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Unpaid household services and child labour

Scott Lyon

Marco Ranzani

Furio C. Rosati

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Understanding Children's Work (UCW) Programme
Villa Aldobrandini
V. Panisperna 28
00184 Rome

Tel: +39 06.4341.2008
Fax: +39 06.6792.197
Email: info@ucw-project.org

As part of broader efforts towards durable solutions to child labor, the International Labour Organization (ILO), the United Nations Children's Fund (UNICEF), and the World Bank initiated the interagency Understanding Children's Work (UCW) Programme in December 2000. The Programme is guided by the Oslo Agenda for Action, which laid out the priorities for the international community in the fight against child labor. Through a variety of data collection, research, and assessment activities, the UCW Programme is broadly directed toward improving understanding of child labor, its causes and effects, how it can be measured, and effective policies for addressing it. For further information, see the project website at www.ucw-project.org.

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[*] UCW Programme and University of Rome "Tor Vergata"

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ABSTRACT

Drawing on data from national household surveys, this paper presents evidence from a range of countries on children's household chores as part of a broader effort towards developing common statistical criteria for classifying household chores as child labour. The resolution on child labour statistics emerging from the 18th International Conference of Labour Statisticians (ICLS) call for the development of a standard methodology for estimating child labour at the international level, and the study is aimed at helping to inform this effort. We find that children's involvement is extensive, but not similarly intensive. In only a few countries do children perform chores for an average of at least 14 hours per week, the suggested ICLS measurement threshold for distinguishing 'light' work in employment, and in no country do chores account for an average of 28 hours per week, the threshold used in some publications for including household chores as child labour. Intensive involvement in household chores adversely affects children's ability to attend school. The negative effect on the probability of school attendance is small and constant up to about 20 weekly hours in household chores, and starts increasing thereafter. The limited evidence on the health impacts of children's household chores is inconclusive. Gender is an important determinant of children's involvement in chores, and we find a positive correlation between involvement in household chores and early marriage.

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1. INTRODUCTION

1. The treatment of household chores in child labour measurement has long been a point of contention among labour statisticians and policy makers. The current study presents evidence from a range of countries on children's household chores as part of a broader effort towards developing common statistical criteria for classifying household chores as child labour. Drawing on data from national household surveys, the study looks at both the characteristics of children's household chores (i.e., prevalence, tasks, time intensity) and at their impact on education and health. The resolution on child labour statistics emerging from the 18th ICLS calls for the development of a standard methodology for estimating child labour at the international level, and the study is aimed at helping to inform this effort.

2. The resolution on child labour statistics from the 18th International Conference of Labour Statisticians (ICLS) broke new ground in including children in hazardous "unpaid household services", or hazardous household chores, as part of the group of children engaged in child labour for the purposes of statistical measurement.[2] This is in recognition of the fact that in some circumstances the performance of household chores can impact negatively on children's welfare, and therefore can fall within the legal definition of child labour set by the UN Convention on the Rights of the Child and other international legal standards. Household chores can pose a particular threat to children's right to education. Ensuring Education For All will require addressing the children – and especially girls – having to spend significant amounts of time each day performing chores.

3. The ICLS resolution defines hazardous unpaid household services only in general terms, as unpaid household services "performed for (a) for long hours, (b) in an unhealthy environment, involving unsafe equipment or heavy loads, (c) in dangerous locations, and so on". The resolution states that the definition of long hours in unpaid household services of children, relative to their age, may differ from the one applied in respect to children in employment, and that the effect on a child's education should also be considered when determining what constitutes long hours. The ICLS resolution contains no other specific guidance in terms of how hazardous unpaid household services should be defined for measurement purposes, and states that this as an area requiring further conceptual and methodological development.[3]

4. Some published statistics on child labour apply a time threshold of 28 hours, beyond which household chores are classified as child labour.[4] But this threshold, while useful in advocating for the inclusion of household

[2] When the general production boundary is used as the measurement framework. See *Report of the Conference*, 18th ICLS (ICLS/18/2008/IV), page 58, paragraph 15.

[3] *Report of the Conference*, 18th ICLS (ICLS/18/2008/IV), page 64, paragraph 63.

[4] For instance, see United Nations Children's Fund (UNICEF). 2009. *The state of the world's children: Special edition: Celebrating 20 years of the convention on the rights of the child* (New York, NY). See also www.ucw-project.org

chores within statistical definitions of child labour, is based only on preliminary evidence of the interaction between household chores and school attendance, and does not constitute an agreed measurement standard. Indeed, a recent study indicates that applying this time threshold effectively excludes most children performing household chores in many countries, suggesting that it might be too stringent.[5] At the other extreme, considering all children spending at least some time performing household chores as child labourers would clearly be too inclusive, as helping out at home for limited amounts of time is considered a normal and beneficial part of the childhood experience in most societies.

5. The remainder of this report is structured as follows. Section 2 presents descriptive evidence on the extent and time intensity of children's involvement in household chores in a sample of 65 developing countries. Section 3 discusses the role of gender in the assignment of responsibility for chores within the household. Section 4 looks at household chores as a factor in early marriage. Section 5 reviews evidence of the educational impact of household chores, in turn necessary for the identification of *hazardous* household chores for the purposes of child labour measurement. Section 6 discusses the possible health impact of household chores. Section 7 concludes.

2. CHILDREN'S INVOLVEMENT IN HOUSEHOLD CHORES

6. Unpaid household services, or household chores, refer to the production of domestic and personal services by a household member for consumption within their own household. This form of work lies outside the production boundary of the System of National Accounts, i.e., is non-economic in nature, and has to date been excluded from most published estimates of child labour.[6]

7. Children might be involved in household activities while they attend school, while they are involved in employment, or while they perform both or neither of these additional activities. Household chores include caring for siblings, sick, infirm, disabled or elderly household members; cleaning and minor household repairs; cooking and serving meals; washing and ironing clothes; and transporting or accompanying family members to and from work and school.

8. This section presents evidence of children's involvement in household chores in a set of 65 developing countries. Figure 1 indicates that a very large proportion of children aged 7-14 years spend at least some time each week performing chores in all 65 countries. Indeed, in most, children are more likely to be involved in household chores than in employment (not

[5] UCW, 2010. *Joining forces against child labour: inter-agency report for The Hague Global Child Labour Conference of 2010.* Geneva: ILO, 2010.

[6] In contrast, the performance of household services in a *third-party* household, paid or unpaid, is included within the SNA production boundary.

shown). Although different reference years and survey instruments mean that cross-country comparisons should be interpreted with caution, Figure 1 nonetheless also points to large variation across countries and regions in terms of involvement in chores. In no country, however, is proportion of children performing chores less than 30 percent.

9. While children's involvement in chores is therefore *extensive* it is generally not similarly *intensive*. Figure 2, which reports children's average weekly hours spent performing chores, illustrates this point. In only eight countries do children perform chores for an average of at least 14 hours per week. This does not mean, of course, that there are not significant numbers of children in many of the countries performing household chores for much longer time periods each week. Figure 3, which reports working hours in household chores at the 20th and 80th percentiles of the working hours distribution for the 7-14 year-old population in each country, illustrates this point.[7] In Mali, for example, while the median hours each week is 17 hours, 20 percent of children performing chores do so for more than 36 hours per week. Moreover, as chores are often performed in parallel with employment (see next sections), chores can be an important addition to the total weekly time burden posed by work even when not performed intensively.

10. Contrary to the pattern for employment, the involvement of female children in household chores is both more extensive (all 65 countries) and more intensive (56 of 64 countries) than that of male children (Appendix Figure A1 and Figure A2). In other words, more girls typically spend more time performing chores each week than boys. This is undoubtedly a reflection of the fact that domestic responsibilities tend to fall more within the traditional roles of females in most societies. The implications of this pattern for child labour measurement are clear – excluding household chores from consideration as child labour understates girls' involvement in child labour relative to boys.[8] Gender as a factor in decisions concerning children's involvement in household chores is taken up in more detail in section 3 of this report.

11. Differences in children's involvement in chores by place of residence are also important. Involvement in household chores is both more extensive (52 of 64 countries where information is available) and intensive (54 of 61 countries where information is available) in rural compared to urban areas (Appendix Figure A3 and Figure A4). This pattern is likely driven in large part by differences in basic services infrastructure in rural and urban areas. Less access to water networks in rural areas, for instance, can mean that households must allocate more time to activities such as transporting water, a task in which children often play an important role

[7] Working hours in household chores at the median and at the 20th and 80th percentiles decomposed by sex are reported in Figure A5 in the Statistical Appendix.

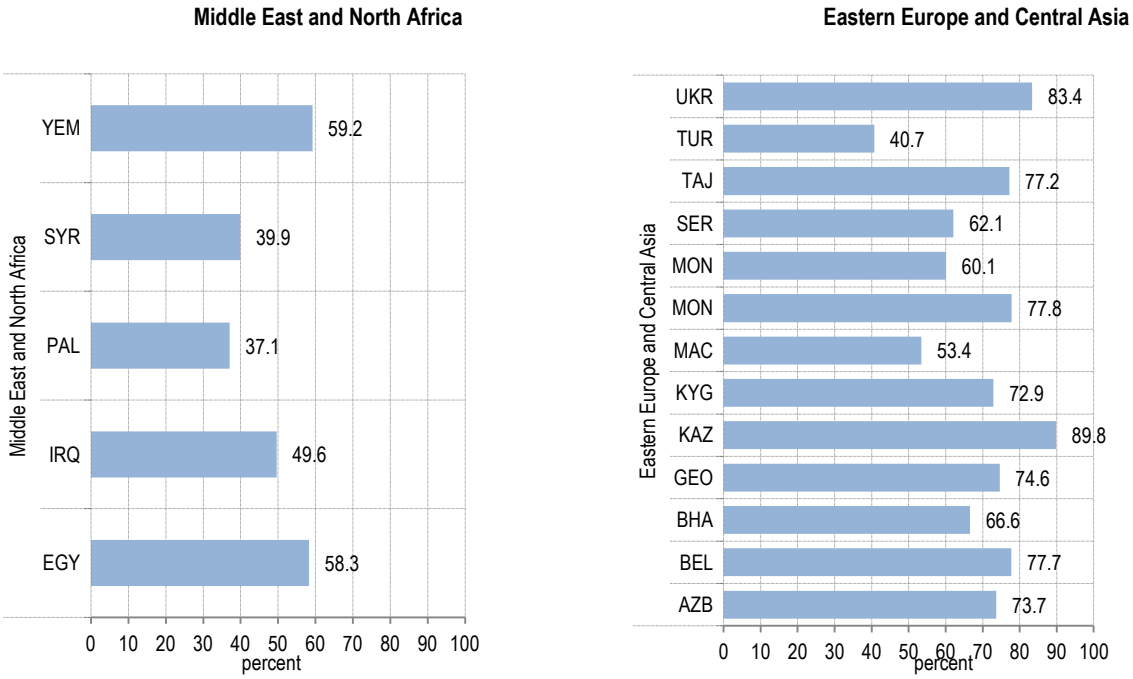
[8] For a more detailed discussion of the gender dimensions of child labour , see: UCW, *Child Labour in the Latin America and Caribbean Region: A Gender-Based Analysis*. ILO 2006.

(Guarcello and Lyon, 2003). Following from this, expanding basic services can be an important component of broader efforts to remove children, and especially female children, from child labour.

12. As mentioned above, household chores can be performed by children while they are involved in other activities, and particularly while they are engaged in employment. Children performing "double duty", i.e., both chores and employment simultaneously, face tighter time constraints, and therefore can be at higher risk of repeating grades, dropping out of school. Children working longer hours because of their double duties can also be at higher risk of work-related accidents.[9]

13. Rates of double duty are frequently very high (Figure 1). Particularly striking are the high rates of double duty in the Sub-Saharan Africa (SSA). At least one-fourth of children perform double duty in 21 of 26 of the SSA countries. Double duty is generally more common among rural compared to urban children (59 of 65 countries) (Appendix Table A3). Girls do not seem consistently disadvantaged in this regard relative to boys across the 65 countries (rates of double duty are higher for girls in 22 of 65 countries) (Appendix Table A3); girls, however, are consistently more likely than boys to engage only in household chores (63 of 65 countries). In other words, girls tend more to be specialised in household chores. Gender specialisation is discussed further in the next section.

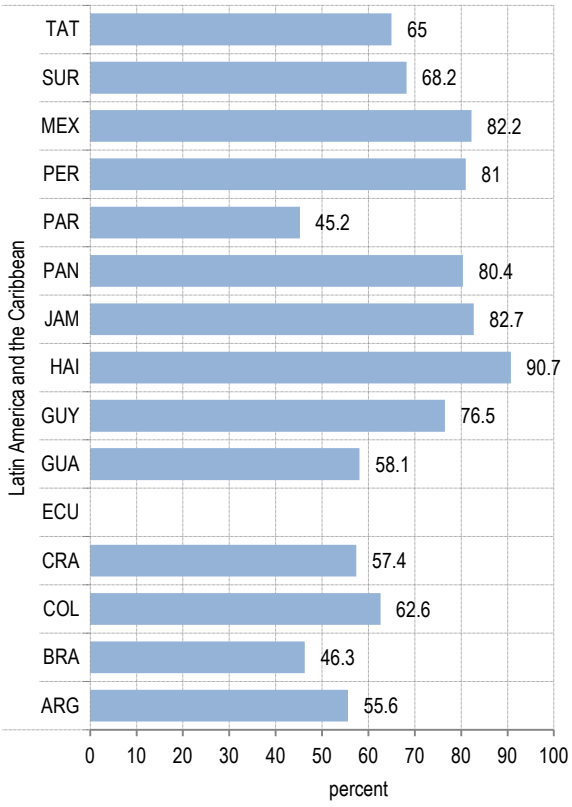
Figure 1. **Children's involvement in unpaid household services, 7-14 years age group,[a] most recent year, by country[b]**



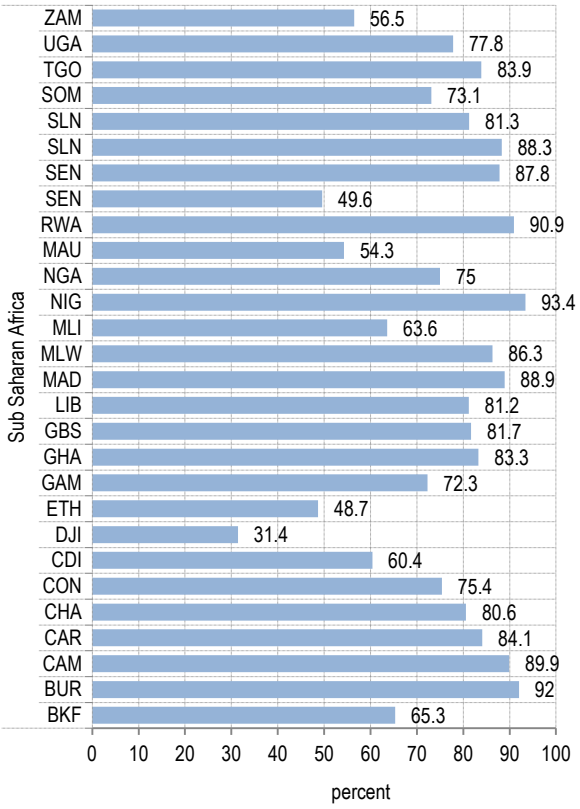
[9] See, for example, UCW, *Impact of working time on children's health.* UCW Working Paper, September 2004.

Figure 1.**Cont'd**

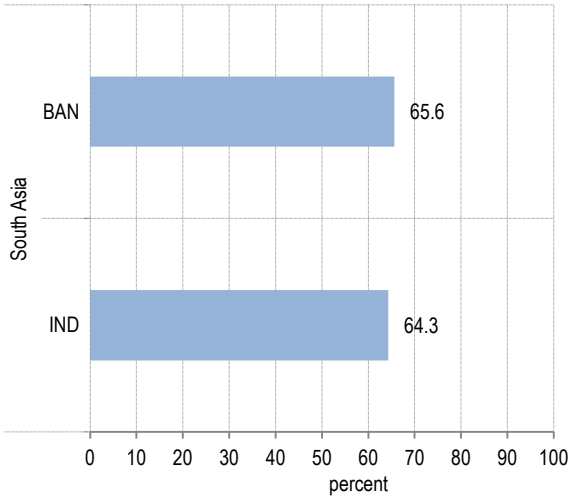
Latin America and the Caribbean



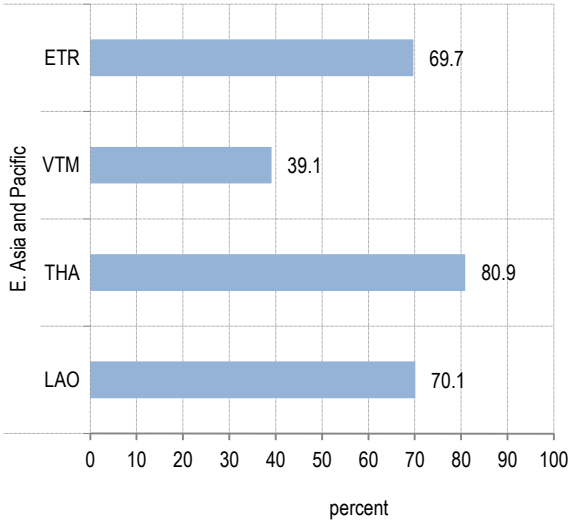
Sub Saharan Africa



South Asia



East Asia and Pacific



Notes: (a) Reference age group is 12-14 years in CRA, MEX, 10-14 years in ETR, MLI and 6-14 years in TUR; Only urban areas in ECU; (b) Full country names and reference years provided in Annex Table A1

Figure 2. **Average weekly hours[a] spent on unpaid household services, 7-14 years age group,[b] most recent year**

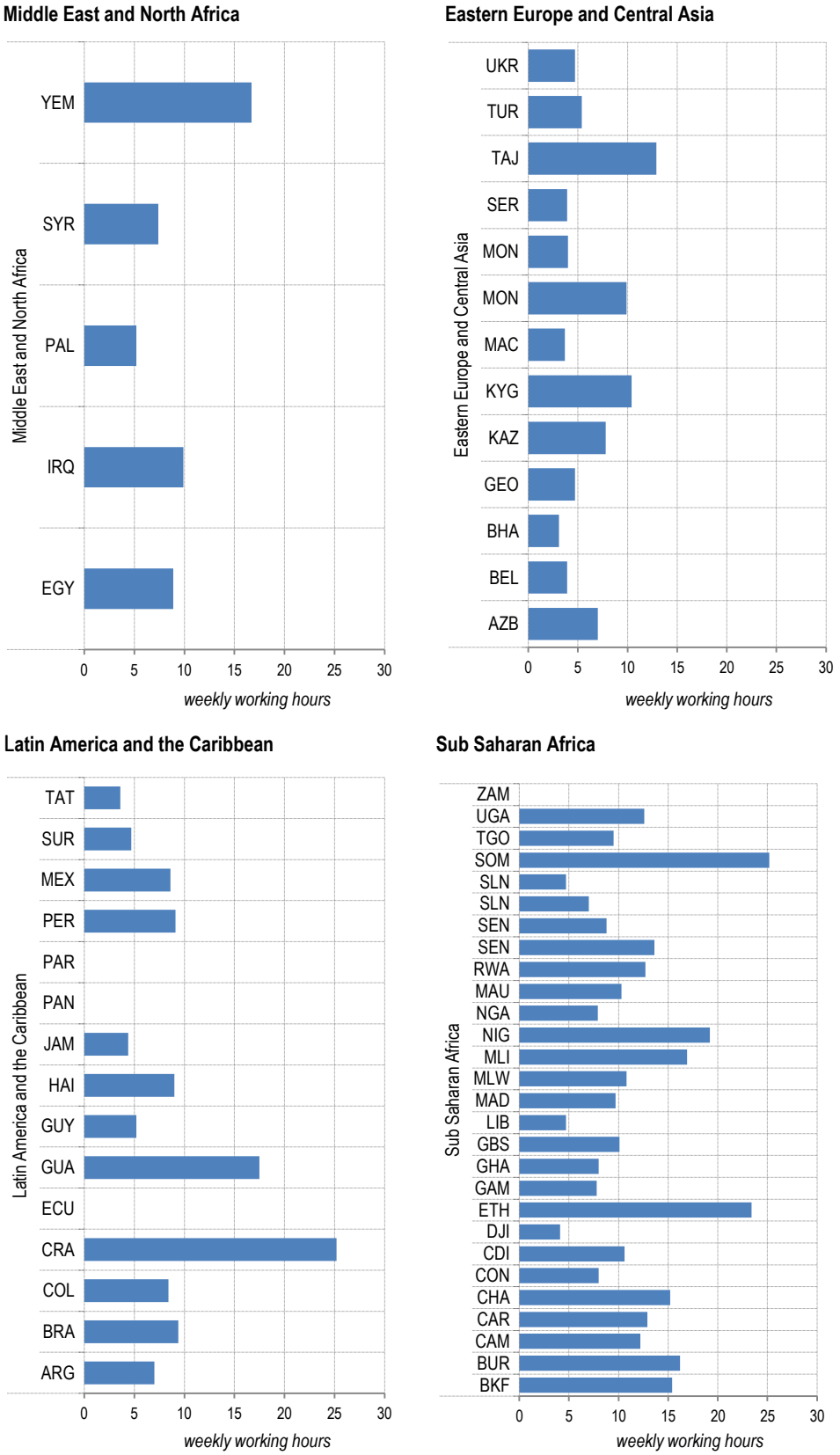
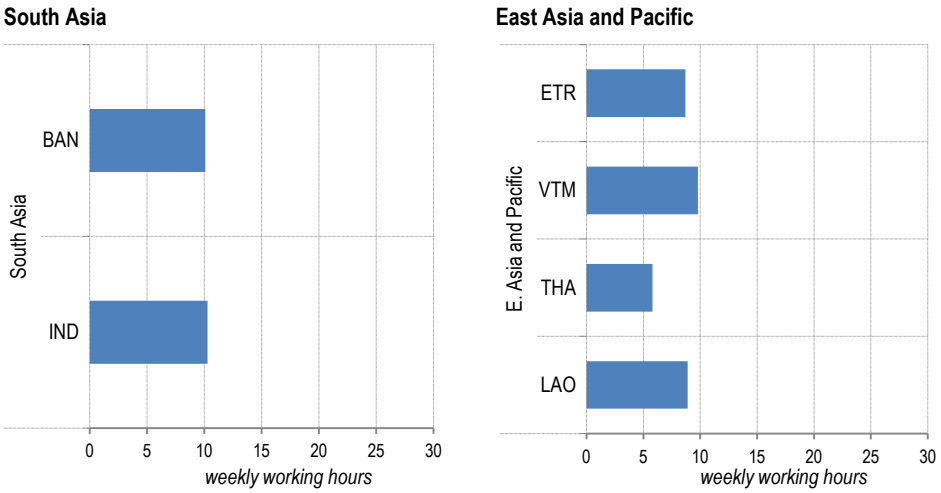


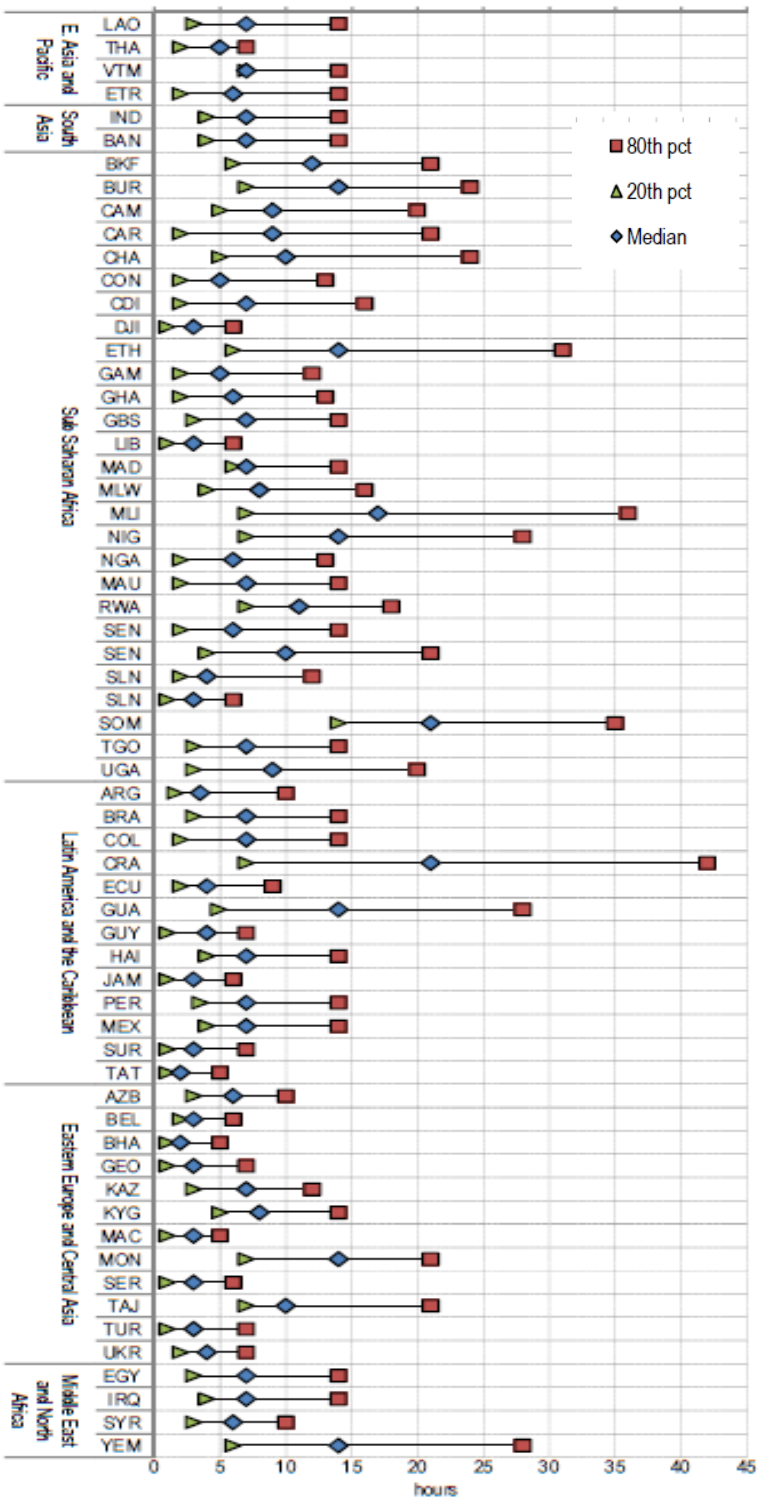
*Figure 2.***Cont'd**



Notes: (a) Information on daily hours collected in survey were multiplied by seven in CRA, GUA, PER, and VTM; (b) Reference age group is 12-14 years in CRA, MEX, 10-14 years in ETR, MLI and 6-14 years in TUR; only urban areas in ECU. (c) Full country names and reference years provided in Annex Table A1.

Source: UCW calculations national household surveys (See Annex Table A1).

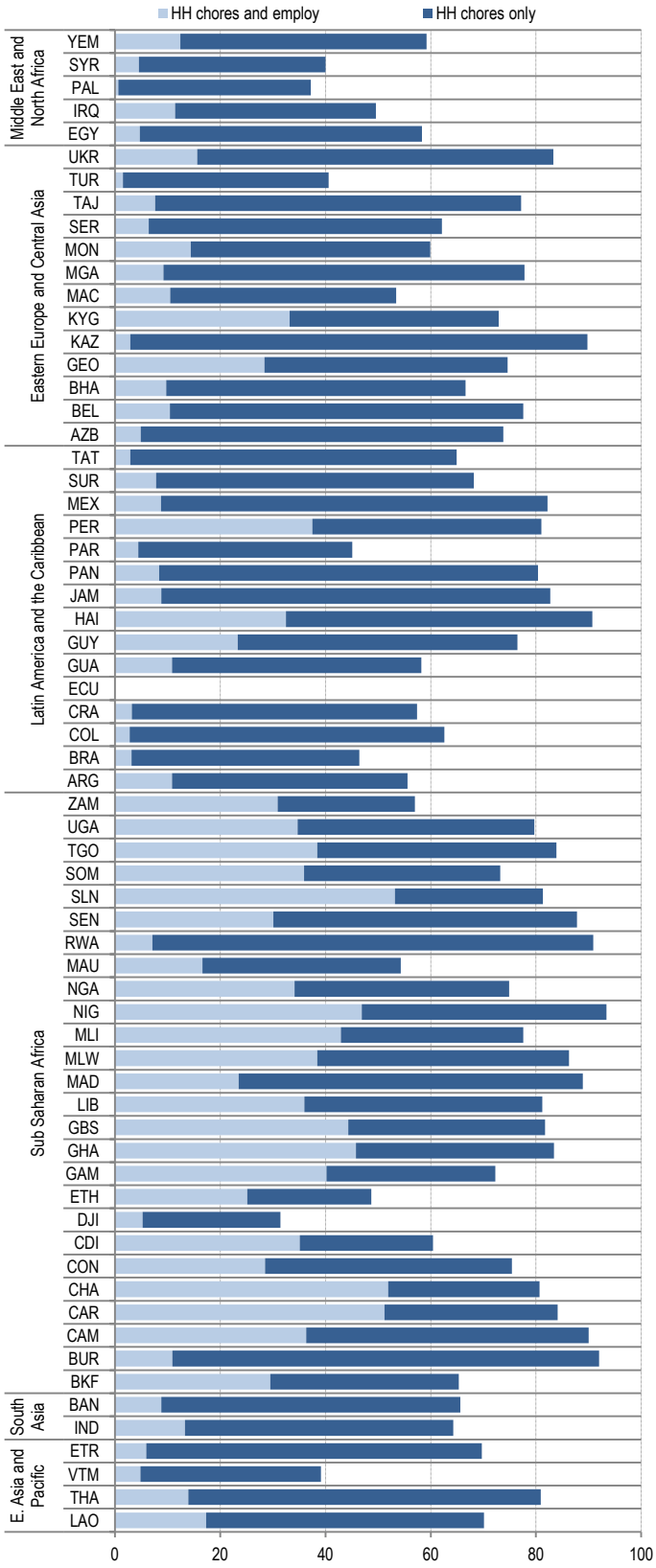
Figure 3. **Working hours in unpaid household services at median, 20th and 80th percentiles**



Notes: (a) Information on daily hours collected in survey were multiplied by seven in CRA, GUA, PER, and VTM; (b) Reference age group is 12-14 years in CRA, MEX, 10-14 years in ETR, MLI and 6-14 years in TUR; only urban areas in ECU. (c) Full country names and reference years provided in Annex Table A1.

Source: UCW calculations national household surveys (See Annex Table A1).

Figure 6. **Children's involvement in unpaid household services, by employment status, 7-14 years age group,[a] most recent year, by country,[b]**



Notes: (a) Reference age group is 12-14 years in CRA, MEX, 10-14 years in ETR, MLI and 6-14 years in TUR; only urban areas in ECU. (b) Full country names and reference years provided in Annex Table A1.
Source: UCW calculations national household surveys (See Annex Table A1).

3. HOUSEHOLD CHORES AND GENDER SPECIALIZATION

14. The descriptive evidence presented in section 2 indicated that the involvement of girls in household chores is both more extensive and more intensive than that of boys (Appendix Figure A1 and Figure A2). In other words, more girls typically spend more time performing chores each week than boys. In this section we look in more detail at the issue of gender specialization relating to involvement in household chores. We first present econometric evidence of gender as a correlate of children's involvement in a set of activities, namely employment, education, and household chores. We then present descriptive evidence of the role of gender in the type of chores that children perform.

Gender and *involvement* in household chores

15. For a set of 32 countries[10] for which we have comparable and complete information on children's activities and household characteristics, we estimate a multinomial logit model of the correlates of the probability of child *i* being engaged in activity *j* (Eq. 1). Since children might be involved in multiple activities, we consider the following combinations of employment, education, and chores: employment only, employment and chores, education only, education and chores, employment and education, employment, education and chores, nothing, and chores only.

$$\boldsymbol{P(Y_i = j) = \frac{exp^{\beta_j' x_i}}{\sum_{k=1}^{M} exp^{\beta_k' x_i}} \quad j = 1, \dots, M} \qquad \textbf{(1)}$$

16. X_i is a vector of individual and household level variables. The main variable of interest is gender, we add additional controls including a second degree polynomial of age, a dummy for being the eldest child, the number of children between 0 and 4 and between 5 and 14 years of age, household size, a dummy for children in female headed households, household head educational level, quintiles of household wealth, location of residence (a dummy for children in urban areas)[11].

17. Since the coefficients in a multinomial logit model are difficult to interpret and it is tempting to associate β_j with the j outcome, Figure 4 reports the marginal effects (M.E.) that are computed by differentiating Eq. 1 with respect to X_i:

$$\boldsymbol{ME_j = \frac{\partial P_j}{\partial x_i} = P_j[\beta_j - \sum_{k=1}^{M} P_k \beta_k] = P_j[\beta_j - \bar{\beta}]} \qquad \textbf{(2)}$$

18. P_j is the probability of being involved in activity j and β_j is a vector of estimated coefficients for activity j. Every sub-vector of β enters every

[10] The list of countries, type of survey, and survey year is reported in Table A2.

[11] For the sake of simplicity, we present and discuss only the coefficient of the gender variable. The full set of estimates is available upon request from the authors.

marginal effect, both through the probabilities and through the weighted average $\bar{\beta}$. These values can be computed from the parameter estimates and standard errors are estimated using the delta method.

19. Our estimates indicate that controlling for a set of individual and household level characteristics, children's gender keeps an important role among the correlates of the type of activity they are engaged into (Figure 4 and Table A4).

20. Conforming to the evidence provided in section 2, females are more likely to be only engaged in household chores relative to males and less likely than males to be inactive (i.e., out of school, out of the labour market, and not involved in household chores).

21. In addition to these findings, our estimates indicate that females are less likely to be involved only in employment: the marginal effect is strongly significant in Bangladesh and India, and its range is between less than 0.5 and 6.7 percentage points. On the contrary, females are more likely to be involved in both employment and household chores relative to their male counterparts.

22. Schooling only appears to be a privilege of males: the marginal effect associated with being a female has in fact a negative sign in all the countries of the sample. The probability of being involved in schooling only decreases by between 1 and 15 percentage points if the child is a female. The combination of schooling and employment is also a prerogative of boys, with the exception of Tajikistan.

23. Females are more likely to be involved in schooling and chores with a few exceptions. The marginal effect ranges between less than 1 and 27 percentage points, i.e. being a female can increase the likelihood of being involved in schooling and chores by some 30 percentage points relative to a male with the same individual and household characteristics.

24. There are also some children performing employment, chores, and schooling. Although in the majority of the countries in our sample, the multivariate evidence points to a negative effect of being a female on the probability of performing all the three activities considered in the analysis, the pattern is not as clear as for the choices discussed so far. In some countries females are more likely to be engaged in the three activities, whereas in some other countries males are more prone to do so.

Figure 4. **Gender differences in the probability of performing household chores (marginal effect of being female on the allocation of time of 7-14 years old children among employment, schooling, and chores)**

Note: Light-blue bars indicate marginal effects statistically significant at 5%.
Source: UCW computations on MICS and DHS survey data. A list of type of surveys and survey year is reported in Table A2.

Gender and the *composition* of household chores

25. What are the types of chores most commonly performed by children? And what, if any, systematic differences are there between boys and girls in this regard? Table 1 reports the distribution of girls and boys involved in household chores by specific task for a subset of 11 countries where more detailed data on children's household chores are available.

26. Tasks are defined slightly differently in the 11 surveys and therefore caution should again be exercised in interpreting cross-countries comparisons. Nonetheless, Table 1 points to clear gender-based differences in the composition of children's household chores consistent with underlying gender-based social roles: cooking, cleaning, washing clothes, and caregiving are typically performed by the girls in the household, whereas their brothers usually take care of fetching water and wood. There is no clear-cut gender-based pattern for shopping. Very few countries have information on the specific time allocated to each task, an information gap that should be addressed in future surveys on household chores.

Table 1. **Distribution of children in household chores by task type, country and sex, 7-14 year-old**

		Cooking	Shopping	Cleaning	Washing clothes	Caring	Fetching water/ wood	Other
Azerbaijan[a]	Male	0.9	21.6	3.4	2.4	1.3	30.4	80.6
	Female	8.4	5.7	41.6	16.8	2.7	15.0	76.0
Burkina Faso[b]	Male	4.9	3.6	20.6	26.6	7.2	71.1	28.7
	Female	33.3	19.2	61.9	40.1	11.6	67.2	14.0
Colombia[c]	Male	-	-	-	-	10.2	-	98.4
	Female	-	-	-	-	15.1	-	98.7
Ecuador[d]	Male	15.4	38.8	95.9	35.3	14.0	-	12.5
	Female	35.7	35.4	97.8	56.0	17.7	-	13.6
Guatemala[e]	Male	12.9	39.7	-	4.3	-	37.5	51.8
	Female	60.0	30.0	-	38.3	-	15.1	74.3
Kyrgyzstan[f]	Male	3.1	41.6	24.8	0.7	4.2	3.3	25.9
	Female	18.7	34.0	42.0	1.3	2.5	0.2	4.5
Liberia[m]	Male	12.7	12.2	61.0	-	7.4	-	8.7
	Female	31.8	17.1	65.2	-	9.7	-	4.9
Madagascar[g]	Male	36.9	31.9	50.2	29.9	29.4	92.0	43.3
	Female	61.6	42.4	84.0	58.2	36.4	89.2	52.2
Panama[h]	Male	16.7	71.9	72.7	54.3	23.7	37.0	70.5
	Female	32.5	62.7	84.3	82.3	31.6	24.2	55.1
Peru[i]	Male	11.2	21.1	73.7	11.5	11.4	30.4	3.5
	Female	27.7	16.1	87.4	19.5	14.2	12.5	2.5
Rwanda[j]	Male	42.0	37.5	53.9	40.9	35.9	-	93.6
	Female	61.0	38.6	72.4	52.2	48.3	-	92.2
Senegal[k]	Male	4.1	6.6	25.1	13.6	5.5	58.6	47.9
	Female	29.5	20.5	86.4	54.2	11.8	49.4	14.0

Notes: (a) Azerbaijan: Category "caring" includes caring for children, for elderly and sick; Category "fetching water/wood" includes only fetching water; Category "other" includes minor household activities and other similar household chores; (b) Burkina Faso: Category "caring" includes caring for children, for elderly and sick; Category "other" includes small repairs and other similar household chores; (c) Colombia: Category "caring" includes caring for children, for elderly and sick; (d) Ecuador: only urban areas. Category "caring" includes caring for children, for elderly and sick; Category "wash clothes" includes also ironing, sewing and repairing clothes; Category "other" includes help with school exercises, participation in the meetings of the area and day-labor or communistic work; (e) Guatemala: Category "shopping" includes also making payments for household services (such as water, electricity, telephone and etc.); Category "wash clothes" includes also ironing; Category "fetching water/wood" includes also chopping firewood; Category "other" includes cleaning house, carrying the trash out; caring for children; (f) Kyrgyzstan: Category "caring" includes caring for children, for elderly and sick; Category "fetching water/wood" includes only fetching water; Category "other" includes repairs of any household equipment, carrying out of waste and other household tasks; (g) Madagascar: Category "caring" includes caring for children, for elderly and sick; (h) Panama: Category "caring" includes caring for children; Category "other" includes carrying the trash out and other household chores; (i) Peru: Category "wash clothes" includes also ironing"; Category "caring" includes caring for children, for elderly and sick; (j) Rwanda: Category "caring" includes caring for children, for elderly and sick; (k) Senegal: Category "wash clothes" includes also ironing and sewing; Category "caring" includes caring for children, for elderly and sick; Category "other" includes small repairs and other similar household chores; (m) Liberia: Category "cleaning" includes washing clothes, Category "caring" includes caring for children, for elderly, sick, and disabled; Category "other" includes small repairs.

Sources: Azerbaijan, CLS 2005; Burkina Faso, ENTE 2006; Colombia, GEIH 2007; Ecuador, ENEMDU 2009; Guatemala, ENCOVI 2006; Kyrgyzstan, NCLS 2007; Madagascar, ENTE 2007; Panama, ETI 2008; Peru, ETI 2007; Rwanda, NCLS 2008; and Senegal, ENTE 2005.

4. HOUSEHOLD CHORES AND CHILD MARRIAGE

27. For girls in some cultures, household chores can be linked to one of the most serious violations of their rights as children – early marriage. This section makes use of the descriptive data from a subset of 25 countries with information on child marriage to look at the correlation between household chores and child marriage in more detail.

Table 2. **Rate of early marriage[a] by work status and country, girls aged 12-17 years**

Region	Country	Difference between % married among girls in relevant group performing chores and % married among girls not performing household chores		
		Girls working in HH chores	Girls working only in HH chores[b]	Girls working in HH chores and employment
Sub Saharan Africa	Burkina Faso	0.9	-1.2	3.7
	Burundi	-0.3	-0.3	-0.4
	Cameroon	1	1.2	0.7
	Congo	-5.2	-6.8	-3.4
	Ethiopia	4.8	1.8	7
	Madagascar[e]	4.8	0.9	9
	Malawi	2.2	-1.1	4.3
	Mali	21.2	16.1	28.1
	Senegal	3.6	3.2	5
	Sierra Leone	-0.4	-0.1	-0.5
	Uganda	0.5	-0.7	1.4
	Zambia	4.2	-0.4	7.4
Latin America and the Caribbean	Brazil	1.5	1.3	3.3
	Colombia	1.2	0.9	4.5
	Costa Rica	0.9	0.6	6.4
	Ecuador[d]	2.4	2.2	5
	Guatemala	3.4	4.3	0.6
	Paraguay	2.6	2.4	3.3
	Peru	-0.2	-0.2	-0.3
South Asia	India	0	-0.1	0.2
Eastern Europe and Central Asia	Azerbaijan	1	0.9	2.2
	Kyrgyzstan	1.2	1.8	0.5
	Mongolia	0.9	1	0.5
East Asia and Pacific	East Timor	0.6	0.8	0
	Vietnam	0.4	-0.3	2.5

Notes: (a) Rate of early marriage calculated as the number of girls aged 12-17 years who are married (or in an arrangement of cohabitation) expressed as a percentage of the total population of girls aged 12-17 years. Data limitations prevent the calculation of the more standard early marriage indicator (i.e., percentage of women 20–24 years old who were married or in union before they were 18 years old); (b) Refers to children not also working in employment; (d) Only urban areas (Ecuador); (e) For 13-14 year-olds (Madagascar).
Sources: See Table 3.

28. Table 2 reports the difference in early marriage rates between girls aged 12-17 years performing household chores and girls in the same age group not performing chores.[12] The table indicates a positive correlation

[12] Girls not performing household chores may be involved in employment. The results do not change appreciably, however, when the reference group is narrowed to girls neither performing household chores nor employment.

between involvement in household chores and early marriage in most of the 25 countries. Girls aged 12-17 years performing chores are more likely to be married than their peers not performing chores in 20 of the 25 countries, whereas in only one, Congo, is there an ostensible pattern in the opposite direction (see below).[13] In Mali, where the early marriage rate is among the highest in the world,[14] the difference in the marriage rate by household chores status is particularly striking. The marriage rate 21 percentage points higher for Malian girls performing household chores compared to their peers not performing chores.

29. Girls performing double duty (i.e., working in both chores and employment) appear to be at particular risk of early marriage in many countries, raising the possibility that work in employment can also play a role in early marriage decisions. In Madagascar, for instance, marriage rates are more than five times higher for girls performing double duty compared to those only performing chores, and in Burkina Faso, Malawi, Uganda and Costa Rica the difference between in the two groups is more than three-fold. Only in one country, Guatemala, we observe a clear pattern in the opposite direction. The discussion of the relationship between work in employment and early marriage, however, is beyond the scope of the current paper.

30. The positive correlation between involvement in household chores and early marriage is even stronger when the time intensity of chores is taken into account. As shown in Table 3, marriage rates among girls performing chores intensively (i.e., for at least 21 hours per week) are higher than for girls not performing chores in all countries except Burundi (where early marriage rates are marginal for all girls). It is worth noting in this context that even in Congo, girls performing chores *intensively* are more likely to be married than girls not performing chores, a reversal of the pattern observed when the time intensity of chores is not taken into account.

31. Table 3 also shows a rise in the proportion of girls who are married at each weekly hours threshold for household chores across all countries where data are available, further evidence of the relationship between household chores and early marriage. While there is no clear pattern across countries between early marriage and limited involvement in chores (i.e., less than seven hours per week), more time intensive involvement in chores is associated with greater risk of early marriage.

[13] In remainder, marriage rates are similar for the two groups (i.e., India, Sierra Leone, Peru) or are marginal for both groups (i.e., Burundi).

[14] Measured as percentage of women 20–24 years old who were married or in union before they were 18 years old. Source: Unicef, *State of the World's Children 2011, Adolescence An Age of Opportunity.* United Nations Children's Fund (UNICEF), New York, February 2011.

Table 3. **Rate of child marriage(1) by time intensity of household chores and country, girls aged 12-17 years**

Region	Country	Difference between % married among girls in relevant group performing chores and % married among girls not performing household chores				
		Girls working less than 7 hours	Girls working at least 7 hours	Girls working at least 14 hours	Girls working at least 21hours	Girls working at least 28 hours
Sub Saharan Africa	Burkina Faso	-1.9	-1.9	1.5	2.1	2.6
	Burundi	0.1	-0.3	-0.3	-0.3	-0.4
	Cameroon	1.2	0.9	1.3	1.8	3.5
	Congo	-6.6	-4	-2.4	1.6	5.9
	Ethiopia	-1.6	5.5	6.9	9	11.6
	Madagascar(3)	-0.5	5.4	9.2	13.1	16.6
	Malawi	---	--	--	--	--
	Mali	2.5	26.1	30.3	31	35.3
	Senegal	-1.2	4.6	6.8	11.5	15.7
	Sierra Leone	-0.1	-1	-0.2	1.8	2.9
	Uganda	-1.4	0.9	1.5	2.4	3.5
	Zambia	---	--	--	--	--
Latin America and the Caribbean	Brazil	-0.1	1.9	2.8	5.2	7.5
	Colombia	-3.1	2.2	5.2	10.7	16.6
	Costa Rica	---	--	--	--	--
	Ecuador(2)	-0.8	4.3	9.1	17.5	25.1
	Guatemala	---	--	--	--	--
	Paraguay	---	--	--	--	--
	Peru	---	--	--	--	--
South Asia	India	-0.5	0.1	0.5	0.8	1
Eastern Europe and Central Asia	Azerbaijan	1.2	0.9	0.8	0.3	0.7
	Kyrgyzstan	0	1.3	1.3	2.5	6.8
	Mongolia	0	1.1	0.7	0.6	0.3
East Asia and Pacific	East Timor	0	1.3	2.2	2.2	3.5
	Vietnam	---	--	--	--	--

Notes: (1) Rate of early marriage calculated as the number of girls aged 12-17 years who are married (or in an arrangement of cohabitation) expressed as a percentage of the total population of girls aged 12-17 years. Data limitations prevent the calculation of the more standard early marriage indicator (i.e., percentage of women 20–24 years old who were married or in union before they were 18 years old); (2) Only urban areas (Ecuador); (3) For 13-17 year-olds (Madagascar).

Sources: Sources: Burundi MICS3 2005; Cameroon MICS 3 2006; India DHS 2005; Sierra Leone MICS3 2005; Brazil PNAD 2009; Burkina Faso ENTE 2006, Colombia GEIH 2007; Costa Rica EHPM 2004; Ecuador3 ENEMDU 2009, Guatemala NLFS 2005; Ethiopia ENCOVI 2006; Kyrgyzstan SIMPOC 2007, Madagascar3 ENTE 2007; Malawi SIHS 2004, Mali EPEAM 2007; Paraguay EPH 2004; Peru ETI 2007; Senegal ENTES 2005, and Vietnam HLSS 2006.

5. HOUSEHOLD CHORES AND SCHOOLING

32. This section reviews evidence of the educational impact of household chores, in turn necessary for the identification of *hazardous* household chores for the purposes of child labour measurement. The ICLS resolution states in this context that the effect on a child's education should be considered when determining what constitutes hazardous household chores.[15] The first section presents descriptive evidence on household chores and schooling for a total of 65 countries. The following two sections present more robust econometric evidence of linkages between household chores and schooling for a subset of countries. The health impact of household chores is taken up in section 7 of this report.

Household chores and school attendance: descriptive evidence for 66 countries

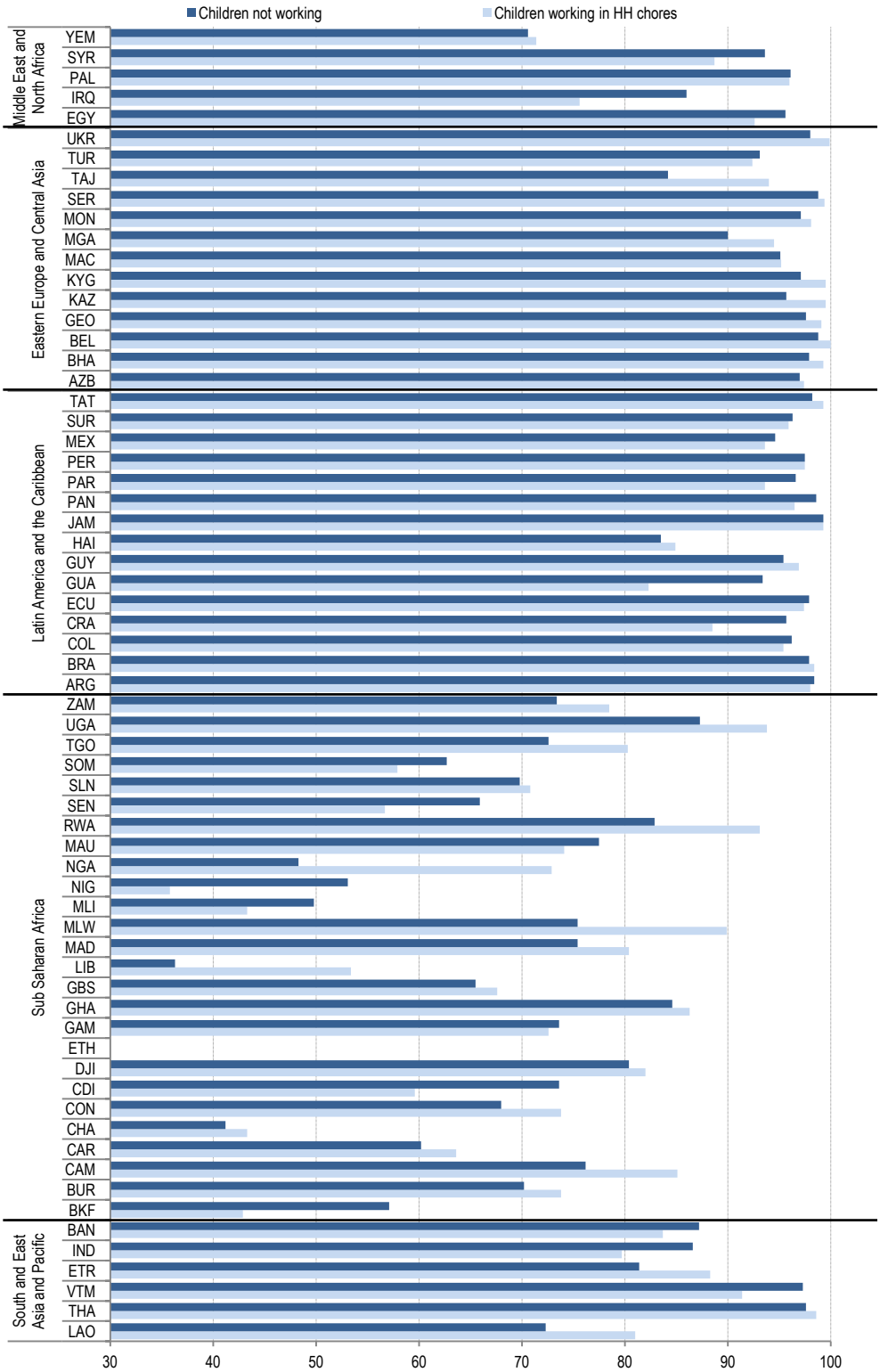
33. At first glance, children performing household chores do not generally appear systematically disadvantaged in terms of school attendance across the 65 countries. Simple bivariate comparisons of the attendance rates of children performing household chores and children not in any form of work reveal countries where non-working children are much more likely to be attending school, but others where the pattern runs strongly in the opposite direction. Overall, school attendance is lower for children performing household chores in only 25 of the 65 countries (Figure 5).

34. But these simple comparisons ignore two important related factors. First, as seen in the previous section, many children combine household chores with work in employment, pointing to the need to disentangle the attendance effects of the two forms of work. The simplest way of accomplishing this is to restrict our attention to the subgroup of children who only perform household chores, i.e., to exclude children simultaneously involved in work in employment.

35. Appendix Table A5 reports school attendance for the group performing only household chores. Again, there is no evidence of systematic disadvantage in terms of school attendance for children performing chores. Those only performing chores are less likely than non-working children to be attending school in only 19 of the 65 countries. Appendix Table A5 also reports school attendance rates for children combining household chores with employment and for those only in employment. Worst off in terms of school attendance appears to be those performing "double duty", i.e. household chores and employment simultaneously. This group is less likely to be in school than non-working children in 45 of the 65 countries.

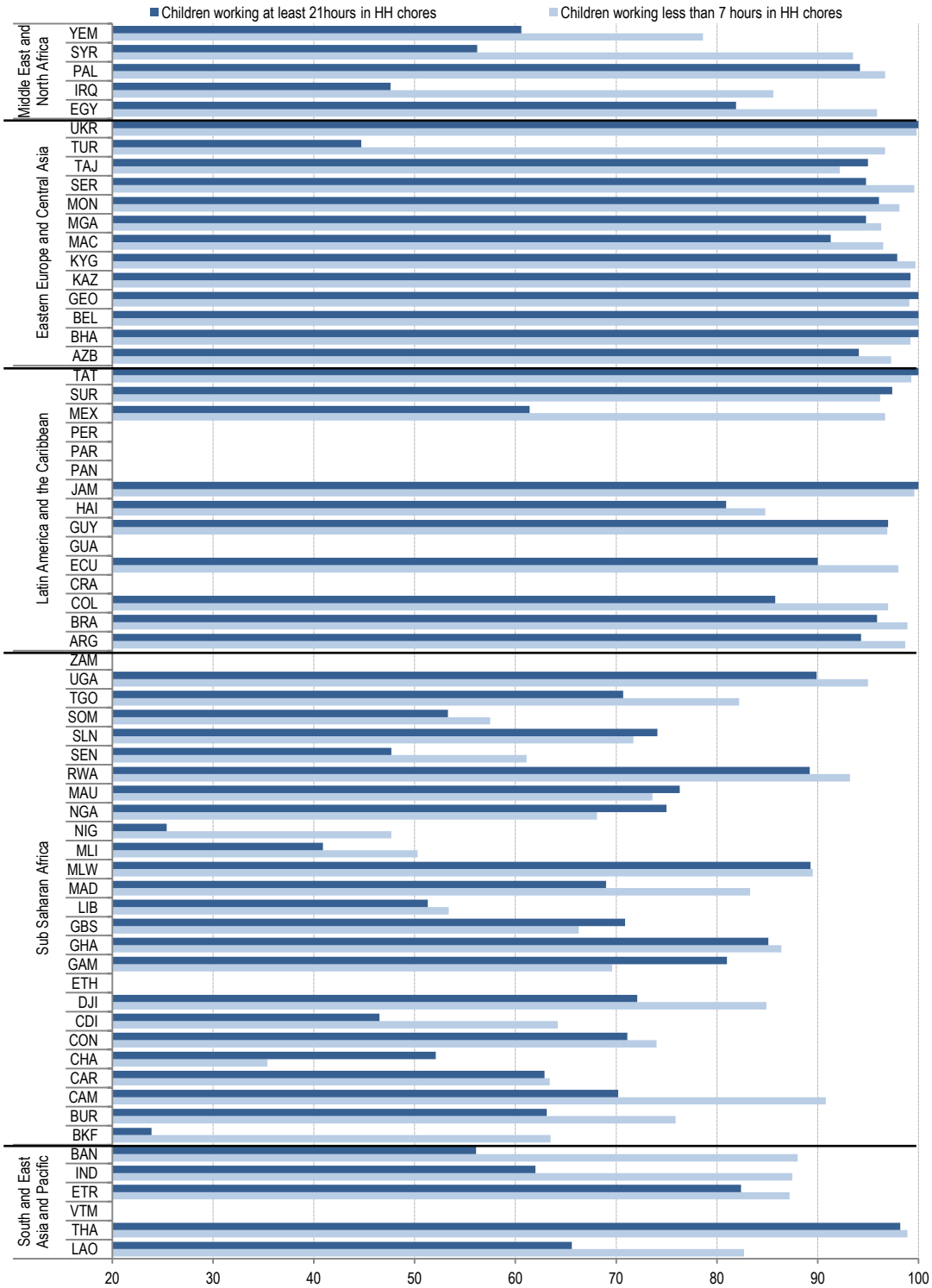
[15] *Report of the Conference*, 18th ICLS (ICLS/18/2008/IV), page 64, paragraph 37.

Figure 5. **Children's school attendance, 7-14 years age group,[a] most recent year, by involvement in household chores and country,[b]**



Notes: (a) Reference age group is 12-14 years in CRA, MEX, 10-14 years in ETR, MLI and 6-14 years in TUR; only urban areas in ECU. (b) Full country names and reference years provided in Annex Table A1.
Source: UCW calculations national household surveys (See Annex Table A1).

Figure 6. **Children's school attendance, 7-14 years age group,(a) most recent year, by hours of involvement in household chores and country,(b)**



Notes: (a) Reference age group is 12-14 years in CRA, MEX, 10-14 years in ETR, MLI and 6-14 years in TUR; only urban areas in ECU. (b) Full country names and reference years provided in Annex Table A1.
Source: UCW calculations national household surveys (See Annex Table A1).

36. The second, and perhaps more important, factor not considered in the simple school attendance comparisons presented in Figure 8 is the *time intensity* of children's household chores. It is unlikely that involvement in household chores *per se* is inimical to schooling, but rather involvement household chores that take up too much time for children to be attend and persist in schooling. Appendix Table A6 and Figure 6, which report children's school attendance by the time intensity of their involvement in household chores illustrate this point. Almost all of the 57 countries where data are available show a fall in school attendance moving from the seven and 14 to 21 and 28 weekly working hours thresholds for work in household chores.

37. But it is likely the *combined* hours worked in household chores and employment that most matter in influencing school attendance. Determining in this context whether one hour performing household chores has the same impact as one hour performing employment, and whether the relationship between time in household chores and employment is the same at all hours thresholds, is more complex. This point is taken up through econometric analysis in the subsequent sections.

38. School life expectancy (SLE) offers another way of assessing the possible educational impact of children's household chores. SLE measures of the total number of years of education that a child can expect to achieve in the future. Relatively higher school life expectancy indicates greater probability of spending more years in education.[16]

39. Table 4 reports school life expectancy at age seven years by work status for a subset of 11 countries. It indicates that children working in household chores can expect to survive in school for fewer years than non-working children in several of the countries. In Burkina Faso, for instance, a seven year-old performing household chores can expect to remain in school for 1.2 fewer years, in Guatemala for 2.7 fewer years, in Madagascar for 1.4 fewer years and in Senegal for 0.8 fewer years. Differences in school life expectancy between children performing household chores and non-working children are smaller for the other countries. Worst off in terms of SLE are the children performing household chores in combination with employment; the school life expectancy for this group is lower than that for children only performing household chores in all 11 countries.

[16] But expected number of years does not necessarily coincide with the expected number of grades of education completed, because of grade repetition.

Table 4. **School life expectancy[1] at age seven years by work status and country**

Country	School life expectancy (years)					
	Children working in HH chores	Children working only in HH chores[a]	Children working in both HH chores and employment	Children working in employment	Children working only in employment[b]	Children not working
Azerbaijan[a]	9.6	9.7	9.0	9.0	-	9.7
Burkina Faso[b]	3.5	3.9	2.9	2.6	2.0	4.9
Colombia[c]	9.3	9.4	8.4	8.1	7.3	9.4
Ecuador[d]	10.4	10.6	9.2	8.8	-	10.3
Guatemala[e]	8.4	9.0	7.1	7.2	7.3	11.1
Kyrgyzstan[f]	10.7	10.8	10.6	10.5	9.8	10.2
Madagascar[g]	7.9	9.5	5.7	5.5	4.4	9.3
Panama[h]	10.1	10.4	8.7	8.5	7.6	10.5
Peru[i]	9.5	9.7	9.4	9.3	8.9	9.5
Rwanda[j]	6.5	6.6	6.3	6.2	4.2	5.9
Senegal[k]	4.0	4.3	2.8	2.7	2.7	4.8

Notes: (1) School life expectancy (provides a measure of the total number of years of education that a child can expect to achieve in the future. Relatively higher school life expectancy indicates greater probability of spending more years in education, but expected number of years does not necessarily coincide with the expected number of grades of education completed, because of grade repetition. The formula of the SLE at an age a in year t is the following:

$$\mathbf{SLE}_{\mathbf{a}}^{\mathbf{t}} = \sum_{\mathbf{i=a}}^{\mathbf{i=n}} \frac{\mathbf{A}_{\mathbf{i}}^{\mathbf{t}}}{\mathbf{P}_{\mathbf{i}}^{\mathbf{t}}}$$

where: $\mathbf{A}_{\mathbf{a}}^{\mathbf{t}}$ - attendance of the population of age i (i=a, a+1,…,n) in school year t; n – the theoretical upper age-limit of schooling; $\mathbf{P}_{\mathbf{i}}^{\mathbf{t}}$ - population of age i in school-year t.

Duration of school education: (a) Azerbaijan: from 6 to16; (b) Burkina Faso: from 7 to 19, but the Burkina Faso ENTE 2006 survey contains information on the current school attendance only for 5-17 year-olds, thus the SLE for the compulsory education in Burkina Faso (from 7 to 14) is considered; (c) Colombia: from 6 to 16; (d) Ecuador: from 6 to 17; Only rural areas; (e) Guatemala: from 7 to 18; (f) Kyrgyzstan: from 7 to 17; (g) Madagascar: from 6 to 17; (h) Panama: from 6 to 17; (i) Peru: from 6 to 16; (j) Rwanda: from 7 to 19, but the Rwanda NCLS 2008 survey contains information on the involvement in household chores only for 5-17 year-olds, thus the SLE for the compulsory education in Rwanda (from 7 to 13) is considered. (k) Senegal: from 7 to 19, but the Senegal ENTE survey contains information on the current school attendance only for 5-17 year-olds, thus the SLE for the compulsory education in Senegal (from 7 to 13) is considered.

Sources: Azerbaijan, CLS 2005; Burkina Faso, ENTE 2006; Colombia, GEIH 2007; Ecuador, ENEMDU 2009; Guatemala, ENCOVI 2006; Kyrgyzstan, NCLS 2007; Madagascar, ENTE 2007; Panama, ETI 2008; Peru, ETI 2007; Rwanda, NCLS 2008; and Senegal, ENTE 2005.

40. Table 4 also suggests that household chores are less detrimental than work in employment in terms of school life expectancy. Indeed, SLE is lower among children in employment than among children performing household chores in all 11 countries where the relevant data are available. This pattern is even stronger when the overlapping group performing double duty is eliminated from consideration: in Madagascar, for instance, seven year-olds only performing household chores can expect to survive in school for 5.1 years more than their counterparts only at work in employment. Why does work in employment appear to be more detrimental in this respect? The answer likely lies both in the greater time intensity of work in employment and in its different nature.

41. Average grade for age is a third measure of the potential educational cost of household chores. Children performing household chores lag slightly behind their non-working counterparts at age 12 in eight of the 10 countries with data for this indicator (Table 5); the largest difference is in

Madagascar where 12 year-olds performing chores are almost one grade behind children that do not work. Children performing double duty again fare worse than those only performing household chores with the exception of one country, Kyrgyzstan. The lower average grade for age among children performing household chores suggests that this form of work can not only impact on school life expectancy, but also on the ability of children to perform effectively in the classroom and keep up with their non-working peers.

42. There is a general negative relationship between the time spent in household chores and grade for age (Table 6). The section below shows that the total combined hours spent in household chores and employment matters in this regard.

Table 5. **Average grade at age 12 years[a] by work status and country**

Country	Grade level					
	Children working in HH chores	Children working only in HH chores[a]	Children working in both HH chores and employment	Children working in employment	Children working only in employment[b]	Children not working
Azerbaijan	--	--	--	--	--	--
Burkina Faso	3.5	3.7	3.3	3.5	3.9	3.7
Colombia	5.2	5.2	5.2	5.1	4.6	5.2
Ecuador[b]	6.9	6.9	6.7	6.6	6.2	7.1
Guatemala	3.9	4.0	3.5	3.4	3.2	4.1
Kyrgyzstan	4.9	4.8	5.0	5.0	5.0	4.9
Madagascar	3.5	3.6	3.4	3.4	4.2	4.2
Panama	5.1	5.2	4.6	4.6	4.9	5.2
Peru	5.3	5.6	5.0	5.0	5.1	5.5
Rwanda	2.8	2.8	2.8	2.8	3.0	3.2
Senegal	3.4	3.5	3.0	3.2	3.5	3.6

Notes: (a) *Grade for age* is computed as average grade completed of children currently attending school at a given age; and (b) Ecuador: only urban areas.

Sources: Azerbaijan, CLS 2005; Burkina Faso, ENTE 2006; Colombia, GEIH 2007; Ecuador, ENEMDU 2009; Guatemala, ENCOVI 2006; Kyrgyzstan, NCLS 2007; Madagascar, ENTE 2007; Panama, ETI 2008; Peru, ETI 2007; Rwanda, NCLS 2008; and Senegal, ENTE 2005.

Table 6. **Average grade at age 12 years[a] by the time intensity of household chores [b] and country**

Country	Grade level					
	Children working in HH chores (total)	Children working less than 7 hours[a]	Children working at least 7 hours[a]	Children working at least 14 hours[a]	Children working at least 21 hours[a]	Children working at least 28 hours[a]
Azerbaijan	--	--	--	--	--	--
Burkina Faso	3.5	3.7	3.4	3.3	3.2	3.1
Colombia	5.2	5.2	5.2	5.2	5.1	5.1
Ecuador[1]	6.9	6.9	6.8	6.2	5.9	--
Guatemala[2],	3.9	4.2	3.8	3.7	3.7	3.7
Kyrgyzstan[6]	4.9	4.8	5.0	5.0	5.1	4.8
Madagascar	3.5	4.0	3.4	3.5	3.6	4.1
Panama[3]	5.1	5.2	5.1	5.0	4.9	--
Peru[2]	5.3	5.4	5.2	5.1	5.0	5.1
Rwanda	2.8	2.8	2.8	2.8	2.6	2.3
Senegal	3.4	3.6	3.4	3.3	3.3	3.1

Notes: (a) See Table 15; (b) Hours refer only to time spent in household chores; the relative impact of time spent on HH chores and time spent in employment is taken up in the section below; (1) Ecuador: only urban areas; (2) Guatemala, Peru: the following groups are considered: children worked in household chores yesterday: less than1 hour; at least 1 hour ; at least 2hours; at least 3 hours and at least 4 hours; (3) Panama: the following groups are considered: children work in household chores: less than1 daily hour; at least 1 daily hour; at least 1-2 daily hours; at least 3-4 daily hours and at least 5-6 daily hours.
Sources: Azerbaijan, CLS 2005; Burkina Faso, ENTE 2006; Colombia, GEIH 2007; Ecuador, ENEMDU 2009; Guatemala, ENCOVI 2006; Kyrgyzstan, NCLS 2007; Madagascar, ENTE 2007; Panama, ETI 2008; Peru, ETI 2007; Rwanda, NCLS 2008; and Senegal, ENTE 2005.

Schooling and working hours: a non-linear relation

43. Building on previous research efforts in this area undertaken by UCW,[17] and on the basis of descriptive evidence presented in the previous section, this section attempts to disentangle the relationship between working hours in household chores, on one hand, and children's ability to attend and persist in school, on the other. As many children performing unpaid household services also work in employment, the relative impact of time in household chores and time in employment on schooling is also addressed.

44. Disentangling the causal links between work and schooling is complicated by the fact that decisions relating to them are typically jointly determined. Decisions concerning allocations of children's time are also influenced by factors such as talent, family behaviour, and family preferences, not captured by survey data.

45. In the absence of panel data relating to children's household chores and employment, and of information to implement adequate econometric techniques, it will not be possible to assert strict causality between household chores and schooling outcomes. It will, however, be possible to examine in greater depth the association between work and school attendance, and to identify children at highest risk of leaving school.

[17] See, for example, Guarcello L. Lyon S. and Rosati F.R., *Towards Statistical Standards for Children's Non Economic Work: A Discussion based on Household Survey Data*, UCW Working Paper, May, 2005.

46. With this limitation in mind, below we investigate the relation between school attendance and working hours in household chores and in employment using MICS (Multiple Indicator Cluster Survey) and DHS (Demographic and Health Survey) surveys for a set of 44 countries.[18] The aims of the analysis are to determine the extent to which involvement in chores is compatible with education, and the existence of time thresholds beyond which involvement in household chores interferes with schooling.

47. It is likely that the effect of one additional working hour in chores will differ according to how much time a child has already spent performing chores. An extra hour of chores for a child who has only logged two total hours on chores in a given week, for example, is likely to have a different impact than an additional hour for a child who has already logged 30 hours performing chores. By the same token, it is likely that the effect of an additional hour of household chores at any given amount of hours spent on chores will differ according to how much time, if any, has been logged simultaneously on employment. With this in mind, we adopt a flexible specification that allows for differential effects of each hour spent performing chores and employment on school attendance.

48. Specifically, in order to assess the correlation between school attendance and working hours and the existence of time thresholds, we estimate the following equation on a sample of children between 7 and 14 years of age engaged either in household chores or in employment, or performing "double duty"[19]:

$$\boldsymbol{S_i = \alpha + X_i'\beta + \sum_{k=1}^{K}(\gamma_k C_{ik}) + \sum_{k=1}^{K}(\delta_k T_{ik}) + f_c + \epsilon_i} \qquad \textbf{(3)}$$

49. S_i indicates school attendance of child i, X_i is a vector of individual and household level characteristics including a second degree polynomial in age, gender, a dummy for being the eldest child, the number of children between 0 and 4 and between 5 and 14 years of age, household size, a dummy for children in female headed households, household head educational level, residence area, and quintile of household wealth. C_{ik} and T_{ik} capture the effect of working in chores and both in chores and in employment (total working hours), respectively. Precisely, C_{ik} is a dummy that takes value one if child *i* is engaged for *k* hours per week in household chores, and T_{ik} is a dummy that takes value one if child *i* is involved in employment and chores for a total of *k* hours per week, i.e. indicates the total number of working hours.

50. Since the total number of hours that a child works per week is the sum of the number of hours in chores and of the number of hours in employment, we do not include the number of hours in employment in order to identify the equation.

[18] The list of countries, surveys, and years is provided in the appendix (Table A2).

[19] We estimate a linear probability model of school attendance on working hours.

51. The term f_c identifies country fixed effects that capture differences in country cultural and institutional settings and that might affect the probability of a child attending school. We do not aim at identifying country-specific effects of working hours on the probability of school attendance.

52. Our goal is to show the existence, if any, of a non-linear relationship between working hours and school attendance by removing from the mean any country-specific effect.

53. The specification adopted implies that the difference in the impact of hours in chores and hours in employment is constant over the number of hours and independent of the number of hours worked and of their combination. This reflects the linear restriction on the number of hours in chores and in employment, in other words the fact that there are no interactions between the hours spent in the two activities.

54. We are aware that these are important restrictions but the estimation is complex and additional flexibility is not be allowed by the data at hand.

55. Our estimates are potentially subject to sample selection bias because we do not observe the number of hours worked for non-working children. The estimates are based on the subset of children engaged in at least one of the two activities, chores or employment, and children involved in both chores and employment. The sample of working children may not be a random sample of the population of 7 to 14 years old children. If the sample of working children has different unobservable characteristics with respect to the sample of children not performing any of the two activities, then our estimates cannot be extended to the population of all the 7-14 years old children and apply only to the subset of children who log some hours of work on household chore and/or on employment.

56. For example, parents might send to school only the kids who have a higher innate ability, who are more adapt to schooling, who are smarter, etc., while they might keep at home the others and engage them in household chores or send them to work outside the household. If this is the case, our estimate of the effect of working hours on the probability of attending school might be upward biased.

57. However, this is not a concern for us as we are interested in the relationship between hours and school attendance for the sample of working children and not on the potential impact of working hours on school attendance of all the 7-14 years old children.

58. Figure 7 and Figure 8 illustrate the marginal effect of hours in household chores and in employment, respectively, on school attendance. The effect is computed holding everything else equal, precisely holding constant the variables included in the regression. In order to have a better understanding of the marginal effects at different levels of working hours, we draw a line that interpolates the points on the grid (from 1 to 60 hours per week for visual purposes) by using a third degree polynomial.

59. We remind that $T_k = C_k + E_k$ with E_k indicating work in employment for *k* hours per week, then the marginal effect netted out of country-specific effects, can be computed simply by deriving Eq. (1) with respect to C_k and E_k as follows:

$$\boldsymbol{ME_{C_k} = \frac{\partial S_i}{\partial C_k} = \gamma_k + \delta_k} \quad \textbf{(4)}$$

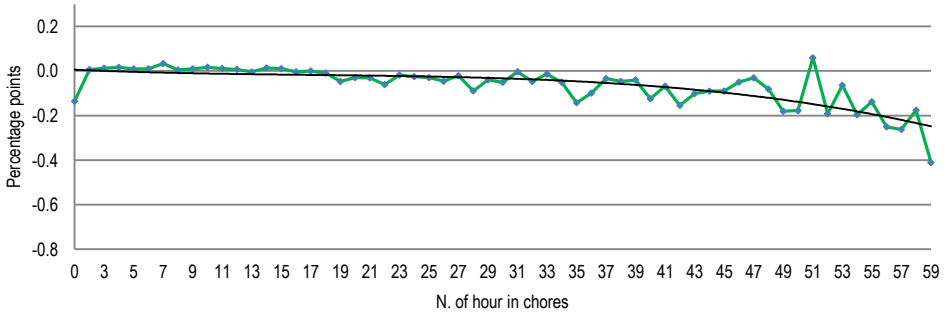
$$\boldsymbol{ME_{E_k} = \frac{\partial S_i}{\partial E_k} = \delta_k} \quad \textbf{(5)}$$

60. First, $\gamma_k \neq 0$ implies that the effect of C_k and E_k differs. Precisely, $\gamma_k < 0$ and $\delta_k > 0$ implies that $\frac{\partial S_i}{\partial C_k} < \frac{\partial S_i}{\partial E_k}$, in other words the effect on school attendance of working one additional hour in household chores is smaller than the effect of working one extra hour in employment. Vice versa, when $\gamma_k > 0$ and $\delta_k < 0$, the impact of working one extra hour in chores is larger relative to the impact of one extra hour in employment. If the two coefficients have the same sign, then the impact of one extra hour in chores is always larger relative to the impact of one additional hour in employment.

61. If we focus on the effect of working up to 20 weekly hours, i.e. the threshold at which the impact of chores hours turns negative), the coefficient γ_k is statistically different from zero: the marginal effect of working one additional hour in chores is statistically different from the marginal effect of working one additional hour in employment. The impact of working one additional hour in household chores is larger than the impact of working one additional hour in employment.

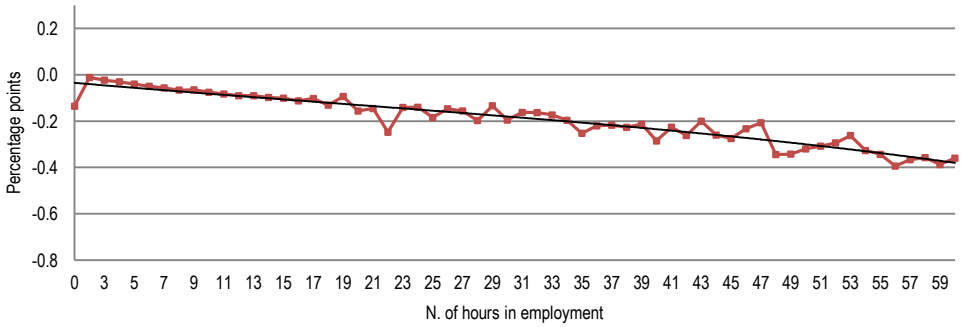
62. The marginal effects ME_{C_k} and ME_{E_k} express the difference in the probability of attending school for a child working *k* hours with respect to a child working 1 hour in chores and in employment, respectively. The difference in the marginal effects at *k* and *k-1* hours indicates the change in the probability of attending school due to an increase in one hour of work in chores or in employment. Note that this is conditional on *k*, in other words it takes into account the total amount of hours worked by the child.

Figure 7. **Average marginal effect of working hours in chores on the probability of attending school, 44 countries**



Source: UCW computations on SIMPOC and DHS data.

Figure 8. **Average marginal effect of working hours in employment on the probability of attending school, 44 countries**



Source: UCW computations on SIMPOC and DHS data.

63. We plot the estimated marginal effects of working in household chores and in employment in Figure 7 and Figure 8[20]. Each point in Figure 7 shows the marginal effect of working *k* hours in chores (up to 60 hours of work), which can be read on the horizontal axis, for a child engaged zero hours in employment on the probability of attending school. The interpolating line, which shows black in the plot, indicates that the marginal effects is zero up to about 20 weekly hours in household chores, and it starts increasing (in absolute value) thereafter. On the contrary, the marginal impact of being in employment on the probability of attending school for a child engaged zero hours in chores is negative starting from 2 hours per week (Figure 8).

64. Being engaged in employment decreases the probability of attending school from the first hour of work and the effect becomes increasingly larger with the number of hours worked. Our findings also support the existence of a threshold beyond which household chores have an increasingly negative effect on children's school attendance. In fact, the

[20] In order to net out the estimated impact of our reference country in the regression, we rescale the intercept by subtracting the average of the country fixed effects from the constant term.

marginal effect appears to be smooth up to about 20 hours per week, and it increases thereafter.

Additional task-specific and causal evidence of working hours on school attendance for four countries

65. This section presents additional evidence on the relation between working hours and school attendance from a sub-set of four countries: Liberia (2010), Guatemala (2006), Mexico (2005-2010), and Nicaragua (2001/2005)[21]. In the case of the first two countries we have cross-sectional data and detailed information on chore tasks, whereas in the case of Mexico the availability of a rotating panel allows us to investigate the short-term relationship between work intensity and school attendance by taking into account individual heterogeneity. In the case of Nicaragua, a second round of the reference survey, conducted four years after the first in 2001, allows investigation of the long-term effect of work intensity on school attendance and performance.

66. Figure A8, Figure A9 and Figure A10 in Appendix A illustrate school attendance rates by hours spent in household chores and in employment for Guatemala, Liberia, and Mexico, respectively. In all three, school attendance drops appreciably with the number of hours spent in both employment and in household chores.

67. In the case of Nicaragua we can look at the long-term effect of chores and employment on school attendance. Figure A11 in Appendix A illustrates school attendance in 2005 by hours spent performing chores and employment four years earlier, for the sample of children attending school in the first round and re-interviewed in the second round.[22] We observe that children who worked longer hours in chores in 2001 have a lower school attendance four years later. The breakout by time intensity in employment is less clear-cut possibly because these children are between 11 and 18 years old in 2005 and therefore they are more likely to have transited out of school regardless of the time spent working four years earlier.

68. In the case of Liberia and Guatemala, we estimate a set of logistic regressions to investigate the correlation between the probability of attending school and the number of hours worked by children between 7 and 14 years of age in different activities: chores only, chore task, chores and employment, and employment only.

69. Controlling for a number of individual and household level characteristics including a second degree polynomial of age, a dummy for being the eldest child, number of children below 4 years of age[23] and

[21] Data for Liberia are from the 2010 Labor Force Survey (LFS), data for Guatemala are from the 2006 Living Standard Measurement Survey (LSMS), data for Mexico are from the 2005-2010 labour force survey (ENOE), and data for Nicaragua are from the 2001 and 2005 Living Standard Measurement Survey (LSMS).

[22] Refers to children aged 7-14 attending school during the first (2001) survey round.

[23] Not available in the case of Liberia.

between 5 and 14, household size, a dummy for households with a female head, household head educational level, location of residence (a dummy for children in urban areas), a dummy for children belonging to a poor household[24], multivariate regressions of school attendance and working hours provide further and more robust evidence of the negative relationship between time spent in chores (also by chore tasks) and employment and the likelihood of attending school.

70. In Guatemala, working one additional hour in household chores decreases the probability of attending school by about 0.4 percentage points (Table 7). The effect is differentiated by chore task: one additional hour in preparing meals for the household decreases the probability of attending school by 8.5 percentage points, the same probability drops by 2.1, 6.7, and 3.1 percentage points in the case of one additional hour in shopping, washing, and other chores, respectively.

71. In the case of Liberia, we do not find any significant effect of working hours for the subset of children performing chores only. The analysis by chore task also does not show any significant effect with the exception of repairing. The probability of attending school decreases by one percentage point as children dedicate one extra hour to this task (Table 8).

Table 7. **Household chores and school attendance, children aged 7-14 years, GUATEMALA 2006**

Explanatory variables[(a)]	HH chores only		Cooking		Shopping		Washing		Other chores	
	M.E.	t-stat	M.E.	t-stat	M.E.	t-stat	M.E.	t-stat	M.E.	t-stat
Female	-0.008	-0.56	-0.004	-0.09	0.031	1.63	-0.003	-0.05	0.033	1.84
Head educational level										
Primary	0.058	4.31	0.102	5.23	0.104	4.17	0.085	3.25	0.091	5.68
Lower secondary	0.085	2.64	0.161	3.35	0.139	3.13	0.196	2.63	0.136	3.69
Upper secondary and above	-	-	-	-	-	-	-	-	0.480	3.81
No. hours in chores	**-0.004**	-12.22	**-0.085**	-11.25	**-0.021**	-2.55	**-0.067**	-3.33	**-0.031**	-5.93

Notes: Logit regression of the probability of attending school; (a) Additional control variables include a second degree polynomial of age, a dummy for being the eldest child, number of children below 4 years of age and between 5 and 14, household size, a dummy for households with a female head, location of residence (urban vs. rural), a dummy for belonging to a poor household.
Source: UCW calculations based on Guatemala LSMS, 2006.

[24] See footnote 23.

Table 8. **Household chores and school attendance, children aged 7-14 years, LIBERIA 2010**

Explanatory variables[(a)]	HH chores only		Cooking		Cleaning		Repairing		Caring for old, sick, and infirm		Looking after children		Shopping	
	M.E.	t-stat	M.E.	t-stat	M.E.	t-stat	M.E.	t-stat	M.E.	t-stat	M.E.	t-stat	M.E.	t-stat
Female	0.020	1.14	0.027	0.97	0.008	0.52	0.065	1.24	-0.002	-0.03	0.001	0.02	0.035	1.1
Head educ. level														
Primary	0.039	1.43	0.102	2.21	0.049	1.86	0.168	2.47	0.161	1.34	0.075	1.11	0.071	1.31
Middle	0.048	1.75	0.052	1.18	0.045	1.43	0.189	1.79	-0.112	-1.32	0.014	0.22	0.106	1.71
Sr. secondary	0.130	4.71	0.153	3.73	0.134	5.19	0.184	2.36	0.209	2.19	0.216	3.57	0.103	2.28
Higher than secondary	0.243	4.33	0.371	3.09	0.284	4.44	0		0.222	1.12	0.317	1.96	0.340	2.27
No. hours in chores	**-0.001**	-0.96	**-0.005**	-1.01	**-0.002**	-0.86	**-0.01**	-1.68	**0.007**	0.82	**-0.001**	-0.23	**0.005**	1.12

Note: : Logit regression of the probability of attending school; (a) Additional control variables include a second degree polynomial of age, a dummy for being the eldest child, number of children between 5 and 14, household size, a dummy for households with a female head, location of residence (urban vs. rural).
Source: UCW calculations based on Liberia LFS, 2010

72. Table 9 shows the effect of work intensity separately for employment and household chores among children who are engaged in both employment and chores in Guatemala. We find that working hours in employment compromise school attendance significantly more than hours in household chores (-1 vs. -0.5 percentage points). The effect of employment is slightly higher among children engaged in employment only: the probability of attending school drops by 1.2 percentage points for each additional hour in employment for this group (Table 10).

Table 9. **Household chores and employment and school attendance, children aged 7-14 years, GUATEMALA 2006**

Explanatory variables[(a)]	Chores and employment	
	M.E.	t-stat
Female	0.011	0.38
Head educational level		
Primary	0.105	3.53
Lower secondary	0.197	2.79
Upper secondary and above	0.437	3.66
N. hours in chores	**-0.005**	-4.66
N. hours in employment	**-0.010**	-14.19

Note: Logit regression of the probability of attending school; (a) Additional control variables include a second degree polynomial of age, a dummy for being the eldest child, number of children below 4 years of age and between 5 and 14, household size, a dummy for households with a female head, location of residence (urban vs. rural), a dummy for belonging to a poor household.
Source: UCW calculations based on Guatemala LSMS, 2006.

Table 10. **Employment and school attendance, children aged 7-14 years, GUATEMALA 2006**

Explanatory variables[(a)]	Employment	
	M.E.	t-stat
Female	0.009	0.24
Head educational level		
Primary	0.016	0.61
Lower secondary	0.208	2.69
N. hours in employment	**-0.012**	-19.58

Notes: Logit regression of the probability of attending school; (a) Additional control variables include a second degree polynomial of age, a dummy for being the eldest child, number of children below 4 years of age and between 5 and 14, household size, a dummy for households with a female head, location of residence (urban vs. rural), a dummy for belonging to a poor household. Reference category: no education/pre-primary education.
Source: UCW calculations based on Guatemala LSMS, 2006.

73. In the case of Liberia, for the subset of children engaged in both employment and chores, the effect of one additional hour in employment on attendance is -0.08 percentage points, whereas we do not find a statistically significant effect of chores hours on the probability of attending school (Table 11). The impact of one additional hour of work in employment on school attendance is -0.09 percentage points on the subset of children involved only in employment (Table 12).

Table 11. **Household chores and employment and school attendance, children aged 7-14 years, LIBERIA 2010**

Explanatory variables[(a)]	Chores and employment	
	M.E.	t-stat
Female	-0.012	-0.38
Head educational level		
Primary	0.130	1.8
Middle	-0.006	-0.1
Senior secondary	0.105	1.97
N. hours in chores	**0.002**	0.81
N. hours in employment	**-0.008**	-5.5

Note: Logit regression of the probability of attending school. Additional control include a second degree polynomial of age, a dummy for being the eldest child, number of children between 5 and 14, household size, a dummy for households with a female head, location of residence (urban vs. rural). Reference category: no education.
Source: UCW calculations based on Liberia, 2010.

Table 12. **Employment and school attendance, children aged 7-14 years, LIBERIA 2010**

Explanatory variables[(a)]	Employment	
	M.E.	t-stat
Female	-0.107	-1.16
Head educational level		
Primary	0.200	2.67
Middle	0.025	0.2
Senior secondary	0.244	2.13
N. hours in employment	**-0.009**	-4.6

Notes: Logit regression of the probability of attending school; (a) Additional control variables include a second degree polynomial of age, a dummy for being the eldest child, number of children between 5 and 14, household size, a dummy for households with a female head, location of residence (urban vs. rural). Reference category: no education.
Source: UCW calculations based on Liberia, 2010.

74. We now turn to the case of Mexico and Nicaragua where the availability of panel data allow us to investigate the effect of working hours on school attendance by exploiting the fact that the information about the number of working hours is predetermined.

75. Child labour and school attendance are usually the result of a joint decision that is also influenced by unobserved factors such as individual ability, family behaviour and preferences. This means that it is difficult to know the direction of the effect: for example, whether it is low individual ability that induce children to drop out of school and start to work, or whether it is family preference or lack of economic resources.

76. In the case of Mexico, the availability of quarterly panel data[25] allows us to investigate the effect of intensity of employment and household chores on school attendance controlling for individual level heterogeneity. We estimate a dynamic random effects logit model separately on a sample of males and females[26] aged between 12 and 17 years[27] controlling for a number of individual and household level characteristics including a second degree polynomial of age, a dummy for being the eldest child, the number of children below 4 years of age and between 5 and 14, the number of individuals aged 65 and above, household size, a dummy for children belonging to a female-headed household, a dummy for children in urban areas, household labour income quintiles. In order to investigate the effect of work intensity on school attendance at a one-year distance, we keep the first and the last interview of the sample of children re-interviewed four times.

77. Our estimates suggest that in Mexico there is considerable state dependence in education, in other words children in education at time *t* are likely to be found in education after 1 year (4 quarters) (Table 13). We also find that children engaged in employment and/or in household chores have a lower likelihood of attending school the next year.

[25] Individuals are interviewed four times after the first interview if they are found in the same dwelling. We restrict the analysis to the sample of children interviewed 5 times.

[26] The large sample size of the labour force surveys allows us to run regressions separately for males and females.

[27] No panel data is available for kids below 12 years of age.

Table 13. **Dynamic random effects logistic estimates of correlates of school attendance, children aged 12-17 years, Mexico 2005-2011**

Explanatory variables[a]	Male		Female	
	M.E.	t-stat	M.E.	t-stat
Attendance at t-4	0.059	14.48	0.061	14.11
N. hours in employment at t-4	-0.021	-7.92	-0.018	-5.99
N. hours in chores at t-4	-0.002	-0.47	-0.024	-7.5
Head education				
Primary	0.358	3.29	0.353	3.59
Lower secondary	1.011	7.34	0.831	6.73
Upper secondary and above	1.950	10.4	1.813	10.35
Missing	-0.750	-0.57	-0.284	-0.3
Spouse education				
Primary	0.321	3.14	0.473	4.99
Lower secondary	0.883	6.8	1.069	8.33
Upper secondary and above	1.790	9.82	2.093	10.99
Missing	3.423	1.28	-1.062	-1.01
Test: working hours t-1=chores hours t-1	chi2(1) =13.58		chi2(1) =3.01	

Note: (a) Additional control variables include a second degree polynomial of age, a dummy for being the eldest child, number of children below 4 years of age and between 5 and 14,number of individuals aged 65 and above, household size, a dummy for households with a female head, location of residence (urban vs. rural), household labour income quintiles.
Source: UCW computations based on Mexico ENOE, 2005-11.

78. The probability of attending school decreases by about two percentage points if children work one additional hour in employment, and it is similar among males and females. Being involved in one extra hour in household chores diminishes the probability of a child attending school by some 2.4 percentage points among females, whereas the effect is not significant among males. The difference between the effect of hours in employment and hours in chores on school attendance is statistically significant for males.

Table 14. **School attendance and highest grade obtained and time intensity of employment and chores, children aged 7-14 years, NICARAGUA**

Explanatory variables[a]	**School attendance**		**Highest grade obtained**	
	Employment	Chores	Employment	Chores
Male	-0.0973	-0.0644 ***	-0.0244	-0.3420 ***
Highest grade in 2001	0.0230	0.0324 ***	0.1860 **	0.1200 ***
N. hours in employment	**0.0023**		**-0.0084**	
Head years of education	-0.0039	0.0154 ***	0.0103	0.0323 ***
Spouse years of education	0.0184	0.0028	0.0307	0.0350 ***
N. hours in chores		**0.0000**		**-0.0062** **
Constant	0.7940	0.9500 ***	-3.9100	-4.3700 ***

Notes: OLS regression; (a) Additional control include a second degree polynomial of age, a dummy for being the eldest child, number of children below 6 years of age and between 7 and 15, number of individuals aged 65 and above, household size, location of residence (urban vs. rural),region fixed effects, a dummy for poor households.
Source: UCW calculations based on Nicaragua LSMS, 2001 and 2005.

79. In the case of Nicaragua (Table 14), we are able to look at the long-run effect of work intensity on two schooling outcomes, namely attendance and highest grade obtained, using a sample of children aged between 7 and 14 years of age in the first round, who attended school in 2001 and were re-interviewed in 2005.[28] We identify a negative correlation between hours in household chores and highest grade obtained, and we do not find a statistically significant effect on school attendance. An additional hour in household chores decreases the highest grade by 0.06 points.

6. HOUSEHOLD CHORES AND HEALTH

80. The limited literature on the health impact of children's household chores is inconclusive. A six-country study based on reported illness and Body Mass Index (BMI) found that children spending at least four hours daily on household chores were not worse-off health-wise than children without chores responsibilities, and that children spending more time on chores actually appeared better-off health-wise than children for whom household chores constitute only a relatively small time burden.[29] Another multi-country study based on more robust econometric evidence failed to demonstrate any clear relationship between hours in household chores and children's health status.[30] Econometric analysis based on datasets for two countries (Nicaragua and Guatemala) undertaken as part of the current study also found no significant link between chores and children's health.

81. Can it be concluded then that household chores are benign, or even beneficial, in terms of their health impact on children? In a context in which the alternative to chores is participation in hazardous or unhealthy forms of work in employment, this may indeed be the case. Intensive involvement in household chores, in other words, might serve to protect children from hazardous work in some contexts. Children's involvement in chores may also yield a positive income effect. By freeing the time of an adult for productive work, children performing household chores might contribute to a higher level of household income. Higher income, in turn, might lead to better levels of nutrition and care, and ultimately to better health.

82. But in many other circumstances the health impact of intensive involvement in household chores is undoubtedly negative. Long hours spent daily on strenuous tasks such as fetching water or collecting firewood can take a significant toll on children's developing bodies. Epidemiological data on domestic accidents from industrialised countries also indicate that

[28] We restrict the analysis to children attending school in the first round because if children not in school in 2001 were included, we would need to include school attendance in the equation of interest, which would generate identification issues (Beegle et al., 2009).

[29] Francavilla F. and Lyon S., *Household chores and child health: preliminary evidence from six countries.* UCW Programme working paper, Florence, 2003.

[30] Guarcello L., Lyon S., Rosati F.C. and Valdivia C. *Towards statistical standards for children's non economic work: a discussion based on household survey data.* Rome, May 2005.

common chores such as cooking and cleaning are often associated with high injury rates (e.g. burns from stoves or spilling hot liquids, cuts from sharp utensils, eye injury from exposure to cleaning chemicals, etc.), and that children are among the groups at especially high risk of such injuries.[31] The incidence and severity of children's domestic accidents are often more serious in developing countries because of more hazardous technologies (e.g. open cooking fire instead of stove), inadequate safety measures, lower levels of awareness and poorer emergency services.

83. As seen in the previous sections of this report, intensive involvement in household chores also limits children's ability to participate in and benefit from education, indirectly affecting their health. Studies show that less education persons are generally less informed about the facts that influence their health, less able to interpret medical instructions and more reluctant to go to the doctor. Loss of educational opportunities can also have an indirect negative influence on health outcomes by limiting human capital formation and lifetime income levels.

84. It is probable, therefore, that the inconclusive results concerning the health impact of children's household chores are in large part a product of shortcomings in the measurement of the health-chores relationship. The common measures used for child health, e.g., reported illness/injury and Body Mass Index, do not, for example, capture the dynamic nature of the chores-health link. Current health is affected by both the household chores performed in the present and in the past, and current household chores affect future as well as present health. Studies suggest that the health effects of involvement in employment show up only in the medium or long term, and this may also be the case with household chores.[32]

85. These simple measures also fail to account for the potential endogeneity of household chores to health outcomes. If individuals born with a predisposition to poor health are also those who are most likely to be engage in household chores as a child, the correlation between chores and health will overstate the impact of the former on the latter. But if, on the other hand, healthy individuals are selected into household chores at a young age, a more plausible scenario, the true health impact of chores will be understated.

86. In sum, the relationship between household chores and health is complex, and difficult to disentangle empirically on the basis of data currently available in developing countries. Determining the extent to which household chores compromise children's health requires new research tools and study methodologies, which account for the dynamic nature of the health-chores link, and correct for the potential endogeneity of chores involvement to health outcomes.

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[31] See, for example, "Preventing children accidents and improving home safety in the European region. Identifying means to make dwellings safer." Report of a WHO expert meeting, Bonn May 30-31 2005, By/Edited by: WHO European Centre for Environment and Health, Bonn Office.

[32] See, for example, Rosati and Straub (2004).

7. CONCLUSIONS

87. This study analyses the impact of unpaid household services, a form of work that lies outside the production boundary of the System of National Accounts (i.e. a form of work that is non-economic in nature), and that has to date been excluded from most published estimates of child labour. Using evidence for children across a broad range of developing countries, we show how children's household chores are differentiated by gender, how they interact with children's employment, how they are correlated with early marriage and, most importantly, how household chores impact on children's schooling and health.

88. We observe a large variation across our sample of 65 developing countries where data are available in terms of children's involvement in household chores but in no country, however, is the proportion of children performing chores less than 30 percent. While children's involvement in chores is therefore *extensive*, it is generally not similarly *intensive*. In only a few countries do children perform chores for an average of at least 14 hours per week, the suggested ICLS measurement threshold for distinguishing "light" work in employment, and in no country do chores account for an average of 28 hours per week, the threshold used in some publications for including household chores as child labour.

89. The involvement of female children in household chores is generally both more extensive and more intensive than that of male children. In other words, more girls typically spend more time performing chores each week than boys. This is undoubtedly a reflection of the fact that domestic responsibilities tend to fall more within the traditional roles of females in most societies. More robust econometric evidence also underscores the importance of gender as a determinant of the extent of children's involvement in chores. The implications of this pattern for child labour measurement are clear – excluding household chores from consideration as child labour understates girls' involvement in child labour relative to boys.

90. Children performing "double duty", i.e., both chores and employment simultaneously, face tighter time constraints, and therefore can be at higher risk of repeating grades or dropping out of school. The share of children engaged in both household chores and employment is lower than the share of children performing only chores in most countries, but rates of double duty are nonetheless frequently very high. Particularly striking in this context is the Sub-Saharan Africa (SSA) region, where double duty rates exceed 25 percent in most of the countries considered.

91. For girls in some cultures, household chores can be linked to one of the most serious violations of their rights as children – early marriage. Girls aged 12-17 years performing chores are more likely to be married than their peers not performing chores. The positive correlation between involvement in household chores and early marriage is even stronger when the time intensity of chores is taken into account. While there is no clear

pattern across countries between early marriage and limited involvement in chores (i.e., less than seven hours per week), more time-intensive involvement in chores is consistently associated with greater risk of early marriage.

92. Intensive involvement in household chores adversely affects children's ability to attend school. Econometric evidence based on data from 44 countries indicates that the negative effect on the probability of school attendance is small and constant up to about 20 weekly hours in household chores, and starts increasing thereafter. By contrast, the likelihood of attending school for children working in employment drops immediately from the first hour of work. These results reflect average impacts netted out of country-specific effects and therefore should be interpreted in this light. The 20 weekly hours threshold nonetheless provides a useful possible guide in the identification of hazardous household chores for the purposes of child labour measurement.

93. The limited evidence on the health impact of children's household chores is inconclusive. A number of studies have failed to demonstrate a clear negative link between chores and health.[33] It is probable, however, that the inconclusive results concerning the health impact of children's household chores are in large part a product of measurement issues –the relationship between household chores and health is complex, and difficult to disentangle empirically on the basis of data currently available in developing countries. Determining the extent to which household chores compromise children's health requires new research tools and study methodologies, which account for the dynamic nature of the health-chores link, and correct for the potential endogeneity of chores involvement to health outcomes.

94. Returning to the broader question of household chores in child labour measurement, the resolution on child labour statistics from the 18th International Conference of Labour Statisticians (ICLS) includes for the first time children in hazardous "unpaid household services", or hazardous household chores, as part of the group of children engaged in child labour for the purposes of *statistical measurement*.[34] But as with other forms of children's production, decisions as to if and what children's household chores should be considered as child labour in *legal terms* rests with national authorities. In order to inform such decisions, it is worth extending national statistical programmes on child labour to include the common household chores performed by children.

[33] See, for example, Francavilla F. and Lyon S., *Household chores and child health: preliminary evidence from six countries.* UCW Programme working paper, Florence, 2003 and Guarcello L., Lyon S., Rosati F.C. and Valdivia C. *Towards statistical standards for children's non economic work: a discussion based on household survey data.* Rome, May 2005.

[34] When the general production boundary is used as the measurement framework. See *Report of the Conference*, 18th ICLS (ICLS/18/2008/IV), page 58, paragraph 15.

95. National statistical programmes should in particular collect information on the *nature*, *circumstances* and *impact* of children's household chores, as explained further below.

96. **Nature of work.** Information on work tasks and activities is especially relevant in the context of non-economic production because this work takes place outside of the formal measured economy and beyond the framework of standard industrial and occupational classifications. Many statistical programmes currently collect information on household chores as an aggregate category and therefore offer no information about the specific types of chores children perform or the time spent performing them.

97. Clearly distinguishing children's non-market production falling within the SNA production boundary (i.e., economic production) and household chores falling outside this boundary is also important for national statistical programmes on child labour. Although the dividing line is often thin, many common forms of children's non-market production (e.g., own-account water collection, fetching fuel wood, flour milling, bottling, dressmaking and tailoring, production of baskets and mats, and the preservation of meat and fish, etc.) technically fall within the SNA production boundary, and therefore are economic in nature. But most statistical programmes currently only collect partial information on these non-market production activities, or collect this information as part of a separate aggregate category on household chores containing production activities on both sides of the SNA production boundary.

98. Circumstances of work. Statistics on work circumstances associated with different chores are especially needed for the identification of hazardous forms of household chores. Again, the ICLS resolution defines hazardous household chores only in general terms, as unpaid household services "performed for (a) for long hours, (b) in an unhealthy environment, involving unsafe equipment or heavy loads, (c) in dangerous locations, and so on", leaving the onus on national statistical programmes to collect detailed information on work circumstances in order to inform the decisions of national authorities concerning what forms of household chores are hazardous.

99. Detailed information on working hours is particularly important in this context. As seen in the previous sections of this report, long working hours are associated with lower levels of school attendance, and, among girls, with higher levels of early marriage. National statistical programmes should collect information on time allocated to household chores generally, and to the time allocated to each specific chore type. This information will in turn facilitate the identification of country-specific hours thresholds beyond which household chores should be classified as child labour (see also below).

100. **Harmfulness of work**. Information on harm to children caused by household chores is needed to inform the determination of hazardous forms of chores. Measuring educational impact is especially relevant in light of

the ICLS resolution, which states that child's education should be considered when determining what constitutes "long hours" as a threshold for classifying household chores as child labour. This paper presented evidence of what could be a possible global hours threshold for the purposes of cross-country comparisons, but more detailed information is needed on the local education impact of chores for identifying the most appropriate threshold in each country.

101. Numerous standard education indicators (e.g., rate of late entry, attendance rate, repetition rate, drop-out rate, and educational attainment) can be used to provide insight into the impact of household chores on children's ability to enrol and survive in the school system. More specialised indicators from school-based surveys can provide further information on the special challenges faced by working students (e.g., attendance regularity; rate of tardiness; test scores; homework completion; and after-hours study).

102. As noted above, there is currently almost no information outside the industrialised world on the possible health impact of household chores, or, more specifically, of links between chores and domestic accidents. National statistical programmes should also look at beginning to addressing this important information gap.

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ANNEX A. STATISTICAL APPENDIX

Table A1. **List of countries**

Region	Abbreviation	Country
E. Asia and Pacific	LAO	Lao PDR
	THA	Thailand
	VTM	Vietnam
	ETR	East Timor[b]
South Asia	IND	India
	BAN	Bangladesh
Sub Saharan Africa	BKF	Burkina Faso
	BUR	Burundi
	CAM	Cameroon
	CAR	Central African Republic
	CHA	Chad
	CON	Congo
	CDI	Cote d'Ivore
	DJI	Djibouti
	ETH	Ethiopia
	GAM	Gambia
	GHA	Ghana
	GBS	Guinea Bissau
	LIB	Liberia
	MAD	Madagascar
	MLW	Malawi
	MLI	Mali
	NIG	Niger
	NGA	Nigeria
	MAU	Mauritania
	RWA	Rwanda
	SEN	Senegal
	SLN	Sierra Leone
	SOM	Somalia
	TGO	Togo
	UGA	Uganda
	ZAM	Zambia
Latin America and the Caribbean	ARG	Argentina
	BRA	Brazil
	COL	Colombia
	CRA	Costa Rica[a]
	ECU	Ecuador[3]
	GUA	Guatemala
	GUY	Guyana
	HAI	Haiti
	JAM	Jamaica
	PAN	Panama
	PAR	Paraguay
	PER	Peru
	MEX	Mexico[a]
	SUR	Suriname
	TAT	Trinidad and Tobago

Table A1. **List of countries**

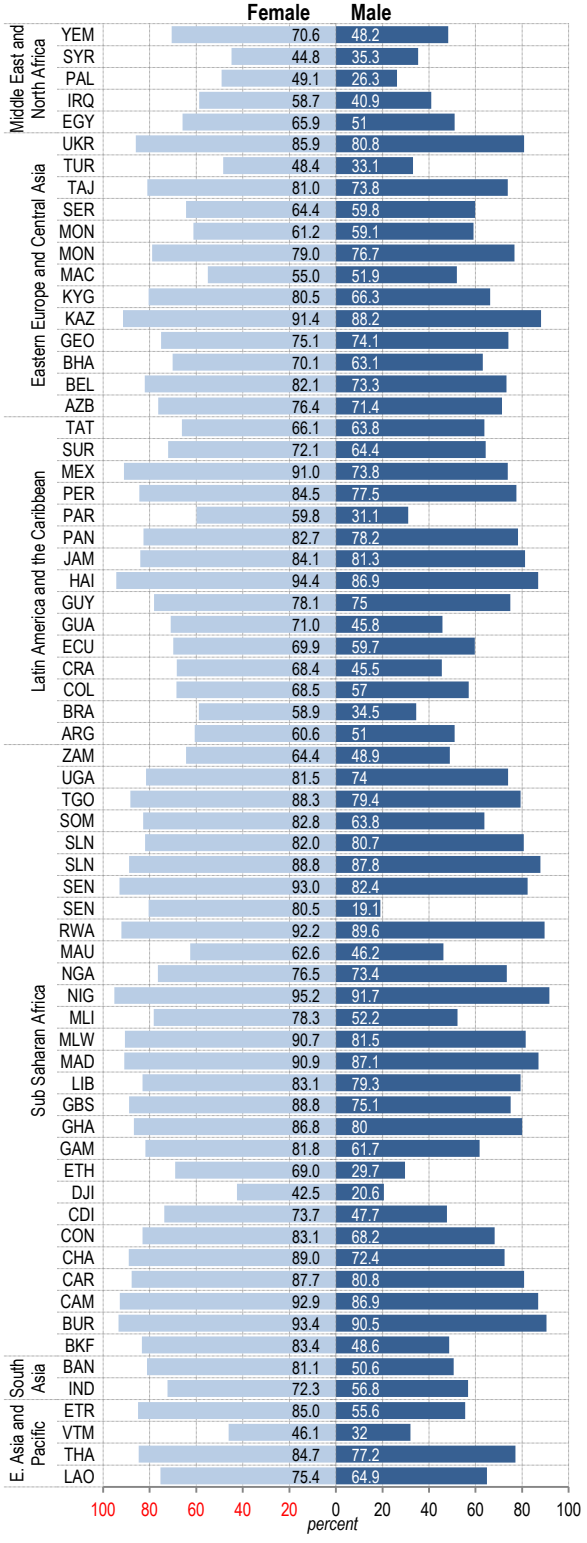
Region	Abbreviation	Country
Eastern Europe and Central Asia	AZB	Azerbaijan
	BHA	Bosnia Herzegovina
	BEL	Belarus
	GEO	Georgia
	KAZ	Kazakhstan
	KYG	Kyrgyzstan
	MAC	Macedonia
	MGA	Mongolia
	MON	Montenegro
	SER	Serbia
	TAJ	Tajikistan
	TUR	Turkey[c]
	UKR	Ukraine
Middle East and North Africa	EGY	Egypt
	IRQ	Iraq
	PAL	Palestinian Refugee Camps, Lebanon
	SYR	Syrian Arab Republic
	YEM	Yemen

Table A2. **List of countries used in the analysis of school attendance and working hours, and gender specialization**

Country	Survey	Year	School attendance analysis	Gender analysis
Bangladesh	MICS	2006	Y	Y
Belarus	MICS	2005	Y	N
BosniaHerzegovina	MICS	2006	Y	N
Burundi	MICS	2005	Y	Y
Cameroon	MICS	2006	Y	Y
Central African Republic	MICS	2006	Y	Y
Chad	DHS	2004	Y	Y
Congo	DHS	2007	Y	Y
Cote d'Ivoire	MICS	2006	Y	Y
Djibouti	MICS	2006	Y	N
Egypt	DHS	2005	Y	Y
Gambia	MICS	2005	Y	Y
Georgia	MICS	2006	Y	N
Ghana	MICS	2006	Y	Y
Guinea Bissau	MICS	2006	Y	Y
Guyana	MICS	2006	Y	N
Haiti	DHS	2005	Y	Y
India	DHS	2005	Y	Y
Iraq	MICS	2006	Y	N
Jamaica	MICS	2005	Y	N
Kazakhstan	MICS	2006	Y	N
Lao PDR	MICS	2006	Y	Y
Liberia	DHS	2007	Y	Y
Macedonia	MICS	2005	Y	Y
Malawi	MICS	2006	Y	Y
Mali	DHS	2006	Y	Y
Mauritania	MICS	2007	Y	Y
Mongolia	MICS	2005	Y	Y
Montenegro	MICS	2005	Y	N
Niger	DHS	2006	Y	Y
Nigeria	MICS	2007	Y	Y
Palestinian Refugee Camps, Lebanon	MICS	2006	Y	Y
Senegal	DHS	2005	Y	Y
Serbia	MICS	2005	Y	N
Sierra Leone	MICS	2008	Y	Y
Somalia	MICS	2006	Y	Y
Suriname	MICS	2006	Y	Y
Syrian Arab Republic	MICS	2006	Y	Y
Tajikistan	MICS	2005	Y	Y
Thailand	MICS	2005	Y	Y
Togo	MICS	2006	Y	Y
Trinidad and Tobago	MICS	2006	Y	N
Ukraine	MICS	2005	Y	N
Yemen	MICS	2006	Y	Y

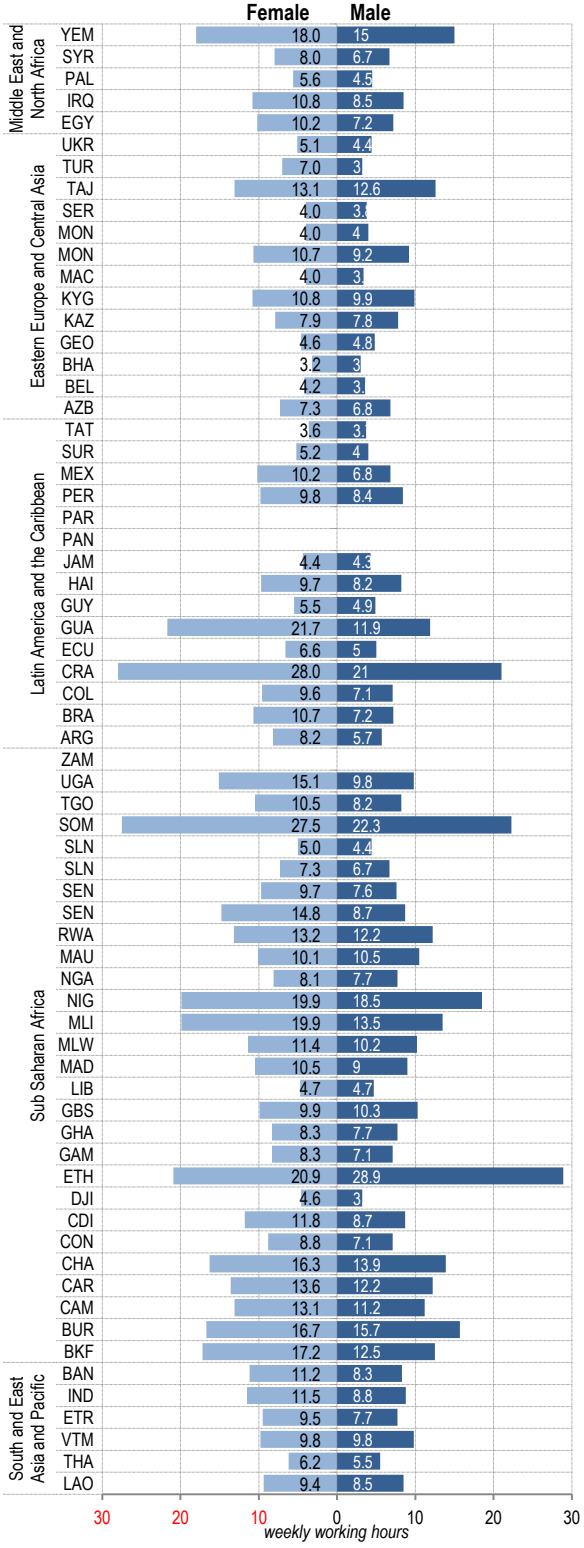
Y=Yes, N=No

Figure A1. **Involvement in unpaid household services, 7-14 years age group,[a] most recent year, by sex and country,[b]**



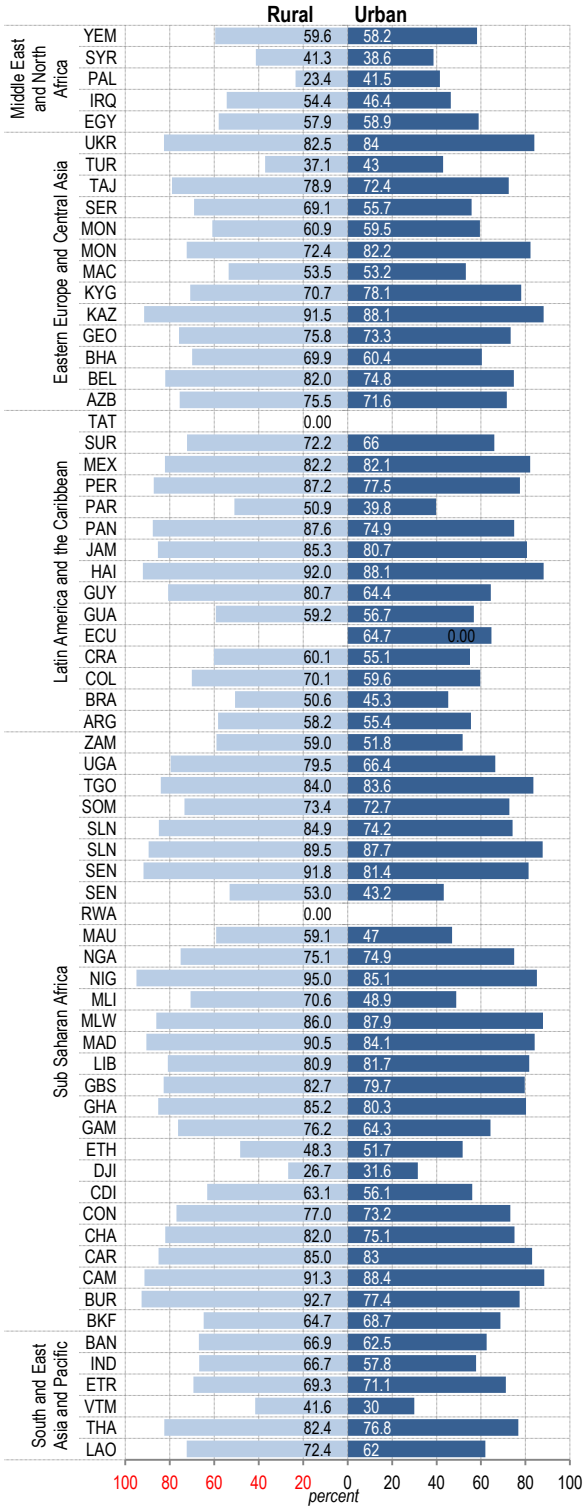
Notes: (a) Reference age group is 12-14 years in CRA, MEX, 10-14 years in ETR, MLI and 6-14 years in TUR; only urban areas in ECU. (b) Full country names and reference years provided in Annex Table A1.
Source: UCW calculations national household surveys (See Annex Table A1).

Figure A2. **Average weekly hours[a] spent on unpaid household services, 7-14 years age group,[b] most recent year, by sex and country,[c]**



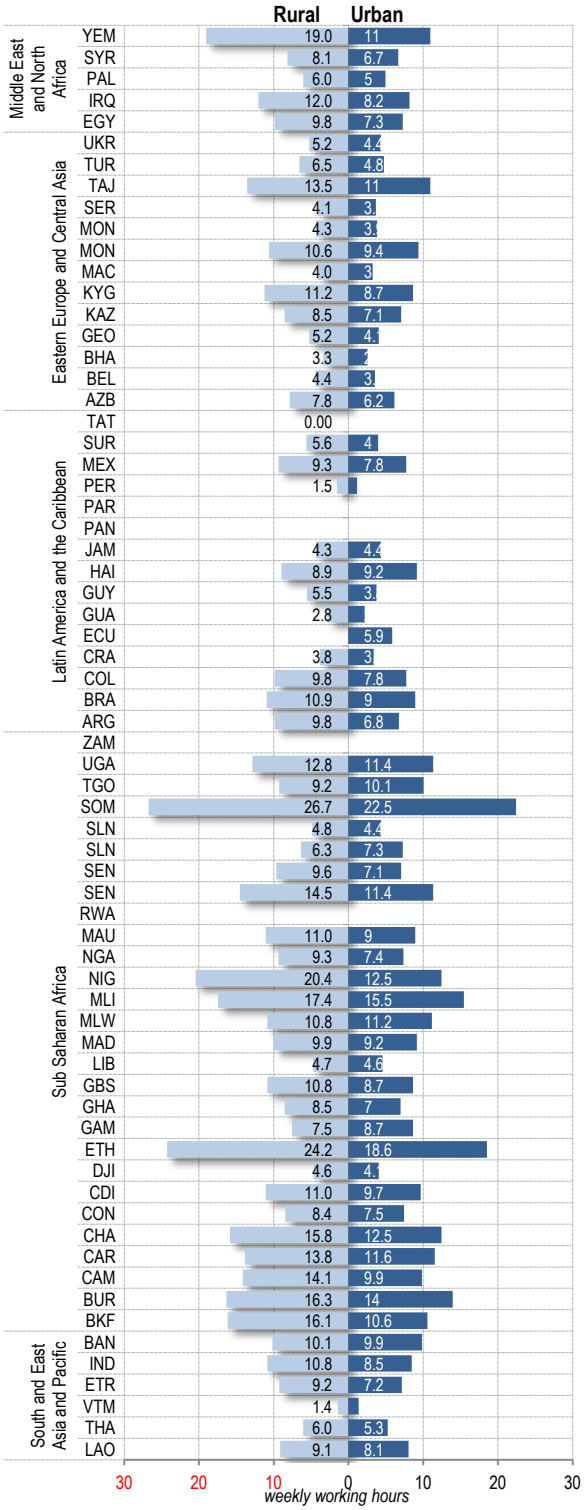
Notes: (a) Information on daily hours collected in survey were multiplied by seven in CRA, GUA, PER, and VTM; (b) Reference age group is 12-14 years in CRA, MEX, 10-14 years in ETR, MLI and 6-14 years in TUR; only urban areas in ECU. (c) Full country names and reference years provided in Annex Table A1.
Source: UCW calculations national household surveys (See Annex Table A1).

Figure A3. **Involvement in unpaid household services, 7-14 years age group,[a] most recent year, by residence and country,[b]**



Notes: (a) Reference age group is 12-14 years in CRA, MEX, 10-14 years in ETR, MLI and 6-14 years in TUR; only urban areas in ECU. (b) Full country names and reference years provided in Annex Table A1.
Source: UCW calculations national household surveys (See Annex Table A1).

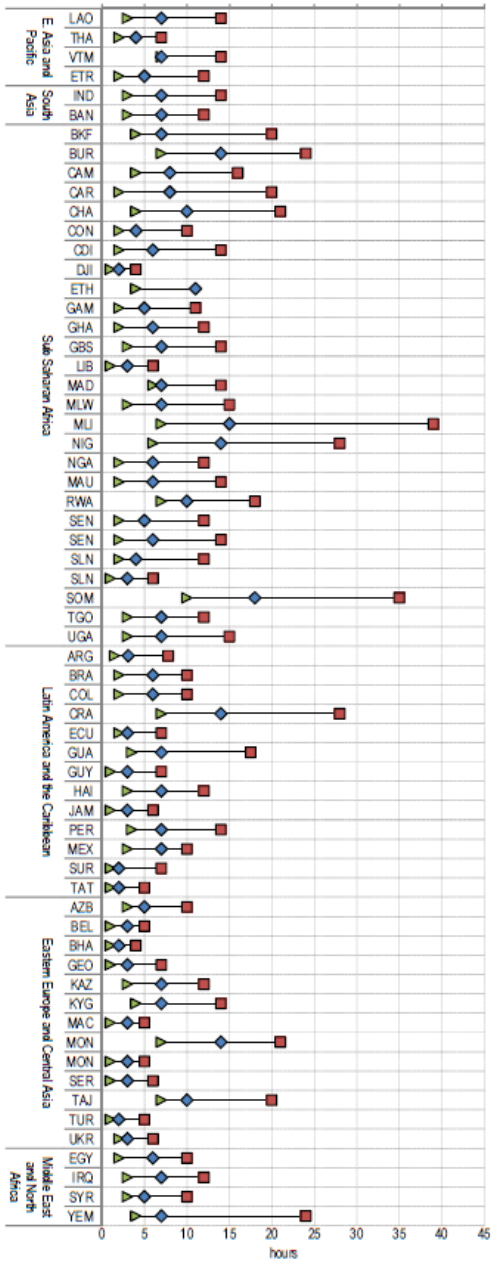
Figure A4. **Average weekly hours[a] spent on unpaid household services, 7-14 years age group,[b] most recent year, by residence and country,[c]**



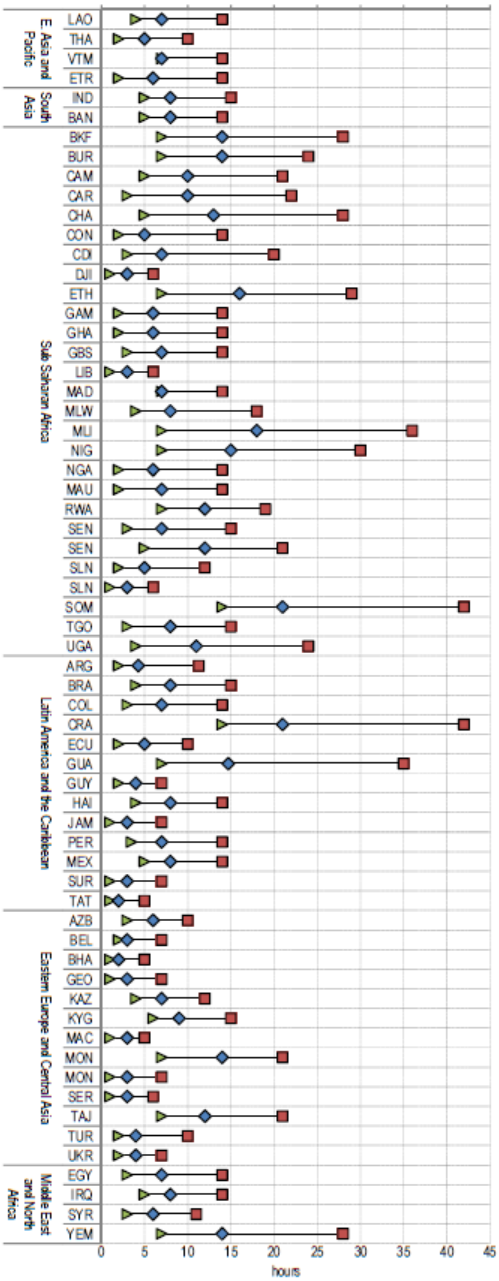
Notes: (a) Daily hours in CRA, GUA, MLW,PER, and VTM; (b) Reference age group is 12-14 years in CRA, MEX, 10-14 years in ETR, MLI and 6-14 years in TUR; only urban areas in ECU. (c) Full country names and reference years provided in Annex Table A1.
Source: UCW calculations national household surveys (See Annex Table A1).

Figure A5. **Working hours in household chores at median, 20th and 80th percentiles[a], 7-14 years age group,[b] most recent year, by country and sex,[c]**

(a) Male

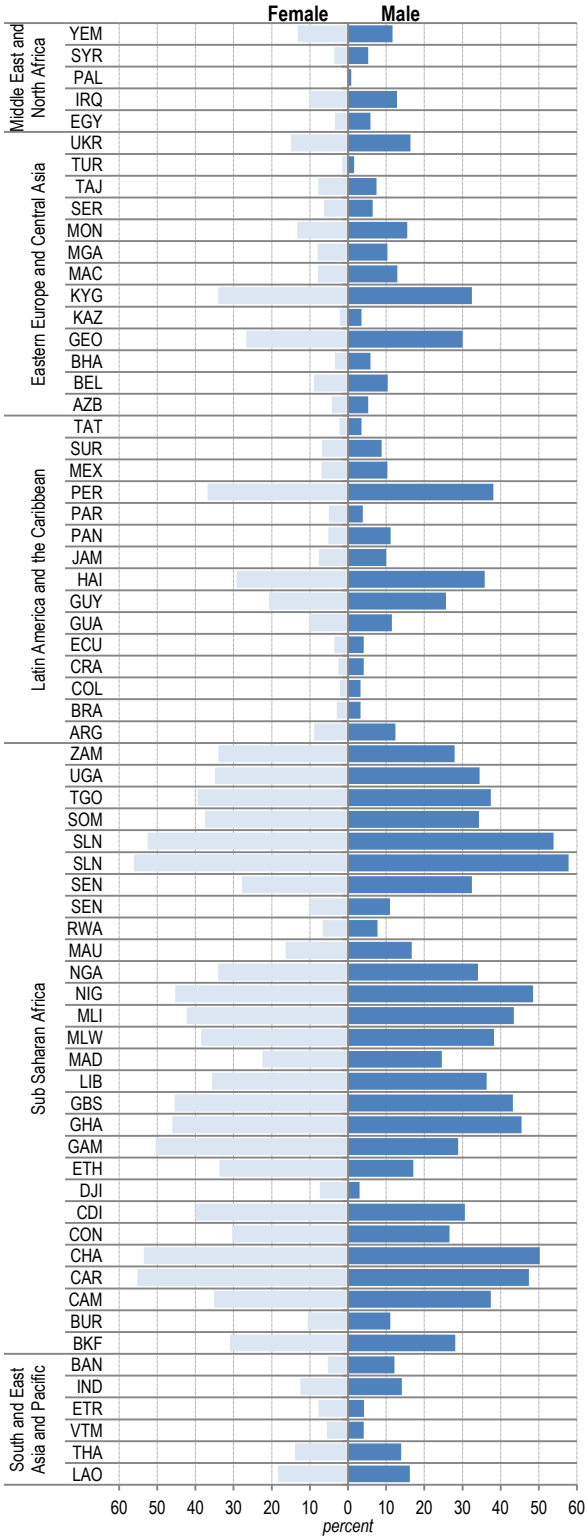


(b) Female



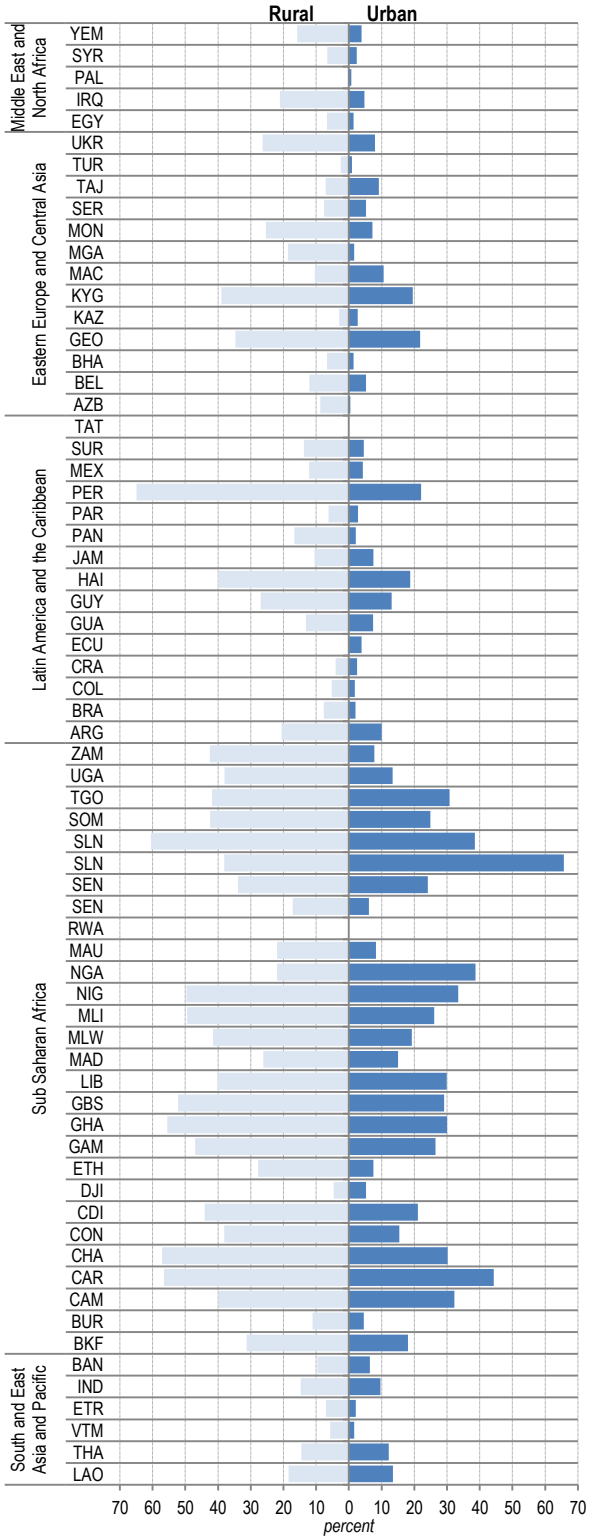
Notes: (a) Information on daily hours collected in survey were multiplied by seven in CRA, GUA, PER, and VTM; (b) Reference age group is 12-14 years in CRA, MEX, 10-14 years in ETR, MLI and 6-14 years in TUR; only urban areas in ECU. (c) Full country names and reference years provided in Annex Table A1.
Source: UCW calculations national household surveys (See Annex Table A1).

Figure A6. **Share of children performing double duty, 7-14 years age group,[a] most recent year, by sex and country,[b]**



Notes: (a) Reference age group is 12-14 years in CRA, MEX, 10-14 years in ETR, MLI and 6-14 years in TUR; only urban areas in ECU. (b) Full country names and reference years provided in Annex Table A1.
Source: UCW calculations national household surveys (See Annex Table A1).

Figure A7. **Share of children performing double duty, 7-14 years age group,[a] most recent year, by sex and country,[b]**



Notes: (a) Reference age group is 12-14 years in CRA, MEX, 10-14 years in ETR, MLI and 6-14 years in TUR; only urban areas in ECU. (b) Full country names and reference years provided in Annex Table A1.
Source: UCW calculations national household surveys (See Annex Table A1).

Table A3. **Involvement of household chores in combination with work in employment, by country sex and residence, 7-14 year-olds**

Country	Survey	Year	Involvement in HH chores (% relevant age group)[g]									
			Total		Male		Female		Urban		Rural	
			HH chores only	HH chores and employ	HH chores only	HH chores and employ	HH chores only	HH chores and employ	HH chores only	HH chores and employ	HH chores only	HH chores and employ
Bangladesh	MICS 3	2006	56.8	8.8	38.4	12.2	75.8	5.3	56.1	6.4	57.2	9.6
Belarus	MICS 3	2005	67.2	10.4	62.4	11.0	72.2	9.9	68.8	6.1	64.9	17.2
Bosnia Herzegovina	MICS 3	2006	56.9	9.7	52.7	10.4	61.0	9.0	55.2	5.2	57.8	12.1
Burundi	MICS 3	2005	81.1	10.9	79.5	11.1	82.8	10.6	72.8	4.6	81.5	11.1
Cameroon	MICS 3	2006	53.7	36.3	49.5	37.4	57.8	35.2	56.1	32.2	51.5	39.8
Central African Republic	MICS 3	2006	32.9	51.2	33.3	47.4	32.4	55.2	38.7	44.3	28.5	56.5
Chad	DHS	2004	28.8	51.9	22.1	50.3	35.6	53.5	44.8	30.2	24.9	57.1
Congo	DHS	2007	46.9	28.5	41.5	26.6	52.7	30.4	57.8	15.4	38.9	38.1
Cote d'Ivore	MICS 3	2006	25.3	35.1	17.1	30.6	33.8	39.9	35.1	21.1	19.0	44.1
Djibouti	MICS 3	2006	26.2	5.2	17.5	3.0	35.1	7.4	26.4	5.2	22.2	4.6
Egypt	DHS	2005	53.6	4.7	45.0	5.9	62.5	3.4	57.5	1.4	51.2	6.7
Gambia	MICS 3	2005	32.1	40.2	32.8	28.9	31.5	50.4	37.9	26.5	29.2	47.0
Georgia	MICS 3	2005	46.2	28.4	44.1	30.0	48.4	26.7	51.5	21.8	41.2	34.7
Ghana	MICS 3	2006	37.6	45.8	34.5	45.5	40.7	46.1	50.3	30.0	29.7	55.5
Guinea Bissau	MICS 3	2006	37.4	44.3	31.9	43.2	43.3	45.5	50.6	29.1	30.6	52.2
Guyana	MICS 3	2006	53.2	23.3	49.3	25.7	57.3	20.7	51.3	13.1	53.9	26.9
Haiti	DHS	2005	58.2	32.5	51.1	35.8	65.2	29.2	69.4	18.7	52.2	39.9
India	DHS	2005	51.0	13.3	42.7	14.1	59.9	12.5	48.2	9.6	52.0	14.7
Iraq	MICS 3	2006	38.2	11.4	28.1	12.8	48.7	10.0	41.6	4.8	33.2	21.1
Jamaica	MICS 3	2005	73.9	8.8	71.4	10.0	76.5	7.6	73.2	7.5	74.8	10.5
Kazakhstan	MICS 3	2006	86.9	2.9	84.7	3.5	89.3	2.2	85.4	2.7	88.5	3.0
Lao PDR	MICS 3	2006	52.8	17.3	48.7	16.2	56.9	18.4	48.5	13.5	54.0	18.4
Liberia	DHS	2007	45.2	36.0	43.1	36.3	47.4	35.7	51.8	29.9	40.7	40.2
Macedonia	MICS 3	2005	42.9	10.5	39.0	12.9	47.1	7.9	42.6	10.6	43.1	10.4
Malawi	MICS 3	2006	47.9	38.4	43.2	38.3	52.3	38.5	68.7	19.2	44.5	41.5
Malawi	DHS	2004	39.6	38.1	33.1	37.5	45.8	38.7	63.6	17.4	35.4	41.7
Mali	DHS	2006	34.7	42.9	26.5	43.5	42.9	42.3	43.5	26.1	31.3	49.4
Mauritania	MICS 3	2007	37.7	16.6	29.4	16.7	46.2	16.4	38.7	8.3	37.1	22.0
Mongolia	MICS 3	2005	75.7	11.6	72.7	12.9	78.8	10.4	85.9	4.7	64.7	19.1
Montenegro	MICS 3	2005	45.5	14.4	43.5	15.5	47.7	13.3	52.1	7.2	35.5	25.4
Niger	DHS	2006	46.5	46.9	43.2	48.5	49.8	45.3	51.7	33.4	45.4	49.6
Nigeria	MICS 3	2007	40.8	34.1	39.3	34.1	42.3	34.1	36.2	38.7	53.1	22.0
Palestinian Refugee Camps, Lebanon	MICS 3	2006	36.6	0.6	25.5	0.8	48.7	0.3	40.7	0.7	23.4	0.0
Senegal	DHS	2005	57.7	30.1	49.9	32.5	65.2	27.8	57.3	24.1	57.9	33.9
Serbia	MICS 3	2005	55.7	6.4	53.4	6.5	58.1	6.3	50.4	5.2	61.5	7.6
Sierra Leone	MICS	2005	31.4	56.9	30.0	57.8	32.7	56.1	22.1	65.7	51.4	38.1
Sierra Leone	DHS	2008	28.1	53.2	26.8	53.9	29.6	52.5	35.7	38.5	24.4	60.5
Somalia	MICS 3	2006	37.3	35.9	29.5	34.3	45.3	37.5	47.8	24.9	31.0	42.4
Suriname	MICS 3	2006	60.4	7.8	55.6	8.8	65.2	6.8	61.4	4.6	58.5	13.7
Syrian Arab Republic	MICS 3	2006	35.5	4.5	30.0	5.3	41.2	3.6	36.3	2.4	34.7	6.6
Tajikistan	MICS 3	2005	69.6	7.6	66.3	7.5	73.2	7.8	63.3	9.2	71.8	7.1
Thailand	MICS 3	(12/2005)	67.0	13.9	63.3	13.9	70.8	13.9	64.6	12.2	67.9	14.5
Togo	MICS 3	2006	45.5	38.4	42.0	37.4	48.9	39.4	52.7	30.8	42.2	41.8
Trinidad and Tobago[d]	MICS 3	2006	62.0	2.9	60.3	3.5	63.7	2.3				
Ukraine	MICS 3	2005	67.7	15.6	64.4	16.4	71.1	14.9	75.9	8.0	56.1	26.4
Yemen	MICS 3	2006	46.8	12.4	36.6	11.7	57.3	13.2	54.3	3.9	43.8	15.8
Argentina	EAN	2004	44.8	10.8	38.6	12.4	51.7	8.9	45.3	10.0	37.5	20.6
Azerbaijan	CLS	2005	68.9	4.9	66.1	5.3	72.0	4.3	71.2	0.4	66.8	8.7

Table A3. **Involvement of household chores in combination with work in employment, by country sex and residence, 7-14 year-olds**

Country	Survey	Year	Involvement in HH chores (% relevant age group)[g]									
			Total		Male		Female		Urban		Rural	
			HH chores only	HH chores and employ	HH chores only	HH chores and employ	HH chores only	HH chores and employ	HH chores only	HH chores and employ	HH chores only	HH chores and employ
Brazil	PNAD	2009	43.3	3.1	31.2	3.3	56.1	2.9	43.4	2.0	42.8	7.7
Burkina Faso	ENTE	2006	35.8	29.5	20.4	28.1	52.4	31.0	50.6	18.1	33.4	31.3
Colombia	GEIH	2007	59.8	2.8	53.7	3.3	66.4	2.1	57.8	1.8	64.9	5.2
Costa Rica[a]	EHPM	2004	54.2	3.2	41.4	4.1	65.9	2.5	52.7	2.5	56.0	4.1
East Timor[b]	LSS	2001	63.8	5.9	51.3	4.2	77.3	7.7	69.0	2.1	62.3	7.0
Ecuador[e]	ENEMDU	2009	-	-	55.5	4.1	66.3	3.6	60.8	3.9	-	-
Ethiopia	NLFS	2005	23.6	25.1	12.6	17.1	35.2	33.7	44.1	7.5	20.5	27.7
Guatemala	ENCOVI	2006	47.4	10.8	34.3	11.5	61.0	10.0	49.3	7.4	46.0	13.2
Kyrgyzstan	SIMPOC	2007	39.7	33.2	33.8	32.5	46.4	34.1	58.6	19.5	31.7	39.0
Madagascar	ENTE	2007	65.4	23.5	62.6	24.6	68.5	22.4	69.0	15.0	64.3	26.2
Malawi	SIHS	2004	27.7	22.9	16.8	16.8	38.3	28.7	52.3	4.8	24.8	25.0
Mali[b]	EPEAM	2007	44.8	18.8	34.9	17.3	57.6	20.8	43.1	5.8	45.6	25.0
Mexico[a]	ENOE	2009/4trim	73.5	8.7	63.5	10.3	84.1	7.0	77.8	4.3	70.0	12.2
Mongolia	LFS	2006	68.6	9.2	66.4	10.3	71.0	8.0	80.6	1.6	53.8	18.6
Panama	ETI	2008	72.0	8.4	67.0	11.2	77.5	5.2	72.8	2.1	71.0	16.7
Paraguay	EPH	2004	40.7	4.4	27.2	3.9	54.8	5.0	37.0	2.8	44.7	6.2
Peru[f]	ETI	2007	43.5	37.5	39.4	38.1	47.8	36.8	55.4	22.1	22.2	64.9
Rwanda[d]	NCLS	2008	83.8	7.1	81.9	7.7	85.6	6.6	-	-	-	-
Senegal	ENTES	2005	40.3	9.3	11.8	7.3	69.2	11.3	40.4	2.8	40.2	12.8
Turkey[c]	CLS	2006	39.1	1.5	31.5	1.6	46.9	1.5	42.1	0.9	34.6	2.5
Uganda	NHS	2005	45.0	34.7	41.1	34.5	48.9	34.9	54.4	13.4	43.5	38.0
Vietnam	HLSS	2006	34.3	4.8	27.9	4.1	40.6	5.5	28.4	1.6	35.9	5.7
Zambia	LFS	2005	26.1	30.9	21.3	27.9	31.0	34.0	45.0	7.8	16.6	42.5

Notes: (a) For 12-14 year-olds (Costa Rica, Mexico); (b) For 10-14 year-olds (East Timor, Mali EPEAM); (c) For 6-14 year-olds (Turkey); (d) No urban/rural division (Trinidad and Tobago, Rwanda); (e) Only urban areas (Ecuador); (f) Involvement in household chores yesterday or the day before yesterday (Peru); (g) For some countries (Mali DHS, Malawi DHS and Uganda NHS), the sum of the combination of household chores with employment and involvement of household chores exclusively is not equal to the total involvement in household chores (see previous table) due to missing values of the employment status.

Table A4. **Gender differences in the probability of performing household chores (marginal effect of being female on the allocation of time of 7-14 years old children among employment, schooling, and chores)**

Country	Employment only	Employment and chores	Schooling only	Schooling and chores	Employment and schooling	Employment, schooling, and chores	Nothing	Chores only
	M.E.	M.E.	M.E.	M.E.	M.E.	M.E.	M.E.	M.E.
Bangladesh	**-0.068**	**-0.018**	**-0.120**	**0.300**	**-0.083**	**-0.034**	**-0.027**	**0.051**
Burundi	**-0.003**	**0.012**	**-0.017**	**-0.007**	**-0.002**	**-0.008**	**-0.006**	**0.033**
Cameroon	**-0.012**	**0.014**	**-0.027**	**0.009**	**-0.014**	**-0.036**	**-0.007**	**0.073**
Central African Republic	**-0.007**	**0.111**	**-0.036**	**-0.054**	**-0.009**	**-0.030**	**-0.016**	**0.040**
Chad	**-0.057**	**0.093**	**-0.040**	**0.033**	**-0.072**	**-0.052**	**-0.008**	**0.103**
Congo	**-0.002**	**0.024**	**-0.108**	**0.058**	**-0.015**	**0.016**	**-0.022**	**0.048**
Cote d'Ivoire	**-0.044**	**0.106**	**-0.116**	**0.061**	**-0.096**	**0.008**	**-0.013**	**0.094**
Egypt	**-0.007**	**0.003**	**-0.091**	**0.131**	**-0.046**	**-0.026**	**-0.004**	**0.040**
Gambia	**-0.009**	**0.086**	**-0.139**	**-0.003**	**-0.013**	**0.117**	**-0.035**	**-0.004**
Ghana	**-0.014**	**0.025**	**-0.044**	**0.037**	**-0.012**	**0.002**	**-0.004**	**0.010**
Guinea Bissau	**-0.017**	**0.013**	**-0.065**	**0.064**	**-0.056**	**0.031**	**-0.004**	**0.034**
Haiti	-0.021	-0.017	-0.052	0.113	-0.009	-0.026	-0.008	0.021
India	**-0.016**	**0.011**	**-0.106**	**0.106**	**-0.016**	**-0.025**	**-0.013**	**0.060**
Lao PDR	**-0.002**	**0.029**	**-0.081**	**0.029**	**-0.008**	**-0.010**	**-0.011**	**0.054**
Liberia	**0.000**	**0.034**	**-0.033**	**0.005**	**-0.001**	**-0.021**	**-0.010**	**0.025**
Macedonia	**0.000**	**0.003**	**-0.038**	**0.057**	**-0.010**	**-0.044**	**0.027**	**0.005**
Malawi	**-0.007**	**0.001**	**-0.053**	**0.080**	**-0.016**	**0.004**	**-0.017**	**0.010**
Mali	**-0.067**	**0.044**	**-0.037**	**0.040**	**-0.042**	**-0.042**	**-0.014**	**0.119**
Mauritania	**-0.020**	**0.008**	**-0.112**	**0.123**	**-0.028**	**-0.008**	**-0.012**	**0.049**
Mongolia	**-0.003**	**-0.006**	**-0.020**	**0.075**	**-0.008**	**-0.022**	**-0.004**	**-0.012**
Niger	**-0.004**	**0.061**	**-0.015**	**-0.026**	**-0.005**	**-0.092**	**-0.010**	**0.092**
Nigeria	**-0.001**	**0.020**	**-0.011**	**0.002**	**-0.010**	**-0.021**	**-0.001**	**0.022**
Palestinian Refugee Camps, Lebanon	**-0.016**	-0.001	**-0.186**	**0.214**	**-0.006**	**-0.003**	**-0.010**	**0.008**
Senegal	**-0.023**	**-0.017**	**-0.048**	**0.063**	**-0.014**	**-0.021**	**-0.020**	**0.081**
Sierra Leone	**-0.002**	**0.023**	**-0.011**	**0.010**	**-0.001**	**-0.031**	**0.002**	**0.012**
Somalia	**-0.020**	**0.062**	**-0.123**	**0.052**	**-0.038**	**-0.040**	**0.003**	**0.104**
Suriname	**0.000**	0.000	-0.066	0.097	-0.006	-0.022	**-0.006**	0.014
Syrian Arab Republic	**-0.018**	**-0.004**	**-0.060**	**0.082**	**-0.016**	**-0.013**	**0.001**	**0.029**
Tajikistan	**0.000**	**0.005**	**-0.075**	**0.046**	**0.001**	**-0.002**	**-0.005**	**0.029**
Thailand	**-0.003**	**-0.001**	**-0.062**	**0.078**	**-0.012**	**0.002**	**-0.001**	**-0.001**
Togo	**-0.010**	**0.045**	**-0.055**	**0.007**	**-0.021**	**-0.019**	**-0.005**	**0.058**
Yemen	**-0.010**	**0.024**	**-0.157**	**0.071**	**-0.048**	**-0.008**	**-0.001**	**0.129**

Note: Marginal effects in bold are statistically significant at 5%.

Source: UCW computations on MICS and DHS survey data. A list of type of surveys and survey year is reported in Table A2

Table A5. **School attendance rates by work status and country, 7-14 year-olds**

Country	Survey	Year	School attendance rates (% relevant age group)					
			Children working in HH chores	Children working in employment	Children working only in HH chores[1]	Children working only in employment[2]	Children working in both HH chores and employment	Children not working
Bangladesh	MICS 3	2006	83.7	62.3	85.6	51.5	71.3	87.2
Belarus	MICS 3	2005	100.0	100.0	100.0	100.0	100.0	98.8
Bosnia Herzegovina	MICS 3	2006	99.3	99.9	99.2	98.4	100.0	97.9
Burundi	MICS 3	2005	73.8	61.1	75.2	41.5	63.0	70.2
Cameroon	MICS 3	2006	85.1	89.3	81.4	71.1	90.5	76.2
Central African Republic	MICS 3	2006	63.6	60.0	69.4	61.1	59.8	60.2
Chad	DHS	2004	43.3	41.0	48.3	44.1	40.5	41.2
Congo	DHS	2007	73.8	71.3	75.4	72.4	71.2	68.0
Cote d'Ivoire	MICS 3	2006	59.6	53.5	68.2	53.8	53.4	73.6
Djibouti	MICS 3	2006	82.0	77.6	82.8	77.6	77.6	80.4
Egypt	DHS	2005	92.6	79.0	93.8	79.0	79.2	95.6
Gambia	MICS 3	2005	72.6	68.0	78.9	72.6	67.6	73.6
Georgia	MICS 3	2005	99.1	99.0	99.2	98.8	99.0	97.6
Ghana	MICS 3	2006	86.3	81.3	91.2	69.0	82.3	84.6
Guinea Bissau	MICS 3	2006	67.6	65.4	69.6	63.2	65.8	65.5
Guyana	MICS 3	2006	96.9	95.0	97.5	89.6	95.5	95.4
Haiti	DHS	2005	84.9	82.3	86.5	89.6	82.1	83.5
India	DHS	2005	79.7	67.2	82.3	52.5	69.5	86.6
Iraq	MICS 3	2006	75.6	67.7	78.3	70.7	66.8	86.0
Jamaica	MICS 3	2005	99.3	97.5	99.4	88.7	98.5	99.3
Kazakhstan	MICS 3	2006	99.5	98.4	99.5	100.0	97.9	95.7
Lao PDR	MICS 3	2006	81.0	77.2	82.3	80.9	76.9	72.3
Liberia	DHS	2007	53.4	56.0	50.9	49.0	56.4	36.3
Macedonia	MICS 3	2005	95.2	97.2	94.6	96.6	97.3	95.1
Malawi	MICS 3	2006	89.9	89.7	89.7	81.9	90.1	75.4
Malawi	DHS	2004	87.3	86.1	88.1	82.9	86.5	75.9
Mali	DHS	2006	43.3	41.0	47.0	44.9	40.3	49.8
Mauritania	MICS 3	2007	74.1	64.1	78.1	61.6	64.9	77.5
Mongolia	MICS 3	2005	96.3	91.3	96.9	74.9	92.4	92.3
Montenegro	MICS 3	2005	98.1	99.3	97.7	100.0	99.3	97.1
Niger	DHS	2006	35.8	33.8	38.1	42.1	33.6	53.1
Nigeria	MICS 3	2007	72.9	69.1	71.6	41.2	74.4	48.3
Palestinian Refugee Camps, Lebanon	MICS 3	2006	96.0	51.8	96.4	39.2	71.9	96.1
Senegal	DHS	2005	56.7	51.6	59.1	45.4	52.1	64.7
Serbia	MICS 3	2005	99.4	98.2	99.5	96.6	98.4	98.8
Sierra Leone	MICS	2005	75.0	70.1	83.9	70.2	70.1	70.4
Sierra Leone	DHS	2008	70.8	67.1	77.3	64.1	67.4	69.8
Somalia	MICS 3	2006	57.9	47.9	64.5	35.3	50.8	62.7
Suriname	MICS 3	2006	95.9	92.8	96.3	95.3	92.3	96.3
Syrian Arab Republic	MICS 3	2006	88.7	65.4	90.9	52.9	71.4	93.6
Tajikistan	MICS 3	2005	94.0	91.0	94.4	90.9	91.0	84.2
Thailand	MICS 3	(12/2005)	98.6	95.8	99.1	87.5	96.5	97.6
Togo	MICS 3	2006	80.3	76.7	82.7	71.7	77.3	72.6
Trinidad and Tobago	MICS 3	2006	99.3	97.4	99.3	91.3	98.5	98.2
Ukraine	MICS 3	2005	99.9	99.9	99.9	100.0	99.9	98.0
Yemen	MICS 3	2006	71.4	69.9	72.5	76.4	66.8	70.6
Argentina	EAN	2004	98.0	95.2	98.6	95.9	95.1	98.4
Azerbaijan	CLS	2005	97.4	93.7	97.7	89.5	94.0	97.0
Brazil	PNAD	2009	98.4	94.8	98.6	93.7	95.6	97.9
Burkina Faso	ENTE	2006	42.9	32.3	48.6	24.9	36.0	57.1
Colombia	GEIH	2007	95.4	75.2	96.0	57.6	82.3	96.2

Table A5. **School attendance rates by work status and country, 7-14 year-olds**

Country	Survey	Year	School attendance rates (% relevant age group)					
			Children working in HH chores	Children working in employment	Children working only in HH chores(1)	Children working only in employment(2)	Children working in both HH chores and employment	Children not working
Costa Rica[a]	EHPM	2004	88.5	55.4	90.6	57.3	53.9	95.7
East Timor[b]	LSS	2001	88.3	73.2	90.0	85.6	69.4	81.4
Ecuador[3]	ENEMDU	2009	97.4	78.5	98.6	76.5	78.8	97.9
Ethiopia	NLFS	2005	-	-	-	-	-	-
Guatemala	ENCOVI	2006	82.3	69.5	85.6	71.7	67.9	93.4
Kyrgyzstan	SIMPOC	2007	99.5	99.2	99.6	97.7	99.4	97.1
Madagascar	ENTE	2007	80.4	59.1	87.6	47.0	60.4	75.4
Malawi	SIHS	2004	90.2	87.2	91.6	84.9	88.5	84.4
Mali[b]	EPEAM	2007	49.9	30.4	59.1	39.2	27.8	81.1
Mexico[a]	ENOE	2009/4trim	93.6	77.4	95.3	74.0	78.8	94.6
Mongolia	LFS	2006	94.5	83.6	95.9	76.0	84.3	90.0
Panama	ETI	2008	96.5	85.4	97.7	73.4	86.2	98.6
Paraguay	EPH	2004	93.6	80.3	95.0	80.2	80.4	96.6
Peru	ETI	2007	97.5	96.0	98.3	92.7	96.5	97.5
Rwanda	NCLS	2008	93.1	81.5	93.9	47.4	83.6	82.9
Senegal	ENTES	2005	56.7	38.1	60.7	36.9	39.3	65.9
Turkey[c]	CLS	2006	92.4	61.2	93.4	53.9	66.1	93.1
Uganda	NHS	2005	93.8	92.3	94.3	83.8	93.1	87.3
Vietnam	HLSS	2006	91.4	58.4	95.9	56.4	59.4	97.3
Zambia	LFS	2005	78.5	74.1	81.2	70.1	76.2	73.4

Notes: (1) Refers to children not also working in employment; (2) Refers to children not also working in HH chores; (3) Only urban areas (Ecuador

Note: (a) For 12-14 year-olds (Costa Rica, Mexico); (b) For 10-14 year-olds (East Timor, Mali EPEAM); (c) For 6-14 year-olds (Turkey).

Table A6. **School attendance rates by time intensity of household chores and country, 7-14 year-olds**

Country	Survey	Year	School attendance rates (% relevant age group)					
			Children working in HH chores (total)	Children working less than 7 hours(1)	Children working at least 7 hours(1)	Children working at least 14 hours(1)	Children working at least 21hours	Children working at least 28 hours
Argentina	EAN	2004	98	98.7	96.4	95.8	94.3	91.5
Azerbaijan	CLS	2005	97.4	97.3	97.5	96.7	94.1	94.6
Bangladesh	MICS 3	2006	83.7	88	81.9	73.3	56.1	39.9
Belarus	MICS 3	2005	100	100	100	100	100	100
Bosnia Herzegovina	MICS 3	2006	99.3	99.2	100	100	100	100
Brazil	PNAD	2009	98.4	98.9	98.1	97.4	95.9	94.9
Burkina Faso	ENTE	2006	42.9	63.5	37.8	30.3	23.9	20.8
Burundi	MICS 3	2005	73.8	75.9	73.3	70.2	63.1	57.5
Cameroon	MICS 3	2006	85.1	90.8	83	77.7	70.2	59.9
Central African Republic	MICS 3	2006	63.6	63.4	63.7	63.2	62.9	64.3
Chad	DHS	2004	43.3	35.4	46.6	48.1	52.1	54.9
Colombia	GEIH	2007	95.4	97	93.8	90.9	85.8	81.7
Congo	DHS	2007	73.8	74	73.5	72.7	71.1	72.5
Costa Rica[a]	EHPM	2004	-	-	-	-	-	-
Cote d'Ivoire	MICS 3	2006	59.6	64.2	55.4	51.3	46.5	42.9
Djibouti	MICS 3	2006	82	84.9	68.4	68.6	72.1	80.4
East Timor[b]	LSS	2001	88.3	87.2	89.7	85.5	82.4	84.2
Ecuador[2]	ENEMDU	2009	97.4	98	96.1	93	90	81.9
Egypt	DHS	2005	92.6	95.9	90	86.5	81.9	77.3
Ethiopia	NLFS	2005	-	-	-	-	-	-
Gambia	MICS 3	2005	72.6	69.6	76.2	78.7	81	79.6
Georgia	MICS 3	2005	99.1	99.1	99.2	99.8	100	100
Ghana	MICS 3	2006	86.3	86.4	86.2	84.4	85.1	89.2
Guatemala	ENCOVI	2006	-	-	-	-	-	-
Guinea Bissau	MICS 3	2006	67.6	66.3	68.4	70.7	70.9	72.1
Guyana	MICS 3	2006	96.9	96.9	96.9	96.6	97	97.2
Haiti	DHS	2005	84.9	84.8	84.9	83.5	80.9	79.5
India	DHS	2005	79.7	87.5	76.4	70.1	62	58.3
Iraq	MICS 3	2006	75.6	85.6	69.7	58.4	47.6	41.5
Jamaica	MICS 3	2005	99.3	99.6	98.5	97.5	100	100
Kazakhstan	MICS 3	2006	99.5	99.2	99.6	99.5	99.2	96.7
Kyrgyzstan	SIMPOC	2007	99.5	99.7	99.4	99.1	97.9	95.3
Lao PDR	MICS 3	2006	81	82.7	79.9	76.4	65.6	53.6
Liberia	DHS	2007	53.4	53.4	53.4	52.3	51.3	59.5
Macedonia	MICS 3	2005	95.2	96.5	87.4	91.9	91.3	79.1
Madagascar	ENTE	2007	80.4	83.3	79.7	75.5	69	66.2
Malawi	MICS 3	2006	89.9	89.5	90.1	89.8	89.3	87.9
Malawi	DHS	2004	87.3	86.5	88	88.4	87.2	85.2
Malawi	SIHS	2004	-	-	-	-	-	-
Mali	DHS	2006	43.3	50.3	41.9	41.5	40.9	41.1
Mali[b]	EPEAM	2007	49.9	64.7	43.3	37.2	31.8	30
Mauritania	MICS 3	2007	74.1	73.6	74.6	75.1	76.3	74.9
Mexico[a]	ENOE	2009/4trim	93.6	96.7	91.9	84.1	61.4	46.4
Mongolia	MICS 3	2005	96.3	96.3	96.3	95.8	94.8	93.6
Mongolia	LFS	2006	94.5	94.4	94.6	94.2	94.2	93.5
Montenegro	MICS 3	2005	98.1	98.1	98.2	96.6	96.1	100
Niger	DHS	2006	35.8	47.7	33	29.2	25.4	24.5
Nigeria	MICS 3	2007	72.9	68.1	78.1	79.5	75	71
Palestinian Refugee Camps, Lebanon	MICS 3	2006	96	96.7	94.5	95.6	94.2	96.6
Panama	ETI	2008	-	-	-	-	-	-
Paraguay	EPH	2004	-	-	-	-	-	-

Table A6. **School attendance rates by time intensity of household chores and country, 7-14 year-olds**

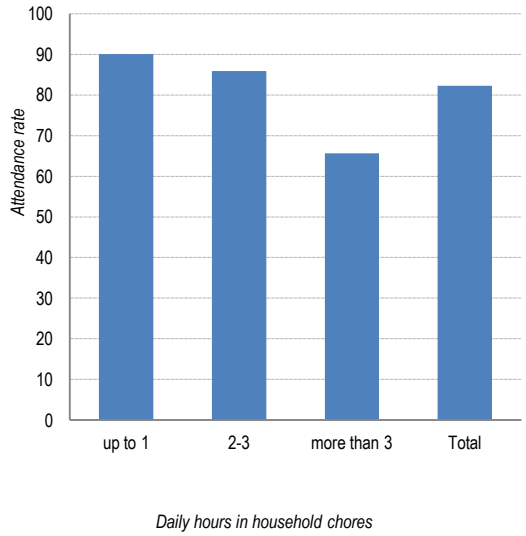
Country	Survey	Year	School attendance rates (% relevant age group)					
			Children working in HH chores (total)	Children working less than 7 hours(1)	Children working at least 7 hours(1)	Children working at least 14 hours(1)	Children working at least 21hours	Children working at least 28 hours
Peru	ETI	2007	-	-	-	-	-	-
Rwanda	NCLS	2008	93.1	93.2	93.1	92.3	89.2	85.3
Senegal	DHS	2005	56.7	61.1	52.4	49.1	47.7	45.1
Senegal	ENTES	2005	56.7	65.6	52.9	47.7	39.1	30.5
Serbia	MICS 3	2005	99.4	99.6	98.3	96.5	94.8	94.1
Sierra Leone	MICS	2005	75	77.4	71.6	66.5	68.4	66.3
Sierra Leone	DHS	2008	70.8	71.7	67.5	70.8	74.1	75.7
Somalia	MICS 3	2006	57.9	57.5	57.9	56.2	53.3	50.6
Suriname	MICS 3	2006	95.9	96.2	95.5	96.5	97.4	97.5
Syrian Arab Republic	MICS 3	2006	88.7	93.5	83	71	56.2	47.4
Tajikistan	MICS 3	2005	94	92.2	94.4	95	95	93.2
Thailand	MICS 3	(12/2005)	98.6	98.9	98.2	97.5	98.2	98.9
Togo	MICS 3	2006	80.3	82.2	78.9	75.3	70.7	70.3
Trinidad and Tobago	MICS 3	2006	99.3	99.3	99	99.1	100	100
Turkey[c]	CLS	2006	92.4	96.7	79.6	63.4	44.7	29.1
Uganda	NHS	2005	93.8	95	93	91.8	89.9	87
Ukraine	MICS 3	2005	99.9	99.8	99.9	100	100	100
Vietnam	HLSS	2006	-	-	-	-	-	-
Yemen	MICS 3	2006	71.4	78.6	69.3	65.2	60.6	56.2
Zambia	LFS	2005	-	-	-	-	-	-

Notes: (1) Hours refer only to time spent in household chores; the relative impact of time spent on HH chores and time spent in employment is taken up in Component 5 of the research proposal; (2) Only urban areas (Ecuador).

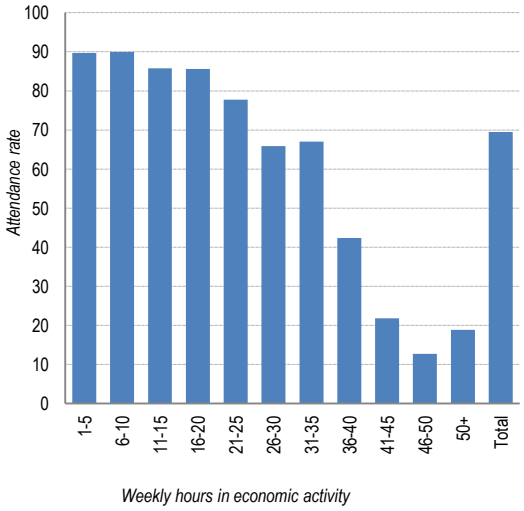
Note: (a) For 12-14 year-olds (Costa Rica, Mexico); (b) For 10-14 year-olds (East Timor, Mali); (c) For 6-14 year-olds (Turkey).

Figure A8. **School attendance rate, children aged 7-14 years, by hours in household chores and employment – Guatemala**

(a) Attendance and daily hours in household chores



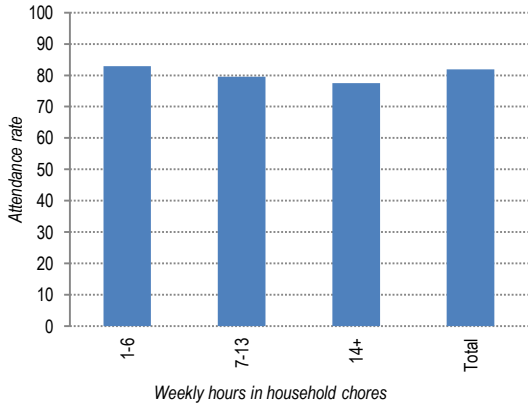
(b) Attendance and weekly hours in employment



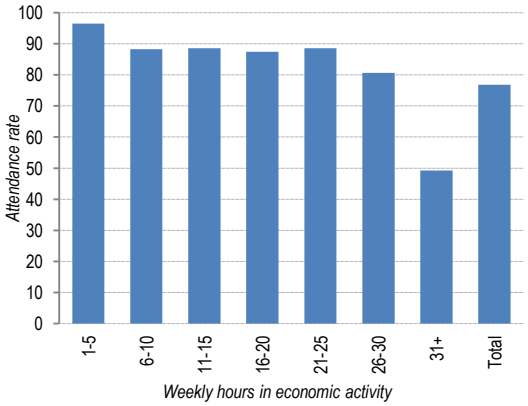
Source: UCW calculations based on Guatemala LSMS, 2006.

Figure A9. **School attendance rate, children aged 7-14 years, by hours in household chores and employment – Liberia**

(a) Attendance and weekly hours in household chores



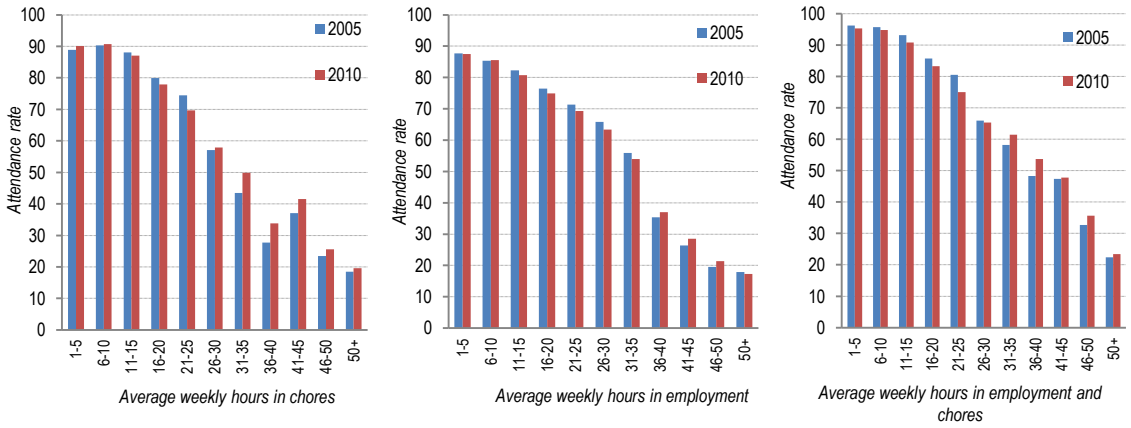
(b) Attendance and weekly hours in employment



Source: UCW calculations based on Liberia, 2010.

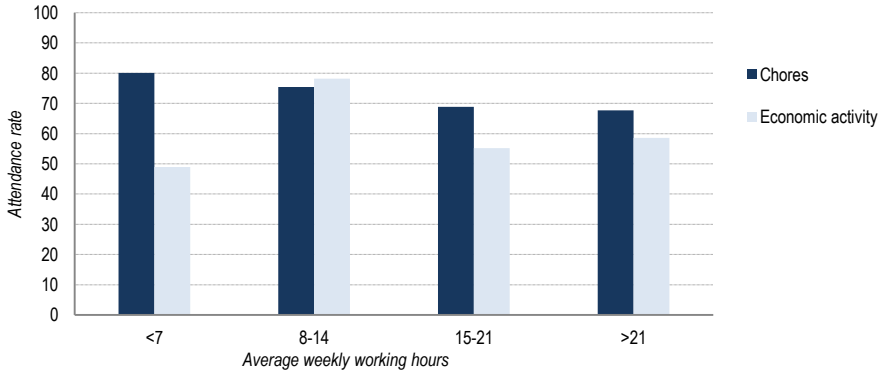
Figure A10. **School attendance rate, children aged 12-17 years, by weekly hours in employment and household chores – Mexico**

(a) Attendance and weekly hours in household chores (b) Attendance and weekly hours in employment (c) Attendance and total weekly hours in employment and chores



Source: UCW calculations based on Mexico ENOE, 2005 and 2010.

Figure A11. **School attendance in 2005 and working hours in 2001,(a) NICARAGUA**



Note: (a) Sample of children aged 7-14 in 2001, attending school in 2001, and re-interviewed in 2005.
Source: UCW calculations based on Nicaragua LSMS, 2001 and 2005.