

# The Statistical Evidence on Care and Non-Care Work across Six Countries

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## Acronyms

<b>EMNV</b>	Encuesta Nacional de Hogares sobre Medición de Niveles de Vida ( <i>National Household Living Standards Survey, Nicaragua</i> )
<b>GDP</b>	gross domestic product
<b>ICATUS</b>	International Classification of Activities for Time Use Surveys
<b>ILFS</b>	integrated labour force survey
<b>ILO</b>	International Labour Organization
<b>KTUS</b>	Korean Time Use Survey
<b>NBS</b>	National Bureau of Statistics, Tanzania
<b>SNA</b>	System of National Accounts
<b>UNRISD</b>	United Nations Research Institute for Social Development
<b>UNSD</b>	United Nations Statistical Division

## Summary/Résumé/Resumen

### Summary

Unpaid care work—the housework and care of persons that occurs in homes and communities of all societies on an unpaid basis—is an area that has generally been neglected by economists, as well as by many development actors. Yet the amount of unpaid care work carried out, the way that the burden of this work is distributed among different actors, and the proportion and kinds of care work that are unpaid or paid, have important implications for the well-being of individuals and households, as well as for the economic growth and well-being of nations.

This paper summarizes and compares findings from analysis of time use data from Argentina, Nicaragua, India, the Republic of Korea, South Africa and Tanzania for a project of the United Nations Research Institute for Social Development (UNRISD) on *Political and Social Economy of Care*. The project as a whole aims to explore the way in which care—and care of persons in particular—is provided by the institutions of family/household, state, market and community, and by the people within these institutions. The analysis presented in this paper focuses on the quantitative aspects of unpaid care provided by individuals in households.

The paper consists of nine sections, as follows.

- *Key concepts* introduces time use-related concepts which are utilized in later discussion in the paper.
- *Background to the surveys in the six countries* describes the source of the data used for analysis in each of these countries. This is important to the extent that some of the variation across countries reported in the paper might reflect methodological, rather than “real”, differences between the countries.
- *Basic gender patterns* presents a set of graphs derived from standardized sex-disaggregated tables compiled for each country. These graphs give a sense of the variation in male and female levels of engagement in, and the time spent on, employment-related work, unpaid care work and care of persons more narrowly defined.
- *Distribution of time spent on care* explores the distributions that lie behind the averages that usually form the basis of time use analysis. The various country graphs confirm that while the amount of time spent by men on unpaid care work and person care tends to cluster at the lower end of distribution, there are substantial numbers of women who spend long hours on care work.
- *The Tobit estimations* reports on the econometric analysis conducted in each of the countries to determine the main factors influencing the time spent on unpaid care work and person care across the six countries.
- *Gender combined with other factors* discusses differences and similarities across countries in the way gender interacts with other factors explored in the Tobit estimations in determining how much care is undertaken by different individuals. In particular, it looks at how time spent differs between women and men in each of the countries in relation to the presence of young children in the household, employment status and age.
- *The care dependency ratio* presents country results for a care dependency ratio proposed by the project as an indicator of care demand, in contrast to other sections that focus primarily on the supply of care.
- *The monetary value of unpaid care work* discusses various approaches to assigning value to unpaid care work, and compares the results with a range of macroeconomic indicators for the six countries. These indicators include gross domestic product (GDP), paid work, government revenue and government expenditure on social services.
- The *conclusion* offers some final remarks on the relevance of the findings.

The paper confirms some constant basic gender patterns in engagement in System of National Accounts (SNA) work, and unpaid care work, across the six countries. For all countries, the mean time spent on unpaid care work by women is more than twice that for men. The gender gap is most marked in India, where women spend nearly 10 times as much time on unpaid care work than men. Conversely, men tend to spend more time than women on SNA work across all countries. Again, India has the largest gender difference, with men spending nearly two and a half times as much time on SNA work as women.

When SNA and unpaid care work are combined, women are found to do noticeably more work than men in all countries. The volume of the total work done by men ranges from 74 per cent of the total amount done by women in South Africa to 94 per cent of the amount done by women in India. When the distribution of men and women in terms of time spent on unpaid care work is examined, there are far more men than women who do not do this type of work at all. Among those who do, there is strong clustering at points representing short times spent on this work. In contrast, there is high variability among women in the amount of unpaid care work done and, as a consequence, a notable level of inequality, with some women spending considerable time on it.

Tobit estimations confirm that, as expected, being male tends to result in doing less unpaid care work across all countries. This factor has the greatest influence (largest coefficient in absolute terms) of all tested factors in every country except Argentina. For all countries, having a (young) child in the household tends to increase the amount of unpaid care work done. The coefficient for age is always positive, while that for age squared is negative. This suggests an initial increase in the amount of unpaid care work done with increasing age, followed by a decrease. The amount of unpaid care work tends to decrease with increases in income, while being employed tends to decrease the amount of unpaid care work done in all countries except Tanzania. For most countries, being married tends to increase the amount of unpaid care work done.

Overall, there are at least as many differences as similarities across countries. In particular, there are significant variations in the “size” of care work done in the sense of the level of participation rates, average times spent by women and men on different activities, and absolute and relative differences between women and men. Some of these reflect methodological differences in terms of instruments, number of days covered, classification schemes, age group covered and so on. However, the methodological differences cannot explain away more than a small proportion of the variations.

The differences between countries in this paper thus confirm that gender is not “god-given” and immutable. Instead, gender is something that varies across countries and cultures. For policy purposes, however, what happens within a particular country is as important, if not more so, than cross-country comparisons. This paper, as well as the individual country research papers, present cross-sectional comparisons of different groups within a particular country at a particular point in time. Longitudinal comparisons of patterns of time use within a particular country are also needed. Countries therefore need to conduct time use surveys at regular intervals, using a standard methodology that allows reliable comparisons over time. This would be similar to the current practice of ongoing labour force surveys, although time use surveys would not need to be conducted as regularly as some labour force surveys because time use patterns are unlikely to shift as quickly.

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### ***Résumé***

Le travail d'assistance non rémunéré—les tâches ménagères et l'assistance aux personnes apportée bénévolement dans les foyers et les communautés de toutes les sociétés—est un domaine qui a été généralement négligé des économistes, ainsi que de nombreux acteurs du développement. Pourtant, le volume du travail non rémunéré effectué, la répartition de cette

charge de travail entre différents acteurs et la proportion et les types de travaux d'assistance qui sont rémunérés ou ne le sont pas, sont lourds de conséquences pour le bien-être des individus et des ménages, ainsi que pour la croissance économique et la prospérité des nations.

Ce document résume et compare les conclusions d'analyses de données sur l'emploi du temps provenant d'Argentine, du Nicaragua, d'Inde, de la République de Corée, d'Afrique du Sud et de Tanzanie pour un projet de l'Institut de recherche des Nations Unies pour le développement social (UNRISD) sur *L'économie politique et sociale des soins*. Le projet dans son ensemble vise à approfondir la manière dont l'assistance—et les soins aux personnes en particulier—sont dispensés par les institutions que sont la famille/le ménage, l'Etat, le marché et la communauté, et par les personnes dans ces institutions. L'analyse dont rend compte ce document porte sur les aspects quantitatifs de l'assistance non rémunérée apportée par des individus dans les ménages.

Le document se compose de neuf sections, présentées ci-dessous.

- Les *Concepts clés* présentent les concepts employés dans la suite du document à propos de l'emploi du temps.
- *Informations générales sur les enquêtes dans les six pays*: cette section explique d'où proviennent les données utilisées aux fins d'analyse dans chacun de ces pays. Ces explications sont importantes dans la mesure où certaines des variations entre pays relevées dans le document pourraient refléter des différences méthodologiques plutôt que "réelles" entre les pays.
- *Constantes dans les rapports sociaux entre les sexes*: sont regroupés ici divers graphiques établis à partir de tableaux normalisés et détaillés par sexe, compilés pour chaque pays. Ces graphiques donnent une idée de la variation des niveaux de participation des hommes et des femmes aux travaux accomplis dans le cadre d'un emploi, aux activités non rémunérées d'assistance et de soins aux personnes au sens étroit et du temps qu'ils y consacrent.
- *Distribution du temps consacré à l'assistance*: cette section examine ce que cachent les moyennes qui sont généralement à la base de l'analyse de l'emploi du temps. Les divers graphiques établis pour chaque pays confirment que si la quantité de temps consacrée par les hommes à des activités non rémunérées d'assistance et de soins aux personnes tend à se concentrer à l'extrémité inférieure de la distribution, nombreuses sont les femmes qui y consacrent de longues heures.
- Les *estimations Tobit* rendent compte de l'analyse économétrique effectuée dans chaque pays pour déterminer les principaux facteurs qui influent le plus sur le temps consacré aux services non rémunérés de soins et d'assistance aux personnes dans les six pays.
- La section intitulée *Genre et autres facteurs* traite des différences et des similitudes observées entre les pays concernant l'interaction entre le genre et d'autres facteurs étudiés dans les estimations Tobit pour déterminer la part des soins dispensés par différents individus. Elle porte en particulier sur les différences entre femmes et hommes dans chacun des pays pour ce qui est du temps consacré en fonction de la présence de jeunes enfants dans le ménage, de la situation professionnelle et de l'âge.
- *Coefficient de dépendance des soins*: contrairement à d'autres sections qui s'intéressent surtout à l'offre de soins, celle-ci présente les résultats par pays pour un coefficient de dépendance proposé par le projet comme indice de la demande de soins.
- La section intitulée *Valeur monétaire du travail d'assistance non rémunéré* traite de diverses méthodes appliquées pour assigner une valeur à ce travail et compare les résultats avec divers indicateurs macroéconomiques pour les six pays, dont le produit intérieur brut (PIB), le travail rémunéré, les recettes publiques et les dépenses publiques en services sociaux.
- La *conclusion* rassemble quelques commentaires sur la pertinence des résultats.

L'étude confirme l'existence de constantes dans les six pays, pour ce qui est de la part prise par les hommes et les femmes aux activités répertoriées dans le système de comptabilité nationale et aux



activités non rémunérées de soins ou d'assistance aux personnes. Dans tous les pays, les femmes consacrent en moyenne plus de deux fois plus de temps que les hommes aux activités non rémunérées de soins ou d'assistance. C'est en Inde, où les femmes y consacrent près de 10 fois plus de temps que les hommes, que l'écart entre hommes et femmes est le plus marqué. Inversement, les hommes accordent généralement plus de temps que les femmes aux activités répertoriées dans le système de comptabilité nationale. Là encore, c'est en Inde que la différence est la plus grande: les hommes y consacrent près de deux fois et demi plus de temps que les femmes.

Lorsqu'on combine les activités répertoriées dans le système de comptabilité nationale et les activités non rémunérées de soins ou d'assistance, on s'aperçoit que les femmes font sensiblement plus de travail que les hommes dans tous les pays. Le volume total du travail effectué par les hommes va de 74 pour cent en Afrique du Sud à 94 pour cent de celui des femmes en Inde. Quand on examine la distribution entre hommes et femmes du temps dédié aux activités non rémunérées de soins ou d'assistance aux personnes, on constate que beaucoup plus d'hommes que de femmes ne font pas du tout ce genre de travail et que, pour ceux qui le font, ce travail est fortement concentré sur de brèves périodes. On note, en revanche, que le volume d'activités non rémunérées de soins ou d'assistance aux personnes est très variable chez les femmes et qu'il existe, en conséquence, un niveau d'inégalité notable entre elles, certaines femmes y consacrant un temps considérable.

Les estimations Tobit confirment que, comme on pouvait s'y attendre, la masculinité est généralement liée à un moindre volume d'activités non rémunérées, et cela dans tous les pays. De tous les facteurs testés dans tous les pays sauf en Argentine, c'est celui-là qui a la plus grande influence (plus fort coefficient en termes absolus). Pour tous les pays, la présence d'un (jeune) enfant dans le ménage tend à augmenter le volume du travail de soins non rémunéré. Le coefficient pour l'âge est toujours positif, alors qu'il est négatif pour l'âge avancé, ce qui laisse à penser que la quantité du travail non rémunéré de soins ou d'assistance aux personnes commence par augmenter à mesure qu'on vieillit, puis diminue. Cette quantité de travail tend à diminuer avec des augmentations de revenus; il en est de même avec un emploi, comme on a pu le constater dans tous les pays hormis la Tanzanie. Pour la plupart des pays, elle a tendance à augmenter avec le mariage.

Dans l'ensemble, il y a au moins autant de différences que de similitudes entre les pays. On constate en particulier des variations sensibles dans la "taille" du travail de soins ou d'assistance réalisé, pour ce qui est du niveau des taux de participation, du temps moyen que consacrent femmes et hommes aux différentes activités et des différences absolues et relatives entre femmes et hommes. Certaines de ces variations traduisent des différences méthodologiques qui tiennent aux instruments, au nombre de jours pris en compte, aux systèmes de classification, aux groupes d'âge étudiés etc. Cependant, les différences méthodologiques ne peuvent expliquer qu'une faible proportion des variations.

Les différences entre pays observées dans ce document confirment donc que les rapports sociaux entre les sexes ne sont pas "de droit divin" ni immuables. Au contraire, ils varient selon les pays et les cultures. A des fins d'orientation politique, cependant, ce qui se passe dans un pays particulier est aussi important, sinon plus, que les comparaisons entre pays. Ce document, ainsi que les rapports des recherches effectuées dans chaque pays, compare différents groupes dans un même pays pendant une période donnée. Il est aussi nécessaire de procéder à des comparaisons longitudinales des constantes de l'emploi du temps dans un pays donné. Les pays doivent donc mener des enquêtes sur l'emploi du temps à intervalles réguliers, en appliquant une méthodologie standard qui permette des comparaisons fiables à travers les années, comme ils le font actuellement sur la population active, bien qu'il ne soit pas nécessaire d'enquêter sur l'emploi du temps aussi régulièrement que sur la population active car il est peu probable que les constantes de l'emploi du temps changent aussi rapidement.

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## **Resumen**

El trabajo de cuidado no remunerado—las labores domésticas y el cuidado de personas que se efectúan en los hogares y comunidades de todas las sociedades de forma no remunerada—es un área que los economistas, al igual que muchos actores del desarrollo, generalmente descartan como materia de estudio. Sin embargo, la cantidad de trabajo de cuidado no remunerado que se realiza, la forma en que la carga de este trabajo se distribuye entre distintos actores y la proporción y los tipos de trabajo de cuidado que son no remunerados o remunerados tienen importantes implicaciones para el bienestar de las personas y las familias, así como para el crecimiento económico y el bienestar de las naciones.

En este documento se resumen y comparan las conclusiones de un análisis de datos sobre el empleo del tiempo en Argentina, Nicaragua, la India, la República de Corea, Sudáfrica y Tanzania para un proyecto del Instituto de Investigación de las Naciones Unidas para el Desarrollo Social (UNRISD) sobre la *Economía política y social del cuidado*. El proyecto en general busca explorar la forma en que el cuidado—y en particular el cuidado de personas—es suministrado por las instituciones de la familia o grupo familiar, el Estado, el mercado y la comunidad, así como por las personas que conforman tales instituciones. El análisis que se presenta en este documento se concentra en los aspectos cuantitativos del cuidado no remunerado que brindan las personas en los hogares.

El documento se divide en nueve secciones, a saber:

- *Conceptos clave*: En esta parte se presentan conceptos relacionados con el empleo del tiempo que se utilizan posteriormente en el análisis.
- *Información básica sobre las encuestas en los seis países*: En esta sección se describe la fuente de los datos utilizados para el análisis en cada uno de los seis países. Esto es importante dado que parte de la variación entre los países que se menciona en el documento podría reflejar diferencias metodológicas, más que “reales”, entre ellos.
- *Pautas básicas de género*: Contiene una serie de gráficos elaborados a partir de cuadros estandarizados desagregados por sexo para cada país. Estos gráficos dan una idea de la variación de los niveles de participación y tiempo invertido por hombres y mujeres en labores relacionadas con el empleo, el trabajo de cuidado no remunerado y el cuidado de personas definido en términos más limitados.
- *Distribución del tiempo invertido en el cuidado*: En esta sección se exploran las distribuciones que hay detrás los promedios que por lo general forman la base de los análisis de uso del tiempo. Los distintos gráficos de países confirman que el tiempo que los hombres invierten en el trabajo de cuidado no remunerado y el cuidado de personas tiende a agruparse en el extremo inferior de la distribución, mientras que un gran número de mujeres dedica muchas horas a la labor del cuidado.
- *Las estimaciones Tobit*: Estos cálculos se refieren al análisis econométrico que se realizó en cada país para determinar los principales factores que inciden en el tiempo invertido en labores de cuidado no remuneradas y el cuidado de personas en los seis países.
- *El género combinado con otros factores*: En esta parte se abordan las diferencias y similitudes entre los países en cuanto a la forma en que el factor de género interactúa con otros factores examinados en las estimaciones Tobit para determinar cómo distintas personas prestan el cuidado. En esta sección se examina especialmente cómo difiere el tiempo invertido entre hombres y mujeres en cada uno de los países en relación con la presencia de niños en el hogar, la situación de empleo y la edad.
- *La relación de dependencia del cuidado*: Contiene los resultados por país de una relación de dependencia del cuidado propuesta para el proyecto como indicador de la demanda de cuidado, en contraste con otras secciones que se concentran fundamentalmente en el suministro de cuidado.

- *El valor monetario del trabajo de cuidado no remunerado:* En esta sección se analizan diversos enfoques para asignar un valor a la labor de cuidado no remunerada, y se comparan los resultados con una serie de indicadores macroeconómicos para los seis países. Estos indicadores son el producto interno bruto, el trabajo remunerado, los ingresos públicos y el gasto público en servicios sociales.
- *Conclusiones:* Aquí se hacen algunas observaciones finales sobre la pertinencia de los resultados del estudio.

Este documento confirma algunas pautas de género básicas constantes en cuanto a la participación en el trabajo que toma el Sistema de Cuentas Nacionales (SCN), así como en el trabajo de cuidado no remunerado, en los seis países. Para todos los países, el promedio de tiempo invertido en el cuidado no remunerado en el caso de las mujeres es más del doble del que invierten los hombres. La brecha de género más acentuada se registra en la India, donde las mujeres pasan casi 10 veces más tiempo cuidando sin percibir remuneración que los hombres. Por el contrario, los hombres tienden a pasar más tiempo que las mujeres en trabajos del SCN en todos los países. También en este caso, la India tiene la diferencia entre géneros más amplia: los hombres pasan casi dos veces y media más tiempo en trabajos del SCN que las mujeres.

Cuando se combinan el trabajo del SCN y el trabajo de cuidado no remunerado, se observa que las mujeres trabajan mucho más que los hombres en todos los países. El volumen de trabajo total que cumplen los hombres oscila entre 74 por ciento del total de trabajo que realizan las mujeres en Sudáfrica y 94 por ciento en el caso de las mujeres de la India. Cuando se analiza la distribución de hombres y mujeres en cuanto al tiempo invertido en labores de cuidado no remuneradas, el número de hombres que no realiza bajo ninguna circunstancia este trabajo es muy superior al del número de mujeres. Y entre quienes sí realizan este tipo de trabajo, se observa una marcada aglomeración en los puntos que representan tiempos cortos invertidos en esta labor. En contraste, existe una alta variabilidad entre las mujeres en cuanto a la cantidad de trabajo de cuidado no remunerado y, en consecuencia, un nivel notable de desigualdad, con algunas mujeres que dedican mucho tiempo a esta tarea.

Las estimaciones Tobit confirman que, como era de esperarse, el ser hombre se traduce en menos trabajo de cuidado no remunerado en todos los países. Este factor es el más influyente (mayor coeficiente en términos absolutos) de todos los factores probados en cada país, con la excepción de Argentina. Para todos los países, el tener un niño en la casa tiende a aumentar la cantidad de trabajo de cuidado no remunerado. El coeficiente para la edad siempre es positivo, mientras que para la edad al cuadrado es negativo. Esto indica un incremento inicial de la cantidad de trabajo de cuidado no remunerado con el aumento de la edad, a lo que sigue una disminución. La cantidad de trabajo de cuidado no remunerado tiende a disminuir con el incremento del ingreso, mientras que el tener empleo tiende a disminuir la cantidad de trabajo de cuidado no remunerado realizado en todos los países, salvo en Tanzania. Para casi todos los países, el estar casado(a) tiende a aumentar la cantidad de trabajo de cuidado no remunerado.

En términos generales, existen al menos tantas diferencias como similitudes entre los países. Específicamente, se observan variaciones importantes en cuanto al “volumen” del trabajo de cuidado realizado, en el sentido del nivel de las tasas de participación, tiempo promedio invertido por las mujeres y los hombres en diferentes actividades y las diferencias absolutas y relativas entre hombres y mujeres. Algunos de estos valores reflejan diferencias metodológicas en cuanto a instrumentos, número de días cubiertos, esquemas de clasificación, grupo de edad cubierto, etc. Sin embargo, las diferencias metodológicas no pueden explicar y despejar más que una pequeña proporción de las variaciones.

Las diferencias entre los países examinados en este documento confirman que el género no es un “regalo divino” y una condición inmutable. El género es más bien un factor que varía con cada país y con cada cultura. No obstante, a los fines de la formulación de políticas, lo que ocurre al interior de un país es tan o incluso más importante que lo que ofrecen las comparaciones entre países. Este trabajo, así como los documentos de investigación

correspondientes a cada país, contienen comparaciones transversales de diferentes grupos dentro de un determinado país en un determinado momento. También se necesita hacer comparaciones longitudinales de pautas del empleo del tiempo dentro de un país determinado. Por lo tanto, los países deben realizar encuestas sobre el empleo del tiempo a intervalos regulares, utilizando para ello una metodología estándar que permita realizar comparaciones fiables con el transcurso del tiempo. Esto sería similar a la práctica actual de las encuestas continuas sobre la fuerza laboral, aunque en el caso de las encuestas del empleo del tiempo no sería necesario realizarlas con la misma regularidad que aquellas, porque es poco probable que las pautas del empleo del tiempo cambien con la misma rapidez.

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## Introduction

Unpaid care work—the housework and care of persons that occurs in homes and communities of all societies on an unpaid basis—is an area that has generally been neglected by economists, as well as by many development actors. This neglect is evident across virtually all schools of economics, whether neoclassical, political economy or Marxist. Yet the amount of unpaid care work done, the way that the burden of the work is distributed across different actors, and the proportion and kinds of care work that are unpaid or paid have important implications for the well-being of individuals and households, as well as for the economic growth and well-being of nations.

The bulk of unpaid care work across all economies and cultures is performed by women. It is therefore not all that surprising that feminist economists have led the call for unpaid care work to be “counted” in statistics, “accounted for” in representations of the economy, and “taken into account” in policy making (Elson 2000:21). It is also feminists who have argued that theorizing and research into welfare states and regimes need to have gender as a central focus (see Razavi 2007 for a summary of this literature).

Like the general literature on welfare states and regimes, much of the feminist work on this topic has, up to now, focused on more developed countries. Similarly, until fairly recently, most of the large-scale attempts to measure unpaid work through time use surveys occurred in the more developed economies of Europe, North America and Australia. In developing countries, there were some explorations of the unpaid work of women, but these tended to be small scale, were often qualitative in nature and tended to focus on the unpaid production of goods (such as subsistence agriculture) rather than the unpaid production of services (care). Over the last decade or two, however, an increasing number of developing countries have conducted large-scale time use surveys that provide more reliable and representative data.

Time use surveys differ from standard labour force surveys in that they ask respondents to report on all activities carried out in a specified period, such as a day or a week. In contrast, labour force surveys focus only on the forms of work that classify a person as “employed” and that are utilized in estimations of gross domestic product (GDP). Labour force surveys can therefore tell us the likelihood of a person (male or female) of a particular age or group being employed or unemployed, the type of work they do in employment and the conditions under which they work. Time use surveys, in contrast, tell us how much time an average person from a particular social group (such as male or female, young or old, rich or poor) spends on sleeping, eating, employment-related work, socializing, and unpaid care work, such as housework and caring for children, the disabled, elderly, ill and so on, in an average day or week. Time use surveys thus provide a good basis for discussing unpaid care work in more concrete terms, and in exploring how responsibility for this interacts with the performance of other activities, such as earning an income, and how it varies along a range of individual and social characteristics.

The project of the United Nations Research Institute for Social Development (UNRISD) on *Political and Social Economy of Care* aims to explore the way in which care—and in particular, care of persons—is provided by the institutions of family/household, state, market and community, and by the people within these institutions. The project has been designed to bring together the findings from in-depth quantitative and qualitative research across a range of countries so as to arrive at a nuanced understanding of the similarities and differences in care provision across different contexts.

The six “core” countries for the research project are Argentina and Nicaragua in Latin America, India and the Republic of Korea in Asia, and South Africa and Tanzania in Africa. Two countries were chosen from each of these three continents in order to have one country that was more developed, both in terms of its economy and welfare services, and another that was less so. In addition, smaller research initiatives have been conducted in Switzerland and Japan so as to include examples of care in more developed economies.

All eight countries were chosen on the basis that time use survey data were available for analysis. In the first year of the project, the research teams for each of the six core countries produced a detailed research report that analysed data from these surveys in their respective countries. Although the surveys differ in some important respects (as discussed below), the reports utilized a relatively similar framework and attempted to analyse similar issues. This report summarizes and compares some of the findings from the analysis of time use data from the six core countries.

The socioeconomic variables used by the country teams are similar in many respects. They are, however, not always completely the same or strictly comparable. The differences between countries arise, among others, from the particular situation within each country (for example, the South African concept of race and the Indian concept of caste are not relevant for the other countries). Further differences arise because of the population covered by the surveys. These include differences in the age group covered, as well as the fact that the Argentina survey covered only the city of Buenos Aires. Further differences arise as a result of the particular instruments and methodology used for the surveys in different countries, the number and nature of days covered, the information gathered through these surveys, and the options provided for answering questions. Many of these differences are described in an earlier paper produced for the project (Budlender 2007). Despite these differences, there is sufficient common ground to allow cross-country analysis.

The paper consists of nine sections after this short introduction, as follows.

- *Key concepts* briefly introduces time use-related concepts utilized in later discussion in the paper.
- *Background to the surveys in the six countries* briefly describes the source of the data used for analysis in each of these countries. This is important to the extent that some of the variation across countries reported in the paper might reflect methodological, rather than “real”, differences between the countries.
- *Basic gender patterns* presents a set of graphs derived from standardized sex-disaggregated tables compiled for each country. These graphs give a sense of the variation in male and female levels of engagement in, and the time spent on, employment-related work, unpaid care work and care of persons more narrowly defined.
- *Distribution of time spent on care* explores the distributions which lie behind the averages that usually form the basis of time use analysis, such as those presented in the previous section. The various country graphs confirm that while the amount of time spent by men on unpaid care work and person care tends to cluster at the lower end of distribution, there are substantial numbers of women who spend extremely long hours on care work.
- *The Tobit estimations* reports on the econometric analysis conducted in each of the countries to determine the main factors influencing the time spent on unpaid care work and person care across the six countries.
- *Gender combined with other factors* discusses differences and similarities across countries in the way in which gender interacts with other factors explored in the Tobit estimations in determining how much care is undertaken by different individuals. In particular, it looks at how time spent differs between women and men in each of the countries in relation to the presence of young children in the household, employment status and age.
- *The care dependency ratio* presents country results for a care dependency ratio proposed by the project as an indicator of care demand, in contrast to other sections which focus primarily on the supply of care.
- *The “monetary” value of unpaid care work* discusses various approaches to assigning value to unpaid care work, and compares the results with a range of macroeconomic indicators for the six countries. These indicators include GDP, paid work, government revenue and government expenditure on social services.
- The *conclusion* offers some final remarks on the relevance of the findings.

The methodology used in the different surveys, of which the results are presented below, can affect the findings. The paper thus, of necessity, includes some technical discussion. The more technical sections are shaded in grey to allow those who are less interested in the technicalities to skip over them.

## Key Concepts

The analysis of care in the UNRISD project, and the time use component in particular, draw on a definition of care which is, in turn, based on the System of National Accounts (SNA). The SNA is a set of internationally accepted rules for calculating GDP. These rules, in essence, define how economic growth is measured. The SNA distinguishes between “production” (or “work”) and non-productive activity by defining production as any activity that one could, at least in theory, pay someone else to do. Work in a factory, as well as housework, thus constitute production, whereas getting dressed, sleeping, socializing and studying do not.

The SNA goes further than this to distinguish production that should be included in calculations of GDP and that which should not. It states that all production of goods should be included in the calculation (in the SNA “production boundary”), whether or not the goods are sold on the market. As a result, subsistence agricultural activity, for example, would be included, as would the collection of fuel and water for household consumption. In respect of services, in contrast, only those that are sold on the market are included. Therefore, housework in one’s own home, and unpaid care for children, elderly people, the ill and disabled are not included in the calculation of GDP. It is these excluded services which this paper categorizes as unpaid care work or “extended SNA”.

Unpaid care work thus forms a key focus of this paper. But unpaid care work can itself be disaggregated into different types of work. At a broad level, the International Classification of Activities for Time Use Surveys (ICATUS), which was used as the basis for coding in three of the six countries, distinguishes between three sub-categories, namely (unpaid) household maintenance (broadly equivalent to housework), (unpaid) care of persons in one’s own household, and (unpaid) community services and help to other households. The UNRISD project has a special interest in care of persons, and some of the analysis below focuses on activities that constitute such care. In some cases, person care is defined as equivalent to the second sub-category (that is, unpaid care of persons in one’s own household). In other cases, care of persons in other households, from the third sub-category, is also considered. In practice, the inclusion of care of persons beyond the household does not substantially affect the results at the broad level presented below, because care of persons in one’s own household is generally far “larger” in terms of rates of participation and time spent on it than care of persons beyond the household.

A complicating factor in using an SNA-related definition is that, according to the SNA, the collection of fuel and water is considered to be production of goods, and is thus included in the production boundary. In practice, however, very few countries – and none of the six considered here – include the value of these activities when computing GDP. In addition, most people who carry out these activities would consider them part of household maintenance. The discussion below highlights, at relevant points, how the collection of fuel and water is classified. This question is obviously of more importance for less developed countries, where the activity is common, than for the Republic of Korea or the city of Buenos Aires.

In five of the countries – all except Nicaragua – the time use surveys were based on a *diary approach*. In this approach, respondents were asked to report what they did for each period of a 24-hour day. The periods (or “time slots”) of the day used ranged from 10 minutes in the Republic of Korea to one hour in India and Tanzania. Whatever the period, this approach provides a full day’s picture, including the time at which particular activities were undertaken. Nicaragua used a *stylized approach* rather than the diary approach. The questionnaire thus

included 22 questions related to specific activities of the form: “Did the person spend time on family or commercial agriculture? (Yes/No)”; “If yes, how much time (in hours and minutes)?”. The 22 questions were followed by a further question asking about any “other activities different to those mentioned”. The fieldworker was required to check that the hours and minutes totalled 24 hours, thus ensuring the full coverage of a day. Nevertheless, as noted in the earlier background paper (Budlender 2007; see also Bittman and Wajcman 2004:174), research suggests that such stylized questions produce less accurate results than a full diary.

A further potential advantage of diary-based methods is that, if designed and implemented appropriately, they are better able to capture *simultaneous activities*. This is especially important in a study of care, as care of persons – particularly “passive” care that involves supervision – is more likely than some other activities to be conducted concurrently with other activities. Ironmonger (2004:96), for example, cites Canadian data that suggest that the amount of time spent on unpaid childcare is four times as high when childcare conducted simultaneously with other activities is included. The surveys in all six countries attempted to capture simultaneous time, but were more successful in doing so in Argentina, South Africa and Tanzania than in other countries. In India and the Republic of Korea, respondents could name more than one activity for a particular period, but were required to rank these activities. In Argentina, South Africa and Tanzania, in contrast, simultaneous activities were given equal weight. Examination of the data reveals that relatively few simultaneous activities were recorded in India and the Republic of Korea.

In Nicaragua, the prompts on specific activities described above were followed by two further double-barrelled questions: “Did the person spend time on caring for children at the same time as other activities?”; “If yes, how much time?” and “Did the person spend time on other simultaneous activities? Yes/No”; “If yes, how much time?” Unfortunately, these final questions were so poorly answered that the Instituto Nacional de Estadísticas y Censos (National Institute of Statistics and Census) decided not to include them in the analysis. These data are – for the same reason – excluded from the analysis presented in this paper. Therefore, the Nicaraguan results do not include simultaneous activities. In fact, even if the questions had been better answered, this method of asking about simultaneous activities does not identify which other activities were combined with childcare or other simultaneous activities.

Where simultaneous activities are recorded, the question arises as to what measure of duration to allocate for purposes of analysis. For example, if two activities are carried out simultaneously in a given 30-minute period, should each be allocated a period of 15 or 30 minutes? For the purposes of the analysis below, the paper distinguishes between two options. For the 24-hour minute, the available time is divided between the simultaneous activities so that all activities in a given day add up to 24 hours. The advantage of this approach is that it allows for simple comparisons of the distribution of activities over a full day, as presented, for example, in figure 1 below.

For the “full minute”, each activity is given its full duration. The advantage of this approach is that it is possible to see the full extent of time devoted to particular activities. This is particularly important in the case of an activity such as care, where performance of the activity may limit the carer in terms of what other activities can be performed at the same time, and where. In the case of Argentina, where simultaneous activities were captured to a greater extent than in other countries in the sample, the full minute approach gives an average of over 28 hours per person per day. In the case of the Republic of Korea, there was little difference in the results of the two approaches, and little analysis was carried out using the full minute approach. For Argentina, India, South Africa and Tanzania, the full minute approach was used more regularly for analysis, as deemed appropriate, although the difference between the two measures for India was small. The discussion below looks at which of the two approaches is used for each type of analysis.



## Background to Surveys in the Six Countries

This section provides information on the source of time use data for each of the six countries and gives the most basic details necessary to understand the analysis which follows. Further key features of each of the surveys are provided in the appendix.

All surveys employed random sampling methodologies designed to obtain samples that were representative of the relevant populations. In most cases, households were sampled and all individuals above a certain age in these households were chosen. In Argentina and South Africa, households were selected randomly, with one or two respondents chosen, also on a random basis, in each of these households.

In *Argentina*, unlike in the other five countries, the time use survey covered only the capital city, excluding its informal settlements and surroundings. With three million people, the city of Buenos Aires accounts for 8 per cent of Argentina's population, according to the 2001 population census. In the discussion below, the term Argentina is used, rather than the city of Buenos Aires, but the reader should remember that the patterns reflected are not those for the country as a whole, or even those for the Greater Buenos Aires area, which encompasses more than 11 million people living in the city plus the 24 counties that surround it.

The Buenos Aires Encuesta Annual de Hogares (Annual Household Survey), which contained the time use module, was conducted by the Directorate-General of Statistics and Census of the City Government. One person between the ages of 15 and 74 years was selected per household for the time use module. The fieldwork took place during November and December 2005. The design for the survey drew on the one used for South Africa, with some modifications. Argentina used the ICATUS, but with adaptations. In particular, the three major ICATUS categories in respect of SNA work were subsumed into a single category.

In *Nicaragua*, the time use survey was implemented as a module within the Encuesta Nacional de Hogares sobre Medición de Niveles de Vida (EMNV, National Household Living Standards Survey). Time use data were collected from 50 per cent of all households in the selected sample for the EMNV. Data were collected between April and August 1998 for all members aged six years or more. The questions in respect of "reproductive work" focused on cooking, washing dishes, mending, ironing, cleaning the house, maintaining the house and garden, collecting fuel and water, buying food, clothes and articles for the house, care of children or the disabled, and care of the elderly.

In 1998/99 *India's* Ministry of Statistics and Programme Implementation conducted a time use study which was categorized as a pilot but was much larger than many other countries' full-scale surveys. The survey was conducted as a stand-alone exercise, and covered six states (Gujarat, Haryana, Madhya Pradesh, Meghalaya, Orissa and Tamil Nadu) that were selected to be as representative as possible of the different regions of the country. The survey was administered in four quarters so as to cover the full year. Diaries were completed for all household members in the selected households in respect of three days during the reference week—a "normal" day, "abnormal" day, and "weekly-variant". After weighting, the "normal" days accounted for 6.51 of the seven days of a week.

India developed its own activity classification system, which was informed by the developing trial classification of the United Nations Statistical Division (UNSD) as well as proposals made by Eivind Hoffmann and Adriana Mata (1998) of the International Labour Organization (ILO). The activities specified in the three major sub-categories of unpaid care work (namely housework, person care and unpaid community services) were very similar to those in ICATUS, but separated out children and adults for all types of care.

The 1999 Korean Time Use Survey (KTUS) was the first survey to use a time diary method in the *Republic of Korea*. A further survey was conducted in 2004, and the National Statistics Office web site ([www.nso.go.kr](http://www.nso.go.kr)) states that the survey would be conducted on a five-yearly basis. The

surveys largely followed Eurostat guidelines, which have a self-completed diary using 10-minute time slots as the default. However, the Republic of Korea did not use the standard Eurostat activity classification system, using instead, nine broad categories similar to those used for ICATUS, although the more detailed codes differ. Fieldwork for the Korean time use surveys was carried out in September 1999 and September 2004. This report presents only the results for 2004, so as to simplify comparisons.

The only existing national time use study in *South Africa* was conducted by Statistics South Africa, the official statistical agency, in 2000. Information was collected in respect of persons aged 10 years and above, with two informants per household (or only one if there was only one household member aged 10 years and above). The survey was conducted in three “tranches” so as to catch possible seasonal variations. ICATUS was used, with minor modifications. One of the weaknesses of the South African approach was that care for adults was not disaggregated to the same extent as care for children. For example, there was no distinction between care for the elderly, disabled or ill. In addition, the coding schema did not distinguish between whether the passive care (“supervision”) reported was carried out in respect of adults or children.

*Tanzania’s* National Bureau of Statistics (NBS) conducted a time use survey as an add-on module to the integrated labour force survey (ILFS) of 2006. The time use module was applied in every fifth household selected for the ILFS. The methodology drew fairly heavily on the South African approach (see above). However, all members aged five years and above in selected households were interviewed each day for seven days about the previous day’s activities. There were also some changes to the activity codes. These included the disaggregation of all care activities in respect of adults into (i) care for elderly people, (ii) care for ill people, and (iii) care for people with disabilities, and the addition of a code to be used when recording time spent the previous day responding to the time use survey.

## **Basic Gender Patterns**

As noted above, the age group covered by the time use surveys in the six countries differed. For the most part, the country papers reported on the full population covered by a particular survey. In the cases of India, Nicaragua and Tanzania, where the surveys had a very low age cut-off, the analysis sometimes utilized a higher age cut-off so as to avoid the patterns of time use of the relatively large numbers of young children obscuring those of teenagers and adults.

To facilitate comparison across countries, each team generated a set of age-standardized tables in relation to time spent on productive and non-productive activities, as well as time spent on the sub-categories of unpaid care work. The age group used for these tables was 15–64 years, which corresponds to the age group commonly used internationally when reporting on labour market engagement.

The age-standardized tables permit more definitive statements to be made in comparing the different countries. However, even after standardizing for age, there are methodological and other issues that can affect comparability. In particular, the use of stylized questions in Nicaragua as opposed to the 24-hour diaries used in the other countries might affect the accuracy of estimates for Nicaragua. In addition, some activity classification systems allow for better identification of care-related activities than others.

The graphs and tables below compare patterns across the countries in terms of three measures, namely, mean population time, participation rate and mean actor time. The *mean population time* gives the number of minutes that an “average” person in the sample spent on a particular type of activity. The *participation rate* gives the proportion of the surveyed population that was recorded as engaging in a particular type of activity. The *mean actor time* provides the number of minutes that a person spent on a particular type of activity averaged only over those who performed that activity. As the Argentina report notes, the mean population time is thus, in

effect, a composite measure made up of the second and third measures, as “proved” by the following formula:

$$\frac{\text{Total time}}{\text{Population}} = \frac{\text{Participants}}{\text{Population}} \times \frac{\text{Total time}}{\text{Participants}}$$

Where virtually everybody undertook a particular type of activity (such as sleeping) over the period recorded in the time use survey, there is no difference between mean population time and mean actor time. Where, in contrast, only a small proportion of the population carried out a particular activity, the mean actor time might be relatively high but the mean population time relatively low as the denominator for the latter includes many people who recorded zero minutes spent on this activity. In the figures presented below, the difference between mean population time and mean actor time is most marked for unpaid community services, for which participation rates are very low. Interpretation of all comments about greater or lesser time spent by particular groups on particular activities must thus consider which of the two time measures is at stake.

The estimates are presented separately for men and women in acknowledgement of the significant gender differences that prevail in respect of unpaid care work as well as some other types of activity.

The results presented for the six countries must be read against the background of what has been found in previous studies which, as noted above, have focused more on developed, rather than developing, countries. They must also be read against what labour force surveys and other sources of data tell us about paid work and employment.

Elson’s (2000:73–74) graphical presentation of the change in the female share of paid employment in industry and services over the period 1980–1997 reveals that the share increased or remained the same for most countries, with the most notable exceptions occurring in the transition countries of Eastern Europe. Nevertheless, in an overwhelming majority of countries, the share remained below 50 per cent. Increasing participation by women in the paid labour force should be reflected in increasing participation in SNA activities in time use surveys. One might also expect that an increased participation of women in the paid labour force would be accompanied by a decreased participation by these same women in extended SNA activities, and compensated for by increased participation by men in extended SNA. In other words, the gender division of labour could be expected to become less stark over time.

The evidence from developed countries is mixed in this respect. Bittman (2004:226), using Australian data covering the period 1974–1992, finds that the amount of hours spent by men on childcare increased, but their share of childcare did not because the number of hours spent by women also rose over the same period. Bittman also finds that the amount of time spent by adult men on unpaid care work hardly changed over their life cycle. In contrast, Budig and Folbre (2004:52–54) suggest that the amount of time spent by women in the United States on housework has declined since 1995, and that the amount of time spent by married fathers on care increased by a small amount. Bittman et al. (2004:146–149), again using Australian data, suggest that mothers who engage in paid work do less “low-intensity” care, such as housework and supervision, but no decrease occurs in respect of “developmental” care, such as reading to and other close contact with the child. They suggest that this pattern reflects a shift in the mothers’ patterns of time use closer to that of the fathers, in which “the most rewarding activities” are prioritized.

Some of the apparent contradictions in the above findings might be explained by differences in patterns in respect of unpaid care work as a whole and person care (or childcare, in particular) more narrowly defined. Overall, however, the evidence suggests that an increase in female engagement in paid work in developed countries has not been matched by a similarly sized increase in male engagement in unpaid care work.

The factors at work in developing countries will differ in some respects from those in more developed countries. In particular, the time that needs to be spent on unpaid care work will be influenced by the availability of basic services, such as safe water and electricity on site, as well as access to modern appliances. It will also be influenced by the availability of “commercial” alternatives, such as domestic workers, laundromats and ready-made meals.

The time spent on care of persons should be influenced by the proportion of the population needing care (see the section on care dependency below), the ideological or cultural emphasis placed on different types of care and—perhaps most important—the likelihood that respondents will perceive and report care as a separate activity. Thus Budig and Folbre (2004:53, 58) suggest that, in the United States, “growing social concern about the amount of time that mothers spend with their children may lead mothers to reclassify their own use of time, perceiving care activities as more salient and therefore reporting them in more detail”. They suggest further that the lesser physical effort required for housework with advances in technology might encourage respondents to report childcare as a primary activity. Smeeding and Marchand (2004:26) suggest that a reduction in family size, by decreasing other demands on the time of parents, could increase the time spent on care of children. It is also likely that where large amounts of time are needed to undertake basic household maintenance, for example, as a result of poor infrastructure and limited income, less time might be available for focused care of persons.

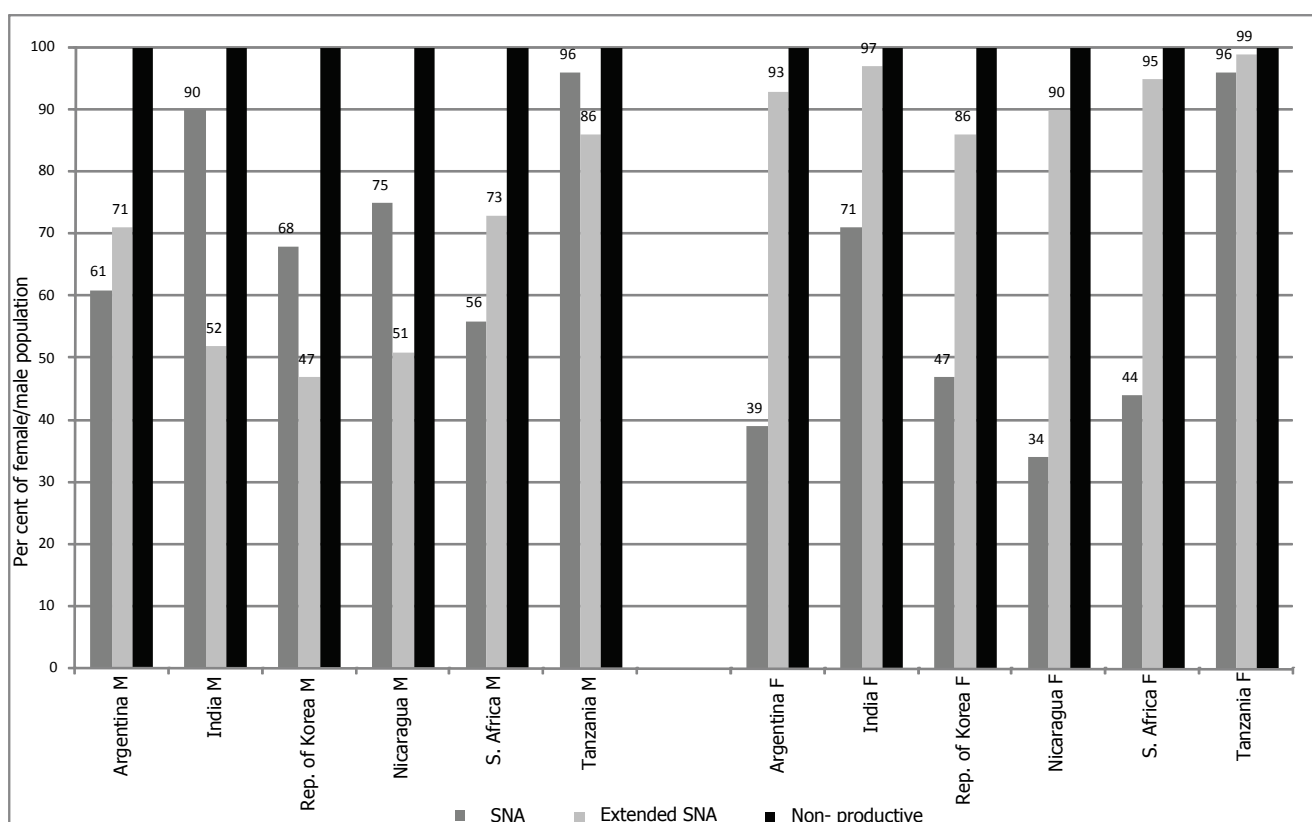
The temporal comparisons discussed above for some developed countries are, unfortunately, rarely available for developing countries, as there are very few developing countries with multiple comparable time use surveys. In their absence, cross-country comparisons can reveal possible trends. Franzoni’s (2005) analysis of time use data for Mexico, Nicaragua and Uruguay is a rare example of cross-country analysis of time use data from developing countries. Franzoni uses level of education as an indicator of social standing for Mexico, poverty for Nicaragua, and socioeconomic status for Uruguay. In all three countries, she finds that women of lower social standing tend to do more preparation of meals but less childcare than those with higher standing. To the extent that “development” results in higher overall social standing of a country’s inhabitants, related changes in patterns of time use over time might be found as a country “develops”.

### ***The SNA-related categories***

Figure 1 shows the patterns across the three major categories into which all activities can be divided, namely SNA, extended SNA and non-productive activities. The first includes all activities that should be included when calculating a country’s GDP because they fall within the narrow production boundary of the SNA. The second category is equivalent to unpaid care work and represents all activities that are recognized in the SNA as production or work, but are not included when calculating GDP. The final category encompasses all those activities that are not considered to be work.

As expected, across all countries, and across both male and female, 100 per cent of the population does some non-productive activity. In particular, virtually all people will sleep or eat in any 24-hour period. A further constant across all countries is that among women, participation rates are higher in respect of extended SNA than for SNA proper. For most countries, there is a large difference in female participation rates between these two categories. The exception is Tanzania, where the participation rate for SNA is 96 per cent, and there is thus inadequate “space” for a large difference between this and extended SNA. Although, as explained in the next paragraph, the Tanzanian participation rates are biased upward compared to those of other countries, as a result of the methodology, the high SNA rates also reflect the fact that in 2006, 89.6 per cent of the population aged 15 years and above was recorded as economically active, with rates of 90.5 per cent for males and 88.8 per cent for females (Meena 2007).

Figure 1: Participation rates by SNA category, country and sex



The Tanzanian pattern is also partly explained by the fact that Tanzania's participation rate represents participation recorded over a seven-day period, whereas for other countries only one or two days of activities were recorded for each person. Increasing the number of days increases the chances of a person undertaking a particular activity. A proxy one-day participation rate for Tanzania can be obtained by treating each person-day as a separate observation. This yields a female participation rate of 83 per cent in SNA activities and 94 per cent for extended SNA. The pattern thus arrived at is closer to that for other countries. The proxy one-day participation rates for men are 82 per cent for SNA activities and 58 per cent for extended SNA. Non-SNA activities for men thus show the sharpest fall with the shift to the one-day proxy, suggesting uneven participation in these activities by men over the course of a week.

Tanzania has by far the highest female rates of participation in SNA work, followed by India. Much of this work is unpaid. In Tanzania, for example, 71.7 per cent of employed females work on their own farm or *shamba*, and many of these are subsistence farmers (Meena 2007). The very low rate for Nicaragua can be partly explained by the fact that the collection of fuel and water was considered part of unpaid care work for this country, whereas for India, South Africa and Tanzania, it was included under SNA work despite the fact that it was not included in the estimation of GDP. The relatively low rate for South Africa despite the inclusion of fuel and water collection reflects the low employment (and high unemployment) rates for both women and men. In September 2000, for example, the employment rate for South African women aged 15 years and above was 48.6 per cent (author's calculations and labour force survey data).

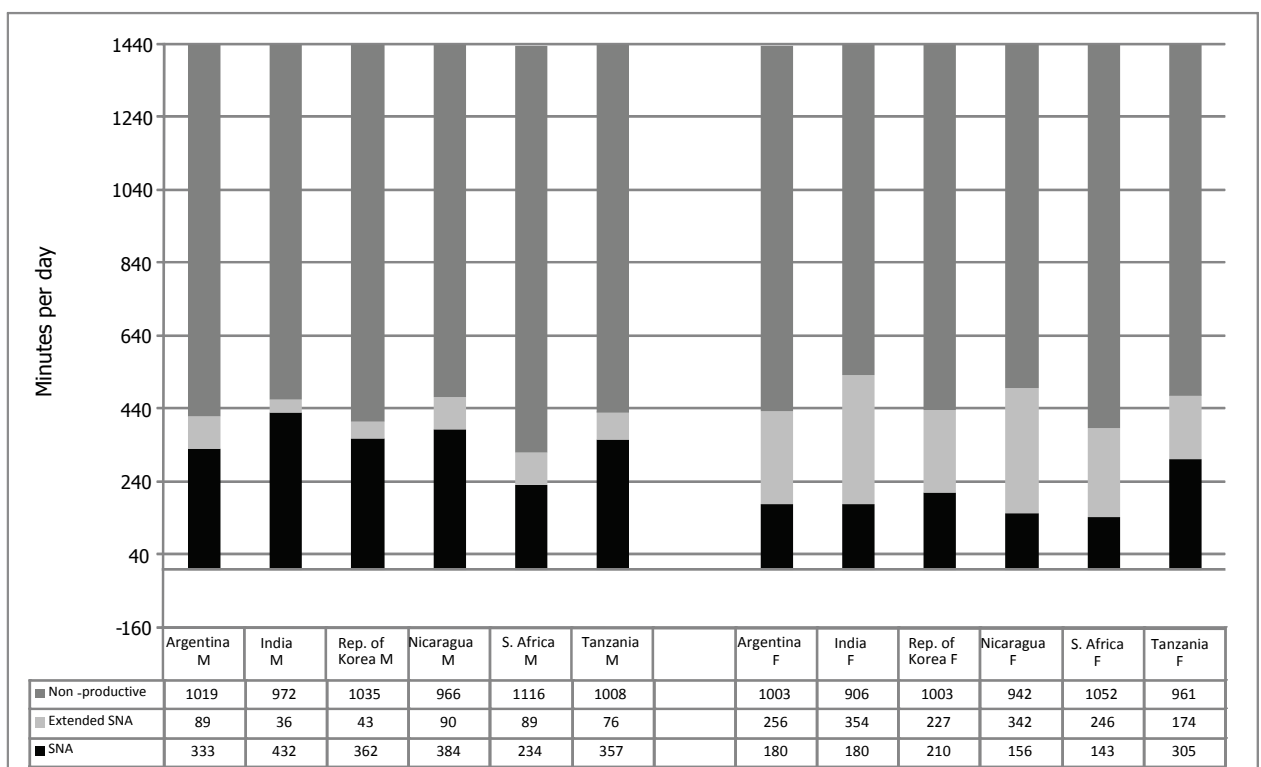
There is far less variation among women in the countries included in the survey in respect of participation in extended SNA work. Engagement is lowest in the Republic of Korea, at 86 per cent.

For men, the participation rate in SNA work is higher than in extended SNA for four countries (India, Nicaragua, the Republic of Korea and Tanzania), but lower in the remaining two. The difference in the male participation rates in SNA and extended SNA work is largest for India, although a similarly large gap in the reverse direction is not found for Indian women. The two countries – Argentina and South Africa – for which the pattern is reversed (that is, male SNA is lower than male extended SNA) have the lowest male SNA participation rates, while male participation in unpaid care work is not particularly high when compared to the other countries. For South Africa, the low rate for male SNA is explained by the high unemployment rates in the country.

For all countries except Tanzania, the SNA participation rate is noticeably higher for men than women. Tanzania’s “exceptionalism” remains, even if we use the one-day proxy described above. For all countries the extended SNA participation rate is noticeably higher for women than men. The gender gap in participation is larger in respect of extended SNA than in SNA across all countries. This is somewhat similar to the findings for developed countries reported above, where female engagement in paid work tends to converge more to male engagement, while the reverse does not occur in respect of male engagement in unpaid care work. A crude interpretation of these patterns is that, using this measure, women are more likely than men to work across all countries if all types of work are considered, and that women are more likely than men to combine both types of work. Further evidence in this respect is presented below.

Figure 2 gives the mean population time, that is, the average time that a man or woman would spend on each of the three activities, including in the calculations those who spend no time. For both this and the mean actor time that follows, the 24-hour minute measure is used. For this particular graph, the mean number of minutes for the three categories adds up to 1,440, equivalent to one day.

**Figure 2: Mean time spent per day on activities by SNA category, country and sex for full sample population**



The figure confirms that men and women across all countries spend a major part of each day on non-productive activities. For both women and men, India records the smallest proportion of the day spent on non-productive activities, while South Africa records the largest proportion. Within each country, men and women tend to spend similar amounts of time on non-productive activities. For South Africa, the high proportion of the day spent on non-productive activities mirrors the fact that the country also reports the shortest proportion of time spent on SNA activities. This, in turn, reflects the high unemployment rates in the country. For India, the relatively small amount of time spent on non-productive work reflects particularly high times recorded for men on SNA work, and high times for women on extended SNA.

Where there is a male-female difference, women tend to spend less time than men on non-productive activities. The converse is that women tend to spend more time working than men do, if all types of work are considered. Pacholok and Gauthier (2004:211) report a similar pattern for Canada and Germany, but find that in Sweden men tend to spend more time than women on paid and unpaid work combined. Similarly, in a larger sample of 27 “high human development” and six “medium and low human development” countries listed in the 2007/08 *Human Development Report*, only three—the Netherlands, Norway and Sweden—report longer combined hours on SNA and expanded SNA for men than women (UNDP 2007:342).

While non-productive activity consumes the largest proportion of people’s time, extended SNA accounts for the least time of the three categories for men across countries, and the least time for women in one country—Tanzania. As noted above, much of the SNA work of Tanzanian women would be unpaid, including the collection of fuel and water.

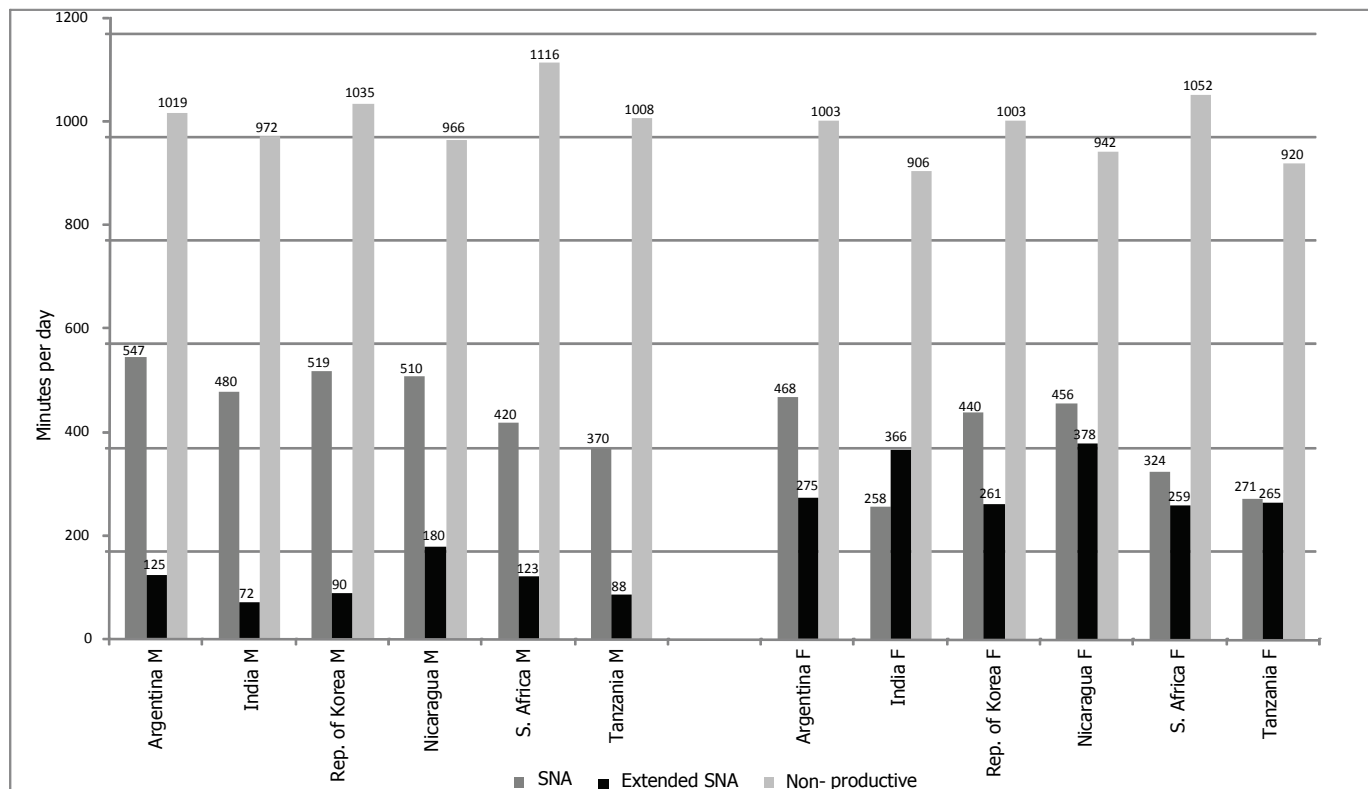
The figure clearly shows that women tend to spend more time on unpaid care work than men. For all countries, the mean time for women is more than twice that for men. The gender gap is most marked in India, where women spend nearly 10 times as much time on extended SNA work than men. The mean time for Indian women is about double that for Tanzanian women. Men from the two Asian countries, India and the Republic of Korea, tend to do noticeably less unpaid care work than men in the other countries. The gap for India is similar to that reported by Bittman and Wajcman (2004:178) for “‘familistically’ oriented” Italy, while that for Tanzania is similar to that for “gender equity conscious” Sweden.

Men tend to spend more time than women on SNA work across all countries. The gender difference is relatively small in Tanzania. In India, in contrast, men spend nearly two and a half times as much time on SNA work as women do, mirroring the much longer times that women spend on unpaid care work. Thus, while the previous graph suggested high rates of participation in SNA work for Indian women, the time spent is not particularly high. The patterns accord with those for economic activity of females aged 15 years and above as a percentage of male activity, where the Tanzanian percentage is the highest for the six countries, at 97 per cent, while the Indian percentage is second lowest, at 42 per cent (the percentage for Nicaragua is even lower, at 41 per cent) (UNDP 2007:338ff). The mean time spent by Tanzanian women on SNA work is more than double that for women in South Africa, and nearly double that of Nicaragua. South African men record the shortest mean times for SNA work, while Indian men record the longest average times. As before, the South African pattern reflects the high unemployment rates. Conversely, the Indian pattern reflects high employment rates and long hours of work.

Figure 3 shows the mean time spent by actors on each of the SNA-related activity types. There is no change in the time spent on non-productive activities, as these had participation rates of 100 per cent. The bars for non-productive activities are nevertheless included to allow comparison with the time spent on the other two categories. For SNA and extended SNA, the actor times are by definition longer than the population mean times. Further, because men tend to have higher participation rates in SNA-related activities, the difference between mean population time and mean actor time on these activities is greater for women than it is for men. The opposite gender pattern holds in respect of extended SNA activities, that is, the difference

between mean population time and mean actor time is greater here for men than for women. All this results in smaller apparent gender gaps for mean actor time than for mean population time. For Argentina, for example, the mean population time spent on unpaid care work for men is 35 per cent that of women’s time, while the mean actor time is 45 per cent that of women’s time.

**Figure 3: Mean time spent per day on activities by SNA category, country and sex for actors**



As with mean population time, the mean actor time spent by men on SNA activity exceeds that spent on extended SNA activity across all countries. The difference is largest for India and smallest for Nicaragua. These two countries have very similar participation rates for extended SNA, but India has a much higher male participation rate than Nicaragua for SNA activities.

For women, the focus on mean actor time results in a reversal of the pattern in figure 2 in respect of time spent on SNA and extended SNA activities in all countries but India. This pattern is explained by the fact that the bars refer to different groupings of women. Thus the longer times are recorded for relatively small numbers of women engaged in SNA work, while the shorter times are recorded for relatively larger numbers of women engaged in extended SNA work.

Perhaps the most important message from the actor means is that population means can obscure the fact that within groups which overall engage very little in a particular type of activity, some individuals might spend extensive time on it. Conversely, high actor means can obscure the fact that only some individuals may be engaging intensely in a particular activity while the majority do very little or do not engage at all. The discussion of distribution patterns below highlights the differences between women and men in this respect.

This section concludes with a graph (figure 4) that provides a simple comparison of the volume of SNA and extended SNA work done in each country. The comparison differs from that



presented in figure 2 in that the average hours per individual male/female are multiplied by the size of the male and female population aged 15–64 years.

The size of both the population and the economy varies enormously across the six countries, and a graphic comparison in absolute volume of hours is therefore not sensible. Instead, the data are standardized across the countries by assuming that all hours spent on SNA work and unpaid care work in a particular country constitute 100 per cent of the full economy. The percentage of this total volume that constitutes SNA and unpaid care work performed by women and men is then calculated. Thus the percentages shown in the bars for Argentina demonstrate that 23 per cent of all hours of work performed by the population aged 15–64 in the city of Buenos Aires consist of SNA work done by women, 35 per cent of the hours consist of SNA work done by men, and 32 per cent and 9 per cent are accounted for by hours of extended SNA work done by women and men respectively.

Figure 4 shows marked variation among countries in terms of both relative size of the SNA and unpaid care work components and the sex composition of each component. This paper focuses first on the first aspect, namely the relative “size” of SNA and unpaid care work in the different countries.

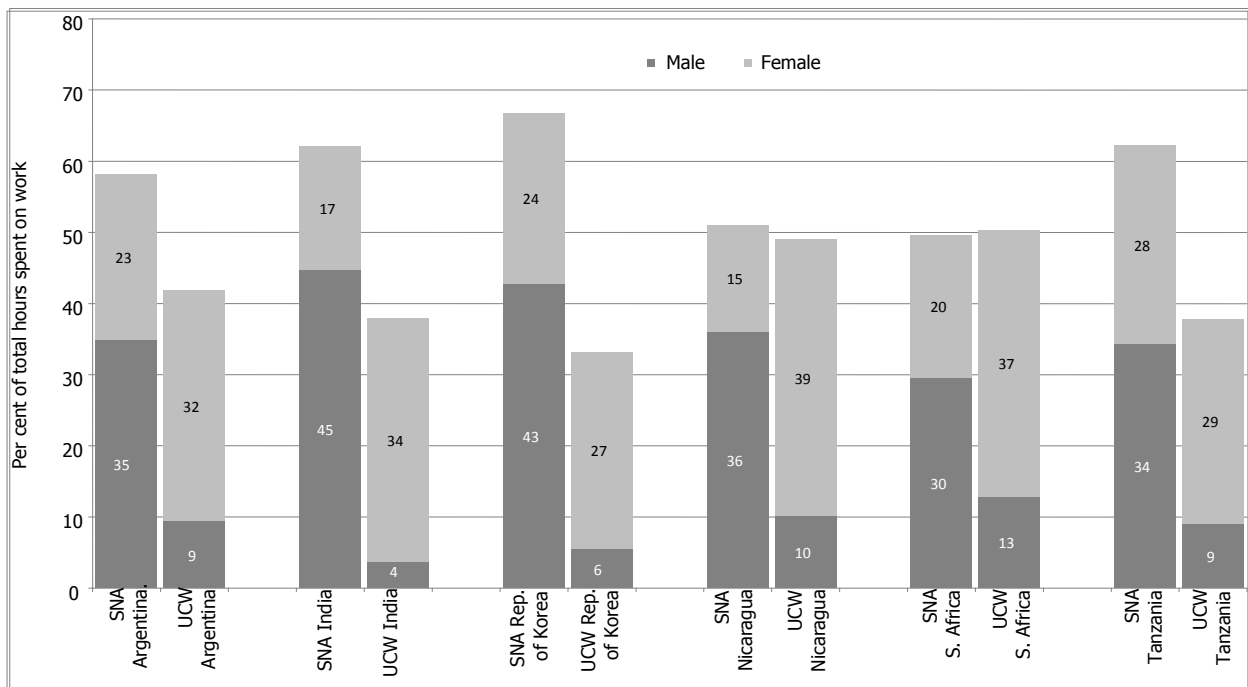
In Nicaragua and South Africa, the SNA and unpaid care work components are almost equal in size. In all the other countries, the SNA component is noticeably larger than the unpaid care work component. In Argentina and the Republic of Korea, this pattern could reflect commercialization of care services. In Tanzania, the predominance of SNA work reflects the small proportion of time spent by both women and men on unpaid care work, and high levels of engagement in SNA work. In India it is caused, among others, by the very long hours on SNA work recorded for men. Alternatively, if Nicaragua and South Africa are taken as exceptions, the relatively low amount of SNA work could be partly explained by high unemployment rates.

Earlier estimates of the division of total work time between SNA and non-SNA for several developing and developed countries show a similar wide range (UNDP 1995:91). For developing countries (covering urban areas of six countries, rural areas of five countries, and combined areas of one country), on average SNA work accounted for 54 per cent of total work time. However, the SNA percentage ranged from 45 per cent for the Republic of Korea in 1990 to 73 per cent in the Philippines in 1975–1977. For 13 developed countries, on average SNA work accounted for 49 per cent of total work time and ranged from 35 per cent in the Netherlands in 1987 to 68 per cent in Denmark in 1987. However, with the exception of these two outliers, the SNA percentage for all remaining developed countries lay between 44 per cent and 52 per cent.

The earlier estimates are probably less reliable than those for the six countries studied here because of a greater variation in methodology, with some of the samples being small, and some data sources dating from the 1970s. In addition, for developing countries the estimates were often reported separately for urban and rural areas, and sometimes only for one of these. Nevertheless, the figures suggest that the extent of the dominance of SNA work in the Republic of Korea, Tanzania and India is unusual.

In terms of sex composition, all countries have, as expected, more hours spent by men on SNA work and by women on unpaid care work. Male dominance with SNA work is, however, much more marked in India and Nicaragua than in other countries and least marked for the city of Buenos Aires and South Africa. The larger number of women doing unpaid care work is most marked in India, and far less obvious in Tanzania. In terms of overall sex division, if all work is included, South Africa stands at one extreme, with men’s volume of work equivalent to only 74 per cent of the volume performed by women. India stands at the other extreme, with men’s work equivalent to 94 per cent of the volume attributable to women.

**Figure 4: Composition of hours spent on SNA and unpaid care work by sex**



### ***The components of unpaid care work***

The previous sub-section focused on three major divisions into which activities can be categorized, namely SNA, extended SNA and non-productive activities. This section examines the second division—extended SNA or unpaid care work—in more detail. For purposes of analysis a three-way (sub-)categorization is used, namely, household maintenance, unpaid care for persons in the household, and unpaid community services and help to other households (care for persons beyond the household, or unpaid community services). This finer disaggregation of the three main categories helps explore the extent to which the differing patterns found for developed countries in respect of unpaid care work in general, and person care in particular, are replicated in developing countries. It also helps explore whether the level of development might affect the amount of time spent on care of persons.

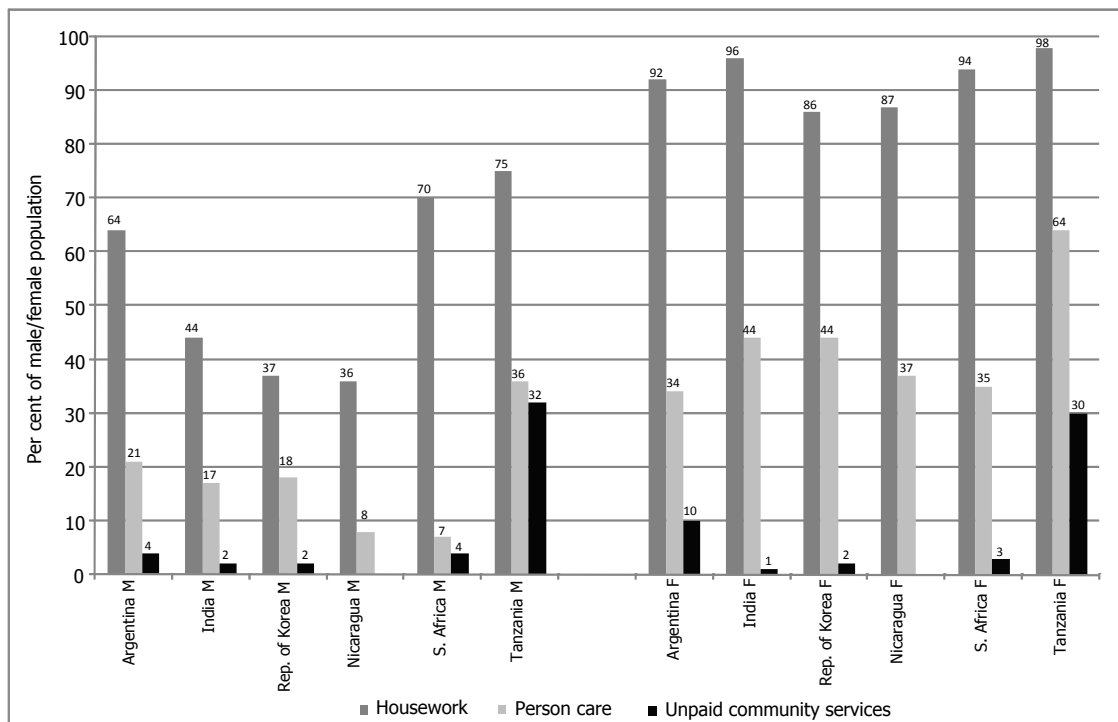
In the previous sub-section, the analysis was carried out in terms of 24-hour minutes so that the mean population time would add up neatly to 24 hours. In this sub-section, full minutes are used for those countries (Argentina, India, South Africa, Tanzania) where the recording of simultaneous activity allowed this distinction. Full minutes are the preferred measure here, as evidence from other countries (see, for example, Ironmonger 2004) has revealed that care of persons is especially likely to be done simultaneously with other activities. Further, person care tends to be reported as a secondary rather than main activity when performed in conjunction with other activities.

Figure 5 shows the participation rates for men and women across the countries. Participation rates in household maintenance are markedly higher than for the other sub-categories for both men and women across all countries. Participation rates in unpaid community services are lower than for all other sub-categories for both men and women in these countries. The gap between participation in person care and unpaid community services is generally large, with the exceptions of Tanzania and for men in South Africa. In Tanzania, the participation rate for unpaid community services is noticeably higher for both men and women than in all other countries. This is a result of the methodology used rather than any real difference in engagement in unpaid community services.

The Tanzanian anomaly is explained by the fact that Tanzania recorded activities over a seven-day period, with the activity of being interviewed for the time use survey taken as an unpaid contribution to the community and given an activity code in this sub-category. This would imply that a participation rate of 100 per cent for Tanzanian participants. The fact that it is not suggests that some respondents failed to mention this activity when reporting on activities performed in each hour of the preceding day. If participation in the time use survey is excluded, Tanzanian participation rates in unpaid community services fall to 2 per cent for men and 4 per cent for women. This is very similar to the patterns found in other countries.

The second exceptional case where there is a relatively small gap between participation in care of persons and unpaid community services involves South African men. Here the explanation is that very few South African men engage in either of these sub-categories of activities.

**Figure 5: Participation rates by sub-category of unpaid care work, country and sex**



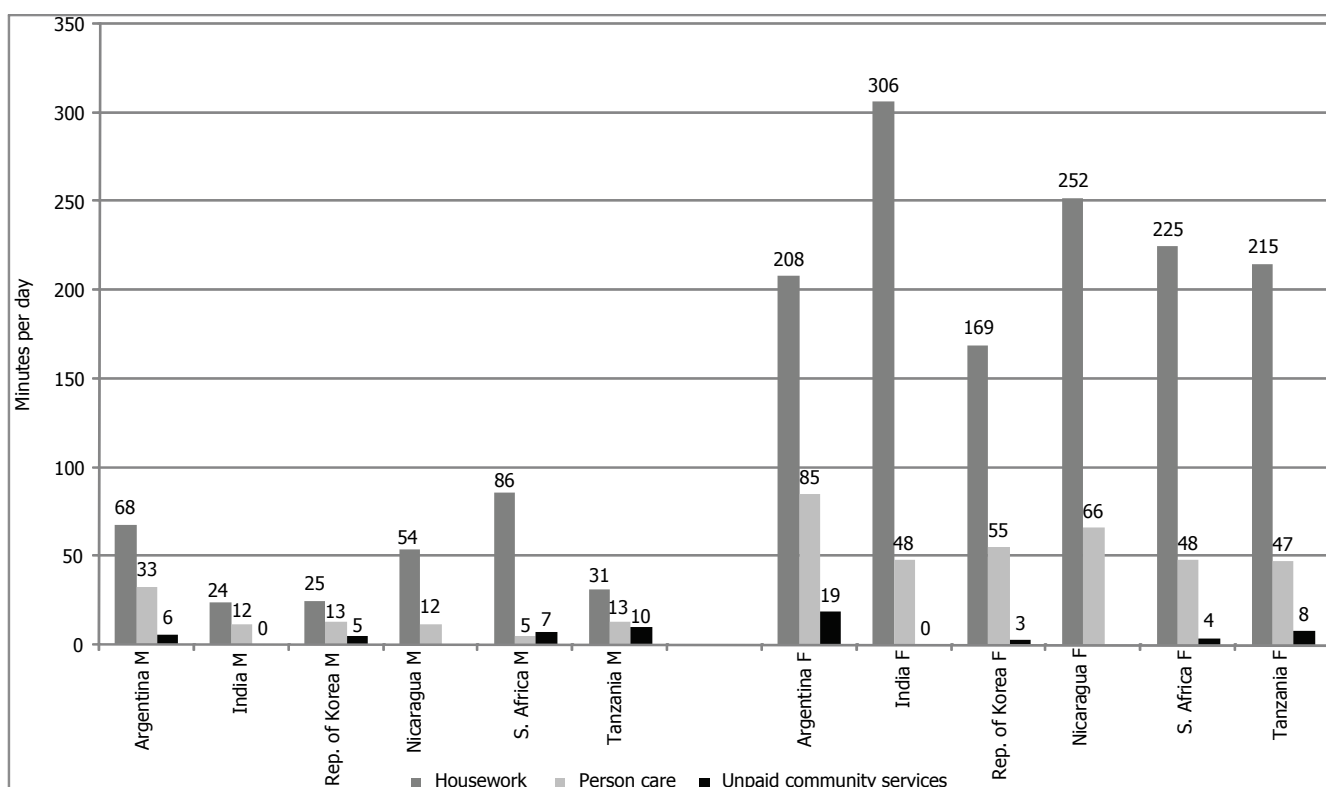
Women are far more likely than men to engage in both household maintenance and care of persons across all the countries. For unpaid community services, in contrast, levels of participation are very similar for men and women, except in Argentina. The fact that the Argentine rates for women are relatively high when compared to other countries (except Tanzania) is especially interesting, given that the survey in Argentina excluded some activity codes for this sub-category that were used in other countries. These were community work, such as cooking for collective celebration, and participation in meetings and involvement in civil responsibilities. The high rates seem to accord with a widespread perception that Latin America, and Argentina in particular, have very active community-based and voluntary sectors, and that women tend to be especially active in these sectors (Jelin 1990). However, half of the unpaid community care services represent care of children outside the household rather than other forms of community engagement. The exclusion of participation in meetings could account for the unusual gender pattern in that men are probably more likely than women to attend meetings.

The fact that men’s performance relative to that of women is “best” in respect of unpaid community services could constitute yet another reflection of the public-private divide, in that men might be more open to participating in unpaid care work when it is in a more public sphere.

Figure 6 shows the mean time spent on the different sub-categories of unpaid care work. The clearest message from this graph is that women tend to spend substantially more time than men on both household maintenance and care of persons across all countries. The gender gap is largest for India and Tanzania in respect of household maintenance, and smallest for South Africa. In India, where there is also a large gender gap for unpaid care work more generally, men do less than a tenth of the amount of housework done by women. The smaller gap for South Africa could reflect the diverse household and family composition and lower marriage rates than in other countries. This could mean that fewer men are able to rely on women partners to do housework for them.

The gender gap in respect of care of persons, in contrast, is largest for South Africa and smallest for Argentina. In South Africa, men do just over a tenth of the amount of person care carried out by women. The South African pattern could perhaps again be partly explained by the fractured family set-up, where fewer than half of all children live with their fathers and many adults do not live with their partners.

**Figure 6: Mean time spent per day on activities by sub-category of unpaid care work, country and sex for full sample population**

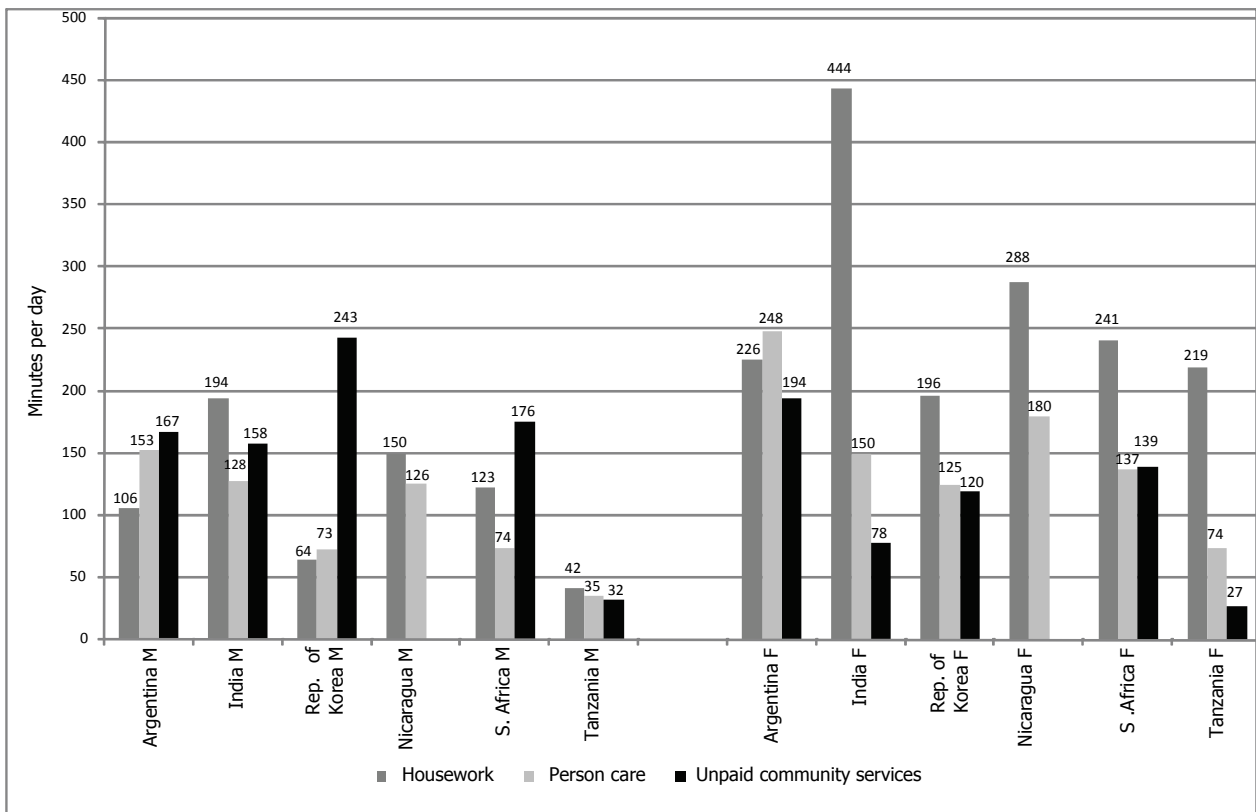


The relatively small amounts of time spent on care of persons accord with findings for more developed countries. In the 2007/08 *Human Development Report*, only two (Ireland and Finland) of the 27 high human development countries, and one (Nicaragua) of the six medium and low human development countries, record an average of more than one hour per day on care of children for women aged 20 to 74 years. For men, the same two high human development countries are again the only ones reporting more than 20 minutes per day, while this situation is not found in any of the less developed countries (UNDP 2007:342). The relatively small amounts of time are, in part, a reflection of the fact that a much smaller proportion of the population engages in care of persons than in housework. This results in reduced means for care of persons. The small amounts of time could also reflect under-reporting of care of persons, particularly where this work is done simultaneously with other activities and does not involve direct physical interaction with the person being cared for.

For unpaid community services it is difficult to comment, beyond noting the very small amounts of time recorded across all countries. The definition and understanding of unpaid community services probably also differs more across countries than that of care of persons or housework. In the case of India, the low participation rates combined with relatively small amounts of time results in a mean close to zero minutes. The higher amounts for Tanzania have been explained above. If participation in the time use survey is excluded, the means fall to 3 minutes for men and 2 minutes for women. Argentine women thus become the real exception, with their record of 19 minutes per day across the population.

The final figure in this section, figure 7 presents the mean actor time for the three sub-categories of unpaid care work. As noted above, the mean actor times tend to reduce gender and other gaps when compared with mean population times. The graph still shows women spending more time than men on both household maintenance and care of persons across countries. The relative gender difference is, as expected, much smaller than before. It is, however, still very marked, particularly for Tanzania in respect of household maintenance. Comparing across countries, Indian women who engage in this activity – and 96 per cent of them do – far outclass all other groups in the amount of time spent on housework. This could partly reflect less developed infrastructure, although the collection of fuel and water is not classified as part of unpaid care work for India.

**Figure 7: Mean time spent per day on sub-categories of unpaid care work by country and sex for actors**



For unpaid community services, men record longer times than women in all countries except Argentina. (The estimates, after excluding time spent responding to the time use survey, would be 44 minutes for men and 28 for women in Tanzania.) The gender difference in time spent on unpaid community services is particularly noticeable in the Republic of Korea.

The graphs presented in this section have shown the cross-country gender patterns in respect of the three SNA categories, and the three sub-categories of unpaid care work. Later sections of the paper take the analysis further by exploring differences relating to additional factors, beyond gender. First, however, the paper explores the extent to which the means reported in this section hide variations in the amount of time spent on care by individual women and men in the six countries.

## **Distribution of Time Spent on Care**

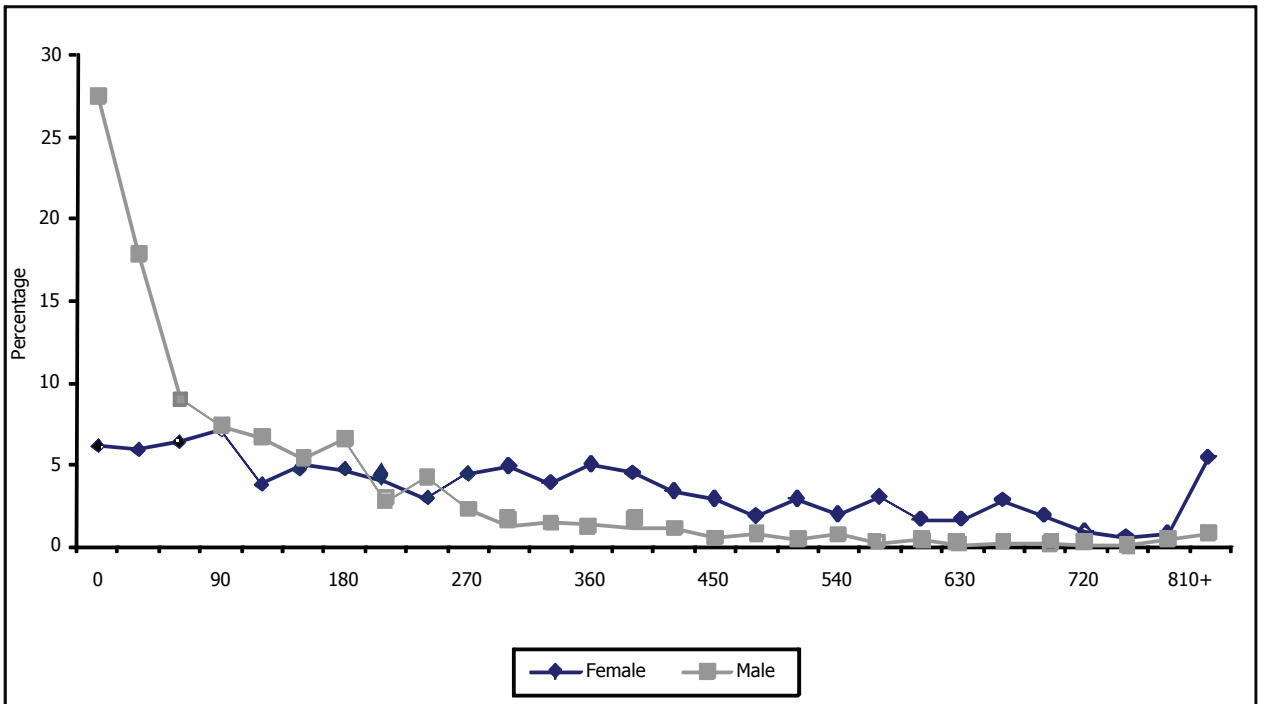
The above analysis has focused on averages (means), whether calculated across the population as a whole or across actors. Even when the measure is restricted to actors, it can be misleading as a mean does not show the dispersion, that is, how many actors are far from the mean, and how far they are. The graphs in this section show the distribution of the surveyed male and female populations in terms of time spent, on unpaid care work as a whole, and then on care of persons defined more narrowly. The distributions are shown for full minutes where this measure could be calculated, and for 24-hour minutes where full minutes could not be calculated.

The distributions cover different age groupings. The intention is therefore to show general patterns rather than to present an exact comparison. For India, the Republic of Korea and Nicaragua, the distribution covers the population aged 15–64 years, while for Argentina, South Africa and Tanzania it covers the entire survey population.

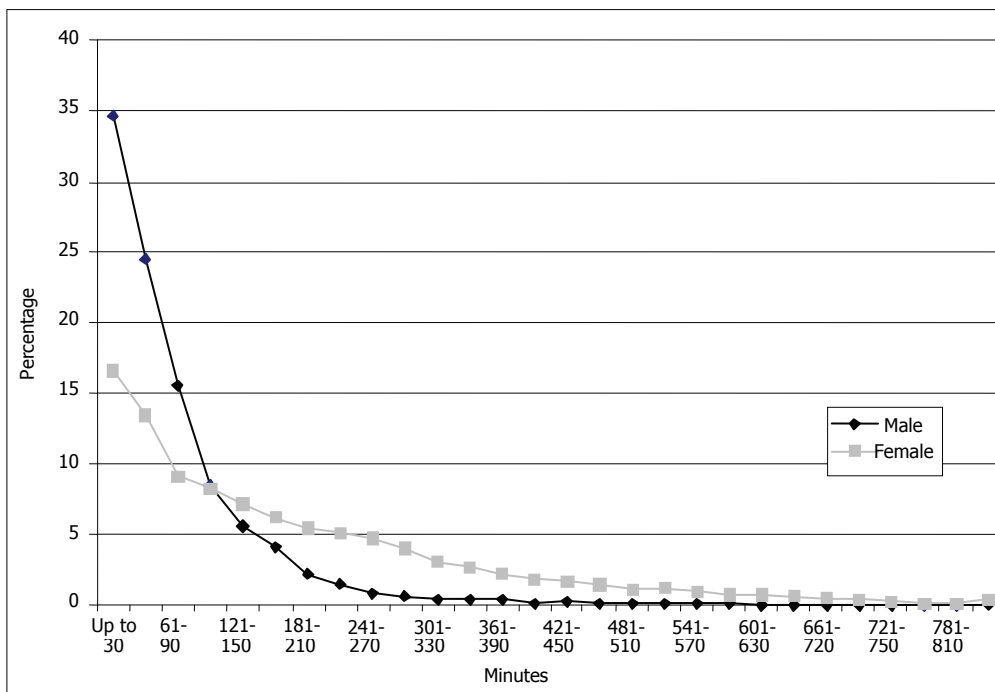
The next six figures show the distribution of unpaid care work. The figures differ across countries. Differences include higher and lower intercepts on the y axis, representing different percentages of the population not engaging at all in unpaid care work. These are the inverse of the participation rates shown elsewhere in the paper. Tanzania differs from the other countries in showing an initial increase in the distribution for both male and female, with a particularly sharp increase for males. This could, in part, be explained by the inclusion of responding to the time use survey as an unpaid care work activity. Argentina shows a less smooth curve than other countries, especially for men. This could perhaps result from the relatively small size of the Argentine sample.

Beyond these differences, there are some strong similarities. In particular, men are far more likely than women not to engage at all in unpaid care work. Where they do this type of work, they are clustered to the left, at points representing short times spent on this work. The curve for women, in contrast, has a long tail to the right. The long tail for women suggests high variability in the amount of unpaid care work done and, as a consequence, a notable level of inequality. The fact that several countries have an up-turn in the line for females points to a small group of women doing very large amounts of care.

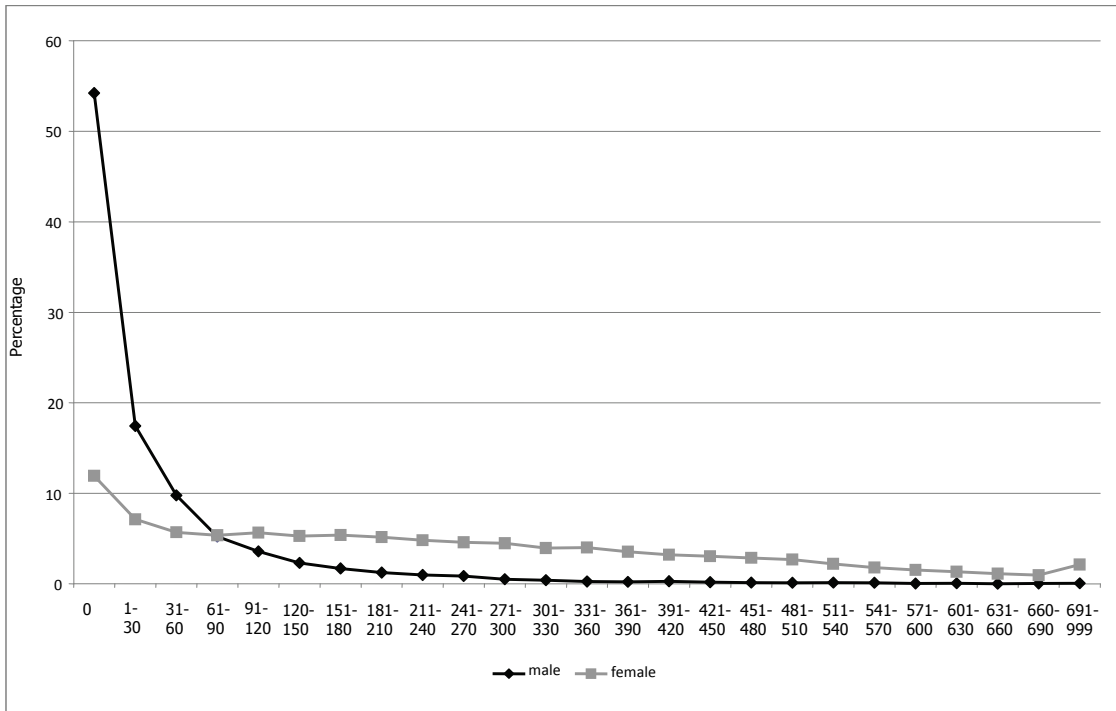
**Figure 8: Distribution of population by sex and minutes spent on unpaid care work, Argentina**



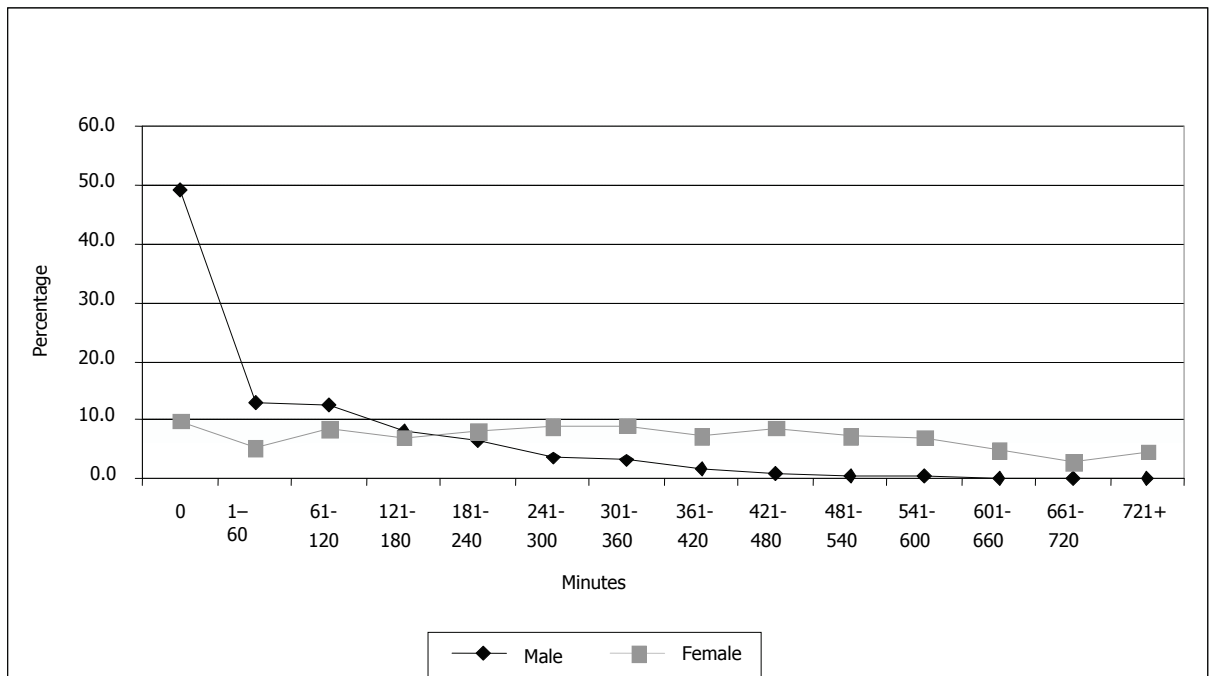
**Figure 9: Distribution of population by sex and minutes spent on unpaid care work, India**



**Figure 10: Distribution of population by sex and minutes spent on unpaid care work, the Republic of Korea**

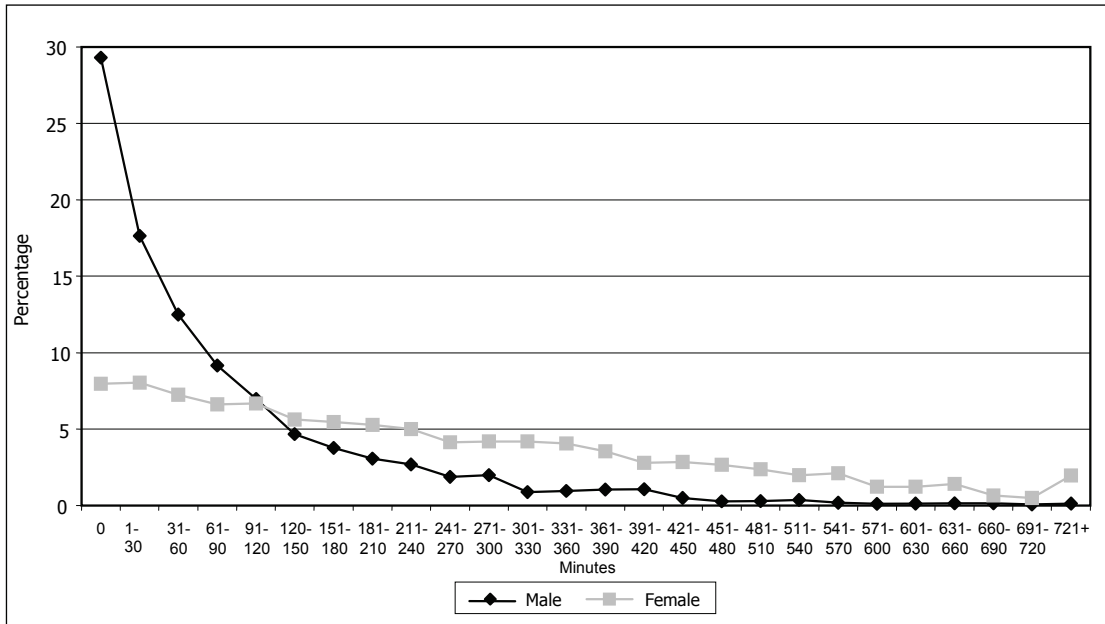


**Figure 11: Distribution of population by sex and minutes spent on unpaid care work, Nicaragua**

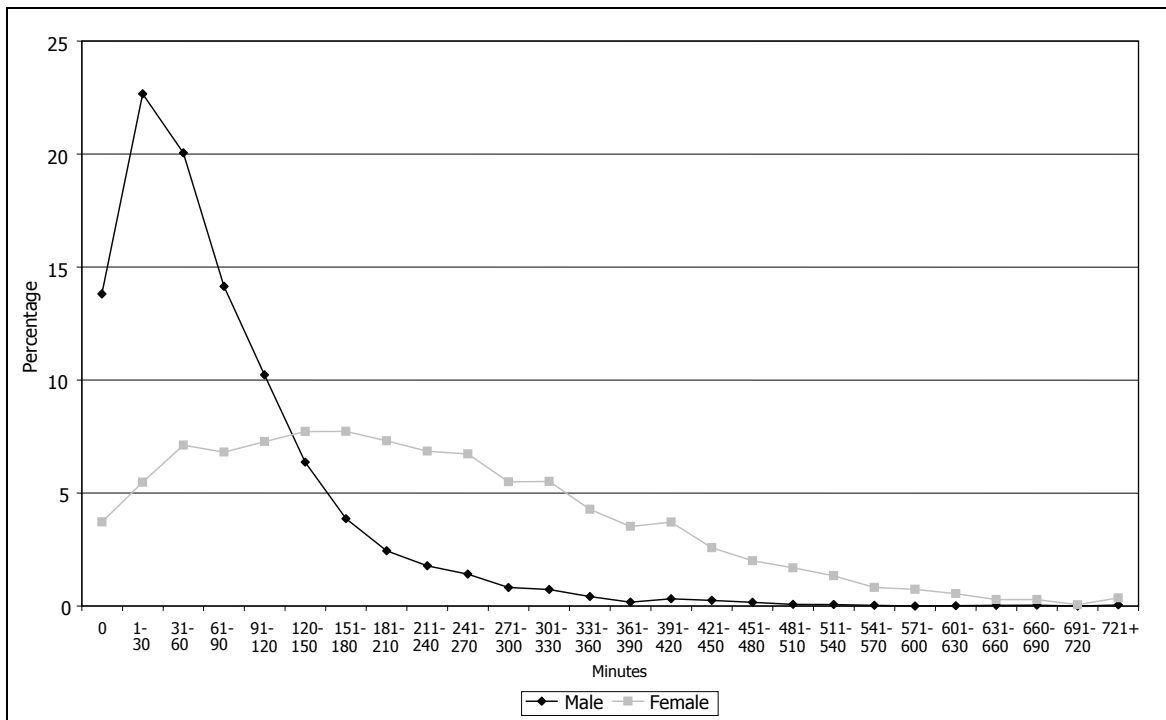




**Figure 12: Distribution of population by sex and minutes spent on unpaid care work, South Africa**

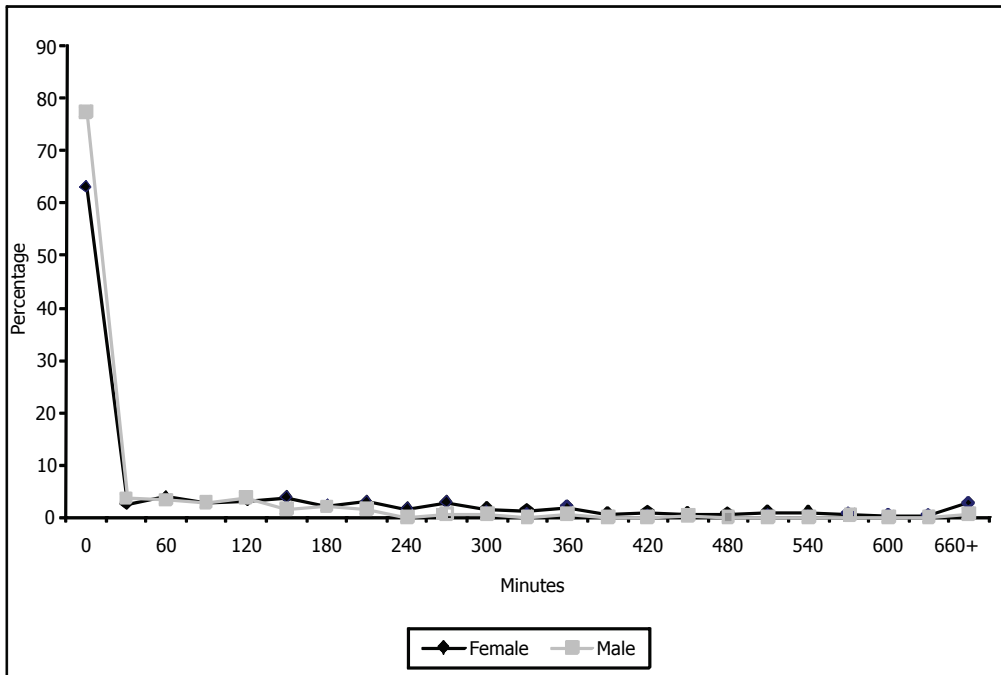


**Figure 13: Distribution of population by sex and minutes spent on unpaid care work, Tanzania**

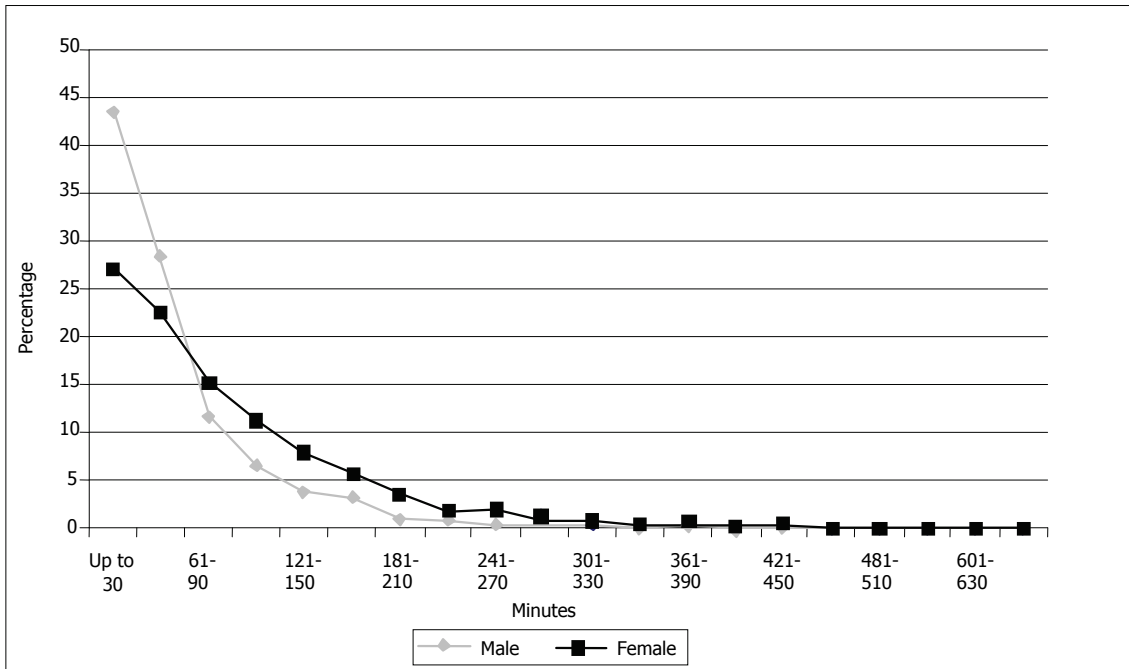


The following graphs, on unpaid care of persons, usually have a lower value at the end of the x axis. Despite this, the clustering of male and female on the left is more marked than for unpaid care work. This confirms that most people undertake relatively little care of persons and many undertake no person care at all. However, as before, for all countries there is a longer, and higher, tail for women than for men. Therefore, there is much more variability across women than across men. The initial drop-off in the distribution is the least sharp in Tanzania.

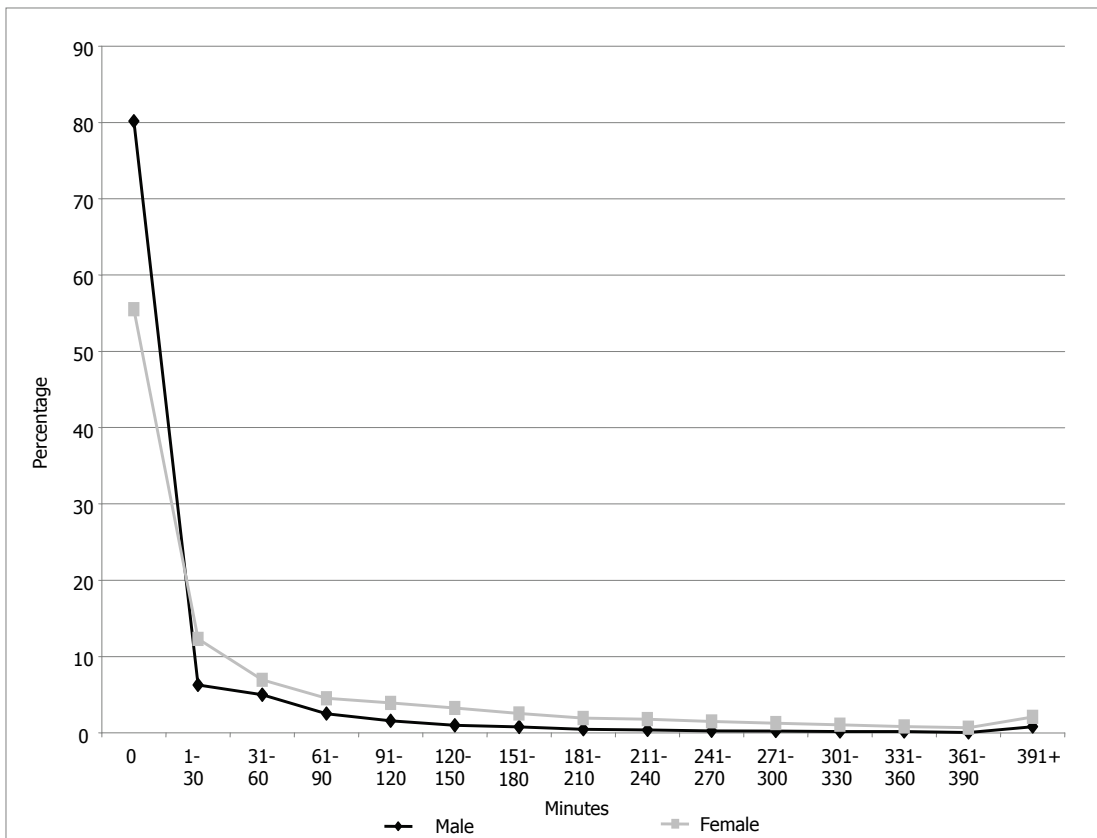
**Figure 14: Distribution of population by sex and minutes spent on care of persons, Argentina**



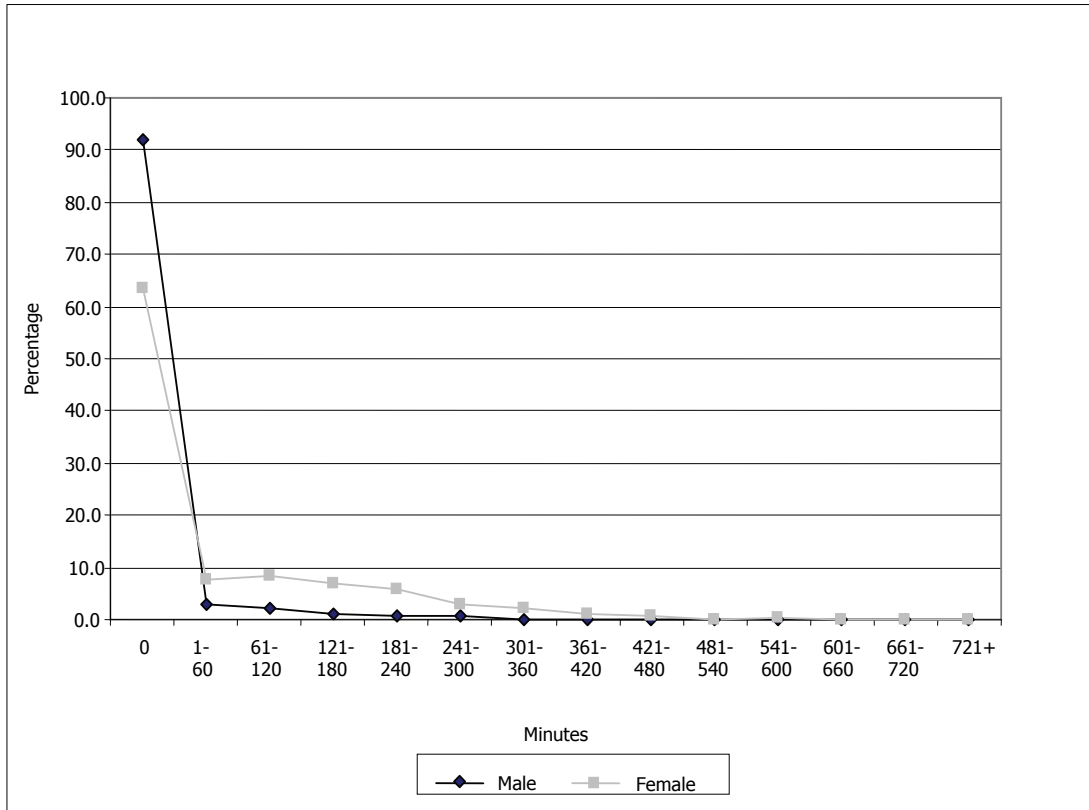
**Figure 15: Distribution of population by sex and minutes spent on care of persons, India**



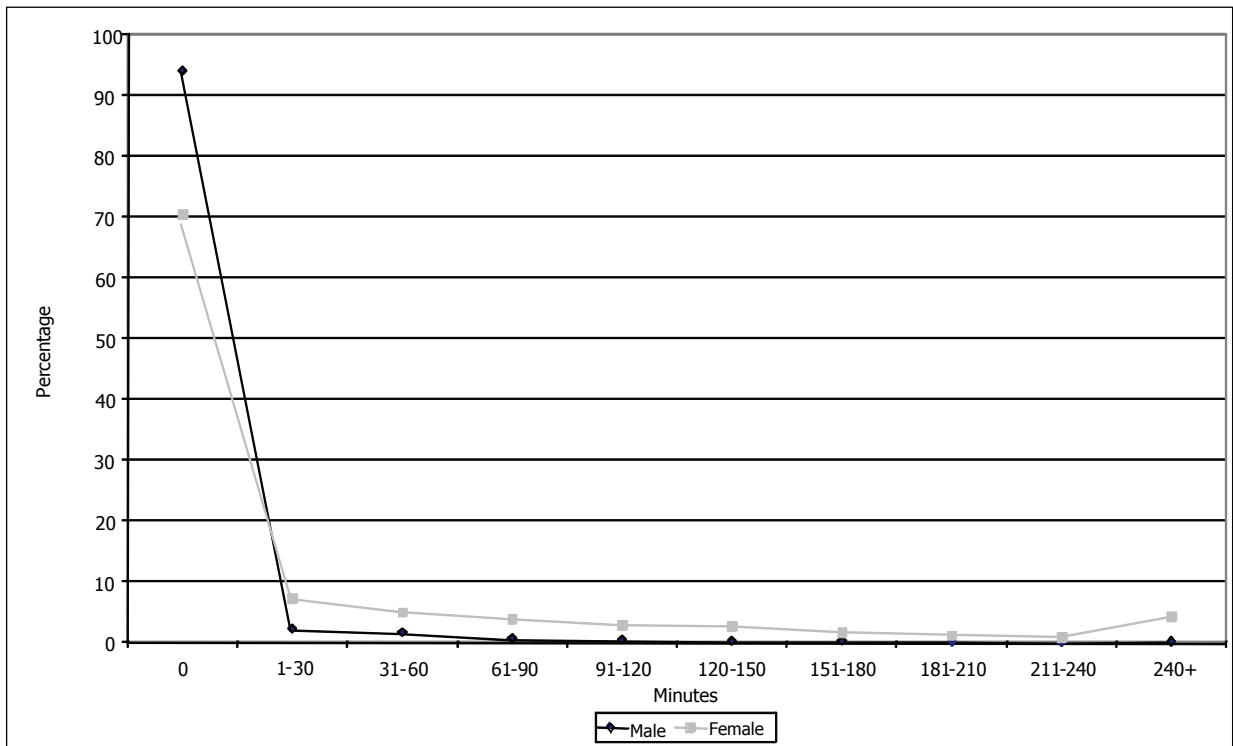
**Figure 16: Distribution of population by sex and minutes spent on care of persons, the Republic of Korea**



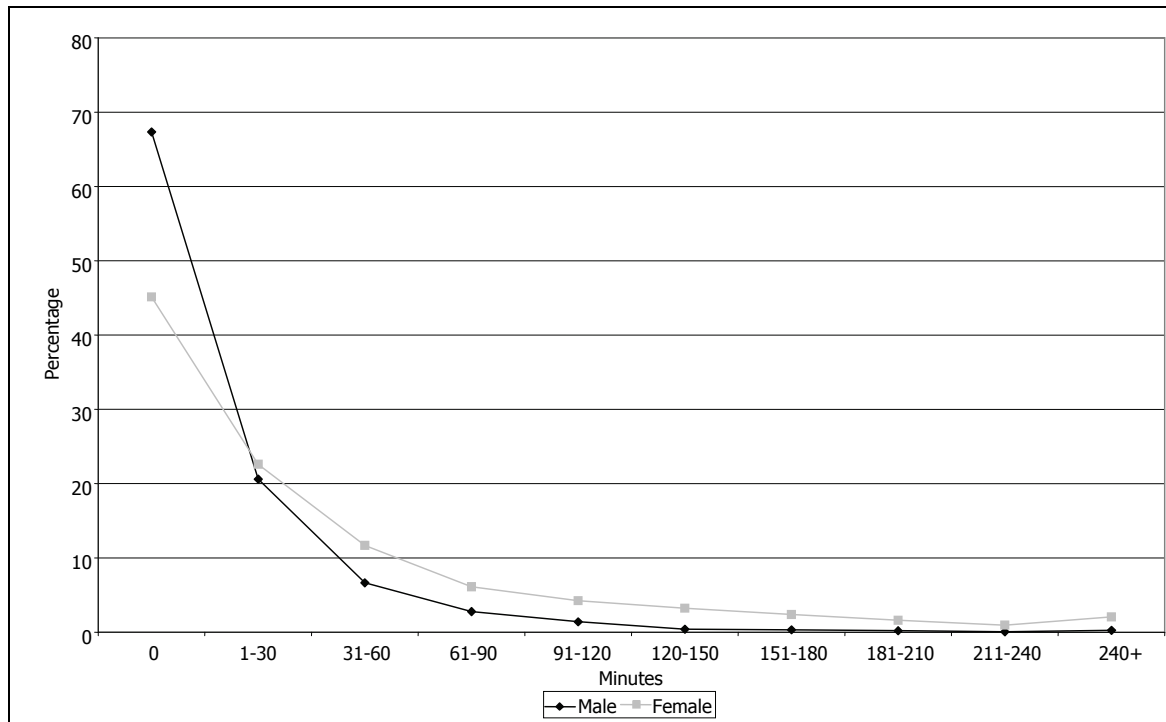
**Figure 17: Distribution of population by sex and minutes spent on care of persons, Nicaragua**



**Figure 18: Distribution of population by sex and minutes spent on care of persons, South Africa**



**Figure 19: Distribution of population by sex and minutes spent on care of persons, Tanzania**



The variability in the time spent shown in the graphs below suggests that there are many other factors beyond gender that determine the amount of time that a particular person—and a woman in particular—spends on care. The Tobit estimations in the next section explore the significant factors revealed by the time use surveys. In the country papers, the Tobit estimations are usually preceded by a series of tabulations that show the participation rates and mean time spent on SNA work, extended SNA and care of persons for men and women of different groups, with the groups defined by age, marital status, employment status, income and other variables available in the various surveys. This paper first reports the findings of the Tobit estimations on which factors are significant in different countries, and the direction of their influence (whether a factor tends to increase or decrease the amount of time spent on care). Subsequently, it explores the way in which gender and three of the variables available for all countries—age, employment status and having children in the household—interact.

## The Tobit Estimations

The Tobit estimations, like other regressions, make it possible to separate out the influence of different factors on the amount of care undertaken. This is especially important in situations where one factor is itself dependent on another factor. For example, a simple tabulation by age would show a clear pattern of increased engagement in, and time spent on, care of persons with increasing age. In reality, however, part of this pattern could be explained by the fact that older people are more likely to be married, and more likely to have children, with both of these characteristics in and of themselves tending to result in increased engagement in the care of persons. The Tobit estimation thus, in effect, “controls” for each of the other factors included in the estimation when calculating whether, and to what extent, a factor is influential.

The Tobit estimation approach is designed for situations, such as occur with time use data, where the dependent variable (minutes of time) has an upper and/or lower limit. In the case of time use data, the lower limit is 0 (zero), as a person cannot spend fewer than zero minutes on a

particular type of activity. The Tobit procedure estimates the probability of being at the lower (or upper) limit and uses this estimate to correct the general linear regression model.

Two other approaches were tested before agreeing that Tobit estimations would be the preferred approach to be used by all country teams. The first of these was selection analysis. This involves a two-stage approach in which the contribution of different characteristics to the probability of a person undertaking an activity at all (that is, not doing zero minutes) is first calculated, and then the strength of different factors in influencing the amount of time spent is estimated. The second step is meant only for those with non-zero time, that is, those who have “selected” to perform the activity. This approach was considered to be inappropriate when testing resulted in problems with specification and estimation that produced unreliable results.

The second alternative approach tested was interval regression, which is an expanded version of Tobit. This approach was abandoned because it was felt that the interval to be used would be affected in sometimes complicated ways by the method used in different countries for recording time use.

Many of the factors used in the Tobit estimations were similar across countries. There were, however, some differences. First, some datasets included variables that others did not. Second, the researchers excluded from the Tobit estimations some variables that were shown by earlier tabulations to have no observable effect on time use spent on care. For Argentina, for example, educational levels measured in brackets, and quintiles of per capita family income, were excluded from the Tobit as they had been found not to have an influence. In South Africa, household composition and settlement type were excluded for the same reason.

Each country paper included at least two Tobit estimations. The first estimation was in respect of minutes spent on unpaid care work, for example, household maintenance, care of persons in the household, and community services and help to other households combined (major categories 4, 5 and 6 of ICATUS). The second estimation was in respect of care of persons. This included all time spent on care of persons in the household, as well as time spent on care of persons in other households where this was recorded.

The Tobit estimations were performed on unweighted data, as the use of weights artificially increased the significance of the various factors. As required by the method, zero values were included when performing the estimations. Where a full-minute measure was able to be computed, this was used in preference to the 24-hour measure.

Table 1 summarizes the results of the Tobit estimations performed for the various country datasets. Showing the relative strength of the association for different factors for each of the countries in a way that would allow meaningful comparison is difficult, and the table therefore shows only whether the factor has a positive or negative influence, that is, whether it tends to increase or decrease the amount of care undertaken. A plus sign indicates that the factor has a positive influence on the amount of unpaid care work at the 95 per cent confidence level, while a minus sign indicates a negative influence. “Y” indicates that there is a significant influence at the 95 per cent confidence level, but either the direction of the influence or the nature of the factor are too complicated to allow simple plus or minus indicators. For example, with some indicators, the amount of care might first increase and then fall, while with factors such as family structure, more than a binary choice (such as male/female) is involved. The letters “ns” indicates that the factor was tested but not found to be significant at this level. A cell left blank indicates that the factor was not included in the Tobit estimation. For the purposes of assigning plus or minus in respect of race and caste, white (in South Africa) is considered higher status than other races, and special caste (in India) lower status than others.

**Table 1: Summary of results of Tobit estimations on unpaid care work**

	Argentina	India	Nicaragua	Republic of Korea	South Africa	Tanzania
Male	-	-	-	-	-	-
Employed	-	-	-	-	-	+
Age	+	+	+	+	+	+
Age squared	-	-	-	-	-	-
(Young) child in household	+	+	+	+	+	+
Education		ns		Y	+	Y
Married		+	+	+	ns	+
Household income/expenditure	-	ns	-		-	-
Personal income	-					
Caste/race		+			-	
Rural		-	+			-
Household structure						Y
Family structure	Y					
Household size		-				
Head of household	+					
Spouse of head	+					

**Notes:** +: positive influence on amount of unpaid care work. -: negative influence on amount of unpaid care work. Y: significant influence, but the direction of the influence or the nature of the factor are too complicated for a simple plus or minus. ns: not significant. Blank cell: factor not included in the Tobit estimation.

For several factors, the results are fairly consistent across countries. As expected, being male tends to result in doing less unpaid care work across all countries. This factor has the greatest influence (largest coefficient in absolute terms) of all tested factors in all countries except Argentina. In Argentina, being male is the fourth strongest factor, after having a young child in the household, being the spouse of the household head and being employed. For all countries, having a (young) child in the household tends to increase the amount of unpaid care work done. (In Argentina the presence of a child under six years was used, while in South Africa and Tanzania it was a child under seven years; in the Republic of Korea the cut-off wage was eight years, and in India and Nicaragua it was 18 years.) The coefficient for age is always positive, while that for age squared is negative. This suggests an initial increase in the amount of unpaid care work performed with increasing age, followed by a decrease. The strength of this association will vary according to the age range covered for the estimation.

Where the influence of household and individual income or expenditure were tested and a significant association found, the amount of unpaid care work tended to decrease with increases in income. This could be explained by several factors, including the poorer infrastructure and technology available to poor households, less ability to buy paid care and larger household size.

Being employed tends to decrease the amount of unpaid care work carried out in all countries except Tanzania, where employed people were inclined to do more unpaid care work. The difference may be partly explained by the very high employment rate for adults in Tanzania. For most countries, being married tends to increase the amount of unpaid care work done.

For the developed countries that they examine, Pacholok and Gauthier find that women's engagement in housework tends to decrease as the level of education increases (2004:199). In the present study, the influence of education differs across countries, and sometimes across levels of education in a particular country (that is, there is a non-linear relationship). In South Africa, the amount of unpaid care work is likely to increase with the level of education. In the Republic of Korea, those with a middle level of education tend to do less unpaid care work than those with lower or higher levels, while in Tanzania the pattern is reversed, in that those with

no schooling or with secondary education and above do less than those with primary education. In India, the association with education is not statistically significant. The cross-country comparisons are complicated by the different levels of education prevailing in a country. Thus, “middle level” for the Republic of Korea means something very different to “middle level” for Tanzania. The comparisons are further complicated by the fact that some countries used categories (discrete variables) for the estimation, while others used a continuous variable.

Finally, there are a range of factors tested only in one or two countries. White people in South Africa tend to do less unpaid care work than those of other races, while those classified as special caste in India do less than others. In South Africa this pattern could be explained by a greater likelihood that a domestic worker will be employed by the higher status group. Rural people in India and Tanzania tend to do less than urban ones, despite the fact that they are less likely to have good infrastructure. A possible explanation could be that the dwellings in rural areas are smaller, or that households are larger and the tasks shared across more people. Heads of household and their spouses in the city of Buenos Aires tend to do more than other family members. In India, the amount of unpaid care work done by an individual tends to decrease as household size increases. Finally, for Argentina and Tanzania it appears that particular household or family structures influence the amount of unpaid care work done.

Table 2 presents the results for the Tobit estimation in respect of care of persons. In this case, having a young child in the household is the strongest factor across all countries except Nicaragua. The association with children might have been muted in Nicaragua because the presence of children up to age 18 was used, while a younger cut-off point was used in most other countries. Again, being male again tends to result in less care work being done. The pattern in respect of age is similar to that for unpaid care work. However, age is not significant for Nicaragua, and the coefficients for age squared are very close to zero for some of the other countries. The Nicaraguan exceptionalism here is probably explained by the fact that a separate factor, being a child (aged 6-17 years), was also included in the estimation.

Being married tends to increase the amount of care of persons, even in South Africa, where this factor was not significant for unpaid care work. The pattern in respect of education still varies, with less care of persons being done by the more educated in India and Tanzania, but more in the Republic of Korea and South Africa. Tanzania is again an exception in terms of employment, with more person care being done in Tanzania by those who are employed but less in other countries.

Where household income is found to be influential, those who are poor tend to undertake more care of persons in two countries (Argentina and Tanzania), but less in the third (India). This factor is, however, not found to be significant in South Africa. And personal income is not found to be significant in Argentina, despite being significant for unpaid care work. Race (in South Africa), caste (in India) and rural residence (in Tanzania) are no longer significant, but living in rural areas tends to result in a decrease in care of persons in India and Nicaragua. Household size tends to increase the amount of care of persons carried out in India, but the coefficient is very small. Being head of household or spouse continues to be significant in Argentina, as do some forms of household and family structure in Argentina and Tanzania.

While the Tobit estimations provide some support for the hypothesis that, within countries, the amount of unpaid care work decreases with income and status, they do not provide clear support for the hypothesis that the amount of person care also decreases with income or status.



**Table 2: Summary of results of Tobit estimations on care of persons**

	Argentina	India	Nicaragua	Republic of Korea	South Africa	Tanzania
Male	-	-	-	-	-	-
Employed	-	-		-	-	+
Age	+	+	ns	+	+	+
Age squared	-	-	-	-	-	-
(Young) child in household	+	+	+	+	+	+
Education		-		+	+	-
Married		+	+	+	+	+
Household income	-	+	ns		ns	-
Personal income	ns					
Caste/race		ns			ns	
Rural		-				ns
Household structure	Y					ns
Family structure	Y					
Household size		+				
Head of household	+					
Spouse	+					

**Notes:** +: positive influence on amount of unpaid care work. -: negative influence on amount of unpaid care work. Y: significant influence but the direction of the influence or the nature of the factor are too complicated for a simple plus or minus. ns: not significant. Blank cell: factor not included in the Tobit estimation.

## Gender Combined with other Factors

As noted above, the Tobit estimation “controls” for each of the other factors included in the estimation when calculating whether, and to what extent, a factor is influential. It thus shows the relative strength of each factor. What the Tobit estimations presented above do not show clearly, however, is how the patterns for male and female might differ in respect of each of the other factors. This section draws out some of the patterns emerging from the tabulations presented in the country papers in respect of participation rates and means. It focuses on the factors that were tested for virtually all countries and shown above to be influential across most of the countries: age, employment and having a child in the household.

As with the Tobit estimations, the tables for the country papers did not all relate to the same age group. Thus the findings presented below cover the age group 15–74 years for Argentina; 10 years and above for India, the Republic of Korea and South Africa; 15–64 years for Nicaragua; and 18 years and above for Tanzania. These differences should be borne in mind when interpreting the findings. Where the lower age cut-off includes more children, for example, some of the patterns found in respect of the non-employed will result from the greater likelihood of younger people being economically inactive.

Comparisons between countries are further complicated by the fact that some country teams tabulated participation rates and actor times, while others tabulated participation rates and mean population times. The Tobit estimations are based on a measure that is closer to mean population times than mean actor times. The discussion below refers to participation rates as well as both types of mean, but usually only one of these measures is available for each country in the country reports. The discussion focuses on unpaid care work rather than care of persons, but for the most part the patterns in respect of care of persons are very similar to those for unpaid care work as a whole.

## ***Age***

For all countries, men and women in the “middle” age groups (typically 18–45 years, or a smaller sub-group) are more likely to engage in SNA work, and tend to spend longer on it. Across all countries adult males were more likely than adult females to engage in SNA work and also more likely to spend more time on this work. While the Nicaraguan team pinpointed the 18–30 year age group as the one with the greatest gender difference in participation in SNA and paid work, it also noted a sharper fall off in engagement in SNA work for older women than older men. A similar pattern is likely in other countries. In India, older urban women (aged 46–64) who did SNA work tended to spend more time on it than younger women. In some countries (the Republic of Korea and Tanzania), the strong overall gender pattern in respect of SNA work did not hold for children.

For most countries, the middle age groups of both women and men were also more likely to do unpaid care work than those of other age groups. In Nicaragua, however, participation rates in unpaid care work were highest for men among those who are 50 years or older. While Nicaraguan women’s rates declined somewhat with age, they were still twice as likely as men to perform unpaid care work. In Argentina, hours spent on unpaid domestic work for those who engaged in it tended to be longer for older people, especially among women. In India, a similar pattern was found for older men in respect of unpaid care work more generally. In Nicaragua there was little variance with age in the time spent by women and men on unpaid care. In South Africa and Tanzania, there was little difference across age groups in the male mean population time spent on unpaid care work. Young South African girls were three times as likely to do unpaid care work as young boys.

## ***Presence of children in the household***

In almost all countries, there were indications that engagement in unpaid care work, as well as direct care of persons, was more intense when there were children in the household, and decreased as the age of the youngest child increased. Nevertheless, women were always far more likely than men to do this work. Further, while the pattern of increased engagement in unpaid care work held across all countries for women, this was not the case for men. Thus in India, men in households with no children spent the most time on extended SNA, while the age of the child in households with children had no noticeable effect on men’s engagement in this work. Similarly, in Nicaragua, South Africa and Tanzania, the time spent by men on unpaid care work stayed more or less constant when there were children in the household.

In Argentina, South Africa and Tanzania, women with young children in the household were not noticeably less likely than other women to engage in SNA work. In South Africa, women with children in the household were more likely than others to do SNA work, although women with young children were less likely to engage than those with older children. This pattern could reflect the greater likelihood of mothers and their children living apart from the children’s father, forcing the mother to provide both financial and other care to the children. In Tanzania, the SNA work performed by women with young children was less likely to be paid than the work done by those living without children. This could, at least in part, reflect the greater presence of children in rural areas, where unpaid SNA work is very common.

In strong contrast to the above countries, women with young children in India, Nicaragua and the Republic of Korea were less likely to engage in, and spent less time on, SNA work. In Nicaragua, the Republic of Korea and South Africa, men living with preschool children were far more likely than others to engage in SNA work, although the time spent on this work was not always longer than for other employed men. In Tanzania, the same trend was found, but was not as strong as in the other countries, perhaps because of the overall high rates of engagement in SNA work. In South Africa, 9–10 per cent of men with young children living with them did both paid work and care of persons in the previous 24 hours, while this was the case for 19 per cent of women with young children.

## **Employment**

Strictly speaking, work status distinguishes between three situations—employed, unemployed and not economically active. The unemployed are those who are not doing SNA work but would like to do so, while the not economically active are those who do not want to, or are unable to, work. The most common reasons offered for the not economically active status are that the person is a full-time student, full-time homemaker, ill or disabled, or too old to work. In the country papers, the unemployed groupings were often very small, especially when analysis was restricted to adults. The unemployed and not economically active are thus combined in the analysis below, with the main distinction being between those who are employed and those who are not.

By definition, both women and men who are employed are expected to have higher rates of engagement in SNA work than those who are not employed. One might even expect an exact match between work status and engagement (or not) in SNA activities. There are several reasons why the match is not perfect. First, the collection of fuel and water in most countries does not classify a person as employed even though it is, strictly speaking, an SNA activity. Second, the diary day used for the time use survey, in most cases, fell outside the reference period used to classify a person as employed or not employed. Third, the standard survey questions may not fully capture all forms of labour force engagement. All the datasets show some evidence of these mismatches, but the extent of the mismatches is not sufficient to warrant examination here of the patterns in respect of engagement in SNA work by work status. The focus, therefore, is on the patterns in respect of engagement in unpaid care work.

In all countries, employed women were less likely to do unpaid care work than those who were not employed. In India, this pattern was stronger in respect of urban than rural women. Nevertheless, across all countries, employed women still had very high participation rates in this form of work.

In Argentina, employed men were more likely to do unpaid care work than those not employed. In India and Nicaragua, the opposite pattern held. In the Republic of Korea, employed men were less likely to do unpaid care work in 1999, but by 2004 this trend was no longer evident. In South Africa and Tanzania, unemployed men did more unpaid care work than those who were employed, but those not economically active did the least. However, employed men undertook more care of persons than unemployed men. These contrasting patterns for South Africa and Tanzania could be partly explained by age factors, in that those who are slightly older are also more likely to be employed and to have children.

This relatively short section highlights the fact that even where general patterns in respect of individual factors influencing the amount of care work carried out are similar across countries, there could be substantial differences among countries in how these factors operate in respect of women and men. These differences include the direction of influence (that is, whether the amount of unpaid care work tends to increase and fall) and the strength of the influence. In general, the factors tend to have a greater effect on women than on men, with men's patterns varying less with life cycle.

## **The Care Dependency Ratio**

The fact that the presence of children in the household tends to result in respondents taking on more unpaid care work and more care of persons calls for discussion of the “demand” for care within and across countries relative to the potential supply. This is done by developing a proxy “care dependency” ratio.

The standard dependency ratio is usually defined as the ratio of the economically dependent population to the population in the age group that can be expected to support itself and others economically through work. The latter group is generally defined as those aged 15–64 years,

while those under 15 or over 64 are considered dependent because they are either too young or too old to be expected to support themselves. A high dependency ratio suggests there is greater stress placed on those aged 15–64 as they must then support more “others” in addition to supporting themselves.

The standard dependency ratio considers only financial dependency. For the UNRISD project, the care dependency ratio is intended to reflect the relative burden placed on carers in society. As with the standard ratio, the care dependency ratio is defined in terms of age groups. This is likely to undercount the number needing care, as it does not take into consideration those in the carer age group who are disabled or ill to the extent that they need care. The undercount is probably most marked in respect of South Africa and Tanzania, where the AIDS epidemic has significantly increased the likelihood that an adult will need care. It was, however, not possible to include this factor in the ratio because, for Tanzania, reliable data on HIV prevalence and data distinguishing the AIDS sick from those who are HIV positive were not available. The ratio also disregards the fact that all people need a certain amount of care. The ratio was nevertheless considered useful in allowing comparisons between the relative burden across countries and across time.<sup>1</sup>

To provide some nuance, the ratio distinguishes between those needing intensive care and those needing a lesser level of care. The former include those aged 0–6 years and those aged 85 years and older, and are given a full weight. The latter are those aged 7–12 years and 75–84 years, and are given a weight of 0.5. The potential carers are defined as those aged 15–74 years, all of whom are given a full weight. Those aged 13 or 14 years are not included in the calculation on the assumption that they will be able to provide more or less the same amount of care as they receive. Their inclusion in both the nominator and denominator would change some of the ratios, but the likely effect was not considered big enough to warrant including them on both sides of the “care equation”.

The calculation can thus be summarized as follows.

*Those needing care in all countries:*

- A = 0–6 years; weight: 1
- B = 7–12 years; weight: 0.5
- C = 75–84 years; weight: 0.5
- D = 85+; weight: 1

*Potential care givers in all countries:*

- E = 15–74 years

*Care dependency ratio* = (A+B+C+D)/E

Country teams were asked to perform the calculation using population data for the year in which the time use survey was conducted. In the case of India, the calculations were performed on the basis of data from the census of 2001 rather than data for 1999. The age groups covered for India also differed slightly from those specified above as the census data were not published in the desired age groups. Thus the age groups used in India were 0–6, 7–14, 75–79 and 80 plus. These small differences should not materially affect the overall ratio.

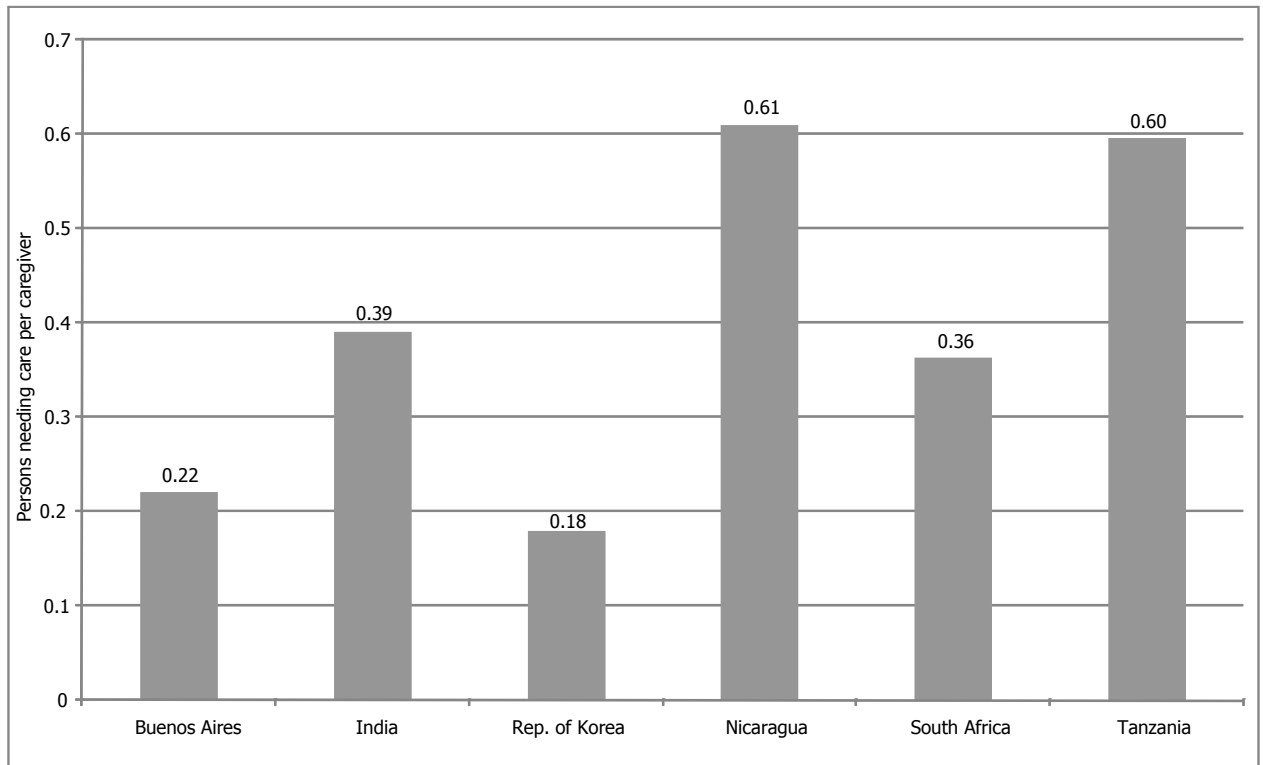
Figure 20 shows the resultant care ratios. The ratio is lowest for the Republic of Korea, and highest for Nicaragua. The ranking to some extent matches the relative fertility rates, with a higher ratio in countries with higher total fertility rate. This match is, however, far from exact. For example, Tanzania and Nicaragua have very similar care dependency ratios, but the total fertility rate for Nicaragua was around 3.0 in the period 2000–2005, while that for Tanzania was

<sup>1</sup> After calculating this ratio, the research team discovered that a similar index, named the Madrid Scale, was used in a publication on gender equality in Latin America and the Caribbean (Montaño 2007). While the age groups used differ somewhat between the Madrid Scale and the UNRISD approach, the two measures are very similar.

5.7 (UNDP 2007:243ff). This particular anomaly might be partly explained by the severity of the HIV/AIDS epidemic in Tanzania, and the fact that it tends to increase the infant mortality rate.

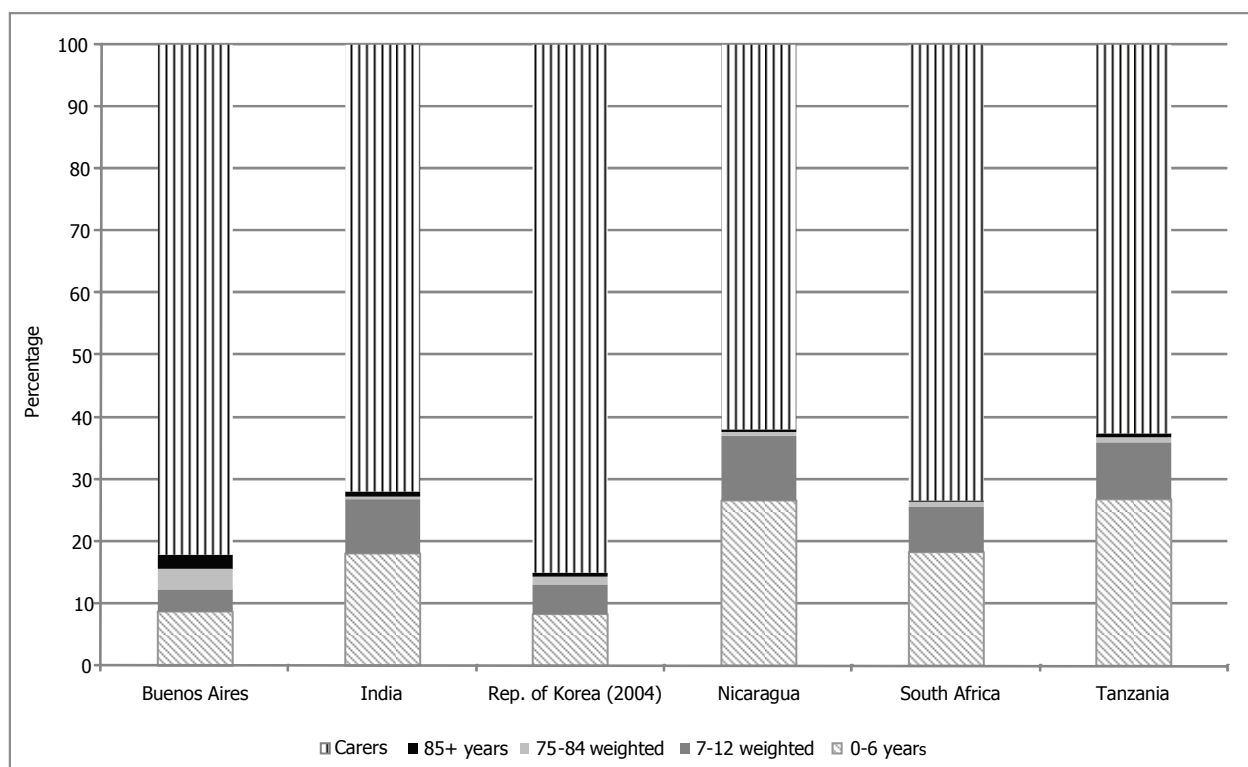
The differences in the actual levels are large—ranging from 0.18 to 0.61. This suggests that a caregiver in the Republic of Korea would, on average, share the responsibility for caring for a single person with at least five other people, while a caregiver in Nicaragua or Tanzania would be responsible for more than half of all the care needed by another person.

**Figure 20: Care dependency ratios**



In order to understand how such large differences arise, figure 21 illustrates the components that make up the care dependency ratio. The components are reflected as weighted. The figure suggests that the size of the population aged 0–6 years is a major determinant of the care dependency ratio, followed by the population aged 7–14 years. (The ratio for Tanzania may be slightly exaggerated by clustering of the sample at age 4. This could have been caused by fieldworkers wanting to avoid having to ask all the child labour-related questions of this group.) While the older age groups are most evident in the city of Buenos Aires sample, they account for much less of a care-giving burden than the children. (The care dependency ratio for Argentina as a whole is somewhat higher, at 0.21.)

**Figure 21: Components of care dependency ratios**



Comparison of the care dependency ratios, with the amount of time spent on care of persons as shown in figure 6, suggests that, contrary to expectation, the amount of time spent on care of persons tends to be larger where care dependency ratios are low, and vice versa. Thus the city of Buenos Aires has the lowest care dependency ratio, but the mean time spent by women aged 15–64 years on care of persons is higher than for all other countries. Conversely, Tanzania has the second highest care dependency ratio, even before considering the HIV-related need for care, although women in this country record less time spent on care of persons than in all other countries. There are clearly other factors at play that also determine the time people in different countries perceive and report themselves as spending on care.

## The Monetary Value of Unpaid Care Work

This section discusses the country teams’ attempts to assign a monetary value to unpaid care work and compares the resultant values with a range of macroeconomic measures. This exercise is in accordance with the SNA recommendation that, although unpaid care work should not (currently) be included in the calculation of GDP, countries should compile “satellite accounts” that reflect this work and its value to the economy.

Undertaking this valuation is not intended to imply that this work should necessarily be paid. It is also not meant to imply that money could accurately reflect the real value of the work for society. Instead its purpose is to promote more “accurate and comprehensive” valuation of the work that takes place in economies (UNDP 1995:98), and to provide support for arguments that those who do this work are entitled to a fair share of, and control over, the income generated by the paid work done by members of their family or household.

As discussed below, there are many complications associated with the exercise. There are, however, also far more complications and heroic assumptions associated with the estimation of GDP than most who use this measure generally recognize. Despite the complications, a measure that reflects pesos, rupees, rand, shillings or won, might have greater success in attracting the

attention of economists than measures that simply record time. Assigning monetary value to care also allows comparison with a range of other macroeconomic measures, thus highlighting the relative importance of care in the different economies.

### ***Deriving the value of unpaid care work***

The underlying idea behind assigning a monetary value to unpaid care work is to estimate the number of hours worked, and multiply this by some measure of hourly earnings. As described in more detail in Budlender and Brathaug (2002), there are four basic standard approaches to choosing the measure of hourly earnings, comprising:

- the average earnings approach;
- the opportunity cost approach;
- the generalist approach; and
- the specialist approach.

The first two approaches have as an underlying question: how much would a person undertaking unpaid care work have earned in the market if the person had performed paid work rather than unpaid care work? The first approach uses the average earnings for all people (or all people of a particular sex) in the economy, while the second approach uses the actual earnings of the person who did the unpaid care work. Because of the underlying question (what would the person earn in the labour market?) and because average female earnings are usually markedly lower than male ones, even where they have equal educational qualifications, the first approach is usually sex-disaggregated. This tends to result in a lower overall estimate of the value of unpaid care work because the greater number of hours worked by women is multiplied by a lower value, lowering the overall estimate. Wolf (2004:117) notes that some researchers reject this approach because it reflects the gender discrimination in the labour market. However, if one accepts the underlying question as being what a person would otherwise have earned doing paid work, then existing discrimination must be reflected if a realistic estimate is to be arrived at. Disaggregation does not imply endorsement of the lower earnings that women earn in paid work. Instead, it reflects the fact that female actors would be likely to earn less than male actors if they substituted paid work for the unpaid care work.

The next two approaches have the following underlying question: how much would a household need to pay someone else to do the unpaid care work, that is, the replacement cost? As Wolf (2004:118) argues, this estimate reflects the savings achieved by not paying for this work on the market.

The generalist approach uses the average wage paid to a worker, such as a domestic worker or housekeeper, who would carry out virtually all the tasks. The specialist approach assumes that the household employs a specialist to do each of the different types of work. For example, the household would employ a cook or chef to prepare meals, a nursemaid or teacher to perform various tasks associated with childcare, a nurse to care for ill people, and so on. For this approach, the calculations are not sex-disaggregated as, in theory, the household's concern would be to have the work performed rather than with the gender of the worker. In practice, for the domestic worker approach (see below), the overwhelming majority of workers in most countries are female.

The UNRISD project used two approaches—the average earnings approach and the generalist approach. The opportunity cost approach was not pursued because of its theoretical and practical limitations. On the theoretical side, for example, this approach assumes that a meal prepared by a university professor has more value than one prepared by an unskilled worker, even if the same ingredients are used. On the practical side, there are difficulties in assigning a value to the time of someone who is not employed. The specialist approach was avoided because of its complexity, and because of the difficulty of finding appropriate paid workers for

all tasks. Both these choices do, however, tend to result in lower estimates of the value of unpaid care work.

For both the average earnings and generalist approaches, two variants were possible. For average earnings, the first, and preferred, variant was based on the average earnings of all employed people with non-zero earnings, whether they were employees or self-employed. The second variant, using only employee wages, was the only possible option for India, given the non-availability of reliable information on self-employed earnings. The available wage data are for regular salaries or waged employees in farm and non-farm enterprises, and spanning both organized and unorganized, including domestic workers. The non-availability of self-employed earnings is, however, unfortunate as the self-employed account for about half of all employed people in India, and their earnings are generally lower than those of regular employees, with much of the work unpaid. The second variant was also calculated for several countries, even where earnings more generally were available. For the city of Buenos Aires and the Republic of Korea, where the informal sector is not significant, there is little difference in the value of the average earnings and average wage variants.

For the generalist approach, the first variant entailed the inclusion of all occupations involving work similar to housework, such as cleaning and cooking, whether performed in institutions or in the home. Technically, this generally included a range of occupations in major category 5 of the International Standard Classification of Occupations or its equivalent. Teachers were excluded in the measures reported below, except in the case of Argentina. Although some teaching includes a large measure of care, teachers were excluded because they constituted a relatively large presence in most countries, and their wages—which are generally higher than those of the average domestic worker, cleaner or cook—would have skewed the value upward. The second variant focused only on wages of domestic workers more narrowly defined. Nicaragua included the reported value of in-kind earnings for this variant. In Argentina the hourly wage for domestic workers was found to be similar to that for other social services, excluding education. The research report (Esquivel 2008) notes, however, that actual earnings of domestic workers tend to be lower than those of the other workers because hours worked are likely to be fewer, and there are usually no added benefits.

In almost all cases the earnings data were sourced from household surveys. It is well-known that respondents tend to under-report earnings in such surveys. No correction was made for this, as the extent of the under-reporting is not reliably known either for the employed population as a whole, or in terms of its variation across groups. This lack of correction for under-reporting usually results in lower estimates of the value of unpaid care work.

In all countries, only non-zero earnings were considered when calculating the various averages and means. This choice inflates the value for countries such as Tanzania and India, where large numbers of employed people work unpaid on family farms or in family businesses. In Tanzania, for example, 64 per cent of employed people were reported to be working on their own farm or *shamba* in 2006, with a further 16 per cent doing unpaid work in family businesses or agriculture. Similarly, when calculating the first variant of the generalist wage for Tanzania, only 16 per cent of the relevant respondents were found to record non-zero wages.

A choice, which again results in lower estimates for some countries, is the use of median earnings rather than mean earnings for the averages. There are two reasons for this choice, one theoretical and one practical. Theoretically, the median is chosen because earnings tend to be skewed toward the lower end. The mean thus tends to over-state the true “middle”. Practically, using the median avoids the problem of how to deal with outliers in the data, at least some of which probably represent incorrect capture of data. The results presented below for Nicaragua, South Africa and Tanzania are based on values using medians rather than means. For Argentina, the median is used for all but the generalist approach.



Each country team was free to choose what age group to include when valuing unpaid care work. India and Nicaragua focused on the age group 15–64 years, even though their data covered a larger age group. Other countries used the age group covered in their time use survey.

All countries valued at least two aggregates of unpaid care work, the first relating to unpaid care work as a whole and the second relating to care of persons. For unpaid care work, the scope was very similar across countries, except that Nicaragua, South Africa and Tanzania included the collection of fuel and water. This was done because the primary comparison was with GDP, and the collection of fuel and water is not included when calculating GDP in these countries (and most others). In any event, for Argentina and the Republic of Korea, this activity would not have been significant.

There was more variation in what was included in the care of persons aggregate. Nicaragua used only unpaid care of children. All other countries included care of persons in the respondent's household. Argentina, South Africa and Tanzania also included care of adults and children in other households.

Argentina, South Africa and Tanzania used full minutes when calculating the value of unpaid care work. The other countries used the 24-hour minute. Theoretically, the 24-hour minute is probably more appropriate for the average earnings approach as those who took on paid work instead of the unpaid care work would be paid for the actual hours they worked, regardless of many tasks they neglected by doing paid rather than unpaid work. In contrast, the full minute is probably more appropriate for the replacement cost approach, because the person would have to pay for the full time spent on all the tasks, whether or not the paid provider undertook other non-care activities at the same time.

The use of full minutes instead of 24-hour minutes would be liable to inflate the value of unpaid care work in Argentina, South Africa and Tanzania to the extent that simultaneous activities were captured. Many other choices of methodology—such as the use of medians rather than means, and the use of sex-disaggregated data for the average earnings approach—would tend to reduce the derived value. All approaches to valuation also have an in-built downward bias which reflects gender discrimination in the labour market. Thus the opportunity cost/average earnings approach is biased downward because women tend to do more care work than men and also to have lower earnings. The replacement cost approach is biased downward because it uses earnings of care workers, who are predominantly women, and tend to have lower earnings than many others in the economy. A “conservative” bias was therefore preferred, to forestall possible objections that the value of care was being exaggerated.

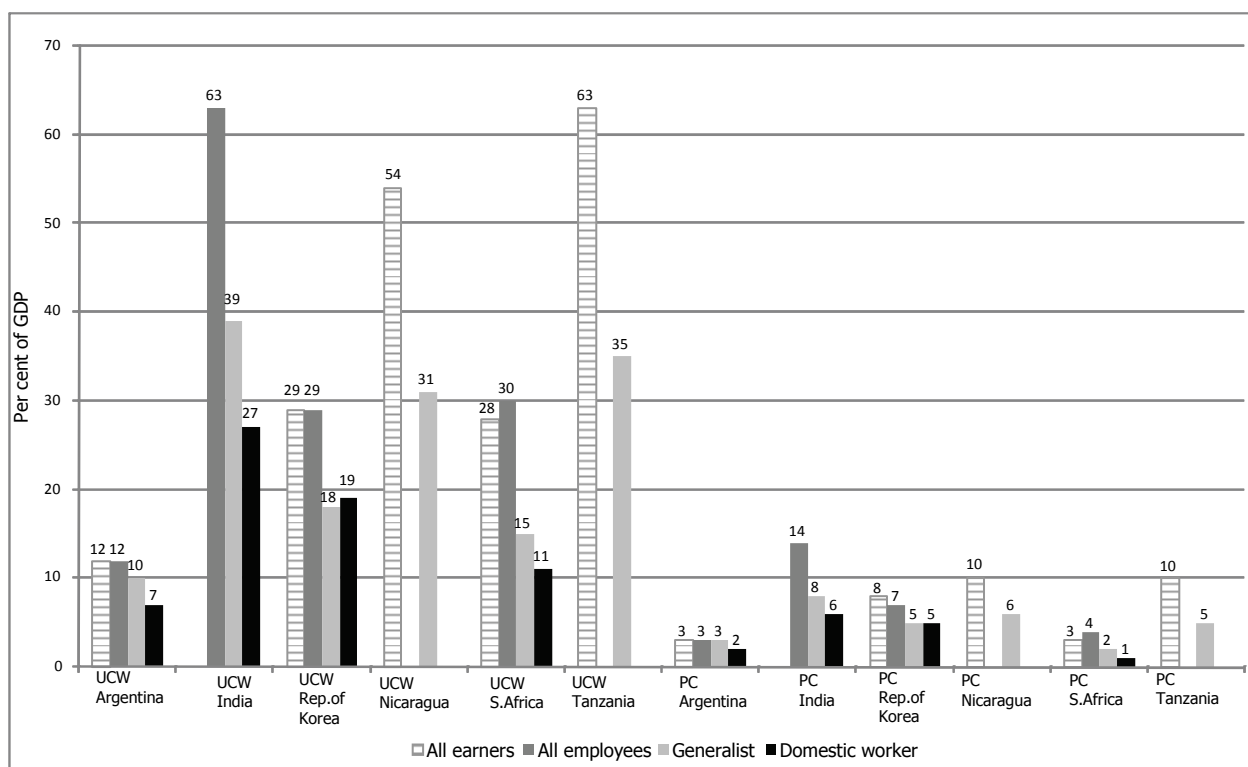
The use of market values implies that the productivity of the person doing unpaid care work is the same as that of the person doing the same work on a paid basis. It might be argued that unpaid care work is likely to involve lower productivity, as the care provider is likely to have less sophisticated infrastructure, lower qualifications, and not be under the same pressure to work productively so as to generate profit for themselves or an employer. The contrasting argument is that unpaid care work might be of better quality because the unpaid carer understands the needs of their family better and cares more about them emotionally. In the absence of agreement on the issue of productivity, the market rates have been used.

### ***Comparisons with macroeconomic indicators***

The first comparison is with GDP. This comparison is important as the basis for advocacy that aims to change the SNA rules so that the production boundary includes unpaid production of services for one's own use, just as they were changed in 1993—as a result of advocacy—to cover subsistence production of goods and the collection of fuel and water. Essentially, the GDP comparisons provide support for the argument that the amount of unpaid care work done and its value are too large to be ignored in economic decision making.

Figure 22 shows the results of the comparison with GDP in respect of both unpaid care work (to the left) and care of persons (to the right). (For Argentina, the value of unpaid care work was compared with the gross geographical product for the city of Buenos Aires.) The value of unpaid care work is estimated to be between 7 per cent (using the generalist wage in Argentina) and 63 per cent (using the employee wage in India and earnings in Tanzania) of GDP. For care of persons, the range is between 1 per cent (using employee wages in South Africa) and 14 per cent (using employee wages in India). The high measures for India and Tanzania could be regarded as misleading to the extent that many workers doing GDP/SNA work in these countries are unpaid, and GDP is thus probably lower than it would otherwise be.

**Figure 22: Value of unpaid care work and care of persons as a percentage of GDP**



The figure shows substantial variation in the percentage for each of the two values, both between and within countries using different measures. The variation in values within country is particularly marked in the case of India and South Africa. In both these countries the highest value for unpaid care work (or person care) is more than twice as high as the lowest value. One reason for this is the very low wages paid to domestic workers in both these countries when compared to wages of other employees. In the Republic of Korea, in contrast, the domestic worker wage measure is higher than the generalist measure. Nevertheless, across all countries the generalist and domestic worker measures are lower than the average earnings and average wage measures. This is, in part, a reflection of the dominance of females in care-related occupations and the relatively low wages paid for these types of work. For the countries where there is a measure in respect of both average earnings and average wages, the measures tend to be very similar. The biggest difference in this respect is found for South Africa, which has a bigger informal sector than the other two countries—Argentina and the Republic of Korea—which have both measures.

Comparison of the GDP-related patterns with those reflecting “volume” of unpaid care work and SNA work shown in figure 4 above illustrates the extent to which differences in the earnings used for valuation affect the value attributed to unpaid care work. For example, while

South Africa has among the lowest values for unpaid care work in the GDP comparison, the volume analysis suggests that it should be higher than for all other countries except Nicaragua.

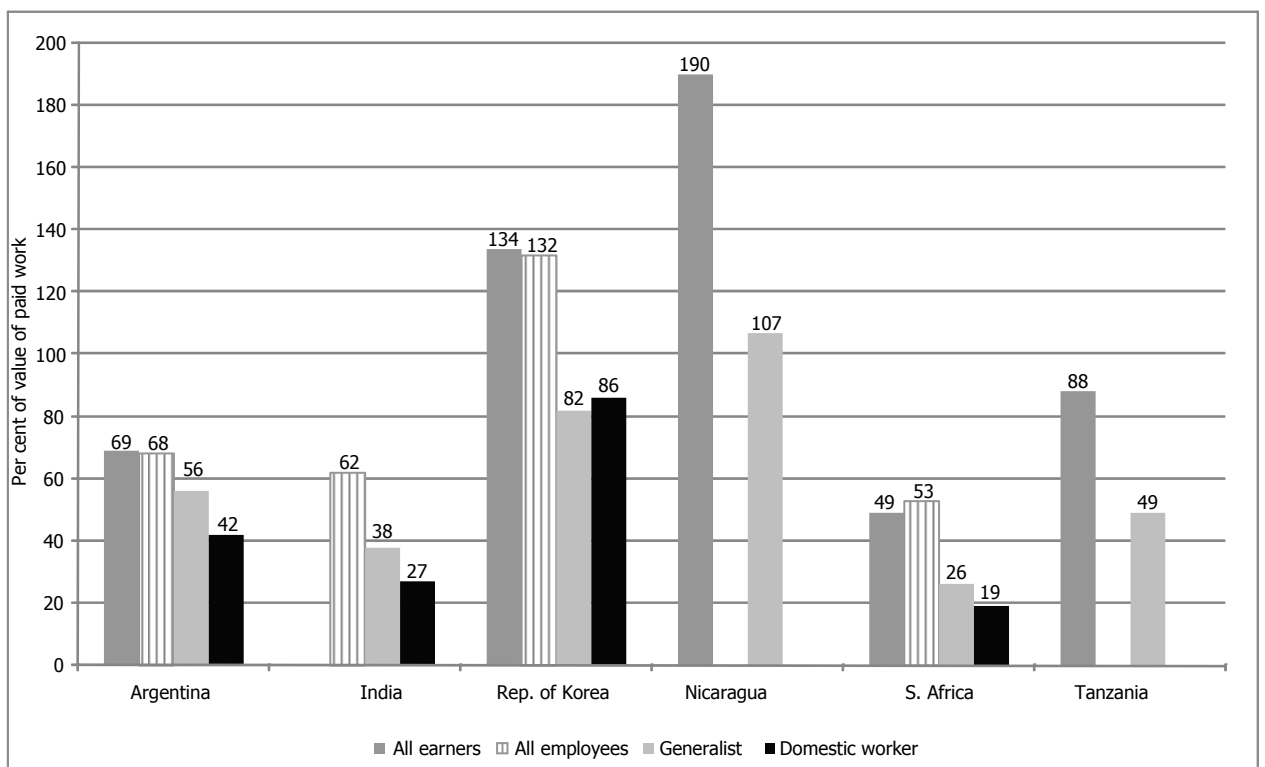
Comparisons were also made with a range of further macroeconomic measures. To simplify presentation, the graphs below first show the results only in respect of unpaid care work. This set of graphs is followed by a single graph comparing the value of care of persons with all the macroeconomic measures. This graph uses the generalist value, which is available for all the countries. When interpreting this graph, however, it must be borne in mind that this represents the lowest value for some countries.

The first comparison is with the *value of paid work* in the economy. This comparison is an alternative version of the volume comparison presented in figure 4 above. The two main differences with the volume comparison are, first, that the hours of paid and unpaid work performed are multiplied by relevant earnings and, second, unpaid SNA work is excluded.

The value for paid work used in the comparison was generally obtained from the same survey as the time use data or another household survey. For Argentina, Nicaragua, South Africa and Tanzania, the value represents the income of all earners, whether employees or self-employed. For India, the value represents income of regular salaried employees. Similarly, in the Republic of Korea only employees are included in the calculation. This restriction will have more of an impact on the Indian comparison than the Korean one, given the high levels of self-employment in India.

Figure 23 shows the value of unpaid care work ranging from 19 per cent (domestic worker wage in South Africa) of the value of paid work in the economy to 190 per cent (all earners in Nicaragua). The high value in Nicaragua could be regarded as misleading to the extent that it only reflects SNA work that is paid. The low value in India is interesting, given that the comparison is only with employees.

**Figure 23: Value of unpaid care work as a percentage of paid work in the economy**



The patterns in the graph above are influenced by the type of earnings used for the valuation. These differ between countries for a range of reasons, including different methods, differences in available datasets and the degree of under-reporting of earned income, and real differences in the economies, the levels of remuneration and degree of inequality.

The next two comparisons are with different measures of *tax revenue*. Ingrid Palmer (quoted in Bakker 1993:6) has likened unpaid care work to a tax that people (mainly women) pay before engaging in income-earning activity. Men and women are required, if they earn enough, to pay a monetary tax which is their contribution to the public good. This tax is more often paid by men, and men tend to pay more of this tax than women. Most women and some men, irrespective of whether they earn, also contribute through their unpaid care work to the public good. Indeed, in 2001, Germany's highest court ruled that it was unconstitutional to tax parents at the same rate as the childless, given that parents "produce the future workers needed to keep the system solvent" (Wolf 2004:126–127).

The unpaid care work "tax" contribution can constrain the carers' opportunities to earn monetary income. Further, the unpaid care tax adds a regressive element to the tax system given that, overall, women (who do most of the care) tend to be poorer in monetary terms than men. The regressive element is increased to the extent that, in some countries at least, poorer people tend to do more unpaid care work than wealthier ones. It is therefore interesting to compare the value of unpaid care work with various tax measures.

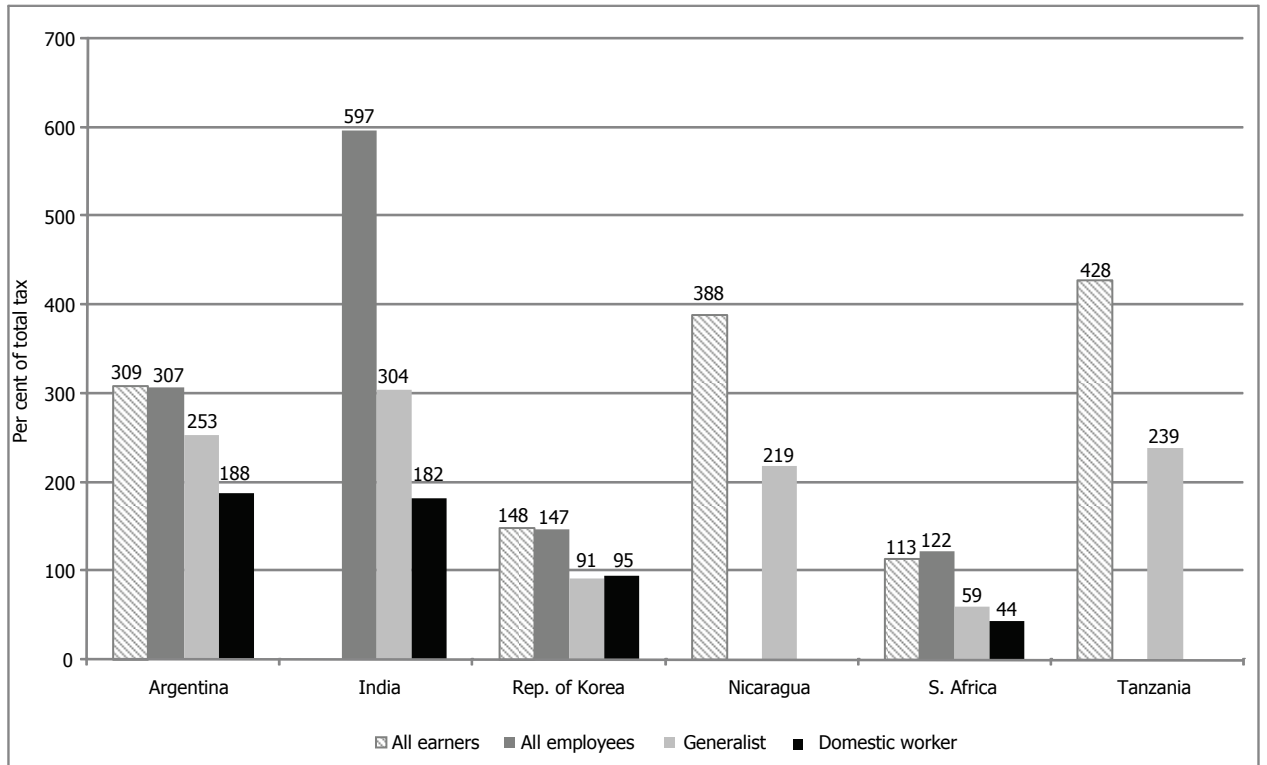
Figure 24 compares the value of unpaid care work with *total government tax revenue*. For the purposes of this comparison, India, Nicaragua, the Republic of Korea and South Africa used total tax revenues. The Argentina researcher used the City of Buenos Aires' total tax revenue, excluding remittances from or to the national government. Tanzania used total domestic revenue.

For this comparison, the South African domestic worker wage again gives the lowest percentage (44 per cent). The highest percentage is for the Indian average earnings approach (597 per cent). The relatively low values for South Africa and the Republic of Korea probably reflect relatively high levels of tax collection in these countries. India, Nicaragua and Tanzania, in contrast, have higher values, reflecting lower tax collections. Argentina is difficult to compare because local government taxes are likely to be of a different nature to national taxes.

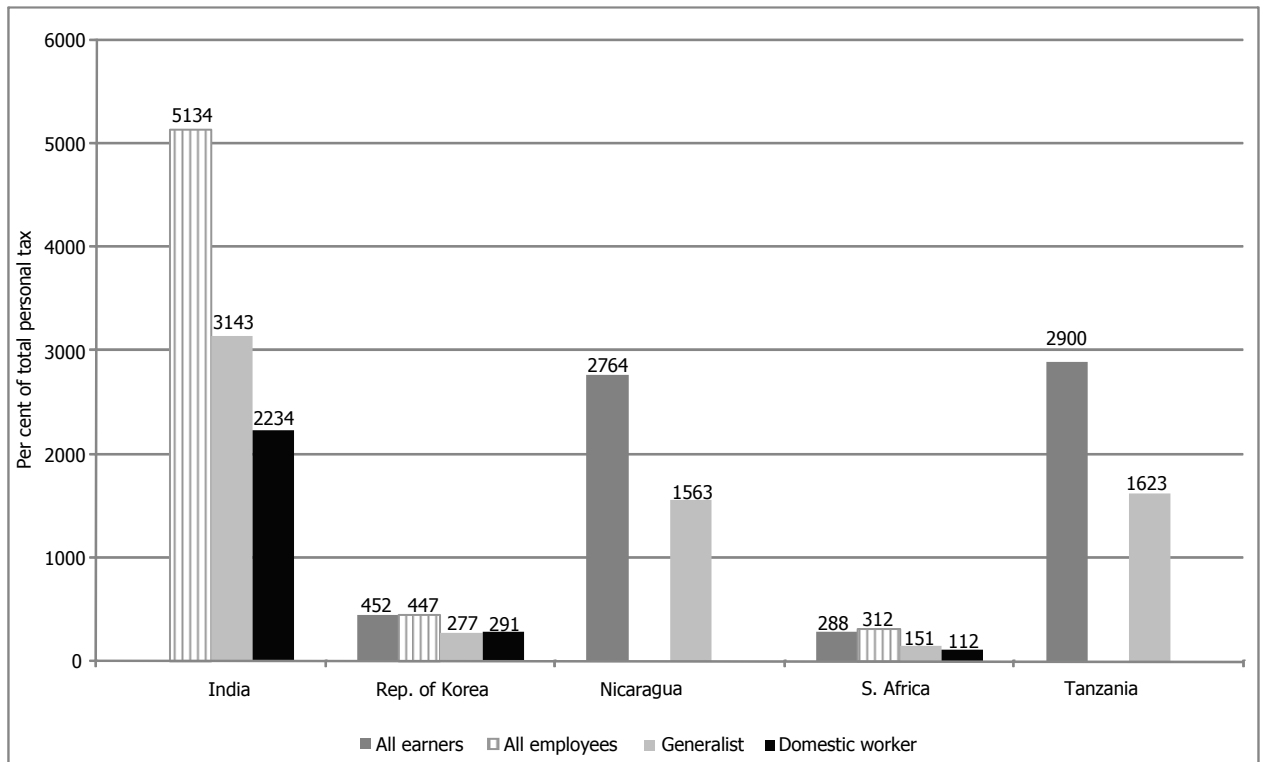
Figure 25 compares the value of unpaid care work with narrower measures of *personal tax*. For India the comparison is with personal tax revenue, for Nicaragua with income tax revenue, for South Africa with personal and individual tax revenue, and for Tanzania with individual income tax revenue. In the Republic of Korea, the comparison is with the total for direct taxes, which include income, corporation, inheritance and gift, and comprehensive real estate holding taxes.

In this graph, the low values for the Republic of Korea and South Africa are even clearer than in the previous graph. As before, this pattern is explained by the fact that both countries have substantial formal sectors with relatively effective taxation of those employed in these sectors. The other countries, with large proportions of the population engaged in informal and unregistered work, show much larger percentages when comparing unpaid care work and personal tax. For India, in particular, the highest measure shows unpaid care work equivalent to 5,134 per cent of the value of personal tax revenue.

**Figure 24: Value of unpaid care work as percentage of government tax revenue**



**Figure 25: Value of unpaid care work as percentage of personal tax**



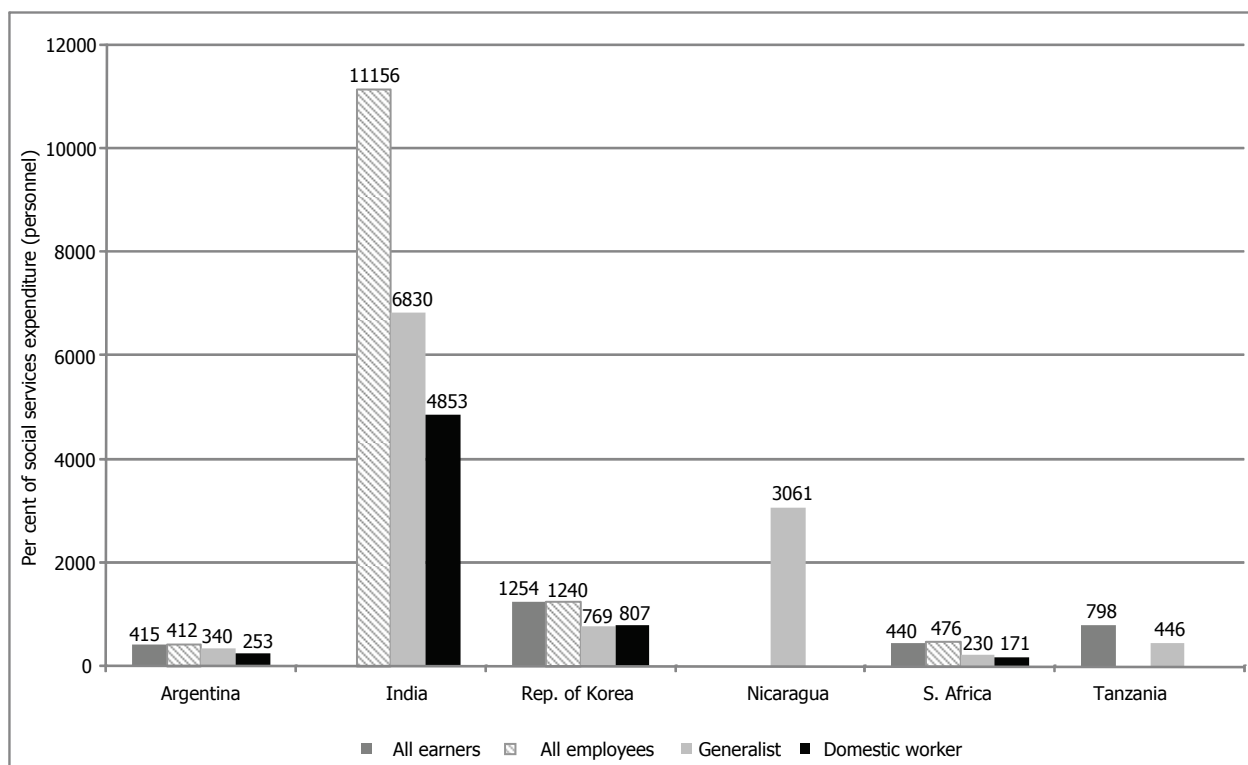
For the next comparison, the intention was to compare the value of unpaid care work with the amount spent by government on *remuneration of government officials providing social services*. This is useful because, if government provided more of these services, there would be less need for people to do this work unpaid in the home and community.

The exact measure desired was not available for any of the countries. In some countries, teams could not obtain a breakdown for social services that separated expenditure on remuneration from other expenditure. Even in countries where this breakdown was available, the remuneration included some administrative staff not directly responsible for delivery. A further challenge related to the fact that in many countries, social services were delivered by more than one level of government. In some cases data for all relevant levels were not available.

The Argentina researcher thus used the social services expenditure of the city's municipal government; India used total expenditure by the central government on sectors such as education, health and social welfare; the Republic of Korea used personnel expenditure of national and public schools, Ministry of Education and educational support institutions falling under this ministry, and personnel expenditures of the Ministries of Health and Social Welfare; Nicaragua used the amount budgeted by the central government for salaries in the Ministries of Education, Health and Social Affairs; South Africa used consolidated national and provincial personnel expenditure of the departments of education, health and social development; and Tanzania used the total allocations for the education and health sectors.

Figure 26 shows India once again reflecting the highest percentages, even for its lowest measures. The highest measure is more than 11,000 per cent of total expenditure by the central government on the chosen social sectors. This suggests very low levels of government delivery of social services in this country. Nicaragua is the next highest, although with only one measure. Tanzania, despite its relative lack of "development", reflects percentages that are similar to those for the more developed countries. South Africa and Buenos Aires have lower levels than the Republic of Korea, which might, to some extent, reflect the higher relative earnings used to value unpaid care work in the Republic of Korea.

**Figure 26: Value of unpaid care work as percentage of government expenditure on social services**



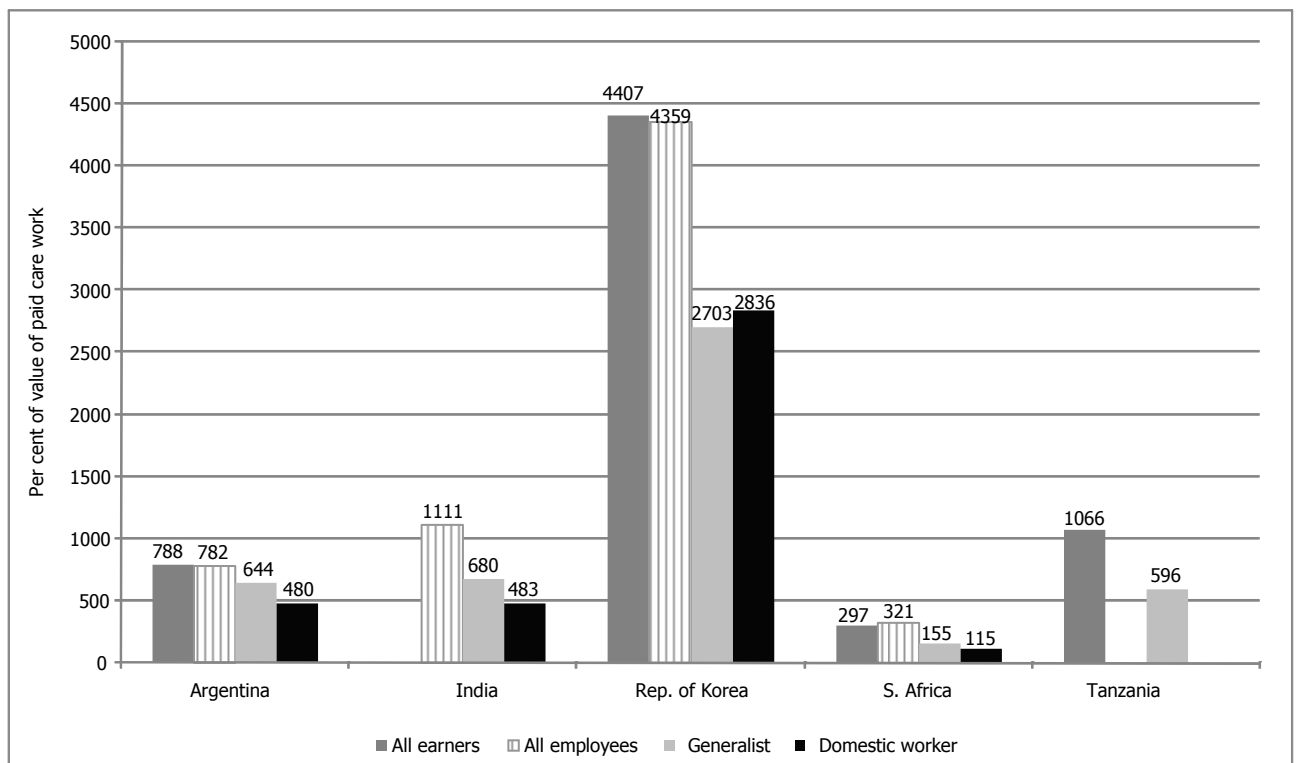
The final comparison is with the value of *paid care work* in the economy, whether performed in the private or public sector. This comparison goes beyond the previous one in asking what the market as well as government currently provide in terms of care, and how this compares with what is provided through unpaid care work in the home and community.

For this comparison, country teams selected occupations that primarily involve care work and calculated the value of employee earnings in these occupations. As with most of the other measures, those used are not identical as a result of, among other things, differences in data availability as well as differences in the way occupations are recorded and coded in the data. Judgment calls were also necessary in deciding which occupations should be considered to involve sufficient care work to be included. In some countries, for example, pre-primary and primary school teachers were included but teachers at higher levels excluded on the grounds that the former's work involved substantial care while the latter's did not.

The Argentina researcher used gross remuneration for the social services selected for the calculation of the generalist wage, and thus included teachers. The India researchers did not include any teachers or health workers as they were not able to separate out those who they would want to consider primarily as care works. The Republic of Korea's approach also excluded teachers and health workers.

Figure 27 shows the highest comparative values for the Republic of Korea. This seems counter-intuitive, as one would expect the paid care sector to be larger in a more developed country. However, as noted above, the Republic of Korea estimate for paid care work excluded teachers and health workers who would account for a substantial proportion of the paid work estimate in other countries. South Africa had the lowest values. This could be partly explained by the inclusion of some education and health workers in the South African measure of paid care work. Even for South Africa, the value of unpaid care work is more than the value of paid care work in the economy. For the highest measure in the Republic of Korea, unpaid care work is equivalent to 4,407 per cent of the value of paid care work.

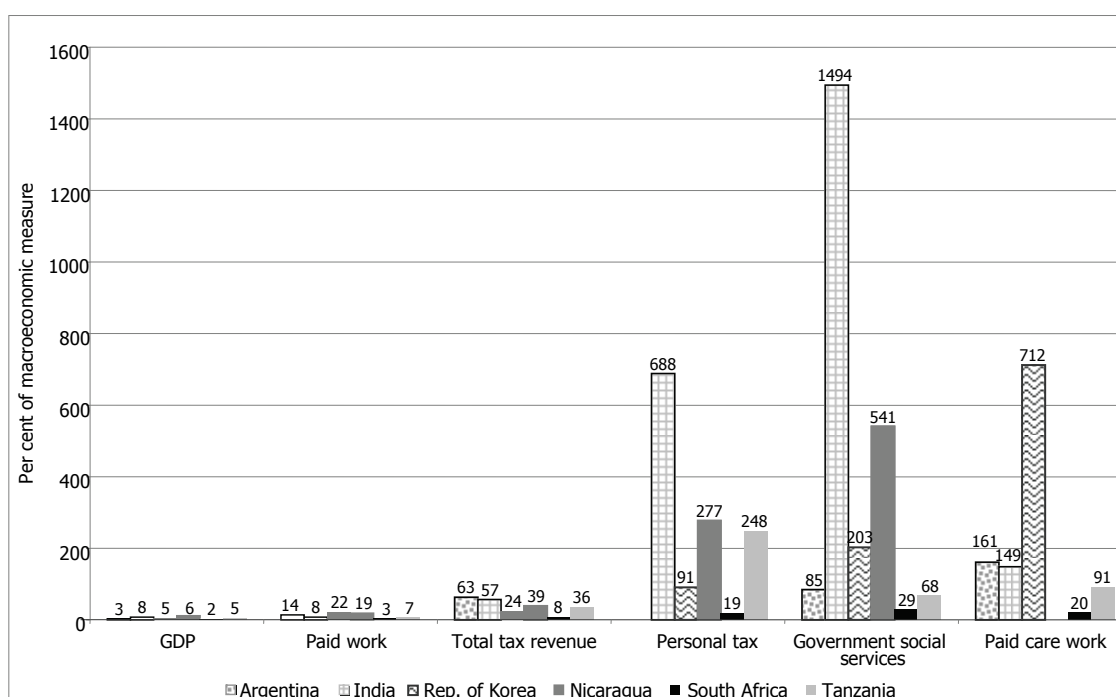
**Figure 27: Value of unpaid care work as a percentage of paid care work in the economy**



Finally, figure 28 presents all the comparisons for the value of care of persons using the generalist approach. Some aspects of this comparison echo those of the comparison in respect of unpaid care work in that the comparators are the same across the two sets of comparisons. The differences arise from the fact that the value of care of persons is, by definition, lower than that of unpaid care work. Further, the proportion of unpaid care work accounted for by the care of persons differs markedly across the countries. It ranges from 13 per cent in South Africa to 26 per cent in the Republic of Korea.

In addition to providing the comparison in respect of the value of care of persons, figure 28 also gives a sense of the size of the various comparators across the countries. Overall, the increasing size of the comparator bar as one moves to the left reflects the decreasing size of the relevant macroeconomic measures. Thus, for all countries GDP is the largest measure, with the next largest being paid work and total tax revenue. India emerges as an exception in the relatively low values (and thus high comparator bars) recorded for personal tax and central government social services.

**Figure 28: Value of care of persons as percentage of various macroeconomic measures**



Focusing on comparisons with the unpaid care of persons, the value of this work is usually less than that of GDP, paid work in the economy and total tax revenue. It is, however, larger than the value of personal tax for all countries, except South Africa and the Republic of Korea, larger than government social services for three of the six countries, and larger than paid care work for three of the five countries for which the comparison has been drawn up.

The comparisons above show very different patterns for the different countries, and variation across the different comparisons. The variation is the result of differences in the labour market, including the level of inequality in earnings by gender and occupation; differences in the distribution of care provision across the home, market and state; and differences in levels of the government sector more generally, among other factors. Unpaid care work tends to loom larger, in comparative terms, in less developed countries because of the smaller size of government and the paid economy. It is consistently less than one might otherwise expect in South Africa because of the extreme inequalities in earnings, which result in particularly low (relative) earnings for care work and for women, which in turn influenced the value ascribed to unpaid



care work. Nevertheless, across all countries, the relative size of unpaid care work is sufficiently large that it is difficult to justify ignoring it in policy making.

## In Conclusion

This paper has shown some constant basic gender patterns in engagement in SNA and unpaid care work across six countries: Argentina, India, Nicaragua, the Republic of Korea, South Africa and Tanzania. As expected, men are more likely than women to engage in SNA work, and to do so for longer than women, while women are more likely than men to engage in unpaid care work and care of persons, and to do so for longer than men. The analysis has also confirmed that across countries a range of similar factors influences the amount of time spent on unpaid care work and care of persons: work (employment) status, having children in the household, being married and age. Other factors that reflect social standing—such as income, caste, race and educational achievement—also influence participation in, and the amount of time spent on, care. Here, however, the patterns vary to some extent across countries.

Overall, there are at least as many differences as similarities. In particular, there are significant variations in the “size” of care work undertaken in the sense of the level of participation rates, average times spent by women and men on different activities, and absolute and relative differences between women and men. Some of these variations reflect methodological differences in terms of instruments, number of days covered, classification schemes, age group covered, and so on. However, the methodological differences cannot explain away more than a small proportion of the differences.

This finding of diversity should not be surprising. Nor should the difficulty of finding simple reasons for some of the patterns be a cause for surprise. In this respect, Pacholok and Gauthier’s (2004) examination of patterns in respect of paid work, housework and childcare in Canada, Germany, Italy and Sweden confirms that in developed countries, too, even quite simple hypotheses are not supported in any simple way by the available data.

Pacholok and Gauthier test four hypotheses:

- i. countries with a smaller wage gap between women and men will exhibit a less marked division of labour;
- ii. the extent to which a country’s population has traditional beliefs in respect of gender will increase the gender gaps;
- iii. the existence of opportunities for reducing the time spent in paid work, for example, through availability of part-time work, will result in more time being spent with children; and
- iv. the level of state support for families will increase the time spent with children.

These hypotheses are interesting in that they touch on issues, such as the influence of government policies and practices, that are a core focus of analysis within the UNRISD project on *Political and Social Economy of Care*. However, despite restricting the analysis to dual-earner couples so as to avoid confounding factors, it is only for the third of these hypotheses that Pacholok and Gauthier find real support. Even then the support is “partial” (Pacholok and Gauthier 2004: 215-216). Clearly, the determinants of the types and amounts of work done by women and men are complicated. With the much more diverse set of countries used in the UNRISD project, and without the restriction to dual-earner couples, the variation is not all that surprising.

Essentially time use surveys offer a way to measure the gender division of labour, which many consider to be an underlying feature of gender patterns and inequality in society. The

differences found between countries in this paper serve to confirm that gender is not “god-given” and immutable. Instead, it is something that varies across countries and cultures.

For policy purposes, however, what happens in a particular country is as important, if not more so, than cross-country comparisons. This paper and the country papers present cross-sectional comparisons of different groups within a particular country at a particular point in time. Also needed are longitudinal comparisons of patterns of time use within the same country.

Therefore, countries need to conduct time use surveys at regular intervals, using a standard methodology that allows reliable comparisons over time, similar to the current practice of ongoing labour force surveys. However, time use surveys would not need to be conducted as regularly as some countries conduct labour force surveys because time use patterns are unlikely to shift as quickly, unless there are economic shocks, major disasters and epidemics or policy shifts in areas such as public support for childcare.

## Appendix: Key Features of the Time Use Surveys in the Six Countries

	<b>Design</b>	<b>Scope and information</b>	<b>Quality</b>	<b>Weaknesses</b>
Argentina	Full 24-hour diary 1 day per person Module in household survey	1,408 households 1,408 individuals 15–74 years	Non-response 18 per cent Detailed codes for care Attention to simultaneous activities	Only one city One person per household
Nicaragua	Stylized In household survey 1 day per person	2,326 households 8,756 individuals 6+ years	Simultaneous activities asked about separately Relatively few codes for person care	Difficulties with simultaneous activities Stylized approach—22 specified types of activity
India	1998/99 “pilot” Full 24-hour diary Normal, abnormal and “weekly variant” days Stand-alone	6 representative states 18,591 households 75,000 individuals Normal, abnormal and “weekly variant” day	Detailed codes for care	Difficulties with simultaneous activities Limited background info
Republic of Korea	KTUS 1999 and 2004: Full 24-hour diary 2 days per person Stand-alone	16,389 households and 42,953 individuals (1999) 12,651 households and 31,634 individuals (2004) 10+ years	Detailed codes for care High response rate	Difficulties with simultaneous activities
South Africa	Full 24-hour diary 1 day per person Stand-alone	8,564 households 14,553 individuals 10+ years	Detailed codes for care Attention to simultaneous activities Response rate 94 per cent	Only two people per household
Tanzania	Full 24-hour diary 7 days per person Module in household survey	Every fifth household of LFS sample 3,146 households 10,953 individuals 5+ years	Detailed codes for care Attention to simultaneous activities	Separation of care for child, ill, elderly, disabled One-hour slots give cruder measurements

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