P-ISSN: 2338-8617
E-ISSN: 2443-2067

Jurnal Ilmiah PEURADEUN

Vol. 13, No. 1, January 2025

SCAD Independent
Accreditation by IAO since 2014

JIP
The Indonesian Journal of the Social Sciences
www.journal.scadindependent.org
DOI Prefix Number: 10.26811

INDEX COPERNICUS INTERNATIONAL

sinta 1
Science and Technology Index
Accredited "Sinta 1" by Decree No. 72/E/KPT/2024
Valid Until the May 2027 Edition

ELSEVIER Scopus

Clarivate Analytics
WEB OF SCIENCE™

JURNAL ILMIAH PEURADEUN
The Indonesian Journal of the Social Sciences
p-ISSN: 2338-8617/ e-ISSN: 2443-2067
www.journal.scadindependent.org

Vol. 13, No. 1, January 2025
Pages: 745-770

Daughters at Risk: Analyzing the Impact of Maternal Son Preference on Stunting and Wasting in Indonesia

Muhammad Adnan[1]; Marwiyati[2]; Zurriyani[3]; Zia Thahira[4]
[1,2]*Faculty of Economics and Islamic Business, Universitas Islam Negeri Ar-Raniry Banda Aceh, Indonesia*
[3]*Faculty of Medicine, Universitas Abulyatama, Aceh, Indonesia*
[4]*Faculty of Economics and Business, Universitas Syiah Kuala Banda Aceh, Indonesia*

Article *in* Jurnal Ilmiah Peuradeun
Available at : https://journal.scadindependent.org/index.php/jipeuradeun/article/view/1351
DOI : https://doi.org/ 10.26811/peuradeun.v13i1.1351

How to Cite this Article
APA : Adnan, M., Marwiyati, M., Zurriyani, Z., & Thahira, Z. (2025). Daughters at Risk: Analyzing the Impact of Maternal Son Preference on Stunting and Wasting in Indonesia. *Jurnal Ilmiah Peuradeun, 13*(1), 745-770. https://doi.org/10.26811/peuradeun.v13i1.1351

Others Visit : https://journal.scadindependent.org/index.php/jipeuradeun

Jurnal Ilmiah Peuradeun
The Indonesian Journal of the Social Sciences
doi: 10.26811/peuradeun.v13i1.1351

Publisher: SCAD Independent
Printed in Indonesia

Jurnal Ilmiah Peuradeun
Vol. 13, No. 1, January 2025
Pages: 745-770

DAUGHTERS AT RISK: ANALYZING THE IMPACT OF MATERNAL SON PREFERENCE ON STUNTING AND WASTING IN INDONESIA

Muhammad Adnan[1]; Marwiyati[2]; Zurriyani[3]; Zia Thahira[4]
[1,2]*Faculty of Economics and Islamic Business, Universitas Islam Negeri Ar-Raniry Banda Aceh, Indonesia*
[3]*Faculty of Medicine, Universitas Abulyatama, Aceh, Indonesia*
[4]*Faculty of Economics and Business, Universitas Syiah Kuala Banda Aceh, Indonesia*
[1]*Correspondence Email: m.adnan@ar-raniry.ac.id*

Received: February 21, 2024	**Accepted:** December 31, 2024	**Published:** January 30, 2025
Article Url: https://journal.scadindependent.org/index.php/jipeuradeun/article/view/1351		

Abstract

Son preference remains prevalent in various communities, influencing intra-household resource allocation and potentially affecting child health outcomes. This study examines the impact of maternal son preference on stunting and wasting among children in Indonesia, utilizing data from the Indonesian Family Life Survey (IFLS) waves 4 and 5. Employing a logit regression model, the analysis incorporates various socioeconomic and demographic factors to estimate the effects of maternal son preference on child malnutrition. The findings indicate that while there is no significant correlation between maternal son preference and stunting incidence, a notable increase in the risk of wasting among boys and a reduction in wasting among girls were observed in households where mothers exhibited a son preference. These results underscore the complex interplay between gender biases and child health, highlighting the need for gender-sensitive health interventions. This study contributes to the literature on gender disparities in child health by providing empirical evidence on the nuanced effects of maternal son preference, offering critical insights for policymakers seeking to promote gender equity and improve child welfare in Indonesia.

Keywords: *Son Preference; Gender Equity; Child Malnutrition; Stunting; Wasting.*

A. Introduction

The study of stunting and wasting has gained significant interest in the fields of socioeconomics and health economics. In developing countries, stunting and wasting among children under the age of 5 pose a persistent threat to child development that cannot be easily resolved (Voth-Gaeddert et al., 2018). The issues of stunting and wasting are critical and require attention, as they are closely linked to child growth and development. Children who are stunted or wasted may suffer from suboptimal brain growth and metabolic disorders, which can ultimately reduce their cognitive abilities and learning achievements, and consequently, adversely affect their productivity in the future (de Onis & Branca, 2016; Kairiza et al., 2020).

Basic Health Research has revealed that various factors contribute to stunted and wasted growth in children. These factors can be classified into two categories—direct and indirect. Direct factors include gender, low birth weight, inadequate intake of energy and protein, infectious diseases, Upper Respiratory Tract Infection (URI), and diarrhea. On the other hand, indirect factors that influence stunting and wasting in children are sufficient exclusive breastfeeding, incomplete immunization, and family characteristics such as the economic status, employment, and educational background of the parents (McGovern et al., 2017; Danso & Appiah, 2023).

Issues related to gender attract significant attention, as they are linked to various areas such as psychological, societal, and theological aspects. The concept of gender equality refers to the state in which both men and women have equal opportunities and rights as human beings to engage in activities such as politics, law, economics, socio-culture, education, national defense and security, and equal access to benefits resulting from the development process (Kabeer & Natali, 2013; Amaroh et al., 2024). Gender inequality is a phenomenon that is not only restricted to one region or area, but it exists in almost every country across the globe (Amaroh et al., 2024). The matter of gender disparity remains a relevant topic of discussion due to the many significant differences that still exist between men and women in terms of acquiring basic human needs such as education, employment, and health (Adika & Rahmawati, 2021).

Pande & Astone (2007) explained that gender preferences and discrimination against girls are prevalent in various countries across the Middle East, North Africa, and Asia. In certain regions of Asia, socioeconomic influences and social norms have led to a higher preference for sons over daughters (Jayachandran, 2015). This preference leads to differences in the way boys and girls are treated, which ultimately affects the status and value of women in society (Thahira & Handayani, 2023). In traditional roles, men are expected to be the primary breadwinners and make a greater financial contribution to the family, as they tend to spend more time working (Gökçekuyu, 2023). On the other hand, women are expected to spend more time taking care of the household and children (Susilo et al., 2022). Consequently, society views men as having a higher value than women (Jayachandran, 2021).

Research has shown that parenting patterns for children are greatly influenced by gender preferences. This includes everything from feeding to the amount of parenting time and other resources allocated to each child (Lin et al., 2021). When resources are limited within a household, parents often look to their preferences as a guide for distributing resources among their children. Unfortunately, social norms can lead to girls being discriminated against and denied their rights as children. A study conducted by Jayachandran & Kuziemko (2011) showed that mothers may discriminate against their daughters when it comes to breastfeeding, particularly if they have a preference for having sons. In such cases, mothers who have a preference for sons are more likely to have another child if their first child is a daughter. As a result, girls often have shorter durations of breastfeeding (Hafeez & Quintana-Domeque, 2018; Jayachandran & Kuziemko, 2011). This, in turn, can have negative effects on their growth and development, since exclusive breastfeeding is an important factor for healthy growth. Non-exclusive breastfeeding has also been shown to contribute to stunting in children (Hadi et al., 2021).

There have been several studies conducted in the past that have identified the impact of gender preferences on child outcomes. According to Palloni (2017), children whose gender matched their mother's preference had better height and weight for their age when compared to children whose gender

did not meet their mother's preference expectations. Additionally, children whose gender aligned with their mother's preference were found to be less sick than children with less-preferred status. Ebert & Vollmer's (2019) study also indicated that son preference negatively affects girls' cognitive scores and language skills. Moreover, Le & Nguyen (2022) found evidence that girls born to mothers with son preference had lower weight and height in comparison to boys. This is further supported by Vijayan K. Pillai's (2015) study which found that male bias can increase the likelihood of malnutrition among female children. However, Kevane et al. (2003) discovered that girls and boys receive the same amount of input despite coming from a country with high son preference.

While the previous studies provide valuable insights into the effects of son preference on child outcomes, this research focuses specifically on the impact of son preference on stunting and wasting in children within the Indonesian context. Palloni's (2017) research examined children's weight, BMI, and frequency of illnesses, while this study addresses stunting and wasting, which are critical indicators of chronic and acute malnutrition. Ebert & Vollmer (2022) introduced a novel measure of son preference, finding a penalty in early mental functions for unwanted girls but did not consider physical health outcomes like stunting and wasting. Nguyen's (2022) investigation into the influence of son preference on health disparities across 66 developing countries found that son preference disproportionately affects children from disadvantaged backgrounds. In contrast, this research provides a detailed analysis of how maternal son preference impacts stunting and wasting specifically in Indonesia.

This study makes a unique contribution to the existing literature by providing empirical evidence on the direct impact of maternal son preference on stunting and wasting, which are rarely explored in the Indonesian context. The findings can inform health and gender policy in Indonesia by guiding targeted interventions aimed at improving nutritional outcomes among children, raising awareness about the adverse effects of son preference, and addressing socio-cultural factors influencing parental preferences and behaviors. Strengthening healthcare services for early detection and intervention for malnutrition, especially in regions with

prevalent son preference, could also be recommended, advancing towards more equitable health outcomes and gender-sensitive approaches to child welfare and development.

B. Method

This study uses a descriptive approach with quantitative analysis that relies on secondary data from the 4th and 5th waves of the Indonesian Family Life Survey (IFLS). The primary focus of this research is to investigate the impact of gender preference on the likelihood of stunting and wasting in daughters who are residing with mothers who have a preference for sons.

The IFLS data were chosen because it is a longitudinal survey, which allows researchers to analyze trends and relationships over time with a high degree of reliability. This characteristic makes it an excellent source for understanding long-term patterns in health behavior and demographics. For this study, data from Wave 4 (derived from 2007 data) and Wave 5 (derived from 2014 data) were sourced from the Indonesian Family Life Survey (IFLS), conducted by RAND Corporation (Strauss et al., 2016). These data were used because more recent data were not available until recently.

The sample includes households where mothers provided gender preference data in wave 4 and had biological children aged 0–59 months in wave 5. This age group is critical for early childhood development, where malnutrition has significant long-term impacts. Households without gender preference data or eligible children are excluded to maintain consistency and reliability.

To ensure the validity and reliability of the data used from the Indonesian Family Life Survey (IFLS), several steps were taken during the data processing phase. First, data cleaning was performed to handle inconsistencies or missing values by checking for and correcting errors such as out-of-range values or duplicate entries. Second, the data was cross-validated with other available sources to ensure accuracy. Third, the variables of interest were constructed carefully to reflect the study's objectives. Gender preference data from the IFLS wave 4 survey was accurately coded, ensuring

that mothers' responses regarding their desired number of sons and daughters were correctly interpreted and categorized. Health outcomes were measured using WHO anthropometric standards, with stunting defined as height-for-age below -2SD and wasting as weight-for-height below -2SD.

Gender preference, the independent variable, was assessed based on responses in wave 4 regarding desired numbers of sons and daughters. Mothers preferring more sons than daughters were categorized as having a son preference, while those preferring equal numbers or no more children were classified as having no gender preference. Control variables such as child, parent, household, and socio-economic characteristics were included to enhance the reliability of the findings.

A cross-sectional design was employed, with a Binary Logit model selected for analyzing binary outcomes like stunting and wasting. This model estimates the probability of the independent variable affecting child health outcomes and identifies positive or negative trends. The model used in this study results from the development of Grossman's (1972) model regarding the effect of household inputs on child health outcomes. To quantify the relationship between son preference and child health outcomes, we estimate the following regression equation.

$$Stunting_{ijt} = \beta_0 + \beta_1 SonPref_{ijt} + \beta_2 SonPref_{ijt} * Female_{ijt} + \beta_3 X_{ijt} + \varepsilon_i \ldots\ldots\ldots (1)$$

$$Wasting_{ijt} = \beta_0 + \beta_1 SonPref_{ijt} + \beta_2 SonPref_{ijt} * Female_{ijt} + \beta_3 X_{ijt} + \varepsilon_i \ldots\ldots\ldots (2)$$

In this model, the subscripts i, j, and t correspond to child, household, and month-year of birth respectively. The variable *stunting* and *wasting* indicate child health outcomes measured by the anthropometric z-scores of height-for-age and weight-for-age respectively. The variable $SonPref$ indicates the degree of son preference, which ranges from zero to one, with zero representing a preference for daughters and one representing a preference for sons. The variable *Female* is a dummy variable that takes a value of one if the child is female, and zero otherwise. The vector X_{ijt} is a covariate of the child, mother's and father's characteristics, and household characteristics. Additionally, the error term ε_{ijt} is included in the model. It's important to note that the source of variation in this model lies both within

and across households. Therefore, standard errors throughout the paper are clustered at the household level. The statistical analysis throughout the paper is conducted in STATA 16.

Coefficients β_1 and $\beta_2$provide insight into the extent of son preference and its effects on the health outcomes of male and female children. As per the findings, the coefficient $\beta_1$measures the anticipated effects of son preference on the health outcomes of male children when the variable $Female_{ijt}$ is equal to zero, which indicates a male child. In contrast, when the variable $Female_{ijt}$ is equal to one, it represents a female child, and the total of β_1 and β_2 reflects the estimated effects of son preference on the health outcomes of daughters. The coefficient β_2, on the other hand, measures the difference in health outcomes between male and female children as a result of son preference.

C. Result and Discussion

This section presents the results and discussion of the study examining the relationship between maternal son preference and child health outcomes in Indonesia, utilizing data from the IFLS. Son preference remains a significant socio-cultural factor influencing family dynamics and child welfare in many societies, including Indonesia. This study investigates how maternal preferences for sons or daughters impact indicators of child health, specifically focusing on stunting and wasting among children aged 0-59 months.

1. Result

Descriptive analysis was conducted to explore the variables used to assess the effects of son preference on child health status. The study's sample characteristics are presented in Table 1., which provides a comprehensive overview of the unit of analysis based on various socio-demographic factors of the children, parents, and the household. In particular, the sample distribution includes data from 1,029 respondents who participated in the IFLS 4 in 2007 and were subsequently tracked for progress over time, becoming observations in IFLS 5 in 2014.

Table 1. Summary Statistic

Variable	Obs	Mean	SD	Min	Max
Dependent Variable					
Height-for-age Z-score	1029	-1.481	1.425	-5.9	5.03
Weight-for-age Z-score	1029	-1.028	1.233	-5.11	3.62
Stunting					
Stunted	365	0.354	0.478		
Non-Stunted	664	0.645	0.478		
Wasting					
Wasted	214	0.207	0.406		
Non-Wasted	815	0.792	0.406		
Independent Variable					
Son Preference					
Son is Preferred	688	0.668	0.470		
Son is Less-preferred	341	0.331	0.470		
Female x Son Preference (SP)	1029	0.148	0.355		
Daughter with Mother SP	153	0.851	0.355		
Daughter with a Mother non-SP	876	0.148	0.355		
Children Characteristics					
Child's Age in Months	1029	32.591	17.428	0	59
Gender					
Female	477	0.463	0.498		
Male	552	0.536	0.498		
Birth Order	1029	2.323	0.776	1	6
1	89	0.086	0.281		
2	610	0.593	0 .491		
3	253	0.246	0.430		
≥4	77	0.073	0.380		
Gestational Age					
Premature	166	0.161	0.368		
Normal	807	0.784	0.412		
Post-term	56	0.054	0.227		
Birth Weight					
Low birth weight (LBW) (<2500 grams)	149	0.144	0.352		
Normal (2500-3999 gram)	803	0.780	0.414		
Macrosomia (≥4000 gram)	77	0.074	0.263		
Breastfeeding Duration in Months	1029	18.708	7.949	0	42
History of Diarrhea					
Had Diarrhea	171	0.166	0.372		
Never Had Diarrhea	858	0.833	0.372		
Have a sibling < 2 years old.					
0 sibling	607	0.589	0.492		
1 sibling	416	0.404	0.490		
2 siblings	6	0.005	0.076		
Firstborn					
The firstborn is a son	490	0.476	0.499		
The firstborn is not a son	539	0.523	0.499		

Variable	Obs	Mean	SD	Min	Max
Father Characteristic					
Father's Age	1029	37.064	5.699	22	64
Father's Employment Status					
Formal Sector Worker	495	0.519	0.499		
Informal Sector Worker	534	0.481	0.499		
Father's Education					
Primary School	279	0.271	0.444		
Middle School	228	0.221	0.415		
High School	522	0,507	0.500		
Father's Height (cm)	1029	162.968	5.832	143.5	185.4
Mother Characteristic					
Mother's Age	1029	32.771	4.601	18	49
Mother's Age at Birth	1029	30.555	4.715	16	48
Mother's Education					
Primary School	268	0.260	0.439		
Middle School	284	0.275	0.447		
High School	477	0.463	0.498		
Mother's Employment Status					
Employed	343	0.333	0.471		
Unemployment	686	0.666	0.471		
Mother's Body Mass Index					
Underweight	42	0.041	0.197		
Normal	488	0.474	0.499		
Overweight	343	0.333	0.471		
Obese	156	0.151	0.358		
Mother's Height (cm)	1029	151.458	5.159	135	174.5
Household Characteristics					
Number of Household Members	1029	4.656	1.049	3	10
3	61	0.059	0.236		
4	492	0.478	0.499		
≥5	476	0.443			
Household Area					
Rural	454	0.441	0.497		
Urban	575	0.559	0.497		
Water Sources					
Unimproved	503	0.488	0.500		
Improved	526	0.511	0.500		
Sanitation Facilities					
Unimproved	253	0.245	0.430		
Improved	776	0.754	0.430		
Total Expenses	1029	2,065,617	1,320,063		
Q1 (Poorest)	206	819,164.1	192,652.8		
Q2 (Poor)	206	1,278,051	121,501.3		

Variable	Obs	Mean	SD	Min	Max
Q3 (Middle)	206	1,733,944	144,444.8		
Q4 (Rich)	206	2,389,418	280,013.6		
Q5 (Richest)	205	4,125,253	1,401,072		

Source: IFLS 4 and IFLS 5, processed by the author

The distribution of the sample in this study, when viewed by gender, as shown in Table 1, showed that only 46% of the sample comprised female children, while 56% was primarily male. The children that participated in this study were also 32 months old on average. Out of the total sample, 153 girls were born to mothers with a son preference, whereas the remaining 876 girls were not born to mothers with a son preference. Furthermore, the study found that 35% of the children in the sample were stunted, and 20% were wasted. Upon further examination of the children's characteristics, it was discovered that the sample was mostly dominated by children born in the second order, with 610 children. Additionally, 78% of children were born through normal childbirth and had a normal weight at birth. Furthermore, 58% of children had no other siblings under the age of two, while 40% of children had one sibling under the age of two. It is also important to note that the sample was dominated by families where the first child was not a boy, at 52%.

Upon examining the characteristics of the fathers in our sample, we found that the average age of the fathers was 37 years old, with the youngest father or head of household being 22 years old, and the oldest being 64 years old. It is also noteworthy that the majority of fathers in the study were employed in the formal sector and possessed a high level of education. Interestingly, the average height of fathers was approximately 162 cm. Furthermore, the mothers in the sample had an average age of 32 years old, with the youngest mother being 18 years old and the oldest being 49 years old. The average age at delivery was around 30 years old. Similar to the fathers, mothers in the sample were highly educated, with 66% of them being unemployed. On average, the height of mothers was approximately 151 cm.

The research sample also focuses on various household characteristics, revealing that the households included in the study have at most 10 household members. Specifically, 47% of the households observed have 4 household members, while 44% of them have five or more household members. Additionally, the majority of households observed were located in urban areas, indicating that urban living is a predominant characteristic of the study sample. Moreover, when it comes to water sources and sanitation, more than 50% of the households have access to improved water sources and sanitation, meaning that their water and sanitation facilities are in good condition. Finally, the study also reveals household expenditures categorized into different wealth status groups. The poorest group has an average expenditure of around IDR 819,000, while the wealthiest group spends an average of IDR 4,125,000.

According to table 2., it shows that the ideal composition of the number of children desired by the mother is not gender biased. The desire for girls is just as strong as the desire for boys. When mothers were asked about their preferences regarding the number of sons they would like, only 10.57% of them said they would like to have at least two sons, while more than half (52 percent) expressed their preference for having just one son. On the other hand, parents, in general, do not have a preference for boys only. As many as 69.58% of parents prefer to have at least one daughter. Moreover, the percentage of mothers who want more girls is 40.06%. In stark contrast, mothers who prefer more sons make up just about 35% of the population. The remaining 24% of mothers either do not have any preference or their desire for sons is equal to their desire for daughters. These findings suggest that the desire for gender balance in the family is strong among parents, and the tradition of preferring boys over girls might gradually fade away.

Table 2. Ideal Composition Number of Children desired by Mother

Ideal Number	Sons	Daughters
0	37,43%	30,42%
1	52%	59,77%
2+	10,57%	9,81%

Percentage of Mothers Who:	
Want More Sons Than Daughters	35,02%
Want More Girls Than Boys	40,06%
Have No Preference	24,92%

Source: IFLS 4, processed by the author

It is important to note that the descriptive analysis presented here provides only a general overview of the findings of this study. While it serves as a useful starting point, it cannot establish a causal relationship between the independent variable and the dependent variable. To gain a deeper understanding of the impact of maternal gender preference and other independent variables, we will need to continue the analysis with inferential techniques. These methods will allow us to make more precise conclusions about the relationships between variables.

Inferential Analysis

The coefficient on the estimation results contained in Appendix 1 and Appendix 2 shows the direction of the influence of the independent variable on the dependent variable. When a variable has a negative coefficient, the independent variable is negatively related to the dependent variable and vice versa. In this study, there were two categories of choices for each dependent variable: children experiencing stunting, children not experiencing stunting, children experiencing wasting, and children not experiencing wasting.

Our research model aimed to identify the factors that affect stunting in children. We estimated the impact of various variables on the likelihood of stunting, assuming that all other variables remain constant.

Our findings in Appendix 1 show that mothers who have a son preference tend to reduce the likelihood of stunting in boys by 0.94 times compared to mothers who do not have a son preference. Similarly, girls with mothers who have a son preference are 0.76 times more likely to reduce the likelihood of stunting than girls with non-son preference mothers.

Moreover, we found that children born with normal weight tend to reduce the likelihood of stunting by 0.61 times compared to underweight children. Children born with low-birth-weight conditions also tend to reduce

the likelihood of stunting, which is 0.36 times higher than underweight children. This finding highlights the importance of birth weight in determining the likelihood of stunting.

We also found that children with tall fathers tend to reduce the likelihood of stunting by 0.91 times compared to children with short fathers. Similarly, children whose mothers are older have a 0.96 times greater chance of reducing the likelihood of stunting compared to children whose mothers are younger. This observation suggests that parental height and maternal age play an important role in the proper development of the child and can significantly impact the likelihood of stunting.

On the other hand, our research found that children with mothers who have a BMI score categorized as obese have an increased chance of stunting by 4.12 times compared to children whose mothers have a normal BMI. This highlights the importance of maternal health and nutrition in ensuring the proper growth and development of the child. Specifically, maternal obesity may lead to complications during pregnancy and affect the quality of breast milk, which can adversely affect the child's growth (Hadi et al., 2021).

Finally, we found that children living in urban areas tend to reduce the likelihood of stunting by 0.71 times compared to children living in rural areas. This suggests that access to healthcare, sanitation, and nutrition may differ between urban and rural areas, leading to different levels of stunting.

Our analysis also revealed several important factors that can affect the likelihood of wasting among children. The study found that sons born to mothers with a preference for sons have a 1.562 times higher risk of experiencing wasting compared to sons born to mothers without a son preference. This may be because mothers with a son preference may not provide equal care for their daughters and sons. Interestingly, the study also found that girls born to mothers with a son preference have a 0.80 times greater chance of avoiding the risk of wasting compared to girls born to mothers without a son preference. This could be attributed to the fact that mothers with a son preference may provide extra care and attention to their daughters.

Birth weight was also found to be a significant factor in reducing the likelihood of wasting. Children born with normal weight have a 0.61 times higher chance of avoiding wasting compared to underweight children. Similarly, children born with low birth weight (LBW) have a 0.38 times higher chance of reducing the likelihood of wasting compared to those born underweight.

The education level of parents was also found to have a significant impact on the likelihood of wasting. Children with highly educated fathers have a 0.53 times greater chance of avoiding wasting compared to those with less educated fathers. This may be because fathers with higher education levels are more likely to have better-paying jobs, which could translate to better access to healthcare and nutrition for their children. However, children born to highly educated mothers tend to have a 1.61 times higher chance of experiencing wasting compared to those with less educated mothers. This could be because highly educated mothers may have more demanding jobs, leaving them with less time to provide care for their children.

2. Discussion

According to the logit estimation results, there was no correlation between son preference and the prevalence of stunting in both girls and boys. Similarly, when the son preference variable interacted with the gender variable of girls, there was no significant relationship between the independent and dependent variables. However, in contrast to the findings on the dependent variable in the other model, wasting, the study revealed an effect of son preference on the incidence of wasting in boys.

The logit estimation results showed that mothers with son preference increased the likelihood of wasting in boys by 1.562 times more than mothers without son preference. This finding contradicts a previous study by Le & Nguyen (2022) who found that boys had a lower chance of stunting when their mothers had son preference. However, in the study conducted by Le & Nguyen, it was also found that in some estimation models, there was a possibility that boys with son preference mothers had a higher chance of stunting.

The study also found that girls who had son preference mothers had a 0.80 times greater chance of reducing the likelihood of wasting, compared

to girls who had non-son preference mothers. This finding contradicts the study by Le & Nguyen (2022) who found that the disparity in health outcomes for girls was lower than that for boys due to son preference. In addition, this finding contradicts the hypothesis built in this study where the author suspects that son preference would increase the chance of wasting incidence of girls.

In examining the relationship between son preference and child health outcomes in Indonesia, our study diverges from the findings of Le & Nguyen (2022) due to significant differences in socio-cultural norms, healthcare access, and policy environments. Le & Nguyen's study was conducted in a context that may have varied markedly from the current landscape, influenced by shifting social attitudes and evolving healthcare practices in Indonesia.

Recent evidence supports a notable transformation in Indonesian societal norms. The World Bank's Women, Business and the Law 2020 report (2020) highlights considerable progress in gender equity, reflecting changing attitudes towards women's roles. Some studies also underscore the dynamic shifts in gender norms, driven by urbanization and socio-economic development (Cameron et al., 2020; Setyonaluri et al., 2021). Furthermore, the Indonesian Ministry of Women's Empowerment and Child Protection's Gender Equality and Women's Empowerment Report (2020) emphasizes substantial improvements in gender equality, showcasing the government's commitment to this cause.

Evidence from Investing in Women's SNAPS (Social Norms Attitudes and Practices Survey) in 2020 indicates that while many young adults in Indonesia still adhere to traditional social norms more so than their peers in other countries, there is a noticeable shift towards more positive gender attitudes and practices (Alderman, 2006; Amaroh et al., 2024). Economic pressures often drive women to join the workforce, prompting a reassessment of traditional gender roles as families adapt to new economic realities (Saleh et al., 2021; Salimi & Fauziah, 2023). This necessity can significantly change social norms and expectations (Investing in Women, 2020). Additionally, education is also one of the crucial factors in promoting these norm shifts. The rise in women's educational attainment might foster more gender-equal norms

within households and society, contributing to the evolving gender dynamics in Indonesia (Bertrand et al., 2016).

The initial assumption was that the cause of not having a higher chance of wasting or stunting incidence of girls compared to boys was due to changing societal attitudes. In Indonesia, there has been a noticeable shift in societal attitudes towards gender roles and preferences, marked by increased awareness of gender inequality and the importance of girls' health (Budiastutik & Nugraheni, 2019). It is doing better than many other countries, with considerable potential for improvement in the opportunities Indonesian women have to fully participate in society (Cameron, 2023). As a result, traditional practices within families are being reevaluated, prompting a significant departure from previous norms that favored sons in terms of access to healthcare, education, and other resources.

Parents are becoming more conscious of the need to provide equal care and resources to all their children, regardless of gender, leading to a growing consciousness amongst parents about the need to prioritize gender equity in care giving and resource allocation (Katoch, 2022). This transformation has significant implications for the health outcomes of daughters, who are now benefiting from improved access to nutrition, healthcare, and educational opportunities.

In communities where son preference remains entrenched, families may prioritize the health and well-being of their daughters through selective survival strategies. Daughters are recognized as caregivers and contributors to the family's economic stability, especially in old age, and families may make strategic investments in their health and development, recognizing the long-term benefits of their well-being (Akombi et al., 2017; Salimi & Fauziah, 2023).

In conclusion, as Indonesia's social attitudes continue to evolve, the convergence of changing perceptions and strategic investments in daughters' health presents a promising path toward gender equity and improved health outcomes for all children. Families are now recognizing the inherent value of their daughters and prioritizing their well-being, which bodes well for a healthier, more equitable future for the entire population. This transformation

signifies a significant departure from previous norms and marks an important step towards a more equitable and just society.

To further strengthen this positive trend, policymakers should enhance educational opportunities for girls, as expanding access to quality education empowers them and promotes gender equality in the long term. Additionally, public awareness campaigns are essential to shifting cultural norms, highlighting the importance of gender equity and the benefits of investing in girls' health and education. Collaborating with community leaders and utilizing media platforms can amplify these messages. Moreover, implementing family support programs, such as parental leave policies, childcare services, and family counseling, can help alleviate economic pressures and promote shared responsibilities in child-rearing, further supporting the recognition of the value of daughters. By adopting these measures, Indonesia can build on the positive trends identified in this study and create a more inclusive society where all children, regardless of gender, have the opportunity to thrive.

Based on the findings of this study, the impact of strengthening gender equality and improving the quality of education for girls in Indonesia is not only significant at the national level but also extends to the global stage. As the fourth most populous country in the world, Indonesia's policies in addressing gender bias and enhancing child welfare, particularly for girls, can serve as a model for other developing nations.

From a global perspective, gender equality in education plays a crucial role in reducing stunting and wasting, which remain major public health challenges in many countries. A study by Bhutta et al. (2017) highlights that child malnutrition has long-term consequences on cognitive development and a nation's economic productivity. If Indonesia successfully reduces stunting and wasting rates through expanded educational access and gender-based interventions, this approach can be replicated by other countries facing similar challenges, particularly in South Asia and Sub-Saharan Africa.

Furthermore, research by Prendergast & Humphrey (2014) emphasizes that social and cultural factors, including gender preferences within families, contribute to nutritional and health disparities among children. Therefore,

Indonesia's strategies in addressing gender bias in household resource allocation can provide valuable insights for global policies aimed at tackling gender-based malnutrition. Public awareness campaigns that highlight the importance of investing in girls' health and education can become part of a broader global effort to achieve the Sustainable Development Goals (SDGs), particularly in health (SDG 3) and gender equality (SDG 5) (Waterflow, 1974; Bhutta et al., 2017; Amaroh et al., 2024).

Additionally, addressing gender bias in child-rearing practices has implications for the global labor market. Martorell (1999) found that children who experience chronic malnutrition in early childhood tend to face cognitive development limitations, ultimately affecting a country's workforce competitiveness. By strengthening educational access for girls and ensuring their nutritional needs are met from an early age, Indonesia can enhance the quality of its human resources, which in the long run will contribute to global economic competitiveness.

It is also essential to consider how the policies implemented can influence the global perception of Indonesia. By demonstrating a strong commitment to gender equality and child welfare, Indonesia can strengthen its position in various international forums focused on social and economic development. This can enhance the country's credibility in multilateral cooperation, particularly within global networks such as the G20 and ASEAN, as well as international organizations like UNICEF and WHO, which play key roles in developing evidence-based policies to address child health issues.

Thus, Indonesia's policies in improving girls' welfare will not only bring positive change domestically but can also serve as a model for other nations dealing with similar issues. Through evidence-based and gender-responsive approaches, Indonesia has the potential to become a key global actor in addressing child malnutrition and advocating for women's rights across various aspects of life.

D. Conclusion

In our comprehensive analysis of the influence of son preference on child health outcomes in Indonesia, we encountered a nuanced relationship

between maternal preferences and the incidence of stunting and wasting among children. While we did not find any significant correlations between son preference and stunting incidence, the directionality of the coefficients helped us gain valuable insights.

Interestingly, our analysis showed that mothers with a son preference were associated with a reduction in the incidence of stunting in boys by 0.94 times compared to those without a son preference. Similarly, girls born to mothers with son preferences showed a 0.76 times greater chance of reducing stunting incidence compared to girls born to non-son preference mothers. Although these findings did not reach statistical significance, they highlighted the intricate interplay between maternal preferences and child health outcomes.

On the other hand, our study revealed a significant effect of son preference on the incidence of wasting in boys. We found that mothers exhibiting a son preference were associated with a 1.562 times greater likelihood of wasting in their sons compared to mothers without son preferences. Interestingly, girls born to mothers with son preferences had a 0.80 times greater chance of avoiding wasting compared to girls born to non-son preference mothers.

Despite the absence of significant disparities between the health outcomes of girls and boys, our estimation results hinted at a positive directionality, particularly regarding the height-for-age ratio of girls born to mothers with son preferences. This observation suggests a potentially higher height-for-age ratio among girls compared to boys in such households, although further investigation is warranted to fully elucidate this phenomenon.

There are several important limitations to consider in this research. The study acknowledges the potential impact of unobserved confounding variables, despite efforts to control for various socio-economic and demographic factors. Addressing these unobserved confounders in future research is crucial to enhance the reliability and accuracy of our conclusions. Furthermore, the reliance on maternal self-reports for measuring son preference may introduce biases and overlook nuanced dynamics within households. This methodological approach

might not fully capture the multifaceted nature of son preference, especially as societal attitudes continue to evolve. Changes in perceptions of gender roles and preferences over time could alter the impact of son preference on child health outcomes. Therefore, future research should explore more comprehensive and dynamic measures of son preference to provide a deeper understanding of its implications for child health.

In conclusion, our comprehensive analysis contributes to the growing body of research on the complex relationship between maternal preferences and child health outcomes in Indonesia. Our findings underscore the importance of considering socio-cultural factors in shaping health disparities and informing efforts aimed at promoting gender equity and improving health outcomes for all children. Although culture tends to persist, a deeply rooted norm can substantially weaken over a generation when incentives change. As Indonesia's societal attitudes continue to evolve, our findings provide valuable insights into the factors influencing child health outcomes and inform efforts aimed at promoting gender equity and improving health outcomes for all children.

Bibliography

Adika, N. D., & Rahmawati, F. (2021). Analisis Indikator Ketimpangan Gender dan Relevansinya terhadap Pertumbuhan Ekonomi Inklusif di Indonesia. *Ecoplan*, *4*(2), 151–162. http://ecoplan.ulm.ac.id/index.php/iesp/article/view/400.

Akombi, B. J., Agho, K. E., Hall, J. J., Merom, D., Astell-Burt, T., & Renzaho, A. M. N. (2017). Stunting and severe stunting among children under-5 years in Nigeria: A multilevel analysis. *BMC Pediatrics*, *17*(1), 15. https://doi.org/10.1186/s12887-016-0770-z.

Alderman, H. (2006). Long term consequences of early childhood malnutrition. *Oxford Economic Papers*, *58*(3), 450–474. https://doi.org/10.1093/oep/gpl008

Amaroh, S., Prasetyoningrum, A. K., & Husain, H. (2024). Women and Investment Decision in Sharia Instruments: Moderating Effect of Financial Spirituality Orientation. *Jurnal Ilmiah Peuradeun*, *12*(2), 877–898. https://doi.org/10.26811/peuradeun.v12i2.1332.

Bertrand, M., Cortés, P., Olivetti, C., & Pan, J. (2016). *Social Norms, Labor Market Opportunities, and the Marriage Gap for Skilled Women*. https://doi.org/10.3386/w22015.

Bhutta, Z. A., Berkley, J. A., Bandsma, R. H. J., Kerac, M., Trehan, I., & Briend, A. (2017). Severe childhood malnutrition. *Nature Reviews Disease Primers*, *3*(1), 17067. https://doi.org/10.1038/nrdp.2017.67.

Budiastutik, I., & Nugraheni, S. A. (2019). Determinant of Stunting in Indonesia: A Review Article. *International Journal of Healthcare Research*, *1*(2), 43–49. https://doi.org/10.12928/ijhr.v1i2.753.

Cameron, L. (2023). Gender Equality and Development: Indonesia in a Global Context. *Bulletin of Indonesian Economic Studies*, *59*(2), 179–207. https://doi.org/10.1080/00074918.2023.2229476.

Cameron, L., Suarez, D. C., & Rowell, W. (2020). Female labour force participation in Indonesia: Why has it stalled. *Achieving Inclusive Growth in the Asia Pacific*, *241*. https://doi.org/10.1080/00074918.2018.1530727 .

Danso, F., & Appiah, M. A. (2023). Prevalence and Associated Factors Influencing Stunting and Wasting Among Children Aged 1 to 5 Years in Nkwanta South Municipality, Ghana. *Nutrition*, 111996. https://doi.org/10.1016/j.nut.2023.111996.

de Onis, M., & Branca, F. (2016). Childhood Stunting: A Global Perspective. *Maternal & Child Nutrition*, *12*(S1), 12–26. https://doi.org/10.1111/mcn.12231.

Ebert, C. L., & Vollmer, S. (2019). *Child-Specific Son Preference, Birth Order, and Cognitive Skills in Early Childhood*. Discussion Papers.

Gökçekuyu, E. (2023). The Effects of Populism on Muslim Minorities: How Politicians' Distrust in Islam Affects Muslim Attitudes Towards Violence in the Netherlands? *Nazhruna: Jurnal Pendidikan Islam*, *6*(2), 159–173. https://doi.org/10.31538/nzh.v6i2.3025.

Hadi, H., Fatimatasari, F., Irwanti, W., Kusuma, C., Alfiana, R. D., Asshiddiqi, M. I. N., Nugroho, S., Lewis, E. C., & Gittelsohn, J. (2021). Exclusive Breastfeeding Protects Young Children from Stunting in a Low-Income Population: A Study from Eastern Indonesia. *Nutrients*, *13*(12), 4264. https://doi.org/10.3390/nu13124264.

Hafeez, N., & Quintana-Domeque, C. (2018). Son Preference and Gender-Biased Breastfeeding in Pakistan. *Economic Development and Cultural Change*, *66*(2), 179–215. https://doi.org/10.1086/695137.

Jayachandran, S. (2015). The Roots of Gender Inequality in Developing Countries. *Annual Review of Economics*, *7*(1), 63–88. https://doi.org/10.1146/annurev-economics-080614-115404.

Jayachandran, S. (2021). Social Norms as a Barrier to Women's Employment in Developing Countries. *IMF Economic Review*, *69*(3), 576–595. https://doi.org/10.1057/s41308-021-00140-w.

Jayachandran, S., & Kuziemko, I. (2011). Why do Mothers Breastfeed Girls Less than Boys? Evidence and Implications for Child Health in India. *The Quarterly Journal of Economics*, *126*(3), 1485–1538. https://doi.org/10.1093/qje/qjr029.

Kabeer, N., & Natali, L. (2013). Gender Equality and Economic Growth: Is there a Win-Win? *IDS Working Papers*, *2013*(417), 1–58. https://doi.org/10.1111/j.2040-0209.2013.00417.x

Kairiza, T., Kembo, G., Pallegedara, A., & MacHeka, L. (2020). The Impact of Food Fortification on Stunting in Zimbabwe: Does Gender of the Household Head Matter? *Nutrition Journal*, *19*(1). https://doi.org/10.1186/s12937-020-00541-z.

Katoch, O. R. (2022). Determinants of malnutrition among children: A systematic review. *Nutrition*, *96*, 111565. https://doi.org/10.1016/j.nut.2021.111565

Kevane, M., Levine, D. I., Ames, M., Barber, S., Blackburn, S., Blalock, G., Federman, M., Fitrani, F., Gertler, P., Gilkey, M., Hull, T., Kaiser, K., Lee, R., Levine, D., & Rothman, D. (2003). *Changing Status of Daughters in Indonesia*.

Le, K., & Nguyen, M. (2022). Son Preference and Health Disparities in Developing Countries. *SSM-Population Health*, 101036. https://doi.org/10.1016/j.ssmph.2022.101036.

Lin, C., Sun, Y., & Xing, C. (2021). Son Preference and Human Capital Investment among China's Rural-urban Migrant Households. *The Journal of Development Studies*, *57*(12), 2077–2094. https://doi.org/10.1080/00220388.2021.1961750.

Martorell, R. (1999). The Nature of Child Malnutrition and Its Long-Term Implications. *Food and Nutrition Bulletin*, *20*(3), 288–292. https://doi.org/10.1177/15648265990200304.

McGovern, M. E., Krishna, A., Aguayo, V. M., & Subramanian, S. (2017). A review of the evidence linking child stunting to economic outcomes. *International Journal of Epidemiology*, *46*(4), 1171–1191. https://doi.org/10.1093/ije/dyx017.

Palloni, G. (2017). Childhood Health and the Wantedness of Male and Female Children. *Journal of Development Economics*, *126*, 19–32. https://doi.org/10.1016/j.jdeveco.2016.11.005.

Pande, R. P., & Astone, N. M. (2007). Explaining Son Preference in Rural India: The Independent Role of Structural Versus Individual Factors. *Population Research and Policy Review*, *26*(1), 1–29. https://doi.org/10.1007/s11113-006-9017-2.

Prendergast, A. J., & Humphrey, J. H. (2014). The stunting syndrome in developing countries. *Paediatrics and International Child Health*, *34*(4), 250–265. https://doi.org/10.1179/2046905514Y.0000000158.

Saleh, A., Syahrul, S., Hadju, V., Andriani, I., & Restika, I. (2021). Role of Maternal in Preventing Stunting: a Systematic Review. *Gaceta Sanitaria*, *35*, S576–S582. https://doi.org/10.1016/j.gaceta.2021.10.087.

Salimi, M., & Fauziah, M. (2023). Social Skills in Early Childhood and Primary Schools: A Systematic Review. *Jurnal Ilmiah Peuradeun*, *11*(2), 441–474. https://doi.org/10.26811/peuradeun.v11i2.930.

Setyonaluri, D., Nasution, G., Ayunisa, F., Kharistiyanti, A., & Sulistya, F. (2021). Social Norms and Women's Economic Participation in Indonesia. *Jakarta: Lembaga Demografi Faculty of Economics and Business Universitas Indonesia*. https://investinginwomen.asia.

Strauss, J., Witoelar, F., & Sikoki, B. (2016). *The fifth wave of the Indonesia Family Life Survey: Overview and Field Report* (Vol. 1). Rand Santa Monica, CA, USA.

Susilo, E., Zahro, A., Santoso, B., & MH Faradz, S. (2022). Gender Decision Dilemma of Disorders of Sex Development (Khunsa) in Islamic Law with Medical Approach. *International Journal of Islamic Thought*, *6*, 46–53. https://doi.org/10.24035/ijit.21.2022.224.

Thahira, Z., & Handayani, D. (2023). The Impact of Mother's Gender Preference on Children's Cognitive Ability in Indonesia. *Jurnal Ilmiah Peuradeun*, *11*(3), 1027–1052. https://doi.org/10.26811/peuradeun.v11i3.1008.

Vijayan K. Pillai, J. (2015). Child Malnutrition and Gender Preference in India: The Role of Culture. *Health Science Journal*, *9*(6), 1–6. https://www.hsj.gr/.

Voth-Gaeddert, L. E., Stoker, M., Cornell, D., & Oerther, D. B. (2018). What Causes Childhood Stunting among Children of San Vicente, Guatemala: Employing Complimentary, System-Analysis Approaches. *International Journal of Hygiene and Environmental Health*, *221*(3), 391–399. https://doi.org/10.1016/j.ijheh.2018.01.001.

Waterflow, J. C. (1974). Some aspects of childhood malnutrition as a public health problem. *BMJ*, *4*(5936), 88–90. https://doi.org/10.1136/bmj.4.5936.88.

APPENDIX

Appendix 1. Logistic Regression Results on Stunting

Stunting	Odds Ratio.	St.Err.	z	p>|z|	[95% Conf	Interval]	Sig
Son Preference	.946	.196	-0.27	.788	.63	1.42	
Female * Son Preference	.766	.187	-1.09	.275	.474	1.237	
Children Characteristic							
Child's Age in Months	1.003	.006	0.50	.618	.991	1.015	
Birth Order	1.063	.126	0.52	.605	.843	1.341	
Gestational Age	1	.	.	.	.	.	
Normal	1.079	.279	0.29	.77	.65	1.791	
Premature	1.038	.404	0.09	.924	.484	2.227	
Birth Weight	1	.	.	.	.	.	
Normal	.616	.164	-1.82	.069	.365	1.039	*
Macrosomia	.363	.138	-2.66	.008	.173	.765	***
Breastfeeding Duration in Months	1.03	.011	2.80	.005	1.009	1.052	***
History of Diarrhea	1.077	.215	0.37	.712	.728	1.593	
Have a sibling < 2 years old	.983	.209	-0.08	.935	.648	1.491	
First Born	.87	.15	-0.81	.42	.621	1.22	
Father Characteristic							
Father's Age	.995	.018	-0.29	.772	.96	1.03	
Father's Employment Status	.862	.133	-0.96	.338	.637	1.167	
Father's Education	1	.	.	.	.	.	
Middle School	.927	.195	-0.36	.718	.613	1.4	
High School	.758	.156	-1.34	.18	.506	1.136	
Father's Height (cm)	.918	.012	-6.32	0	.894	.943	***
Mother Characteristic							
Mother's Age	.963	.022	-1.65	.098	.921	1.007	*
Mother's Education	1	.	.	.	.	.	
Middle School	.892	.186	-0.55	.583	.592	1.343	
High School	1.275	.281	1.10	.271	.827	1.965	
Mother's Employment Status	.945	.146	-0.37	.715	.698	1.279	
Mother's Height (cm)	.976	.021	-1.13	.258	.935	1.018	
Mother's BMI	1	.	.	.	.	.	
Normal	.831	.346	-0.45	.656	.367	1.879	
Overweight	2.321	1.335	1.46	.143	.751	7.168	
Obese	4.129	3.265	1.79	.073	.877	19.451	*
Household Characteristics							
Number of Household Members	1.11	.094	1.23	.22	.94	1.311	
Household Area	.713	.113	-2.13	.033	.522	.973	**
Water Sources	1.057	.155	0.38	.706	.793	1.409	
Sanitation Facilities	.811	.147	-1.15	.249	.569	1.157	
Total Expenses	.891	.125	-0.82	.412	.677	1.173	
cut1	-23.372	3.976	.b	.b	-31.165	-15.58	

Mean dependent var	0.356	SD dependent var	0.479
Pseudo r-squared	0.335	Number of obs	1026
Chi-square	138.967	Prob > chi2	0.000
Akaike crit. (AIC)	1219.195	Bayesian crit. (BIC)	1377.064

**** p<.01, ** p<.05, * p<.1*

p-ISSN: 2338-8617
e-ISSN: 2443-2067

Appendix 2. Logistic Regression Results on Wasting

Wasting	Odds Ratio.	St.Err.	z	p>|z|	[95% Conf	Interval]	Sig
Son Preference	1.562	.362	1.93	.054	.992	2.461	*
Female * Son Preference	.808	.219	-0.79	.431	.475	1.375	
Children Characteristic							
Child's Age in Months	1.007	.007	1.06	.288	.994	1.021	
Birth Order	.951	.128	-0.38	.707	.73	1.238	
Gestational Age	1	.	.	.	.	.	
Normal	.802	.228	-0.77	.44	.459	1.402	
Premature	.654	.303	-0.92	.359	.264	1.622	
Birth Weight	1	.	.	.	.	.	
Normal	.614	.177	-1.69	.091	.349	1.08	*
Macrosomia	.383	.171	-2.15	.031	.16	.918	**
Breastfeeding Duration in Months	1.051	.014	3.73	0	1.024	1.078	***
History of Diarrhea	1.099	.242	0.43	.669	.714	1.691	
Have a sibling < 2 years old	.822	.205	-0.79	.432	.504	1.34	
First Born	1.022	.206	0.11	.913	.689	1.517	
Father Characteristic							
Father's Age	1.026	.02	1.27	.205	.986	1.066	
Father's Employment Status	.96	.172	-0.23	.82	.676	1.363	
Father's Education	1	.	.	.	.	.	
Middle School	.527	.127	-2.65	.008	.329	.846	***
High School	.531	.121	-2.78	.005	.339	.829	***
Father's Height (cm)	.939	.015	-3.97	0	.91	.969	***
Mother Characteristic							
Mother's Age	.961	.026	-1.44	.149	.911	1.014	
Mother's Education	1	.	.	.	.	.	
Middle School	1.485	.358	1.64	.102	.925	2.383	
High School	1.613	.42	1.84	.066	.968	2.688	*
Mother's Employment Status	.98	.176	-0.11	.909	.69	1.392	
Mother's Height (cm)	.965	.024	-1.45	.148	.919	1.013	
Mother's BMI	1	.	.	.	.	.	
Normal	1.008	.449	0.02	.985	.421	2.415	
Overweight	1.381	.854	0.52	.602	.411	4.642	
Obese	1.395	1.186	0.39	.695	.264	7.38	
Household Characteristics							
Number of Household Members	.988	.097	-0.13	.899	.814	1.198	
Household Area	.874	.157	-0.75	.454	.614	1.243	
Water Sources	1.115	.187	0.65	.516	.802	1.55	
Sanitation Facilities	.897	.186	-0.52	.6	.598	1.347	
Total Expenses	1.151	.182	0.89	.373	.845	1.569	
cut1	-14.716	4.436	.b	.b	-23.41	-6.022	
Mean dependent var		0.208	SD dependent var				0.406
Pseudo r-squared		0.309	Number of obs				1026
Chi-square		88.806	Prob > chi2				0.000
Akaike crit. (AIC)		997.610	Bayesian crit. (BIC)				1155.480

*** $p<.01$, ** $p<.05$, * $p<.1$