The role of working mothers in children's health during the COVID-19 pandemic in Indonesia

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Abstract

During the COVID-19 pandemic, children's health requires as much attention as that of adults. Mobility and school restrictions limited children's daily activities, while many mothers entered the labour market to support household welfare. This study investigates the impact of maternal employment on child health in Indonesia, using nationally representative microdata from the 2020 and 2021 National Socioeconomic Surveys (SUSENAS) and logit regression analysis. Findings indicate that children of employed mothers are more likely to report illnesses that interfere with daily activities, with an average marginal effect 3–4 percent higher than among children of non-employed mothers. However, maternal employment in the formal sector has a protective effect, reducing the likelihood of childhood illness by about 2%. Similarly, maternal employment in agriculture and increased working hours are associated with lower risk, whereas maternal employment in industrial jobs is associated with higher risk. These findings highlight that the conditions and quality of maternal employment, not just employment status, shape child health outcomes. The study underscores the need for supportive family policies, remarkably affordable childcare and greater workplace flexibility to safeguard children's well-being during crises.

Keywords: working mother; child health; covid-19; household welfare; logit
JEL Classification: J01; I25

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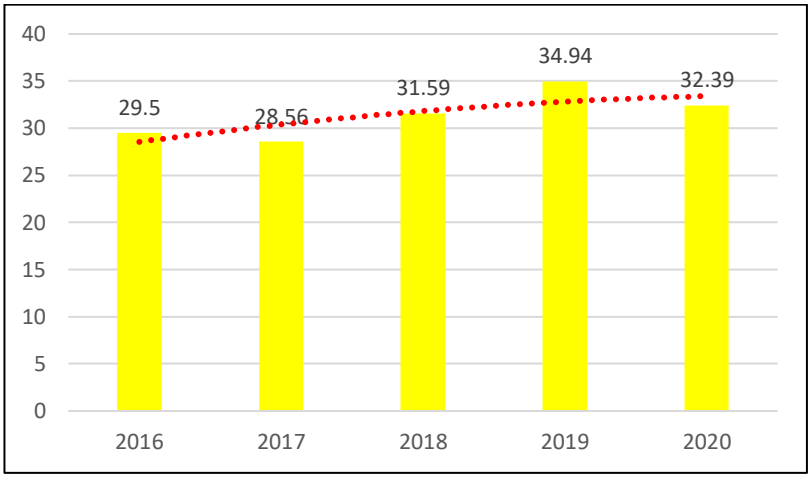
1. Introduction

Children's health plays a critical role in the economic sustainability of families (Houweling & Grünberger, 2024). Healthy children form the foundation of a family's economic stability by ensuring that parents can focus on work and other productive activities (Eriksen et al., 2021). When children are healthy, parents face fewer financial burdens related to healthcare costs, allowing them to allocate resources more effectively toward education, savings, and other critical needs (Haakenstad et al., 2023; Garcia-Diaz et al., 2024). Furthermore, healthy children are more likely to attend school regularly and perform well academically, which in turn enhances their long-term economic prospects and reduces the likelihood of generational poverty. In this way, the well-being of children directly influences the economic resilience and future opportunities of families. (Dräger et al., 2024; Hughes et al., 2021).

Poor health in children can hinder their ability to develop adequate human capital, which is essential for their future economic productivity. When children suffer from poor health, their ability to learn and develop essential skills is significantly compromised. Chronic illness or malnutrition during critical developmental periods can lead to cognitive and physical impairments that affect school attendance, academic performance, and overall skill acquisition (Deshpande, & Ramachandran, 2022; Lestari et al., 2024). This not only limits their individual potential but also reduces their contribution to the economy, thereby perpetuating cycles of low productivity and poverty.

Figure 1.
Percentage of Children Reporting Health Issues



Source: BPS (2025), Processed by Author

Health issues among children, as indicated by SUSENAS data, have shown an upward trend (Figure 1). The indicator “activity-limiting illness/complaints” captures the functional dimension of child health whether morbidity is severe enough to hinder learning, play, or daily activities. This measure is policy-relevant because it directly relates to school absenteeism and loss of instructional time. It is also readily actionable through immunization, nutrition interventions, community maternal-and-child health

posts (*Posyandu*), improvements in water and sanitation, and timely access to primary care. During the COVID-19 period, the metric is sensitive to both infection burden and disruptions in health services, thereby helping set priorities and allocate resources across regions. Although it does not record specific diagnoses, the indicator effectively monitors the burden of childhood morbidity with tangible functional consequences and links statistical findings to concrete policy levers.

This situation has been exacerbated by the Covid-19 pandemic, which has not only affected adults but also posed a significant threat to children. Although the health risks of Covid-19 infection in children are considered lower compared to older age groups (UNICEF, 2020), Indonesia has been reported to have one of the highest Covid-19 mortality rates among children globally (UNICEF, 2021). World Health Organization (WHO) showed that in December 2020, there were 37,706 confirmed cases of her Covid-19 in children, of whom 175 cases died.

Other impacts are also felt by children. Thirty percent of the total child population in Indonesia, (or around 80 million children) has the potential to experience serious impacts due to various secondary impacts that arise both in the short and long term. Such as having an impact on learning, economic resilience, and children's health (Karana, 2021). According to the UNICEF report 2020, the Executive Director of UNICEF has called on the government to pay attention that children are the invisible victims of the pandemic, given the short-term to long-term impacts on children's health, well-being, and future (UNICEF, 2020).

One of the factors that play an important role in children's health is the role of a mother (Syahailatua & Kartini, 2020). Mothers are often referred to as the front line in maintaining family health (Wulandari et al., 2022). During the pandemic, mothers assume many roles, namely ensuring that the family stays healthy and their needs are met, helping the family economy, to accompanying children to study at home (KemenPPPA, 2021).

However, this dual role also causes a dilemma for a working mother (Azizah & Salam, 2021). On the one hand, a mother wants to give the best for her child in terms of love, education, and nutrition for health. On the other hand, a mother also wants to work to help her husband to increase their family income so that the necessities of life can be met (Fitriyani et al., 2016). As a result, this change requires mothers to be able to adapt to balance their dual roles.

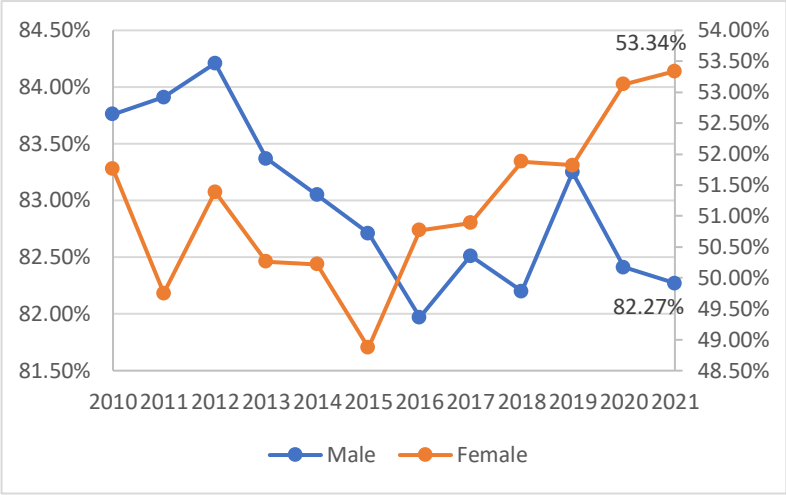
If we look at today in Indonesia, many mothers decide to become workers to help their family's welfare. During the 2020 pandemic, according to the National Socio-Economic Survey (SUSENAS) data, 38.45% of mothers spent most of their time working. In addition, according to the Central Statistics Agency (BPS), in 2021 as many as 39.52% or 51.79 million people aged 15 years and over who work are women (BPS, 2021). This figure increased by 1.09 million people from the previous year which was 50.7 million people.

Research on working mothers and child health points to two main ideas. First, there is a time-allocation issue. When affordable, quality childcare is hard to access, a mother’s work hours can reduce the time available for caregiving and preventive practices (for example, keeping up with immunizations or healthy diets). As a result, the risk of illness or developmental delays may increase.

Second is the income effect: maternal earnings can expand resources for nutrition and healthcare, improving outcomes. Evidence from Indonesia and comparable middle-income settings indicates that the effect depends on mediating conditions—household socioeconomic status, the availability and quality of childcare, and access to

primary care (Dwinanda et al., 2021; Yuliasri et al., 2015; Altaf et al., 2021). Thus, children's health is shaped less by employment status per se than by the caregiving and service environment surrounding it. This thematic framing motivates our analysis of heterogeneity in the pandemic context.

Figure 3.
Percentage of Female Labor Force in Indonesia in 2020 – 2021



Source: BPS (2025), Processed by Author

But for other studies the correlation is positive or no significant relationship is found. As in Chutikul (1986) research, his research found a positive effect of mothers working in the informal sector on child nutrition for weight and height, but the effect was negative for mothers who worked in the formal sector. Similarly, Wolfe and Behrman (1982) found that children of informal workers, but not formal sector workers, were higher in nutrition than children of mothers who did not work.

Several other researchers have also considered the effects of maternal occupational activity. Leslie (2021) found that for Peru, children of mothers working part-time had better nutritional status than children of mothers working full-time when household income was taken into account. In contrast to this study, Franklin (1979), in his Colombian non-income management analysis, reported that children of full-time workers were more affected than children of part-time workers.

Other researchers have also included maternal educational factors. In a study by Yuneta et al. (2019), results showed that there was a significant correlation/relationship between the mother's knowledge and nutritional status of her children under the age of 5 in the Wonolejo area. Education at home level plays a very important role in the formation and development of behaviour according to the child's character and disposition. In general, home-level education is the first education children receive before entering formal education schools (Hulukati, 2019). Formal education describes a learning process in which the higher an individual's level of education, the easier it is for an individual to obtain information from other people and various media. This means that the more information you receive from a person, the more likely you are to gain and gain sufficient knowledge about health.

In spatial terms, the landscape of child health in Indonesia exhibits marked heterogeneity across rural and urban areas and between Java and the rest of the archipelago. Cross-district evidence documents significant geographic disparities in child nutritional status as a key determinant of susceptibility to illness underscoring the need for region-sensitive interventions (Ayuningtyas et al., 2022; Wulandari et al., 2023; Laksono et al., 2023). During the pandemic, disruptions to maternal and child health and nutrition services varied across provinces, widening gaps in access and outcomes for children (Helmyati et al., 2021).

International evidence likewise indicates pronounced urban–rural inequalities in COVID-19 outcomes and responses, reinforcing the importance of accounting for area characteristics (Tao et al., 2021; Kang et al., 2025). Accordingly, foregrounding the urban–rural dimension and the Java versus non-Java distinction at the outset of the analysis helps link the data to contextually grounded policy prioritization.

This study focuses on mothers because, in many cultural and institutional contexts, they remain the primary day-to-day caregivers and devote more time to childcare than fathers, giving them greater opportunity to shape children's health and learning (Becker, 1981; Giurge et al., 2021; Collins et al., 2020; Lyttelton et al., 2022).

Empirically, mothers also display distinct spending preferences that favor child well-being; when women control a larger share of household resources, expenditures on children's health, education, and other child-specific goods tend to rise (Duraisamy, 1992; Thomas, 1994; D'Exelle & Ignowski, 2022; Sperber et al., 2023). Additionally, mothers often bear a dual burden of caregiving and paid work, a gap that recent evidence shows widened in many settings, further underscoring the policy relevance of focusing on maternal roles (Collins et al., 2020; Lyttelton et al., 2022; Giurge et al., 2021).

So this study examines how working mothers affects children's health. Specifically, it assesses whether mothers' employment status influences their children's health outcomes. To strengthen the literature, we operationalize child health using a proxy based on illnesses reported for the child. To the best of the authors' knowledge, no prior study has measured children's health using a history of illnesses, and most existing studies were conducted outside the COVID-19 pandemic period.

2. Methodology

This research employs a quantitative approach, utilizing Logit regression analysis to examine the impact of working mother on child health outcomes. The use of the logit model, compared to the linear probability model (LPM), offers methodological advantages as it reduces the likelihood of error distribution misspecification and heteroscedasticity that often arise when estimating binary dependent variables with non-metric outcomes (Gujarati, 2011). By applying this statistical method, the study aims to explore how various factors associated with working mothers, such as employment status, work hours, and employment sector, influence the overall well-being of their children. Therefore, the equations used in the study are as follows:

$$C_{Health} = \beta_0 + \beta_1 Mother_{Work} + \beta_2 Mother_{Formal} + \beta_3 Mother_{Hours} + \beta_4 Mother_{Agri} + \beta_5 Mother_{Ind} + X_i\psi + \epsilon \quad (1)$$

where *C_Health* is a binary outcome equal to 1 if the child experienced illness that interfered with daily activities in the past month and 0 otherwise. The key explanatory variable is MotherWorking, indicating whether the mother is employed. Additional maternal employment characteristics are included *MotherFormal* (working in the formal sector), *MotherHours* (number of hours worked per week), and employment sector dummies (*MotherAgri and MotherInd*), with the service sector as the reference category. The vector of control variables (X) includes maternal, household, and child characteristics. Maternal controls are age, self-reported health status, years of schooling, and marital status. Household characteristics consist of household size, residential area (urban vs rural), residential island (Java vs non-Java), and log per capita expenditure. Child-level controls include age and gender.

The data used in this study are sourced from the Indonesian Socio-Economic Survey (*Susenas*) for the years 2020 and 2021. *Susenas* is a nationally representative household survey conducted by Statistics Indonesia (BPS) that collects extensive information on socio-demographic characteristics, education, health, and other socio-economic indicators. The 2020 *Susenas* data are treated as the pre-pandemic baseline, as the survey was conducted in March, a period when the COVID-19 outbreak had not yet fully disrupted household activities in Indonesia. Meanwhile, the 2021 *Susenas* serves as the pandemic period dataset, since the data captures one of the most severe phases of the health crisis. After restricting the sample to children who live with their mothers in the same household, the final estimation sample comprises 774,425 child–mother pairs, consisting of 344,499 observations from 2020 and 429,926 observations from 2021.

Table 1.
Summary Statistics

Variables	Unit	All		Pre-Pandemic (2020)		During-Pandemic (2021)	
		Mean	St Dev	Mean	St Dev	Mean	St Dev
Child's Health	Dummy (0/1)	0.218	0.413	0.257	0.437	0.187	0.39
Working Mother	Dummy (0/1)	0.403	0.491	0.403	0.491	0.403	0.491
Mother's Job Characteristics							
Working Mother in the Formal Sector	Dummy (0/1)	0.15	0.357	0.153	0.36	0.147	0.354
Mother's number of hours worked	Hours/week	17.395	23.796	17.359	23.659	17.423	23.905
Agriculture Sector	Dummy (0/1)	0.128	0.334	0.124	0.33	0.131	0.338
Industry Sector	Dummy (0/1)	0.036	0.187	0.035	0.184	0.037	0.19
Mother's Characteristics							
Mother's Age	Years	41.045	9.825	41.219	9.842	40.906	9.809

Variables	Unit	All		Pre-Pandemic (2020)		During-Pandemic (2021)	
		Mean	St Dev	Mean	St Dev	Mean	St Dev
Mother's Years of Schooling	Years	0.741	0.438	0.715	0.452	0.762	0.426
Mother's Health Condition (1 = Healthy)	Dummy (0/1, 1=Healthy)	0.924	0.264	0.922	0.268	0.926	0.261
Mother's Marital Status (1 = Married)	Dummy (0/1, 1=Married)	9.571	3.332	9.533	3.322	9.602	3.339
Household Characteristics							
Live in Java Island	Dummy (0/1)	4.015	1.872	2.959	1.668	4.861	1.572
Live in Urban Area	Dummy (0/1)	0.428	0.495	0.405	0.491	0.447	0.497
Ln Capita Expenditure	Log of IDR per capita	0.222	0.416	0.161	0.368	0.271	0.444
Number of Household members	Count	13.722	0.606	13.714	0.604	13.729	0.607
Child's Characteristics							
Child's Gender (1=Male)	Dummy (0/1, 1=Male)	0.531	0.499	0.532	0.499	0.529	0.499
Child's Age	Years	12.986	8.877	13.035	8.912	12.948	8.848
Vulnerable Household	Dummy (0/1)	0.243	0.429	0.243	0.429	0.243	0.429
Middle / Upper Class Household	Dummy (0/1)	0.626	0.484	0.631	0.483	0.621	0.485

Source: (processed by the author)

The descriptive statistics in Table 1 provide an overview of children's health status and maternal employment characteristics before and during the pandemic period. Overall, around 22 percent of children reported illness in the month before the survey, with a higher prevalence in 2020 (26 percent) than in 2021 (19 percent).

Regarding maternal employment, approximately 40 percent of mothers were in the labour market, a proportion that remained stable in both 2020 and 2021. However, participation in the formal sector was relatively low, with only about 15 percent of mothers employed in formal jobs.

On average, working mothers reported about 17 hours of work per week, reflecting the persistence of part-time or low-hour arrangements. Sectoral distribution highlights agriculture as a dominant area of female employment, with around 12 to 13 percent of mothers engaged in agricultural activities. In comparison, the share of those working in industry was markedly lower at about 3 to 4 percent.

3. Results and Discussion

The estimation results indicate that maternal employment is consistently and positively associated with the likelihood of children experiencing health problems. The regression results in Table 2 show that maternal employment increases the probability of children experiencing health issues by 0.91 percent in the full sample, 1.21 percent in the pre-pandemic period (2020) and 0.64 percent during the pandemic (2021).

This suggests that children of working mothers are more vulnerable to health issues, highlighting the predominance of the time-allocation trade-off over the potential income effect in the Indonesian context. In other words, the reduction in direct maternal caregiving time due to employment responsibilities appears to outweigh the benefits gained from additional household income.

This finding resonates with the broader literature on maternal employment and child well-being. Several studies conducted in low- and middle-income countries argue that maternal work can constrain caregiving time and supervision, thereby increasing the risk of illness or inadequate preventive health practices among children (Chai et al., 2020; Glick, 2002). For example, Glick (2002) emphasizes that when childcare alternatives are limited or of poor quality, maternal employment tends to correlate with worse health and schooling outcomes for children.

Similarly, empirical evidence suggests that mothers who face a double burden of paid work and unpaid domestic labour often experience time poverty, which can negatively affect both their own health and their children's welfare (Floro & Pichetpongsa, 2010).

Table 2.
Logit Regression Results

Variables	Dependent Variable: Health issues in the past month		
	All	Pre-Pandemic (2020)	During Pandemic (2021)
Working Mother	0.0091***	0.0121***	0.0064**
	(0.0024)	(0.0039)	(0.0030)
Mother's Job Characteristics			
Working in the Formal Sector	-0.0048***	-0.0108***	-0.0035*
	(0.0016)	(0.0025)	(0.0020)
Number of hours worked	-0.0001***	-0.0001	-0.0002***
	(0.0000)	(0.0001)	(0.0001)
Working in the Agriculture Sector	-0.0145***	-0.0160***	-0.0073***
	(0.0018)	(0.0029)	(0.0022)
Working in the Industry Sector	0.0064***	0.0064*	0.0059**
	(0.0024)	(0.0039)	(0.0030)
Mother's Characteristics			
Mother's Age	-0.0019***	-0.0020***	-0.0020***
	(0.0001)	(0.0001)	(0.0001)
Mother's Years of Schooling	-0.2615***	-0.2592***	-0.2551***
	(0.0007)	(0.0012)	(0.0009)
Mother's Health Condition (1 = Healthy)	-0.0218***	-0.0295***	-0.0158***
	(0.0018)	(0.0029)	(0.0023)
Mother's Marital Status (1 = Married)	0.0000	0.0005*	-0.0000
	(0.0002)	(0.0002)	(0.0002)
Variables	Dependent Variable:		

	Health issues in the past month		
	All	Pre-Pandemic (2020)	During the pandemic (2021)
Household Characteristics			
Number of Household members	-0.0045***	-0.0080***	-0.0044***
	(0.0002)	(0.0004)	(0.0003)
Live in Urban Area	0.0145***	0.0183***	0.0143***
	(0.0010)	(0.0015)	(0.0012)
Live in Java Island	0.0125***	0.0411***	0.0099***
	(0.0011)	(0.0019)	(0.0013)
Ln Capita Expenditure	0.0111***	0.0169***	0.0057***
	(0.0008)	(0.0013)	(0.0010)
Child's Characteristics			
Child's Gender (1=Male)	-0.0057***	-0.0075***	-0.0047***
	(0.0009)	(0.0014)	(0.0011)
Child's Age	-0.0084***	-0.0103***	-0.0068***
	(0.0001)	(0.0001)	(0.0001)
Observations	774,425	344,499	429,926

Standard errors in parentheses. *** p<0.01, ** p<0.05, or * p<0.1.
Source: Processed by Author

At the same time, these results stand in contrast with evidence from many high-income settings where maternal employment is often associated with neutral or even positive outcomes due to well-established childcare services, supportive workplace policies, and broader social protection systems (Kalil & Ziol-Guest, 2005). The divergence underscores the importance of contextual factors: in Indonesia, where affordable and quality childcare options remain limited, maternal employment appears to create vulnerabilities in children's health rather than protective effects. These results stress the need for policy frameworks that can mitigate the adverse health consequences of maternal work, such as expanding accessible childcare facilities and implementing family-friendly labour regulations.

The results further show that maternal employment in the formal sector significantly reduces the likelihood of child health problems by 0.48 percent in the full sample, with the protective effect even stronger in the pre-pandemic period at –1.08 percent, and still significant though smaller during the pandemic at –0.35 percent (see Table 2). These findings suggest that formal sector jobs provide a degree of protection for child health, likely due to greater job stability, access to social benefits, and more structured working conditions compared with informal employment. This result is consistent with prior research that emphasizes the role of formal jobs in improving family well-being (Oddo & Ickes, 2018; Bhan et al., 2020).

Interestingly, the protective role of formal-sector employment appears to have weakened during the pandemic, as shown by the decline in the effect size between 2020 and 2021. This may reflect the widespread disruptions to labour markets and healthcare systems caused by COVID-19, which reduced the relative advantage of formal jobs in protecting household health. It also underscores the fragility of these protective mechanisms in times of systemic crisis. Overall, the evidence suggests that strengthening formal labour protections and expanding the reach of social benefits could play a critical role in mitigating the negative health consequences of maternal employment on children.

The regression results also indicate that maternal working hours have a protective effect on child health, with coefficients of –0.01 pp in the pooled sample and –0.02 pp during the pandemic. However, the effect is not significant pre-pandemic (Table 2).

These findings suggest that additional working hours increase household income and improve the ability to secure better nutrition, healthcare, and living standards for children, particularly when economic stress is high. Such evidence supports the view that in resource-constrained settings, the income effect of longer working hours can outweigh the potential loss of caregiving time (Ilahi, 2000; Wang & Yang, 2019).

Table 3.
Logit Regression Results Based on Household Economic Status (During-Pandemic)

Variables	Dependent Variable: Health issues in the past month		
	Poor Household	Vulnerable Household	Middle Class Household
Working Mother	0.0037	0.0193***	0.0024
	(0.0088)	(0.0061)	(0.0038)
Mother's Job Characteristics			
Working in the Formal Sector	-0.0071	-0.0027	-0.0021
	(0.0069)	(0.0045)	(0.0024)
Number of hours worked	0.0001	-0.0004***	-0.0001*
	(0.0002)	(0.0001)	(0.0001)
Working in the Agriculture Sector	-0.0051	-0.0103**	-0.0051*
	(0.0061)	(0.0043)	(0.0030)
Working in the Industry Sector	0.0082	-0.0033	0.0081**
	(0.0088)	(0.0063)	(0.0038)
Mother's Characteristics			
Mother's Age	-0.0015***	-0.0015***	-0.0024***
	(0.0002)	(0.0002)	(0.0001)
Mother's Years of Schooling	-0.2267***	-0.2342***	-0.2679***
	(0.0026)	(0.0020)	(0.0012)
Mother's Health Condition (1 = Healthy)	-0.0102	-0.0242***	-0.0140***
	(0.0063)	(0.0050)	(0.0029)
Mother's Marital Status (1 = Married)	-0.0011**	0.0002	0.0003
	(0.0005)	(0.0004)	(0.0002)
Household Characteristics			
Number of Household members	-0.0066***	-0.0037***	-0.0034***
	(0.0007)	(0.0006)	(0.0004)
Live in an urban area	0.0189***	0.0221***	0.0111***
	(0.0035)	(0.0025)	(0.0015)
Live on Java Island	-0.0004	0.0113***	0.0094***
	(0.0038)	(0.0028)	(0.0016)
Ln Capita Expenditure	-0.0371***	-0.0071	-0.0050***
	(0.0064)	(0.0056)	(0.0016)
Child's Characteristics			
Child's Gender (1=Male)	-0.0032	-0.0032	-0.0057***
	(0.0029)	(0.0022)	(0.0014)
Child's Age	-0.0077***	-0.0080***	-0.0062***
	(0.0003)	(0.0002)	(0.0001)
Observations	58,055	104,680	267,191

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Source: Processed by Author

Sectoral patterns reinforce this interpretation. Employment in the agricultural sector reduces the probability of child health problems by 1.45 pp overall, 1.60 pp pre-pandemic, and 0.73 pp during the pandemic. The flexibility of agricultural work allows mothers to combine income-generating activities with caregiving, thereby protecting

children's health (Johnston et al., 2015; Gillespie & van den Bold, 2017). By contrast, industrial sector employment increases the probability of health problems by around 0.6 pp across all periods. Industrial jobs typically involve rigid schedules, commuting demands, and limited family-friendly provisions, reducing maternal time for childcare and contributing to adverse child health outcomes (Schneider & Harknett, 2021; Victora et al., 2016).

The results across economic classes reveal distinct patterns of how maternal employment influences child health, both before and during the pandemic. During the pandemic (Table 3), the effect of maternal employment was heterogeneous.

In poor households, the effect of working mothers was not statistically significant, while in vulnerable households it was significantly positive, indicating that children faced higher risks of health problems when mothers worked. Extended working hours further exacerbated these risks in vulnerable families, likely due to limited access to childcare and constrained healthcare services. Among middle-class households, the effects were smaller but industrial sector employment consistently increased risks, underscoring the rigid and time-intensive nature of industrial work during crisis conditions.

Before the pandemic (Table 4), maternal employment patterns showed more protective effects. In poor households, employment in the formal sector and in agriculture reduced child health risks, reflecting the benefits of stable income and flexible caregiving structures. Among vulnerable households, formal sector jobs also provided protection, but industrial employment significantly increased risks.

Table 4.
Logit Regression Results Based on Household Economic Status
(Pre-Pandemic)

Variables	Dependent Variable: Health issues in the past month		
	Poor Household	Vulnerable Household	Middle Class Household
Working Mother	0.0139	0.0152*	0.0106**
	(0.0114)	(0.0080)	(0.0048)
Mother's Job Characteristics			
Working in the Formal Sector	-0.0288***	-0.0137**	-0.0070**
	(0.0086)	(0.0057)	(0.0030)
Number of hours worked	0.0001	-0.0001	-0.0001
	(0.0002)	(0.0001)	(0.0001)
Working in the Agriculture Sector	-0.0192**	-0.0193***	-0.0098**
	(0.0078)	(0.0055)	(0.0039)
Working in the Industry Sector	-0.0019	0.0201**	0.0005
	(0.0118)	(0.0079)	(0.0049)
Mother's Characteristics			
Mother's Age	-0.0014***	-0.0014***	-0.0024***
	(0.0003)	(0.0002)	(0.0001)
Mother's Years of Schooling	-0.2512***	-0.2441***	-0.2652***
	(0.0033)	(0.0025)	(0.0015)
Mother's Health Condition (1 = Healthy)	-0.0199**	-0.0179***	-0.0359***
Variables	Dependent Variable: Health issues in the past month		
	Poor Household	Vulnerable Household	Middle Class Household
	(0.0080)	(0.0062)	(0.0036)

Mother's Marital Status (1 = Married)	0.0025***	0.0003	0.0003
	(0.0007)	(0.0005)	(0.0003)
Household Characteristics			
Number of Household members	-0.0115***	-0.0079***	-0.0061***
	(0.0010)	(0.0008)	(0.0005)
Live in Urban Area	0.0263***	0.0267***	0.0151***
	(0.0046)	(0.0032)	(0.0019)
Live in Java Island	0.0406***	0.0444***	0.0378***
	(0.0058)	(0.0041)	(0.0023)
Ln Capita Expenditure	-0.0123	-0.0295***	0.0097***
	(0.0082)	(0.0068)	(0.0020)
Child's Characteristics			
Child's Gender (1=Male)	0.0008	-0.0063**	-0.0098***
	(0.0037)	(0.0028)	(0.0018)
Child's Age	-0.0102***	-0.0107***	-0.0102***
	(0.0003)	(0.0003)	(0.0002)
Observations	43,476	83,679	217,344

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Source: Processed by Author

In middle-class families, both formal and agricultural work remained protective, while the industrial sector showed inconsistent results. These findings indicate that, in regular times, the formal sector and agricultural employment served as a buffer to safeguard child health.

The comparison of both periods highlights a key shift during the pandemic. The protective role of formal employment weakened, while the adverse effects of long working hours and industrial employment became more pronounced. Vulnerable households emerged as the most affected group, as their limited access to childcare and healthcare exacerbated the negative consequences of maternal employment.

This suggests that while employment can provide income security, without institutional and community support, families in vulnerable economic positions face heightened risks during systemic shocks. The findings call for stronger social safety nets and workplace protections, particularly targeted to vulnerable households, to ensure that maternal employment contributes positively to child health even in crisis conditions.

4. Conclusion

This study investigates the relationship between maternal employment and children's health in Indonesia before and during the COVID-19 pandemic, using nationally representative data from the 2020 and 2021 National Socioeconomic Surveys and a logit regression framework. The findings reveal that maternal employment overall is associated with an increased likelihood of child health problems, suggesting that the time-allocation trade-off outweighs the potential income effect in the Indonesian context.

In particular, children of working mothers face higher risks of illness, reflecting the challenges of balancing caregiving and labour market participation in a setting with limited access to affordable childcare and weak family-support policies.

At the same time, the results demonstrate that job quality and sector matter. Employment in the formal sector consistently shows a protective effect, reducing

children's risk of health problems, although the magnitude of this effect weakened during the pandemic. By contrast, industrial employment is associated with higher risks. In contrast, agricultural employment tends to be protective, reflecting greater flexibility in work arrangements and the possibility of integrating childcare with income-generating activities. These sectoral differences highlight the importance of employment conditions, not just whether mothers work, in shaping child well-being.

The analysis by household economic class underscores further heterogeneity. During the pandemic, vulnerable households experienced the sharpest increase in risk, with maternal employment and long working hours significantly associated with poorer child health outcomes. In contrast, for poor families, only formal employment appeared protective, whereas in middle-class households the effects were milder, yet the industrial sector remained a source of risk. Compared to the pre-pandemic period, these findings suggest that COVID-19 amplified existing inequalities, weakening the protective role of formal jobs while exacerbating the adverse consequences of excessive work hours and rigid industrial employment.

Taken together, the evidence calls for policy interventions that go beyond promoting women's labour force participation. First, the expansion of affordable and high-quality childcare facilities is essential, particularly in urban and industrial areas, to mitigate the maternal time-allocation trade-off. Second, strengthening formal-sector job opportunities for women, combined with the enforcement of family-friendly workplace regulations, such as flexible working hours and paid parental leave, can reduce the health risks borne by children.

Third, targeted social protection measures for vulnerable households, such as childcare subsidies, nutritional support, and healthcare access programs, are especially urgent, given their heightened exposure during crises. Finally, industrial sector employment policies should incorporate occupational health standards and flexible shift arrangements to ensure that working mothers are not forced to choose between economic survival and their children's well-being.

This study is subject to several limitations. First, the use of cross-sectional data limits causal inference and fails to capture dynamic household adjustments over time. Second, child health was proxied through survey-reported health status, which may not reflect clinical indicators or long-term health outcomes.

Third, unobserved factors, such as parental preferences or caregiving arrangements, may confound the observed relationships, raising the possibility of selection bias. Finally, potential endogeneity and reverse causality cannot be ruled out; healthier children may allow mothers to work more, rather than the reverse. Future research should employ panel data and causal identification strategies to disentangle these complex relationships better.

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