MATERNAL EMPLOYMENT AND UNDER FIVE CHILD NUTRITION IN INDONESIA: BEYOND THE STANDARD MEASURE OF EMPLOYMENT

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List of Acronyms

FBE	Financial Bargaining Effect
FLFP	Female Labour Force Participation
HA	Height-for-age
HTFW	'High-tier' Formal Workers
HTIW	'High-tier' Informal Workers
IFLS	Indonesian Life Family Survey
JHS	Junior High School
LMICs	Low- and Middle-income Countries
Logit	Logistic Regression
LPM	Linear Probability Model
LTFW	'Low-tier' Formal Workers
LTIW	'Low-tier' Informal Workers
MIE	Monetary Investment Effect
SES	Socio-Economic Status
TAE	Time Allocation Effect
U5	Under five

Abstract

The theoretical notion of a household trade-off if a mother works still becomes a topic of debate, mainly driven by the traditional social norms of women's roles. On the one hand, employed mothers benefit children's development through monetary investment (MIE) and bargaining power effects (FBE). On the other hand, they reduce the total time allocation for childcare (TAE) which may harm children's development. The relationship between maternal employment and children's outcomes, therefore, remains questionable. This study aims to investigate the impact of maternal employment on under five (U5) children's nutrition, which is measured by height-for-age (HA) and stunting status, in Indonesia. Previous studies in Indonesia have been dominated by using the standard measure of employment (working and non-working), which is limited to illustrating the underlying mechanisms to validate the trade-off hypothesis. Motivated by this gap, this study examined six proxies of maternal employment: employment status, time of initial employment, four types of employment, labour incomes, working hours, and relative income to total family labour income as a proxy for bargaining power—all of the variables being extracted from the Indonesia Life and Family Survey (IFLS) 4 and 5 datasets. We adopted two econometric methods, the Linear Probability Model (LPM) for the child's HA and marginal effects from Logistic Regression (Logit) estimation for the child's stunting status, by controlling a wide range of individual and household characteristics, including potential confounding factors.

In general, the estimate provided in the thesis shows that the positive effect of maternal employment status on a child's HA could not capture the adverse effects on a child's HA and stunting status when mothers spent very short or long working hours. We also found maternal employment benefits on child nutrition indicators via MIE, FBE, and participation in 'low-tier' formal workers. All in all, this study highlighted the existence of a trade-off hypothesis in Indonesia under specific circumstances.

Relevance to Development Studies

This research will explore family economics, where the importance of gender is increasing rapidly. By questioning the relationship between maternal employment and a child's nutritional health, we will show how deeply ingrained conservative gender roles are in Indonesia's labour market and how they influence the child's nutrition. Our research will contribute to existing literature that focuses on family economics and gender studies since it provides a thorough argument in both studies. Policymakers can also make this research a material consideration for more targeted policies.

Keywords

Maternal Employment; Under-five Children Nutrition, Children Height for Age; Children Stunting Conditions; Monetary Investment Effect; Time Allocation Effect, Mother's Bargaining Power.

Chapter 1 Introduction

1.1. Stunting and Maternal Employment: An Overview

The prevalence of child undernutrition, mainly due to stunting (low height-for-age), is a global health issue that affects children in low- and middle-income countries (LMICs). A *Joint Malnutrition Estimate* (JME) report released by the World Bank, UNICEF, and WHO (2021) revealed that around 149.2 million children under five years old (U5) were stunted in 2020. Despite the reduction in the number of children undernourished over twenty years (by 11%), the prevalence of stunting is still high. It is still more than the other undernutrition indicators, such as wasting with 38.9 million (5.7%) and being overweight with 45.5 million (6.5%). According to the report, around 53% of U5 children in Asia are affected by stunting, while there are only 38% in Africa.

Compared to other malnutrition issues, the development of stunted childhood is more likely to occur over an extended period due to the presence of a chronic illness (Rodgers, 2011, p. 106). This condition is also the most common reason why children do not develop the necessary skills and knowledge to succeed in their lives. In addition, it can affect the development of human capital (Dewey and Begum, 2011; Hoddinott et al., 2013; Steward et al., 2013). Empirically, children with stunted development experience lower school achievement (see Gansaonré et al., 2022, for a recent review), lower labour market participation (Carba et al., 2009), and lower-income (McGovern et al., 2017; Victora et al., 2008). At the macro-economic level, the lack of human capital resulting from the underdevelopment of children also hurts the country's economy (Galasso and Wagstaff, 2018)[1].

Although there are various factors that can affect a child's linear growth, it is believed that the role of mothers (for example, exclusive breastfeeding) can play a vital role in preventing it. The time spent with their children when they are young can help decrease the risk of having impaired growth. (Rodgers, 2011, p. 52-53; UNICEF, 2018). Aside from mothers, fathers also play a critical part in children's development due to their income and socioeconomic status (SES) (Rodgers, 2011). However, in LMICs, mothers are more likely to be the primary caregivers. On the other hand, the husband is more likely to be the household's primary breadwinner (Ghosh, 2004, cited in Setyonaluri, 2013).

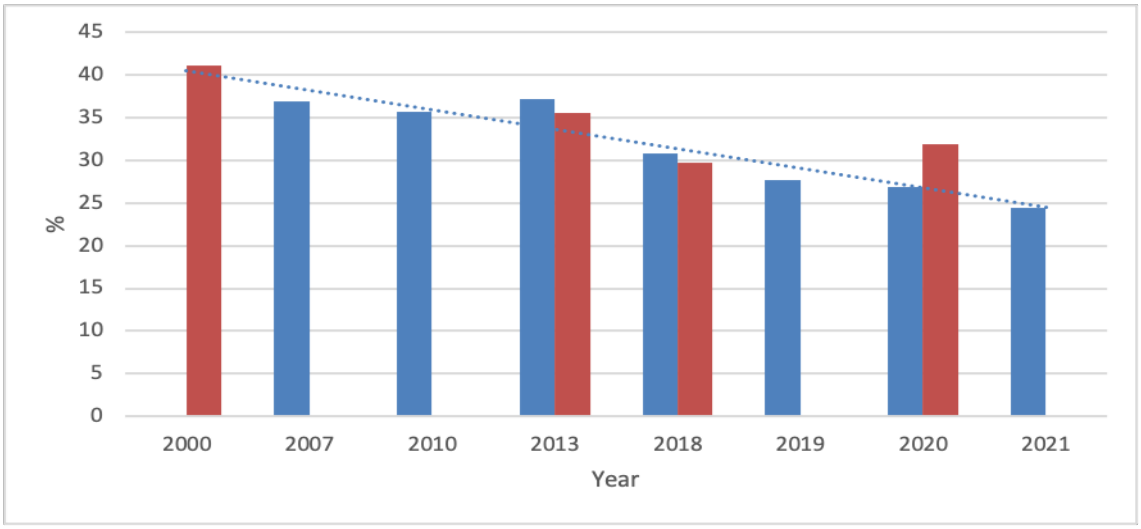
The cost of childrearing in LMICs is higher than in high-income nations (Chen et al., 2005). This means that mothers are more likely to look for paid work in families with low-income potential. Although dual-income families may have a lower risk of poverty, having working mothers can make them more vulnerable to exploitation. Having a paid job can help mothers invest in their children's health, as it can provide them with more money to purchase nutritious food and pay for their healthcare expenses (Debela et al., 2021). It can also improve their bargaining power in their household (Majlesi, 2016; Schaner and Das, 2016). In addition, it can help them gain better childcare information and lower their stress levels (Miyake et al., 2011). However, as the labour income of mothers in LMICs increases, they are more likely to work. This can decrease their time spent at home, as well as time spent with their children (Debela et al., 2021). Working mothers are also more prone to experiencing stress, which can affect their interactions with their children (Chaterrji et al., 2012).

[1] The study estimated that in the developing world, GDP per capita would have been 7% greater if no one who is currently working had been stunted as a child, and 9-10 % in South Asia and Africa.

1.1.1. Why Indonesia?

In Indonesia, stunting is a serious public health issue that affects U5 children. In 2021, the prevalence of this condition was still higher than that of underweight with 7.4% and wasting with 17.3% (Indonesian Ministry of Health, 2021). Stunting affected approximately three out of every ten children (see Graph 1). In addition, despite the reduction in the prevalence of stunting over a twenty-one-year period, the number of children suffering from this condition still remains higher in 20 out of 34 provinces than the national average, with 90% coming from outside Java Island[2].

Graph 1. Prevalence of Children Under-Five Affected by Stunting in Indonesia, 2000-2021 (%)



Notes: The WHO, UNICEF, and the World Bank estimate the red bars, while the Indonesian government provides the blue ones. Prior to 2019, the government's estimates were based on the Riset Kesehatan Dasar (Basic Health Research). However, in 2019 and 2021, the authority known as the Indonesian Nutritional Status Survey (Survey Status Gizi Indonesia/SSGI) conducted a survey to assess the nutritional status of the country. The WHO, UNICEF, and The World Bank then conducted a prediction for the nutritional status of the country in 2020. This was done due to the COVID-19 pandemic. Source: The Indonesian Ministry of Health (2021), UNICEF, WHO, The World Bank Group (2021), and The World Bank (2022).

According to the ILO's data released in 2022, the number of employed married women's percentage in Indonesia has increased significantly from 42% to 54% (see Graph 2). Interestingly, the movement patterns between the curves for the total value (light blue line) and the values for those with married status (dark blue line) were similar. This suggests that married women have dominated the employment of women in the country. Although the exact number of children that married women and divorced women have is not known, it is widely believed that childbearing is related to marriage in Indonesia (Setyonaluri, 2013). Setyonaluri argued that, women in the country typically deliver their first child around one year after their wedding (Setyonaluri, 2013, p. 91). Despite an increase in female labour force participation (FLFP) in Indonesia, the ILO reported that the informal sector accounted for 81.6% of total female employment in the country in 2019 (ILO, 2022b).

In developing economies, such as Indonesia, gender division remains a prevalent issue when it comes to household chores. According to the Law on Marriage 1/1974 Article 34, the husband is expected to provide for his family while the spouse takes care of the household. Utomo (2006) cited

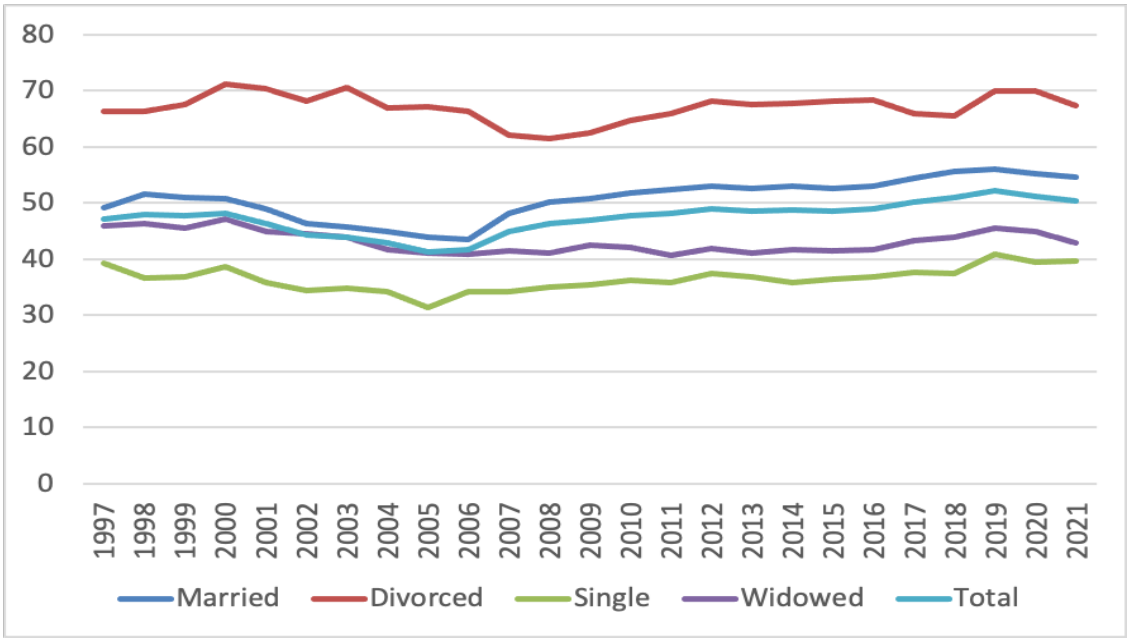
[2] It is well known that five provinces in the island of Java, including the capital city (Jakarta), are more developed than other provinces outside Java.

in Miranti (2022), revealed that the dominance of women's domestic labour in Indonesia remained despite the Covid-19 pandemic (Setyonaluri et al., 2021). As a result, households may face a trade off if mothers enter the labour market.

Substituting support for mothers when they become employed may help minimize the impact of their child's nutritional status on the child's development. However, the quality of early childhood education (*Pendidikan Anak Usia Dini*/PAUD) is still prioritized for children aged six to five in Indonesia. According to a 2015 report by the World Bank, the country's preschool programs and policies are significantly different from those in other countries. Unfortunately, most preschools only provide a maximum of 3 hours of regular education per day, and they are located in urban areas that are typically targeted by wealthier families (Halim et al., 2021). This means that lower-income families cannot fully rely on these types of support services.

In Indonesia, there has been a rise in the number of domestic helpers and alternative informal caregivers, such as household members and non-resident individuals (Snopkowski and Sear, 2015, Setyonaluri 2013). Their traditional practices, which are related to the development of children, are considered by parents to be very important. Compared to the quality of care provided by parents, the care provided by alternative childcare providers is generally inferior (see Rodgers 2011, p. 55-56). In the parental leaves scheme, the mothers are only entitled to three months of paid leave, while the spouses only get two days (Law 13/2003, article 82). Unfortunately, only a third of working women in Indonesia are entitled to maternity leave. This means that not all maternal workers can benefit from this benefit (Schaner and Das, 2016).

Graph 2. Female Employment-to-population Ratio by Marital Status (%)



Source: ILO (2022a).

1.2. Problem Statement

In LMICs, such as Indonesia, childhood stunting is a major concern. It can have detrimental effects on the human capital development and country's productivity. Mothers play a vital role in preventing stunting, and they should play a role in early childhood development. In developing countries, the dual burdens of maternal employment and household production have been a persistent concern. In Indonesia, Article 34 of the law on marriage provides that the wife's primary responsibility is the production of household goods. This implies that households would have to trade off in order to maintain their standard of living. The wages of mothers can have a positive impact on children's nutritional status. It is believed that their bargaining position can influence the household's decisions regarding the allocation of resources for the child's health. However, mothers may also work outside the home to earn more money. Working outside the home can reduce the time that mothers spend at home with their children. It can also negatively affect their child's health. Although the effects of maternal employment on children's nutritional status are still questionable, more research is needed to confirm this.

1.3. Research Objectives and Questions

1.3.1. Research Objectives

This study has three objectives:

1. To understand the link between maternal employment and U5 children's nutritional status, which is proxied by height-for-age (HA) and stunting.
2. To empirically examine the effect of maternal employment on HA and the likelihood of children being stunted.
3. To fill the research gap regarding the link between children's nutritional status and maternal employment in developing countries, particularly in Indonesia.

1.3.2. Research Questions

This thesis aims to answer the question, "Does maternal employment affecting the nutritional outcomes of children under five years old in Indonesia?". This main research question can be divided into four sub-research questions following the measurements of maternal employment:

1. Does the employment status of mothers affect the children nutrition? Is there any difference in the effect regarding the starting time of work with the age of the child?
2. To what extent does the household's trade-off of having working mothers occurs in Indonesia?
3. Do mothers engaged in upper-tier and lower-tier jobs have a different impact on children's nutrition than non-working mothers?
4. Does the mother's bargaining power in the household affects the children's nutrition?

1.4. Knowledge Gap and Contribution of the Current Study

Studies in Indonesia on the topic are very few and have mixed results. Some of these found that maternal employment can positively affect children's height and development (Ng, 2018, Dervisevic et al., 2021, Laksono et al., 2022, Huriah et al., 2021). On the other hand, non-working mothers are

more prone to having children with stunted growth (Laksono et al., 2019, Savita and Amelia, 2020). Other studies also found that employment does not affect childhood stunting (Yurista et al., 2021, Wulandari et al., 2022, Titaley et al., 2019).

The studies that measure the employment status of mothers only look at the individual's working status, which simplifies the theoretical channels that lead to the link between maternal employment and children's health. The proxy is not able to explain the household's trade-off hypothesis regarding having working mothers. Moreover, the types of employment that the mothers have may have a different effect on the children's health that is indescribable by the measurement. For instance, working as an informal worker can provide mothers with more opportunities to balance their income production and childcare needs. Additionally, as noted earlier, even though FLFP in Indonesia is largely involved in the informal workforce, Ablaza (2021) found that the "job quality" within the informal sectors in Indonesia is non-uniform in terms of earnings and working hours. Furthermore, in the samples of U5 children, previous studies by Titaley et al., (2019), Laksono et al. (2019), Savita and Amelia, (2020), Huriah et al. (2021), Yurista et al. (2021), and Wulandari et al. (2022) do not consider some alternative childcare supports that could compensate the negative effect when mothers work outside the home, mainly during the first three years of children's life.

Hence, according to the research gap above, this study offers two main contributions. This study will add to existing knowledge on the topic among U5 children by utilizing the two last waves of Indonesia Life Family Survey (IFLS) data. The datasets allows us to control a wide range of individual and household characteristics including alternative childcare supports. Through the datasets, the study can examine the effects of maternal employment on children's nutrition outcomes which takes into account various measurements such as the income of the mothers, and the regular hours of work.

The contributions of this study are important for policy implications at the national level. Following the implementation of the Sustainable Development Goals (SDGs), the government is focusing on reducing the prevalence of stunting among children while also attempting to increase women's empowerment through a variety of initiatives, such as addressing gender inequality in job opportunities. Thus, to improve the nutrition and development of children in Indonesia, the government can rely on empirical evidence regarding the link between maternal employment and the children's nutritional outcomes. This can help them develop effective policies and improve the country's standing in global development.

1.5. Scopes and limitations

This thesis has some scope to avoid complications in the analyses. First, the study will only focus on the HA and stunting conditions of U5 children without explicitly considering severely stunted as a child's nutritional measurement. The age restriction follows the standard detection for HA and stunting status in children, as mentioned by many previous studies that will be discussed in the next chapter. Second, although there are some theoretical arguments about the links between maternal employment and children's nutritional conditions, as briefly mentioned in sub-section 1.1, we will only pay more attention to the Monetary Investment Effect (MIE), Time Allocation Effect (TAE), and Financial Bargaining Effect (FBE). Third, regarding specific mothers' employment types and initial employment times, we will only concentrate on the mothers' main jobs. Last, even though this study focuses on the effect of maternal employment on children's nutrition, it does not intend to understate the importance of fathers' roles in a family. The roles of fathers in children's nutritional status tend to be less complex than those of mothers due to the issue of dual burdens.

Due to the nature of the IFLS data, this study has three limitations. Firstly, mothers who have left for six months (or more) or who plan to move out if they have stayed less than six months are not covered in our sample. Secondly, the study cannot capture a short break in parents' (mothers') participation in the labour market, such as a parental (maternity) leave scheme or seasonal breaks. Lastly, because we do not get information on the mothers' time used at home, we assume that the rest of the mothers' time after working is fully dedicated to their children. Consequently, we cannot precisely capture the employed mothers' "quality" of time with children. Indeed, some working mothers may trade their quantity of time for the "quality" of time, and not all of their activities at home are likely beneficial for their children's outcomes.

1.6. Structure of the Thesis

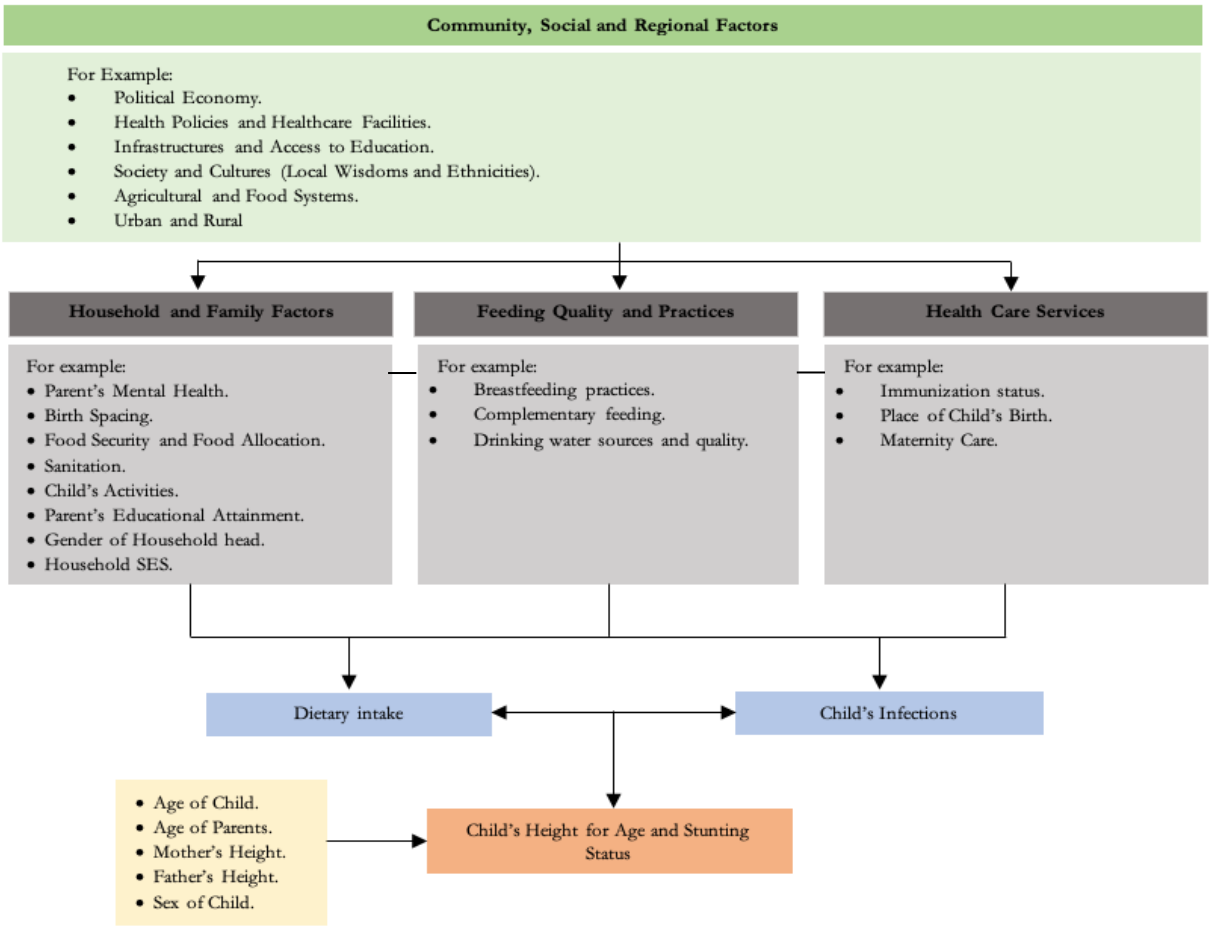
After this introductory chapter, chapter two provides a conceptual framework driven by literature reviews. Specifically, the chapter will discuss the driving factors for children's nutritional outcomes and the link between maternal employment and a child's nutrition. Additionally, a summary of recent studies on the topic will be described. Chapter three will explain the study's methodology, including the source of data, variable selections and constructions, the techniques of data analyses, and the estimation strategies. Chapter four will discuss the samples, descriptive statistics, estimation results, and discussions. The last chapter will provide a summary of the study and inputs for further future studies.

Chapter 2 Conceptual Framework and Literature Review

2.1. Determinants of Children's Nutritional Conditions: An Overview

Figure 1 illustrates the determinants of a child's HA and stunting status. The characteristics of the parent and child, parental roles, the child's supervision, and the household's SES are the most significant determinant factors among the various factors that influence it either directly or indirectly. Specifically, as non-modifiable factors, a child's characteristics (sex and age) and the mother's and father's height are the significant genetic factors that directly determine a child's height (Rizal and Dooslaer, 2019; Wu et al., 2019). More specifically, some previous studies argued that the parent's short stature is when the mother's and father's heights, respectively less than 145 cm and 161,9 cm, and will potentially deliver a stunted child (Stewart et al., 2013; Rizal and Doorslaer, 2019; Sari and Sartika, 2021).

Figure 1. Determinants of Children's Height for Age and Stunting Status



Source: Author based on some previous studies.

Meanwhile, the "underlying determinants" (the grey areas) can affect a child's linear growth via the child's diseases and dietary intake (Stewart et al., 2013; Rizal and Doorslaer, 2019). Those determinant categories generally correspond with the roles of parents in a family, especially exclusive

breastfeeding practices. A housewife tends to have more devotion time for mothering than working mothers, including but not limited to child-parent activities, the quality and practices of complementary feedings, and the child's immunization status.

Further, in the context of parents' educational level, less educated parents are linked to inadequate caring practices. Rodgers (2011) argued that educated parents could positively contribute to their child's health conditions through household expenditures on healthier foods and having more excellent knowledge and skills for childcare. Of course, they obtain better knowledge and skills not merely through formal education but also outside the classrooms (e.g., through their parents' experiences, information in the news media, and participation in some communities). It is typically captured by the age of the children's parents, with older parents having more positive information (and even experiences) about childcare methods.

Last, the household's SES category can be measured by the household wealth index, which most contributes to the SES inequality in U5 children's stunting status (Rizal and Doorslaer, 2019). Aside from that, the primary poor environmental factors that can positively influence the likelihood of stunted children are poor sanitation and unsafe drinking water. WHO and UNICEF (2016), cited in Cameroon et al. (2021), categorized improved drinking and cooking water sources as piped water, rainwater, spring water, and bottled water. Meanwhile, improved sanitation quality can be proxied by having a private toilet with a septic tank. Using those classifications, their study found that improved sanitation and safe drinking water reduce the prevalence of stunting in Indonesian children (Cameroon et al., 2021).

2.2. Conceptual Framework: The Links Between Maternal Employment and Children's Nutritional Conditions

Given the discussion above, parents' roles in the household, mainly mothers' time spent at home, are crucial to improving children's nutritional status. Of course, it does not mean that fathers do not have a substantial influence on children's development, but their contributions are likely less complex regarding that relationship due to traditional gender norms (Rodgers, 2011). From the numerous competing explanations for the links between maternal employment and children's nutritional outcomes, this sub-chapter will only focus on three primary channels: MIE, TAE, and FBE (see Figure 2).

First, when a mother engages in paid labour, the unitary household model by Becker (1981) explains that a mother's earnings will increase the household income (assuming their spouse also participates in income-earning activities, has fixed earnings, and their parents pooled their incomes). The increased household economic resources will increase households' financial capacity to allocate to children's well-being, such as spending more on nutrient-rich foods and medical expenses. However, the heterogeneity of power and preference within the household members, particularly parents in the case of a child's nutritional status, tends to be ignored in this classical perspective.

Whereas, if the mother's relative income to the father's income increases, she tends to have a higher position/autonomy in the family, which could have a greater influence on the decision-making process for the household's resource allocations (Engle 1993). The human capital investment literature has long held that when mothers have more control over household resources, they prefer to spend money on increasing their children's investments than fathers (Rodgers & Kassens, 2018, cited in Hartarto, 2021; Debela, 2021). Specifically, Lépien and Strobl (2013) argued that when mothers have full control over household resources, it could be induced by their "better intrinsic characteristics" in parenting and then positively impact the child's health. The arguments for intrahousehold bargaining

can be traced back to the cooperative model of Chiappori (1992). Similarly, if the unitary household approach's basic assumption of pooled incomes fails, mothers can decide solely on their earnings allocation, as explained in the non-cooperative bargaining model. Thereby, the maximization of a child's utility function is a function of the mother's and father's inputs and investments separately (Debela, 2021).

Furthermore, due to the traditional norms for gender division of labour in domestic chores, mothers' responsibilities in the household could potentially become heavier when they are more active in income-generating activities. Many previous studies argued that mothers' time spent at work would reduce the quantity of time spent with children[3] (e.g., Debela et al., 2021; Tominey et al., 2022). Moreover, in the LMICs, some studies found that the substitution effect in the labour supply dominates the "classical" income effect (e.g., Heath & Mobarak, 2015, cited in Debela, 2021), which means mothers may be willing to work more due to a higher marginal return on labour (Schaner and Das, 2015). As a consequence, mothers may reduce their potential ability to supervise and decide on their children's investment inputs (Rodgers, 2011). As noted in the previous sub-chapter, the adequacy of care and feeding for children, especially during the first 1000 days of a child's life, is important to improve their nutritional outcomes. Rodgers (2011) also highlighted that the effect of maternal hours spent at home (particularly with their children) on a child's health could vary depending on the mother's educational level (see Rodgers, 2011, p. 52–54, for more explanation).

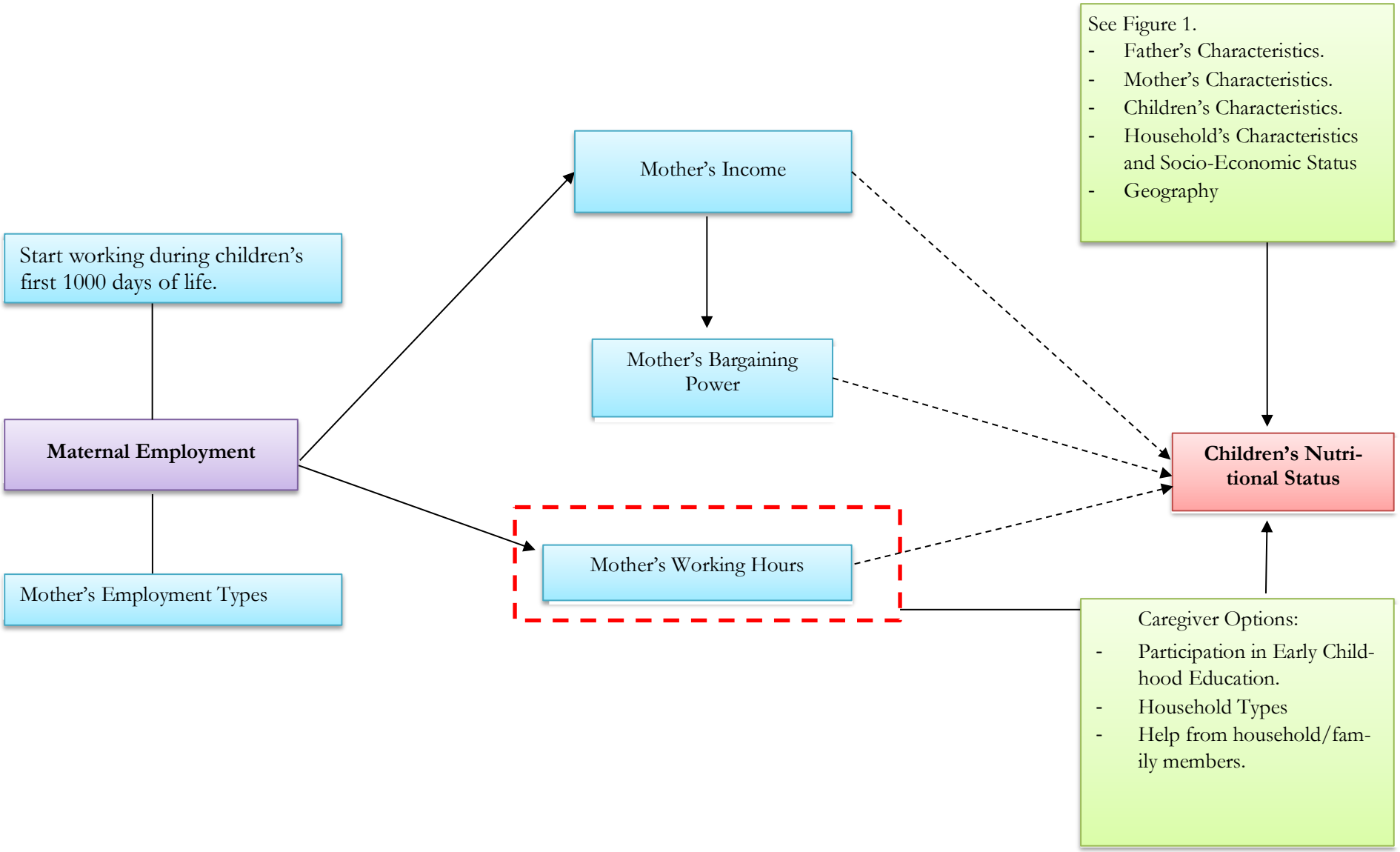
Nevertheless, other family members (for instance, grandparents or older siblings) may also become childcare options when the mother is away for work. For example, a study in Indonesia by Snopkowski and Sear (2015) found that when a mother participates in the labour market, she obtains household help, including childcare, during the past 12 months from the non-co resident married grandparents and single paternal grandmother. Specific to the stunting issue, a study by Ciptanurani and Chen (2021) highlighted that an extended household in a rural area has a lower risk of a stunted child than a household with two nuclear parents. The result suggests that the other adult family members may potentially become another childcare-home option. Of course, it also depends on the composition of the household and its primary activity. Generally, having a grandparent (mainly a grandmother due to traditional norms) at home could potentially provide an alternative caretaker since they do not engage anymore in the employment market.

Another substitute for maternal care is Early Childhood Education and Development (ECED) programs. A study by Young (1995), cited in Rodgers (2011), showed that children who participate in ECED programs have a short-term beneficial impact on their nutrition. Nonetheless, in the Indonesia context, even though the availability of preschool facilities can increase the FLFP, as Halim et al. (2021) found, its effect is driven by a rise in unpaid women workers and does not have an impact on women's earnings and hours of work. It is because preschools typically operate for 3 hours per day and are mostly located in urban areas, as briefly mentioned in sub-chapter 1.1.2. It aligns with the evaluation report by the World Bank (2015), which showed the "quality" gap of ECED policies and programs between developed and underdeveloped provinces in Indonesia. Thus, this program may only help urban middle-income families or higher.

All links above, in particular, the income and working hours channels, are more likely to vary according to the mothers' employment types. It is widely known that more than 80% of Indonesian working women join the informal sector (ILO, 2022b). Their participation in those sectors is caused by the flexibility between family responsibilities, income earning, and autonomy (Setyonaluri, 2013).

[3] However, it is possible that it will not occur in the 'quality of time' as found by Hsin and Felfe (2014).

Figure 2. A Conceptual Framework of The Links Between Maternal Employment and Children's Nutritional Status



Source: Author's compilation based on some previous studies.

However, informal workers tend to experience low pay, low job security, and fewer job benefits (for example parental leave). Furthermore, some research contends that "job quality" varies across types of informal sectors. For instance, by leveraging the IFLS dataset, Ablaza (2021) found that the workers in "lower-tier" informal jobs have poor quality in terms of low income and non-standard working hours. In contrast, the opposite effects appear in workers who work in the 'upper-tier' informal jobs.

2.3. Empirical Evidence

In this subchapter, we will discuss some related literature in the context of developing countries since the prevalence of stunting in U5 children is higher than in developed countries (see sub-chapter 1.1.1). From an extensive body of literature, here we only select some recent studies in terms of a "reputable" journal, different proxies of maternal employment (working status, hours of work, employment types, and initial employment), and methodologies. The comparison between those studies is crucial for us to gain some beneficial information, such as potential estimation issues, "good" measurement of maternal employment, and identifying the knowledge gap on this topic, specifically in Indonesia. We provide a summary of the literature in Appendix I.

First, a study in Egypt by Rashad and Sharaf (2018) found that comparing mothers who recently (within the past seven days) participated in the employment market with those who worked in the past 12 months significantly increased the probability of having U5 stunted children. That negative effect occurs only when using the ordinary least square (OLS) and instrument variable two-stage least square (IV2SLS) methods. After controlling the endogeneity issue on maternal employment status, the coefficient effect using the IV2SLS method became stronger from 0.0316 to 0.186 and more significant to 5 %. It indicates that the OLS method potentially produces an under-estimated effect.

In contrast, the Win et al. (2022) study found that the current participation of mothers in the labour market increases the odds of a child being stunted compared to non-working mothers. Interestingly, the coefficient estimate becomes high (from 1.68 to 4.96) and more statistically significant after subsequently adding the control variables as follows: parents' characteristics (1.68), household characteristics (1.84), household SES (2.22), and secondary care options by fathers and siblings (4.96). It shows that the results are susceptible to additional control variables. However, the limitations of those two studies are that maternal employment is reflected only on the working status and that the sample selection and a small number of observations also lead to external validity issues.

Looking at the maternal daily work hours effect, Garti et al. (2018) examined the effect of mothers' daily work hours in the agriculture sector and public servant occupation on the likelihood of stunted U5 children in Northern Ghana. The authors applied three categorizations of mothers' work hours: <4, 5–6, and >6. According to the job classifications and work hour categorizations, they only found a significant impact on stunting during mothers' work hours. Specifically, mothers who work less than 4 hours a day have a higher risk of having a stunted child (5.4 times) than mothers who work more than 6 hours per day. They argued that working longer hours is associated with higher incomes and that the availability of alternative childcare (grandmothers, older siblings, and extended family members) in that region can substitute for the mothers' childcare time at home. However, they did not control these confounding variables and the mothers' income in the model estimations.

Instead of applying a set of dummy variables to hours of work and the cross-sectional data as used by Rashad and Sharaf (2018) and Garti et al. (2018) studies, Debela et al. (2021) found a non-linear relationship between mothers' work hours and U5 children's HA in rural Tanzania. If a mother participates in off-farm activities for less than 12 or more than 55 hours a week, it negatively affects their children HA, while between those two ranges, they found positive effects on HA. The effects

remain statistically significant after controlling some additional confounding factors to account for possible substitution factors and testing the MIE hypothesis. It indicates that the time allocation effect dominates the adverse effect on the children's outcomes. However, even though the Debela et al. (2021) study provided a comprehensive explanation of the theoretical link between maternal employment and a child's nutrition, they did not directly estimate the income and bargaining power effects of working mothers.

Nankinga et al. (2019) investigated the effects of five types of maternal employment ("professional or formal," "sales and services," "domestic work," "agriculture," and "manual work") on children's nutritional status in Uganda. Mothers who engage in the two last occupation categories increase the odds of stunting in U5 children. More complex, Brauner-Otto et al. (2019) combined each job category (see Table 1) with six dummies of mothers beginning to work with children aged 0-5. The result has proven that the impaired linear growth can unfold over extended periods, precisely for mothers who join the wage-job category. Nevertheless, the limitation of this study is that it only focused on the mothers who engaged in paid jobs. It may cause an external validity problem because the samples are unlikely to be representative of non-working mothers.

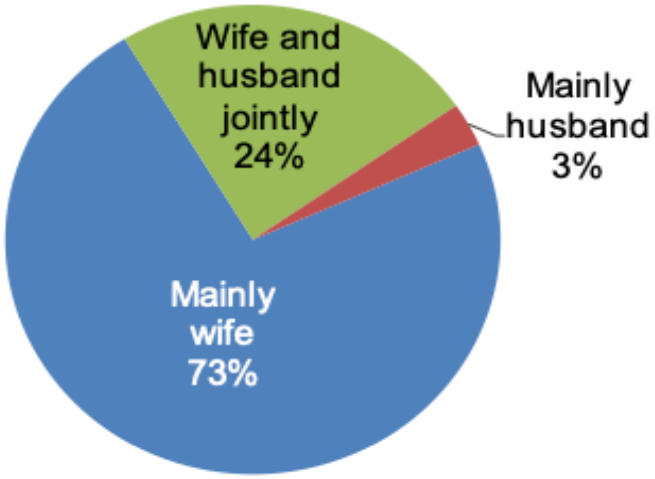
Moving to the Indonesia cases, the previous related studies remain sparse with mixed findings, and notably, all studies only used women's participation status in the labour market. Utilizing four IFLS waves, Dervisevic et al. (2021) found a negative statistical effect on the likelihood of stunted children aged 6–15 by 0.54 percentage points. Similar to Rashad and Sharaf's (2018) study, they used IV2SLS to control the potential endogeneity issue. In U5 children, non-working mothers have a higher risk (0.951) of stunted children than working mothers (Laksono et al., 2019). In contrast, Laksono et al. (2022) argued that maternal employment positively affects the likelihood of stunted children under two by 0.975 percentage points. Wulandari et al. (2022) found an insignificant effect of maternal employment on stunting in children under two years old using a similar data set but focusing on Papua island. Another study using Indonesian-level data also found the same result (Titaley et al., 2019).

For the FBE channel, some related studies have examined the impact of mothers' bargaining power on children's nutritional outcomes. Before delving into those studies further, it is important to note that women's multifaceted bargaining power is difficult to quantify or is fundamentally unobserved (Doss, 2013; Hartarto, 2021). For instance, several studies use women's participation status in the labour force as a measurement of bargaining power (e.g., Anderson & Eswaran, 2009). However, the work itself is also potentially disempowering (Doss, 2013). Participation in income-generating activities tends to increase women's work obligations, putting them in unsafe and difficult conditions, such as those related to mental health. In addition, Doss (2013) also found that women's earnings are the primary determinant factors of women's bargaining power, apart from education and assets. From a range of its proxies, here we only focus on the "financial" bargaining power between mothers and fathers, sometimes called "the indirect measurement." It is measured by mothers' relative earnings compared to total mother's and father's labour income.

Engle (1993) empirically conducted a field survey in Guatemala to determine the impact of mothers' and fathers' income on children's nutritional status. The author found that except for food expenditures, which have already become women's responsibility, women have much more control over decision-making when they contribute a more significant share of the household's income. Then, it positively impacts children's nutritional status, including height-for-age z-score. Haddad & Hoddinott (1994) also found a similar result for the boys as the relative income of wives to their husbands increased. However, in the context of Indonesia, there are very few studies that have examined this topic. The two closely related articles are conducted by Deijl (2015) on children's health and education and Anggaraini (2020) on children's years of schooling. Both articles found a positive effect on the children's outcomes as the share of mothers' income to the fathers' increases.

In the measurement aspects, Deijl (2015) highlights that mothers' relative income to the fathers' income can be a 'good' proxy of the mothers' bargaining power when the working mothers keep control over their income. If their relative income increases and their husband controls it, the proxy may need to be more precise in measuring the bargaining power. Therefore, according to the recent Indonesia Demographic Health Survey in 2017 (National Population and Family Planning Board et al., 2018), 73 % of employed women who have married control their earnings (see Figure 3), which increased by 8 % in 2012. Another general assumption when we attempt to explore the effect of bargaining power (in particular between mothers and fathers) on the children's outcomes is that the parents must have different preferences (Doss, 2013), especially on children's nutritional intake in our case. Following the previous discussions, we can only assume that fathers' and mothers' preferences regarding the treatments for children's nutrition in Indonesia are dissimilar.

Figure 3. Percentage of Shares for Control Over Their Own Earnings



Notes: The total number of respondents is 21,990 women aged 15-49. Source: National Population and Family Planning Board et al. (2018).

Chapter 3 Data and Methodology

3.1. Source of data

This study uses IFLS data, which contains information on the indicators that are needed to answer our research questions. Other alternative datasets include the Indonesian Demographic Health Survey, Indonesian Basic Health Surveys, and Indonesian Nutritional Monitoring Status. However, even though the datasets provide recent data, they lack information on our primary variables, such as how long mothers spend at work.

3.1.1. An Overview of the IFLS data

The IFLS data was developed by RAND corporation as a longitudinal survey. The respondents in the first round (1993/94) were interviewed multiple times in the follow-up waves: in 1997, 2000, 2008, and 2015. Thus, currently, five rounds of IFLS data are publicly available. The sample in the first wave represented 83 % of the Indonesian Population, covering 321 enumeration areas in 13 out of 27 provinces (see Figure 4). The provinces were selected using the stratified sampling method, and then within the provinces, the respondents were chosen randomly based on the 1993 National Socio-Economic Survey used as the sampling frame. The first survey successfully interviewed more than 22,000 people who lived in 7,224 households (RAND, n.d.). Meanwhile, in the last wave, the IFLS successfully interviewed more than 15,000 households in more than 4,600 villages in 24 provinces (Witoelar, n.d.).

The dataset contains information on indicators about the households' social, health, and economic aspects that are mainly useful to examine the effect of maternal employment on children's nutritional status by controlling for some households and individual characteristics. However, the complexities of the questionnaire may cause a high attrition rate, and if there are a non-random number of missing values, the bias estimations could potentially increase. However, Strauss et al. (2009, 2016) claimed that IFLS has a generally low attrition rate.

Figure 4. Main IFLS's Provincial Coverage

Source: RAND (2010)

3.1.2. The IFLS-4 and 5

This study only uses the two last waves, IFLS 4 (2008) and IFLS 5 (2015), because we are particularly interested in the periods that have shown a significant increase in married women's employment in Indonesia (see Graph 2). The RAND Corporation conducted the IFLS 4 in collaboration with the University of Gadjah Mada (UGM) and Survey METRE (Strauss et al., 2009). Meanwhile, the RAND and Survey METRE administered the IFLS 5 (Strauss et al. 2016). The user guides, questionnaires, and data are publicly available on the RAND Corporation's official website. For ethical clearance, the RAND Institutional Review Boards in the USA and UGM in Indonesia evaluated the IFLS surveys, including the procedures. In addition, each book in each IFLS round provided a consent form, and then the official boards evaluated the signed form before the fieldwork began (RAND, n.d.).

It should be noted that, in this study, we do not utilize the IFLS's longitudinal (or panel) main feature. Due to the seven-year difference between IFLS 4 and 5, it is impossible to analyse similar children aged 0–5 in both waves. However, repeated households may appear in our total sample if they had U5 children in different periods. Therefore, we will use the cross-sectional data. Furthermore, drawing from the IFLS 4 and 5 survey questions on the employment section, this study defines employment as the respondent's activity being either working for pay or helping to earn income for at least one hour a week. Therefore, maternal employment is defined as employed mothers with U5 children.

3.2. Variable Selection and Construction Process

This subchapter will explain in more detail the construction process of our variables concerning the previous literature and the availability of data. This section will be divided into four sub-sections: (1) The outcome variables (2) The maternal employment measurements (3) The potential confounding factors (4) Control variables. Table 2 at the end of this subchapter contains a summary of an operational definition of variables. Meanwhile, the details of the questions used in the questionnaire that correspond to the variables used in our analysis are provided in Appendix II.

3.2.1. Outcome Variables

This study uses U5 children's HA and stunting status as two anthropometric indicators and malnutrition conditions. We use both indicators since they may produce different effects. We will use the Z-scores or Standard Deviation (SD) scores to measure the height-for-age of children aged 0-5. According to WHO (1995), the HA is calculated as follows:

$$HA = \frac{H - M}{SD}$$

where H is a child's height (usually in centimetres/cm) at a certain age (usually in months). M and SD stand for the median height of similar age and sex in the population and the standard deviation of the height in the reference population respectively. Population references will follow the child's growth reference (WHO, 2006). A -1 of HA is interpreted as a child's height being one SD below the average height in the given age and sex group. In the normal distribution of HA, we will limit the min-max values to -6 and 6 SD because some studies argue that a range greater than that is unreasonable (for example, Rizal and Doorslaer, 2019; Rashad and Sharaf, 2018). A HA less than -2 is considered a stunted child according to the international standard measurement (Rashad and Sharaf, 2018).

The construction of the two variables in our data source generally involves four processes. First, the children's height (in cm and single digit decimal) information will be extracted from the US04 question, which was fielded by trained nurses (Kunto and Bras, 2018). Second, the children's age in months will be calculated from the difference between the children's date of birth (US02)[4] and the interview date[5]. Third, the ar07 question will be used for information on the sex of children. After getting all the fundamental variables, we will use the 'Zscore06' constructed by WHO (2006) in Stata 17. Last, we will remove unreasonable HA following the previous studies, and then we will construct a binary variable reflecting stunted and non-stunted children.

3.2.2. Maternal Employment Measurement

The maternal employment in this study will be proxied by six variables: the mothers' working status and initial time of employment, the mothers' hours of work, the mothers' labour income and bargaining power, and the mothers' job types. We use various measurements to obtain specific information on maternal employment characteristics and their connection to our outcome variables of interest. More importantly, we would like to prove the theoretical argument about the household's trade-off when mothers participate in the labour market. The IFLS's Book IIIA provides the necessary information to construct the variables.

First, we will divide working mothers into two categories: non-working mothers and working mothers. Mothers who worked for the past 12 months before the interview are defined as "working mothers," which is extracted from the responses to questions in the questionnaire with codes TK01-04 and TK28. Specifically, we use TK03 to capture some respondents who did not participate in the employment market in the past seven days due to particular reasons (e.g., sickness). We will also take information on TK28 because of some determinant factors that influence the children's nutritional outcomes during pregnancy[6]. Although mothers may potentially exit the labour market after delivering a child, we do not get information about the short-break periods (e.g., maternity leave, seasonal work) taken by mothers who work in the formal or agricultural sectors. However, these (mainly the maternity leave) factors probably have an insignificant effect on our estimations since our outcome variables, in particular stunting status, are categorized as long-term nutritional status and most mothers participate in the informal sector (see sub-sections 1.1.1 and 2.2.1). Using a similar technique, we will also construct an indicator of fathers' working status.

For the mothers' initial time of employment variable, we only focus on the mothers who start to join their primary job during the first 1000 days (≈3 years) of their children's life. The primary reason follows the arguments made in the previous literature that this period is crucial for the children's development, including their nutritional outcomes (e.g., Rodgers, 2011; Brauner-Otto et al., 2018). This dummy variable is developed from a combination of the interview year, the birth date of the child, and how long the mother has participated in the primary job (TK23a2).

Next, the mothers' work hours variable will be created by combining hours spent in a primary job (TK22a) and an additional job (TK22b). Those questions accurately captured the regular/normal work hours of other questions[7]. In our sample, 99 hours a week is the maximum[8] since it is hard to

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[4] If there is missing information on the child's date of birth, we will try to combine it with other questions: ar08 and dob.

[5] The source of this variable is based on the data "bus_time" which contains information such as the interview day/month/year for respondents in the book US.

[6] In our sample, the total observations of mothers who only worked in 2014 and 2007 are 324 observations.

[7] TK21a or TK21b only asks for the hours of work in the past seven days, instead of normal work hours. So, the respondents may spend more time at the workplace due to specific reasons such as high work intensity.

[8] From 4208 observations of working mothers in our sample, 3.6% work more than 99 hours in a week, and 83% work as self-employed.

believe they can spend more. For non-working mothers, we will set zero work hours instead of removing them from our sample. We will also construct the fathers' work hours variable based on a similar method.

Mothers' labour income variable is the total between primary and additional jobs. It will be built by summing up last month's salary (TK25a1 and TK25b1), last month's profit (TK26a1 and TK26b1), and last year's bonuses (TK25a2b and TK25b2b)[9]. Fathers' income also follows the same calculation, and we set zero income for non-working parents. The logged value will be used in the regressions, and we will set 0 earnings for non-working parents. We will transform the mothers' and fathers' incomes into logarithmic form. Later, we construct the mothers' bargaining power variable as the share of mothers' income in total parents' incomes. The reason is straightforward: to minimize the missing values when the fathers do not work but the mothers do[10].

For the variables on mothers' and fathers' employment types, we will disaggregate into five sets of dummy variables: non-working, 'high-tier' and 'low-tier' formal workers, and 'high-tier' and 'low-tier' informal workers. In this case, we will only focus on the primary job to avoid complicating analyses. Unlike previous studies (Garti et al., 2018; Nankinga et al., 2019; & Brauner-Otto et al., 2019), we will combine mothers' types of occupations (TK20a) and types of jobs (TK24a) that follow Rizky et al.'s (2020) and Ablaza's (2021) studies. The TK20a is an open-ended question that IFLS records following the 2-digit International Standard Text Code (ISTC) occupation codes and 1-digit sector code (see Appendix III). Indeed, the classifications in Table 2 below may need to be more accurate in representing informal and formal workers. However, it can portray mothers' employment types based on different labour laws, benefits, average incomes, and flexibility of work hours.

Table 1. The Classification of Mothers' Employment Types

	IFLS Types of Job							
IFLS Occupation Codes	Government workers	Private workers	Self-employed	Self-employed with family members	Self-employed with permanent workers	Casual Worker in agriculture	Casual Worker in non-agriculture	Unpaid family workers
0X-4X and 01-40	HTFW	HTFW	HTIW	HTIW	HTIW	HTIW	HTIW	LTIW
5X-9X and 41-99	LTFW	LTFW	HTIW	LTIW	LTIW	LTIW	LTIW	LTIW

Notes: HTFW: High-tier Formal Workers, LTFW: Low-tier Formal Workers, HTIW: High-tier Informal Workers, LTIW: Low-tier Informal Workers. The IFLS's occupation codes can be seen in Appendix III.

3.2.3. The Potential Confounding Variables

This study uses four potential confounding factors, according to the availability of data. The first is the presence of a servant in a household. Second, we also consider the household types: a nuclear or an extended family. These two variables are developed from the questionnaire code Ar02b. We do not distinguish between single-parent and two-parent nuclear families as used in the study by Ciptanurani and Chen (2021), since there are few observations of a nuclear family with single parents. Likewise, we are not interested in looking at extended household compositions. Third, the presence of a grandmother in a household, either from maternal or paternal kin. Apart from using the presence of grandparents as used by Dervisevic et al. (2021), we take into account the traditional perspective of

[9] IFLS did not ask monthly bonuses.

[10] In our sample, 8.3% from 8464 observations without father, and only 0.5% from 7753 observations who both of mother and father do not work.

gender roles in Indonesian households, in which women (in this case, grandmothers) are more likely to become the alternative options for home childcare when mothers become employed. Information on this variable can be obtained from the ar11 and ar10 codes. Last is a dummy variable that represents the children's participation in either kindergarten or playgroup. The information can be obtained from the questionnaire codes DLA04a, DLA04c, and DLA04e. All confounding variables are the potential as alternative support substitution to the mother's roles in the household and tend to be related to our outcome variables, as discussed in the previous chapter.

3.2.4. Control Variables

As for control variables, we will consider the children's age and gender in the children's characteristics category. We also use mothers' and fathers' heights as direct genetic factors for children's HA and stunting status. It will be extracted from a similar source as children's height. Another parent's characteristic is their educational level. According to Indonesian Law 20/2003, nine years of compulsory education are equal to the Junior High School (JHS) level. Following that, we will make a dummy variable from the ar16 and ar17 codes, in which zero refers to less educated parents if they did not complete JHS and one otherwise. Besides, we also consider the age of the mother and the father. It is derived from the AR19 questionnaire code, which also includes information such as the parents' knowledge and experience with child rearing.

In the household level category, we will use five variables: the quality of drinking water sources, the sanitation conditions, household wealth, the gender of the household head, and the number of children aged 5-14. The first three variables represent the household's SES, and they are from Kr13, Kr13a, Kr20, and Hr06 questionnaire codes. Following studies by Cameron et al. (2021) and Rizal and Doorslaer (2019), we classify households that used improved sanitation when they have their toilets connected to a septic tank. Meanwhile, an improved source of drinking water is either bottled water or boiled pipe/pump/well water/spring water. To construct the household wealth level, we will utilize household assets (e.g., house and land, poultry, livestock, vehicles, home appliances, furniture, savings, and jewellery). All items will be created as an index using the Principal Component Analysis method and then divided into five quintiles, from the poorest to the wealthiest. Finally, using islands and rural/urban area classification, this study will account for geographical factors. Due to a few observations at the provincial level, we will only classify the islands into six groups: Java, Sumatra, Bali, West Nusa Tenggara, Kalimantan, and Sulawesi. Of course, it does not cover all islands due to the nature of our data (see Figure 3 above).

Table 2. Operational Definition and Location of Variables in IFLS

Name of Variable	Descriptions	Measurement Scale
Outcome Variables		
Height for age	Child's height for age with -6 and +6 is the min and max values.	Continuous
Stunted	Child's stunting status. 1. stunted, 0. otherwise.	Dummy
Maternal Employment		
Mother worked	Mother's work status, 1. worked, 0. otherwise.	Dummy
Initial employment time	1 if mothers worked during 1st 3 years children's life in the primary job, 0 otherwise.	Dummy
Mother worked hours	Mother's normal working hours in a week (total between primary and secondary job).	Continuous

Name of Variable	Descriptions	Measurement Scale
Mother earnings	Mother's total labour income in primary and secondary jobs (in log).	Continuous
Mother bargaining power	The share of the mother's income to the total of parent's incomes.	Continuous
Mother employment types	0. non-working, 1. 'high-tier' formal workers (HTFW), 2. 'low-tier' formal workers (LTFW), 3. 'high-tier' informal workers (HTIW), 4. 'low-tier' informal workers (LTIW). Mother's participation is only in the primary job.	Categorical
Child's Characteristics (Category 1)		
Female	Child's sex. 1 female, 0 male	Dummy
Age of Child	Child's age (months).	Continuous
Mother's Characteristics (Category 2)		
Mother short stature	1 if mother's height was less than 145 cm, 0 is otherwise.	Dummy
Educated Mother	1 if mother completed at least JHS level, 0 is otherwise.	Dummy
Age of Mother	Mother's age (years).	Continuous
Household's Characteristics and SES (Category 3)		
Unimproved Drinking Water	1 if they drank from unimproved drinking water sources, 0 is otherwise.	Dummy
Unimproved Sanitation	1 if they did not have a private toilet with septic tank, 0 is otherwise.	Dummy
Wealth Index	Assets which are owned by all household members. 1 Poorest, 2. Poor. 3. Middle. 4. Rich. 5. Richest	Categorical
Number of Children	Number of children age 5-14 in a household	Continuous
Female household head	1 if head of household is Female; 0 otherwise	Dummy
Father Presence	1 if father is present in a household; 0 otherwise	Dummy
Father's Characteristics & Paternal Employment (Category 4)		
Father short stature	1 if father's height was less than 161.9 cm, 0 is otherwise.	Dummy
Educated Father	1 if father completed at least Junior High School level, 0 is otherwise.	Dummy
Age of Father	Age of father (year).	Continuous
Father worked	1 if father worked, 0 is otherwise.	Dummy
Father worked hours	Father's Normal Working Hours in a Week (Total between Primary and Secondary Job).	Continuous
Father earnings	Father's labour income in the primary and secondary jobs (in log).	Continuous
Confounding Variables (Category 5)		
Servant Presence	The existence of servant in a household	Dummy
Extended Family	0. Nuclear family. 1. Extended Family	Dummy
Maternal Grandmother	The existence of maternal grandmother in a household	Dummy
Paternal Grandmother	The existence of paternal grandmother in a household	Dummy
Early Educational Attainment	The participation status of child in early education institutions. 1. Participated. 0. otherwise	Dummy

Name of Variable	Descriptions	Measure-ment Scale
Location of Residence		
Islands	0. Java, 1. Sumatera, 2. Bali, 3. West Nusa Tenggara, 4. Kalimantan, and 5. Sulawesi	Categorical
Urban	0. Rural. 1. Urban	Dummy

3.3. Data Analysis and Estimation Strategy

3.3.1. Descriptive Analysis

Before conducting the multivariate analyses, we will provide some descriptive statistics to capture the basic features of our data. First, we will provide the descriptive statistics of all variables between the two survey years and test them with the t-statistics method to determine whether there is any significant difference between the data in 2008 and 2015. This analysis will inform us about the changing pattern of some primary variables with a seven-year difference, such as stunting conditions in U5 children and maternal employment variables. More importantly, we will predict the non-linear relationship between the mother's working hours and the two outcome variables by using the Locally Weighted Sum of Squares (Lowess) tool.

3.3.2. General Setup

In the multivariate analyses, the general model estimation follows studies by Dervirsevic et al. (2021) and Debela et al. (2021):

$$N_{imjkt} = \tau_0 + \mu_t + \beta_k + \alpha L_{mkt} + \gamma C_{ikt} + \delta M_{mkt} + \theta F_{jkt} + \rho H_{hkt} + \partial X_{kt} + \varepsilon_{imjkt}$$

where N is the number of U5 children with our outcome variables (HA and stunted status). L stands for maternal employment variables. In succession, C, M, and F are a set of variables on children's, mothers', and fathers' characteristics, including paternal employment variables, respectively. Meanwhile, H and X represent household and confounding factors, respectively. ε is the error term assuming uncorrelated with all explanatory variables (a related concern will be discussed in section 3.4). Meanwhile, i, m, j, k, and t reflect children, mothers, fathers, households, location, and years. To account for environmental and temporal changes, we will employ fixed effects such as years t and islands k. Besides, since more than one child is likely to live in the same household, we use cluster-robust standard error at the household level, which produces estimates that are robust to heteroskedasticity within households. In addition, we will step by step add the categories of the control and confounding variables (see Table 3) to observe the sensitivity of the results.

We will use two econometric methods. Since the HA data is a continuous variable, we prefer to use the Linear Probability Model (LPM) method. Because the stunting data is binary, we will use logistic regression (Logit), and the interpretation of correlations for main regressions will be based on the marginal effects at the mean results. The motivation to use this method rather than average marginal effects is straightforward since it treats the dummy variable as a dichotomy instead of a continuous distribution. The binary outcome is possible to estimate using the LPM method. However, the error term estimates tend to suffer from heteroskedasticity issues, which will affect the efficiency of the estimators.

3.3.3. Estimation Scenarios & Hypotheses

This study will implement three estimation scenarios**. First,** we will begin the empirical analysis by examining the effect of working mothers' status on the two interest-dependent variables. According to the conceptual framework in Chapter 2, there are two possible effects. Firstly, an employed mother has predicted an increase (or decrease) in her child's HA (the probability of having a stunted child) through implicit MIE or FBE channels. The prior channel can be explained by saying that a mother can directly allocate her labour income to spending more on nutritious foods or health care expenditures that improve child nutrition. For the last channel, an employed mother may seek to increase her bargaining position in the family, which can positively influence the decision-making process of household resource allocation toward the child's health. Secondly, due to the traditional roles of women in Indonesia, childcare (including but not limited to food preparation, looking for medical care, supervision, and monitoring) becomes the mothers' responsibility. Consequently, a working mother may have less time devoted to childcare, which is likely to harm the child's health. However, it may be compensated by the substitution of childcare supports such as the availability of the father's time spent at home or other alternatives to childrearing. *Thus, apart from the first theoretical argument that maternal employment benefits a child's health implicitly through MIE and FBE, we also predict that, if there is a negative effect on a child's health due to the participation of the mother in the employment market, it will turn insignificant after controlling for father employment and confounding variables.*

In the same estimations, we will consider the time of initial employment. Based on the discussion in sub-chapter 2.2, the first 1000 days (approximately three years) of a child's life are a critical period of their development, including their nutrition, which relies on the presence of mothers at home. If a mother is absent during that time, it may harm a child's health through factors such as inadequate breastfeeding. Nevertheless, the presence of alternative childcare can potentially overcome the negative short- and long-term effects on a child's development due to the absence of mothers. When the paternal employment variables and confounding factors are controlled for, the negative effect of the time of initial employment variable becomes insignificant.

Second, the first scenario only simplifies the theoretical reasons for the link between maternal employment and children's outcomes. Thereby, we do not fully illustrate the household's trade-off of having a working mother and how their employment types affect HA and stunting conditions for the U5 children. Unfortunately, we cannot estimate simultaneously between mothers' work types and the other proxies of maternal employment.

First, if our Lowess regressions indicate a non-linear relationship between the mother's hours of work and our outcome variables. We will apply the quadratic (or even higher-degree) terms to mothers' hours of work. If it does not occur, we will go with the linear function. Following the findings of the Debela et al. (2021) study, *we predict that there is a non-linear relationship between the mother's hours of work and the child's outcome*. A child's HA (stunting status) will be affected by a low or high number of time allocations at work. If the effects remain statistically significant after including the mother's and father's earnings, it may indicate the TAE for childcare matters more than the MIE. Or, to put it differently, it confirms the existence of the household's trade-off of having working mothers. In contrast, the positive (or negative) effect arises when mothers spend time at work in a moderate range of work hours, which highlights that MIE becomes the underlying mechanism. *We can therefore conclude that the household trade-off of having working mothers only occurs when mothers spend very short and long working hours at work*. Additionally, since we use the mother's wages variable rather than total household incomes as used by Debela et al. 's (2021) study, *we predict that it has a positive (or negative) effect on the child's HA (stunting status)*. The reason follows the previous discussion, in which mothers preferred to allocate their incomes to purchase more healthy inputs for their children's development.

Second, we will focus on the mother's employment types: HTFW, LTFW, LTIW, and HTIW. Since our reference category is non-working mothers, it is clear that they do not get labour earnings but spend more time on childcare compared to employed women in all employment types. Thus, if the income effect becomes dominant, all employment types have a positive (negative) differential effect on a child's stunting status compared to non-working mothers. The opposite effects indicate that time allocation is more important. However, in the context of Indonesia, different results may come out, mainly between HTIW and LTIW, due to their being heterogeneous in terms of income and working hours (Ablaza, 2021). Based on what they found, the possible result is that informal workers in the lower tier may not have much in common with non-working mothers because their income (or their total household income) is insufficient to fulfil their children's 'basic needs', and at the same time, they can bring their child to work. Hence, our hypotheses are that: *(1) HTFW, LTFW, and HTIW have a positive (negative) differential effect on children's HA (stunting status) compared to non-working mothers. (2) There is no differential effect between LTIW and non-working mothers on children's outcomes.*

Third, we will estimate the effect of the mother's bargaining power on the child's HA and stunting status. We separate it from the previous scenario due to the multicollinearity issue with income variables. Following the discussion in sub-section 2.2., a mother will have more influence over the intra-household decision-making process when her relative income to total household labour income increases. Then, it has long been observed in the human capital investment literature that they favour spending households' economic resources to increase children's health investment over fathers. Thus, we hypothesize that *women's bargaining power, measured by their relative income to their spouse, has a positive (negative) effect on children's HA (stunting status).*

3.4. Caveats

The scenarios above are not without concerns. First, the individual income data in Indonesia may be biased due to such reports as 'false information'. Nonetheless, we do not have alternatives in the IFLS that can be used to proxy an individual's income. For instance, one of the common proxies is expenditures, but the IFLS only provides it at the household level.

Second, we treat maternal employment variables as exogenous explanatory variables. However, the potential for reverse causality and unobserved heterogeneity variables could lead to endogeneity concerns. For instance, mothers may participate in income-generating activities because their children have poor health outcomes. Besides, the 'unobserved characteristics of mothers' characteristics (e.g., ability and personality) are likely to affect the number of hours in the employment market. At the same time, these also affect their childcare methods. Using IV2SLS may solve this problem, as recommended by previous studies. However, finding a 'good' instrument is difficult, even when we have more than one endogenous explanatory variable. So, we can only interpret the correlation rather than the effect size, which may be either underestimated or overestimated.

Last, stunting could also result from biological mechanisms – a chronic illness that takes time to manifest after exposure, as argued by Brauner-Otto et al. (2019). In the first scenario, we will address this by using not only the mothers' current employment status but also the past 12 months and the work that occurred during the first three years of the children's life. We can analyse this on children aged more than three years and mothers with more than three years of work experience. However, it will significantly reduce the number of observations. Besides, we also need specific information about the confounding and control variables during the children aged less than three years, which are not provided in IFLS due to the seven-year difference between waves.

Chapter 4 Results and Discussions

4.1. Sample

From over 120,000 respondents in both IFLS 4 and 5, our U5 child samples included 8,464 individuals for whom height measurements were available and reasonable, and their mothers lived under the same roof at the same time. Due to the IFLS's regional coverage, our samples only represent 22 of the 34 provinces. The sample difference is only 2% (or 136) between the survey years. We also found 14% of 6,681 households in 2015 from 2008 data, and almost all variables have low missing rates (see the last column in Table 4).

However, since 707 (8.35%) children lived with single mothers, it reduces the number of observations in the father characteristics variables. Moreover, the missing rates increased to around 20% because there were around 10% of missing values in the fathers' heights, hours of work, and labour income variables. One possible reason is the father's absence during the interview. Furthermore, the missing values in the father's earnings also decreased the number of observations in the mother's bargaining power variable. Apart from that, employed parents reported zero incomes/profits in the past months, including 22 (0.28%) couples who worked as unpaid workers. Thereby, we can only observe 6,612 children with two parents in the third scenario. Additionally, concerning the biased estimations due to the high missing rates and insubstantial impact of our estimations, we exclude the fathers' short stature variable in all models.

4.2. Descriptive Analyses

Table 3 presents the summary statistics of all variables in 2008 and 2015 separately, and we also provide the t-test results to compare the means of each variable between the two years. Overall, although many variables experience significant change over seven years, the means of the outcome variables do not show significant differences. The averages of children's heights in both years are almost similar, which signifies 1.3 SD below the mean height of the reference population. Meanwhile, the prevalence of stunted children was 32% and 31% in 2008 and 2015, respectively.

Almost all maternal employment variables, except LTIW, have positive changes and are statistically significant. Women's participation in income-generating activities on average increased by 3%. Also, the average initial time of employment variables rose by 6%, which may be supported by the significant increase in alternative childcare: the presence of grandmothers in the household (2%), early educational attainment (6.5%), and living in an extended family (2%). We also identified seven percent of children aged 3-5 in our sample whose mothers became employed during their critical periods of development. Furthermore, the average mother's work hours and income increased by an hour and around 338,000 IDR ($22), respectively, although our samples included stay-at-home moms.

In the mothers' employment type classifications, there was a significant increase in women's participation rates as HTFW, LTFW, and HTIW compared to non-working mothers. Specifically, the average participation rates increased by more than 1% for all three job types. While participation in the LTIW classification fell by about 0.3%, this is statistically insignificant. Because FLFP increases significantly over seven years, it generally indicates that mothers are more likely to participate in higher-tier employment types.

Table 3. Descriptive Statistics of All Variables

Variable	2008					2015					Change of the Mean	Total Obs.	Missing Rate
	Obs	Mean	SD	Min	Max	Obs	Mean	SD	Min	Max			
Outcomes Variables													
Height for age	4164	-1.255	1.685	-5.96	5.88	4300	-1.255	1.566	-5.92	5.61	-0.000938	8464	0.00%
Stunted (1/0)	4164	0.324		0	1	4300	0.317		0	1	-0.00723	8464	0.00%
Children's Characteristics													
Age of Child (1/0)	4164	29.37	17.66	0	60	4300	29.69	17.66	0	60	0.323	8464	0.00%
Female (1/0)	4164	0.489		0	1	4300	0.483		0	1	-0.00639	8464	0.00%
Maternal Employment													
Mother worked (1/0)	4161	0.52		0	1	4299	0.554		0	1	0.0345***	8460	0.05%
Initial employment time (1/0)	4161	0.039		0	1	4299	0.103		0	1	0.0639***	8460	0.05%
Mothers worked hours (a)	4103	17.97	24.26	0	99	4187	19.18	25.08	0	99	1.214**	8290	2.06%
Mother employment types: HTFW (1/0) (b)	4157	0.069		0	1	4297	0.089		0	1	0.0199***	8454	0.12%
Mother employment types: LTFW (1/0) (b)	4157	0.092		0	1	4297	0.108		0	1	0.0166**	8454	0.12%
Mother employment types: HTIW (1/0) (b)	4157	0.077		0	1	4297	0.092		0	1	0.0145**	8454	0.12%
Mother employment types: LTIW (1/0) (b)	4157	0.236		0	1	4297	0.233		0	1	-0.00304	8454	0.12%
Mother earnings (in thousand IDR) (a)	4146	260.30	759.63	0	10500	4274	597.75	1384.5	0	20000	337.5***	8420	0.05%
Mother bargaining power	3176	0.141	0.259	0	1	3436	0.157	0.252	0	1	0.0158***	6612	21.80%
Mother's Characteristics													
Educated mother (1/0)	4162	0.432		0	1	4300	0.519		0	1	0.0875***	8462	0.02%
Age of mother	4164	28.97	6.061	15	52	4300	29.68	5.996	15	54	0.713***	8464	0.00%
Mother short stature (1/0)	4144	0.106		0	1	4272	0.103		0	1	-0.00319	8416	0.57%
Father's Characteristics													
Educated father (1/0)	3824	0.475		0	1	3910	0.532		0	1	0.0563***	7734	8.62%
Age of father	3824	33.48	7.024	18	72	3913	33.81	6.747	16	65	0.330**	7737	8.59%
Father short stature (1/0)	3446	0.428		0	1	3362	0.393		0	1	-0.0345***	6808	19.57%
Father worked (1/0)	3823	0.987		0	1	3913	0.987		0	1	0.000039	7736	8.60%

Variable	2008					2015					Change of the Mean	Total Obs.	Missing Rate
	Obs	Mean	SD	Min	Max	Obs	Mean	SD	Min	Max			
Outcomes Variables													
Father worked hours (a)	3332	49.03	19.65	0	99	3433	48.86	19.79	0	99	-0.17	6765	20.07%
Father earnings (in thousand IDR) (a)	3408	1201.3	2960.9	0	125000	3583	2744	6451.3	0	200000	1542.8***	6991	17.40%
Confounding Variables													
Servant (1/0)	4164	0.013		0	1	4300	0.006		0	1	-0.00668***	8464	0.00%
Early Educational Attainment (1/0)	4164	0.07		0	1	4300	0.135		0	1	0.0650***	8464	0.00%
Household Types (1/0)	4164	0.477		0	1	4300	0.498		0	1	0.0212*	8464	0.00%
Paternal Grandmother (1/0)	4158	0.114		0	1	4286	0.139		0	1	0.0243***	8444	0.24%
Maternal Grandmother (1/0)	4164	0.194		0	1	4300	0.224		0	1	0.0299***	8464	0.00%
Household's Characteristics and SES													
Unimproved Drinking Water (1/0)	4163	0.043		0	1	4300	0.031		0	1	-0.118***	8463	0.01%
Unimproved Sanitation (1/0)	4148	0.348		0	1	4265	0.256		0	1	-0.0921***	8413	0.60%
Wealth Level: Poorest (1/0)	4164	0.167		0	1	4300	0.187		0	1	0.0205**	8464	0.00%
Wealth Level: Poor (1/0)	4164	0.209		0	1	4300	0.143		0	1	-0.0659***	8464	0.00%
Wealth Level: Middle (1/0)	4164	0.191		0	1	4300	0.263		0	1	0.0716***	8464	0.00%
Wealth Level: Rich (1/0)	4164	0.212		0	1	4300	0.196		0	1	-0.0160*	8464	0.00%
Wealth Level: Richest (1/0)	4164	0.222		0	1	4300	0.212		0	1	-0.0103	8464	0.00%
Female household head (1/0)	4164	0.094		0	1	4300	0.104		0	1	0.0105	8464	0.00%
Number of Children	4164	0.765	0.916	0	6	4300	0.703	0.803	0	6	-0.0614***	8464	0.00%
Father presence (1/0)	4164	0.919		0	1	4300	0.913		0	1	-0.00653	8464	0.00%
Java (1/0)	4164	0.525		0	1	4300	0.468		0	1	-0.0583***	8464	0.00%
Sumatera (1/0)	4163	0.248		0	1	4300	0.274		0	1	0.0263***	8464	0.00%
Bali (1/0)	4163	0.049		0	1	4300	0.051		0	1	0.00195	8464	0.00%
West Nusa Tenggara (1/0)	4163	0.07		0	1	4300	0.104		0	1	0.0341***	8464	0.00%
Kalimantan (1/0)	4163	0.05		0	1	4300	0.055		0	1	0.00445	8464	0.00%
Sulawesi (1/0)	4163	0.057		0	1	4300	0.048		0	1	-0.00854*	8464	0.00%
Urban	4163	0.533		0	1	4300	0.576		0	1	0.0426***	8464	0.00%

Notes: (a) include non-working mothers or fathers. (b) non-working mothers is a reference. *p<0.10, **p<0.05, ***p<0.01. Source: IFLS4 and 5 estimates from authors' calculation

Table 4. Percentage of maternal employment by socio-economic characteristics

Characteristics	% of maternal employment from total samples
Mothers' Age (years)	
15-54	53.71
15-24	10.05
25-34	31.30
35-49	12.35
50-54	0.012
Location of Residence	
Urban	29.01
Rural	24.70
Island	
Java	24.94
Sumatera	14.30
Bali	3.59
West Nusa Tenggara	5.06
Kalimantan	3.00
Sulawesi	2.81
Mothers' Educational Level	
Completed junior secondary or higher	27.43
Did not Completed junior secondary	26.25
Employment Types	
HTFW ('high-tier' formal workers)	7.91
LTFW ('low-tier' formal workers)	10.00
HTIW ('high-tier' informal workers)	8.45
LTIW ('low-tier' informal workers)	23.45
Household's Wealth Quantile	
Lowest/Poorest	8.46
Second/Poor	8.77
Middle	12.25
Third/Rich	11.31
Highest/Richest	12.92

Source: Authors' calculation using IFLS 4 and 5 datasets.

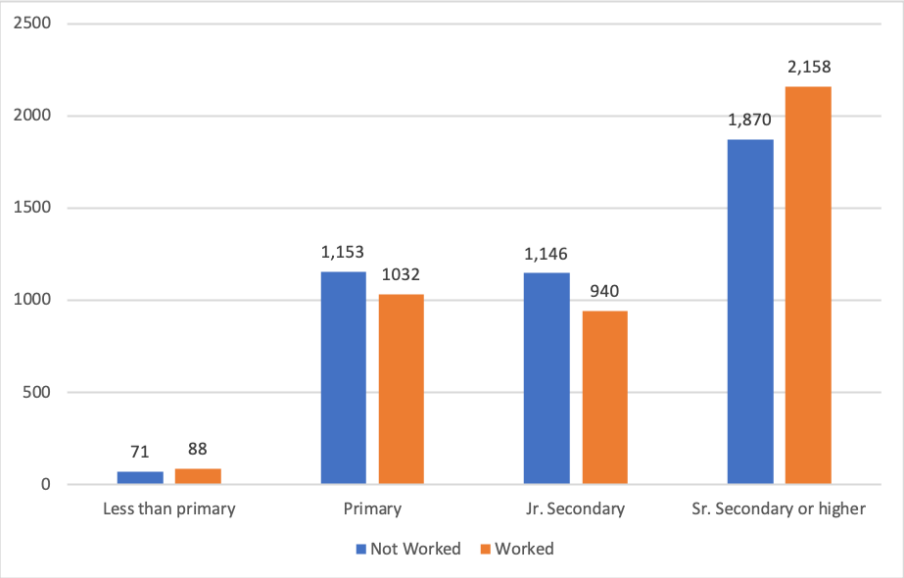
The mother's bargaining power in terms of income sharing also increased by 1.6%, although there was a significant increase in the father's wages. Appendix IV provides more details the distribution of the wife's relative income to the couple's total earnings. Interestingly, when the wife earns more than the husband (> 0.5), the distributions fall dramatically, and breadwinners account for 25% of the 731 women with a higher income share. This pattern is closely related to a study by Bertrand et al. (2015) in the US. They argued that generally, the 'gender identity norms' within a household play a key role

in explaining this phenomenon – a husband dislikes a situation when his spouse obtains more income than him.

Table 4 above shows the percentage of maternal employment in total samples by selected characteristics. Commonly, there is an inverted U-shaped relationship between the age of mothers and their participation in the labour force. The percentage of employed women increased until age 25–34 and then decreased as age increased. Working mothers were more common in urban areas and on Java Island than in counterparts' residences and islands, due to higher living costs that motivate mothers to seek paid jobs. Well-educated mothers participated more in the employment market, although the percentage difference is only 1%. The 'low-tier' informal workers category was higher than the other employment types. It is not surprising since almost 25% of employed mothers in our samples worked as unpaid/family workers. Interestingly, as households' socioeconomic status increased, more women became employed. It may be associated with their educational attainment, which will be comprehensively discussed later.

Graph 3 below depicts a more elaborated distribution of mothers' work participation at each level of education. Well-educated mothers (senior secondary or higher) participated more in the labour market than those who only completed JHS. Mothers who only finished primary school were more likely to be employed than those who only finished JHS. One possible reason is that mothers take 'jobs of necessity'; if they come from low-income families, any job demands will attract them to join due to the high marginal benefits of additional income. Mothers, on the other hand, tended to be stay-at-home in both educational attainments. Compared with the work participation pattern in the well-educated group, the traditional attitude to women's roles tends to be believed among 'less' educated families that are more likely to encourage a mother to be a homemaker rather than become employed.

Graph 3. The distribution of mothers' work participation by educational attainment.

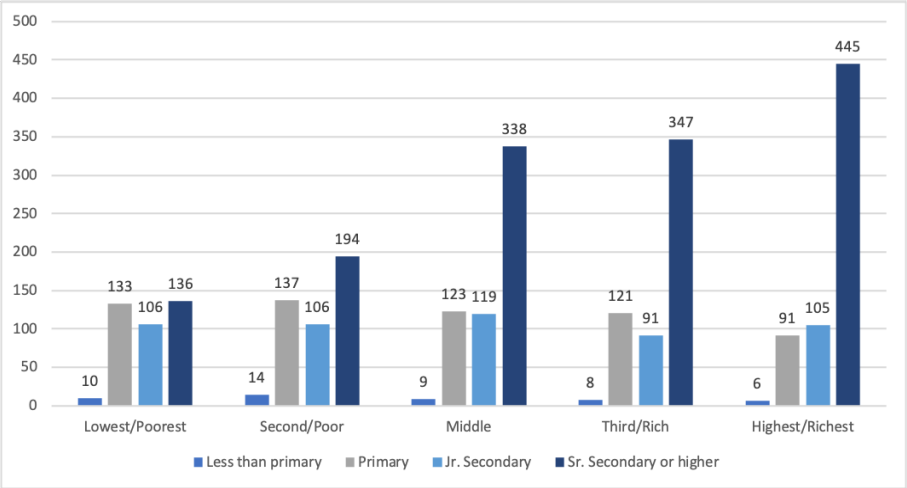


Source: Author's elaboration from IFLS4 and 5 datasets.

Aligning with our previous argument, in Graph 4, 'less' educated mothers from low-income families were more likely to participate in the labour market than those who only completed JHS. Fascinatingly, participation rates among well-educated mothers in the employment market increased along with the increase in their household wealth level. Even in the richest households, participation was the highest compared to other levels. It indicates that even though the marginal return on additional income tends to be low, they have access to 'attractive' jobs, as stated by Schaner and Das (2016).

On the other hand, graph 5 shows that well-educated employed mothers are higher in the LTIW than the other categories, even from the top-tier employment type. Apart from that, mothers prefer to join the bottom-tier employment type regardless of their educational attainment. There are two plausible reasons why they join the informal sectors either involuntary or voluntary. The prior reason is that married women with young children tend to face a barrier to entry into formal jobs in Indonesia (Indraswari, 2006), especially for those with low levels of formal educational achievement. Another reason is driven by the traditional women's roles that may force mothers to join informal sectors. They can therefore do a 'joint production' – combine income and home production (Setyonaluri, 2013). The last reason is that mothers voluntarily join informal jobs because they have flexible working hours and autonomy to maximize their self-actualization.

Graph 4. The distribution of maternal employment by educational level and household's wealth conditions



Source: Author's elaboration from IFLS4 and 5 datasets.

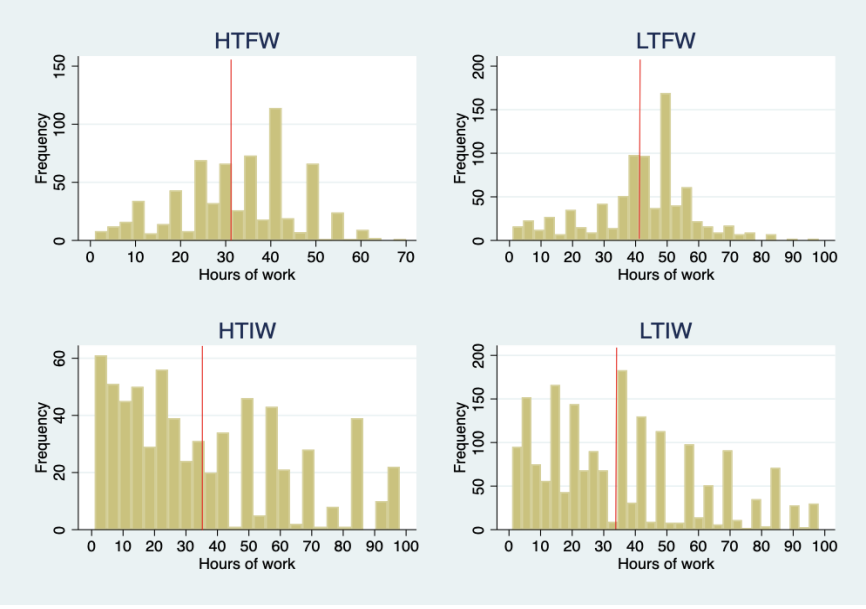
Graph 7. The distribution of mothers' employment types by educational attainment

Source: Author's elaboration from IFLS4 and 5 datasets.

The previous reason is partly explained by the skewed distribution of work hours in informal sectors rather than in formal categories, which appear roughly normally distributed (see Figure 5). More specifically, the variance among the formal workers (13 and 16 hours for HTFW and LTFW, respectively) tends to be lower than that among the informal workers (more than 25 hours for HTIW and LTIW), which could be an indication of less flexibility. However, Messenger (2018) argued that some of those with very short hours (less than 25) may also be categorized as having marginal or involuntary part-time employment, which will be a signal of time-related underemployment. If this is the case, marginal part-time workers will suffer more by earning less income, as well as earning lower average wages, less benefit coverage, and having less work-hour flexibility than full-time workers (Messenger, 2018).

More importantly, we also found that some employed mothers in the informal sector also work more excessive working hours than those who are formally employed and have standard full-time employment in Indonesia (48 or 40 hours a week)[11]. It is in line with what Ablaza (2021) found in Indonesia, where the 'bifurcation' of women's working hours exists more in the informal than the formal sectors. Moreover, the overworked conditions may affect their 'join production' practice, which can harm children's well-being by reducing the total time devoted to childcare and increasing the risk of work-family conflict (Fagan et al., 2014). Although it may be offset by increased earnings and alternative childrearing support.

Figure 6. Regular hours worked past seven days by employment types (in primary job)



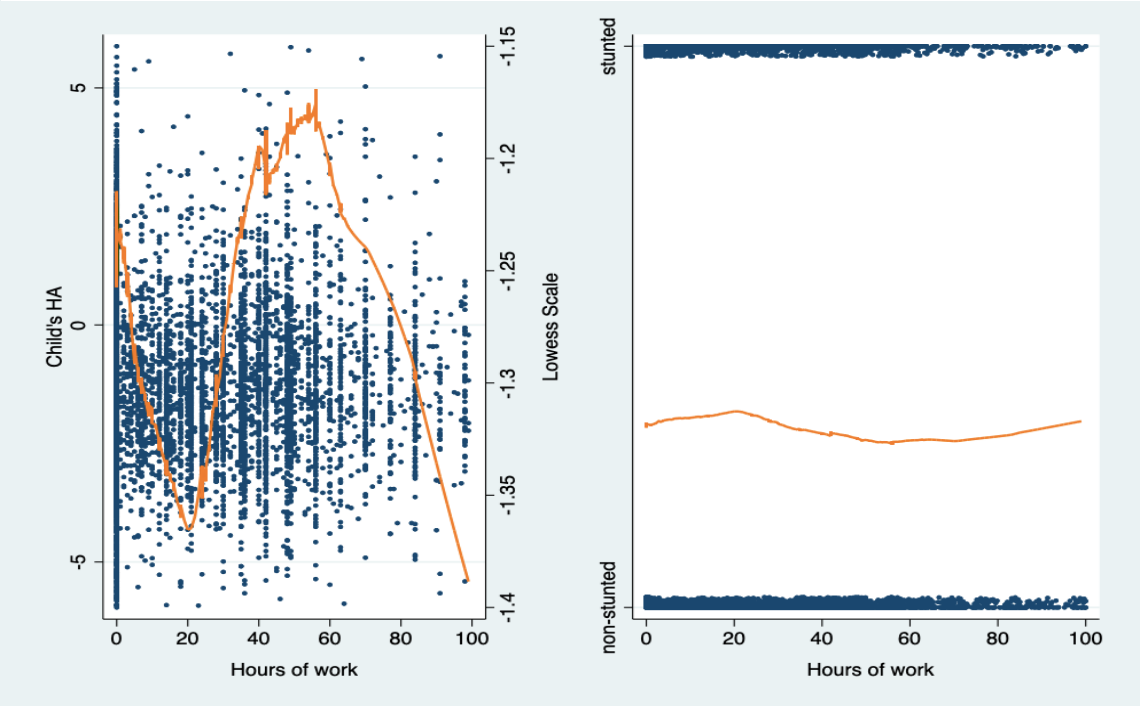
Note: Red vertical lines represent the average of hours worked past seven days. Source: Authors' calculation using IFLS 4 and 5 datasets.

Figure 6 demonstrates the non-linear predictions between mothers' regular work hours over the past seven days and our outcome variables. By including non-working mothers (which was replaced by a zero value), both panels show the polynomial relationship, which is closely related to the Debela, et al. (2021) study in rural Tanzania. The very short and extremely long weekly work hours are predicted to have a negative effect on a child's health, but in the moderate ranges, it turns positive. Similar outcomes also occur when we only focus on the mother's primary jobs and exclude those who worked

[11] Forty-eight hours in a week based on ILO Conventions no 1 and 30 cited in ILO (2011, p 23) or 40 hours plus 14 overtime hours per week as stated in the Indonesian law of employment no. 11/2013.

in agriculture sectors, which potentially experience seasonal work (see Appendices V and VI). Although the Lowess regressions have not considered the other factors that may overcome the potential negative effects, it allows us to apply the first-, second-, and third-degree terms in the second scenario.

Figure 9. The predictions of non-linear relationship between mothers' hours of work and children's nutritional outcomes when including non-working mothers.



Note: the predictions use 0.3 bandwidth. Source: Authors' calculation using IFLS 4 and 5 datasets.

4.3. Econometric Results and Discussions

4.3.1. First Scenario

Table 5 shows the estimation results for the effect of maternal employment – reflected by the mother's employment status and work participation during the first three years of the child's life – on the child's nutritional outcomes. Our results imply that maternal employment positively correlates with children's HA and becomes statistically significant after controlling some additional variables (models 4–10). It is closely in line with Dervisevic et al. (2021) results in Indonesian children aged 6-18, although the sample criteria are different.

Furthermore, we found a negative correlation if mothers begin to work when their children are younger than 3. However, it is only significant in models 7 and 8 when we include the fathers' characteristics and employment status variables. After considering confounding factors (model 9), the correlation becomes statistically insignificant, even after removing the fathers' related variables (model 10). Aligning with our hypothesis, alternative childcare supports can compensate for the short- and long-term adverse effects of mothers' absence during their children's under-3 years.

A different story emerges once we estimate the impact of maternal employment status on children's retardation conditions (see Table 6). We found that employed mothers do not significantly impact the likelihood of stunted children after controlling mothers' characteristics and some variables at individual and household levels (models 5-10). After removing all mothers' characteristics variables,

employed mothers significantly affect the incidence of stunted children at 10%, and the correlation is negative (see Appendix VII). Nevertheless, the effect becomes insignificant after controlling each variable of mothers' characteristics (model 13-14). We argue that employed mothers are susceptible to the inclusion of all mother's characteristics variables. It is supported by some previous studies in Indonesia that also found an insignificant effect of maternal employment on the probability of stunted children (Titaley et al., 2019; Wulandari et al., 2022).

In model 4, the mothers' initial employment time variable becomes insignificant, which turns significant after incorporating additional control and confounding factors (models 6–9). The decrease in total observations may have a significant impact on models 7–9. The coefficient becomes statistically insignificant when we exclude the related fathers' variables (Model 10). Similar to the previous finding, assistance from alternative caregivers can mitigate the short- and long-term negative effects on children's health when mothers are absent when their children are aged 0-3.

4.3.2. Second Scenario

Similar to the Lowess regressions before, we found that the coefficients of higher-degree worked hours are consistently significant after including the mother's income, other control, and confounding variables (models 4–10 in Tables 7 and 8), which indicates the variables are not very sensitive or robust. We also found that the mother's income will implicitly improve the child's health through direct expenditure on child-specific investments. Figures 7 and 8 show a prediction of child HA and stunting status at different levels of the mother's work hours per week. Although Figure 9 depicts a quite difference which is 5 hours higher than the prediction on the child's HA, in general, both Figures reveal that the mother's time allocated to very short and very long hours for work in a week will decrease (increase) children's HA (the probability of children affected by stunting). However, the moderate range of maternal weekly work hours benefits children's nutrition. Even after excluding the mothers who worked in the agriculture sector, the coefficients are hardly affected (see Appendix IX).

Our results highlight that the trade-off between a mother's time allocation and income will occur under specific circumstances that cannot be captured by using maternal employment status only. In more detail, MIE tends to be the primary mechanism when mothers spend a moderate range of working hours. Meanwhile, TAE for childcare matters when mothers spend very long working hours. Besides, some previous studies also argued that overwork has been associated with an increased risk of chronic illness (Bannai and Tamakoshi, 2014; Wong, Chan, and Ngan, 2019), and work-family conflicts (Fagan et al., 2014) as well as reduced happiness (Kharisma et al., 2020). It potentially adversely impacts the mother's productivity at home and her quality time with children, which may negatively affect children's nutrition.

When mothers work for very short periods of time (excluding non-working mothers), the underlying mechanisms of maternal employment on child nutrition are unclear. On the one hand, they had more childcare time than the other employed mothers (full-time or overworked). On the other hand, they are also involved in income-earning activities. Unfortunately, we require more specific information about the time mothers spent at home in order to observe mothering activities. Hsin and Felfe (2014) found that not all parents' activities with children benefit the child's well-being. Another explanation is that their incomes or their parents' total incomes are insufficient to improve children's nutritional status. In our sample, their average monthly and total household incomes (including non-labour revenues) are only 414.814 Rupiahs ($26) and 1.014.814 Rupiahs ($64), respectively. Furthermore, nearly 77% of them were employed informally, which resulted in significant job insecurity and lower labour benefits when compared to formal sectors. However, it may be underestimated since we do not count the other sources of income, such as other household members or non-labour revenues.

Table 5. The effect of maternal employment on children's height for age (scenario 1)

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Mother worked	0.018 [.0363593]		0.047 [.0378188]	0.115*** [.0370162]	0.071* [.0367325]	0.069* [.0367966]	0.075* [.0386499]	0.073* [.038647]	0.065* [.0386101]	0.061* [.0368151]
Initial employment time		-0.198*** [.0627498]	-0.222*** [.0654134]	-0.088 [.0643207]	-0.072 [.0628392]	-0.093 [.0625794]	-0.116* [.0653304]	-0.108* [.0651817]	-0.103 [.0652604]	-0.086 [.0629226]
Children Characteristics	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mother Characteristics	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Household Characteristics & SES Conditions	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes
Father Characteristics (a)	No	No	No	No	No	No	Yes	Yes	Yes	No
Paternal Employment Status	No	No	No	No	No	No	No	Yes	Yes	No
Confounding Factors	No	No	No	No	No	No	No	No	Yes	Yes
Area Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8459	8459	8459	8459	8413	8363	7643	7642	7642	8345

Notes: Cluster robust standard error in parentheses. (a) The variable of father's short stature is not included in the category. Full estimation of model 9 is provided in Appendix VIII. *p<0.10, **p<0.05, ***p<0.01.

Table 6. The effect of maternal employment on children's stunting status (scenario 1)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Mother worked	-0.011 [.0104476]		-0.019* [.0108892]	-0.027** [.0110432]	-0.013 [.0112852]	-0.013 [.0113748]	-0.017 [.0119065]	-0.016 [.0119135]	-0.013 [.0118916]	-0.011 [.0113472]
Initial employment time		0.050** [.020484]	0.060*** [.0215511]	0.035* [.0212782]	0.031 [.0212389]	0.037* [.0213674]	0.043* [.0226936]	0.042* [.0227029]	0.038* [.0226721]	0.032 [.0213274]
Children Characteristics	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mother Characteristics	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Household Characteristics & SES Conditions	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes
Father Characteristics	No	No	No	No	No	No	Yes	Yes	Yes	No
Paternal Employment Status	No	No	No	No	No	No	No	Yes	Yes	No
Confounding Factors	No	No	No	No	No	No	No	No	Yes	Yes
Area Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8459	8459	8459	8459	8413	8363	7643	7642	7642	8345

Notes: Cluster robust standard error in parentheses. (a) The variable of father's short stature is not included in the category. Full estimation of model 9 is provided in Appendix VIII. *p<0.10, **p<0.05, ***p<0.01.

Furthermore, according to 'the adaptive strategy,' mothers participate in part-time employment because they need to balance income and household production (Buehler et al., 2011). The argument aligns with the distribution of fathers' working hours in our sample. Among mothers who allocated less than 25 hours a week, only 22% of 4425 fathers worked less than 35 hours, including 2% who were unemployed. Nevertheless, some of them may be in marginal part-time employment, which is a signal of time-related underemployment, and then potentially experience low wages and job insecurity (Messenger, 2018). Unfortunately, our data source does not provide information about the respondents' preferences and willingness to work more hours, which could be more relevant to measuring underemployment. Yet, Ablaza (2021) found that time-related underemployment is more common in the informal sector in Indonesia.

In the categories of mothers' employment types, the LTFW variable is consistently significant and benefits the child's health (models 11 and 12 in Tables 7 and 8). These two underlying mechanisms are behind the correlation. First, they obtain standard salaries as 'formal workers' that can be allocated to improve child nutrition. Second, mothers in the LTFW category tend to gain standard work security and labour benefits in formal jobs (such as maternity leave and family health insurance) that will be beneficial for child health compared to non-working mothers. Meanwhile, when the father employment types variables were excluded, we only found a significant effect of the HTFW variable on the child's nutrition (model 12 in Tables 7 and 8). The variable may be sensitive due to either the reduction in total observations or the nature of the father's work, particularly for those who are also involved as top-tier workers. Further, our results do not show significant differences between informal maternal workers and non-working mothers. One plausible explanation is that they can bring their children during their working time because the work location is typically close to their home (Hein 2005, cited in Setyonaluri, 2013), especially for someone who engages in the agricultural sector.

4.3.3. Third Scenario

Our last scenario results can be seen in Tables 9 and 10. As we have predicted, the mother's bargaining power indicator has a positive effect on the child's HA and a negative effect on the likelihood of stunting, and the coefficients are consistently significant. It implicitly indicates that with the mother's increasing relative income to total household labour income, so does her bargaining position in the intra-household decision-making process. According to some studies, the greater the contribution of women's income to household income, the lower the budget share for alcohol and cigarettes and the higher the expenditure on food (for example, Hoddinott and Haddad, 1995 in Cote d'Ivoire).

In order to validate the correlation between the mother's bargaining position and the child's health, we conducted a supplementary analysis by estimating the mother's bargaining power with the child's health as our outcome variable. We only consider the responses from the wife because it is more relevant to capture her involvement in the decision about the child's health. There are three possible answers: 1) the mother was powerless because she did not participate in the decision-making process, 2) the mother and other household members, including her spouse, jointly took the decision, 3) the decision was made solely by the mother of the household. Following a study by MacPhail and Dong (2007), we used the ordered logit method, which represents the higher mother's position in deciding a child's health in sequential order. We expect that the increase in the relative mother's income to the total family income will increase the probability that the mother solely decides regarding the child's health and decrease the probability of powerless and joint decision categories.

Table 7. The effect of maternal employment on children's height for age (Scenario 2)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Mother worked hours (a)	0.0004 [.0007303]	0.0019 [.0020468]	-0.0065 [.0046734]	-0.0165*** [.0053571]	-0.0088* [.0052015]	-0.0093* [.0051609]	-0.0089* [.0051481]	-0.01* [.0053542]	-0.0139** [.0058677]	-0.0148** [.0058575]		
Mother worked hours squared (a)		-0.00002 [.0000285]	0.0002* [.0001505]	0.0004*** [.0001592]	0.0003* [.000155]	0.0003** [.0001538]	0.0003** [.0001534]	0.0003** [.0001597]	0.0004** [.0001751]	0.0004** [.0001749]		
Mother worked hours cubed (a)			-2.39e-06** [1.18e-06]	-3.58e-06*** [1.22e-06]	-2.32e-06* [1.19e-06]	-2.31e-06* [1.18e-06]	-2.42e-06** [1.18e-06]	-2.56e-06** [1.22e-06]	-3.13e-06** [1.34e-06]	-3.29e-06** [1.34e-06]		
Mother earnings (log) (b)				0.0147*** [.0041829]	0.0172*** [.0040138]	0.0119*** [.0039984]	0.0093** [.0039829]	0.0102** [.0041564]	0.0136*** [.0045881]	0.0128*** [.0045845]		
HTFW											0.1134 [.0792405]	0.1775** [.0721501]
LTFW											0.1485** [.0711574]	0.1439** [.0617337]
HTIW											-0.0125 [.0659188]	0.0043 [.0581012]
LTIW											-0.0031 [.0466638]	-0.0045 [.042341]
Children Characteristics	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mother Characteristics	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household Characteristics & SES Conditions	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Father Characteristics (c)	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	No
Paternal Employment	No	No	No	No	No	No	No	No	Yes	Yes	Yes	No
Confounding Factors	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes
Area Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-1.113791 [10.19326]	-1.161833 [10.19184]	-1.84154 [10.20404]	2.973718 [10.32326]	4.351548 [9.951226]	7.002421 [9.865]	9.784818 [9.957076]	5.785888 [10.47318]	-1.03045 [11.63157]	4.436388 [11.7122]	-0.897932 [11.05676]	12.21517 [9.823805]
R-squared	0.0223214	0.0223949	0.0228387	0.0245964	0.0944252	0.1156368	0.1250574	0.1239419	0.1286434	0.1337692	0.1308791	0.1291514
Observations	8289	8289	8289	8255	8255	8210	8160	7460	6141	6141	6982	8339

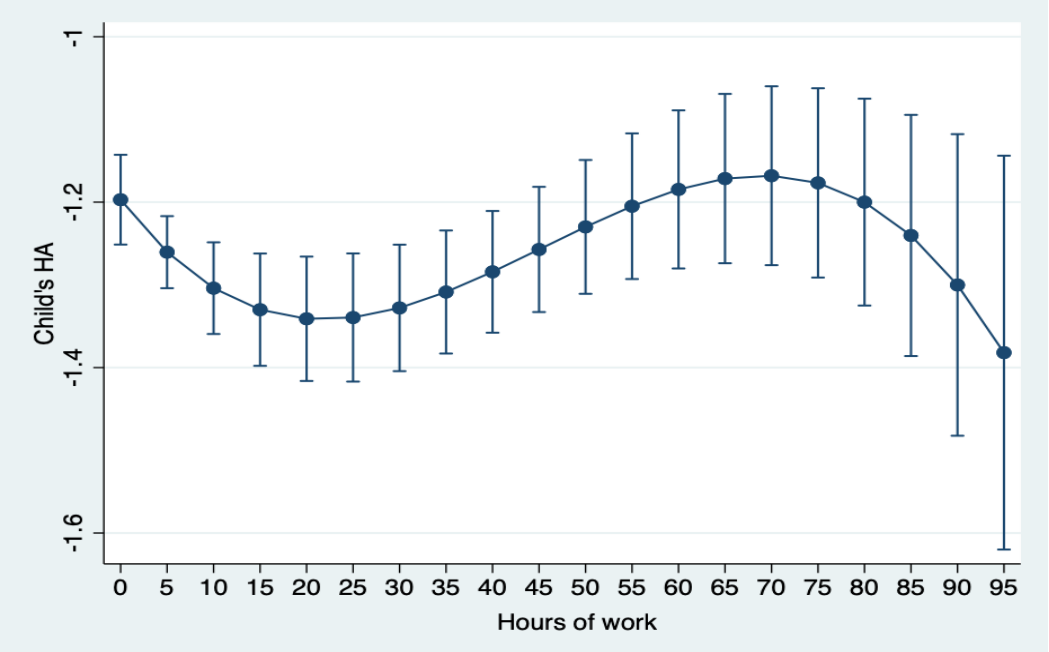
Notes: Cluster robust standard error in parentheses. (a) and (b) include the non -working mothers with zero hours of worked and income, respectively. (c) without father's short stature. The reference of mothers' employment types variables are the non-working mothers. HTFW = 'high-tier' formal workers, LTFW = "low-tier formal workers, HTIW = 'high-tier' informal workers, and LTIW = 'Low-tier' informal workers. Models 1-7 & 12 include father present variable. Paternal employment variables in Model 9-10 are father's income and hours of work. Meanwhile, in model 11, we use father's employment types. The full estimations for models 10 and 11 can be seen in Appendix VIII. *p<0.10, **p<0.05, ***p<0.01.

Table 8. The effect of maternal employment on children's stunting status (Scenario 2)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Mother worked hours (a)	-0.0003* [.0002142]	-0.0005 [.000605]	0.0014 [.0014233]	0.0057*** [.001625]	0.0048*** [.0016357]	0.0052*** [.0016421]	0.005*** [.0016506]	0.0047*** [.0017279]	0.0056*** [.0019017]	0.006*** [.0019128]		
Mother worked hours squared (a)		3.29e-06 [8.63e-06]	-6.85e-05 [.0000465]	-0.0002*** [.0000491]	-0.0001*** [.0000495]	-0.0001*** [.0000495]	-0.0001*** [.0000496]	-0.00012** [.0000521]	-0.0001** [.000057]	-0.0001*** [.0000574]		
Mother worked hours cubed (a)			5.76e-07 [3.64e-07]	1.07e-06*** [3.76e-07]	9.12e-07** [3.80e-07]	9.37e-07** [3.80e-07]	9.64e-07** [3.80e-07]	8.58e-07** [4.00e-07]	9.52e-07** [4.35e-07]	1.01e-06** [4.40e-07]		
Mother earnings (log) (b)				-0.007*** [.0012323]	-0.007*** [.001231]	-0.006*** [.0012549]	-0.005*** [.0012669]	-0.005*** [.0013284]	-0.007*** [.0014828]	-0.006*** [.0014871]		
HTFW											-0.027 [.0249825]	-0.038* [.0219807]
LTFW											-0.043** [.0206281]	-0.044** [.0182103]
HTIW											0.0001 [.0217838]	-0.0004 [.0192663]
LTIW											0.002 [.0150164]	0.013 [.0135058]
Children Characteristics	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mother Characteristics	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household Characteristics & SES Conditions	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Father Characteristics (c)	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	No
Paternal Employment	No	No	No	No	No	No	No	No	Yes	Yes	Yes	No
Confounding Factors	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes
Area Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8289	8289	8289	8255	8255	8210	8160	7460	6141	6141	6982	8339

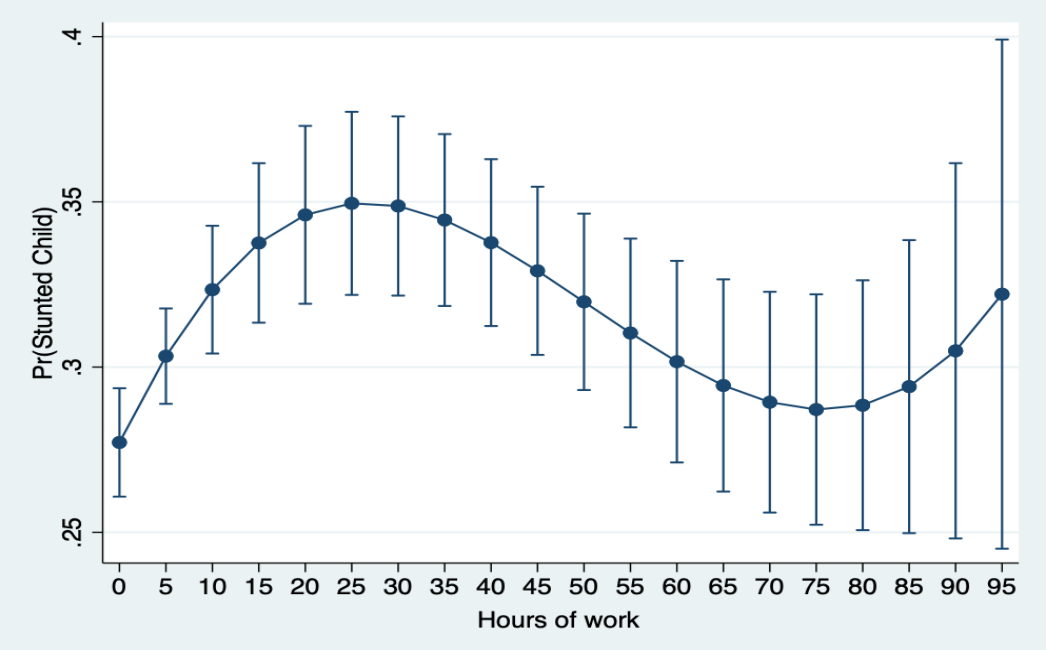
Notes: Cluster robust standard error in parentheses. (a) and (b) include the non -working mothers with zero hours of worked and income, respectively. (c) without father's short stature. The reference of mothers' employment types variables are the non-working mothers. HTFW = 'high-tier' formal workers, LTFW = "low-tier formal workers, HTIW = 'high-tier' informal workers, and LTIW = 'Low-tier' informal workers. Models 1-7 & 12 include father present variable. Paternal employment variables in Model 9-10 are father's income and hours of work. Meanwhile, in model 11, we use father's employment types. The full estimations for models 10 and 11 can be seen in Table A3 in Appendix VIII. *p<0.10, **p<0.05, ***p<0.01.

Figure 12. The relationship between maternal employment and child's HA



Notes: The linear predictions are estimated from model (10) in Table 8 with 90% confidence intervals. Only on the graph, the maximum values are set 95 hours for brevity and clarity.

Figure 13. The relationship between maternal employment and child's stunting status



Notes: The linear predictions are estimated from model (10) in Table 9 with 90% confidence intervals. Only on the graph, the maximum values are set 95 hours for brevity and clarity.

Table 11 below provides the estimation result. As we predict, the increase in the relative mother's income decreases the probability of a powerless and joint decision. While it increases the probability of a sole decision on the child's health, all of them are significant at 5%. It supports our previous argument that increasing the mother's bargaining power improves the child's nutrition by improving the mother's position in intra-household decision-making, specifically the child's health in our case. With more power in the child's health, mothers can allocate more family resources to adequate health care services and proper dietary intake that will be beneficial to the child's nutrition.

Table 9. The effect mother's bargaining power on child's height for age (Scenario 3)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Mother Bargaining Power	0.183** [.0820515]	0.294*** [.081653]	0.185** [.0802847]	0.162** [.0798536]	0.158** [.0798148]	0.146* [.0798665]	0.149* [.0798852]
Children Characteristics	No	Yes	Yes	Yes	Yes	Yes	Yes
Mother Characteristics	No	No	Yes	Yes	Yes	Yes	Yes
Household Characteristics & SES Conditions	No	No	No	Yes	Yes	Yes	Yes
Father Characteristics (a)	No	No	No	No	Yes	Yes	No
Confounding Factors	No	No	No	No	No	Yes	Yes
Area Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	6612	6612	6577	6541	6541	6541	6541

Notes: Cluster robust standard error in parentheses. (a) The variable of father's short stature is not included in the category. Full estimation of model 6 are provided in Appendix VIII. *p<0.10, **p<0.05, ***p<0.01.

Table 10. The effect mothers' bargaining power on children's stunting status (Scenario 3)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Mother Bargaining Power	-0.109*** [.0244799]	-0.122*** [.0250602]	-0.091*** [.0252553]	-0.086*** [.0251392]	-0.085*** [.0250498]	-0.081*** [.025004]	-0.082*** [.0250739]
Children Characteristics	No	Yes	Yes	Yes	Yes	Yes	Yes
Mother Characteristics	No	No	Yes	Yes	Yes	Yes	Yes
Household Characteristics & SES Conditions	No	No	No	Yes	Yes	Yes	Yes
Father Characteristics (a)	No	No	No	No	Yes	Yes	No
Confounding Factors	No	No	No	No	No	Yes	Yes
Area Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	6612	6612	6577	6541	6541	6541	6541

Notes: Cluster robust standard error in parentheses. (a) The variable of father's short stature is not included in the category. Full estimation of model 6 are provided in Appendix VIII. *p<0.10, **p<0.05, ***p<0.01.

Table 11. The effect mothers' bargaining power on decision-making process in child's health

	All	Marginal Effects		
		Powerless	Joint	Sole
Mother Bargaining Power	0.248** [.1225786]	-0.011** [.0057186]	-0.022** [.0108802]	0.033** [.0165247]
Relative Education	0.005** [.0027308]	-0.0002** [.0001276]	-0.0005** [.0002422]	0.0007** [.0003691]
Age of Mother	0.0119* [.0061976]	-0.0005* [.0002886]	-0.001* [.0005494]	0.002* [.0008334]
Urban	0.04 [.0687991]	-0.002 [.0032043]	-0.003 [.0060836]	0.005 [.0092844]
Female household head	0.367** [.1657713]	-0.014** [.0057278]	-0.041* [.0221397]	0.056** [.0277717]
Number of Children	0.081* [.0447772]	-0.003* [.0020692]	-0.007* [.0040332]	0.011* [.0061173]
Extended Family	-0.036 [.0698404]	0.001 [.0032573]	0.003 [.0061739]	-0.005 [.0094283]
Sumatera	0.064 [.080978]	-0.002 [.0036751]	-0.006 [.0075128]	0.009 [.0111804]
Bali	-0.370** [.1694693]	0.02* [.010631]	0.024*** [.0076838]	-0.044** [.0181016]
West Nusa Tenggara	-0.463*** [.109067]	0.025*** [.0069977]	0.029*** [.0048423]	-0.054*** [.0113105]
Kalimantan	-0.225 [.1416617]	0.011 [.0078539]	0.017* [.0089115]	-0.028* [.0166949]
Sulawesi	0.851*** [.1493]	-0.028*** [.0038354]	-0.117*** [.027555]	0.146*** [.0308938]
Poor	-0.157 [.1145214]	0.007 [.0058275]	0.01 [.0086414]	-0.02 [.0144319]
Middle	-0.238** [.1098888]	0.011** [.0057133]	0.019** [.0080277]	-0.03** [.0136506]
Rich	-0.271** [.1140243]	0.013** [.006096]	0.021*** [.0079146]	-0.034** [.0138927]
Richest	-0.357*** [.1112162]	0.018*** [.006155]	0.026*** [.0072323]	-0.045*** [.0131673]
Year	0.086*** [.009856]	-0.004*** [.0005423]	-0.007*** [.001118]	0.011*** [.0019099]
Constant Cut 1	171.164*** [19.75647]			
Constant Cut 2	175.781*** [19.78438]			
Observations	6529	6529	6529	6529

Notes: Cluster-robust standard error is in parentheses. Control variables are chosen from the previous literature (for example, Deijl, 2015; Schaner and Shan, 2016; MacPhail and Dong, 2007) and data availability in IFLS. The following formula is used to calculate relative education: (mother's education years / (mother's education years + father's education years) x 100. *p<0.10, **p<0.05, ***p<0.01.

Chapter 5 Conclusion

The current study sought to examine the impact of maternal employment on U5 child nutrition in Indonesia. HA and stunting status were used to estimate child nutrition. The last anthropometric indicator is significant, as it has long-term negative effects on human capital development and also on the country productivity. Data in 2021 showed that the prevalence of children affected by stunting in Indonesia decreased by 12% from 2000, but 20 out of the 34 provinces do still have a prevalence higher than the national average. At the same time, FLFP increased to around 50% from about 40% in 2006, with the increasing rates dominated by married women. Furthermore, the perpetuation of traditional women's roles in the household (such as food preparation and childcare) causes a household trade-off in the child's health if the mother works. On the one hand, an employed mother benefits the child's health through MIE and FBE. On the other hand, the reduced time allocation for childcare resulting from the increased time spent at work could harm children's health. Therefore, the direction of the effect of maternal employment and child nutrition is unclear.

Looking at the limited evidence in Indonesia on this topic, they only used the standard measure of employment (working and non-working) and generalized the mothers' types of employment. The proxy needed to be more precise to illustrate the household's trade-off hypothesis and capture the different impacts of the nature of a mother's work. This research accordingly contributed by employing six measurements of employment (employment status, time of initial employment, income, working hours, employment types, and bargaining power). We extracted secondary data from IFLS4 and 5 and applied two econometric methods, Linear Probability Model for the child HA as the dependent variable and marginal effect from Logit estimation for another outcome. Three estimation scenarios were applied by following the theoretical link between maternal employment and child nutrition and the measures of maternal employment.

In the first scenario, employed mothers benefited from a child's HA, and this benefit was statistically significant, according to this study. However, we did not find a significant impact of working mothers on U5 child's stunting conditions due to the sensitivity of the mother characteristics variables. We also found significant adverse effects on child nutrition if the mother was absent during their children aged 0-3, but it turned insignificant after including the confounding factors. It indicated that the negative short- and long-term consequences could be compensated by the presence of alternative childcare supports. In the second scenario, our estimations revealed that mothers working hours have non-linear effects on child nutrition and remained statistically significant after controlling all factors. Specifically, the extremely long working hours decreased the child's HA and increased the probability of stunted, indicating that TAE mattered more than MIE. Meanwhile, the income effect seemed to dominate when mothers worked a moderate range of hours. In the very short working hours, we found that maternal employment harmed child nutrition because they might be part of time-related underemployment. We also found that mothers' income benefited child nutrition, and similar results appeared when mothers worked in the category of LTFW rather than stay-at-home moms only. All in all, our results validated the existence of the household trade-off of having working mothers in Indonesia but under specific circumstances. In the last scenario, we found the mother's bargaining power had a significant and positive effect on the child's nutrition, at least through the increase of women's bargaining position in the child's health decisions.

This study has four limitations that future research could address. First, the effect of maternal employment may vary across the household and individual characteristics, such as household SES, gender of a child, and the mother's educational level. We only employed these factors as control

variables without considering the interaction effects. Second, this study did not solve the potential endogeneity issues that may be biased in our estimates. Another concern is the selection issue regarding the adverse effect of maternal employment on child outcomes. Future studies can address the problem by using the instrumental variable approach, for instance. Third, this study only covered three theoretical links between maternal employment and child health. Future studies can consider other mechanisms, such as the mental health of working mothers, which may impact the child's health, mainly those who work incredibly long hours. Last, due to the nature of the data, we strictly assumed that the rest time after work was devoted to children, which is different from what is true in real life. Therefore, future studies can address it by utilizing other data sources such as time use data of working mothers.

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Appendices

Appendix II. The summary of previous literature

Authors (Year)	Region	Data & Methodology	Maternal Employment Measurement	Result
Maternal Employment Status				
Rashad & Sharaf (2018)	Egypt	Data: EDHS (Egypt Demography Health Survey). Method: PSM, OLS, IV2SLS. Age of Child: U5.	Currently employed (0). Employed past 12 months (1).	IV2SLS: Positive on stunted children (0.186**).
Win et al. (2022)	Dhaka, Bangladesh	Data: Survey (346 obs.) Method: Logit. Age of Child: U5.	Non-working (0). Currently employed (1).	Positive on stunted children (1.68**-4.96**)
Dervisevic et al. (2021)	Indonesia	Data: IFLS2-5 (main). Method: OLS & IV2SLS. Age of Child: 6-18.	Non-working (0). Currently Employed (1).	IV2SLS: Positive on HA (0.837**) and Negative on stunted children (0.054***)
Laksono et al. (2022)	Indonesia	Data: 2017 Indonesia Nutritional Status Monitoring Survey. Method: Logit. Age of Child: ≤ 2.	Non-working (0). Currently Employed (1).	Positive on stunted children (0.975**)
Laksono et al. (2019)	Indonesia	Data: 2017 Indonesia Nutritional Status Monitoring Survey. Method: Logit. Age of Child: U5.	Employed (0). Non-working (1).	Positive on stunted children (1.081**)
Titaley et al. (2019)	Indonesia	Data: 2013 Indonesia Basic Health Survey. Method: Logit. Age of Child: ≤ 2.	Non-working (0). Currently Employed (1).	No Impact
Wulandari et al. (2022)	Papua, Indonesia	Data: 2017 Indonesia Nutritional Status Monitoring Survey Method: Logit. Age of Child: U5.	Non-working (0). Currently Employed (1).	No Impact
Debela et al. (2021)	Rural Tanzania	Data: The Worldbank's LSMS-ISA survey Method: Mundlak Estimator Age of Child: U5	Non-working (0). Off-farm activities. On-farm activities.	Negative on HA when active in off-farm activities (around -0.18**)
Hours of Work				
Garti, et al. (2018)	Northern Ghana	Data: Survey (320 obs.). Method: Logit. Age of Child: 6-59 months.	Above 6 hour/day. ≤ 4 hours /day (reff). 5-6 h/day,	Positive on stunted if mother worked only max 4 hours/day (5.375**)
Debela et al. (2021)	Rural Tanzania	Data: The Worldbank's LSMS-ISA survey Method: Mundlak Estimator Age of Child: U5	Continuous data on hours of work with max 80 hours/week.	Off Farm Activity: Negative relationship on HA when less than 12 hours/week (-0.038***) and more than 55 hours/week (0.001***). Positive relationship when more 12 hours/week and less than 55 hours/week (-1.3E-05***).
Employment Types, Occupations, and Initial Employment				
Nankinga et al. (2019)	Uganda	Data: UDHS (Uganda Demographic Health Survey) Method: Logit Age of Child: U5	0. Formal. 1. Sales & Services. 2. Agriculture 3. Manual works.	Positive on stunted if mothers who work on category 2 and 3. The effect size is 2.00**.

Authors (Year)	Region	Data & Methodology	Maternal Employment Measurement	Result
			4. Domestic/household works.	
Brauner-Otto et al. (2018)	Nepal	Data: The Chitwan Valley Family Study. Method: Logit Age of Child: 3-60 months.	The Mother's Job Types: 0. Non-working. 1. "Wage worker". 2. "Salary jobs". 3. "Own-business jobs". The Initial Employment: 0. "Current". 1. "Ever". 2. "Before child born". 3. "1st 6 months child's life". 4. "1st 1000 days child's life". 5. "12 months prior to the survey"	First, negative on HA only as wage workers (-0.499**). Second, combination between mother's job types and initial employment: 1 & 1: Negative relationship on HA (-0.279*) and positive relationship on Stunted (-0.443*) 1 & 5: Negative relationship on HA (-0.267*) and positive relation on Stunted (0.585*) 1 & 2: Negative relationship on Stunted (-0.447*).
Financial Bargaining Power				
Engle (1993)	Guatemala	Data: Field Survey (around 300 obs.) Method: OLS Age of Child: 8-47 months	The share of wife's income to household's income	Positive on HA (0.008*).
Haddad & Hoddinott (1994)	Cote d'Ivoire	Data: Field Survey (559 obs.) Method: IV2SLS Age of Child: U5	The wife's income proportion to father's income	Boys experience better HA compare to Girls (0.0129**).

Notes: U5 stands for under-five and HA is height-for-age.

Appendix III. The related questionnaire questions in the IFLS 4 and 5

Questionnaire Code	Question
Book US ("Respondent is a household member")	
US01	"Sex"
US02	"Date of birth"
US04	"Height (cm)"
Book II ("Respondent is Head of Household/an adult Member (aged 18 or more) in a household"	
Kr13	"What is the main water source for drinking for this household?"
Kr13a	"Before the water is used for drinking, is it boiled?"
Kr20	"Where do the majority of householders go to the household?"
Hr06	"Is the entire [...] owned by the householders?"
Book IIIA ("Respondent is an adult member who aged 15 or more)", TKXXa and TKXXb for primary and additional Jobs, respectively.	
TK01	"What was your primary activity during the past week?"
TK02	"Did you work/try to work/help to earn income for pay at least 1 hour during the past week?"
TK03	"Do you have a job/business but were temporarily not working during the past week?"
TK04	"Did you work at a family-owned (farm or non-farm) business during the past week?"
TK20a	"What are your primary duties at your workplace?"
TK23a2	"How long have you worked on this job?"
TK24a	"Which category best describes the work that you do?"
TK21a, TK21b	"What was the total number of hours you worked during the past week (on your job)?"
TK22a, TK22b	"Normally, what is the approximate total number of hours you work per week?"
TK25a1, TK25b1	"Approximately what was your salary/wage during the last month (including the value of all benefits)?"
TK25a2, TK25b2	"What is the amount of year-end-bonus or other bonuses you received during the last year?"
TK26a1, TK26b1	"Approximately how much net profit did you gain last month, after taking out all your business expenses?"
TK25a2, TK25b2	"Approximately what was your salary/wage during the last year (including the value of all benefits)?"
TK26a3, TK26b3	"Approximately how much net profit did you gain last year, after taking out all your business expenses?"

Questionnaire Code	Question
TK25a1a, TK25a2c, TK26a1a, TK25b1a, TK25b2c, TK26b1a	"It is below Rp. [….], about Rp […], or above Rp […]?"
TK27, TK33a	"Do you have any additional job?"
TK28	"Did you work in 2014?" or "Did you work in 2007?"
Book V ("Respondent is a child under 15")	
dob	"Date of birth"
DLA04a	"Did [CHILD'S NAME] ever attend a kindergarten?"
DLA04c	"Did [CHILD'S NAME] ever attend a playgroup?"
DLA04e	"Is [CHILD'S NAME] attending school at kindergarten now?"
Book K ("Respondent is a household member 18 Years or Older who is Knowledgeable About Characteristics of Household Members")	
Ar02b	"Relationship to household head now"
Ar07	"Sex"
Ar10	"Line No. Birth Father"
Ar11	"Line No. Birth Mother"
Ar16	"Highest Level of Schooling Attended by HHM"
Ar09	"Age"
Ar13	"Marital Status"

Source: IFLS 4 and 5 (Strauss, J. et al., 2009; 2016).

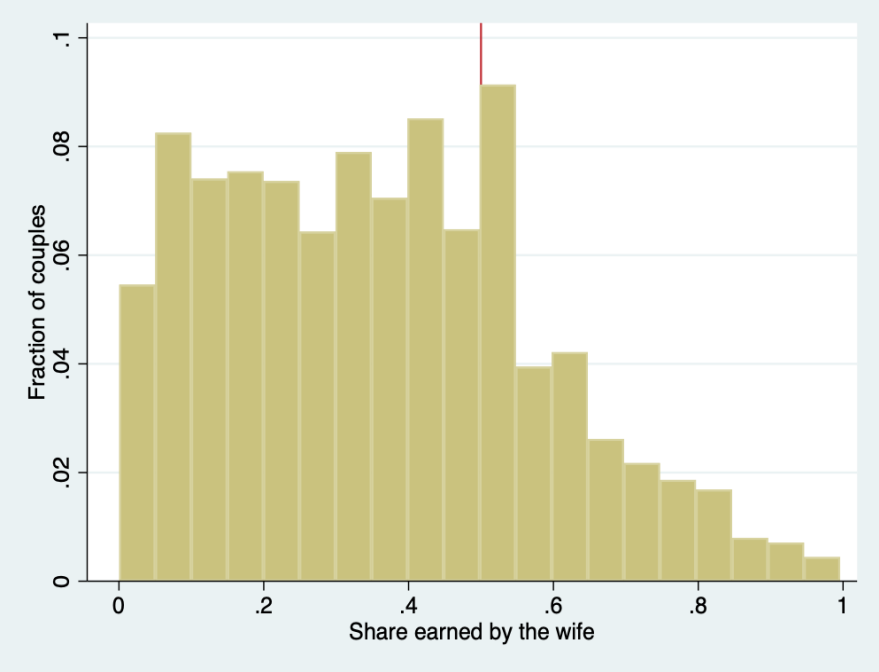
Appendix IV. IFLS Occupational Codes

Code	Description
Professional/technical	
0X	Professional, category 0, second digit could not be assigned
01	Physical scientist and related technicians
02	Architects, engineers, technologists
03	Surveyors, draftsmen, engineering assistants
04	Aircraft and ship's officer
05	Life scientists and related technicians
06	Physicians, medical assistants, dentists, dental assistants, pharmacists, nutritionists
07	Nurses, midwives, x-ray technicians, traditional medicine
08	Statisticians, mathematicians, system analysts, and related technicians
09	Economists
1X	Professional, category 1, second digit could not be assigned
11	Accountants and auditors
12	Jurists
13	Teachers
14	Workers in religion
15	Authors, critics, journalists, editors, and related writers
16	Sculptors, painters, photographers, and related creative artists
17	Composers, performing artists
18	Athletes, sportsmen, and related workers
19	Professional and technical workers not elsewhere classified
Administrative and managerial	
2X	Administrative/managerial but second digit could not be assigned
20	Legislative officials and government administrators
21	Managers
26	Administrators unknown
27	Administrator, government
28	Administrator, non-government
29	Manager not elsewhere classified (mostly school principals)
Clerical and related workers	
3X	Clerical but second digit could not be assigned
30	Clerical supervisors
31	Government executive of officials
32	Stenographers, typists, and card tape-punching machine operators
33	Bookkeepers, cashiers, and related workers
34	Computing machine operators
35	Transport and communications supervisors
36	Transport conductors
37	Mail distributors and related workers
38	Telephone and telegraph operators
39	Clerical and related workers not elsewhere classifieds
Sales workers	
4X	Sales but second digit could not be assigned
40	Managers (wholesale and retail trade)
41	Working proprietors (wholesale and retail trade)
42	Sales supervisors and buyers
43	Technical salesman, commercial travellers, manufacturer's agents
44	Insurance, real estate, securities and business services salesman and auctioneers
45	Salesmen, shop assistants and related workers
48	Sales agent
49	Sales workers not elsewhere classified

Code	Description
Service workers	
5X	Service but second digit could not be assigned
50	Managers (catering and lodging services)
51	Working proprietors (catering and lodging services)
52	Housekeeping and related service supervisors
53	Cooks, waiters, bartenders, and related workers
54	Maids and related housekeeping service workers
55	Building caretakers, char workers, cleaners, and related workers
56	Launderers, dry-cleaners and pressers
57	Hairdressers, barbers, beauticians and related workers
58	Protective service workers
59	Service workers not elsewhere classified
Agricultural, animal husbandry, forestry workers, fisherman, and hunters	
6X	Agriculture but second digit could not be assigned
60	Plantation managers and supervisors
61	Planters and farmers
62	Agricultural and animal husbandry workers
63	Forestry workers
64	Fishermen, hunters, and related workers
69	Agricultural worker not elsewhere classified
Production and related workers, transport operators, and labourers	
7X	Production, category 7, but second digit could not be assigned
70	Production supervisors and general foremen
71	Miners, quarrymen, well-drillers, and related workers
72	Metal processers
73	Wood preparation workers and paper makers
74	Chemical processers and related workers
75	Spinners, weavers, knitters, dyers, and related workers
76	Tanners, fellmongers, and pelt dressers
77	Food and beverage processors
78	Tobacco preparers and tobacco product makers
79	Tailors, dressmakers, sewer, upholsterers, and related workers
8X	Production, category 8, but second digit could not be assigned
80	Shoemakers and leather good makers
81	Cabinet makers and related wood makers
82	Stone cutters and carvers
83	Blacksmith, tool makers and machine tool operators
84	Machinery fitters, assemblers, repairers and precision instrument makers (except electrical)
85	Electrical fitters and related electrical and electronic workers
86	Broadcasting station, sound equipment operators, and cinema projectionists
87	Plumbers, welders, sheet-metal and structural metal preparers and erectors
88	Jewellery and precious metal workers
89	Glass formers, potters, and related workers
9X	Production, category 9, but second digit could not be assigned
90	Rubber and plastics product makers
91	Paper board product makers
92	Printers and related workers
93	Painters
94	Production and related workers not elsewhere classified
95	Bricklayers, carpenters and other construction workers
96	Stationary engines and related equipment operators
97	Material handling and related equipment, operators dockers and freight handlers
98	Transport equipment operators
99	Labourers not elsewhere classified

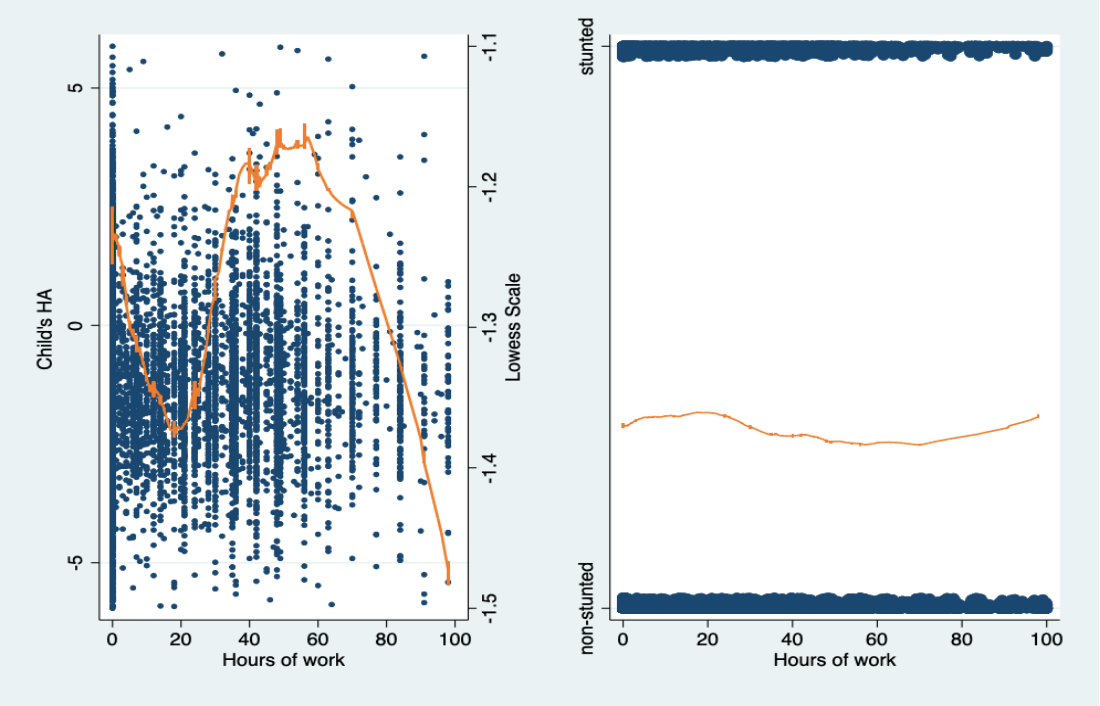
Source: Demographic Institute and RAND (1995) cited in Setyonaluri (2013)

Appendix VII. Distribution of relative income



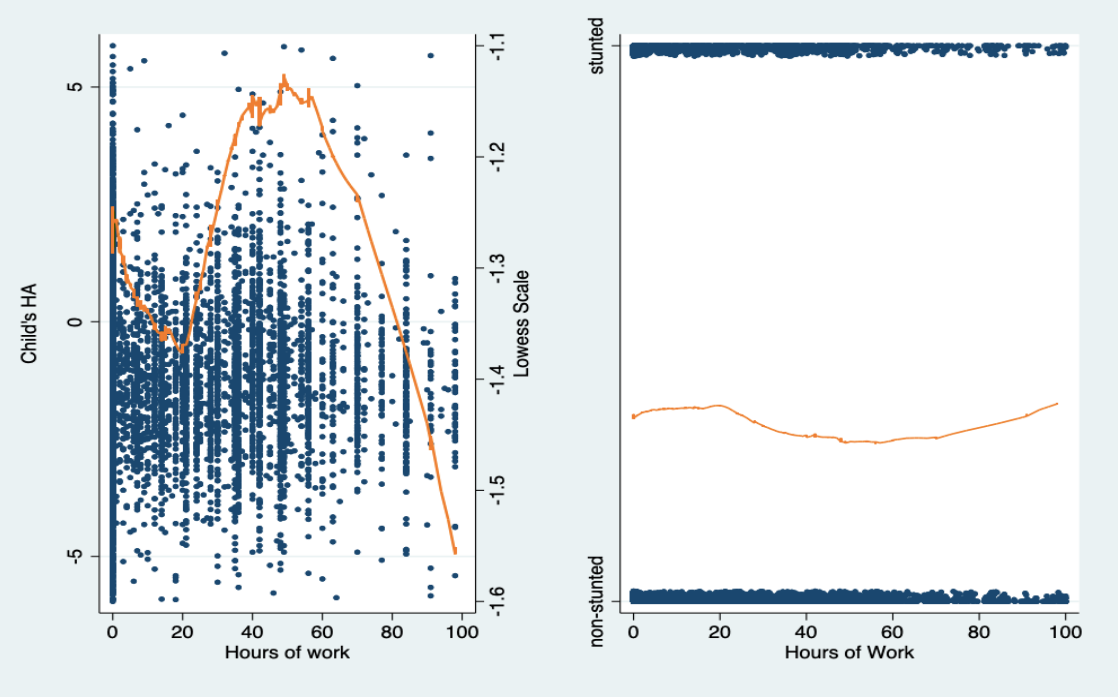
Notes: Red vertical line indicates the relative income = 0.5.

Appendix IX. The predictions of non-linear relationship between mothers' hours of work and Children's nutritional outcomes including non-working mothers (Primary Job)



Note: we used 0.3 bandwidth. Source: Authors' calculation using IFLS 4 and 5 dataset.

Appendix X. The predictions of non-linear relationship between mothers' hours of work and children's nutritional outcomes including non-working mothers (Primary Job and Non-Agriculture)



Note: we used 0.3 bandwidth. Source: Authors' calculation using IFLS 4 and 5 dataset.

Appendix XI. The effect of maternal employment on children's stunting (Scenario 1)

	(11)	(12)	(13)	(14)
Mother worked	-.0205982* [.011736]	-0.0093277 [.011643]	-0.0104781 [.0116452]	-0.0093779 [.011723]
Initial employment time	.0409263* [.0227451]	.0621503*** [.0230332]	.0625167*** [.02302]	.0602758*** [.0229964]
Children Characteristics	Yes	Yes	Yes	Yes
Mother Worked*Educated Mother				
Mother Characteristics	No			
Educated Mother		-.0420794*** [.0134205]		
Mother Age			-0.0018662 [.001483]	
Mother Short Stature				.1869857*** [.0200905]
Household Characteristics & SES Conditions	Yes	Yes	Yes	Yes
Father Characteristics	Yes	Yes	Yes	Yes
Paternal Employment Status	Yes	Yes	Yes	Yes
Confounding Factors	Yes	Yes	Yes	Yes
Area Fixed Effects	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes
Observations	7682	7680	7682	7644

Notes: Cluster robust standard error in parentheses. (a) The variable of father's short stature is not included in the category. *p<0.10, **p<0.05, ***p<0.01.

Appendix XII. Full estimation results

	S1-HA	S1-Stunting	S2-HA	S2-HA	S2-Stunting	S2-Stunting	S3-HA	S3-Stunting
Maternal Employment								
Mother Worked	.0648917*	-0.0137435						
	[.0386101]	[.0118916]						
Time of initial employment	-0.1031641	.0383963*						
	[.0652604]	[.0226721]						
Mother worked hours (a)			-.0148483**		.0060754***			
			[.0058575]		[.0019128]			
Mother worked hours squared (a)			.0004482**		-.0001549***			
			[.0001749]		[.0000574]			
Mother worked hours cubed (a)			-3.29e-06**		1.01e-06**			
			[1.34e-06]		[4.40e-07]			
Mother earnings (log) (b)			.0128466***		-.006476***			
			[.0045845]		[.0014871]			
HTFW				0.113486		-0.0270133		
				[.0792405]		[.0249825]		
LTFW				.1485002**		-.0439488**		
				[.0711574]		[.0206281]		
HTIW				-0.0125438		0.0001333		
				[.0659188]		[.0217838]		
LTIW				-0.0031025		0.0025444		
				[.0466638]		[.0150164]		
Mother bargaining power							.1462672*	-.0809893***
							[.0798665]	[.025004]
Child Characteristics								
Age of Child	-.0812771***	.0138306***	-.0856426***	-.0833398***	.0141146***	.0142228***	-.0831224***	.0135786***
	[.0043605]	[.0012765]	[.0048063]	[.0045132]	[.0014011]	[.0013275]	[.0046827]	[.0013687]
Age of Child Squared	.0010544***	-.0001875***	.0011154***	.0010867***	-.0001913***	-.0001944***	.0010851***	-.000186***
	[.0000667]	[.0000208]	[.0000735]	[.000069]	[.0000229]	[.0000216]	[.0000718]	[.0000224]
Female	0.034927	-.0190972*	0.0297577	0.0418113	-0.0161167	-.0188211*	0.0298463	-0.0169151
	[.0349025]	[.0108162]	[.0387841]	[.0363772]	[.0120693]	[.0113132]	[.037582]	[.0116289]
Mother Characteristics								
Educated Mother	.1338239***	-.0352155***	.1362902***	.134304***	-.0342562**	-.0327577**	.1433688***	-.0317067**
	[.0445032]	[.0135961]	[.0488662]	[.0469959]	[.0150567]	[.0145015]	[.0479751]	[.0146776]
Age of Mother	.0082764*	-.0033467**	.0097444*	.0114247**	-.003286**	-.004238***	.012354**	-.0039397**
	[.0049466]	[.0014979]	[.0054827]	[.0051544]	[.0016737]	[.0015555]	[.0053925]	[.0016135]
Mother short stature	-.5839857***	.1941696***	-.5486286***	-.5756469***	.178519***	.186968***	-.5926546***	.1924203***
	[.0549783]	[.0199121]	[.0596751]	[.0577765]	[.0221774]	[.0210387]	[.0588673]	[.0217427]
Household Characteristics								
Unimproved Drinking Water	-.2796384***	.0628498*	-.3104361***	-.2916988***	.0730323*	.0656473*	-.3007995***	.0678916*
	[.0889941]	[.0325844]	[.0999586]	[.0934709]	[.0379877]	[.0341074]	[.0989271]	[.0365961]
Unimproved Sanitation	-.1580053***	.0435992***	-.1420574***	-.1523624***	.0546647***	.0501545***	-.1386007***	.0539718***
	[.043072]	[.0134373]	[.0488473]	[.0450423]	[.0151504]	[.0141431]	[.0470594]	[.0146499]
Wealth Index: Poor	.1314295**	-.0434629**	0.0755876	.1323065**	-0.0179037	-.0371436**	0.1036745	-0.0236352
	[.0595887]	[.017257]	[.0667861]	[.0624642]	[.0199013]	[.0183183]	[.0650158]	[.0193069]
Wealth Index: Middle	.0965268*	-0.0267784	0.0291734	0.0848786	-0.0040305	-0.0182732	0.0774151	-0.0128432
	[.0581641]	[.0170275]	[.0644304]	[.0603935]	[.0193254]	[.0180024]	[.0626557]	[.0186719]
Wealth Index: Rich	.1664272***	-.045255***	.1952564***	.1638271***	-.0516622***	-.0436655**	.1829702***	-.0429423**
	[.0605556]	[.017401]	[.0670897]	[.063107]	[.0191895]	[.0183026]	[.0650364]	[.01884]
Wealth Index: Richest	.2235002***	-.0642479***	.161059**	.1909145***	-0.0285579	-.0481889***	.1904385***	-.040546**
	[.0612994]	[.0174063]	[.0676831]	[.0637076]	[.0201054]	[.0186474]	[.0655015]	[.0193328]
Female household head	-.1434105*	0.0223113	-.2248135*	-.2298063**	0.0465758	0.055983	-.2218262*	0.0468897
	[.0810423]	[.0263111]	[.1191031]	[.1078279]	[.0382345]	[.0354112]	[.113654]	[.0370053]
Number of Children	-.084269***	.0217875***	-.0891606***	-.0853562***	.0239077***	.0229355***	-.0932226***	.0233462***
	[.0239658]	[.0074421]	[.0271164]	[.0256094]	[.0085487]	[.0079059]	[.0268307]	[.0081717]
Father Characteristics								
Educated Father	.1132609***	-.0414573***	.1040697**	.0906775*	-.0317562**	-.0313214**	.1130417**	-.0355209**
	[.0436417]	[.0133361]	[.0486243]	[.0465206]	[.0147051]	[.0142234]	[.046961]	[.0142336]
Age of Father	-0.0008309	0.0004049	-0.0004687	-0.0017441	0.000068	0.0007389	-0.0038374	0.0012555
	[.0041749]	[.0012833]	[.0046626]	[.0043565]	[.0147051]	[.0013351]	[.0045169]	[.0013867]
Paternal Employment								
Father Worked	-.3047192*	0.0497221						
	[.1768569]	[.0463475]						
Father worked hours			0.0005238		-0.0004374			
			[.0010558]		[.0003316]			
Father earnings			-0.004527		0.0019708			
			[.0086565]		[.0025027]			
Father employment types: HTFW				-0.214236		0.0177613		
				[.1879116]		[.0568212]		
Father employment types: LTFW				-0.2820004		0.0394514		
				[.1785847]		[.053005]		
Father employment types: HTIW				-0.2467926		0.0394609		
				[.1820383]		[.0554195]		
Father employment types: LTIW				-.3150923*		0.0607366		
				[.1792437]		[.0540281]		

	S1-HA	S1-Stunting	S2-HA	S2-HA	S2-Stunting	S2-Stunting	S3-HA	S3-Stunting
Confounding Factors								
Servant Presence	.4731275** [.1889419]	-.1815314*** [.0445371]	.4851481** [.1894983]	.4294351** [.2013989]	-.1941256*** [.0474282]	-.1637464*** [.0496896]	.5027999*** [.1914287]	-.1974652*** [.0467662]
Early Educational Attainment	.3551218*** [.0554291]	-.122808*** [.0171773]	.3966502*** [.0610935]	.3375169*** [.0585874]	-.1319679*** [.0183471]	-.1178042*** [.018036]	.3369245*** [.0599743]	-.1203005*** [.0183095]
Extended Family	-0.0027043 [.053654]	0.0058318 [.016237]	-0.0402384 [.0580589]	-0.0001701 [.0556459]	0.0155765 [.0176611]	0.0051435 [.0167941]	-0.0116586 [.0573981]	0.0078414 [.0172312]
Paternal Grandmother	0.0371529 [.0688033]	-0.0300667 [.0202062]	0.0606361 [.075507]	0.0309161 [.0708625]	-0.0344964 [.0219774]	-0.0282101 [.0209885]	0.0311736 [.0735699]	-0.0260349 [.0217277]
Maternal Grandmother	0.0012683 [.0658164]	-0.0226012 [.0195594]	-0.0213177 [.0733621]	-0.0133946 [.0688139]	-0.0244953 [.0217449]	-0.0232875 [.0204803]	-0.0037958 [.071693]	-0.024887 [.0211001]
Regional Factors								
Sumatera	-0.0619773 [.0440263]	-0.0061669 [.0139876]	-0.0361755 [.0487108]	-0.0463336 [.0456812]	-0.0234258 [.0153041]	-0.0175348 [.0145632]	-0.0564381 [.0469237]	-0.0176981 [.0148806]
Bali	0.1137383 [.0779946]	-0.0312232 [.0263321]	0.026985 [.0822689]	0.0906987 [.0795402]	-0.0198698 [.028383]	-0.0324404 [.026964]	0.0553616 [.0801478]	-0.0190329 [.027474]
West Nusa Tenggara	-.516955*** [.067432]	.143212*** [.0235845]	-.5494847*** [.0739385]	-.4955565*** [.0707952]	.138286*** [.0267315]	.1306889*** [.0243543]	-.5544546*** [.0740532]	.1399572*** [.0258312]
Kalimantan	-.16138** [.0753321]	0.0432392 [.02725]	-.1693615** [.0790987]	-0.1231929 [.0779831]	0.0273372 [.0289767]	0.0222417 [.0279279]	-0.1161528 [.0792721]	0.0191915 [.0279854]
Sulawesi	-.3089132*** [.08812]	.0864093*** [.0272521]	-.3240304*** [.0990377]	-.3132946*** [.0951228]	.0745439** [.0318444]	.0802106*** [.0292741]	-.3186861*** [.0973733]	.0812793*** [.0305135]
Urban	.1441968*** [.0395925]	-.0484202*** [.0125637]	.1464941*** [.0442522]	.1535436*** [.0418842]	-.0427163*** [.0139827]	-.0478262*** [.0132591]	.163917*** [.0423704]	-.0526739*** [.0134502]
Survey Year	-0.0027034 [.0051399]	0.0002594 [.0016021]	-0.0023939 [.0058313]	-0.0020809 [.0053581]	0.000262 [.0018058]	0.0004405 [.0016775]	-0.0027352 [.0055483]	0.0004225 [.0017251]
Constanta	5.2644 [10.3318]		4.436388 [11.7122]	3.964175 [10.77054]				
Observations	7642	7642	6141	6982	6141	6982	6541	6541
R-squared	0.1281		0.1337692	0.1313229				
F-test (Prob)	1.281 (0.000)		25.85637 (0.000)	26.17485 (0.000)				

Notes: Cluster robust standard error in parentheses. (a) and (b) include non-working mothers with zero values. The reference of mother's and father's employment types variables are the non-working mother and father respectively. HTFW = 'high-tier' formal workers, LTFW = "low-tier formal workers, HTIW = 'high-tier' informal workers, and LTIW = 'Low-tier' informal workers. *p<0.10, **p<0.05, ***p<0.01.

Appendix XIII. The effect of maternal employment (hours of work and income) on child's HA and stunting status (scenario 2 by excluding the mother who worked in agriculture sector).

	S2-HA	S2-Stunting
Maternal Employment		
Mother worked hours (a)	-.0145232** [.0064363]	.0331085*** [.0098547]
Mother worked hours squared (a)	.0004577** [.0001894]	-.0008308*** [.000292]
Mother worked hours cubed (a)	-3.46e-06** [1.44e-06]	5.44e-06** [2.21e-06]
Mother earnings (log) (b)	.0119327** [.0050677]	-.0352679*** [.007798]
Child Characteristics		
Age of Child	-.0863448*** [.0049415]	.06712*** [.0069055]
Age of Child Squared	.0011353*** [.000076]	-.000924*** [.0001132]
Female	0.0216177 [.0401167]	-0.0763478 [.0593437]
Mother Characteristics		
Educated Mother	.1482362*** [.0507843]	-.1773182** [.0741328]
Age of Mother	.0115557** [.0056983]	-.0161182* [.0082275]
Mother short stature	-.5475513*** [.062308]	.7619829*** [.0950007]
Household Characteristics		
Unimproved Drinking Water	-.3632314*** [.1046325]	.4531879*** [.1684281]

	S2-HA	S2-Stunting
Unimproved Sanitation	-.1417412*** [.0510807]	.2567658*** [.0720731]
Wealth Index: Poor	0.0820339 [.0708224]	-0.0566554 [.1019322]
Wealth Index: Middle	0.0192694 [.0679298]	0.0044347 [.0967014]
Wealth Index: Rich	.1932619*** [.0698921]	-.232429** [.1009416]
Wealth Index: Richest	.1532723** [.0705095]	-0.1191254 [.1024249]
Female household head	-.2667875** [.1203884]	0.2135219 [.1726602]
Number of Children	-.0976533*** [.0279586]	.1245216*** [.0420975]
Father Characteristics		
Educated Father	.1061955** [.050564]	-.1621904** [.07224]
Age of Father	-0.0020656 [.0048363]	0.0007032 [.0070627]
Paternal Employment		
Father worked hours	0.0004239 [.0011023]	-0.0022711 [.0016291]
Father earnings	-0.0070567 [.0092791]	0.0126719 [.0127436]
Confounding Factors		
Servant Presence	.4785192** [.1904545]	-1.250638** [.4885995]
Early Educational Attainment	.384461*** [.0638289]	-.6802335*** [.1221802]
Extended Family	-0.0315872 [.0600601]	0.054027 [.0863386]
Paternal Grandmother	0.0620766 [.0789792]	-0.1643564 [.1146176]
Maternal Grandmother	-0.0032352 [.0755958]	-0.1359607 [.1094589]
Regional Factors		
Sumatera	-0.0347007 [.0501521]	-0.105095 [.0766751]
Bali	0.0364368 [.0846841]	-0.1226063 [.1463712]
West Nusa Tenggara	-.5759724*** [.0776967]	.6179717*** [.1148303]
Kalimantan	-.1533812* [.0824702]	0.0600108 [.1391235]
Sulawesi	-.3506266*** [.1023992]	.3545293** [.1406359]
Urban	.136781*** [.0454894]	-.1882702*** [.0674976]
Survey Year	-0.0016751 [.0061385]	0.0027902 [.0090264]
Constanta	3.039873 [12.32677]	-6.722881 [18.12215]
Observations	5817	5817
R-squared	0.1317622	
F-test (Prob)	24.58989 (0.000)	

Notes: Cluster robust standard error in parentheses. (a) and (b) include non-working mothers with zero values. *p<0.10, **p<0.05, ***p<0.01.