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Jihye Kim and Wendy Olsen

ABSTRACT

This paper explores the prevalence of child labour and long working hours in India using 2019 data, with estimates for boys and girls that deal with age-related child development concerns related to long hours of work. We use international suggestions to define harmful child labour from ILO and UNICEF and a nationally defined time-threshold model in analysing the child-labour phenomenon. Measuring time by the three measurement systems and splitting children by age, gender, and cultural components make harmful forms of labour become clearer. The results show that girls doing agricultural labour and boys working as non-agricultural labourers had the longest average working hours in India. Important social-group differentials emerge. This study implies that policy-makers can be, and need to be, aware of explicit measures of hours worked by children aged six to 17.

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Time-use; India; employment; gender; child labour; harmful forms of work; extreme exploitation

Introduction

Empirical datasets about working children play a role in debates among stakeholders in the child labour debate. There are proponents of children accessing good schooling; there are also those who advocate allowing children to contribute to family income, particularly as a way to compensate when the adults are low-income or have faced economic shocks or distress; and there is another group of meso stakeholders who try to criminalise, reduce, target, eliminate, or rehabilitate those children involved in damaging forms of child labour. As authors on this topic, we aim to voice a reasoned, evidence-based view on children's growing maturity, which enables children's own wishes to be respected and not criminalised; however, we still draw attention to the harms children experience when working in hazardous, exploitative or harmful ways/situations. This paper contributes by measuring harmful forms of work and particularly some invisibilised forms of work performed by children in India, as of 2019.

The proponents of children's schooling have to face the economic reality of a class society to which gender-and-development theory can be applied. In such a situation, being a "girl" is articulated with social-class relations. On one hand, girls have expectations as members of their own social class, such as conforming with female-gendered stereotypes, submitting to the demands of elders, and going forward into a decent marriage if they possibly can. On the other hand, girls may also question the class structure and their place in it. They may want better jobs or good service-sector jobs; they may have views about their schooling and their work which differ from their parents' views. When we use statistical methods to look at child labour we do not aim to silence these complex voices. Social statistics as a field has ways of invoking class and gender as theoretical concepts which can helpfully distinguish the prospects and trajectories of boys from girls, by class and social group, thus showing sensitivity to intersections of class, ethnicity, and gender.

The second group mentioned is those who acknowledge the necessity to work and be productive found among children of the poor. Commonly, in north India, this position is voiced by some local

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officials, some employers, some parents, and some teachers, yet there is a dearth of qualitative evidence illustrating the reasoning involved.[1] It is possible that those holding this view also hold the view that the children should not work – and should go to school – which is obviously a contradiction. They mean to be realistic and submit to the structural necessities of survival. People taking this position are among the opponents of criminalising children who work for pay or as bonded labour; they worry that making it a crime will exacerbate children's life chances instead of improving them. This middle way suggests that children should work but only in decent positions and under limited, reasonable conditions based on their ages.

Thirdly, the structuralist position focuses on child labour as forced labour caused by global and domestic inequality (Phillips and Mieres 2015; LeBaron 2014, 2015). On one hand, structuralists want to see the actual economic class structure being changed over time for the better. Agency can then have positive effects for those families currently facing marginalisation and poverty. On the other hand, structuralists also see the emergent properties of the class system, with its strong self-perpetuating patterns. In India, for example, the lack of assets means an adult's health problem or a divorce or desertion can become a permanently scarring factor. In Bangladesh, being orphaned is a risk factor mentioned in the VAW (violence against women) report as leading to worse health outcomes for children (Naved and Amin 2013). The structuralist is poised over a knife-edge when interpreting children's work behaviour: does the viewer trust the child to be making their decisions in their best interest? Do we trust parents to send children to work when/only when it is really necessary? Does the viewer doubt the efficacy of the personal agency of at-risk children and question the motives or reasoning of children and parents? It is likely that self-preserving choices can be part of the pathway to harm, in which children take part in harmful forms of child labour.

We chose to analyse child labour in India because it is a large country with a relatively huge informal sector in which child labour has thrived. We also noticed that the use of non-harmonised datasets from 2011/12–2019 would cause non-comparability of results. We offer open-source coding for our analyses so that others can make scientific comparisons later of the changes over time, even within regions and sub-groups.

This paper tries to help with this issue by identifying some types of hidden child labour time that reveals part of the reasoning involved. We aim to tease out gender and social-group differences within child labour, particularly hidden child labour, and encourage wider debate about the effectiveness of different forms of pro-children actions. We do not accept micro-atomistic theories of "the luxury axiom" where schooling is a paid-for luxury. Any theory of the luxury of schooling should be complemented by a theory of the cultures of childhood (James and James 2004) and work relationships that allow harmful and exploitative forms of work to persist in a society. For structuralists, theories are a way to gain insights to help reform society toward greater equality and fairness. This paper, furthermore, explores the gender-and-development approach to child labour in India by going outside the standard definitions from the International Labour Organisation (ILO 2013) and including child domestic work as a part of their daily work. Using a measurement taking simultaneous activities – primary, denoted as "major", and secondary (and even tertiary) activities – into account, we are able specifically able to show how child-labour percentages within the age groups vary significantly across key aspects, such as gender and social groups. Later, we draw out policy conclusions based on a gender-and-development theoretical standpoint.

Review of prior knowledge on time-use of children

We first look at the reasons behind India's child labour problem, then summarise some past measurements of child-labour prevalence.

The reasons for child labour are not just low levels of assets or income poverty, but also social exclusion (Krauss 2017; Edmonds and Pavcnik 2005) along the lines of gender and cultural groups. Child labour and its underpinnings in the economy, including circular migration and

COVID-19 more recently, are highly gendered topics (Dubey, Olsen and Sen 2017; Olsen et al. 2020). Circular migration within India is another factor meaning children are put at risk of harmful forms of child labour (Olsen et al. 2020; Kwan and Schwanen 2016). Kim, Olsen, and Wiśniowski (2020) have taken detailed age-differentials in the Indian time-threshold into account. Instead of rigid age-based thresholds, it was possible to smooth the limit on weekly working-hours of children aged five to 17 using data from the Indian Human Development Survey and National Sample Survey from 2011/12.

Causes of child labour are usually gauged using a transdisciplinary framework, invoking economic, demographic, social group, and religious identity factors, and this framework helps identify the highest-risk groups in India. An economic model has been shown to provide only a partial explanation of the situation, with education of at-risk children being inhibited by family poverty and discrimination and social exclusion within India's schools (Nambissan 2009). The worsening of the intergroup conflict during the period 2016 to 2020 might have caused further social exclusion. Examples include Muslim children in the Kanpur area of Uttar Pradesh (UP), who are a marginalised minority group in that state (Jodhka 2011 and the authors' fieldwork observations in 2015–2016); circular migrants' children living in Rajasthan (Borooah, Sabharwal and Thorat 2013); and low-income migrants from Nepal, Tibet, and Myanmar living in northern and north-eastern India (Borooah, Sabharwal, and Thorat 2013; Bhattachan et al. 2009).

Moving more specifically to time measurement for children's work, paid and unpaid, there are several studies already using past datasets. Rao et al. (2021) investigated the time use of men and women in Punjab, urging that social reproduction needs to be considered central whenever labour is being studied in India. Two further studies looked at gendered patterns of paid and unpaid work in India (Naidu 2021; Choudhuri and Desai 2021), though neither focused upon working children. Naidu's (2021) study on the time use of men and women in paid and unpaid work used the ITUS 2019 and implied that demands on women's and girls' reproductive roles – in domestic production and unpaid domestic services – might become severe during the pandemic (see also MOSPI 2020).

In India, time-use patterns of children or child labourers are less known, but Hirway (2002) found in 1998–1999 that boys and girls aged six to 14, in six states in India, spent 24.3 and 18.6 hours a week, respectively, on work that counted towards the Gross Domestic Product (GDP) at the time as system of national accounts (SNA) work. Domestic work has not been added to the SNA, and therefore does not count in GDP, but is considered as part of a satellite account instead. The weekly SNA hours of the children were disaggregated by gender within the occupational group, as reported by Burra (2005) and based on Hirway (2002), e.g. for boys: 32.7 hours for manufacturing, 26.2 hours for construction, and 21.5 and 20.1 hours for animal grazing and farming. Girls' working hours were recorded as 27.6 hours for manufacturing, 22.3 hours for construction, 20.8 hours for farming, and 18 hours for animal husbandry, respectively (ibid.).

Rustagi (2009) conducted a time-use survey targeting 3,563 children aged seven to 14 years, in four states – Andhra Pradesh, Bihar, Chhattisgarh, and Rajasthan – during 2004 to 2005. The research found that 70 per cent of children were involved in SNA activities as defined by the ILO's standards, and among them, 33 per cent spent more than 21 weekly hours working. Bhat and Rather (2009) showed that child labourers in the handicrafts sector in Kashmir in 2007 to 2008 worked six to eight hours every day. In Bangladesh, children working eight hours a day for six days see higher risks of ill-health (Guarcello, Lyon, and Rosati 2004).

None of the studies has explored the time-use of children using nationally representative samples in India,[2] which leads to measurement errors in the difference between estimates and true value. Furthermore, multiple jobs taken on by children are not clearly recognised in previous studies due to the data limitations and also the limitations in methodology, which could contribute to measurement errors. The Indian Time Use Survey (NSS 2020a) provides detailed weekly time-measures with information about multiple jobs and whether they are conducted simultaneously or non-simultaneously.

Data

The Indian Time Use Survey (ITUS) 2019 (NSS 2020a) provides a measurement of time that individuals spent on paid and unpaid activities, covering all age groups (above the age of five) across India. This survey is meaningful as it was the first time-use survey conducted at a national level with the previous time-use survey in 1998 implemented only in six major states. The sample includes 447,250 individuals and 138,799 households, and the survey employs a one-day recall method. It not only covers employment but also unpaid work, including caregiving activities, volunteer work, and household production.

Methods

Child labour is stipulated in this paper to be: work harmful to the development of children aged six to 17,[3] involving excessive hours or hazardous conditions. It is differentiated from the broader category of child work, involving a variety of tasks that are acceptable and manageable for children in ages six to 17. Both harmful child labour, and child work, should be defined to allow for changes in what is appropriate as age of child rises. In this study, harmful forms of child labour include the types of work requiring excessively long working hours, and the focus is placed on time-use. Other harms caused by working in hazardous industries or occupations and carrying heavy workloads within the time-threshold limit will need further investigation using easily available, free national data sources (NSS 2020a, 2020b). Some hazardous forms of labour are allowed for here (as per ILO 2017), but a wider list of harmful occupations is formally applied within India by the government (see Indian Child Labour Prohibition and Regulation Act of 1986, cited by Sekar, Kshetrimayum, and Nongkynrih 2017: 97–101).

The time threshold is most commonly applied when defining and measuring child labour, and many studies follow the ILO (2017) time thresholds defined as 14 hours per week for ages 12 to 14 and 43 hours per week for ages 15 to 17.[4] This study suggests using a time threshold established using evidence to account for the situation in India, and Table 1 introduces categorisations of child labour according to the suggested definition. Details of the time threshold models are introduced in Kim, Olsen, and Wiśniowski (2022), including 38 hours of work per week for children aged 12 to 17 years as the time threshold for child labour in India. For children aged five to 11, we use the category that the ILO provides.

Unpaid household services are important parts of child labour. Household services that exceed time thresholds might not affect children's health (Francavilla and Giannelli 2010); however, such children are harmed when it means missing formal schooling opportunities. Household labour is included in the SNA general production boundary and also one of the Sustainable Development Goals (SDG 8.7.1[5]) indicators. UNICEF, too, is sensitive to the domestic work burden (UNICEF,

Table 1. A working definition of child labour.

	Age groups	5–11	12–14	15–17
Child labour criteria	Hazardousness(1)	– In hazardous industries (mining and construction)	– In hazardous industries (mining and construction)	– In hazardous industries (mining and construction)
	Time thresholds	- At least 1 hour of economic work(1) or - at least 21 hours of unpaid household services per week(3)	- More than 38 hours of economic work(2) or - at least 21 hours of unpaid household services per week(3)	- More than 38 hours of economic work per week(2)

Notes: (1) The ILO (2017) scheme is used in the categories considered hazardous; (2) this paper's estimated time threshold; (3) the UNICEF (2019) scheme is shown in the category of time thresholds, and in this paper, the services include those performed in their own and other households.

2019). However, calculating an hourly threshold for unpaid household services is never easy. It requires assessing the impact of unpaid household services on children's development or wellbeing. In this study, we use the UNICEF (2019) time threshold for unpaid household services (21 hours for ages 5–14), albeit with the clear concern that adolescents who are 15 years old and over and work long hours only in domestic chores might be excluded from the count of child labourers. We measure the separated number of working hours among children aged 15 to 17 who are not considered child labourers by our criteria but are possibly involved in harmful forms of labour within households.

To look at the patterns of harmful forms of child labour, we offer estimates that are sensitive to the risk of measurement error in the time-use diary data. Measurement error can arise from having 30-minute slot reports of activities, with three activities per slot. We test for the impact upon overall estimates if we take a conservative, an extended, or a literal view of the multiple tasks (one, two, or even three tasks) in each 30-minute slot. The specific impact of the literal view is that some tasks are considered simultaneous, while the conservative or extended views are that they are sequenced. Another way of seeing this is conservative/extended views state that activities are considered major or minor ones, while the literal view states that all activities matter and total time spent can exceed 24 hours when a person reports multiple activities in some time-slots.

The most common pattern of multiple activities is a combination of unpaid household domestic services and self-care/socialising. For example, some respondents answer self-care/socialising as the main activities but do household work as a non-major activity. This clear pattern allows us to consider an extended view, which follows specific rules to include multiple activities. An extended view is a more inclusive approach based on the patterns of multiple activities. Time for any slot, including work activities, is added, regardless of the major and minor status of the activity(ies). No time stint is duplicated because a time stint counts only once if there is any presence of work, either as a major or non-major activity.

Table 2 shows that the complexity of summarising the data can be off-putting and confusing, leading to a lack of comparability of studies. Therefore, we placed the code for data cleaning and processing in a repository for public use (see Appendix Table A4). Moreover, we invite discussion on the impact of measurement alternatives on adult as well as child labour. It is important to use a clear conceptual frame, which is guided in this case by ILO documents and past Indian time-use surveys.

Findings

About 7 per cent of children aged six to 17 were considered child labourers in 2019, working in hazardous industries or with excessive hours. The difference in the numbers of child labourers counted by conservative and literal views is not immense (Table 3). On the contrary, the extended view makes a clear distinction as it extends the range of work activities – both major and minor – so that the count of child labourers increases significantly. It also shows that the number of female child labourers might outweigh the number of male child labourers if we take an extended view. Figure 1 shows whether the child-labour percentage within the age group varies significantly

Table 2. Three alternative methods of time measurement.

Types	Non-multiple activities	Multiple activities	
		Simultaneous	Non-simultaneous
Conservative	Count a stint working	Count a stint working if it has a major "work" activity	
Extended		Count a stint working if it has a major or minor "work" activity	
Literal		A stint*no. of work activities (adds to daily total time above 24 hours)	A stint*the proportion of work activities (divides up some stints into 2*15 or 3*10 minutes, based on the 2–3 activities)

Note: * refers to multiplication; a stint means 30 minutes in ITUS 2019 (NSS 2020a). See MOSPI (2020).

Table 3. Indian child labourer counts using three alternative measurement methods.

	All		Male		Female	
	Weighted count of CL	CL rate	Weighted count of CL	CL rate	Weighted count of CL	CL rate
Conservative	7326	0.0695	3752	0.0653	3574	0.0744
Extended	7924	0.0751	3909	0.0681	4015	0.0836
Literal	7353	0.0697	3747	0.0652	3606	0.0751

Notes: See Table 2 for the three methods used. Weighted total = 105,476; male weighted total = 57,436; female weighted total = 48,040; ages 6–17; CL = Child labour. Data source: India Time Use Survey 2019 (NSS 2020a).

in terms of the number of tasks recorded in a slot. An extended measurement shows a clear impact on the count of child labourers aged 11 to 14, and, according to more disaggregated data, the difference is led by children's work in domestic areas, especially among girls aged 11 to 14. Their participation in domestic work is considerable, but that work is often considered to comprise "minor" activities. There is no evidence yet that using further accurate measurements for simultaneous and sequenced activities (e.g. literal view) makes any apparent change in the child labour count.

Table 4 shows the trend of daily working hours in three measurements. It summarises the working hours of children categorised as child labourers by gender and work type, with child labourers working approximately 5.7 hours a day in either paid or unpaid work. There is a difference in the working hours from a conservative/literal view and an extended view; for example, the average working hours reached about 5.24 hours among child labourers if using a conservative view and 5.26 hours from an extended view. A literal view suggests 5.19 hours per week for child labourers. Adopting an extended view, girl child labourers aged six to 17 spent 1.68 hours in economic activity and 3.13 hours in unpaid household services, on average. Unpaid household services take a larger proportion of labouring hours among girl children, including cleaning, maintaining, and cooking, etc., and economic activities include employment and production of goods for their own use, such as fetching water and gathering firewood. Contrarily, boy child labourers among the same age group spend 4.7 hours in economic activities and 1.05 hours on unpaid household

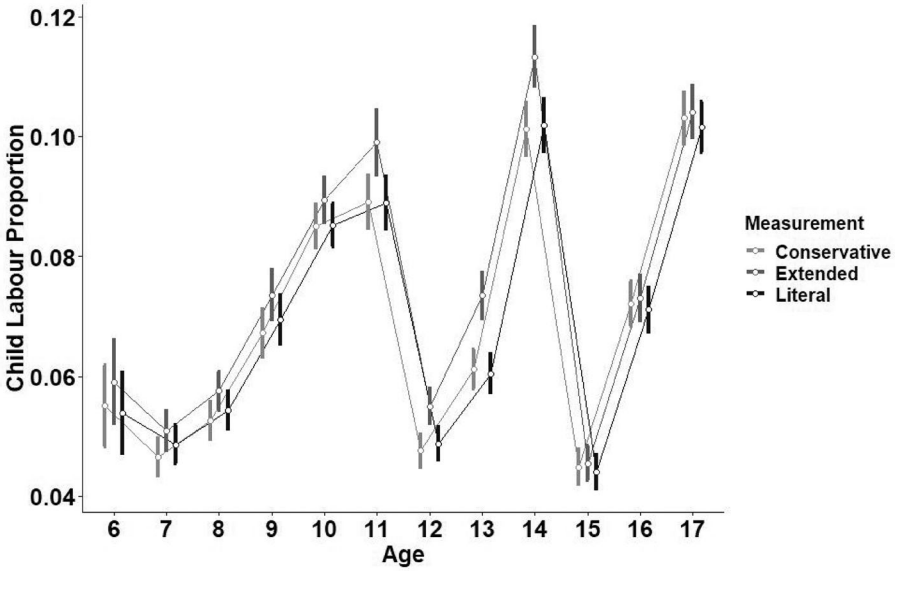


Figure 1. Indian child labour proportion by three measurement methods in 2019 time-use data. Notes: The child labour proportions show range from 4% to 12%, defined as the ratio of the number of children in harmful forms of work (numerator) to (the denominator) the number of children in the population in that age-group. The mean and +/−2 standard errors are displayed. Data source: India Time Use Survey 2019 (NSS 2020a).

Table 4. Labouring hours of child labourers by gender (measured in hours per day).

Type of work	Measurement	All		Male		Female	
		Mean	SE	Mean	SE	Mean	SE
Any work	Conservative	5.24	0.05	5.73	0.08	4.74	0.06
	Extended	5.26	0.05	5.74	0.08	4.79	0.06
	Literal	5.19	0.05	5.62	0.08	4.73	0.06
Economic activity	Conservative	3.34	0.06	4.80	0.09	1.81	0.06
	Extended	3.17	0.06	4.70	0.08	1.68	0.06
	Literal	3.24	0.06	4.67	0.08	1.76	0.06
Unpaid household services	Conservative	1.90	0.03	0.93	0.03	2.92	0.05
	Extended	2.10	0.03	1.05	0.03	3.13	0.04
	Literal	1.95	0.03	0.95	0.03	2.98	0.05

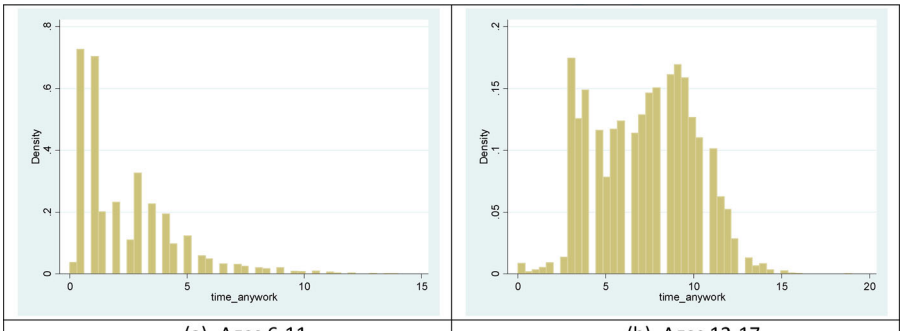
Notes: Ages 6–17; SE = Standard errors. Data source: India Time Use Survey 2019 (NSS 2020a).

services, representing a stark contrast between the patterns of time use among boy and girl child labourers. In the further investigation, we will keep the extended view for examination because it considers the widest range of child labour.

The following figures show disaggregated patterns of time-use of child labourers who are defined by our definition of child labour after taking an extended measure. The number of working hours is much higher in the age range of 12 to 17 (Figure 2), and mean hours of labour among child labourers aged 12 to 17 are about 7.25 hours (8.13 hours for boys and 6.35 hours for girls). This mean figure is partly affected by applying different time thresholds. The histogram shows a clear age pattern of children who experience extremely long working hours (i.e. more than 10 hours); they are distributed among adolescents aged 12 years or over, and the amount is not negligible.

The pattern disaggregated by age and gender shows the number of hours among females aged 15, 16, and 17 (Figure 3) is even higher. The average worktime per day of adolescents aged 15 to 17 who are considered labourers is nine hours (females: 9.9 daily hours, males: 8.9 daily hours). Those teenage children could have an extremely heavy workload because of the characteristics of their jobs and the dual burden of economic activity and unpaid household services. Most female child labourers aged 15 to 17 are agricultural or unpaid household workers, and their working hours increase if one includes their work fetching water and rearing animals along with other household services. It might seem obvious that girls do more domestic work than boys, but high rates of engagement in household domestic tasks are also found among Indian men (Deshpande 2020).

Another clear pattern can be seen by gender and social groups (Figure 4). Muslim-NonSC/ST boys could work much longer hours than any other group of children (7.38 hours), and many Muslim boys work as regularly paid workers or casual labourers. Construction is a common type of child labour



(a) Ages 6-11 (b) Ages 12-17

Figure 2. Histograms of daily working hours by age groups in India 2019 (hours/day). Notes: Our definition of child labour includes those in hazardous work (ILO 2017) or overwork; an extended measurement strategy is applied. Data source: India Time Use Survey 2019 (NSS 2020a).

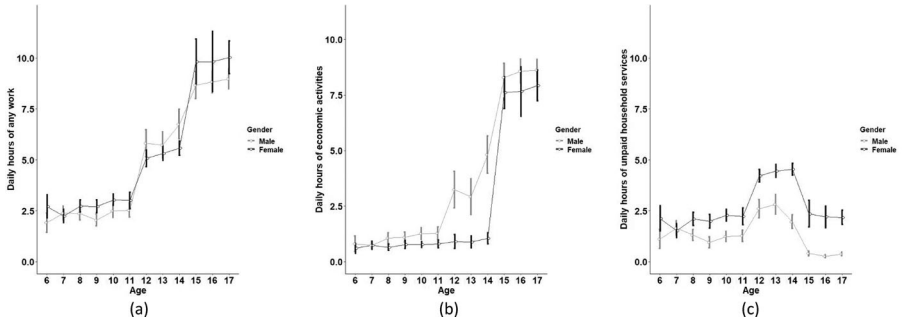


Figure 3. Daily labouring hours of Indian child labourers by gender and age in 2019 (hours/day). Notes: The definition of child labour used here includes those in hazardous work (ILO 2017) or overwork (using the time thresholds discussed here); the figure uses the extended measurement strategy. Coverage is ages 6–17. The mean and +/−2 standard errors are displayed. Column (a) reflects both (b) and (c) activities. Data source: India Time Use Survey 2019 (NSS 2020a).

among Muslim Non-SC/ST boys. Meanwhile, ST and Muslim-NonSC/ST girls have the most extended working hours (5.1 and 5.3 hours per day each) across all ages six to 17. While Muslim-NonSC/ST girls are more likely to be involved in unpaid household services, ST girls participate in the labour market. Adivasi households have both boys and girls participating in labour due to the lack of family resources (Kim, Olsen, and Wiśniowski 2022). Moreover, the gender equity norm is stronger among Adivasi people, meaning their girls work outside the home.

Among adolescents aged 15 to 17, in marginalised groups such as "scheduled caste" (SC) or the "other backward caste" (OBC) (sic), girls tend to have even higher labour hours with an average of 10 working hours a day. SC and OBC adolescent girls work not only in agriculture but also in retail, textile, or food production, with their total working hours outweighing the boys' because girls also work in unpaid household services.

Finally, we observe the extremes of working hours of child labourers by their dominant types of work patterns. Girls working as agricultural labourers and boys as non-agricultural labourers can suffer from extremely long working hours (averaging 10.4 and 9.3 hours per day each). Non-agricultural labour includes retail, textiles, and apparel for girls, and retail, construction, and food production for boys. Non-agricultural household business includes construction, retail, and domestic production among girls, and construction, retail, motor vehicles, and civil engineering among boys. It is mainly female agricultural labourers who work in domestic chores for an average of two hours a day besides their work outside the home (Figure 5).

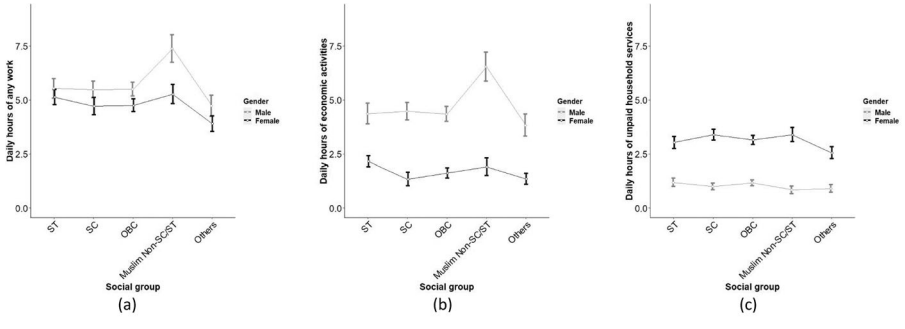


Figure 4. Daily labouring hours of Indian child labourers by gender and social group in 2019. Notes: Using the extended measurement strategy; ages 6–17; mean and +/−2 standard errors are displayed; column (a) reflects both (b) and (c) activities. Data source: India Time Use Survey 2019 (NSS 2020a).

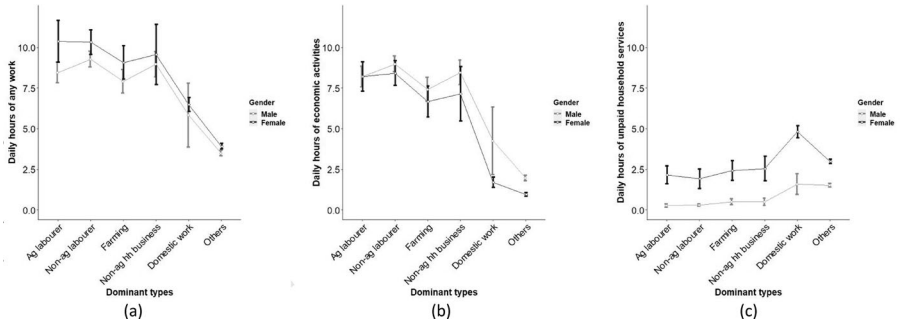


Figure 5. Daily labouring hours of Indian child labourers by gender and the respondent's dominant type of work in 2019. Notes: Using the extended measurement strategy; ages 6–17; mean and +/−2 standard errors are displayed; column (a) reflects both (b) and (c) activities; a respondent's dominant type is decided by a respondent's activity written as usual status. Data source: India Time Use Survey 2019 (NSS 2020a).

Discussion

This study suggests that approximately 7.5 per cent of children aged six to 17 worked as labourers in 2019 with an extended measurment, suggesting the proportion of child labourers has not reduced significantly in India (estimated as 6 per cent in 2011/12: Kim, Olsen, and Wiśniowski 2022). Including work hours in domestic sectors is essential to show the real measure of child labour. The difference in time among child labourers measured by the three measurement system is clear between an extended vs conservative/literal view, and it is caused mostly by time working in domestic areas in which girls are mostly engaged. Harmful forms of labour become more vivid when we use more specific data by considering age, gender, and cultural components. In India, some groups of children are in extreme danger of working too many hours: female agricultural labourers, male non-agricultural labourers, ST or Muslim-Non-SC/ST girls, and Muslim-Non-SC/ST boys. In particular, among children aged 15, 16, and 17, girls can work for 9.9 hours, and boys for 8.9, proving that the magnitude of labour of children is severe. Long working hours among female adolescents might be driven by gender norms and female seclusion (Kambhampati 2009) and son preferences (Bose 2012; Lin and Adserà 2013). There is no doubt that such long work hours are harmful to children's health and wellbeing.

Children in harmful forms of work are subject to risks, both short and long-term. In the short term, they are unable to go to school or concentrate on book-based or internet-based learning. Their work also exposes them to risks that, as children, they may be unprepared for. A "choice" framework underestimates the importance of short- and long-term harms which a child may not understand or foresee whilst they are young. The use of a weekly-hours threshold has been validated here because it shows that all age groups of Indian children have sub-groups facing high risks of excessive working hours. The appearance of large numbers of children even at age 11 in harmful forms of work is worrying. Next, we raise concerns about extreme exploitation, with certain groups of children working 10 hours a day and more. The medium-term effect is that the leisure life of enrichment through watching cultural shows, engaging in play, relaxing with family, and learning history through talking at leisure with elders has been lost by part of the youngest generation in India. Long-term, this will cause scarring of their earnings capability.

Further development is possible using several approaches. Firstly, it can provide more detailed industry-level evidence to state actors so the information can be helpful for policies within industrial sectors. Our calculations of state-level child-labour risks disaggregated by sector is available in Appendix Table A2. The results can also be used for enabling data science to pinpoint hot spots of risk, which tend to be found in industrial clusters inside specific areas. While there has been press coverage of brick kilns in other countries (Bhukuth 2005), in India brick-making,

carpet-making, garment work, arable farming, livestock work, diamond mining, and manufacturing are some of the industries where harmful forms of child labour occur (Haythornthwaite and Olsen 2018).

Implications

We aim to help build up campaigns and social networks which share the objective of improving children's wellbeing in socially disadvantaged groups. The time-use data for India 2019 suggests that domestic work is a live issue among parents and children, and that gender specificity remains highly stereotyped in domestic work in India. Haythornthwaite and Olsen (2018) showed this was a common feature of several South Asian countries, but that India has the largest reserve of informal-sector working children.

Whilst part of Indian society is becoming more modern, de-linking adulthood from motherhood, postponing births and marriages, and limiting family size, child labourers are being left out. This compromises their ability to learn science, use libraries and the Internet, and enable themselves to become proficient consumers. Instead, they become dependents and are often subjugated from puberty onward through motherhood and wifehood. The answers lie, in part, in challenging the invisibility of domestic work in the first place. On the other hand, adults, like children, need to recognise the role men play in caring and in domestic chores. There is plenty of evidence about this, but jobs in the commercial economy, most of which are informal and involve exposure to buses, walking in public or other risks, are considered more appropriate for boys and not girls. Therefore, from a young age, the exploitation of young women through both a domestic and double work burden is being passed on from one generation to the next. Significant change in societal behaviour, including men's behaviour and parental patterns of life, and expectations is crucial in order to alter such harmful patterns.

In campaigns about children, children's voices need to play a role, and parents, teachers, and others who care about children can also participate. We have experienced gender-focused charter focus groups in which progressive views were dominant even in rural and low-income areas within Uttar Pradesh where socially-discriminated minorities live [2015–2017]. Groups of low-income women, of mixed socio-religious origin, were constructing a charter of demands to help women with both their wellbeing and at work. These involved recognising the linked needs for job security, transport, reasonable and flexible hours, and other progressive demands. Literature on gender and development consistently argues for the voice of women of the "low classes" to be enabled, and that they are not merely subjected to various treatments. We tend to think, therefore, that impact studies are needed less than networked campaigns with joined-up participatory training, which may be wiser as a response to the extreme exploitation of child labour. In India, shame and embarrassment are strong motivators; therefore, a campaign of "Work Wisely – Don't Work Excessively" and "Don't Harm Child Workers by Overworking Them", aimed at children and parents – one which values culture and leisure and encourages home-based family-centred or neighbourhood learning, including tutoring and adult/family literacy – could be a wise response to the current dire situation. Policy has a place in this endeavour, but top-down, national policies are clearly not working well enough to reduce harmful child labour.

Notes

1. Our fieldwork in 2015 to 2017 in three states of North India involved visiting four villages in the eastern districts of Uttar Pradesh, including urban Kanpur and three rural areas. We discussed women's work and their families' work. We also asked questions of various informants and these observations form part of the basis for this claim.
2. The Periodic Labour Force Survey (PLFS) 2017 to 2018 (NSS 2020b) provides hours worked on the seven days previous to the survey, as did previous Employment and Unemployment Surveys. The PLFS now surveys four times a year to address seasonality issues. However, the PLFS only approaches one respondent for each household.

3. We use ages six to 17 years rather than five to 17 years, as the Indian Time Use Survey 2019 covers children aged six and above.
4. Any work under age 12 is considered child labour regardless of work hours (ILO 2017).
5. Indicator 8.7.1: Proportion and number of children aged five to 17 years engaged in child labour, by sex and age (Available at: https://unstats.un.org/sdgs/metadata. Accessed Aug. 11, 2022)

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Data availability statement

Indian Time Use Survey (ITUS) is an open dataset. It is provided through the Ministry of Statistics and Programme Implementation website (https://www.mospi.gov.in/web/mospi/download-tables-data/-/reports/view/templateTwo/24805?q=TBDCAT).

Ethics approval statement

Ethics approval is not required for this study. The authors have complied with ethical standards. Permission to reproduce material from other sources: Not required. We do not reproduce the data.

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Appendix

Table A1. A state-level proportion of child labourers by gender.

Proportion of child labourers	Male		Female	
	Mean	SE	Mean	SE
A & N Islands	0.080	0.002	0.093	0.002
Andhra Pradesh	0.070	0.000	0.077	0.000
Arunachal Pradesh	0.040	0.000	0.088	0.001
Assam	0.054	0.000	0.036	0.000
Bihar	0.057	0.000	0.070	0.000
Chandigarh	**0.153**	0.005	0.114	0.007
Chhattisgarh	0.075	0.000	**0.128**	0.000
D & N Haveli	0.089	0.003	0.050	0.004
Daman & Diu	0.095	0.004	0.019	0.004
Delhi	**0.097**	0.000	0.087	0.001
Goa	0.081	0.005	0.049	0.003
Gujarat	0.077	0.000	0.117	0.000
Haryana	0.063	0.000	0.048	0.000
Himachal Pradesh	0.032	0.000	0.036	0.000
Jammu & Kashmir	0.066	0.001	0.027	0.000
Jharkhand	0.057	0.000	0.098	0.000
Karnataka	0.046	0.000	0.053	0.000
Kerala	0.032	0.000	0.035	0.000
Lakshadweep	0.000	0.000	0.000	0.000
Madhya Pradesh	0.087	0.000	0.117	0.000
Maharashtra	0.058	0.000	0.085	0.000
Manipur	0.024	0.000	0.028	0.000
Meghalaya	**0.101**	0.000	0.099	0.000
Mizoram	0.067	0.001	**0.181**	0.001
Nagaland	0.071	0.001	0.093	0.001
Odisha	0.071	0.000	0.101	0.000
Puducherry	0.029	0.002	0.073	0.003
Punjab	0.069	0.000	0.076	0.000
Rajasthan	0.080	0.000	**0.121**	0.000
Sikkim	0.025	0.001	0.019	0.001
Tamil Nadu	0.045	0.000	0.045	0.000
Telangana	0.040	0.000	0.042	0.000
Tripura	0.043	0.000	0.040	0.000
Uttar Pradesh	0.089	0.000	0.102	0.000
Uttarakhand	0.041	0.000	0.059	0.001
West Bengal	0.070	0.000	0.059	0.000

Notes: An extended view is applied; ages 6-17; highlighted top 10%. Data source: India Time Use Survey 2019 (NSS 2020a).

Table A2. State-level labouring hours of child labourers by dominant types of work.

	Male				Female			
Hours of labour for any work	Others	Agr	Non-agr	Domestic service	Others	Agr	Non-agr	Domestic service
A & N Islands	3.3		**10**		3.9			5
Andhra Pradesh	3.7	7.9	8.5		3.4	9.1	10.8	9.2
Arunachal Pradesh	4.7		**10.5**	3.8	5.4	8.5	6	8.4
Assam	3.1	9.5	8.8		2.8	10		6.8
Bihar	3.5	8.1	8.6	5.4	4	8.9	11	6.4
Chandigarh	3.9		**10.8**		2.5			5
Chhattisgarh	3.1	6.8	8.8	5.6	4.2	11.1	9.7	7.9
D & N Haveli	8		**12.5**		9		**12.5**	
Daman & Diu	0.5		**11.8**		4			
Delhi	2.6		**11.6**	0.5	3.2		**11.5**	6
Goa	2.1				3.3			
Gujarat	3.4	8.6	**10.3**	1	4.3	10.5	**11.6**	6.8
Haryana	2.7	7.8	7.5		2.8		9.7	6.9
Himachal Pradesh	4.1	7.5	7.9		3.7			4.3
Jammu & Kashmir	2.7	9.2	8.7	7.3	3.2	6.5		
Jharkhand	4.6	8	**10.1**	**10**	4.5	**11.8**	**11.9**	7.1
Karnataka	3.3	8.3	8.8	3.5	3.3	8.1	8.6	6.7
Kerala	4.8		8.7		4			
Madhya Pradesh	3.6	8.2	8.6	7.5	4	9.4	8	7.5
Maharashtra	3.9	8	9.3	8	4	9	9.6	6.8
Manipur	3	6	8.6	5.5	3.3	10.1	9.5	10
Meghalaya	3	8.1	7.2		4	8.3	10.3	8.7
Mizoram	4.6				4.2			
Nagaland	3.9	8			2.6	7.5		9.5
Odisha	1.7	6.8	7	6.2	2.5	**11.5**	**12.5**	8.2
Puducherry	0.7				3			
Punjab	2.3	**10.4**	9.6	9.7	3.4		9.5	5.5
Rajasthan	3.4	7.6	9.7	7.3	3.9	8.5	9.9	6.8
Sikkim	2		9	5	3.3			6.5
Tamil Nadu	2.6	9.4	**10**	1	2.5		10.2	8
Telangana	2.6	9.3	9		3.4	**11.2**		
Tripura	3.3	8.8	8.8	4.3	3.1	10	10.4	5.3
Uttar Pradesh	4.1	8.3	9.3	5.3	4.4	**11.2**	10.3	5.8
Uttarakhand	4.8		**10.3**		4.3	11		7.8
West Bengal	3	7.8	9.3	3	4.2	**11.2**	9.1	8.4

Notes: Usual status and NIC are used to categorise domain types of work; an extended view is applied; ages 6-17; highlighted top 10%. Data source: India Time Use Survey 2019 (NSS 2020a).

Table A3. ITUS 2019 case studies.

(Case 1) Female, 16 years old, Chhattisgarh, OBC, casual labourer
6.5 hours/day for [Paid self-employment] Informal employment – growing of crops
2 hours/day Own use – fetching water
2 hours/day Unpaid domestic services – indoor cleaning = 10.5 hours a day in work
(Case 2) Female, 14 years old, UP, ST, domestic duties only
4 hour/day [Paid self-employment] Informal employment – growing of crops
3 hours/day Own-use production of goods – animal rearing
5 hours/day Unpaid domestic services – cleaning, preparing meals = 12 hours a day in work
(Case 3) Female, 16 years old, Madhya Pradesh, ST, unpaid family worker
7 hours/day [Unpaid] Own use production of goods – growing of crops
1 hour/day Commuting
2 hours/day Unpaid domestic services – cleaning, preparing meals = 10 hours a day in work
(Case 4) Female, 15 years old, Jharkhand, ST, student
4 hours/day Own-use production of goods – fetching water, animal rearing
1.5 hour/day Paid casual labour – services
4.5 hours/day Unpaid domestic services – cleaning, washing, meals = 10 hours a day in work
(Case 5) Female, 17 years old, Rajasthan, OBC, casual labourer
1.5 hours/day Own-use production of goods – animal rearing
8.5 hour/day Paid casual labour – services
1.5 hours/day Unpaid domestic services – cleaning = 11.5 hours a day in work
(Case 6) Male, 13 years old, UP, Muslim Non-SC/ST, regular waged worker
10 hrs/day paid casual labour – goods (wholesale and retail trade and repair of motor vehicles and motorcycles) = 10 hrs a day in work

Data source: India Time Use Survey 2019 (NSS 2020a).

Table A4. STATA code for data cleaning.
The code is available on Github at https://www.github.com/WendyOlsen/excessworkhoursindia.