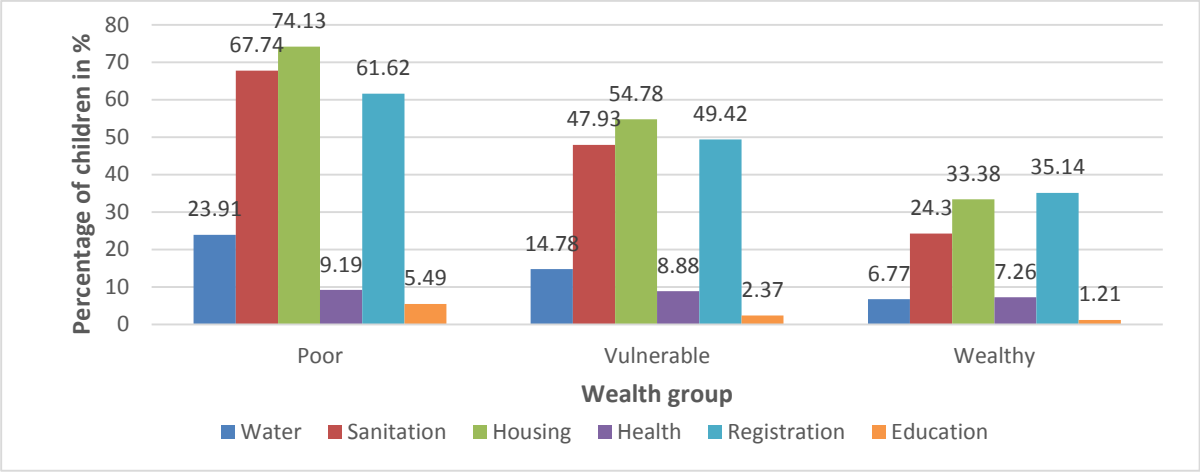

Figure 5. Deprivation rates by dimension and wealth level, 5–11 years

Moving to the third group, this group has the largest age range among all age groups. Unlike the two previous groups, the health dimension in this age group comprises only one indicator in which the indicators of skilled birth attendance and vaccination are excluded. Furthermore, education dimension which consists of two different indicators (i.e., school enrolment and grade for age) is introduced in this age group. Similar to the two previous age groups, the highest deprivation rates are sanitation, housing and birth registration (Figure 5). About one thirds of children who are wealthy still do not have birth certificate. This number increased to two thirds for the group of poor children.

The deprivation rate of health significantly decreases since the dimension only comprises one indicator. Nevertheless, the rates for health seem to be similar across wealth groups. Moreover, the deprivation rates of education are relatively low for all wealth groups. About 5% of children are poor suffer from education problem, while 1.2% of children in the group of wealthy experience the same condition.

Group 4: 12–14 years old

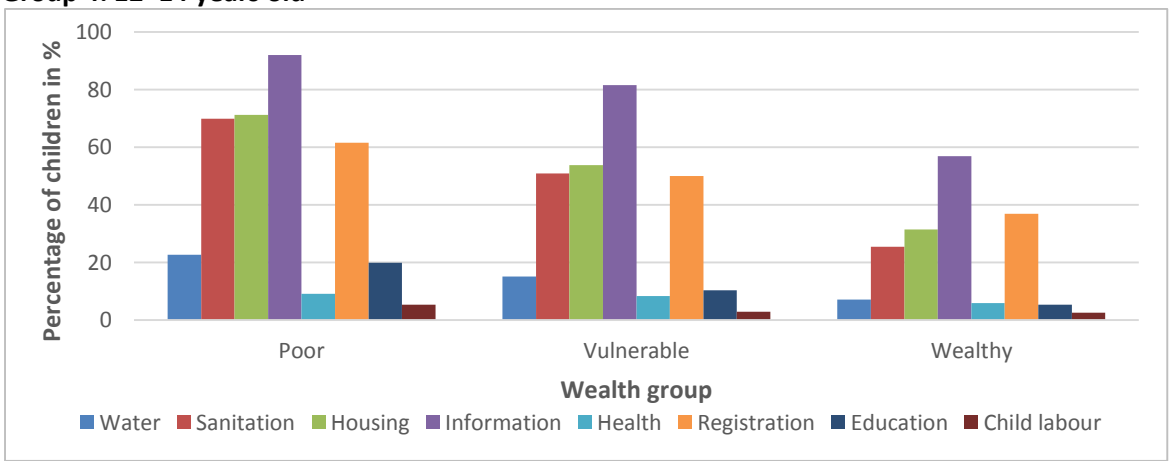

Figure 6. Deprivation rates by dimension and wealth level, 12–14 years

In the group of children aged 12–14 years old, two additional dimensions are included. Information dimension is measured based on two indicators: (i) access to internet and (ii) access to information device. Child labor dimension, on the other hand, is calculated based on the international standard. Information dimension has the highest deprivation rate among all dimensions in this age group; 9 out of 10 poor children are deprived in this dimension. Furthermore, vulnerable children also share similar condition of deprivation in information dimension (about 80%). The condition for wealthy children is relatively better for this dimension; however, the deprivation condition is considered still to be high higher as more than half of the children in this sub-group are deprived.

Compared with the previous age group, the deprivation in education for this age group is relatively quite high. About 20% of children in the sub-group of poor suffer from deprivation in education, while 5% children who are rich also experience the same condition. Registration issue also occurs in this age group as more than one third of children who are wealthy do not have or cannot show their birth certificate. Furthermore, the deprivation rate in the same dimension is doubled for poor children. Child labor exists in this age group although the deprivation rate is relatively low. About 5% poor children must work. Similar condition also occurs in the wealthier sub-groups.

Group 5: 15–17 years old

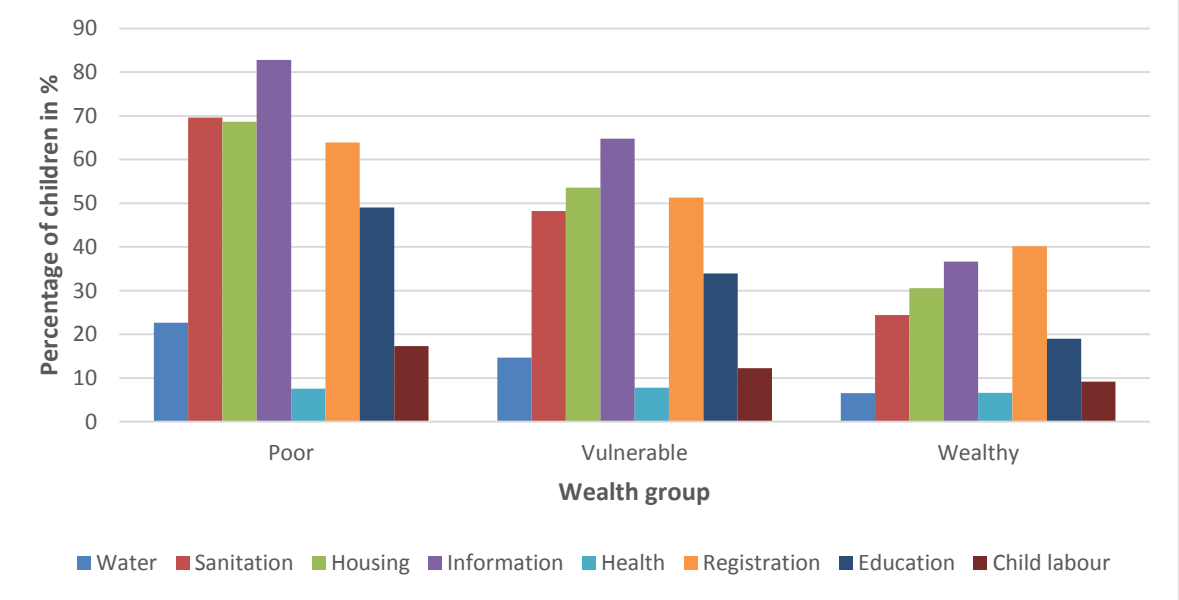

Figure 7. Deprivation rates by dimension and wealth level, 15–17 years

The eldest age group is children aged 15–17 years old. This group has the same dimensions as the group of aged 12–14 years old. Compare with the previous age group, children in this age group are worse-off in some dimensions. The deprivation rates in education are very high where almost a half of poor children are deprived in this dimension. Furthermore, although the deprivation rate for the sub-group of wealthy children who is lower than the other two groups, about 1 out of 5 children in that sub-group is still deprived in that dimension. In addition, similar to other age groups, there is no big gap in the proportions of children who are lack of medical treatment across wealth groups.

The deprivation rates in child labor in this age group are relatively high as can be seen from the above graph. About 17 percent of children who live below PPL must do some labor activities, while the rate for wealthy children is slightly lower (around 9%). Furthermore, the deprivation rates in health dimension are similar across sub-groups.

3.3 Children in Multidimensional Deprivation

Overall, around 15.9% children suffer from multidimensional deprivation. The deprivation rates differ across age groups: 28.7% for the 0–24 months old, 30.4% for the 2–4 years old, 8% for the 5–11 years old, 10.8% for the 12–14 years old, and 16.5% for the 15–17 years old children. This estimates are based on derivation cut-off points that arbitrarily chosen for each age group. For the two youngest age groups (0–24 months and 2–4 years old), the cut-off point is two deprivations. Any child in those groups that deprived in more than two dimensions is considered as deprived in multidimensional aspects. The cut-off point for the three oldest age groups is three deprivations. It is higher compare to the younger age groups because of the consideration that as the children grow up, they need more dimensions to be meet. For example, the education dimension is not relevant for the two youngest age groups, but it is deemed important in the older age groups. In addition, the child labor dimension and information dimension are only applicable to the two oldest age groups but not the younger age groups.

Table 4. Household Composition of Deprived Children

	0–23 Months	2–4 Years	5–11 Years	12–14 Years	15–17 Years	All Children
Gender of Head of Household						
Male	28.66	30.65	8.12	10.36	16.31	15.87
Female	28.54	27.45	6.99	14.7	18.11	16.04
Marital Status of Household Head						
Never married	44.06	51.14	16.33	38.39	25.63	28.63
Married	28.67	30.48	8.02	10.32	16.1	15.75
Separated/divorced	30.76	31.87	9.02	14.34	19.07	16.8
Widowed	27.8	28.95	7.72	12.91	17.96	16.43
Age of Youngest Child						
0	27.77	36.63	8	12.15	23.21	21.73
1–5	29.58	29.91	8.69	11.91	18.56	19.29
6–11			7.47	11.16	15.14	9.35
12–14				9.25	18.03	11.36
Number of Children in Household						
1–3	26.01	28.05	6.73	8.8	14.2	14.26
3+	45.62	46.03	13.71	17.45	24.11	22.92

Profiling deprived children provides us more information on the household background of those deprived children which allow us to identify children with most vulnerable condition. The pattern between male and female headed household is unclear. Adolescent (children aged 12–17 years old) tend to have higher risk of being deprived if the household head is male. On the opposite, children at younger age are less likely to deprive when the household head is male. Based on the marital status of the household head, the data of children population shows that children with married parents have the lowest deprivation rate compared with children in other categories. Moreover, among all age groups, children aged 5–11 years old have the lowest rates in the all categories of the marital status of household head.

Children aged 15–17 years old are at highest risk for being deprived if the youngest child in their household is less than one year old. Overall this pattern is consistent in all age groups. Moreover,

children in all age groups tend to have higher risk of being deprived when there are more than three children in the household. For instances, about 1 out of 4 children in the group age of 0–23 months experience multidimensional deprivation if they are in the household with fewer than four children. The proportion of children who are deprived increases to 45% in the households with more than three children.

Table 5. Household Characteristic of Deprived Children

	0–23 Months	2–4 Years	5–11 Years	12–14 Years	15–17 Years	All Children
Location						
Urban	14.36	14.47	1.78	4.05	9.03	6.85
Rural	41.96	46.06	13.95	17.32	23.7	24.5
Number of Working Adults						
0	32.72	30.96	5.94	13.69	19.64	16.51
1	30.82	30.32	6.64	8.86	15.37	15.54
2+	26.59	30.49	9.08	11.73	16.9	16.07
Highest Educational Level Among Females (16–59) in the Household						
No formal education	57.72	59.47	18.34	21.74	30.94	29.53
Primary education	45.09	46.99	10.64	13.28	24.89	22.48
Secondary education	21.74	21.45	3.93	5.76	10.52	10.61
Tertiary/vocational education	5.48	4.41	0.45	0.64	1.43	2.12
Employment Sector of Head of Household						
Primary sector	45.19	50.01	16.06	19.05	27.27	27.02
Secondary sector	21.95	24.14	4.27	6.13	12.83	11.25
Tertiary sector	17.89	17.77	2.91	4.6	8	8.13

The risk of being deprived for children is much higher in rural areas, compare with children who live in urban areas. The condition is even worse for younger children in which almost half of children in this rural areas are defined as deprived children. Moreover, the rates are relatively lower for older group ages. The results are mixed when it comes to profile of the number of working adults in households. In the youngest age group, the deprivation rate decreases if there are more adults who work in their households. Nevertheless, the opposite pattern occurs for children aged 5-11 years old while the lowest rate in the group of 12–14 years and 15–17 years is when only one adult works in each household.

Children have the highest risk of suffering from multidimensional deprivation when there is no educated adult female in their households. The deprivation rates for children who are below five years old are above 50%. On the other hand, the deprivation rates for those age groups are around 45% when the adult female in the household has primary education. The rates significantly decrease if the households have adult females who have education at secondary or higher level. However, the rates are, overall, relatively still high for children who live in the household with secondary education, particularly for children below five years old. Furthermore, The gap between the category of no educated female in the household and the category of tertiary level-educated female in the household is significantly large for the youngest age groups (under 5 years old), where

the difference is more than 50 percentage points. The smallest gap between those two categories occurs in the group of 5–11 years.

Having household head work in tertiary sector will reduce the risk of being deprived and the pattern is consistent across age groups. Only about 8% of children whose household head works in tertiary sector and this number increases threefold for children who are in the household that depends on primary sector. Children who suffer from multidimensional deprivation the most are Children whose household heads are in primary sector are more likely to experience multidimensional deprivation. Children in younger age (under five years old) suffer from the deprivation the most. About half of children who depend on primary sector as household income source experience deprivation. The rates decrease to about 23% for children whose household head has job in secondary sector. In contrast, the deprivation rates of children in the last category are about 17%.

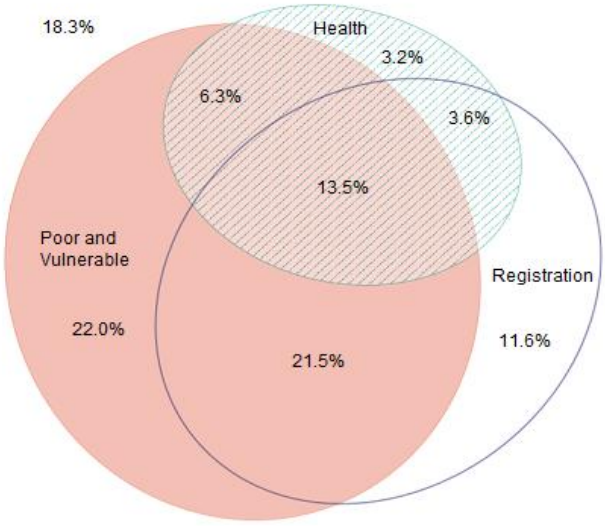

Figure 8. Overlapping between monetary condition and dimension deprivation, 0–23 months

The Venn diagram above shows the overlapping deprivation between monetary poverty and two other well-being dimensions suffered by children, namely birth registration and health. Only around 18.3% of all children aged 0–23 months in the population suffers none on all of the three dimensions observed. There is 13.5% children who are poor and vulnerable, yet at the same time also deprived in health and birth registration dimensions. The intersection between monetary poverty and birth registration shows a rate of 35%. It means that one out of three children in the population who live in poverty also do not have birth registration. In contrast, there are still 15% of children who do not birth registration as well although they live above poverty threshold. Moreover, even though the monetary poverty rate is already high, still 6.8% nonpoor children suffer from health dimension, and a higher rate of 14.3% deprived in birth registration dimension. This implies that monetary poverty is not the solely reason behind child's deprivation in health and birth registration.

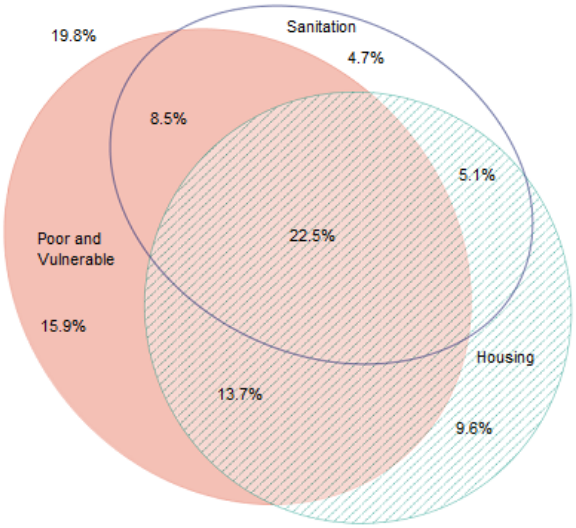

Figure 9. Overlapping between monetary condition and dimension deprivation, 2–4 years

The chosen dimension to be overlapped with the monetary dimension for the second youngest group are housing and sanitation. Those dimensions are chosen because the deprivation rate on these two dimensions are the highest among other types of household asset at this age group. Dimensions which are classified as household asset are sanitation and water. Around 28.4% children deprived in three dimensions at the same time. There are 14.2% children deprived in the monetary and housing dimension at the same time, which is the highest among two dimensions combination. Monetary dimension and sanitation dimension overlapped with 7.1% of children who are deprived only on those dimensions. A quarter of children in this age group deprived only in one type of dimension. Almost half of them deprived on monetary dimension only, followed by housing and sanitation dimension at 9% and 3.7%, respectively. Only 18.2% of children who do not suffered from any of the three dimensions.

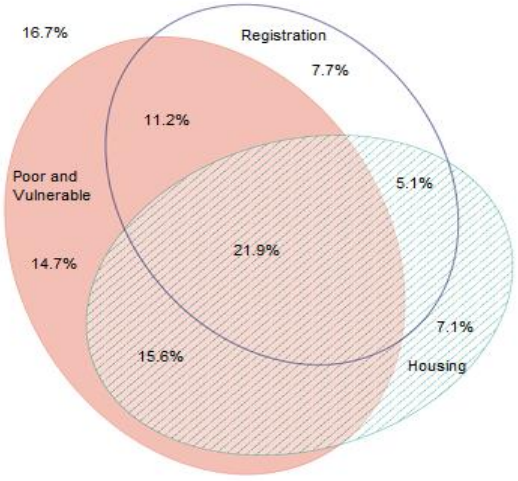

Figure 10. Overlapping between monetary condition and dimension deprivation, 5–11 years

Housing and registration dimensions are highlighted in this age group because registration is deemed important for school administration and housing is one of the household asset's dimension which has the highest deprivation. Around 21.9% of children are deprived in all of the three dimensions. There are 15.6% who are deprived in housing and monetary dimensions. Almost one in ten children at this age is deprived on registration and monetary dimension at the same time. Children who are deprived in housing and registration dimension account for 5% of the overall children at this age group, this combination have the least deprivation rate compare to the other two combinations. Close to 15% of children only deprived in monetary dimension, but not on the other two dimensions. While the percentage of children who do not deprive on any of the three dimensions is only 16.7% of the total population.

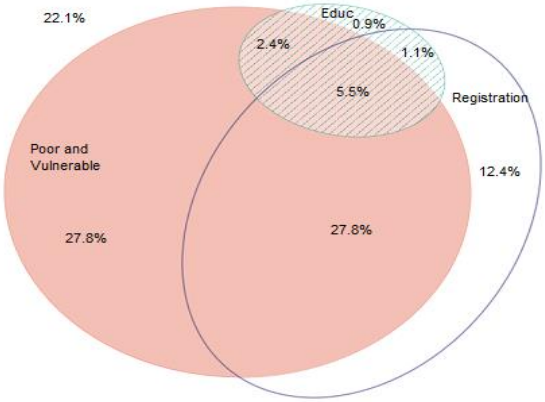

Figure 11. Overlapping between monetary condition and dimension deprivation, 12–14 years

Registration dimension is again highlighted in this age group along with education dimension. A small percentage of children (5.5%) is deprived on three dimensions. Around a quarter of children in this age group is deprived at monetary and registration dimension. The other two overlap dimensions have a small percentage of deprived children compare to the overlap between monetary and registration dimension, which are 1.1% for registration and education dimensions and 2.4% for monetary and education dimension. The highest percentage of children who are deprived in only one particular dimension is 27.8%, which is monetary dimension. Registration dimension followed with 12.4% of children which suffered on that dimension in particular. Education appear to have the smallest share of deprived children compare to the other two dimensions. Children who are not deprived on any of those chosen dimensions account for 22.1% of the total population at this age group.

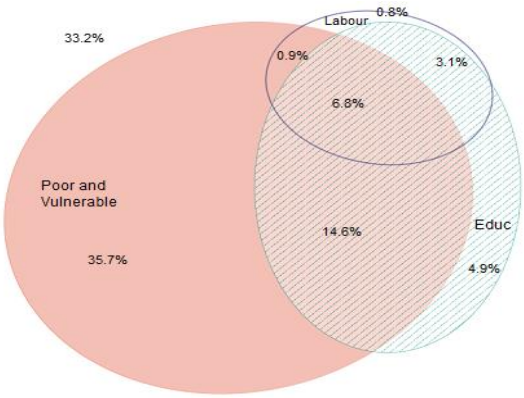

Figure 12. Overlapping between monetary condition and dimension deprivation, 15–17 years

For children aged 15–17 years, education and child labor dimensions are chosen to examine the overlap rate between non-monetary dimension and monetary poverty deprivation. The proportion of children aged 15–17 years who are not deprived on any of those three deprivations is 33.2% of the population. Around 6.8% of all children aged 15–17 years who are poor and vulnerable, lack behind on their education and at the same time becomes a child labor. The deprivation rate for children who live in poverty and deprive in their schooling is stood at 14.6% which relatively high compare to the other combinations with two dimensions. Monetary poverty appears to have the highest deprivation rate, and is explaining high proportion of deprivation in education and working dimensions. Approximately, 35.7% children aged 15–17 years are living in poverty but do not deprived on any other two dimensions. Among children deprived in education dimension, around one-fourth is neither poor nor vulnerable; while among children deprived in working dimension, around one-third is neither poor nor vulnerable.

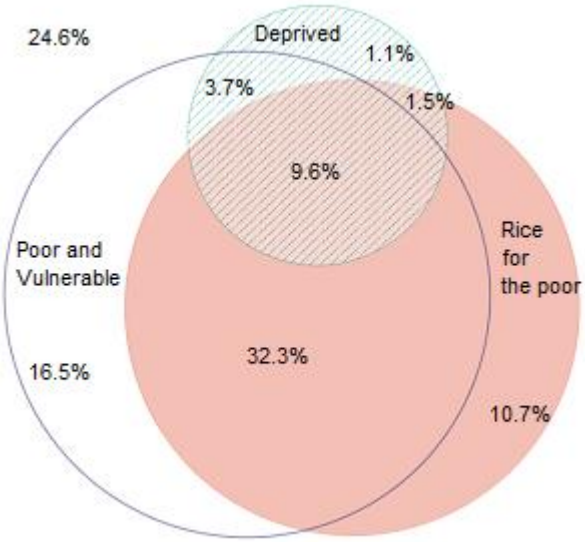

Figure 13. Overlapping Between Monetary condition, Multiple Deprivation and the Subsidized Rice Program

Figure 10 shows to what extent the subsidized rice program (Raskin) goes to children who suffer from deprivation, poverty and/or vulnerability. The Raskin program targets low-income or vulnerable households. This program was initiated in 2002 to improve food security and social protection for the targeted households. In 2013, there were 15.5 million beneficaries (households) of the program. The overlap analysis shows that 32% of poor and vulnerable children receive the Raskin program. In addition to about 10 percent of children who suffer from both deprivation and monetary poverty and have access to this social protection program.

Nevertheless, 21% of the children who are financially poor and/or multidimensionally deprived are not beneficiaries of the program. On the other hand, almost 11 percent of the children receive support from the program despite the fact that they are neither poor nor deprived—this might reflect the inclusion error of the program. This overlap analysis shows that the targeting of the program needs more improvements in order to reduce both inclusion and exclusion errors so that the program can effectively support the children who are in need of assistance.

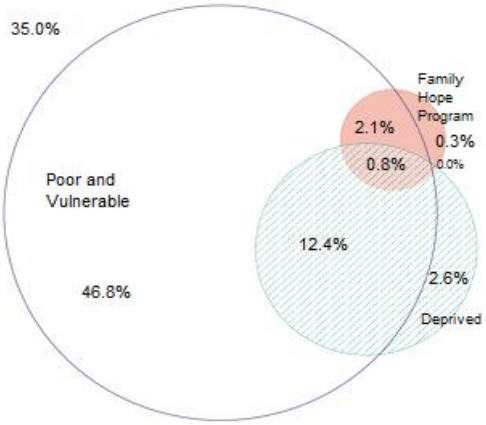

Figure 14. Overlap between monetary condition, deprivation and family hope program

Another social protection program provided by the government that covers children is the Family of Hope program (PKH). This program was initiated in 2007 to support the extremely poor households through conditional cash transfer. The program has a long-term objective to cut the chain of inter-generational poverty so that children of the very poor households can escape the poverty trap. Indonesian government recently scaled up the program into covering 6 million poor households nationwide, from only 3.5 million previously. The number of the beneficiaries of this program is relatively smaller compared to other social protection programs (such as Raskin) since the PKH has been designed to target households who are at the bottom of the wealth quintile or the poorest of the poor.

The Venn diagram depicted in Figure 11 shows the overlap between the PKH and both monetary poverty and multidimensional deprivation. The coverage of the program is quite small, only 3 percent of all Indonesian children are covered. About one-third of the PKH beneficiaries (or around 1 percent of total child population) experience multidimensional deprivations and monetary poverty at the same time. Contrariwise, about two-third of the program beneficiaries suffer from financial deprivation only. Additionally, the inclusion error of the program is relatively small, with 0.3 percent of children (or 10 percent of the all children that are beneficiaries) who receive cash transfer despite the fact that they are neither poor nor deprived.

In total, about 62% of the children do not receive the benefits of the PKH in spite of the fact that they suffer from either monetary poverty or multidimensional deprivations, or the combination of both. There is also a small share of the children (3%) who are not program recipients in spite of the fact that they are multidimensionally deprived. Nevertheless, 12% of the children are in the worst condition because they suffer from both monetary poverty and multidimensional deprivations but receive no support from this PKH. The size of the program seems to be too small to cover children who suffer from deprivations. The government should consider alternative strategies and options in order to provide protection to more vulnerable and deprived children in Indonesia.

IV. CONCLUSION

The results estimated by the MODA methodology have provided a comprehensive overview about children life condition in Indonesia. The brief overview of poverty condition shows that children are more likely to suffer from monetary poverty compared with the whole population. Since the current

poverty line is considered to be too low in representing individual life condition, this study also measured poverty using the double size of the poverty line (2PPL) as the threshold. This results in much higher poverty rates in the whole population, including children.

This study also finds that children, regardless their age and wealth level, are vulnerable to multidimensional deprivations. The evidence shows that children live above 2PPL can also be deprived in several dimensions simultaneously. Poor children are indeed the ones who are most likely to experience deprivation in one or more dimensions of life. Living in households lacking financial support makes them more difficult to obtain some basic needs such adequate sanitation, health care and education. However, evidences show that better financial condition does not guarantee non-poor children to be free from any deprivation. A fraction of nonpoor children who live in a deprived environment tells us that there some issues that restrict these children to access existing infrastructures and services. Moreover, there is overlap between monetary poverty and deprivations in other dimensions. However, it shows that there are children suffering from several deprivations simultaneously but at the same time do not experience financial problem.

The profile analysis from the previous section shows that the pattern of poverty is consistent when measured by either the PPL or the 2PPL. The evidence shows that the proportions of children who are defined to be poor consistently increase in significant size across age groups and categories when the poverty threshold is raised from the PPL to the 2PPL. Although the government uses only the PPL as the formal threshold to define monetary poverty, the evidence shows that there are more children who are live between the PPL and the 2PPL require the attention from the government since they are not much better off than those who are below the PPL.

Furthermore, the profile analysis on both deprived children and poor children—either measured by the PPL or the 2PPL—also find that they share similar background. Children are better off when there less number of children in the household. Furthermore, living in rural areas makes children are more likely to either poor or experience multidimensional deprivation. The level of education of adult females in the household also strongly associated with children's wellbeing. Children in household with adult females who are uneducated or only have primary education have higher risk for being both poor and deprived. In addition, children whose household head's work is in the primary sector are at the highest risk for being poor and suffered from multidimensional deprivation.

Children in different age groups experience different dimension deprivation. Younger children mostly suffer from deprivation in health dimension. In contrast, children at the eldest age group have higher deprivation rates in education dimension, compared with children who are at the group of 5–11 years and 12–14 years. Moreover, children aged 15–17 years also face child labor issue. Nevertheless, children of all age groups experience the same deprivation condition in regard to birth registration.

The evidence encourages us to go deeper and be more carefully in assessing children deprivation based on life cycle. A thorough analysis on the aspects related to multidimensional deprivations will provide us more accurate information. This allows us, especially policy makers, to address multidimensional deprivations problems that vary across age groups more appropriately.

Finally, this study also has a number of limitations. Most of indicators used in this analysis are still limited to measuring only the accessibility of services and infrastructure. Nevertheless, we need to cover indicators which can be used to capture the quality of basic social services experienced by children.

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APPENDICES

Appendix 1.

Threshold for Multidimensional Child Poverty

1. Water

1.1 Source of water for drinking (0–17 years)

Deprived	Non-deprived
Unprotected dug well	Branded bottled water
Unprotected spring	Refill water
Surface water (river)	Meter piping water
Others	Retail piping water
	Well equipped with pump
	Protected dug well
	Protected spring
	Rainwater

2. Sanitation (0–17 years)

The use of the toilet facility:

Deprived	Non-deprived
Public toilet	Private toilet
None	Shared toilet

Type of toilet facility:

Deprived	Non-deprived
Flush toilet	Water seal latrine
Pit latrine	
None	

Final disposal for waste water:

Deprived	Non-deprived
Pond/ paddy field	Septic tank
River/ lake/ sea	
Pit	
Beach/ open field/ yard	
Others	

3. Housing

3.1 Housing materials (0–17 years)

Deprived	Non-deprived
Floor	
Dung	Marble/ ceramic
Others	Tiles
	Cement
	Wood planks
Roof	
Palm leaves	Concrete
Others	Roof tile
	Sirap roof
	Zinc
	Asbestos roof
Walls	
Wood plank	Cement
Bamboo	
Others	
Facilities: Electricity	
Kerosene pressure lantern/ gas lamp	PLN
Candle, carbide lamp, castor oil lamp, candlenut lamp	non PLN (State-owned electricity enterprise)
Others	

3.2 Housing: overcrowding (0–17 years): deprived if on average the ratio of house size per number of household member is greater than 8

4. Information

4.1 Information: internet connection (12–17 years): deprived if child does not have access to internet in the last three months

Electronic device (12–17 years): deprived if child does not have at least one of the following devices available: telephone, cell phone, desktop, laptop.

5. Health

5.1 Health: skilled birth attendant (0–2 years) deprived (all children in household) if no or an unskilled birth attendant assisted with the birth of the child (in last 2 years)

Deprived	Non-deprived
Witchdoctor	Doctor
Household	Midwife
Others	Other paramedic

5.2 Health: Vaccinations (0–59 months)
Deprived if child does not receive Hepatitis B/ BCG/ DPT/ Measles/Morbili vaccinations

5.3 Health: medical treatment, deprived if child does not receive immediate medical treatment (self-treatment or outpatient) for his/her illness, except for self-healing illness e.g.: cough and flu

6. Child Protection

6.1 Child Protection: birth registration (0–17 years), child is deprived if he/she does not have birth certificate

6.2 Child Protection: birth certificate (0–17 years), child is deprived if he/she has birth certificate but cannot be shown

7. Education

7.1 Education: School enrolment

Children 3–6 years	:	Deprived if child is not attending pre-school
Children 7–12 years	:	Deprived if child is not attending school in the current school year and if he or she has not obtained his/her primary school certificate yet.

7.2 Education: Grade for age

Children 7–12 years	: Deprived if child is 1 or more years behind with his/her schooling.

8. Child Labor

8.1 Child Labor (12-17 years):

Child 12 year	: Deprived if he/she is working
Child 13–14 years	: Deprived if he/she is working for more than 15 hours per week
Child 15–17 years	: Deprived if he/she is working for more than 20 hours per week

Appendix 2.

Provincial Poverty Lines, Child Poverty Rates, and Multidimensional Deprivation

Province	PPL		2PPL		Number of Children	% Children < PPL	% Children < 2PPL	% Deprived Children
	Urban	Rural	Urban	Rural				
Aceh	359,217	319,416	718,434	638,832	1,865,802	21.2	77.36	20.05
North Sumatera	307,352	263,061	614,704	526,122	5,430,189	13.46	67.19	20.98
West Sumatera	332,837	288,215	665,674	576,430	1,962,266	10.83	62.51	19.54
Riau	346,796	312,591	693,592	625,182	2,351,133	10.2	56.93	20.3
Jambi	337,930	258,408	675,860	516,816	1,188,606	9.42	58.4	18.01
South Sumatera	311,606	252,497	623,212	504,994	2,873,660	16.49	62.82	18.77
Bengkulu	390,488	281,468	780,976	562,936	664,965	24.13	67.34	29.83
Lampung	383,332	265,105	766,664	530,210	2,759,669	20.29	73.99	21.88
Bangka Belitung	328,972	409,901	657,944	819,802	454,747	4.92	54.64	10.24
Riau Islands	310,464	326,819	620,928	653,638	659,889	3.33	37.94	8.28
DKI Jakarta	407,437		814,874		2,877,460	5.29	49.37	4.83
West Java	258,538	240,945	517,076	481,890	15,930,606	11.74	56.83	14.45
Central Java	254,800	235,202	509,600	470,404	10,692,297	16.17	66.23	7.4
DI Yogyakarta	297,391	256,558	594,782	513,116	992,908	17.54	58.96	4.1
East Jawa	265,203	250,530	530,406	501,060	11,796,225	13.8	67.95	7.17
Banten	273,828	242,331	547,656	484,662	4,085,815	7.02	53.4	14.98
Bali	287,551	249,446	575,102	498,892	1,287,109	4.86	41.95	4.01
West Nusa Tenggara	286,020	243,620	572,040	487,240	1,834,961	22.02	69.51	16.1
East Nusa Tenggara	308,059	217,918	616,118	435,836	2,234,102	23.76	80.17	39.03
West Kalimantan	263,058	242,321	526,116	484,642	1,683,328	10.13	57.68	25.73
Central Kalimantan	287,333	298,172	574,666	596,344	842,675	6.59	54.25	29.56
South Kalimantan	298,518	272,614	597,036	545,228	1,334,411	6.2	49.05	24.91
East Kalimantan	401,132	349,935	802,264	699,870	1,385,738	6.85	51.33	10.96
North Sulawesi	242,840	233,415	485,680	466,830	792,044	9.25	53.7	11.3
Central Sulawesi	298,646	265,582	597,292	531,164	1,070,682	17.97	67.23	29.92
South Sulawesi	221,892	192,161	443,784	384,322	3,175,274	12.05	55.73	17.58
Southeast Sulawesi	215,910	200,058	431,820	400,116	987,348	15.68	58.83	25.29
Gorontalo	224,622	219,827	449,244	439,654	423,728	21.4	63.14	28.01
West Sulawesi	218,429	211,850	436,858	423,700	537,154	15.73	66.56	31.83
Maluku	315,012	285,967	630,024	571,934	714,213	22.41	68.75	25.05
North Maluku	284,374	248,026	568,748	496,052	463,424	9.38	58.29	27.42
West Papua	362,401	298,395	724,802	596,790	331,768	23.01	66.37	29.82
Papua	382,905	355,839	765,810	711,678	1,356,936	48.88	77.1	56.24

Appendix 3.

Household Composition of Poor Children (in Absolute Value)

	0–23 Months		2–4 Years		5–11 Years		12–14 Years		15–17 Years	
	PPL (%)	2PPL (%)	PPL (%)	2PPL (%)	PPL (%)	2PPL (%)	PPL (%)	2PPL (%)	PPL (%)	2PPL (%)
Gender of Head of Household										
Male	1,174,949	5,158,826	2,002,629	8,453,204	4,425,623	20,094,064	1,766,967	8,082,391	1,481,972	7,282,438
Female	144,425	566,985	173,851	681,875	518,135	1,785,452	215,052	1,002,333	188,783	924,046
Household Type										
Never married	61	10,374	4,185	11,762	8,597	38,696	9,129	70,178	1,562	104,607
Married	1,173,095	5,130,877	1,971,213	8,374,977	4,386,430	19,982,320	1,768,610	8,011,498	1,466,234	7,103,938
Separated/divorced	15,223	66,038	41,809	131,165	142,569	412,302	35,704	205,251	32,582	173,608
Widowed	130,995	518,522	159,273	617,175	406,162	1,446,198	168,576	797,797	170,377	824,331
Age of Youngest Child										
0	665,268	2,958,997	242,040	762,545	517,845	2,039,264	164,923	633,189	155,286	533,221
1–5	654,106	2,766,814	1,934,440	8,372,534	2,702,245	9,979,643	858,858	3,170,943	612,083	2,342,899
6–11					1,723,668	9,860,609	569,990	2,679,512	505,452	2,543,810
12–14							388,248	2,601,080	156,694	932,886
Number of Children in Household										
1–3	977,397	4,764,200	1,612,742	7,531,528	3,240,258	16,640,495	1,162,112	6,481,789	919,533	5,690,623
3+	341,977	961,611	563,738	1,603,551	1,703,500	5,239,021	819,907	2,602,935	751,222	2,515,861

Appendix 4.

Household Characteristic of Poor Children (in Absolute Value)

	0–23 Months		2–4 Years		5–11 Years		12–14 Years		15–17 Years	
	PPL (%)	2PPL (%)	PPL (%)	2PPL (%)	PPL (%)	2PPL (%)	PPL (%)	2PPL (%)	PPL (%)	2PPL (%)
Location										
Urban	445,058	2,359,333	759,552	7,442,616	1,764,639	9,219,329	770,051	3,965,318	610,536	3,407,616
Rural	874,316	3,366,478	1,416,928	7,600,090	3,179,119	12,660,187	1,211,968	5,119,406	1,060,219	4,798,868
Number of Working Adults										
0	46,130	157,392	62,258	221,952	145,433	552,134	51,387	320,101	61,045	312,934
1	577,514	2,628,539	862,512	3,873,586	1,981,403	8,721,805	708,074	3,089,377	494,530	2,533,570
2+	695,730	2,939,880	1,251,710	5,039,541	2,816,922	12,605,577	1,222,558	5,675,246	1,115,180	5,359,980
Highest Educational Level Among Females (16-59) in the Household										
No formal education	149,620	493,632	286,173	919,378	765,659	2,756,298	326,638	1,294,827	240,538	995,385
Primary education	483,451	1,815,673	872,583	3,105,521	1,950,860	7,589,435	740,263	3,181,480	548,420	2,389,358
Secondary education	613,216	3,064,006	847,078	4,469,238	1,728,238	9,733,505	695,592	3,712,889	736,346	4,091,177
Tertiary/vocational education	20,937	246,960	23,683	285,738	43,362	563,794	14,603	175,501	13,375	177,137
Employment Sector of Head of Household										
Primary sector	715,232	2,476,148	1,183,090	3,965,581	2,746,417	9,522,270	1,091,363	4,082,976	937,824	3,752,048
Secondary sector	206,523	993,600	380,720	1,744,315	774,358	4,106,596	312,104	1,635,014	243,782	1,414,400
Tertiary sector	270,628	1,705,811	417,745	2,745,722	1,027,225	6,815,387	430,769	2,705,900	342,019	2,370,863

APPENDIX 5.

Data Table for Figure 3–7

	0–23 Months			2–4 years			5–11 years			12–14 years			15–17 years		
	Below PPL	Between PPL and 2PPL	Above 2PPL	Below PPL	Between PPL and 2PPL	Above 2PPL	Below PPL	Between PPL and 2PPL	Above 2PPL	Below PPL	Between PPL and 2PPL	Above 2PPL	Below PPL	Between PPL and 2PPL	Above 2PPL
Water	24.58	14.69	6.39	23.18	15.13	6.61	23.91	14.78	6.77	22.7	15.15	7.19	22.67	14.65	6.58
Sanitation	64.11	46.77	21.39	67.74	45.99	25.15	67.74	47.93	24.3	69.89	50.9	25.19	69.6	48.21	24.42
Housing	70.95	53.78	38	73.23	55.46	37.4	74.13	54.78	33.38	71.24	53.78	31.51	68.62	53.6	30.57
Information										92.03	81.53	56.94	82.78	64.75	36.68
Health	39.79	28.79	18.52	47.92	35.85	24	9.19	8.88	7.26	9.2	8.42	5.92	7.61	7.79	6.59
Registration	62.28	53.15	41.6	63.91	51.66	39.7	61.62	49.42	35.14	61.57	49.97	36.95	63.87	51.32	40.16
Education							5.49	2.37	1.21	19.96	10.39	5.41	49.03	33.93	18.99
Child labor										5.37	2.96	2.6	17.3	12.24	9.2

Appendix 6.

Household Composition of Deprived Children (in Absolute Value)

	0–23 Months	2–4 Years	5–11 Years	12–14 Years	15–17 Years
Gender of Head of Household					
Male	2,369,454	4,289,019	2,594,623	1,331,991	2,036,740
Female	221,622	288,466	179,469	213,143	298,561
Household Type					
Never married	6,371	7,711	9,542	36,372	65,562
Married	2,348,937	4,238,961	2,553,422	1,314,613	1,963,060
Separated/divorced	30,828	70,476	54,959	44,286	65,064
Widowed	204,940	260,337	156,169	149,863	241,615
Age of Youngest Child					
0	1,290,673	426,925	224,976	100,307	176,133
1–5	1,300,403	4,150,560	1,293,111	522,787	621,038
6–11			1,256,005	474,360	629,492
12–14				447,680	276,150
Number of Children in Household					
1–3	2,035,559	3,661,929	1,889,029	967,169	1,536,927
3+	555,517	915,556	885,063	577,965	798,374

Appendix 7.

Household Characteristics of Deprived Children (in Absolute Value)

	0–23 Months	2–4 Years	5–11 Years	12–14 Years	15–17 Years
Location					
Urban	626,290	1,077,046	298,317	285,051	624,738
Rural	1,964,786	3,500,439	2,475,775	1,260,083	1,710,563
Number of Working Adults					
0	72,250	106,699	51,580	62,999	121,068
1	1,257,744	1,912,583	908,375	438,857	702,376
2+	1,261,082	2,558,203	1,814,137	1,043,278	1,511,857
Highest Educational Level Among Females (16–59) in the Household					
No formal education	335,868	664,615	632,863	367,382	419,903
Primary education	1,011,463	1,891,385	1,062,487	564,861	834,860
Secondary education	1,109,272	1,696,567	654,189	363,439	790,755
Tertiary/vocational education	54,609	68,166	12,480	6,518	14,963
Employment Sector of Head of Household					
Primary sector	1,446,297	2,569,850	1,972,064	1,027,058	1,423,638
Secondary sector	356,663	719,969	283,472	160,870	313,460
Tertiary sector	602,011	1,041,820	390,462	242,825	417,601

The SMERU Research Institute

Telephone : +62 21 3193 6336
Fax : +62 21 3193 0850
E-mail : smeru@smeru.or.id
Website : www. smeru. or.id
Facebook : The SMERU Research Institute
Twitter : @SMERUInstitute
YouTube : SMERU Research Institute