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HOW MOTHER'S EDUCATION SHAPE CHILDREN DEVELOPMENT IN INDONESIA?

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Abstract

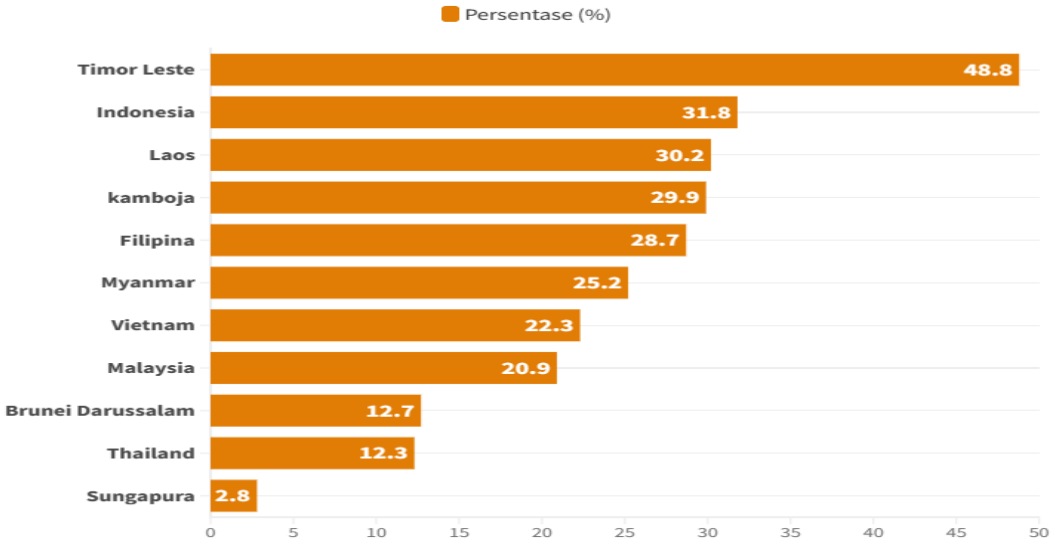
Children's development is a crucial factor in achieving the vision of Indonesia Emas 2045, particularly in fostering globally competitive human resources. One of the main challenges in realizing this vision is the high prevalence of wasting and stunting among children in Indonesia. As of 2023, the stunting prevalence in Indonesia recorded at 21.5%, indicating persistent issues with chronic malnutrition. Additionally, the wasting rate among children increased from 7.7% in 2022 to 8.5% in 2023. This research answers the question of how mother's education can improving children's development. The research method uses quantitative analysis involving secondary data obtained from 2014 IFLS data. For the first equation, the dependent variable is stunting, measured by the height of children aged 0-5 years. For the second equation, the dependent variable is the weight of children aged 0-5 years. To ensure that the effects observed in the study are due to the independent variables of interest and not influenced by other external factors, we use some control variables, such as direct cash assistance, household income, waste management, number of household members, distance from home to healthcare facilities, area of residence (rural/urban), and ethnicity (Javanese/non-Javanese). The results of the analysis show that the mother's education have significant and positive impact on height and weight of the children. Apart from that, the control variables of direct cash assistance, household waste management, and place of residence also have a positive effect on children's height as well as children weight. And house hold size have significant and negative relationship to height and weight of the children. This analysis shows the importance of mother's education. Increasing mother's educational attainment can help increase family access, especially their children, to healthy nutrition, health services, hygiene and education, all of which can contribute to reducing stunting in children. There for, policy steps that support women's empowerment, such as increasing access to education and the economy for women as a mother for now and future need to be prioritized to reduce wasting and stunting of children in Indonesia.

Keywords : Mother's Education, Wasting, Stunting, Indonesia.

Introduction

Children development is a fundamental aspect of realizing the vision of Indonesia Emas 2045, particularly in building globally competitive human resources. Achieving this vision faces several key challenges, including health, education, and creating an environment that optimally supports child growth and development.

Not only in Indonesia, actually stunting is one of the global nutrition issues. United Nation's statistics recorded that in 2020, more than 149 million (22 percent) children under five worldwide experienced stunting. Stunting is particularly prevalent among children in Asia and Africa. According to UNICEF data from 2022, the percentage of children suffering from stunting globally is still above 30% in regions such as Africa, South Asia, and Southeast Asia. Africa has the highest prevalence of stunting worldwide, reaching 31.7 percent (Katadata.com). In Southeast Asia, data in 2020 shows that the highest prevalence of stunting is in Timor Leste, reaching 48.8 percent. As this picture 1 follows.



Source : Asian Development Bank

Picture 1. Prevalence of stunting in the Southeast Asian Region in 2020

Picture 1 shows Indonesia holds the second highest position after Timor Leste. It shows that stunting is till to be a serious problem in Indonesia. Data from SIPERINDU (2023) shows that the prevalence of stunting in Indonesia has decreased over the past five years, but this reduction varies greatly across different regions. The Indonesian government has set ambitious targets to reduce wasting prevalence to below 7 percent by 2024 while enhancing access to healthcare services, particularly in primary health centers. This issue underscores the critical need for robust nutrition programs, community education, and healthcare investments to safeguard child development and contribute to the nation's long-term goals

As of 2023, the prevalence of stunting in Indonesia is 21.5 percent, while the target for 2024 is 14 percent. During President Jokowi's administration, a team was formed to accelerate the prevention of stunting to achieve this target. Tabel

berikut ini menunjukkan kondisi prevalensi stunting di all province in Indonesia based on Indonesian Health Survey data in 2023. The prevalence of stunting varies between provinces, with most provinces having high stunting rates, namely Papua Tengah 39,4 pecent, Papua Pegunungan 34,7 percent and NTT 37,9 percent and others still around 10-30 percent. Bali is the lowest stunting prevalence and its above national condition which is 7 percent.

Table 1 Top Tenth Prevalence Stunting In Region of Indonesia

No	Province	2023
		SKI 2023
1	Aceh	29.4
2	Sumatera Utara	18.9
3	Sumatera Barat	23.6
4	Riau	13.6
5	Jambi	13.5
6	Sumatera Selatan	20.3
7	Bengkulu	20.2
8	Lampung	14.9
9	Kepulauan Bangka Belitung	20.6
10	Kepulauan Riau	16.8
11	Dki Jakarta	17.6
12	Jawa Barat	21.7
13	Jawa Tengah	20.7
14	Daerah Istimewa Yogyakarta	18
15	Jawa Timur	17.7
16	Banten	24
17	Bali	7.2
18	Nusa Tenggara Barat	24.6
19	Nusa Tenggara Timur	37.9
20	Kalimantan Barat	24.5
21	Kalimantan Tengah	23.5
22	Kalimantan Selatan	24.7
23	Kalimantan Timur	22.9
24	Kalimantan Utara	17.4
25	Sulawesi Utara	21.3
26	Sulawesi Tengah	27.2
27	Sulawesi Selatan	27.4
28	Sulawesi Tenggara	30
29	Gorontalo	26.9
30	Sulawesi Barat	30.3
31	Maluku	28.4
32	Maluku Utara	23.7

33	Papua	28.6
34	Papua Barat	24.8
35	Papua Selatan	25
36	Papua Tengah	39.4
37	Papua Pegunungan	37.3
38	Papua Barat Daya	31
	Nasional	21.5

Sumber : SIPERINDU online, 2023

According to WHO, stunting is a condition where children fail to reach their ideal height for their age. In a population, the prevalence of stunting is defined as the number of children under five years old whose height-for-age is more than two standard deviations below the expected standard. Stunting should not be taken lightly, as it affects not only physical development but also cognitive development. Children who grow up stunted face challenges such as difficulties in memory, problem-solving, and performing activities related to mental and brain functions or intelligence. The slow cognitive growth leads to reduced intellectual functioning, difficulties in receiving information, and communication problems. This will inevitably affect their learning and social interactions at home and school. Moreover, their physical development lags behind their peers because nutritional deficiencies hinder muscle development. Stunted children also tend to tire more quickly and are less agile than their peers, which impacts their productivity in adulthood.

Stunting affects not only the physical growth of children but also their cognitive development and future productivity. Low productivity levels are a significant factor in a country's low GDP and, ultimately, affect national welfare (find a theory on micro productivity). Additionally, children suffering from stunting tend to have weaker immune systems, making them more susceptible to diseases. Research by Paediatrics and International Child Health indicates that stunting increases the risk of diabetes in adulthood. This is because nutritional deficiencies during growth disrupt the hormonal systems of insulin and glucagon in the pancreas, which regulate glucose balance and metabolism. Consequently, blood sugar balance is easily disturbed, and the body is more prone to fat accumulation as the child grows into adulthood. Moreover, there is a higher risk of degenerative diseases such as cancer, diabetes, and obesity, due to imperfect cell formation caused by inadequate micronutrient and macronutrient intake.

Stunting is a primary measure used to assess child malnutrition. Generally, the causes of stunting can be categorized into two main factors: nutritional intake and child health status (https://dashboard.stunting.go.id/). These factors are linked to: 1) Food availability/food security, including availability, affordability, and access to nutritious food; 2) Social environment, including norms, infant and child feeding practices, hygiene, and workplace education; 3) Health environment,

including access to preventive and curative services; 4) Residential environment, including water, sanitation, and housing conditions.

The ability of households to create positive conditions related to these four factors is closely tied to economic conditions, such as income and economic inequality, trade, urbanization, food systems, social protection, health systems, economic development, and women's empowerment. Achieving these conditions requires political commitment, the implementation of necessary actions, and pressure for implementation. Effective governance involving both government and non-governmental organizations is also crucial in preventing stunting (UNICEF 1997, BAPPENAS 2018).

Besides stunting, wasting is one of the main issues related to create superb generation in Indonesia. Children wasting also remains a significant challenge in Indonesia. As of 2022, the country has one of the highest burdens of child wasting globally, with over 760,000 children under five experiencing severe wasting. The prevalence of wasting was recorded at 10.2 percent in 2022 and has shown an increase in some areas, reflecting the ongoing struggle to combat this severe form of malnutrition (UNICEF, 2023). This condition, characterized by children being dangerously underweight for their height, often arises from inadequate dietary intake and recurrent infections, which are compounded by poor healthcare access in many regions.

The role of women, particularly as mothers, is fundamental in combating stunting and wasting, especially in developing countries like Indonesia. Mothers are typically the primary caregivers and are directly involved in managing their children's nutrition, health, and overall well-being. Women's empowerment, as highlighted by (Marah Has et al., 2022), equips them with control over family resources, active participation in decision-making, and the ability to elevate their socioeconomic status. These factors are crucial for creating a nurturing environment where children can thrive. Empowered mothers are better positioned to ensure proper dietary practices, access healthcare services, and implement preventive measures against malnutrition. When women are educated and economically independent, they can break the cycle of poverty and undernutrition, fostering an environment conducive to raising resilient and intelligent children. For example, initiatives aimed at improving maternal education and financial inclusion directly enhance a woman's capacity to make informed decisions about her family's diet and healthcare. This approach not only addresses immediate nutritional challenges but also ensures long-term benefits by cultivating a generation free from stunting and wasting. Thus, strengthening women's roles and empowering them as mothers has a transformative impact on human capital development.

Women's empowerment significantly impacts their ability to fulfill their roles as mothers, directly influencing their children's nutritional and overall well-being. According to (Fidyani & Wisana, 2021), a mother's bargaining power within the household plays a pivotal role in improving children's nutritional status.

Empowered mothers, with access to education and nutrition knowledge, are better equipped to make informed decisions about food, healthcare, and education, benefiting their children's development and welfare. When mothers participate in family decision-making, they can prioritize resources for nutritious food, ensure access to health services, and support educational opportunities. These decisions create a nurturing environment where children can thrive. For example, maternal access to health services and social support networks enhances their capacity to prevent malnutrition and manage illnesses effectively.

Daerah tempat tinggal	Jenis kelamin	Tidak/belum pernah sekolah	SD/MI	SMP/MTS	SMA/SMK	Diploma 1 s.d Universitas	Jumlah Yang Masih Bersekolah	Tidak bersekolah lagi	total	Tidak/belum pernah sekolah	SD/MI	SMP/MTS	SMU/SMK/MA	Diploma s.d Universitas	Jumlah yang masih bersekolah	Tidak bersekolah lagi	total
Perkotaan	Laki-laki	1.29	6.28	5.26	5.10	3.42	20.07	78.64	100	1.15	6.16	5.30	5.13	3.47	20.06	78.79	100
	Perempuan	2.47	5.92	5.01	5.11	3.78	19.82	77.71	100	2.35	5.83	5.04	5.27	3.87	20.01	77.64	100
	Laki-laki	1.88	6.10	5.14	5.11	3.60	19.94	78.18	100	1.75	5.99	5.17	5.20	3.68	20.03	78.21	100
Perdesaan	Laki-laki	3.59	6.57	5.44	4.72	2.12	18.85	77.56	100	3.44	6.76	5.27	4.77	1.80	18.60	77.96	100
	Perempuan	5.91	6.24	5.25	4.88	2.35	18.72	75.38	100	5.85	6.34	5.15	4.84	2.06	18.38	75.77	100

	Laki-laki	4.74	6.41	5.35	4.80	2.23	18.78	76.48	100	4.64	6.55	5.21	4.80	1.93	18.49	76.87	100
perkotaan	Laki-laki	2.27	6.40	5.34	4.94	2.86	19.55	78.18	100	2.11	6.41	5.29	4.98	2.78	19.45	78.44	100
	Perempuan	3.92	6.06	5.11	5.01	3.17	19.35	76.72	100	3.80	6.04	5.08	5.09	3.12	19.33	76.86	100
	Laki-laki	3.09	6.23	5.23	4.98	3.02	19.45	77.46	100	2.96	6.23	5.18	5.03	2.95	19.39	77.65	100

Source: Statistic Beraau of Indonesia

Figure 1 Average length of schooling for boys and girls in Indonesia on 2023

From the figure above, we can see there is gap in educational attainment between women and men in Indonesia, as evidenced by lower educational attainment among women, has significant implications for maternal education and its impact on children's welfare. The educational status of a mother will certainly determine the quality of her child's care. Higher education has a positive effect on child development and factors that influence developmental deviations in children aged 0-3 years are poverty and hunger (Jufia Syahailatua & Kartini, 2020). A mother's level of education is a key determinant of her ability to provide adequate nutrition, access healthcare, and support her children's overall development. Research shows that educated mothers are more likely to understand the importance of balanced diets, hygiene, and timely medical care, directly reducing the risk of stunting and wasting in their children. The mother's level of education influences educating children to achieve goals at the stages of toddler development according to their age and developmental tasks in a complete and optimal manner (Bambang Yuli Krisnanto, Ikit Netra Wirakhmi, Noor Yunida Triana, 2022).

Moreover, maternal education empowers women to make informed decisions within the household, such as prioritizing children's health and education. When girls have less access to education, this perpetuates a cycle of underdevelopment, where future generations are also at risk of malnutrition and limited opportunities. Addressing this gender disparity in education is thus critical not only for achieving gender equality but also for improving the well-being of families and communities. Enhanced educational access for women strengthens their roles as caregivers and decision-makers, fostering healthier and more resilient future generations.

Maternal education and economic empowerment play crucial roles in shaping children's health and overall development. Mothers from wealthier families are better equipped to provide varied, nutritious meals and maintain

consistent feeding schedules, ensuring optimal growth and reducing malnutrition risks (Marah Has et al., 2022). For example, wealthier families can afford more diverse diets that meet children's nutritional needs, contributing to better health outcomes.

Studies from Ethiopia highlight disparities between urban and rural settings, showing that children in urban areas, where mothers face fewer barriers to accessing resources, tend to exhibit better physical growth and nutritional outcomes. These findings underscore the significance of mitigating environmental and demographic challenges that limit food availability in remote regions. Addressing these disparities requires multifaceted strategies, including enhancing women's education, increasing access to nutritious food, and reducing barriers in rural areas. Together, these efforts ensure that mothers can better fulfill their roles as providers and nurturers, promoting the health and resilience of future generations

A study in Southeast Asia (journal) found that the patriarchal system gives men control and leadership in the family, so women do not have freedom of access to the economy and do not participate in decision-making. Previous research found that in South Asia, children with good nutrition are associated with mothers who have better social and economic resources (Kulkarni et al, 2021).

Educated women with high social connections tend to have more freedom of movement, which in turn affects their knowledge about good parenting in meeting their children's nutritional needs (Cunningham, et.al, 2015). Relatively, women have more limited access to the economy, society, and household control, which makes them powerless and often subjected to domestic violence. This is more common in poor rural areas than in wealthy urban areas, which affects the health of their children. Research from Alfred Khecia Mhukong & Justine Burns (2021) found that increasing parental cooperation in household decision-making and women's access to household resources can reduce the nutritional gap between urban and rural children.

Access to quality education is also a woman's right. Inclusive and equitable education helps child development and alleviates poverty. A similar study in Ethiopia on women's empowerment and childhood stunting found different results. In the final adjusted logistic regression model, there was a significant association between maternal empowerment and child stunting. Therefore, the likelihood of having a stunted child was 40% lower in moderately empowered mothers compared to low empowered mothers. For each empowerment dimension, mothers who completed secondary education or higher were 43% less likely to have stunted children compared to mothers with no formal education. Compared to women without a house or land, women with a house or land were less likely to have stunted children. Similarly, mothers who were members of a community group were 46% less likely to have stunted children compared to mothers who were not members of a community group. Two empowerment

dimensions (household decision-making and cash income) did not show a significant association with stunting in the final model (Wassie et al., 2024).

Research specifically examining the relationship between mothers role and stunting and wasting in Indonesia is still limited. Such research is highly needed to fill knowledge gaps, provide a strong foundation for more effective policy-making and programs, and design targeted and contextual interventions. Therefore, research on the impact of women's empowerment on stunting is not only relevant but crucial in efforts to improve the quality of life and health of children in Indonesia towards a better future. Based on this, this study aims to fill the research gap in this area. First, to empirically prove the impact of mother's education on children's height with reflects stunting in Indonesia and the second to analyze the impact of woman education to children weight which reflects as wasting. Basically, this research wants to find out how much role mothers' education plays in children's development in Indonesia.

The theory of gender inequality in economic development highlights how unequal access to economic opportunities, resources, and decision-making power for women hinders broader growth and societal progress. When linked to a mother's role in child development, this inequality can perpetuate cycles of poverty and poor outcomes for children.

Mothers with limited access to education, economic opportunities, and health services are less equipped to provide optimal conditions for their children's development. Research shows that empowered mothers—those with better education, access to income, and decision-making power—are more likely to invest in their children's health, nutrition, and education, fostering better cognitive and physical development. These investments are critical for breaking intergenerational cycles of poverty and inequality, ensuring children can thrive and contribute to society's growth.

Metodology

This study aims to explore the relationship between mothers' education to children development, by conducting two different regression analyses. The first regression examines the impact of mothers' education on child height, while the second investigates its impact on child weight. Utilizing secondary data from the 2014 Indonesian Family Life Survey (IFLS), this study uses regression analysis.

Data analysis was conducted using Stata 12. This approach seeks to highlight the important role of mothers' education as a potential determinant in addressing child development in Indonesia. The Independent Variables in this study is mothers' education. This is measured using educational attainment by mothers. For the first equation, the dependent variable is the height of children aged 0-5 years. For the second equation, the dependent variable is the weight of children aged 0-5 years. To ensure that the effects observed in the study are due to the independent variables of interest and not influenced by other external factors, we

use some control variables, such as direct cash assistance, household income, waste management, number of household members, distance from home to healthcare facilities, area of residence (rural/urban), and ethnicity (Javanese/non-Javanese). These are the description for each control variable: 1) Direct Cash Assistance represented as whether the household received direct cash assistance; 2) House hold income is total income earned by all members of a household, encompassing various sources such as wages, business earnings, agricultural income, and other forms of revenue; 3) Waste management refers to the practices and methods households use to handle and dispose of their waste; 4) household size represented as number of members in the household; 5) Nearest Health Facility, represented as Distance to the nearest health facility; 6) Urban/Rural Residence represented as Whether the household is located in an urban or rural area; 7) Ethnicity represented as Whether the household is of Javanese or non-Javanese ethnicity. The model aims to examine the relationship between women's empowerment and stunting, controlling for other socio-economic and environmental factors. Based on this, the linear regression model that is formed is as follows.

Stunting = f(Woman Empowerment, Control Variables)

Where,

Children Height = f(Mother's Education Attainment, Control Variable) …….(1)

The equation above can be elaborated into the following model:

Children Height (Y_1) = $\alpha+\beta_1$(Mother's Education) + β_2(Direct Cash Ass) + β_3(HH Income) + β_4(Waste Management) + β_5(HH Size) + β_6(Nearest Health Facilities) + β_7(Residence) + β_8(Ethnicity) + ε

Then, the second equation is:

Children Weight = f (Mother's Education Attainment, Control Variable)……....(2)

The second equation is formulated into a model as follows:

Children Weight (Y_2) = α + β_1(Mother's Education) + β_2(Direct Cash Ass) + β_3(HH Income) + β_4(Waste Management) + β_5(HH Size) + β_6(Nearest Health Facilities) + β_7(Residence) + β_8(Ethnicity) + ε

Where :

α = Intercept

β_1 to β_8 = Coefficients for the independent and control variables

ε = Error term

By employing this methodology, the study aims to provide empirical evidence on the relationship between women's empowerment and child stunting in Indonesia, highlighting the critical role of education and economic status in influencing child health and development.

Result and Discussion

Result

Table 1 and Table 2 are the results of multiple linear regression analysis using Stata software. Table 1 presents the analysis of the relationship between maternal education and children's height. The results highlight how varying levels of maternal education influence child height outcomes, providing insights into the potential impact of educational attainment on child growth and development.

Table 1. Multiple Linear Regression Analysis Test Results Equation 1

Source	SS	df	MS	Number of obs	=	1,975
				F(8, 1966)	=	12.09
Model	97.7072456	8	12.2134057	Prob > F	=	0.0000
Residual	1985.67149	1,966	1.01000584	R-squared	=	0.0469
				Adj R-squared	=	0.0430
Total	2083.37874	1,974	1.05540969	Root MSE	=	1.005

z_height	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
blt	.1408676	.0599473	2.35	0.019	.0233007	.2584346
rel_inc2014	.0009351	.0130184	0.07	0.943	-.0245961	.0264664
dumwaste	.2073861	.0699183	2.97	0.003	.0702644	.3445078
art	-.0780032	.0108571	-7.18	0.000	-.0992959	-.0567105
hdist	.0024755	.0007797	3.17	0.002	.0009463	.0040046
urban14	.1153167	.0472483	2.44	0.015	.0226548	.2079787
jawa	-.0238211	.0460021	-0.52	0.605	-.1140391	.066397
education	.0132309	.0057396	2.31	0.021	.0019746	.0244872
_cons	-.0138894	.1058806	-0.13	0.896	-.2215395	.1937606

The data in table 1 when written in a multiple linear regression model is as follows.

Children Height (Y1) = -0.01 + 0.013(Mother's Education) + 0.141(Direct Cash Ass) + 0.001 (HH Income) + 0.207(Waste Management) - 0.078(HH Size) + 0.024 (Nearest Health Facilities) + 0.115 (Residence) - 0.023 (Ethnicity) + ε

Each variable's coefficient reflects its unique contribution to predicting children's height, considering the interplay of socioeconomic and environmental factors. Mother's Education (0.013) means For each additional year of the mother's education, the child's height increases by 0.013 units, holding all other factors constant. This suggests a positive correlation between the mother's education level and the child's height. Direct Cash Assistance (0.141) means Children in households receiving direct cash assistance are expected to be 0.141 units taller than those not receiving such assistance, assuming all other factors are constant. This implies that direct financial support has a positive impact on child height. Household Income (0.001) means For every additional unit of household income, the child's height increases by 0.001 units, holding other factors constant. This indicates a very small positive effect of household income on child height. Waste Management (0.207) means Children living in areas with proper waste

management are expected to be 0.207 units taller than those in areas without proper waste management, all else being equal. This shows a significant positive impact of waste management on child health. Household Size (-0.078) means each additional member in the household is associated with a decrease of 0.078 units in child height, holding other factors constant. This negative coefficient suggests that larger household size might dilute resources, adversely affecting child height. Nearest Health Facilities (0.024) means For each unit increase in proximity or quality of the nearest health facilities, the child's height increases by 0.024 units, assuming other factors remain constant. This indicates better access to health services positively impacts child height. Residence (0.115) means This variable likely indicates whether the household is in an urban or rural area. Children in urban areas (if coded as 1) are expected to be 0.115 units taller than those in rural areas (if coded as 0), controlling for other variables. Ethnicity (-0.023) means This coefficient indicates that belonging to javanese ethnic group is associated with a decrease of 0.023 units in child height, all else being equal. This might reflect genetic or socioeconomic differences among ethnic groups.

Based on their significance, the independent variables that affect the height of children are those with a t-value smaller than the probability of 0.05. Therefore, the variables that significantly influence the height of children are mother's education, direct cash assistance, nearest distance to health facilities, household size, waste management, and residence.

The R^2 value of 0.469 indicates a moderate positive relationship between the two variables studied, with approximately 22.0% of the variation explained by this relationship. This signifies a fairly significant but not dominant relationship, suggesting that further analysis considering other variables might be necessary to obtain a more complete picture. It would also be important to include variables such as genetic factors, parenting styles, and other relevant variables.

Table 2 below shows the relationship between mother's education and children's weight. Compared to Table 1, the R^2 value is larger than the R^2 value in Equation 1. This indicates that the independent and control variables used can explain children's weight better than their height. Specifically, in regression model 2, with an R^2 value of 0.518, it means that 51.8% of the variation in children's weight (Y2) can be explained by the regression model involving the following variables: mother's education, direct cash assistance, household income, waste management, household size, nearest health facilities, residence, and ethnicity. An R^2 value of 0.518 shows that the model is quite good at explaining the variation in children's weight, but there is still room for improvement. For example, including other variables that also influence children's weight, such as nutritional intake, parenting styles, or other variables not included in the model, could enhance the model. This model captures more than half of the variation in the data, indicating that the chosen variables are relevant and significantly impact children's weight.

Source	SS	df	MS	Number of obs = 1,975

				F(8,1966)	= 13.41
Model	97.634747	8	12.2043434	Prob > F	= 0.0000
Residual	1788.62052	1,966	.909776461	R-squared	= 0.0518
Total	1886.25527	1,974	.955549782	Adj R-square	= 0.0479
				Root MSE	= .95382

Table 2. Multiple Linear Regression Analysis Test Results Equation 2

z_weight	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
blt	.0865585	.0568951	1.52	0.128	-.0250226	.1981396
rel_inc2014	-.0013059	.0123555	-0.11	0.916	-.0255372	.0229255
dumwaste	.1221915	.0663584	1.84	0.066	-.0079487	.2523317
art	-.0763321	.0103043	-7.41	0.000	-.0965407	-.0561235
hdist	.002638	.00074	3.56	0.000	.0011867	.0040893
urban14	.1621445	.0448427	3.62	0.000	.0742003	.2500886
jawa	.0304315	.04366	0.70	0.486	-.0551931	.1160562
education	.0148784	.0054474	2.73	0.006	.0041952	.0255616
_cons	-.0122982	.1004898	-0.12	0.903	-.2093759	.1847795

The data in table 2, when written in a multiple linear regression model, is as follows.

Children Weight (Y2) = - 0,123 + 0,014 (Mother's Education) + 0,865 (Direct Cash Ass) -0,01(HH Income) + 0,122 (Waste Management) – 0.076 (HH Size) + 0,002 (Nearest Health Facilities) + 0,162 (Residence) + 0,162 (Ethnicity) + ε

The above equation can be interpreted as follows 1) Intercept (-0.123) means This is the baseline value of children's weight when all independent variables are zero. While it might not have a practical meaning if none of the variables can be zero, it serves as the starting point of the regression line; 2) Mother's Education (0.014) means For each additional year of the mother's education, the child's weight increases by 0.014 units, assuming other factors remain constant. This suggests that higher education levels in mothers are positively associated with children's weight; 3) Direct Cash Assistance (0.865) is Receiving direct cash assistance is associated with an increase of 0.865 units in children's weight, holding other factors constant. This indicates a strong positive impact of financial assistance on children's weight; 4) Household Income (HH Income) (-0.01) : For each unit increase in household income, children's weight decreases by 0.01 units, assuming other factors remain constant. This negative coefficient may seem counterintuitive and might need further exploration or context-specific interpretation; 5) Waste Management (0.122) means Effective waste management is associated with an increase of 0.122 units in children's weight, suggesting that better waste management practices positively impact children's health and weight; 6) Household Size (HH Size) (-0.076) means Each additional member in the

household is associated with a decrease of 0.076 units in children's weight, assuming other factors remain constant. This could imply that larger households might have fewer resources per child, negatively impacting weight; 7) Nearest Health Facilities (0.002) means For each unit increase in proximity to health facilities, children's weight increases by 0.002 units. This indicates that closer access to health facilities has a slight positive impact on children's weight.; 8) Residence (0.162) means This variable likely represents a binary indicator (e.g., urban vs. rural). If the residence is urban, children's weight increases by 0.162 units, holding other factors constant. This suggests a positive association between living in an urban area and children's weight. 9) Ethnicity (0.162) means This variable likely represents a specific ethnic group compared to a reference group. Being part of the specified ethnic group increases children's weight by 0.162 units, assuming other factors remain constant. This reflects the influence of ethnicity on children's weight. Referring to Table 2, the independent variables that significantly affect the dependent variable, namely child weight, are variables that have a significant t value of less than 0.05. Thus, the variables identified as having a significant influence on child weight include the mother's education level, the number of household members, proximity to the nearest health facility, and type of residence.

Discussion

Based on the statistical tests, it is concluded that mothers' education has a positive and significant impact on the height and weight of children in Indonesia. For children's height, it is also significantly and positively influenced by other control variables, including direct cash assistance, waste management, nearest health facilities, and residence. In contrast, household size has a significant and negative effect on children's height.

For the second equation, it was found that maternal education positively affects children's weight and is also influenced by several other control variables. The proximity to health facilities and residence significantly and positively impact children's weight, whereas household size significantly and negatively affects children's weight.

It can be concluded that mothers'education has a significant and positive effect on the height and weight of children aged 0-5 years in Indonesia. In other words, women's empowerment, as seen from the mothers' educational attainment, correlates with stunting and wasting. Mother's education plays a major role in determining knowledge and practices related to nutrition. Educated mothers tend to have a better understanding of the importance of balanced nutrition, contributing to healthy weights for their children. They are more likely to provide adequate and appropriate nutritious food, adopt healthy eating habits within the family, and access health information through various media and health facilities.

Educated mothers are also more aware of the importance of quality healthcare for their children, including accessing preventive and curative health services better and following the child immunization schedule. They generally have better knowledge of hygiene and sanitation, which directly impacts children's health. Good sanitation practices reduce the risk of infections and diseases, directly contributing to increased weight and height in young children, and facilitate the early detection and treatment of children's illnesses.

Education empowers women especially as a mother to make better decisions and be informed about family health and welfare. Consequently, mothers with better education tend to be more involved in making decisions related to family health and can influence decisions to postpone the birth of a second or subsequent child until they are physically and mentally ready, which positively impacts child health. Moreover, highly educated mothers are more likely to choose to work and have income, as educated mothers also have the ability to achieve financial independence (Dimitri Tchakounte Tchuimi, 2022). This affects decision-making related to the reduced likelihood of stunting during childhood

Translation:

Research on stunting in Tanzania has found that women's autonomy in decision-making and control over household resources reduces the likelihood of child stunting. This significance is particularly evident in rural communities compared to urban areas. The difference in women's autonomy between rural and urban areas results in a 5% gap in child nutrition between rural and urban areas (Alfred Khecia Mukong & Justine Burns, 2021).

Translation:

Research in Papua New Guinea (Gibson, 2021) investigated the relationship between maternal and paternal education levels and stunting in the region. The results indicate that maternal education is at least three times more impactful than paternal education. Therefore, the lack of investment in female education appears to contribute to poor health outcomes and economic performance in Papua New Guinea (John Gibson, 1999).

Therefore, the low priority given to girls' education (gender inequality) can eventually incur significant social costs due to the poor health outcomes of children. Gender differences in educational attainment will impact child health when there is an efficiency effect because mothers tend to spend more time caring for children compared to fathers. If women show greater concern for child growth and nutrition compared to men, increasing women's education relative to men's may lead to more resources being allocated to children. Enhancing maternal schooling has a greater influence in reducing stunting compared to increasing household income.

This analysis highlights the importance of empowering women in efforts to prevent stunting in Indonesia. Maternal education not only affects the children they raise currently but also has long-term and sustainable effects. Healthy and

well-nourished children tend to have better learning abilities and ultimately achieve greater success in their lives, creating a cycle of sustained benefits. Therefore, policy measures that support women's empowerment, particularly through increased access to education alongside improvements in health, environment, and household economics, need to be prioritized to reduce stunting and enhance the well-being of children in Indonesia.

Conclusion

Mothers' education has a significant and positive relationship with children development in Indonesia. This is evidenced by the results of multiple linear regression analysis showing that mothers' education levels have a significant and positive impact on the height and weight of children aged 0-5 years. Additionally, control variables that affect child height include direct cash assistance, waste management, distance to nearest health facility, and residency (urban/rural), all of which have significant and positive effects on child height. On the other hand, the number of household members has a significant negative impact on child height.

The weight of children is also significantly and positively influenced by maternal education levels. Furthermore, distance to the nearest health facility and residency have significant and positive effects on child weight, whereas the number of household members correlates negatively with child weight. Household income and ethnicity, however, do not have significant effects on either child height or

Based on these findings, the government needs to create policies that promote women's empowerment in Indonesia, especially focusing on increasing women's education. The role of women in development is crucial, particularly in creating a quality human resource base. Women with higher education have better knowledge regarding maternal readiness and child care, leading educated women to be selective about their children's health and nutrition, household hygiene, and their education.

In other words, highly educated women always aim to have high-quality children. Therefore, households with highly educated women are less likely to experience stunting. This emphasizes the importance of improving women's education and their access to income.

For future research, it is important to include variables that influence stunting, such as genetic factors, nutritional intake within families, the role of technology, economic policies related to education and health in relation to stunting. It is also crucial to understand the role of variables related to maternal psychosocial factors such as stress, mental health, and social support in child health.

In Indonesia, research on stunting should consider cultural and regional contexts. Comparisons between regions or countries can provide insights into contextual factors that influence research outcomes.

References

Alfred Khecia Mhukong & Justine Burns (2021). Parental bargaining and rural–urban child health differential in Tanzania. Vol 38 (6).

Bambang Yuli Krisnanto at al. (2022). *Gambaran Tingkat Pengetahuan Ibu Tentang Perkembangan Anak Usia 1-5 Tahun di Posyandu Desa Karangsari Kecamatan Kembaran*. Jurnal Kesehatan, Kebidanan, dan Keperawatan. Vol 15(2)

Cunningham, et.al, (2015). Women's empowerment and child nutritional status in South Asia: a synthesis of the literature. vol 11 (1)

Dimitri Tchakounte Tchuimi, (2022). *Does maternal empowerment influence childhood stunting and wasting in Cameroon? A cross-sectional study*. Vol 18 (2)

Fidyani, A. Y., & Wisana, I. D. G. K. (2021). The Impact of Mother's Bargaining Power on the Nutritional Status of Children in Indonesia. *Economics and Finance in Indonesia*, *67*(1), 115. https://doi.org/10.47291/efi.v67i1.797

John Gibson. (1999). Can women's education aid economic development? The effect on child stunting in Papua New Guinea. *Facific Economic Bulletin*. Vil 14 (2)

Jufia Syahailatua & Kartini. (2020). *Pengetahuan ibu tentang tumbuh kembang berhubungan dengan perkembangan anak usia 1-3 tahun.* Vol 3(2)

Kulkarni et al, (2021). Gendered Intrahousehold Bargaining Power is Associated with Child Nutritional Status in Nepal. *The Journal of Nutrition*. Vol. 151 (4)

Marah Has, E. M., Efendi, F., Wahyuni, S. D., Mahmudah, I. Z., & Chotimah, K. (2022). Women's Empowerment and Sociodemographic Characteristics as Determinant of Infant and Young Child Feeding Practice in Indonesia. *Current Research in Nutrition and Food Science*, *10*(2), 607–619. https://doi.org/10.12944/CRNFSJ.10.2.17

Wasting, T. C. (2021). *Treating Child Wasting in Indonesia : A Cost-Effective Approach to Save Lives Key Messages :*