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School Closures and Parental Labor Supply

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Abstract

We explore in this study the potential impact of school closures to in-person learning on the labor supply of parents in terms of paid employment and hours of work. Using a probit model, we find that women with school-age children, regardless of educational attainment, face a lower probability to be on paid employment, but the same cannot be observed among men with school-age children. We also apply a Heckman model to estimate the log of hours of work. Conditional on employment, we see that school closures do not significantly determine the log of hours of work for both men and women with school-age children. However, further disaggregating the estimates by education reveals that female college graduates—and, to some extent, male college graduates—with school-age children tend to work more hours during school closures. In contrast, school closures appear to not affect the hours of work of less educated men and women with children. Overall, the results suggest that school closures have a negative effect on employment at the extensive margin for women, but there is no evidence on reduced labor supply at the intensive margins. Policies aimed at preserving employment and mitigating the deterioration of human capital can thus address the cost of school closures on women's labor supply.

Keywords: labor supply, COVID-19 pandemic, school closures, gender differentials

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School Closures and Parental Labor Supply

Ma. Christina F. Epetia, John Joseph S. Ocbina, and Kimberly R. Librero¹

1. Introduction

School closure to in-person learning² was one of the mobility restrictions implemented to prevent the spread of the COVID-19 pandemic. The length of full school closures markedly varied across countries, ranging from one week in Mashall Islands and Niue to as much as 75 weeks in the Philippines (UIS, 2022). It is well-documented in the literature that the longer the school closures are, the greater are the projected costs for individuals, households, and the economy (e.g., Azevedo et al., 2021; Gayares and Thomas, 2022; WB et al., 2021). These costs can come in several forms: learning loss and lower future productivity of current students, loss in income of parents who need to stay at home to support the remote learning of their children, and loss in wages of private-school teachers who lost their jobs (Raitzer et al., 2020). While much research interest in school closures in the Philippines leans towards measuring learning and productivity loss, not much is known about the cost of school closures in the form of reduced labor supply of parents which leads to decreased labor income, household income, and overall productivity.

In the Philippines, businesses opened gradually a few months into the pandemic to reinvigorate the economy, but all schools had remained completely closed to in-person learning from March 2020 to October 2021. To prevent further disruptions to learning, the education system shifted to remote learning which can be delivered through printed modules, online classes, TV, and radio. In the absence of trained teachers to provide regular instruction and monitor learning, students—especially school-age children—would likely need parental support for remote learning. This would likely affect the labor supply of parents with school-age children as they redistribute their time between work and childcare.

Ducanes and Ramos (2022) partly attributed to household responsibilities and remote learning the larger employment losses during hard lockdowns for women with minor children compared to women without minor children. It is also worth noting that, in a developing country like the Philippines where childcare systems are not as well-established, schools could be thought of to substitute for childcare facilities. On the other hand, in developed countries where lockdown measures also temporarily closed the childcare system, some studies found evidence of reduced hours of work for parents with school-age children when in-person classes were halted (Amuedo-Dorantes et al., 2020; Couch et al., 2022; Garcia and Cowan, 2022). The adverse impact on hours of work is observed to be larger for mothers than for fathers (Amuedo-Dorantes et al., 2020; Zamarro and Prados, 2021). Women also tend to transition out of employment compared to men (Garcia and Cowan, 2022; Heggeness, 2020; Russell and Sun, 2020; Zamarro and Prados, 2021).

Amid school closures to in-person learning, we seek to answer the following questions in this study. First, were parents with school-age children less likely to be paid on employment? Second, did parents with school-age children work fewer hours? Given gender differences in

¹ Former Research Fellow, Research Analyst II, and Senior Research Specialist, respectively.

² In-person learning and face-to-face (F2F) classes will be used interchangeably throughout the paper.

labor outcomes and the disproportionate domestic work placed on women, the third question is: were there differences in the labor market outcomes for fathers and mothers?

Using a probit model, we find that women with school-age children show a lower probability of being on paid employment during school closures. Examining paid employment further by education, we see that female college graduates with school-age children face a lower probability of paid employment during full remote learning. On the other hand, less educated women with school-age children show a lower probability of paid employment during periods of full and partial remote learning. In contrast, school status does not appear to be generating a differential impact by presence of school-age children on the probability of paid employment for men. The same implication can be obtained even if the male sample is disaggregated by educational attainment.

Using a Heckman model, we find that, for both men and women, the presence of school-age children does not lead to significant hour differential across different school statuses. Further disaggregating the results by education, we see that male and female college graduates with school-age children work with more hours when full remote learning is in place. Highly educated women with school-age children even exhibit more hours of work even when schools are on academic break or implementing partial remote learning. For less educated men and women with school-age children, any form of school closure does not generate a significant differential effect on hours of work.

Section 2 provides a review of related literature. Section 3 examines the education policies during the COVID-19 pandemic vis-à-vis labor market outcomes. Section 4 describes the sample and the methodology. Section 5 discusses the results. Section 6 concludes the paper.

2. Review of Related Literature

School closures to in-person learning gained interest on how this policy would affect the labor supply of parents, especially of women who take the traditional role of caring for children. In developed countries, the effect of school closures was attenuated by closures of childcare centers. Significant reductions on hours of work were observed for both fathers and mothers of school-age children when in-person classes were halted (Amuedo-Dorantes et al., 2020; Couch et al., 2022; Garcia and Cowan, 2022), although the impact was larger among mothers (Amuedo-Dorantes et al., 2020; Zamarro and Prados, 2021). In a related take, Heggeness (2020) saw that, among those with school-age children, women were more likely to take a leave from work, while men tended to reduce their hours of work more than women.

Women were also found to be more likely to transition out of employment (Garcia and Cowan, 2022; Heggeness, 2020; Russell and Sun, 2020; Zamarro and Prados, 2021). Similarly, using differences-in-differences approach, Couch et al. (2022) estimated that male-female gaps in the employment ratio widened for those with school-age children. Among women with school-age children, those who do not have college degrees (Garcia and Cowan, 2022) and those who cannot telework (Amuedo-Dorantes et al., 2020; Garcia and Cowan, 2022) experienced larger negative impacts on their employment.

In the United States (US), Collins et al. (2020) examined the impact of telecommuting on influencing the work hours of parents. The study revealed that when both parents have the option to work remotely and are directly involved in childcare and household tasks, mothers

tend to reduce their work hours more significantly than fathers to fulfill these responsibilities. Among telecommuting-capable parents with children one to five years old, they found that mothers reduced their work hours four to five times than fathers between February 2020 and April 2020. For those with school-age children, the difference between mothers and fathers is found to be not significant.

In an exploratory Germany survey, Hipp and Bunning (2021) found that while there was a more equal sharing of childcare tasks early in the pandemic, the tendency for equal sharing have been decreasing over time. They observed that the unequal pre-pandemic distribution of housework remained largely unchanged. In the Philippines, Ducanes and Ramos (2022) compared the impact of hard lockdowns on the employment of women with and without minor children by applying the difference-in-differences approach. They found that employment losses were larger for women with minor children, which they explain to be partly because of the responsibilities disproportionately shouldered by mothers amid children doing remote learning.

Similar to developed countries, Alon et al. (2022) saw the largest decline in employment among mothers of school-age children in Nigeria, which they attributed to increased childcare needs. On the other hand, they found no significant difference in working hours during school closures among parents of school-age children. They explained that this reflects the smaller share of children who continued learning activities during school closures in developing countries, thus reducing the need for parental time. Relatedly, Hoehn-Velasco et al. (2022) found that, in Mexico, children reduced their time spent on schoolwork by a quarter from pre-pandemic, which suggests that parents were not able to compensate for lost instructional time. Interestingly, Alon et al. (2022) did not observe statistically significant gender variations in employment among individuals with young children. This lack of distinction could be attributed to the initial lower utilization of formal childcare, predominant home-based work, and the accessibility of informal childcare.

The reopening of classes to in-person learning facilitated the return of women with school-age children to the labor market (Hansen et al., 2022). However, some studies raised the concern of potential long-term, negative effects of school closures on female labor market outcomes. While gender gaps in employment ratios narrowed later into the pandemic, Couch et al. (2022) argued that the negative effects on employment imply decreased opportunities to advance in the labor market and depreciation of human capital. Furthermore, the returns to work experience are quite high (Alon et al., 2020), so labor market interruptions would have hampered earnings growth.

Consistent with other studies in the literature which found smaller negative effects on labor market outcomes for mothers who were able to telework, Alon et al. (2020) and Hansen et al. (2022) argued that flexible work arrangements could help narrow the gender gap. However, some studies are not as optimistic. In the US, Albanesi and Kim (2021) observed the increased non-participation of women in the labor market over the pandemic, implying that remote work is unlikely to play a large role in narrowing the gender gap. Zamarro and Prados (2021) explain that increased flexible work arrangements would not be able to improve female labor market outcomes if childcare demands continue to fall on women. A policy implication provided by Russell and Sun (2020) is the significance of childcare programs and facilities in promoting equitable labor market outcomes for men and women, while Lokot and Bhatia (2020) suggested the need for parental leave policies that encourage men's role in caregiving.

3. Policies on Education Delivery vis-à-vis Parental Labor Supply during the COVID-19 Pandemic

In this section, we discuss the timeline on education delivery during the COVID-19 pandemic to provide a preliminary understanding how school closures could have affected parental labor supply. Box 1 provides the relevant policies on the conduct of classes.

Initially, amid COVID-19 cases being reported, the Department of Education (DepEd) put forward arrangements to conduct the 4th Quarter examinations in a staggered basis, a measure that sought to minimize contact between students. In regions where classes had been suspended, the examinations would not be conducted. The rest of the requirements for the School Year (SY) 2019-2020 was directed to be completed as home-based assignments. However, the full community quarantine imposed in Luzon led to the closure of schools in mid-March, which was around two weeks earlier than the original academic break for SY 2019-2020.

In May 2020, the DepEd decided to postpone the start of SY 2020-2021 from June to August 2020 to prepare the basic education system in delivering instruction and learning using alternative methods in substitute for face-to-face (F2F) classes. As outlined in the DepEd's Basic Education Learning Continuity Plan (BE-LCP), alternative learning modalities include distance learning (such as modular distance learning, online distance learning, and TV/radio-based instruction), blended learning, and homeschooling. The continuing strict community quarantine measures further moved the start of classes to October 2020, resulting in a nearly seven-month academic break between SY 2019-2020 and SY 2020-2021. Also, instead of the usual end of school year in March, classes were set to end in June 2021.

The non-conduct of in-person learning, whether full or partial, continued to the early parts of SY 2021-2022. After extensive deliberations over the formulation of guidelines for the safe resumption of F2F classes, the government decided to conduct the pilot testing of in-person classes in November 2021 which was a combination of F2F instruction in school and distance learning methods. Gradual expansion of F2F classes were sought in April 2022.

In July 2022, just in time before the start of SY 2022-2023 in August, the DepEd affirmed its commitment to resume full in-person learning by November 2022. As such, the DepEd provided guidelines on how to facilitate a smooth transition towards a five-day F2F classes.

Box 1. Timeline of the Policies on the Conduct of Classes

Official Statement from the Department of Education—March 10, 2020. The Executive Committee of the Department of Education (DepEd) convened to discuss the execution of school suspension in the National Capital Region (NCR) and evaluate the pending school obligations for the year. Considering feedback from educational institutions and guidance from the Inter-Agency Task Force on Emerging Infectious Diseases (IATF-EID) and the Department of Health (DOH), 4th Quarter Examinations were directed to be conducted on staggered basis to minimize the number of students in the school per day. Following the completion of the examinations, any additional school requirements will be assigned as home-based assignments.

Guidelines for the Remainder of School Year 2019-2020 in light of COVID-19 Measures—March 15, 2020. Considering the strict social distancing measures imposed by the IATF and the Office of the President, DepEd planned to implement the 4th Quarter Examinations using a staggered schedule during the week of March 15, 2020. However, in regions where the relevant national or local authorities have

suspended classes for the week of March 16, 2020, examinations will not be conducted. All additional academic requirements will be completed through assignments that can be done at home.

Memorandum from the Executive Secretary—March 16, 2020. The Office of the President, through the Executive Secretary, imposed community quarantine over Luzon. The effectivity of the community quarantine was from March 17, 2020 to April 13, 2020. Classes and all school activities in all levels were suspended until April 14, 2020.

Department of Education Order No. 7 s. 2020—May 11, 2020. After conducting consultations and internal deliberations, the DepEd scheduled the start of School Year (SY) 2020-2021 on August 24, 2020. The days leading up to the official start of the school year in August would be used to provide students with assignments to explore fundamental subjects that would be further developed throughout the SY. Additionally, students would be oriented on the use of alternative learning delivery methods, among other activities. Shifting the start of the SY to August allowed DepEd to prepare for the upcoming academic year.

Department of Education Order No. 012 s. 2020—June 19, 2020. DepEd implemented the Basic Education Learning Continuity Plan (BE-LCP) for SY 2020-2021. The BE-LCP served as a comprehensive framework that sought to provide guidance to all DepEd offices, units, schools, as well as stakeholders including parents, partners, and students. The BE-LCP comprises a range of educational interventions designed to address the challenges faced by basic education due to COVID-19. As outlined in the plan, face-to-face (F2F) classes will not be conducted until any restrictions imposed by the DOH, the IATF, or the President are lifted or eased. Instead, schools may choose from various alternative learning modalities such as distance learning (including modular distance learning, online distance learning, TV/radio-based instruction), blended learning, or homeschooling.

Department of Education Official Statement—August 15, 2020. The start of classes was moved from August 24 to October 5, 2020 in light of the Modified Enhanced Community Quarantine (MECQ) imposed in Metro Manila, Cavite, Laguna, Rizal, and Bulacan. Private or non-DepEd schools which had already started classes were allowed to proceed as long as there were no F2F classes.

Department of Education Order No. 29 s. 2021, August 15, 2021. The start of classes was moved to September 13, 2021. F2F classes, whether on partial or full scale, would not be permitted unless authorized by the Office of the President.

Department of Education Official Statement—September 20, 2021. President Rodrigo Duterte approved the pilot implementation of F2F classes in areas with low risk according to the criteria established by DOH. This pilot program involved a minimum of 100 public schools and 20 private schools. They must have successfully passed the safety assessment conducted by DepEd and have obtained the support of the local government unit (LGU) through a resolution or letter of support. Moreover, participating schools must have written consent from parents or guardians of students who would take part in the pilot program. The trial would take place over a duration of two months, utilizing a combination of F2F instruction in school and distance learning methods.

Joint Memorandum Circular No. 1 s. 2021—September 27, 2021. DOH and DepEd jointly issued guidelines for the reintroduction of F2F classes, ensuring alignment with the government's public health standards. All the directives outlined in the circular would have to be followed when developing models for the safe resumption of F2F learning, including the implementation of blended learning.

Department of Education Memorandum No. 71 s. 2021—October 18, 2021. As part of the preparations for the pilot F2F classes and the transition to the "new normal," DepEd provided details on the conditions and essential steps for the safe reopening of schools.

Department of Education Official Statement—November 12, 2021. The number of schools initially approved to participate in the pilot implementation of F2F was expanded due to the improvement in the

COVID-19 situation across various regions in the country. The 100 public schools selected commenced the pilot F2F classes on November 15, while the 20 private schools began on November 22.

Department of Education Order No. 85 s. 2021—December 9, 2021. To prepare for the upcoming expanded phase of F2F classes, all public and private schools across the country were instructed to comply with the standards outlined in DepEd-DOH JMC No. 1 s. 2021. This included setting up physical structures, acquiring WASH facilities and supplies, involving the community in the school reopening process, and establishing local coordination mechanisms with Barangay Health Emergency Response Teams and LGUs for effective contact tracing. Schools were also required to collaborate with LGUs to expedite the vaccination of teachers and school personnel, among other important tasks.

Joint Memorandum Circular No. 1 s. 2022 and Guidelines on the Progressive Expansion of Face to Face Classes—April 6, 2022. These memoranda outlined the updated operational directives for the gradual expansion of in-person instruction in schools.

Department of Education Order No. 34 s. 2022—July 11, 2022. DepEd affirmed its commitment to reintroduce five days of in-person classes for SY 2022-2023 regardless of the COVID-19 alert level imposed by the IATF or the DOH. The schools would resume in-person learning on August 22, 2022. To facilitate a smooth transition to five days of F2F classes, DepEd allowed schools ample time to gradually adopt the guidelines by offering the following options until October 31, 2022: (1) five days of in-person classes, (2) blended learning approach with three days of in-person classes and two days of distance learning, and (3) full distance learning. From November 2, 2022, all public and private schools were expected to have fully transitioned to five days of in-person classes.

Source: Various department orders and official statements of DepEd; Various joint memorandum circulars by different government agencies; Memorandum from the Executive Secretary (2020, March 16).

How did the changing education policies over the COVID-19 pandemic coincide with the labor supply of parents? Figure 1 shows the paid employment ratio by sex and presence of school-age children. Consistent with the historically low labor force participation rate and the double-digit unemployment rate in April 2020, both men and women experienced a steep decline in their paid employment ratio in this period. Paid employment ratio displayed a moderate increase between July 2020 and April 2022. Men consistently exhibited higher paid employment ratio than women do, reflecting huge gender gaps. Nonetheless, it appears that the gender gap in the paid employment ratio fell from the pre-pandemic period (average of 42 percentage points) to the pandemic period (average of 39 percentage points).

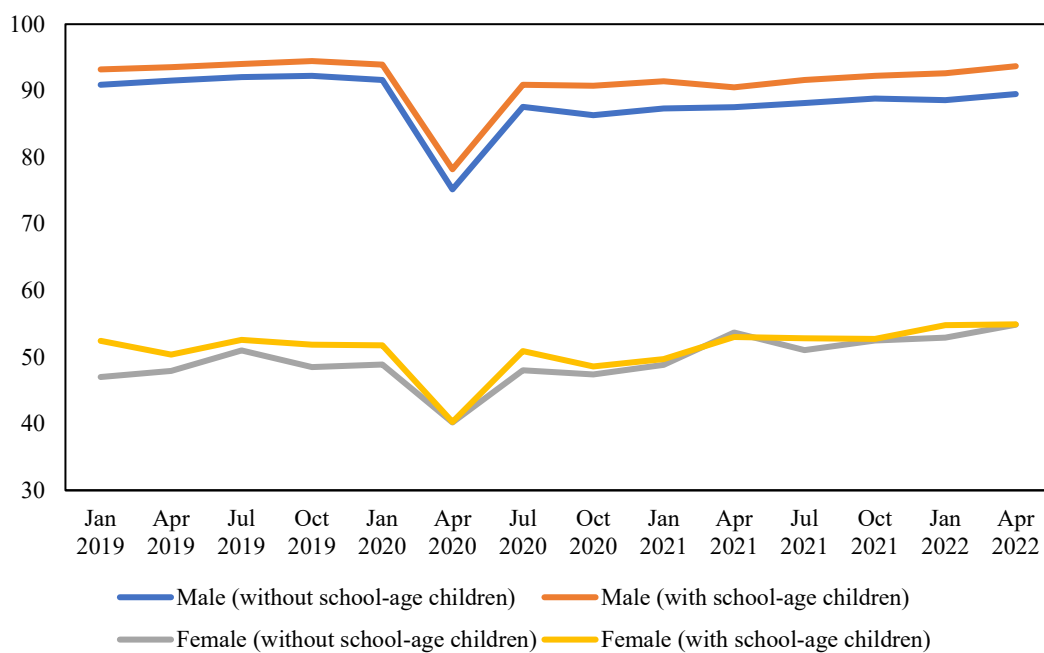
Men with school-age children had higher paid employment ratio than their counterparts without school-age children. The difference in the ratio seems to have widened over the course of the pandemic, with the largest difference observed in October 2020 when remote learning for the year started. On the other hand, women with school-age children displayed higher paid employment ratio compared to women without school-age children prior to the COVID-19 pandemic. Unlike what was observed for men, the gap between the two groups of women appears to have mostly diminished during the COVID-19 pandemic.

As expected, average hours of work dropped in April 2020 amid a huge increase in the number of the employed reporting zero hours of work (Figure 2). A consistent pattern over the observed period is that men worked more hours than women (the only exemption is in April 2020). For the most part, there is almost negligible difference between men with and without school-age children whether we are looking at the pre-pandemic and pandemic periods.

Unlike what is observed among men, the difference in hours of work between women with and without school-age children is more notable. Over the observed period, women without school-age children mostly work with more hours. The largest gaps can be seen in January 2019 and October 2020. On the other hand, the notable exemptions appeared in April 2019 and April 2020, where women with school-age children work with more hours than women without school-age children. These are some of the periods wherein children were on school break.

While average hours increased for all four groups following the dip after April 2020, it had not gone back yet to pre-pandemic levels as of April 2022. It also appears that the recovery in terms of hours of work is slower for men, resulting in the narrowing of the gender gap in hours of work in 2022.

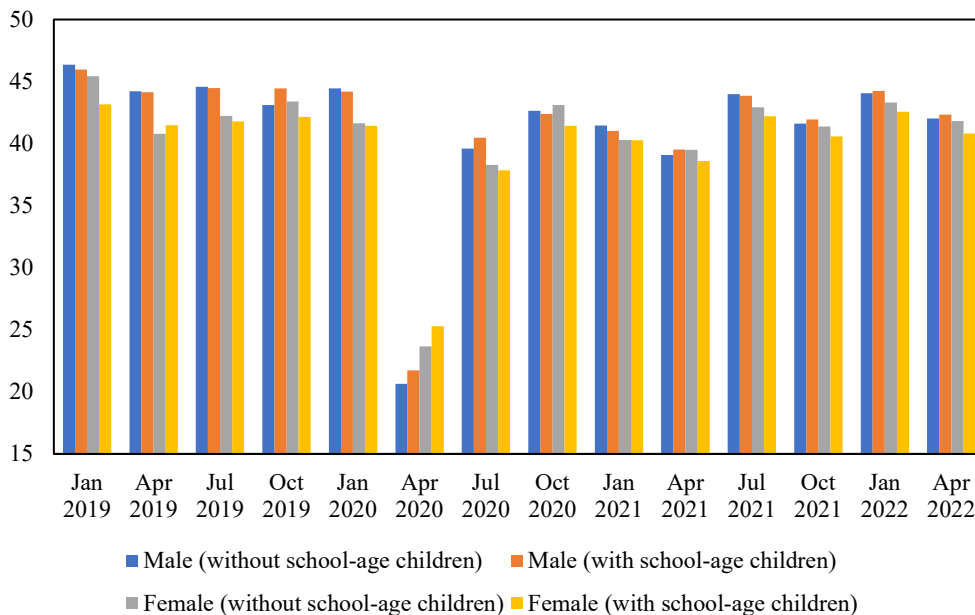
Figure 1. Paid employment ratio by gender and presence of school-age children (%)



Note: Sample includes people aged 25 to 55 years old who are household heads and their spouses. Paid employment refers to all classes of work except unpaid family worker. Paid employment ratio is measured as the ratio between the number of people on paid employment and the number of people in the sample. School-age children refers to children aged 5-17 years old. Survey weights are used in the estimates.

Source: Authors' calculations using several rounds of the Labor Force Survey.

Figure 2. Average weekly hours of work conditional on employment by gender and presence of children



Note: Sample includes people aged 25 to 55 years old who are household heads and their spouses, and who were employed in the given period. School-age children refers to children aged 5-17 years old. Survey weights are used in the estimates.

Source: Authors' calculations using several rounds of the Labor Force Survey.

4. Data and Methodology

4.1 Data and Sample

This study uses the quarterly rounds of the Labor Force Survey (LFS) from January 2019 to April 2022. The LFS is a nationally representative household-based survey data produced by Philippine Statistics Authority (PSA) that is used to generate the official labor market statistics of the country. The PSA used to conduct the LFS on a quarterly basis, but the necessity to produce more frequent labor market statistics during the COVID-19 pandemic prompted the monthly implementation of the survey starting February 2021. For consistency purposes, the study only uses the quarterly rounds of the LFS.

The sample consists of individuals aged 25 to 55 years old, a range which is considered the prime age for working. The challenge in the LFS data is exhaustively matching the parents with their children, which cannot be accurately done for all individuals in the survey. This is because the position in the household is always referenced to the household head. For example, if there were two people in the household tagged as sons or daughters of the household head and there were two people tagged as grandchildren of the household head, there is no further information available to tell which is the parent of the household head's grandchildren. Therefore, the sample is limited to household heads and their spouses, as this is the only way to produce a reliable match between parents and children.

4.2 Methodology

This study closely follows the methodological framework implemented by Couch et al. (2022) and Garcia and Cowan (2022), where the variable of interest is the interaction between having school-age children and school closures. As school closures had been implemented at the national level (contrary to the US case where state-level differences can be found), this study modifies the framework to interact having school-age children with an indicator on school status for the period of observation.

$$\text{Eq. (1): } y_{it} = \alpha + \gamma_t \text{Status}_t + \delta_{it} \text{Child}_{it} + \omega_{it} (\text{Status}_t * \text{Child}_{it}) + \beta_{it} X_{it} + \rho_t + \varepsilon_{it}$$

Labor supply is represented by y_{it} . Two labor supply indicators are used: paid employment and log of weekly hours of work conditional on employment. Paid employment is defined as being a worker in a private household, worker in a private establishment, worker in government or government corporation, self-employed, employer, and paid family worker. Thus, unpaid family workers are excluded from paid employment. Hours of work refers to the actual hours of work for all jobs of an employed individual during the reference week.

Status_t represents school status at time t , which is determined according to four categories: (1) schools are completely open to in-person learning, (2) schools are on academic break, (3) schools are completely closed to in-person learning but delivery is through remote learning, and (4) schools are partially open to in-person learning and remote learning is partially conducted. The definition of school status is another differentiation of this study from Couch et al. (2022) and Garcia and Cowan (2022), which only focused on school closures during the COVID-19 pandemic. In the absence of a well-established childcare system in the Philippines, schools could informally substitute for these facilities. Therefore, academic breaks—even those occurring regularly before the COVID-19 pandemic—is another form of school closure that can possibly affect the labor supply of parents. What makes school statuses (3) and (4) different from (2) is that there is another likely reason for parents to change their labor supply, which is to help their children do remote learning.

Child_{it} denotes the dummy variable which indicates whether individual i has a school-age child at time t . School-age children refers to children aged 5 to 17 years old. The key independent variable in the study is the interaction term between Status_t and Child_{it} , representing the impact of school closures on the labor supply of parents with school-age children.

The vector of control variables is denoted by X_{it} . Household composition is considered in the study as this can affect labor supply decisions. The presence of young children (i.e., aged less than 5 years old) could increase the necessity to stay at home or at least prompt people to perform less market work in favor of increased childcare time. Furthermore, extended families are quite common in the Philippines, so relatives within the household such as grandparents could be another source of childcare support, especially the non-working ones, which then encourages greater labor market participation. This is especially likely for women who are traditionally assigned to do household work and childcare duties. In this context, we include dummy variables that indicate the presence of family members in the household who are not in the labor force by age group: the young (18 to 24 years old), the prime aged (25 to 55 years old), and the old (56 years old and over). Outside the family, having a household helper could also increase market time.

Labor market outcomes had been substantially determined by the adverse impacts of community quarantine measures as these curbed economic transactions and restricted labor mobility. Disregarding the effect of community quarantine measures would inflate the effect of COVID-19-related school closures on parental labor supply. To isolate the effect of such measures from the effect of school closures, we constructed a discrete community quarantine index that indicates the stringency of the quarantine in region at time t .³ Other controls include demographic and socioeconomic characteristics, particularly age, age squared, marital status, highest educational attainment, and region.

To account for seasonality, we include a set of quarterly fixed effects as represented by ρ_t . A potential concern for including quarterly fixed effects is that these could wash out the effect of school closures, because school status is purely time-based. However, the shift in the school calendar due to the COVID-19 pandemic means that each of the categories is not exactly matched with the same quarters across the observation period. Hence, controls for seasonality in this case will not undermine the likely effect of school closures on labor supply. Finally, the error term is denoted by ε_{it} .

Equation (1) is estimated separately by gender to assess the difference in labor supply response to school closures between men and women. The estimates are further disaggregated by highest educational attainment as individual labor supply varies by education (e.g., Epetia, 2019). Previous literature also found that highly educated individuals have a greater tendency to do remote work compared to less educated individuals (e.g., Delaporte and Peña, 2020; Hatayama et al., 2020; Mongey et al., 2020; Saltiel, 2020). Being able to perform remote work would likely lessen the tendency to drop out of the labor force or to reduce hours of work amid COVID-19 related measures, so it would be of interest to see the differing labor supply response by educational attainment. While an actual indicator of work arrangements is more desirable, such indicator started to become available in the LFS only in February 2021.

A probit model is applied to estimate the probability of employment. Heckman model is used to estimate the equation for log of hours of work to account for selection bias. The bias comes from the non-observance of reservation hours of work in the data for non-working individuals. In this two-step model, the first equation is the probability of working where the instrumental variable is having family members in the household as overseas workers, while the second equation is where log of hours of work is estimated.

5. Results and Discussion

5.1 Probability of Paid Employment

Table 1 shows the results of the probit model on the probability of paid employment. In column (2), both men and women are included in the sample. Having school-age children when schools are completely closed to in-person learning lowers the probability of paid employment, but it does not have a significant impact on paid employment during other forms of school closure. The presence of young children is associated with lower probability of paid employment. While the presence of family members in the other age groups does not significantly determine paid employment, having prime-age relatives who are not in the labor force reduces the probability of paid employment. Thus, contrary to expectations, the presence of adult family members in

³ Refer to Appendix 1 for the details on how the community quarantine index was constructed.

the household does not lead to increased paid employment. The presence of a household helper, on the other hand, encourages the engagement in paid employment. Compared to the single, currently married individuals are less likely to be on paid employment, while previously married individuals are more likely to be so. The probability of paid employment is positively associated with completing at least high school education and is negatively associated with community quarantine measures regardless of the degree of stringency.

Table 1. Results of probit model—probability of paid employment

(1)	(2)	(3)	(4)
Independent variable	All	Male	Female
<i>School status (base: F2F learning)</i>			
Academic break	-0.088*** (0.013)	-0.222*** (0.023)	-0.042*** (0.016)
Remote learning	0.082*** (0.016)	0.069** (0.028)	0.085*** (0.020)
Partial remote learning/partial F2F	0.137*** (0.018)	0.101*** (0.033)	0.160*** (0.023)
Presence of school-age children	0.085*** (0.009)	0.099*** (0.017)	0.136*** (0.011)
<i>Interaction terms</i>			
Academic break * with school-age children	-0.017 (0.011)	-0.017 (0.020)	-0.024* (0.014)
Remote learning * with school-age children	-0.028** (0.012)	-0.014 (0.023)	-0.042*** (0.015)
Partial remote learning/partial F2F * with school-age children	-0.013 (0.012)	0.014 (0.022)	-0.042*** (0.015)
Presence of young children	-0.105*** (0.004)	0.010 (0.006)	-0.162*** (0.004)
Presence of family members aged 18-24 years old not in the labor force	-0.004 (0.004)	0.032*** (0.007)	-0.013*** (0.005)
Presence of family members aged 25-55 years old not in the labor force	-0.079*** (0.007)	-0.157*** (0.012)	-0.048*** (0.009)
Presence of family members aged 56 years old and over not in the labor force	-0.007 (0.007)	-0.074*** (0.011)	0.036*** (0.009)
Presence of householder helper	0.227*** (0.022)	0.103*** (0.037)	0.289*** (0.027)
Age	0.096*** (0.002)	0.068*** (0.004)	0.091*** (0.002)
Age squared	-0.001*** (0.00002)	-0.001*** (0.00004)	-0.001*** (0.00003)
<i>Marital status (base: single)</i>			
Currently married	-0.348*** (0.010)	0.235*** (0.013)	-0.912*** (0.015)
Previously married	0.195*** (0.012)	0.133*** (0.019)	-0.198*** (0.017)
<i>Highest educational attainment (base: did not complete grade school)</i>			
Completed grade school	-0.015*** (0.005)	-0.089*** (0.009)	0.066*** (0.007)
Completed high school	0.010**	-0.218***	0.169***

	(0.005)	(0.009)	(0.007)
Completed post-secondary	0.089***	-0.328***	0.333***
	(0.009)	(0.015)	(0.011)
Completed college and above	0.435***	-0.296***	0.765***
	(0.006)	(0.011)	(0.008)
<hr/>			
Regional community quarantine index (base: 0 - no community quarantine)			
1 (least stringent)	-0.074***	-0.154***	-0.033***
	(0.010)	(0.018)	(0.013)
2	-0.044***	-0.118***	-0.0001
	(0.015)	(0.027)	(0.018)
3	-0.059***	-0.166***	-0.005
	(0.014)	(0.025)	(0.018)
4	-0.067***	-0.178***	-0.0004
	(0.021)	(0.036)	(0.026)
5 (most stringent)	-0.267***	-0.444***	-0.123***
	(0.010)	(0.016)	(0.013)
<hr/>			
Region	Yes	Yes	Yes
Quarter	Yes	Yes	Yes
Gender	Yes	No	No
<hr/>			
No. of observations	924,253	449,287	474,966

Note: *** means significant at 1 percent level, **5 percent, and *10 percent (probit coefficients). Standard errors are in parentheses.

Source: Authors' estimates using several rounds of the Labor Force Survey.

Generating separate estimates by gender reveal some gender differentials as shown in columns (3) and (4). First, for males, the non-significance of the interaction terms implies that school closures of any kind do not affect the labor supply of fathers with school-age children. In contrast, the significantly negative interaction terms in the female sample implies that having school-age children reduces the probability of paid employment for women when schools are closed in any form. Second, the negative effect of having young children on the probability of paid employment can be only found among women. For men, the presence of young children does not have a significant effect on paid employment. Third, ever-married males are more likely to be on paid employment than their single counterparts, but the opposite result is observed among women. Taking all these together implies that gender roles in the household remain prevalent, with the husband likely doing labor market work and the wife likely performing household work and childcare duties—both in the absence of formal childcare support and in the temporary shifting of the education sector to remote learning.

Nonetheless, it appears that the presence of elderly family members in the household, such as grandparents, raises the probability of paid employment for women, supporting the notion that they can play an important role in providing childcare. Another result to highlight is that women had been less likely to be on paid employment when the most and least stringent community quarantine measures were in place but not during the middle levels of stringency. Men, on the other hand, exhibited lower probability of employment when community quarantines measures had been implemented, regardless of the stringency level. While further study is needed, this is a possible manifestation of an added-worker effect involving women, such that women are taking up paid employment when jobs are limited, and men are experiencing job losses during economic downturns.

Table 2 shows the results of the probability employment when the sample is disaggregated by gender and education. Columns (2) and (3) refer to the results for the subsample of men with a college degree and those without a college degree, respectively; while columns (4) and (5) display the results for the subsample of women with a college degree and those without a college degree, respectively. Regardless of educational attainment, there appears no significant impact of school closures on paid employment for men with school-age children. In contrast, both highly educated and less educated women with school-age children face a lower probability of paid employment during full remote learning. In addition, having school-age children for women without a college degree lowers the probability of paid employment amid partial remote learning. The results then suggest that, regardless of education, having school-age children only negatively affects women’s paid employment during full remote learning. It can also be observed that having young children reduces the probability of paid employment for women—whether they have a college degree or not—but the same cannot be seen for men. This implies that, not only women are more likely to be responsible for their children’s remote learning, but they are also less likely to take on paid employment in order to take care of their young children.

Table 2. Results of probit model with sample selection by gender and education—probability of paid employment

Independent variable	(1)	(2)	(3)	(4)	(5)
		Male		Female	
		With college degree	Without college degree	With college degree	Without college degree
<i>School status (base: F2F learning)</i>					
Academic break		-0.035 (0.065)	-0.249*** (0.025)	-0.067* (0.040)	-0.038** (0.017)
Remote learning		0.233*** (0.080)	0.046 (0.030)	0.079 (0.051)	0.084*** (0.022)
Partial remote learning/partial F2F		0.190** (0.091)	0.087** (0.035)	0.085 (0.059)	0.175*** (0.024)
Presence of school-age children (base: without school-age children)		0.050 (0.047)	0.113*** (0.018)	0.164*** (0.029)	0.131*** (0.012)
<i>Interaction terms</i>					
Academic break * with school-age children		0.007 (0.056)	-0.020 (0.022)	-0.052 (0.034)	-0.020 (0.015)
Remote learning * with school-age children		-0.07 (0.062)	-0.005 (0.025)	-0.077** (0.038)	-0.036** (0.017)
Partial remote learning/partial F2F * with school-age children		-0.028 (0.059)	0.025 (0.024)	-0.049 (0.036)	-0.042*** (0.016)
Presence of young children		-0.015 (0.018)	0.016** (0.007)	-0.044*** (0.012)	-0.187*** (0.005)
Presence of family members aged 18-24 years old not in the labor force		0.039** (0.019)	0.027*** (0.007)	0.075*** (0.012)	-0.022*** (0.005)
Presence of family members aged 25-55 years old not in the labor force		-0.115*** (0.033)	-0.162*** (0.013)	-0.011 (0.023)	-0.061*** (0.009)
Presence of family members aged 56 years old and over not in the labor force		-0.026 (0.025)	-0.102*** (0.012)	0.065*** (0.017)	0.045*** (0.010)
Presence of householder helper		0.150*** (0.045)	-0.137** (0.068)	0.293*** (0.032)	0.349*** (0.051)

Age	0.103*** (0.010)	0.062*** (0.004)	0.070*** (0.007)	0.095*** (0.003)
Age squared	-0.001*** (0.0001)	-0.001*** (0.00005)	-0.001*** (0.0001)	-0.001*** (0.00003)
<hr/>				
Marital status (base: single)				
Currently married	0.071** (0.030)	0.277*** (0.014)	-0.648*** (0.028)	-1.017*** (0.018)
Previously married	0.001 (0.057)	0.184*** (0.020)	-0.263*** (0.036)	-0.257*** (0.020)
<hr/>				
Regional community quarantine index (base: 0 - no community quarantine)				
1 (least stringent)	-0.265*** (0.051)	-0.140*** (0.019)	-0.012 (0.033)	-0.036*** (0.014)
2	-0.186** (0.074)	-0.110*** (0.029)	0.058 (0.049)	-0.014 (0.020)
3	-0.238*** (0.072)	-0.157*** (0.027)	0.048 (0.047)	-0.016 (0.019)
4	-0.479*** (0.085)	-0.120*** (0.040)	0.028 (0.060)	-0.003 (0.030)
5 (most stringent)	-0.436*** (0.048)	-0.442*** (0.017)	-0.152*** (0.032)	-0.118*** (0.014)
<hr/>				
Region	Yes	Yes	Yes	Yes
Quarter	Yes	Yes	Yes	Yes
<hr/>				
No. of observations	52,018	397,269	77,790	397,176

Note: *** means significant at 1 percent level, **5 percent, and *10 percent (probit coefficients). Standard errors are in parentheses.

Source: Authors' estimates using several rounds of the Labor Force Survey.

5.2 Log of hours of work conditional on employment

We also investigate the log of hours of work conditional on employment as another indicator of labor supply. Table 3 shows the results of the Heckman model. Column (2) displays the results based on the whole sample. As evidenced by the non-significance of the interaction terms, school closures do not have an impact on hours of work for those with school-age children. Looking at the other variables, we see that people with young children exert more hours of work compared to those who do not have young children. The presence of prime-age family members who are not in the labor force increases hours of work, but the presence of the youth and elderly family members reduces hours of work. Marital status seems to also affect hours of work as currently married individuals record more hours of work and previously married individuals exhibit fewer hours of work. Better educated individuals work more hours. Lastly, community quarantine measures mostly lead to lower hours of work.

Columns (3) and (4) reveal a few gender differences in hours of work. First, having young children leads to women working fewer hours of work, but this results in exerting more hours of work for men. Second, while currently married men exhibit more hours of work compared to their single counterparts, being currently or previously married results in fewer hours of work for women. In sum, the same implications as in the probability of paid employment can be noted here, i.e., there appears a greater tendency for men to do more labor market work and less of childcare and household work, while the opposite likely holds for women. Nonetheless,

for both men and women, the presence of school-age children does not lead to working hour differential across different school statuses, as evidenced by the non-significant interaction terms.

Table 3. Results of Heckman model—log of hours of work conditional on employment

(1)	(2)	(3)	(4)
Independent variable	All	Male	Female
<i>School status (base: F2F learning)</i>			
Academic break	0.046*** (0.007)	0.042*** (0.007)	0.008 (0.011)
Remote learning	-0.031*** (0.008)	-0.004 (0.009)	0.004 (0.017)
Partial remote learning/partial F2F	0.019** (0.009)	0.054*** (0.010)	0.073*** (0.016)
Presence of school-age children (base: without school-age children)	-0.034*** (0.005)	0.002 (0.005)	-0.029*** (0.008)
<i>Interaction terms</i>			
Academic break * with school-age children	0.002 (0.006)	-0.008 (0.006)	0.012 (0.010)
Remote learning * with school-age children	0.004 (0.006)	-0.003 (0.007)	0.004 (0.011)
Partial remote learning/partial F2F * with school-age children	0.002 (0.006)	-0.005 (0.006)	0.004 (0.010)
Presence of young children	0.031*** (0.002)	0.006*** (0.002)	-0.018*** (0.003)
Presence of family members aged 18-24 years old	-0.004** (0.002)	0.012*** (0.002)	-0.001 (0.003)
Presence of family members aged 25-55 years old	0.031*** (0.002)	0.026*** (0.002)	0.014*** (0.004)
Presence of family members aged 56 years old and over	-0.006* (0.003)	-0.001 (0.003)	0.006 (0.005)
Presence of householder helper	-0.054*** (0.010)	-0.008 (0.011)	0.027* (0.014)
Age	-0.016*** (0.001)	-0.002* (0.004)	0.016*** -0.0002***
Age squared	0.0002*** (0.00001)	0.00001 (0.00001)	0.0004*** (0.00002)
<i>Marital status (base: single)</i>			
Currently married	0.076*** (0.004)	0.008** (0.004)	-0.104*** (0.009)
Previously married	-0.020*** (0.006)	0.008 (0.006)	-0.043*** (0.009)
<i>Highest educational attainment (base: did not complete grade school)</i>			
Completed grade school	0.062*** (0.003)	0.039*** (0.002)	0.087*** (0.005)
Completed high school	0.133*** (0.002)	0.101*** (0.002)	0.215*** (0.005)

Completed post-secondary	0.124*** (0.005)	0.108*** (0.005)	0.267*** (0.008)
Completed college and above	0.052*** (0.003)	0.118*** (0.003)	0.307*** (0.006)
Regional community quarantine index (base: 0 - no community quarantine)			
1 (least stringent)	-0.029*** (0.005)	-0.052*** (0.005)	-0.044*** (0.009)
2	-0.039*** (0.008)	-0.058*** (0.008)	-0.055*** (0.013)
3	-0.034*** (0.007)	-0.056*** (0.007)	-0.041*** (0.012)
4	-0.011 (0.011)	-0.031*** (0.011)	-0.026 (0.018)
5 (most stringent)	0.023*** (0.006)	-0.036*** (0.007)	-0.129*** (0.011)
Region	Yes	Yes	Yes
Quarter	Yes	Yes	Yes
Gender	Yes	No	No
No. of observations	910,621	440,725	469,896
Selected	670,523	404,283	266,240
Non-selected	240,098	36,442	203,656

Note: *** means significant at 1 percent level, **5 percent, and *10 percent. Standard errors are in parentheses. Source: Authors' estimates using several rounds of the Labor Force Survey.

Disaggregating the sample further by educational attainment in Table 4 yields additional insights. Columns (2) and (3) show the results using the sample of men with and without a college degree, respectively. Highly educated men tend to work more hours when remote learning was in place. In contrast, school closures of any form do not seem to have a significant effect on hours of work for less educated men with school-age children.

Table 4. Results of Heckman model by gender and education—log of hours of work conditional on employment

Independent variable	(1)	(2)	(3)	(4)	(5)
	Male		Female		
	With college degree	Without college degree	With college degree	Without college degree	Without college degree
<i>School status (base: F2F learning)</i>					
Academic break	0.009 (0.019)	0.048*** (0.007)	0.010 (0.018)	0.016 (0.014)	
Remote learning	-0.066*** (0.024)	0.004 (0.009)	-0.018 (0.023)	-0.0004 (0.017)	
Partial remote learning/partial F2F	0.022 (0.027)	0.061*** (0.010)	0.025 (0.026)	0.082*** (0.019)	
Presence of school-age children (base: without school-age children)	-0.010 (0.013)	-0.001 (0.005)	-0.060*** (0.013)	-0.040*** (0.010)	

Interaction terms

Academic break * with school-age children	0.005 (0.016)	-0.010 (0.006)	0.034** (0.015)	0.008 (0.012)
Remote learning * with school-age children	0.043** (0.018)	-0.009 (0.007)	0.051*** (0.017)	-0.005 (0.013)
Partial remote learning/partial F2F * with school-age children	0.020 (0.017)	-0.009 (0.007)	0.055*** (0.016)	-0.008 (0.012)
Presence of young children	0.005 (0.005)	0.004 (0.002)	0.001 (0.005)	-0.027*** (0.004)
Presence of family members aged 18-24 years old	0.010* (0.006)	0.010*** (0.022)	-0.017*** (0.005)	-0.008** (0.004)
Presence of family members aged 25-55 years old	0.019*** (0.006)	0.010*** (0.002)	0.007 (0.006)	0.014*** (0.005)
Presence of family members aged 56 years old and over	-0.012* (0.007)	0.027*** (0.003)	-0.009 (0.007)	0.023*** (0.007)
Presence of householder helper	-0.012 (0.012)	0.008** (0.004)	-0.068*** (0.012)	0.182*** (0.035)
Age	-0.006* (0.003)	-0.0005 (0.001)	-0.014*** (0.003)	0.022*** (0.002)
Age squared	0.00005** (0.00004)	-0.00002 (0.00001)	0.0001*** (0.00004)	-0.0003*** (0.00003)
Marital status (base: single)				
Currently married	0.027*** (0.009)	-0.001 (0.005)	0.084*** (0.010)	-0.175*** (0.014)
Previously married	-0.003 (0.018)	-0.004 (0.006)	0.039*** (0.014)	-0.102*** (0.012)
Regional community quarantine index (base: 0 - no community quarantine)				
1 (least stringent)	-0.007 (0.015)	-0.060*** (0.006)	-0.049*** (0.015)	-0.036*** (0.011)
2	-0.047** (0.022)	-0.061*** (0.008)	-0.089*** (0.021)	-0.047*** (0.015)
3	-0.023 (0.021)	-0.061*** (0.008)	-0.070*** (0.021)	-0.030** (0.015)
4	0.048* (0.026)	-0.044*** (0.012)	-0.054** (0.026)	0.002 (0.024)
5 (most stringent)	0.002 (0.017)	-0.042*** (0.007)	-0.030* (0.016)	-0.126*** (0.014)
Region	Yes	Yes	Yes	Yes
Quarter	Yes	Yes	Yes	Yes
No. of observations	51,074	389,651	76,461	393,435
Selected	45,648	358,635	57,358	208,882
Non-selected	5,426	31,016	19,103	184,553

Note: *** means significant at 1 percent level, **5 percent, and *10 percent. Standard errors are in parentheses. Source: Authors' estimates using several rounds of the Labor Force Survey.

Columns (4) and (5) display the results using the sample of women with and without a college degree, respectively. Highly educated women with school-age children tend to work more hours during periods of any type of school closure but having school-age children during school

closures do not significantly determine hours of work for less educated women. Such differentials cannot be observed for less educated men with school-age children. Thus, it appears that highly educated women with school-age children—and to some extent, highly educated men—have been able to work with more hours amid school closures. However, the implication of the results while looking at the angle of remote learning can go in two opposite ways. On the one hand, the increased hours of work could mean that highly educated women are redistributing their time between market and household work, i.e., reducing their time spent in the household while increasing their time spent in the labor market. On the other hand, given that women remain the traditional bearer of household work and childcare, the increased hours of work may indicate that, instead of redistributing their time, the double burden of labor market and domestic work could have been placed on highly educated women. It is possible that the higher capacity to perform remote work during school closures among the highly educated enabled them to do labor market work together with helping their children with remote learning.

6. Conclusion

In this study, we seek to determine whether school closures affected the labor supply of parents with school-age children. This is motivated by two practical arguments. First, the absence of a well-developed formal childcare support such as in the Philippine context means that schools can likely substitute for childcare. This can be especially observed when schools are open to in-person learning. Second, the shift to remote learning and consequently the limited exposure to teacher instruction could have led to parents dedicating more time with their school-age children. In other words, the lengthy school closures during the COVID-19 pandemic in the Philippines can potentially lead to considerable costs to households, as reduced labor supply means decreased labor and thus household income. This is especially true in the absence of support amid employment losses. Given that it is the women who are traditionally tasked to perform more household and childcare duties, we also explore gender differences in labor supply amid school closures.

We have two major findings. First, we find that school closures have a negative effect on the probability of paid employment of women with school-age children, but it does not have a significant effect for men with school-age children. The lower probability of paid employment for women with school-age children can be seen regardless of educational attainment. Second, it appears that, once employed, school closures do not have a significant impact on hours of work for both men and women with school-age children. However, hours differential can be found when the sample is further disaggregated by education. Highly educated women—and, to some extent, highly educated men—with school-age children are found to exert more hours of work when schools are closed to in-person learning. In contrast, school closures do not appear to influence the hours of work of less educated men and women with school-age children. Previous literature mostly found that the highly educated tend to work in occupations whose tasks can be done at home, which could explain the difference in results by education.

However, the situation for women when remote learning was in place could be different than that for men in the sense that the implication of the results could have gone in either two ways: once employed, they are dedicating more time to market work and less time to household and childcare work, or they are spending more time in both activities which suggests that double burden is placed on women. Because of data limitations, a conclusive finding about these two possible scenarios cannot be determined by the current study. For future study, time-use data

which explores both periods of school closures and in-person learning would help in gaining a more nuanced understanding of the change in the behavior of parents with school-age children, especially that of women. Such data can also be used to investigate more accurately which women provide educational support to their children.

School closures, including regular academic breaks, seem to lead to reduced labor supply of women with school-age children at the extensive margin, but it does not have a negative effect on labor supply at the intensive margin. Intermittent participation of women in the labor market can adversely affect their future labor market prospects because of lower labor market experience, shorter tenure, and lesser tendency to stay in the labor force. The school closures coupled by the negative effects of the COVID-19 pandemic on employment could then generate larger losses in human capital for women, making it more difficult to reintegrate in the labor force or acquire better labor market conditions once they decide to go back to working. The results then suggest that policies aimed at preserving employment, especially for women, should be established. This includes formal and affordable childcare support, which is found to be effective in increasing female labor force participation in the literature. Deterioration in human capital can also be addressed by training, such as those provided by the government, that incorporates gender and inclusivity lenses.

7. References

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Appendix 1: Construction of the community quarantine index

To represent the stringency of an imposed community measure or alert level in a region or local government unit (LGU) during a specific period, an index ranging from zero (being the lowest) to five (being the highest) is constructed (Appendix Table 1.1). The operational capacity of the establishments served as the basis for assigning the index of a community measure and alert level. The operational capacity was gathered through the Omnibus Guidelines released by the Inter-Agency Taskforce for the Management of Emerging Infectious Diseases (IATF-EID). From May 15, 2020 to August 19, 2021, the IATF-EID released 19 Omnibus Guidelines on the implementation of community quarantine in the Philippines. Meanwhile, there are two guidelines on the implementation of alert level systems for COVID-19 response released on October 13 and December 14, 2021.

Appendix Table 1.1. Mapping between index and community quarantine measures

Community Quarantine Index	Operational Capacity	Community Measure	Alert Level
5	0% to 24%	ECQ	Alert Level 5
4	25% to 49%		Alert Level 4
3	50% to 74%	MECQ	Alert Level 3
2	74% to 99%		Alert Level 2
1	100%	GCQ MGCQ	Alert Level 1
0	Pre-pandemic (without minimum health standards)		

The operational capacity can be considered a good measure in determining the stringency of a community measure or alert level, as workers were directly affected by these imposed measures. An index of 5 is for community measures or alert level with 0 percent to 24 percent of operational capacity, 4 for 25 percent to 49 percent operational capacity, 3 for 50 percent to 74 percent operational capacity, 2 for 74 percent to 99 percent operational capacity, 1 for full capacity or 100 percent operational capacity. Meanwhile, an index of 0 is for the pre-pandemic level where there are no prescribed minimum health standards such as wearing of face mask and social distancing, among others.

Under an Enhanced Community Quarantine (ECQ), majority of the establishments are allowed to have skeleton workforce, including but not limited to clinics, banks, business process outsourcing establishments, and government agencies. Thus, an index of 5 is assigned to areas under ECQ. Under a Modified Enhanced Community Quarantine (MECQ), majority of the establishments are allowed to operate at 50 percent operational capacity, including but not limited to administrative and office support, manufacturing industries, film, music, and television production, malls and commercial establishments, dining establishments, and restaurants. An index of 3 is assigned to areas under MECQ. Establishments that are not allowed to operate during the ECQ are allowed to operate under General Community Quarantine (GCQ) with a capacity between 50 percent to 100 percent, with few exceptions such as casinos and kid amusement industries, among others. The same applies under the Modified General Community Quarantine (MGCQ). Hence, an index of 1 is assigned to areas under GCQ and MGCQ.

In terms of the alert level status, Alert Level 5 follows the same guidelines as the ECQ, thus the index for areas under Alert Level 5 is 5. Areas under Alert Level 4 allow most

establishments to have a maximum of 10 percent operating capacity for indoor venue capacity with fully vaccinated individuals and 30 percent for outdoor venue capacity. Establishments such as dine-in services and personal care establishments are covered by this guideline. Under Alert Level 3, the allowed venue capacity for outdoor is 50 percent, while for indoor venue is at 30 percent with fully vaccinated individuals. This includes limited face-to-face or in-person classes for higher education and for technical and vocational education and training, and cinema and movie houses, among others. For areas under Alert Level 2, the maximum capacity for outdoor venue is at 70 percent, while for indoor venue is 50 percent. Establishments and activities that are allowed to operate at this capacity include but are not limited to kid amusement industries and venues with live voice. Lastly, establishments and activities under Alert Level 1 are allowed full on-site capacity provided that they follow the minimum public health standards.