Ca' Foscari
University
of Venice

Master's Degree
in Economics and Finance (EM20-QEM)
Curriculum: Economics-QEM
(LM-56)

Final Thesis

Women and unpaid care work: a barrier in bridging gender gaps.

Supervisor
Ch. Prof. Ylenia Brilli

Assistant supervisor
Ch. Prof. Raluca Elena Buia

Graduand
Martina Bertoli
871745

Academic Year
2020 / 2021

CONTENTS

1. INTRODUCTION

The aim of this work is to study the nature of unpaid work, analyze how the time devoted to unpaid work is distributed within the household, and highlight which are the consequences of an unequal allocation of it.

The analysis starts with framing the concept of unpaid work in the chapter "The nature of unpaid work" and whether it is classified as economic or non-economic work. The System of National Accounts (SNA) provides the conceptual framework that sets the international standard for classifying economic activities such as paid work and unpaid work for the market, but it does not include non-market unpaid work, namely, care household maintenance and volunteer work.

Non-market unpaid work or unpaid care work refers to tasks such as cooking, doing housework, caring for children, older people, and sick people where the person doing this work is not paid. The term also includes the work done for the family and the voluntary activities, where individuals assist other households or communities. The word "unpaid" stresses that the individual performing this activity is not remunerate; the term "care" is used to indicate that the activity provides what is necessary for the well-being, health, maintenance, and protection of something or someone; and "work" is to indicate that the activity has a cost in term of mental and physical effort and in terms of time resources. Thus, unpaid care work can be seen as an important social indicator, and as stated by Stiglitz *et al.* Report (2009), "household production constitutes an essential aspect of economic activity; ignoring it may lead to incorrect inferences about changes and levels in well-being."

Thus, it emerges the necessity of measuring, valuing, and accounting it, facts that could be challenging due to its non-monetary value and its private nature -usually taking place within the household.

There are several approaches and tools to analyze and measure unpaid care work using quantitative, qualitative, and participatory methodologies to obtain a different level of information. The main qualitative tools available are the Rapid Care Analysis (RCA), the *Gender Action Learning System* (GALS), and the *Care Diamond* and community mapping

of services. However, the main quantitative tools used to measure unpaid care work are the *Household Care Survey* (HCS) and the *Time-use Survey*.

Instead, to assign an economic value to unpaid care work is necessary to convert time measurements into money measures, and most of the time is doing by assigning an hourly wage to the time spent. There are several different approaches to finding the correct wage to use in the calculation. The main are the mean wage approach, the opportunity cost approach, the generalist approach, and the specialist approach.

Finally, to account for unpaid care work, a solution could be the construction of satellite accounts parallel to the core national accounts to consider unpaid care work to measure the unpaid production of goods and services by households and provide indicators of their contribution to welfare.

The chapter "The impact of the double burden on women" starts listing the main evidence at the world level and European level of the distribution by gender of paid and unpaid work. Data show that across the world, and with no exceptions, women dedicate more time than men to unpaid care work.

In particular, the average time devoted by women to the three forms of unpaid care work, namely, care services, domestic work, and volunteering or community services, at the global level is 277 minutes (19.7 percent of a 24-hour day). The world average of time devoted to unpaid care work by men is instead 111 minutes (7.7 percent of a 24-hour day). The gaps in the relative contributions of women and men to unpaid care work can be found in every country, and in none of them, it is reached parity at 50 percent to the contribution of men to unpaid care work. As at the world level, also in European countries, women are more involved than men in unpaid care work. Time spent on family care and household activities for the whole population vary between 3 and 4 hours on average across countries, with the highest gender gap in Turkey (3 hours and 16 minutes more for women than men) and Italy with 2 hours and 47 minutes. The study continues analyzing the participation rate of women and men in specific categories of unpaid work.

It follows a review of the different theoretical perspectives that try to explain the process through which domestic labor is allocated among household members. This work focuses on economic, namely, utility models of allocation of time and bargaining models, and sociological theories, namely, the social exchange theory and the "Doing gender" theory.

The study then highlights what are the main consequences on women of this unequal distribution of unpaid work, such as the fact that the unequal distribution of caring and household responsibilities between men and women translates into unequal opportunities in terms of time to participate equally in paid market activities and so that the amount of time devoted to unpaid work is negatively correlated with female labor force participation; the fact that unpaid care work is related to the quality of female employment: the unequal amount of time spent by women in caring responsibilities increases the probability that they will be engaged in part-time or vulnerable employment; and that gender inequalities in unpaid responsibilities are related to gender wage gaps.

The unequal distribution of unpaid care work between genders can be attributed to four leading root causes: policies and social institutions, the economic environment, the availability of technology and infrastructure, and social norms. Especially social norms strongly influence the distribution of unpaid care work between women and men. Social norms shape the traditional role carried out by women, often result in the unequal distribution of care activities and place women within the household as their primary role limiting their opportunities to have multiple roles in society due to the lack of resources and time.

The study concludes by providing an analysis of the economic benefits of reducing gender inequality in the allocation of unpaid work, a model to quantify the economic effects of policies addressed to reducing burned of unpaid work on women and increasing their participation in the labor force, and an analysis of the policies that could be implemented to reduce and redistribute unpaid work.

2. THE NATURE OF UNPAID CARE WORK

2.1 Defining Unpaid Work

People allocate their time to activities classified as no work, paid work, and unpaid work. The concept of no work time consists of free time spent on leisure activities and personal care; paid work refers to time contracted out that receives remuneration; the idea of unpaid work includes all non-remunerated work activities.

An important question to ask is whether unpaid work is economic or non-economic work. According to the United Nations System of National Accounts of 1993 (SNA), which provides the conceptual framework that sets the international statistical standard for the classification and measurement of economic activities[1], some unpaid work activities are considered as "economic work" and, like paid work, are considered to be within the SNA production boundary. Some other unpaid work activities are classified as "non-economic." The United Nations System of National Account convention of 1993 indicates that the unpaid economic work activities are to be measured and included in annual estimates of Gross Domestic Product (GDP). These include: production work such as crop cultivation, forestry, and fishery for own use; production of fixed assets for household use; collection of basic necessities from common lands or private lands; activities like unpaid family work for crop production that reaches the market as well as agro-processing and food processing for sale; collection of raw materials for income-generating activities. This classification also includes unpaid agricultural family work for the market.

Other types of unpaid work are classified by the SNA 1993 to be "non-economic" and are left outside the SNA production boundary as shown in Table 2.1. These types of work consist of cleaning, washing, household maintenance, shopping, cooking, providing care for

---

[1] The System of National Accounts (1993) consists of an integrated set of macroeconomic accounts, tables, and balance sheets based on internationally agreed definitions, classifications, concepts, and accounting rules that outline the market economy. It also provides a crucial element for the construction of satellite accounts of unpaid work.

children and infants, care for older relatives and the disabled, providing care for the permanently ill, and all the volunteer work for community services. Nevertheless, all these works are not recognized to be an essential way of contributing to the economy. For this reason, the SNA recommends creating parallel accounts to the National Income and Product ones (GDP).

SNA/Non-SNA Work and Paid/Unpaid Work and			
SNA Work (production boundary)	**Paid Work** (for the market)	**Unpaid Work** (for the market)	
Non-SNA Work (outside the production boundary)			**Unpaid work** (non-market; care work, household maintenance, and volunteer work)

Table 2.1 Paid/Unpaid Work and SNA/Non-SNA Work (Source: SNA, 1993)

Nancy Folbre provides an even more accurate classification of the boundaries of the paid and unpaid work in her article "Measuring care: gender, empowerment, and the care economy" (2006), where she suggests "the need to move beyond the term "unpaid care" to a more disaggregated analysis, distinguishing among forms of care work according to their relationship to the market, characteristics of the labor process, and type of beneficiaries" (Folbre, 2006). The four most important categories of relationship to the market for Folbre are: paid employment, unpaid services, unpaid work that helps meet subsistence needs (non-market but included in SNA), and informal market work. Each of the former categories can be further divided between indirect care activities and direct care activities. The first provides support for direct care, the second type of activities provides a process of personal and emotional engagement.

Table 2.2 provides an overview of this classification. In columns, there are the four most important categories of relationship to the market, in rows care recipients, i.e., children, the elderly, the sick or disabled, other non-disabled adults, and the self. Every cell of the table offers an example of the type of care work being described. The matrix also locates the paid work as the paid provision of indirect care for other adults. All goods and services can be seen as indirect inputs into care provision.

	Unpaid work (outside SNA)		Unpaid subsistence production (inside SNA)		Informal market work		Paid employment	
	Direct care	Indirect care	Direct care	Indirect care	Direct care	Indirect care	Direct care	Indirect care
Children	Changing diapers	Preparing food, cleaning, doing laundry	Breastfeeding	Growing food for own consumption, collecting wood, or carrying water	Family daycare, babysitting	Domestic servant paid or unpaid family worker in a small service enterprise	Childcare worker, teacher pediatrician	School administrator, clerical, food services, or janitorial
Elderly	Spoon feeding or bathing	Preparing food, cleaning, doing laundry		Growing food for own consumption, collecting wood, or carrying water	Family daycare, elder sitting	Domestic servant paid or unpaid family worker in a small service enterprise	Eldercare worker, gerontologist	Nursing home administrator, clerical, food services, or janitorial
Sick, disable	Spoon feeding or bathing	Preparing food, cleaning, doing laundry		Growing food for own consumption, collecting wood, or carrying water	Informal but paid assistance to in the home	Domestic servant paid or unpaid family worker in a small service enterprise	Nurse, nursing aide, doctor	Hospital administrator, clerical, food services, or janitorial
Adults (other than self)	Counseling	Preparing food, cleaning,		Growing food for own		Domestic servant paid or	Counselor, nutritionist,	Most paid jobs not

9

	doing laundry	consumption, collecting wood, or carrying water	unpaid family worker in a small service enterprise	yoga instructor	listed in other cells
Self	Visiting doctor, exercising	Growing food for own consumption, collecting wood, or carrying water			

Table 2.2 Examples of direct and indirect care for type of work and type of recipients (Source: Folbre, 2006)

Labor is the most critical input into care, but it is not the only one: physical environmental, human and social capital and raw materials are synergically combined with labor to provide care services. The quality of direct care work is hard to specify and monitor in an explicit contract. As a consequence, personal preferences and social norms have a noticeable impact on the quality of care. It follows that "long-term personal relationships or low rates of turnover in the context of purchased services of elder care and child care are likely to increase quality. Finally, care services have an important public good component[2] because they improve productive human capabilities; the benefit of providing good care "spillover" to improve the well-being of the community" (Folbre, 2006).

All four units of the typical macro-economic diagrams of the circular flow of labor and money provide direct care service (households, governments, non-profit organizations, and businesses). Each of the former units plays in the subset of activities referable to the care sector.

---

[2] A public good is a good that has one or both the characteristics of nonexcludability and jointness in consumption. Nonexcludability means that it is difficult to avoid people to consume the good once it has been produced, and jointness in consumption means that once it is produced for one individual, additional consumers can consume at no additional cost (Holcombe, 1997). Goods that are joint in consumption are also called non-rival consumption goods. The technical definition of a public good is the definition that Samuelson has formulated in the paper "The Pure Theory of Public Expenditure" in 1954. He says that a public good is a good that, once produced for some consumers, can be consumed by additional consumers at no additional cost (Samuelson, 1954).

2.1.1 Defining unpaid care work

Taking into account the above classification, the term unpaid care work has to be considered the sum of eldercare, childcare, and care of the sick and permanently ill. As stated in *Progress of the World's Women* (Elson, 2000), unpaid care work refers to tasks such as cooking, doing housework, caring for children, older people, and sick people where the person doing this work is not paid. The term also includes the work done for the family and the voluntary activities, where individuals assist other households or the community. The word "unpaid" stresses that the individual performing this activity is not remunerate; the term "care" is used to indicate that the activity provides what is necessary for the well-being, health, maintenance, and protection of something or someone; and "work" is to indicate that the activity has a cost in term of mental and physical effort and in terms of time resources[3].

Since unpaid care work is composed of non-market activities, there is no observable price for the services provided, and it is generally complex to quantify in national accounts data. Unpaid care work is not included in GDP, but its amount is substantial. There are two ways to measure it: the first method is the input method that counts hours worked in unpaid care work activities using a comparative wage rate. The second method is the output method that measures the results of unpaid care work by assessing a price to goods and services produced. A more detailed account of unpaid care work has been made possible by the systematic collection of time use data in recent years. Time-use data show how many hours individuals dedicate to unpaid and paid work, personal care, and leisure. The boundary between leisure and unpaid work is determined by the so-called "third person" criterion: "if a third person could hypothetically be paid to do the activity, it is considered work" (Miranda, 2011). So, childcare, gardening, cleaning the house, laundry are all examples of unpaid work activities, while reading a book, watch a movie, or play tennis are all leisure activities because someone cannot be paid

---

[3] For example, childcare activities consume time resources. In the paper "Child care and the labor supply of married wome" (1992), the author David C. Ribar in his model uses a shadow cost approach to capture the effects of the indirect costs of nonmarket care and in particular assigns to unpaid care utilization an explicit cost in terms of consumption goods. Hence, the shadow cost of nonmarket care represents the value of unpaid care provide's time in alternative activities, a sort of opportunity cost (Ribar, 1992). See also "Child skill production: Accounting for parental and market-based time and goods investments" (Caucutt *et al.,* 2020).

to do them "as the benefits of the activity would accrue to the doer (the third person) and not to the hirer" (Ironmonger, 1996).

Differently from the labor force survey, time use surveys record both paid work and unpaid activities; this instrument can help reveal behavioral choices in time allocation and the differences based on age, gender, and location (Alonso, 2019).

Several problems emerge in cross-country comparison of time use surveys: care work for others tends to be under-reported as time spent caring for people often overlaps with other activities. Moreover, time use surveys usually adopt diverse methods and are designed differently.

2.1.2 Unpaid care work as an important social indicator

At the national level, well-being is often approximated by computing the GPD per capita and changes in well-being by the corresponding rate of growth, but neither measure is entirely suitable if there is a large amount of unpaid care work or if growth occurs because of substitution of paid for unpaid hours of work (Weinrobe, 2005). As stated by Stiglitz *et al.* Report (2009), "household production constitutes an essential aspect of economic activity; ignoring it may lead to incorrect inferences about changes and levels in well-being" and it suggests "a comprehensive and periodic accounts of household activity as satellites to the core national accounts". Since women traditionally do much of the unpaid care work, excluding it from the compute leads to underestimating women's contribution to the economy (Antonopoulos, 2008).

Families devote substantial unpaid time to productive activities such as caring, cooking, cleaning, and this unpaid care work increases the overall consumption of goods and services and represents implicit income (Becker, 1965). As countries industrialize, a vast part of the household production of food and caring for family members is transferred to the market and purchased by families. This fact, which is a simple shift from the non-market to a market sector, is reflected in a rise in income as measured by income and production aggregates and given an incorrect impression of an improvement in standards of living.

Ignoring home production may also bias the measures of income inequality and poverty rates (Abraham *et al*., 2005). An example could be the fact that a family where a parent has time to take care of children and do routine housework will have a higher disposable income than families with the same income, but where both parents cannot do housework activities due to their work, and so they purchase cleaning and childcare services. In standard measures of household living standards, the former families are considered identical. A good instrument to capture this is to consider an extended income measure, which incorporates the value of household production, and so it will be more equally distributed as unpaid work changes much less than paid work across households.

Moreover, in addition to unpaid work within the household, people also play vital work that is not remunerated for relatives who live outside the household and for the community. Voluntary work, such as caring for older people, helping people with disabilities, supporting charities, also contribute to the well-being of society. Nevertheless, these activities are not included in the traditional economic measures.

A social good that sustains the society and markets is a good quality care work. However, unpaid care work is problematic when it is heavy, unequal, and invisible. Heavy, when, due to inadequate access to service, it is characterized by heavy care tasks. Unequal, when the most significant responsibility of spending more time on care work falls on one specific category of population[4]. Furthermore, invisible when unpaid care work is undervalued or ignored in public policy and market economic analysis.

Unequal and heavy care responsibilities contribute to limited mobility, poor well-being, and health. They also limit the opportunities, choices, capabilities, and rights of careers, often restricting individuals to low-skilled, informal employment. The former characteristics have effects on families since they tend to use their income for the food security, health, and education and well-being of their children (Grassi *et al*., 2015).

---

[4] The specific category in question is women category. In the next chapter "The impact of the double burden on women" there will be an explanation of this statement.

2.2 Measuring unpaid care work

It can be challenging to determine the value of unpaid care work due to its non-monetary value and its private nature, i.e., usually taking place within the household. However, measuring unpaid care work is needed and essential to understanding its economic contribution and its impact on those who perform the work or benefit from it.

One way to measure unpaid care work is through the *Time-use Surveys* that record how people allocate their time in the course of the day. This type of tool allows researchers and policy-makers to see activities that are usually not visible, such as unpaid care work, and how the distribution of this work differs based on gender, socio-economic level, and ethnicity.

2.2.1 Tools to analyze unpaid care work

There are several approaches and tools to analyze unpaid care work using quantitative, qualitative, and participatory methodologies to obtain different level of information. Quantitative *Time-use Surveys,* for example, analyze how women and men use their time; participatory methodologies assess care work in rural and urban communities; the "care diamond framework" maps how households, the State, and the private sector share the provision of care.

2.2.1.1 Qualitative tools

The main qualitative tools available are the Rapid Care Analysis (RCA), the *Gender Action Learning System* (GALS), and the *Care Diamond* and community mapping of services.

The first of the former tool, the *Rapid Care Analysis* (RCA), is a low-cost participatory program tool designed to assess context-specific patterns of unpaid care work and identify practical approaches to ensure women can benefit from development programs. RCA involves a series of mixed focus group discussions. It provides men, women, and practitioners with space

to understanding gendered roles and responsibilities in the household, available infrastructure and services for care, and overall activities of paid and unpaid work, and to identify problems related to care work and find strategies to address these (Kidder and Pionetti, 2013).

The purpose of the RCA is to allow participants to identify problematic tasks and potential solutions. The main steps are the following: find time-use patterns, then the awareness and recognition of the main problems, finally, prioritizing constraints and find solutions to those problems.

Another qualitative tool available is the *Gender Action Learning System* (GALS), a community-led empowerment methodology used to inspire men and women to act. Using the participatory and inclusive process, it aims at constructive economic, political and social transformation. It is a long-term visual approach allowing to work with a small group of people. It comprises a series of tools that enable household members to negotiate their needs and interests and find gender-equitable solutions in livelihoods planning. This tool combines in-depth group discussions with the use of diagrams; participants draw pictures to reflect their economic and social realities, their vision of change, and the roadmap to achieve these using three categories: who does what (roles and responsibilities), who own what (control, access), and who spends on what (decision-making) (Maestre and Thorpe, 2016).

Instead, the *Care Diamond*, a concept developed by Razavi (2007), shows the different categories of actors that can provide care support, services, and infrastructure. It links the role and responsibilities of different actors in addressing the issues of unpaid care work through coordination and linkage. The four categories are the household, providing unpaid care work; the market or private sector, which must conform with the enabling environment set by the State and can act as a provider for the care infrastructures or services to households; the State, responsible for providing access to infrastructure such as electricity, water or roads to all the households, health care centers, social protection, and ensuring all others actors respect human rights; and the civil society, which may support voluntarily specific care infrastructures in the absence of government support, i.e., caring for older people.

Mapping the provision of care services and infrastructure in the community and understanding the roles and responsibilities that different actors have, informs about the available services and infrastructures, contributes to the diagnosis of women's mobility and access to resources, and identifies options to reduce and redistribute care work.

2.2.1.2 The Care Diamond

Esping-Andersen (2002) proposes the notion of "welfare triangle" where the total welfare package of the society combines inputs from the welfare State proper, markets, and families. The notion of a "welfare diamond" (Razavi, 2007) adds a voluntary provision to the definition of "welfare triangle" proposed by Espring-Andersen. It includes the State, family, and market and the heterogeneous cluster of care providers referred to as the voluntary, non-market, community, or non-profit sector. The *Care Diamond* represents the architecture through which care is provided, especially for those with intense care needs such as the elderly, chronically ill people, young children, people with disabilities.
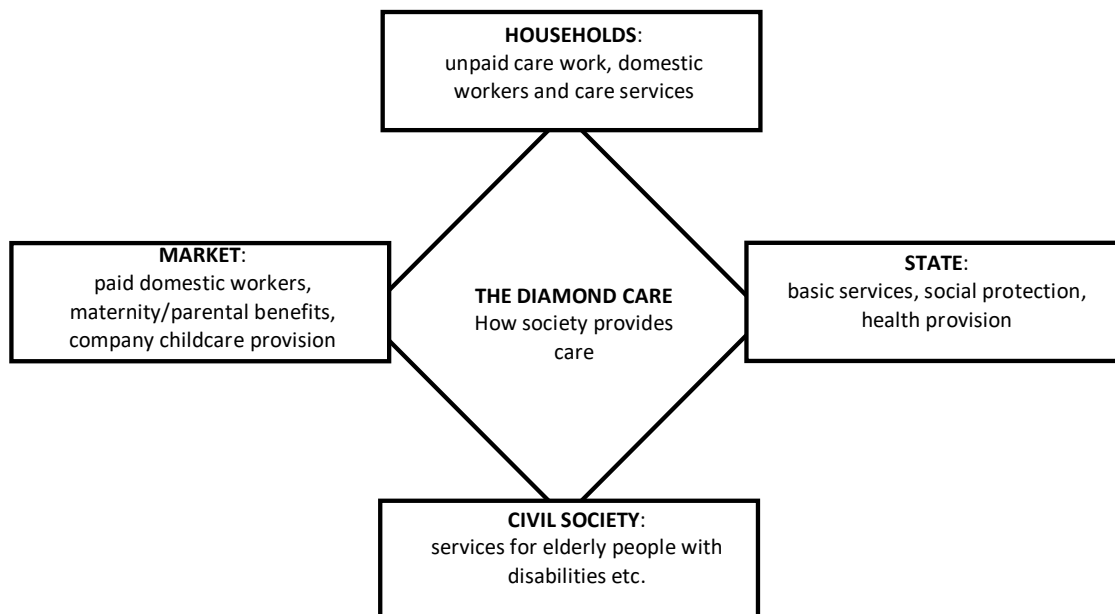
Figure 2.1 The Diamond care (Source: Razavi, 2007)

It is possible to conceptualize the institutions involved in providing care as a care diamond that includes household/family, the public sector, markets, and the not-for-profit sector/civil sector including community and voluntary provision. Some forms of provision may not fall in one of the former clusters, as in the case of the family care provided by parents while on paid leave or voluntary care work that is paid. Furthermore, market provision is rarely pure as the State often regulates and subsidizes market providers. There are significant institutional

differences across these diverse points of the diamond, the overlaps notwithstanding (Razavi, 2007)[5].

An essential part in the provision of care, even in developing countries where families assume a predominant caring role, is played by other institutions such as community organizations, the State, and the market.

2.2.1.3 Quantitative tools

The main quantitative tools used to measure unpaid care work are the *Household Care Survey* (HCS) and the *Time-use Survey* (Table 2.3).

The *Household Care Survey* (HCS) is a rigorous quantitative methodology aimed at generating statistical evidence to assess constraints, and support program design with government, market actors, and donors around unpaid care work as a development issue. The HCS can be used to monitor a range of outcomes and changes in patterns of care provision. Oxfam has adapted the HCS using CTO Survey software and Mobenzi to facilitate data collection through tables and mobile devices (Maestre and Thorne, 2016). The 2015 HCS included expanded sections on perceptions and attitudes about care work and gender-based violence linked to men's and women's care roles. A first household survey provides a baseline of current patterns of care provision in households access, use of time, labor-saving equipment and public services, and individual perceptions and attitudes about care. The program can then use follow-up surveys to identify changes in care provision and explore why these changes occurred. The HCS aims to learn about what happens in households and communities where a range of care being strategies are being implemented and to build understanding about pathways of positive change for more equitable care provision in households ad communities.

---

[5] This group is also referred to as the care sector, embracing economic activities in the community, home, market, and State that fit loosely under the category of human services and have a powerful emotional and personal dimension. Activities that are included are eldercare, health care, childcare, social work, and education.

Time-use Surveys (TUS)[6] is a tool that measure the amount of time people spend doing several activities. Through a household survey, data on time use are collected on a national scale. The essential components in the design of a *Time-use Survey* consist of the type of survey instrument used for recording activities and related aspects of design, the mode of data collection, and the type of household survey. Then the sample design and selection, i.e., population and time dimension, and activity classification.

The main types of instruments used to obtain data on activities and their duration over a specific period of time are the 24-hour time diary and the stylized analogues of these diaries.

The principal object of a time diary is to enable respondents to report all activities undertaken over a period of time and the beginning and ending time for each activity. There are two types of diary, the full-time diary and the light or simplified time diary. In the first., respondents report what activities they were doing when they began the day, what activities came next, and at what time this activity began and ended, this through the 24 hours of the day. With the light diary, respondents report the time at which each activity occurs based on an exhaustive list. The activity categories' list may consist of a small number of the broad activity, or it can contain a long list of more detailed activity tasks.

In the stylized version of diaries, respondents have to recall the amount of time they allocate to a particular activity over a specific period of time. It is different from diary because the respondents do not report the specific time of the day the activity is performed.

Time-use data can be collected in different ways: by direct observation, by self-reporting, or by interview. In the direct observation method, the time-use of respondents is observed and recorded by the survey enumerator. In the self-reporting method, respondents report their own time use by recording their activities in an appropriate designed time diary; instead of in the interview method, there is a personal or face-to-face interview or a computer-aided telephone interview (CATI).

Most household surveys designed to collect time-use data may be classified into independent or stand-alone time-use surveys[7] and multi-purpose or multisubject household surveys[8] with a time-use component.

---

[6] See Appendix A for a list of the Time-use Surveys by region and year.

[7] An example of stand-alone survey is the Australians' Use of Time, 1974,

[8] An example is The Longitudinal Surveys of Australian Youth (LSAY) focus on the progress of young Australians. It includes the Youth in Transition Survey (YITS), the Australian Longitudinal Survey (ALS), the Australian Youth Survey (AYS), and the current LSAY collection. LSAY uses large, nationally representative

A *Time-use Survey* that is independent is a household survey concerned with the single subject of time use, while a multi-purpose household survey dispones of a modular approach where the time-use component is a separate module and an integrated approach where the time-use component is included with all other features in a single module.

Time-use data is about people's activities. For this reason, a comprehensive, detailed, and systematic listing of activities needs to be available. The classification of activity for time-use statistics defines the framework for analysis of time-use survey data: the classification needs to define analytical and tabulation categories of activities.

Classifications of activity are hierarchical in nature, and their structure is determined by the number of broad groups and subgroups and the number of detailed descriptions of activities based on which activities are categorized. There are usually numerical codes assigned at a one or two-digit level to major divisions and two or three-digit level to the first level of subgroups within a significant division. The most detailed description of the activities has the highest-digit level codes.

The activity classifications, consistent with the themes of many time-use studies, have focused on lists of non-economic activities such as caregiving and housework. Some countries have also developed new activity classifications to include uses of time-use data, i.e., assessing national labor inputs into the production of all goods and all services types and the completion of household satellite accounts consistent with the System of National Accounts. Time-use activity classifications have included details for economic activities and started developing means for differentiating activities relative to the production boundary of the SNA, such as providing care for others, self-care, non-market work from other non-market activities, and intra-household transfers from interhousehold transfers.

Furthermore, analyses that measure changes in time-use and provide cross-national comparisons require that an activity classification be linked with the activity classifications use in other studies and in another country. The harmonized time-use project of the Statistical Office of the European Communities (Eurostat) developed a time-use classification that is used

---

samples of students at school to collect information about education and training, financial matters, social activities, work, health and related issues. Since 2003, the initial survey wave has been integrated with the OECD Programme for International Student Assessment (PISA).

as a standard for the region. Instead, a standard classification at a global level is the United Nations *International Classification of Activities for Time-Use Statistics* (ICATUS).

The *International Classification of Activities for Time-Use Statistics* (ICATUS) aims to be a standard classification of all the activities that the general population may spend time on during the 24 hours of a day and provides a set of activity categories utilized in producing statistics on time use. ICATUS has been established to enable researchers to delineate more precisely the boundaries of economic and non-economic activities and productive and non-productive activities and measure all work forms, including non-remunerated work. Specifically, it distinguishes between the production of goods for income or own final use and the production of services for income, permitting a clear delineation of crucial activities in developing countries within the classification that covers the circumstances of both developed and developing countries. This classification is designed to be consistent with existing standard classifications in labor and economic statistics and integrate the time-use statistics with the official economic and social statistics.

The set of activity categories for productive activities are defined concerning concepts of economic activity, employment, and occupation. The ICATUS uses definitions and categories in the SNA and the standard economic classifications, i.e., ICSE, ISIC, and ISCO, respectively, the International Classification of Status in Employment, the International Standard Industrial Classification of All Economic Activities, and the International Standard Classification of Occupations. The ICATUS provides data that can be linked to official statistics from the SNA and labor statistics framework. This is crucial where time-use data are used in estimates of household production in satellite accounts that extend gross domestic product (GDP) measurement to include non-SNA production.

The degree of detail required in the classification of daily human activity type differs from country to country. Also, differences in the cultural, historical, economic, and geographical circumstances result in differences in the degree of elaboration that various countries may find necessary to achieve their time-use data. The detail level required for scopes of international comparison is generally lower than that needed for national analysis.

In European countries, this type of tool has been harmonized to guarantee the comparability of results. *The Harmonised European Time Use Surveys* (HETUS) are national surveys conducted in European countries to quantify how much time people spend on various activities like household chores and family care, paid work, personal care, social life, travel, and leisure, and voluntary work. Household questionnaires, individual questionnaires, and

time-use diary are the main survey instruments. In these tools, respondents are asked to record their daily activities in ten minutes time slots.

HETUS is held once every ten years based on an agreement between Eurostat and participating countries. So far, there have been two rounds of *Harmonised European Time Use Surveys*, one in 2000, conducted in fifteen European countries considering data from 1998 to 2006, the other in 2010, undertaken in eighteen European countries (fifteen European countries and three non-European countries, i.e., Norway, Serbia, and Turkey) with data from 2008 to 2015. The main document's methodological manual with guidelines on harmonized data collection was completed in early 2019 (Eurostat[9]).

Participating countries followed the methodological guidelines using standardized survey designs and statistical classifications. By doing so, the resultant data should be broadly comparable across the countries. Furthermore, the main components of the survey were kept stable over time, ensuring cross-time comparability. HETUS collects detailed information on aspects of the social lives of people only once a decade, and since some activities become obsolete during this period and sometimes are replaced by others, comparability over time could be complex.

---

[9] Eurostat, URL: https://ec.europa.eu/eurostat/en/web/products-manuals-and-guidelines/-/ks-gq-20-011 (site visited in May 2021).

Tools	Description	Methodology	Limitations
Rapid Care Analysis (RCA)	Set of exercises for the rapid assessment of unpaid care work in households and communities	**Qualitative** Participatory Action Research 1-day focus group discussion with women and men in a community	Data is only qualitative, time-use estimates are not rigorous evidence for policy advocacy; small sample size
Gender Action Learning System (GALS)	Community-led empowerment methodology to inspire women and men to take action	**Qualitative** Participatory Action Learning Research Visual Method	Long-term approach that allows to work with a small group of people
Care Diamond	Shows categories of actors that can provide care support, infrastructure and services	**Qualitative** Community map of care services and infrastructure and its service provider	Static map; not useful for intra-household dynamics
Household Care Survey (HCS)	Survey to measure and monitor time use by gender and age, access to infrastructure and services, attitudes and norms on care	**Quantitative** Households questionnaire	Requires a few months to be completed; requires professional consultants; relatively expensive
Time-Use Surveys	Measures the way different categories of people use their time	**Quantitative** Includes different ways of asking questions about time use	Time-consuming and complicated to administer; doesn't usually account for multi-tasking; categories vary

Table 2.3 Tools to analyze unpaid work (Source: Maestre, 2016)

2.2.2 Assigning economic value to unpaid care work

To assign an economic value to unpaid care work is necessary to convert time measurements into money measures, and most of the time is doing by assigning an hourly wage to the time spent. There are several different approaches to finding the correct wage to use in the calculation. The main are the mean wage approach, the opportunity cost approach, the generalist approach, and the specialist approach.

The mean wage approach calculates the mean wage in the economy as a whole and assigns this wage to each hour. The mean is calculated separately for women and men, and the male value is assigned if a male performed the unpaid care work, the same for the female. This sex-disaggregated approach lowers the overall estimated value of unpaid work because women generally perform more unpaid work than men and because the average female wage is usually lower than the average male wage (Charmes, 2019)

Instead, the opportunity cost approach uses the economic concept of opportunity cost[10], meaning the benefit that someone loses by making one choice over another. "The individual loses the benefit of earnings that they would have earned in paid work if they had not done the unpaid care work" (Budlender, 2004). This approach presents theoretical problems because it uses different wages for the same activity when different people perform the work since it uses the wage that the person would have earn if they were working in their paid job. So, in this framework, time spent cooking by a university graduate has more value than time spent in cooking without formal schooling. Another problem of this approach is what wage to use for unemployed individuals and do not have a usual wage and for those who work in subsistence agriculture where there is no wage (Benarìa, 1999).

The third approach is the generalist approach. It uses the mean wage of workers that perform similar work to the unpaid work. In this framework for housework, it is possible to use the wage of paid domestic workers and for childcare the wage of workers in nurseries.

The last approach, the specialist approach, focuses on the activity rather than on the person who does the activity, and for each of those activities, it uses the wage earned by paid workers whose functions match the unpaid care work considered.

---

[10] For an application of the opportunity cost to value the cost of childcare, see Ribar (1992).

In light of the various analysis conducted, it is possible to observe that the opportunity cost approach gives the highest values. Conversely, the generalist approach gives the lowest one. Moreover, it becomes evident that the differences between the values from the various approaches are notably significant where there are wider inequalities in salaries and wages in the economy (Budlender, 2004).

Another instrument for measuring time devoted to unpaid care work is a method of input valuation that puts more emphasis on what is called "quality-adjusted" replacement cost (Abraham and Mackie, 2005): it should be ensured that "the quality of the market service that would be used as a replacement is comparable, e.g., the value of time that a university-educated parent spends reading aloud to a child should be established by asking how much it would cost to hire a university-educated worker to do the same" (Folbre, 2006).

A different approach of valuing non-market work goes beyond simply considering the value of labor inputs, taking the value of household capital goods, raw materials, and utilities into consideration as well (Ironmonger, 2004). For example, time's value devoted to cooking can be determined by asking what it could cost to buy a similar meal in the market, subtracting the cost of the capital goods, raw materials, and utilities devoted to that meal. The rest represents the value of the other factors of production, i.e., labor.

2.2.2.1 The importance of value unpaid care work

Unpaid care work can be seen as a form of public good[11] that involves externalities[12]. It is possible to describe an externality as a third-part effect, where the individuals affected were not the original target of the production. Negative externalities impose a cost on other

---

[11] See Folbre (1994), "Children as public goods."

[12] Externalities, together with imperfect competition, imperfect information, and public goods, are a type of market failure. In the Pigouvian social welfare economic approach, there are externalities when there is a divergence between the social and private costs of an activity. In his book "The economics of welfare" (1932) he defines externalities as follow: "... one person A, in the course of rendering some service, for which payment is made, to a second person B, incidentally also renders services or dis-serves to other persons, of such a sort that payment cannot be extracted from the benefited parties or compensation enforced on behalf of the injured parties".

individuals, which the individual who does the activity which results in the cost does not pay for. Positive externalities give a benefit to other people because of the activity of an individual, which the people who benefit do not pay for. Unpaid care work takes positive externalities for employers because the care and the education of children, the feeding and care of the workforce enhance the quality of the labor force. Women predominantly bear the cost of this type of work both in terms of effort and time.

The value of the labor force is partially covered by the payment of wages and governments when they pay for health services and education, but people who perform the care work part do not receive any payment. Alexander and Baden argue that "the evaluation of unpaid care work would make such externalities visible in the national accounts" (Alexander and Baden, 2002). This fact is crucial because these goods have an economic cost, even if they appear to be free, that is the economic cost that while women are doing these works, they are impeded from doing other types of work. In this context, the opportunity cost is the things that did not get done because the unpaid work was done. Since unpaid care work has no price and society does not pay for it, policymakers often assume that there is an unlimited supply of unpaid care work. Nevertheless, a limit to unpaid care work supply exists: if the burned placed on the suppliers of unpaid care work, that are for the major part women, becomes too heavy, the quality and quantity of care they can provide will decrease. As Palmer states, "when the use of unpaid labor begins to affect its quantity or quality, it is a no longer limitless gift from the gods" (Palmer, 1997).

The externalities related to the environment have been recognized, and in some countries, policymakers have imposed a cost on environmental negative externalities. Instead, very few policymakers have recognized the externalities related to unpaid care work. As Palmer writes, "reproduction of the population has been seen as a separate private choice, a family issue with no ramification for the main economy" (Palmer, 1997).

2.2.3 Accounting for unpaid work

The roots of the statistical bias that lead to underestimating women's work in the labor force and national accounting statistics are mainly theoretical and conceptual norms. The effort to account for the work of women has progressively evolved to include all unpaid work by

anyone who performs it. As pointed out by Ester Boserup, "the subsistence activities usually omitted in the statistics of production and income are largely women's work" (Boserup, 2007). She also emphasizes the time-consuming character of this type of activity. In 1934 Margaret Reid, in her book *Economics of household production*, conveyed preoccupation that domestic production is not included in national income accounts and the necessity to design a method to evaluate the value of home-based work (Reid, 1934). With the four world conferences on women promoted by the United Nations, there was a first step in incorporating into the agendas of the United Nations the topic of evaluating women's work. A relevant body of the traditional literature has developed on time allocation data, including unpaid work. It is possible to find in the USSR in 1924 the first systematic collection of these types of data having the objective to collect information about leisure time and community-oriented work (Juster and Stafford, 1991). Since the sixties, national studies of time use have been developed with several purposes, among which the analysis of household behavior and the expansion of national accounting statistics.

Nevertheless, unpaid work is still underestimated in national and international statistics on the labor force and national income, whose were designed to collect information about the level of remunerated economic activity and changes over time and furnish a basis for economic policy development. The market is considered the core of economic activity, so the statistical concept of work is related to being engaged in paid work. Consequently, the issue is closely linked to the fact that the term work has been defined as a paid economic activity linked to the market (Benarìa, 1992; 1999).

The adopted definition of *the economically active population* referred to all individuals of either sex who supply labor to produce economic goods and services. It considers a link between the labor force and national product, and *active labor* is defined as the element that contributes to the national product plus the unemployed. Using this definition, individuals who work part-time can be classified as employed or unemployed when working in a market sector but not when involved in household production. This means that much unpaid work is excluded from national product and income accounting and labor force statistics. The underestimation of unpaid work and the reasons behind it varies for the specific sector to which unpaid work belongs, namely, informal sector, volunteer work, subsistence production, and household economy. Domestic work and related activities have not the problem of being underestimated but of being completely excluded from the national accounts because such activities are viewed

as falling outside the conventional definition of work, even if some progress has been made on this issue on the conceptual, theoretical, and methodological side.

2.2.3.1 Conceptual side

The United Nations International Research and Training Institute for the Advancement of Women (INSTRAW), after a recommendation by the First World Conference on Women held in 1985, started to promote the revision of national accounts and other statistical information on women's work and develop separate or supplementary accounts that would permit the creation of augmented estimates of GNP (Benerìa, 1992). The purpose of the satellite accounts is to measure the unpaid production of goods and services by households and provide indicators of their contribution to welfare. It is possible to either assign a monetary value to the goods and services produced or to time inputs or use time as a measurement unit as in time-use surveys.

The center of the discussion is which of the several tasks performed in the home has to be included. The principal criterion accepted is the so-called third-party principle, designed by Margaret Reids, according to which domestic production refers to unpaid activities that a third person can perform for pay. This principle includes activities like cleaning, childcare, and food preparation, but it does not include leisure or personal activities. Some ambiguities remain, but this criterion represents an important step in establishing a standard definition that can permit comparisons between countries. Some critiques have been addressed to the third-party principle for assuming the market as a model of economic activity and precluding "the existence of economic activity unique to the household, since anything that does not, or does not yet, have a commodity equivalent cannot be considered economic" (Wood, 1997). Although the criterion assumes market production as the point of reference, a domestic activity without market equivalent can be included as long as a third party can perform it.

Overall, it is possible to notice that a significant shift has taken place in the conceptualization of economic activity towards the inclusion of activities that contribute to the maintenance of the labor force and social reproduction and are not immediately related to the market.

2.2.3.1.1 Satellite accounts

National accounts are the set of figures that are used to compute GDP. The SNA sets the rules for national accounts states, and unpaid care work is not included in the above calculation of GDP. It suggests constructing a satellite account parallel to the core national accounts to consider unpaid care work. Most economists and most finance ministers support this separation due to their view that there is the difficulty of measuring unpaid care work, a lack of comparability over time, and a lack of international comparability. The Organization for Economic Cooperation and Development (OECD) supports the SNA's exclusion of unpaid care work from the core national accounts. However, its exclusion gives a distorted picture of the composition, magnitude, and trends of production activities, considering that the household industry produces a value more significant than any single industry within the counted economy. The macroeconomic measures produced by national accounts do not ultimately reflect changes in total household well-being when there is a shift in providing services such as healthcare and childcare between market and non-market.

There are several approaches to constructing satellite accounts for unpaid care work. In Finland *et al.* (1999), there is a description of constructing a household satellite account, which measures all production carried out in the household. This approach includes some production already included in GDP, as well as unpaid care work, the wage of a domestic worker, and subsistence work.

A different and more straightforward approach estimates the value only of the excluded production from GDP calculations. This approach is easier to understand because total production is basically the sum of the ordinary national accounts and the satellite accounts. It is crucial in this framework how is assigned a value to unpaid care work because labor is the primary input to the production involved in unpaid care work. The majority of the studies use the costs of the inputs to production to value household production, and this method is also used as one method in standard accounts, for instance, to value the production of government and non-profit institutions. Although for private-sector production, national accounts generally use the output method; this calculates not the value of what goes into producing it but the value of what is produced. The output approach is better than the input approach if the attention is on welfare as it focuses on the goods and services produced or enjoyed.

The output method is comparatively easy when the goods and services are sold on the market as the value is then assumed to be the same as the price. Nevertheless, this method is more complicated when goods and services produced are not sold on the market, as for the unpaid care work. It is possible to try to find the same sort of goods and services in the market and apply the price.

 A critic of input-based methods is that they do not consider different productivity levels into account. The input method measures the burden, while the output method measures the values of the goods produced. Another critic of the input method is that using it will exaggerate the value of household production due to people take longer to produce the goods and services than in the private sector; some suggests that the value of the household sector should be adjusted by considering 50%-70% less its value to reflect lower productivity. However, some others, like Schafer and Schwarz (1992), affirm that households are sometimes more productive than private firms. They observe that when services are supplied to people, households may have better information about the precise needs, be more flexible, and adjust more promptly to unexpected circumstances.

Household Satellite Account accounts and values unpaid production activity, including childcare, household services, adult care, unpaid nutrition, laundry, and volunteering services. Each of these activities is an essential aspect of people's lives and is mainly missing from regular economic statistics such as GDP. With the satellite accounts, they measure these activities to expand the traditional analysis of GDP. Measuring unpaid production provides a complete picture of the activities that affect the well-being of individuals. Measuring unpaid production allows users to analyze the reciprocating relationship between people's economic choice and unpaid work and the substitution between paid and unpaid activities, a crucial element for considering social policies and the labor market together. For instance, accounting for adult care provision in an aging society permits policymakers to consider how care provision interacts with labor market choices. Moreover, policies like free children hours for working parents and changes to the state pension age can be analyzed for their impact on unpaid activities.

Accounting for unpaid activities is extremely important in a digital economy. There are several alternatives to traditional services offered free of charge, and new activities and ways of production are generated. With alternative labor choices, the impacts on household consumption may be missing from estimates.

2.2.3.2 Theoretical side

Significant changes occurred in parallel with the conceptual work on this issue on the theoretical front achieving a better understanding of the nature of domestic production. Economic analysis has increasingly focused on the household in the fifties, and in sixties and in particular, the New Household Economics has analyzed household production as a way to understand the gender division of labor and the participation of women and men in the paid labor force (Becker, 1965; Lloyd, 1975). In the seventies, the domestic labor debate highlighted the importance of domestic work for the daily reproduction and maintenance of the labor force and the importance of understanding the nature of domestic work, its links to the market, and the social and economic power relations established between paid and unpaid domestic work and between women and men (Gardiner, 1975; Molyneux, 1979). This debate has helped raise the understanding of the economic importance of domestic work and the need to develop methods to evaluate its contribution to production and welfare and their political implications (Folbre, 1994).

Another debate emerged around the obstacles to measuring household production and voluntary work. The main difficulty stated was comparing them with the market production based on the different conditions in which they are performed. As domestic work is not subject to market pressures, productivity levels in the two sectors can be considerably different. Also, the quality of outputs can differ in the case of the provision of meals, childcare, and many other activities. The same holds for voluntary work.

Measuring and documenting unpaid work has many essential purposes. The first is to bring attention to the issue and make it socially recognized. A second objective is to create indicators of the contribution of unpaid work to social well-being and the reproduction of human resources and provide the base for rethinking labor force statistics and GNP. A third purpose is that the measurement of unpaid work is essential to analyze the measure to which the total amount of work, namely paid and unpaid work, is shared equally at the household and society level. Fourth, measuring unpaid work can provide both macro and micro-level information on how time is allocated to leisure, paid, and unpaid work, and it is essential to give a gender dimension to budgets in order "to make explicit that they are not neutral tools of resource allocation" (Benerìa, 1999). Fifth, there are practical uses associated with the measurement of unpaid work and, even if productivity levels are not comparable, time-use indicators can be utilized to analyze trends in the share of unpaid and paid work overtime. All

the former purposes can help governments and other institutions to create policy and action more effectively.

2.2.3.3 Methodological side

The revision of data-gathering methods has been a progress at the methodological level. These methods aim to capture with greater accuracy the contribution to GNP made by the several types of unpaid work, namely, volunteer work, subsistence production, household economy, and informal sector. Another progress is dealing with the complex task of designing methods to measure the value of unpaid work. Focusing on domestic work, time-budget studies and surveys conducted in many countries have furnished the base for such a task, and they have been helpful to analyze the actual contribution and complexities of household dynamics and domestic work. As a result, two principal approaches have been introduced to measure domestic work value: an input-related method and an output-related method. The first is based on the imputation of labor time, the second on the imputation of market prices to goods and services produced in the domestic sphere.

For the input-related approach, there are several methods of different estimation: the global substitute method, which uses the cost of a hired domestic worker, paid to do all types of household activities; the opportunity cost method that is based on the wage that the person doing domestic work can receive in the market; and the specialized substitute method that uses the average wage od a specialist with the appropriate skills for each specific household activities. The global methods have as disadvantages the fact that it tends to give very low estimates, the opportunity cost method gives the broadest range of estimates, depending on the opportunity wage and the skills of the individual involved, the specialized substitute method tends to generate high estimates, even though it is more indicative of the market value of household production (Goldschmidt-Clermont, 1989).

As the output-related estimates, they require some method for imputing the value of domestic work and deducing the cost of inputs from it. The issue is determining which market goods and services are equivalent to those produced at home and the price to impute to inputs such as raw materials and labor not produced in the market. Moreover, there is a problem in disparities in the number of goods and services produced, which an imputed price cannot

capture. This fact involves a method requiring time-budget data, hourly wages, and high numbers of output and input prices. Some of these data can be obtained from the existing census, but some others not and have to be generated by surveys: this is the type of information that satellite accounts could provide periodically. Doubts have been expressed about the usefulness of these methods, but it is essential to consider that time and its uses vary from one country to another, and culture plays an essential role.

2.2.3.4 Issues and critiques

"The attempt to account for unpaid work continues to be important, as current labor market trends raise new questions about the links between paid and unpaid work and about their distribution and boundaries" (Benerìa, 1999). The increasing participation of women in the paid labor force has strengthened the importance of the distribution of unpaid and paid work within the household, and this is a crucial gender equality issue. Moreover, the high incidence of part-time work and underemployment results in cyclical combinations of paid and unpaid work, which affect men and women in different ways. Therefore, measures of these changes are essential to assessing variations in living standards and contributions to well-being. Similarly, the debate about the 35-hours week has many gender implications for the distribution of paid and unpaid work. The assumptions behind these discussions are that a reduction in working time will help deal with unemployment. However, for Figart and Mutari, the underlying assumption is that full-time employment is a social norm constructed around gendered assumptions, for instance, that "a full-time worker, presumably male, faces limited demands from unpaid work and family life" (Figart and Mutari, 1998). Another assumption for them is that the women's concentration in part-time work will continue, independently from women's preferences and households with more than one earner need to address the distribution of working time of their worries about ensuring that caring work is equally shared among household members.

Unpaid work represents between a quarter and a half of economic activity, so its exclusion from national accounts seems difficult to justify. Australian data from 1974 to 1992 indicate that households grew at a rate of 2.4 percent per year while the corresponding rate for market production was 1.2 percent (Ironmonger, 1996), and so that the domestic work is

increasing faster than market production. Several causes can explain this fact, for instance, the growing proportion of older people in the population and the rapid increase in small households. To be noted, this fact has happened despite female labor force participation rates has increased.

The importance of the sex distribution of paid and unpaid work has been increasing awareness. The *Human Development Report 1995* underlines that "one of defining movements of the 20th century has been the relentless struggle for gender equality ... When this struggle finally succeeds – as it must – it will mark a great milestone in human progress. Moreover, along the way, it will change most of today's premises for social, economic, and political life" (UNDP, 1995). This quote in defense of gender equality delineates the figures on the distribution of paid and unpaid work across countries. Also, the report of the Independent Commission on Population and Quality of Live (ICPQL) 1996, *Caring for the future*, try to promote a redefinition of work and equality in the distribution of its output. "The Commission proposes ... to redefine work in a broad sense that encompasses both employment and unpaid activities ... benefiting society as a whole, families as well as individuals, and ensuring equitable distribution of wealth generated" (ICPQL, 1996).

The effort to redefine work and compute unpaid work has obtained much support from these institutions, but there is also an opposition to it, and this is feasible with the complexity of the issue.

One of the main objections that emerged against this effort to account for unpaid work is the so-called "the-waste-of-time-argument" (Benerìa, 1999) and results from the fear that resources and energy are required to generate statistics on unpaid work will have no impact on those engaged in it, in particular women. Greater social recognition of the importance of domestic work may rigidify a division of labor that already relegates women to activities providing little autonomy over the resources they need and no financial autonomy. Furthermore, such a result would not contribute to the gender economy.

Too little is known about how an economic slowdown that reduces income and increases unemployment in a portion of the population results in unpaid work. It is known that the enforcement of structural adjustment policies led to the intensification of unpaid work, and a disproportionate burden fell on women. In this case, a reduction of real income may not result in a corresponding reduction in well-being; it depends on the measure to which unpaid work compensates for the reduced ability to purchase goods and services from the market. It is possible to assess these shifts only with systematic statistical information on unpaid work. Furthermore, more precisely, people's daily activities information would help measure the

quality of their lives more thoroughly and develop indicators of work intensity, individual health, and simultaneous performance of several tasks. Finally, the effort to account for unpaid work has to be viewed to understand who contributes to human development and welfare and what action is required to distribute equally the work.

Another objection to the project of measuring unpaid work refers to methodological and theoretical questions. A pioneer in capturing many criticisms to measuring unpaid work is Sujai Shivakumar in his paper *Valuing women's work: Theoretical constraints in determining the worth of household and other non-market activity* (Shivakumar, 1997). He stated that the monetary imputation of unpaid work "is not consistent with present conceptions of the theory of value in economics" and that this imputation is purely a "rhetorical effort" without a theoretical foundation (Shivakumar, 1997). He criticized the different methods used to compute the unpaid work value and pointed out the problem of comparability between market and non-market time. Within neoclassical economics, the imputing of market prices to household production is standard practice, and the New Household Economics has experienced the application of modern human capital theory to household production and decision-making.

Unpaid work is not equally distributed across social groups and gender. Wealthy households can employ people for domestic work and purchase goods and services that poor households have to produce at home without outside help. There is a significant difference in the total amount of hours dedicated to domestic work by women with different income levels. The challenge of measuring unpaid work requires "transforming knowledge," overcoming the boundaries of conventional paradigms and rethinking "mystified concepts or ideas, notions, categories and the like, that are so deeply familiar they are rarely questioned ... and which result in partial knowledge" (Minninch, 2010). The challenge is to question current methods to measure well-being and who contributes to it in society and to challenge the assumptions underlying received knowledge, those linking work to paid labor time and the market. The discussions about the difference between paid and unpaid work lead to challenging how far the economic rationality attached to market-related behavior is the norm and the measure to which models of human behavior are based on motivations most associated with unpaid work, such as empathy, solidarity, altruism, and collective responsibility.

Feminist economists have highlighted the need to create models no more based on the market-oriented motives of rational economic men. Conventional economic theory is based on the "separate-self model" of male behavior, which is different from the "relational model more commonly associated with female behavior" (England, 1993).

3. THE IMPACT OF THE DOUBLE BURDEN ON WOMEN

After determining the nature and characteristics of unpaid care work, the study proceeds by asking how this unpaid care work is distributed between women and men and which are the consequences that this allocation caused.

International progress in developing women's capabilities is monitored by the Human Development Report Office using both Gender Empowerment Measure (GEM) and the Gender-related Development Index (GDI). The GDI helps determine women's health and well-being; the GEM instead assesses participation in activities traditionally dominated by men, such as professional and managerial works, paid employment, and the share of parliament seats.

Due to the limitations of these two measures, additional indices such as a Relative Status of Women and a Gender Equality Index have been proposed as supplements. There is a need for better estimates of the input into care instead of capturing only some of the care outputs. Reasons for greater attention to unpaid care arises from the critiques of the "universal breadwinner" model of the feminism movement that encourages women to change their work to more closely look like one of the men.

Unpaid care work provides essential resources for the development of human capabilities and take care of the nurturance of children and dependents impose significant temporal and financial constraints. Women can be unwilling to achieve gender equality if they are afraid for the well-being of children and other dependents, or they may try to minimize the burden of care responsibilities by remaining childless, a trend that is growing in many countries such as Spain, Italy, and South Korea with fertility rates way below replacement rates (Folbre, 2006).

Many experts highlight a need for policies that will encourage men to participate more actively in family care and furnish more public support for such work (Perrons, 2000). Instead of purely promoting increased women's paid employment, policies should foster both men and women to combine paid work with family care. Such policies can be supported by developing a more accurate picture of both the costs and the rewards of care: maintenance requires costs in the form of lost opportunities, financial obligations, and foregone wages, but it also generates intrinsic rewards, social ties, and stronger families, and high-quality services for children and

dependents. Nor the GEM nor the GDI says anything about participation in the care economy and may also overrating enhancements in the relative women's position.

Moreover, suppose women increase their access to market income. In that case, studies of time allocation in the United States suggest that employed women often work a "second shift" or live a "double day" (Hochschild *et al.*, 2012). Working hours have implications for the development of human capabilities and personal health, and they are relevant to subjective evaluation of well-being, such as stress levels (MacDonald *et al.*, 2005).

New schemes of time allocation may also enhance inequalities among women. For instance, high-earning and well-educated women are often able to incur expenditure for domestic outsourcing, purchasing substitutes for the time they would otherwise have used to child care of house care. Low-earning and poorly educated women typically enjoy assistance from other female family members and have less flexibility. The allocation of time and money of women affects their ability to develop their own capabilities and their relative standard of living, as measured by national income statistics. Essential dimensions of women's lived experience are not captured by estimates of the total value of marketed output. Conventional statistics do not highlight unpaid work, "making it easier for policy-makers to ignore the negative effects of cutbacks in public services that affect the provision of care to children, the sick, and the elderly" (Folbre, 2006).

As stated by Diane Elson, "the ability of money to mobilize labor power for "productive work" depends on the operation of some non-monetary set of social relations to mobilize labor power for reproductive work" (Elson, 1994). Completing care responsibilities constitutes an essential contribution to the maintenance of social capital - an asset crucial to economic development – and of human capital.

The entrance of women into paid work increases the resources available to meet the necessities of communities and families. Still, demands on money and time of women have been intensified: while in many countries fertility is declining, the relative demands of the older people are increasing (Stark, 2005). Debates over the composition of public spending and the development of new incentives are always more focused on discussions about the supply of care (Razavi, 2005).

3.1 Gender gap in unpaid work: descriptive evidences

World level evidences

From an analysis[13] of the most recent *Time-use Surveys* conducted at the national level across various regions of the world, it is possible to see how paid, and unpaid work[14] is distributed by gender in multiple countries all around the globe. Data show that across the world, and with no exceptions, women dedicate more time than men to unpaid care work (Charmes, 2019).

In particular, the average time devoted by women to the three forms of unpaid care work, namely, care services, domestic work, and volunteering or community services, at the global level is 277 minutes (19.7 percent of a 24-hour day). The world average of time devoted to unpaid care work by men is instead 111 minutes (7.7 percent of a 24-hour day)[15]. The gaps in the relative contributions of women and men to unpaid care work can be found in every country, and in none of them, it is reached parity at 50 percent to the contribution of men to unpaid care work. A virtuous case is represented by Northern European countries, namely, Norway, Sweden, and Denmark, that come close to the parity of 50 percent, reaching a percentage above 40 percent[16]. On average, at the world level, the contribution of men to unpaid care work is 27.5 percent, one-fourth of the total burned.

Moreover, through an analysis of time spent by women and men in unpaid care work for various regions of the world and dividing countries into developed-high income, emerging-

---

[13] Analysis conducted by Jacques Charmes (2019), "The unpaid care work and the labor market. An analysis of time-use database on the latest world compilation of time-use surveys". See also Charmes (2015). The report analyzes 133 time-use surveys conducted in 76 countries through diaries and at the national level. For a complete list of the Time-use Surveys studied, see Appendix.

[14] The unpaid care work concept is based on the definition of the Non-SNA work in the System of National Accounts in its revisions of 1993 and 2008. See paragraph "Defining unpaid work" in the chapter "The nature of unpaid care work.

[15] See Table 3: Time spent by men in the three categories of unpaid care work, in Appendix.

[16] See Table 4: Share of total unpaid care work of women and men, Appendix.

middle income, and developing-low income, it stands out that emerging countries are situated below the developed countries for the distance in reaching the parity division of unpaid care work between gender, and the developing countries below the emerging countries[17].

At the world level, Figure 3.1 shows that women dedicate 3.2 times more than men to unpaid care work, namely, 4 hours and 32 minutes (272 minutes) per day against 1 hour and 24 minutes (84 minutes) for men, with a percentage of 76.4 of the total amount of unpaid care work on women. Instead, women devote 36.1 percent of the total amount of paid work, 3 hours and 1 minute, against 5 hours and 21 minutes for men. From the measures of total work, namely, the sum of the amount of unpaid care work and paid work, it appears that the burden of women is higher than the one of the men by 5.8 percentage points: 7 hours and 33 minutes per day (453 minutes), against 6 hours and 44 minutes (404 minutes) for men. To be noticed that the gender inequalities mainly lie in the unequal role distribution between unpaid care work and paid work.
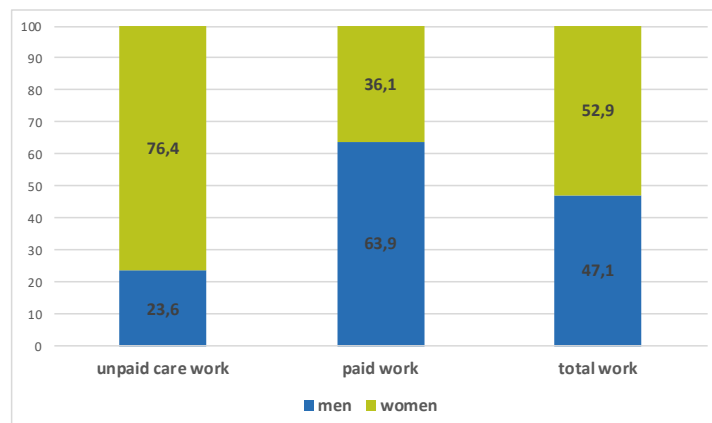
Figure 3.1 Gender distribution of unpaid care work, paid work, and total work: world average, 75 countries, percentage (Source: own elaboration from Charles (2019) data).

---

[17] See Table 5 to Table 13 in Appendix.

Focus on the European context

As at the world level, also in European countries, women are more involved than men in unpaid care work. Time spent on family care and household activities for the whole population varies between 3 and 4 hours on average across countries (Figure 3.2), with the highest gender gap in Turkey (3 hours and 16 minutes more for women than men) and Italy with 2 hours and 47 minutes, and the lowest in Norway (47 minutes more for women than men) and the Netherlands (1 hour and 2 minutes)[18].
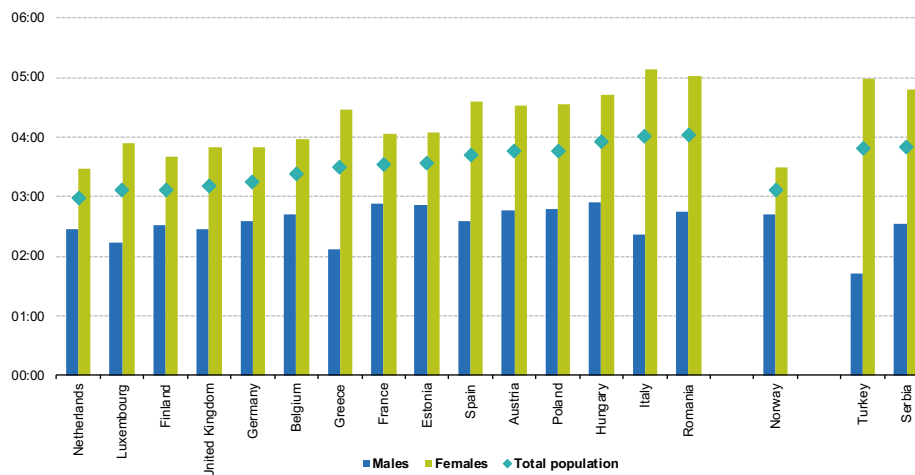
Figure 3.2 Participation time per day in family care and household activity, by gender, (hh mm, 2008 to 2015) (Source: own elaboration from Eurostat data (online data code: tus_00age)).

The participation rate in family care and household (Figure 3.3) is higher for women than for men in all countries. The lowest participation rate of men is registered in Turkey (53 percent), followed by Italy (70 percent), and the highest in Finland (93 percent) and Norway (92 percent)[19].

---

[18] See Table 14 in Appendix for data.

[19] See Table 15 in Appendix for data.
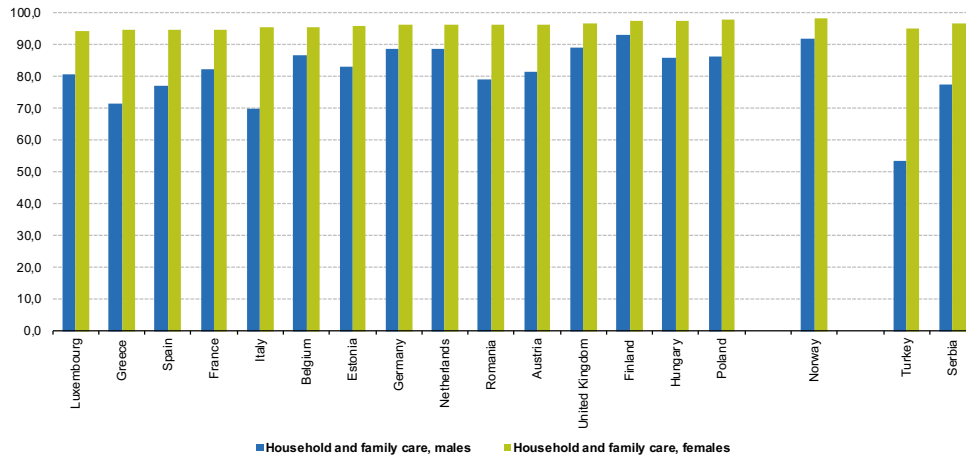
Figure 3.3 Participation rate per day in family care and household activity, by gender, (hh mm, 2008 to 2015) (Source: own elaboration from Eurostat data (online data code: tus_00age)).

The average participation time spent on unpaid work as a primary activity varies across countries, but, as shown in Figure 3.4, in all countries, women do more unpaid work than men. The highest gender gap is registered in Turkey that is 3 hours and 30 minutes per day, and in Italy, that is 3 hours[20].
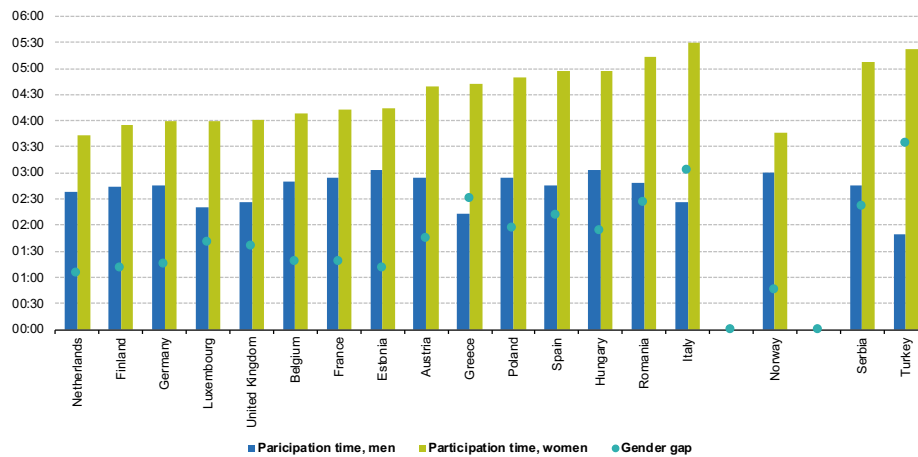
Figure 3.4 Participation time per day in unpaid work (main activity), by gender, (hh mm, 2008 to 2015) (Source: own elaboration from Eurostat data (online data code: (tus_00npaywork)).

---

[20] See Table 16 in Appendix for data.

Observing the specific activities of family care and household, it emerges that the participation rate of women is higher in typical household activities such as food management and laundry and ironing (Figure 3.5). Food management is the activity most done by both women and men; the highest participation rate of men is in Norway (70 percent), the highest for women is in Poland (91 percent)[21]. Also, laundry and ironing are predominantly done by women.

Figure 3.5 Participation rate per day in household chores, by gender, (percentage, 2008 to 2015) (Source: own elaboration from Eurostat data (online data code: (tus_00educ).

An equivalent involvement of women and men is observed in childcare, but in different activities (Figure 3.6). Childcare involves several activities such as playing, teaching, supervision, etc. Childcare involving supervision, and physical care, for instance, is performed more by women than men: the participation rate of women is between 14 percent and 32 percent on average across the countries, while that of men is between 6 percent and 21 percent. The highest men's participation rate is observed in Norway (21 percent), the lowest in Turkey (6 percent)[22].

---

[21] See Table 17 in Appendix for data.

[22] See Table 18 in Appendix for data.
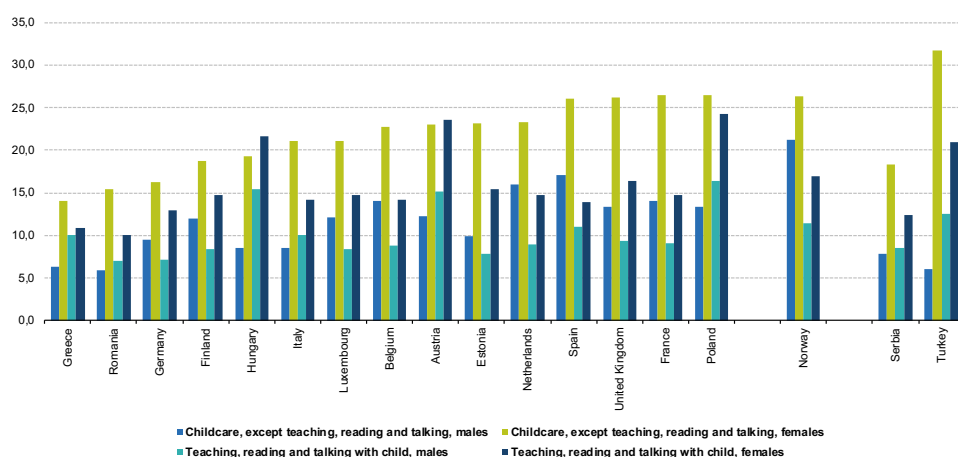
Figure 3.6 Participation rate per day in childcare, by gender, (percentage, 2008 to 2015) (Source: own elaboration from Eurostat data (online data code: (tus_00educ).

Construction and repairs are activities mainly performed by men in several countries (Figure 3.7). Up to 21 percent of men perform repairs activity and construction, while women participate in these activities on average by 6 percent. The highest participation for both women and men is observed in Norway and Finland (7 percent for women in each country, 21 percent for men), and the lowest participation for both women and men is in Turkey (0.6 percent for women and 3 percent for men) and Italy (1 percent for women and 5 percent for men)[23].

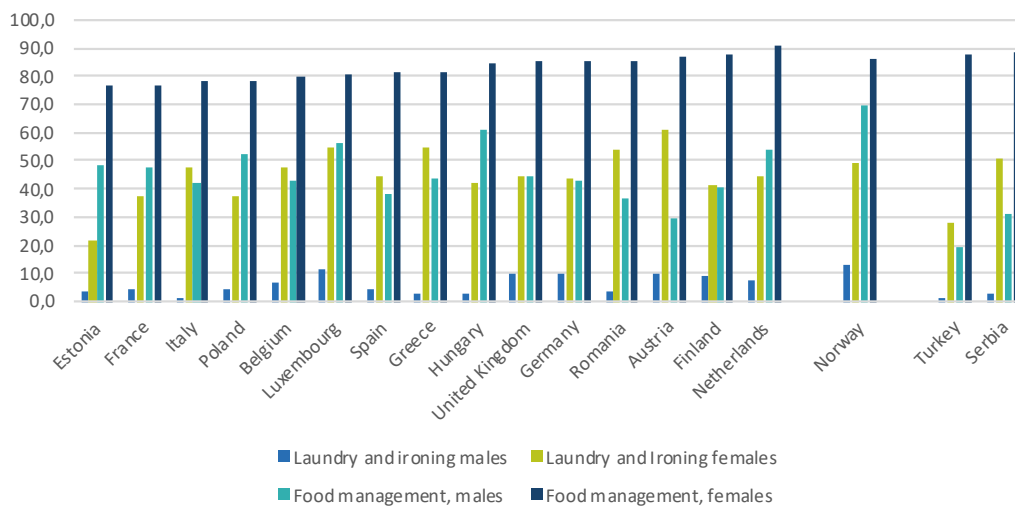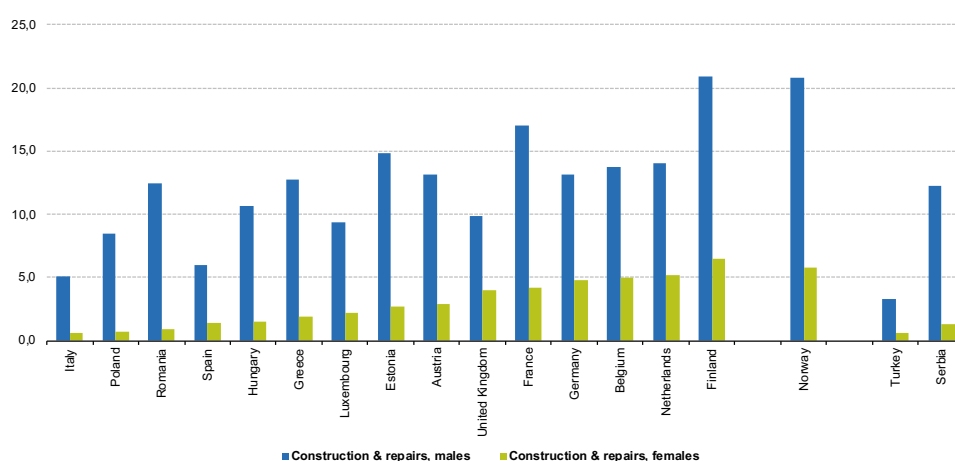

Figure 3.7 Participation rate per day in construction, by gender, (percentage, 2008 to 2015) (Source: own elaboration from Eurostat data (online data code: (tus_00educ).

---

[23] See Table 19 in Appendix for data.

Data Problems: data quality, comparability, and gender data gaps

Time-use data has a degree of detail of an individual's daily life that no other type of survey data has. From such a specific and comprehensive coverage of how people spend their time, it is possible to produce statistics showing how various activities, i.e., volunteer work, paid and unpaid work, domestic work, personal activities, and leisure, are interrelated in people's lives. Time-use data can allow for relating time allocation patterns to the socio-economic and demographic status of the individuals.

Many of the analytical objectives for collecting time-use data revolve around these themes: the measurement and valuation of unpaid work, meaning volunteer and domestic work, and development of household production accounts, and the improvement of the estimates of paid and unpaid work.

For what concerned the first, time-use accounts and household production accounts are two approaches that allow making on an individual basis the estimates for income and production with the detail needed. Moreover, "they have the advantage of being easily linked to national accounts through the measurement and distribution of labor inputs and outputs of goods and services. The principal goals for collecting time-use data for these accounts are offering a more in-depth representation of a national economy by incorporate household production in traditional measures of economic progress or status and providing the status of women by making their economic contribution visible and valued" (United Nations, 2005). A great amount of unpaid work is also performed in the community, resulting in a range of crucial goods and services. Individuals care for people with disabilities and older people; in rural areas, people produce food for their own substance and assist each other with farm labor: these works too are part of the national production that is not incorporated in the traditional production of the economy. Work of this type may shift between the paid and unpaid sectors. Time-use data also investigate the participation in voluntary work and the connections between market services and voluntary.

In the nineties emerged a debate on including unpaid production in national economic accounts, which has influenced time-use data. The main recommendation of all four United Nations conferences on women was to improve the measurement of remunerated and unremunerated work of women. The Beijing Platform for Action taken by the Fourth World Conference on Women contributes to increasing the interest in collecting time-use data in

developed and developing countries. This Platform for Action highlighted the need to develop a more comprehensive knowledge of all forms of work and employment. It has as main objectives the need of improving data collection on the unremunerated work that is already included in the SNA, such as agriculture and other types of non-market production activities; improving measurements that at present underestimate unemployment of women and underemployment in the labor market; developing methods quantifying the value of unpaid work that is outside national accounts for possible investigation in satellite accounts that may be created separately from core national accounts, but still consistent with (United nations, 2005). An outcome has been using time-use data to analyze the distribution of paid and unpaid work between women and men. Since the second half of the nineties, several developing countries have started to work on data collection on time-use and, although geographically, culturally, and economically diverse, they have started to consider national time-use surveys as a fundamental statistical tool for providing valuation and measurement of unpaid and paid work and for enhancing the visibility of women's work in the labor market and at home. This is crucial to enhance data provided by traditional labor-force surveys by recording the actual time spent on labor-market activities and recording the relationship between unpaid and paid work, which is essential to understand better women's economic participation in the labor force and the informal sector.

Time-use data from the Time-use Survey of India (1999), for example, "was expected to provide the basis for improved estimates of the workforce in the informal sector and of work performed by women, relative to those data generated by standard household surveys" (United Nations, 2005). It has been noted that time-use data have this advantage over other data types in the Indian context for two reasons. The first is that even if women report economic work to survey interviews, interviewers tend to interpret this work as non-economic and record it as such, and this is because, in many cases, it is complex to differentiate between informal sector work and unpaid housework. The second is that sociocultural values confer a lower status on women employed in unpaid housework. So, "women tend to underreport or not report economic work when directly asked about it, as they are in traditional labor-force surveys. Reporting such activities within the time-use survey framework is less direct and thus yields more accurate reports" (United Nations, 2005).

However, gender data gaps and scarcity exist and make difficult to monitor progress for women. The 2030 Agenda for Sustainable Development is an agreement signed by the 193 Member States of the United Nations, and it includes 17 Sustainable Development Goals

(SDGs), 232 indicators, and 169 targets. It aims to address the economic, environmental, and social dimensions of sustainable development, and it includes 54 gender-specific indicators, meaning indicators that explicitly try to promote disaggregation by sex and gender equality as the underlying objective. Those gender-specific indicators are integrated across different goals and cover areas not monitored before, such as women's unpaid care and domestic work. But many obstacles remain. Observing the SDGs from a gender equality perspective is challenging due to uneven coverage of gender-specific indicators, gaps in gender data, and the quality and comparability of available data across time and countries.

Six of the seventeen SDGs lack gender-specific indicators, for example, industry and innovation, sustainable consumption, and water and sanitation. The latter, for example, calls for special attention to the needs of women, but "the indicator to monitor this target (population's proportion using safely managed sanitation services) does not explicitly refer to the specific needs of women. This exclusion may mislead producers and users into believing that certain SDG areas are not gender-relevant" (Azcona and Valero, 2018).

Observation of progress on gender equality in the SDGs requires access to quality gender data collected regularly and frequently. An evaluation of the availability of gender data suggests that there is a need for improvement. Many of the gender-specific indicators cover statistical areas where measurement methodology is not well developed, and for many regions, official statistics are often lacking. Country-level data gaps prevent regional, national, and global monitoring of progress on the SDGs as these aggregates are derived from country-level data. Only 22 percent of the 54 gender-specific indicators are produced with enough regularity to be used to monitor progress across all regions, and this mismatch between data demand and data availability is a significant issue for many countries in additions to problems related to technical capacity and financial constraints within national statistical systems, lack of timely reporting to the international statistical system, inconsistent disaggregation, shortage of coordination between data producers within countries, and limited data dissemination.

Gender biases are incorporated in the definitions, concepts, classification used, in the way questions are asked and samples are drawn for population surveys, and in how data are collected. These defects affect the reliability and accuracy of the data collected, compromising the gender statistics quality. For example, the labor force surveys ask only about the respondent's primary economic activity leaving out the contributions of women who perceived paid work as secondary to their unpaid care and domestic work. "International statistical

standards and classifications can help overcome some biases and improve the international comparability of the data" (Azcona and Valero, 2018).

A solution to the above issues could boost the volume, expand types and speed of data produced, foster greater engagement between citizens, the private sector, and government, and increase support for statistical systems. A better use, integration and spreading of different data sources can improve policy formulation, empower people by making robust information available, and bring better outcomes for people. Data that reflect the life of the women, including underestimated areas such as time spent on care, are not suitable or completely missing. To fill these gaps, we need to enhance traditional data collection, spread capacities within national statistical systems, and exploit the potential of non-conventional data sources.

Gender must be integrated into national statistical strategies and prioritized in data collection and disclosure. Moreover, national decision-makers should recognize the crucial role that utilizing gender statistics plays, and it should provide greater technical, political, and financial support to producers of official statistics. Lack of coordination, limited resources, and weak policy space are other obstacles that impede the production of gender data. A 2012 review of 126 countries indicated that "only 37 percent had a coordinating body for gender statistics, and only 13 percent had a regular dedicate budget for gender statistics" (ECOSOC, 2012). There are also political and legal restrictions that constrain national statistical systems. Data collection cannot be extended to some forms of gender statistics in some countries, particularly on particularly sensitive topics, such as violence against women. A necessary forerunner to making gender data available for SDGs observation is the political will. *Making Every Woman and Gils Count,* a United Nations Women's program launched in 2016, aims to address some of these gaps and promote a change in how gender statistics are created. It works with a range of partners to support countries to boost the production, use, and accessibility of gender statistics focusing on three areas: create a favorable environment to prioritize gender data and effective SDGs monitoring; fill gender data gaps by guaranteeing quality and comparability of gender statistics; ensuring accessibility and usability of data. This global program offers financial and technical capacity to countries with a particular focus on a set of pioneer countries. The interventions provide the support of the development of gender-sensitive national strategies for the development of statistics, build technical capacity for gender data production, financially support specialized surveys and other forms of data collection, train data producers on promoting gender data, enhance gender data communication strategies and the dialogue with users.

Without reliable and timely information about gender equality and the status of women, it is not possible to know whether women are benefiting from the measures that address gender equality directly. A central action to monitoring gender equality and the SDGs is to invest in national statistical capacity to produce timely and quality gender statistics. "Statistical systems need to be independent and agile to adapt quickly to a dynamic data landscape" (Azcona and Valero, 2018). Doing so can help close data gaps and ensure that the data collected help achieve the SDGs and make women visible and counted.

3.2 Evidence from economic theory and applications

The debate of the time allocation within the household and the dynamics that govern the different allocation of time between women and men has been primarily discussed. Evidence shows that women dedicate more time to household work than men. Different theoretical perspectives try to explain the process through which domestic labor is allocated among household members. This work focuses on economic and sociological theories.

3.2.1 Economic models of Time allocation[24]

The main economic theories analyzed are the Economic Models of Time Allocation, e.g., Becker's economics of the family (1991), Gronau (1977), and Kimmel and Connelly model (2007), and Bargaining Models, e.g., Lundberg and Pollak (1996), and Agarwal (1997).

3.2.1.1 Utility models of allocation of time

---

[24] The following paragraphs of the study focus their attention principally to child care activities, being aware that unpaid care work includes also other care activities such as elderly care.

Becker (1965, 1991) draws a microeconomic theory in which households rationally and efficiently allocate resources, i.e., goods and time, to optimize their utility and outputs, e.g., the satisfaction and the well-being that results from the preferred bundle of commodities of the family. Moreover, he assumes that family members have identical preferences about the desired commodities' combination, or if preferences are different, decisions are taken by an altruistic family head. Goods and services bought with wages from market labor are transformed through nonmarket labor into household commodities (Blau *et al.*, 1998). Becker characterizes the household as a small factory that transforms raw materials, e.g., cleaning products and food, into finished products, e.g., clean house and cooked meals (Berk, 1985, Blau *et al.*, 1998).

The utility of the households is maximized if the bundle of commodities is produced through the most efficient division of labor between nonmarket and market tasks, and so the specialization of one family member in market labor and the other partner in nonmarket labor. For Becker, women specialize in nonmarket work while men specialize in market work because of human capital and biological differences that result in a comparative advantage for each partner in their respective domains.

Women invest in human capital that enhances their efficiency and skills in housework and child education. On the contrary, men invest in human capital that increases their efficiency and skills in market work, so their market work time relative to their nonmarket work time is more valuable and more productive. As a result, women have a comparative advantage in the domestic market, resulting from their concentration on nonmarket work, while the comparative advantage in wage-earning of men derives from their concentration on market work. The greater the comparative advantage in the market work of the husband, the less time he will invest in nonmarket labor.

Gronau in his work "Leisure, Home production, and work. The theory of the time allocation revisited" (1977), states that there exists a distinction between work at home and leisure, namely, between home production time and home consumption time, that is that an individual would have somebody doing her/his work at home, while it would be impossible to enjoy leisure through a surrogate. Thus, work at home is described as a time use that generates services which have a close substitute in the market, while leisure not.

Gronau (1977) depicts a single-person household where person maximizes the amount of commodity Z, which is a combination of good and services (X) and consumption time (L):

$$Z = Z(X, L).$$

Goods can be bought in the market or produced at home, but the X composition does not affect Z.[25] Gronau then measure the home goods and services value (X_M) in terms of their market equivalent. X_M represents market expenditures; total consumption is composed of the consumption of goods purchased in the market and those produced at home,

$$X = X_M + X_H.$$

Home goods are produced by work at home (H), subject to decreasing marginal productivity ($f' > 0; f'' < 0$):

$$X_H = f(H).$$

The decline in the value of marginal productivity at home is due to changes in input proportions fatigue, and to a change in the composition of X_H: as H increases, there is a shift onto activities that have a cheaper market substitute.

The maximization of Z is subject to the budget constraint and the time constraint[26]. The budget constraint is:

$$X_M = WN + V,$$

And the time constraint is the following:

$$L + H + N = T.$$

The necessary conditions for an interior optimum require that the marginal product of work at home is equal to the marginal rates of substitution between goods and consumption time, which in turn equals the shadow price of time (W^*):

$$\frac{\partial Z / \partial L}{\partial Z / \partial X} = f' = W^*.$$

---

[25] This assumption distinguishes this model from the previous formulations such as Z=Z(X_M, X_H, L) in Gronau (1973).

[26] $Z = Z(X, L)$ can be rewrite as $Z = Z(X, L) = Z'(X, L, T - L) = Z'(X, L, H + L)$. $Z = Z(X, L)$ does not imply that work in the market and work at home do not affect welfare, but only that H and N are perfect substitutes as far as the consumption technology (Z) is concerned.

If an individual works in the market (N > 0), they will also equal the real wage rate, W[27].

Gronau (1977) extends the model to the case of two commodities where the person maximizes the welfare function $U(Z_1, Z_2)$ subject to the constraints imposed by the transformation curve between the two commodities which depends on the consumption technology of each commodity, the home production function, and the budget and time constraints. Another extension of the model study the effect of children on the allocation of time: an increase in the number of children or the introduction of children, is associated with a transfer of time to child-related activities and the additional time units devoted to children are spent on work at home and leisure.

The overall effect on the allocation of time introducing children depends on the leisure intensity of child-related in comparison with other activities and on the profitability of home production of child-related services. For Gronau, women usually received a lower wage than men and they may also be more productive in home production. So, an increase in the number of children conducts working mothers to work less in the market and more at home.

Gronau extends the model considering the model with multi-person care and married couple. New activities are introduced into the set of individuals' choices with the marriage. The new activities use home-produced goods in its production and involves an enhance in work at home and a reduction of work in the market. Marriage may also have an effect on allocation of time of the household' members by allowing for specialization within family. For Gronau (1977), specialization within the family increases the welfare of the family: the husband enhances his work in the market while the wife her home production.

In this field, Kooreman and Kapteyn (1987) examine caregiving time focuses on married couples and found that higher wages of the husband increased the time their wives spent in childcare, but that the wage of the women does not affect her childcare time nor her husband's childcare time.

Kimmel and Connelly (2007), instead, study the role that socioeconomic factors play in the time choices of the mothers. The aim of their market wage and childcare price elasticity for each category of time allocation, namely, paid market work, leisure, home production, and

---

[27] $\frac{\partial Z/\partial L}{\partial Z/\partial X} = f' = W^* = W$ is derived from maximization of the Lagrangian function $G = Z\{[X_M + f(H)], L\} + \lambda(WN + V - X_M) + \mu(T - L - H - N)$ with respect to L, H, N, and X_M. the shadow price of time equal $W^* = \mu/\lambda$, where μ and λ are the marginal utilities of time and income.

caregiving time. Kimmel and Connelly (2007) use a standard neoclassical individual-based utility maximizing problem in which the utility of the mother is expressed as a function of leisure (t_L), child services (CS), and aggregated adult consumption of final goods and services (G).

$$\max U = U(t_L, CS, G).$$

The consumption goods of adult (G) are home produced with a combination of household production time (t_{hp}) and purchased intermediate good: $G = G(t_{hp}, X; \theta)$. θ is an efficiency parameter that is affected by differences in abilities and personal investment. Child services (CS) are home produced, but with a combination of child goods produced in the market (CX), caregiving time of the mother (t_{mcc}), and nonmaternal childcare time (t_{cc}): $CS = CS(t_{mcc}, t_{cc}, CX; \phi)$ where ϕ is an efficiency parameter. The constraints of the model are the mother's time constraint:

$$T = t_{em} + t_{hp} + t_{mcc} + t_L + t_s$$

and the budget constraint:

$$P_X X + P_{cc} t_{cc} + P_{CX} CX = w t_{em} + V.$$

The total time of the mother can be divided into paid market time (t_{em}), home-production time (t_{hp}), caregiving time (t_{mcc}), leisure (t_L), and investment time (t_s)[28].

The total amount of time available to children is the following:

$$CT = t_{mcc} + t_{cc} + t_{scc}$$

where t_{mcc} is the maternal childcare time, t_{cc} is the nonmaternal time; both of them contribute to enhance the level of child services. t_{scc} is the secondary childcare time in which children are supervised but not actively engaged; this term does not contribute to child services and it is provided without opportunity cost by the mother or without money cost by anyone other than the mother. If t_{scc} includes also sleep, it results that $CT = T$.

The above three constraints result in different costs of a mother's time: there is a cost of time in the market labor (w - P_{cc}); a cost of time when mother is engaged in leisure of home production activities while children are not present because an alternative caregiver actively

---

[28] This theoretical model has an assumption similar to Gronau model (1977), namely, that only leisure product process utility. Household production time, caregiving time, and market work yield outcome utility only.

engages the children. Here, the opportunity cost of that activity's time is the price of earnings forgone and the price of nonparental child care (w - P_{cc}); at other time, e.g., when children are in public school or when are old enough for self-care, the opportunity cost of that activity's time is the wage (w).

Their analyses find that the caregiving's time of the mothers increases with the number of children, decreases with child's age, and increases with the price of child care.

3.2.1.2 Bargaining models

Economic bargaining models of marriage are based on similar theoretical propositions of the utility models of time allocation but incorporate the role of power and status differential between women and men in determining the division of labor of the family (Lundberg and Pollak, 1996). Moreover, bargaining models relax the assumption that the preferences of the family are identical. A primary assumption of bargaining models lies in the presence of two decision-makers, each with a well-defined set of preferences, who bargain to maximize their individual utilities from an available set of alternatives through an optimal time allocation to nonmarket and market activities.

Access to a higher level of economic resources enhances the bargaining power of the individual because it enhances their "threat point," or the ability to fall back from the relationship. The fallback position is influenced by personal earnings, access to other resources of income, and other preferences related to the utility of fallback from the relationship.

Economic bargaining models assume a gender-neutral process in which males and females can use resources to negotiate favorable bargains. Nevertheless, Lundberg and Pollak (1996) recognize that cultural norms about appropriate marital roles for men and women define the baseline around which negotiations on the labor division occur.

In the literature on household economics, some authors recognize the importance of social norms and model then as Lundberg and Pollak (1996) treat them as exogenous, some others (Agarwal, 1994, Folbre, 1995) treat them as exogenous endogenous. Agarwal (1997) formulate the question of how social norms may affect bargaining. She finds that norms set

limits on what can be bargaining about, they are constraints to bargaining power, and they affect how bargaining is conducted.

3.2.2 Sociological models of time allocation

The sociological theories of how couples allocate time to household work analyzed in these paragraphs are the Social Exchange Theory, e.g., Sabatelli and Shehan (1993), Howard and Holiander (1997), and Bittman (2003), and the Gender Theory, e.g., West and Zimmerman (1987), Brines (1994), and Bittman and Pixley (1997).

3.2.2.1 Social exchange theory

The social exchange theory developed by George Homans merges concepts from behavioral psychology with utilitarian economic theory. Social exchange theory assumes that human behavior is moved by rational calculation of costs, gains, and alternatives. Moreover, it lies on the assumption that individuals alone are not able to provide all the goods and services they need to maximize their well-being and enter into exchange relationships. It also lies on the assumption that the dynamic of the exchange relationship comes from different level of dependence of the individual and that the exchange relationship lasts as long as there is a gain for both individuals and there are no better alternatives (Sabatelli and Shehan, 1993; Howard and Hollander, 1997).

Similar to economic bargaining theory, social exchange theory states that the division of labor within marriage is a type of exchange relationship in which each individual brings a bundle of resources to the relationship, and bargains over the optimal allocation of time to nonmarket and market production.

Women are generally more dependent on the resources provided by men due to social gender stratification that values the resources of men more and limits the ability of women to

sustain their well-being outside of a marital relationship, and so placed women in a weaker bargaining position (Sabatelli and Shehan, 1993).

Husbands have more advantage in buying out of tasks they do not wish to perform, such as domestic chores and engaging in activities they prefer (Blumberg and Coleman, 1989).

It results that time allocation between nonmarket and market reflects power and status differentials between women and men, and the level of resources of wives and husbands will identify how much nonmarket and market labor each performs.

3.2.2.2 The "Doing Gender" theory

After the traditional view of norms just described above, has emerged the notion of "doing gender" (Coltrane, 2000). This view of gender was launched by West and Zimmerman (1981) and applied to household work by Berk (1985) and South and Spitze (1994). The idea behind this is that the behavior of individuals is affected by the expectations held by others. In this view, different from a rational choice view of norms in which people follow norms to avoid punishments or obtain rewards, including approval or disapproval, "social influence can proceed even without carrots and sticks" (Bittman, 2003). People behave in a way that can explain to others, which conducts them to follow the expectations of others, including those that regard gender. Actors do not necessarily internalize gendered norms, but they internalize only expectations that others will follow norms.

The primary conclusion of several studies in this field is that women do more household work than men even when market hours are equal, and relative earnings explain only a small share of the variance in which women or men do more. Greenstein (2000) finds that traditional gender belief conducts men to do less and women to do more household work.

Bittman and Pixley (1997) find that women still do a more significant portion of cleaning, cooking, and physical childcare even when both partners are working full-time. Berk (1985) shows that when spouses both works full-time, wives often do many hours of household work at night while husbands do less than one hour in those activities. Hochschild (1989) find that even among couples with equal earnings, only thirty percent shared household work equally.

The relevance of gender is also shown because whatever independent variables are used, most seem to affect the housework time of the women more than men's. Regardless of what variables are included in the model, studies (Brines, 1994; Greenstein, 2000) predicting the hours of household work of men and women separately find a higher proportion of variance explained for women than for men. These studies also find that the hours of housework of men increases as the share of income provided by women increases, up to the point where women contribute similarly. But beyond that point, men reduce their contribution to housework as the percentage of income provision of the women continues to increase. Instead, when men earn less than their wives, this violates gender norms and conducts both husband and wife to a more traditional behavior to neutralize the deviance. Brines and Greenstein differ in interpret this fact. Brines (1994) uses the concept of "gender display": "while the employment of the wives is now acceptable, husbands are still not supposed to be dependent."

Greenstein (2000) believes that it should be interpreted in terms of "deviance neutralization," a more general concept regarding the Brines' one. When the deviance in question is the failure of men to provide a majority of the couple's income, it is deviance from the norm about gender.

3.3 Empirical evidence from economics studies

Kooreman and Kapteyn (1987), using time-use data for United States couples, studied the time allocation of wife and husband considering market work and seven types of unpaid activities, beginning pioneers of analyzing simultaneously different types of time use within the household.

Sousa-Poza *et al.* (2001), using Swiss data, analyze time spent by men and women on childcare and household activities, finding that women respond more than men to changes in socio-economic variables. Although, both better-educated men and women spend more time on childcare activities. They also found that women with higher wages spent more time with children and reduced the time spent in the household.

Hallberg and Klevmarken (2003), using Swedish data, study childcare time in couples with double-earner and find that changes in the working hours of the mother do not significantly

affect either caregiving time of parents. Conversely, changes in the working hours of the father are compensated by the mother providing more caregiving time. Furthermore, they find that the presence of young children affects the market work of the mother and childcare more significantly than the father.

Kalenkonski *et al.* (2005, 2009) analyze how parents distribute their time between primary childcare, secondary childcare, and market work in the UK. Both analyses suggest that the presence of children affects childcare activities of women and men, but with a very different magnitude, and that only that paid work of women is affected by the presence of very young children. Kalenkonski *et al.* (2009) also consider the effect of wages and find that time spent by women in paid work grows with their own wage and decreases with the partner wage. They also find that men spend more time in caregiving when the wage of the women increases.

Guryan *et al.* (2008) analyze many countries and find that parents with higher education generally spend more time with their children than parents with lower education. Connelly and Kimmel (2009) see similar results for the United States: for both parents, an increase in their own wage is positively related to time spent in childcare. Moreover, they find that an increase in the paid work of the mother conducts to a rise in the caregiving time of the father.

Guitierrez-Domenich (2010) finds that in Spain, the caregiving time of the father increases when the mother is employed and that parents with higher education spend more time in childcare. Also, Gimenez-Nadal and Molina (2013), using time-use data of Spain and the United Kingdom, find that mothers with a higher level of education positively affect the caregiving time of the fathers.

Bloemen *et al.* (2010) and Pasqua and Mancini (2012), using Italian data, study simultaneously time devoted by women and men to home production, paid work, and childcare. Both analyses find that the presence of children mainly affects the allocation time of women. They also find that well-educated women spend more time in paid work and childcare.

However, Bloemen and Stancanelli (2014), using data from France, find that an increase in wages of parents decreases childcare and domestic work for both parents. Furthermore, higher wages of women are associated with a higher level of unpaid work by their partners. This result indicates that women who are better off in terms of earnings tend to have a higher bargaining power within the household. This evidence suggests that the time allocation of wives is not determined by a unitary model of household behavior but by a bargaining process between the members of the family (Chiappori, 1988, 1997).

Unequal distribution of caring and household responsibilities between men and women translates into unequal opportunities in terms of time to participate equally in paid market activities. Thus, gender inequality in unpaid activities is "the missing link in the analysis of related to gender gaps in labor outcomes" (Ferrant, 2014) in areas such as gender gaps in labor force participation rates, wages, and quality of employment.

The amount of time devoted to unpaid work is negatively correlated with female labor force participation (World Bank, 2014): in countries where women spend more hours on unpaid activities, half of the women in the working age-population are active, while in countries where they spend less time in unpaid work, the percentage is higher. The World Bank (2014) has estimated that a decrease in unpaid care work of women leads to a ten percentage points increase in women's labor force participation rate. Gender inequalities in the allocation of unpaid care work are also linked to gender gaps in labor force participation: a higher level of inequality in the distribution of care activities between men and women leads to a higher presence of gender gaps in labor force participation.

Unpaid care work is also related to the quality of female employment: the unequal amount of time spent by women in caring responsibilities increases the probability that they will be engaged in part-time or vulnerable employment. Countries where women perform a higher share of unpaid work than men have a higher percentage of women in part-time jobs (World Bank, 2014). So, women doing the majority share of unpaid care work, an occupation that consumes time and energy, are restricted to access to the labor market, relegating them to insecure and low-income employment.

Reconcile care responsibilities with paid work is challenging for women, and this can lead to "occupational downgrading," where women choose employment below their skills level and accept more impoverished conditions (Hegewisch and Gornick, 2011).

Gender inequalities in unpaid responsibilities are related to gender wage gaps. A cross-country analysis conducted by the World Bank (2014) shows that in countries where women spend a significant amount of time on unpaid work, and there is a more considerable gender gap in time spent, the gender gap in hourly wages is also more significant, namely, higher inequalities in unpaid responsibilities leads to higher inequalities in wages.

This evidence highlights that where women have most of the responsibilities for unpaid care work, they are less likely to be engaged in paid work. Those who are active in the labor market are more likely to be addressed in informal or part-time employment and earn less

respect to males. So, it is possible to affirm that gender inequalities in unpaid care work lead to higher gender gaps in labor outcomes.

3.3.1 Root causes of unpaid work addressed mostly to women

The evidence that ascertains the unequal distribution of unpaid care work between genders leads to the question of the root causes of this phenomenon. Four root causes drive women's unpaid care work: policies and social institutions, the economic environment, the availability of technology and infrastructure, and social norms (Figure 3.9).

Weak policy and social institutions, including non-sufficient access to quality and affordable care services, can lead to more work for women and, in particular, mothers. An improvement and expansion of institutional support for caregivers could help individuals to manage their paid and unpaid responsibilities better. Actions could include policies to support caregivers, e.g., paid parental leave (Baker *et al.*, 2008), and provide childcare and eldercare programs.

The economic environment submits women to poor working conditions or discourages them from formal and paid work due, in part, to gender-discriminatory hiring policies, unequal wages, and inadequate social protection.

Moreover, the availability of technology and infrastructure could require women to perform time-consuming unpaid work. Technology and infrastructure can facilitate and increase care productivity and make it easier to combine reproductive and productive work. Supporting the development of accessible time and energy-saving technologies and infrastructure could ensure that those engaging in unpaid care activities can do so more efficiently. Actions could include commitments to develop sanitation and water infrastructure and their maintenance, support for new technological solutions that enhance access to necessities and care services. Also, accessible and affordable transport is a crucial aspect both for the paid economy and for health and maternal needs.

Social norms strongly influence the distribution of unpaid care work between women and men. These norms shape the traditional role carried out by women, often result in the unequal distribution of care activities (Akerlof *et al.*, 2000), and influence the perception of

unpaid care work as contributing little value and requiring low skills. Gender norms place women within the household as their primary role limiting their opportunities to have multiple roles in society due to the lack of resources and time (Fernàndez, *et al*., 2004; Maurin *et al.*, 2009; Bertrand, 2011; Alesina *et al*., 2013). Actions to accelerate norms change could include targeted unpaid care work norms education campaigns for teens and parents and national public information campaigns focused on shifting unpaid care work norms. Social norms also shape and influence all the other root causes.

Causes	Possible Solutions	
Policy and social institutions	Care	Childcare provision/subsidy
		Eldercare services
		Income support
		Paid family and medical leave
		Early childhood education
	Employment	Antidiscrimination policies
Economic environment	Jobs	Flexible work arrangements
		Employment skills training
		Job placement programs
	Pay	Equal pay audits
		Transparency in compensation
Technology/Infrastructure	Physical infrastructure (network/individual level)	Water and sanitation
		Energy
		Transportation
		Domestic appliances
	Digital infrastructure (network/individual level)	Mobile platforms
		Mobile phones, applications
Social norms	Individual norms change	Parental education programs
		School-based programs
	Population norms change	Media campaigns
		Community campaigns
	Integrated programs	Programs with norms campaigns

Figure 3.9: Inequality distribution of unpaid care work's root causes and examples of possible solutions (Source: own elaboration based on Ferrant *et al.* (2014)).

Gender social norms govern the interpretation of what is appropriate behavior for men and women: the interpersonal application of culturally specified roles is called, as said before, "doing gender" (Berk, 1985; Brines, 1994). Generally, norms are treated as solutions to coordinate problems without considering how they may reflect a "collective form of social power" (Schotter, 1981). Groups could try to enforce preferences and norms they find beneficial and, as Edna Ullmann-Margalit (1977) writes, "a norm may be conceived of as a sophisticated tool of coercion, used by the favored party in a status quo of inequality to promote its interest in the maintenance of this status quo."

The coercive dimension of social norms of femininity and masculinity is emphasized by feminist theory, describing norms as a crucial element of gendered structure of constraint (Folbre, 1994). The constructs of gendered behavior come from societies in which men had more economic and cultural power than women, resulting in what can be described as "socially imposed altruism" or a gender-biased system of coercive socialization (Folbre and Weisskopf, 1998). Regardless of the innate differences between women and men, social norms generate intense pressures for differentiation of roles by gender. Experimental studies show that while there are no significant differences in altruism's level between women and men, the ways in which it is expressed are very gendered (Kohn, 1990).

However, women are more likely to behave in altruistic ways helping relatives and the community. Mothers generally allocate a significantly larger share of their earnings and income to family needs than fathers (Benerìa and Roldan, 1987; Chant, 1997). Women's income tends to be spent more likely on children's nutrition and health (Haddad *et al.*, 1998).

3.4 The economic benefits of reducing gender inequality in unpaid care work

The unpaid work unequal distribution has negative effects on women's health levels. Using time-use data of Canada, MacDonald *et al.* (2005) find that greater hours of unpaid work spent by women contribute to afflict to women more stress than men.

Fathering has a crucial role in the education of children, and the involvement of the father in childcare is positively associated with the social, cognitive, and emotional development of children (Tamis-LeMonda and Cabrera, 2002), and the well-being of children

increases with the involvement of fathers (Allen and Daly, 2007). An essential tool is paternal leave to enhance fathers' involvement: the participation of fathers in paternal leave reinforces women's labor market position. Paternal leave makes the initial parental experience more similar across gender, causing long-lasting consequences on time allocation within the household.

Although this evidence in the positive effect of father participation in child development, the utilization of paternal leave is very low. Loss of earnings is a crucial factor in the decision of fathers to take or not paternal leave (Zhelyazkova, 2013). Using Spain time use surveys data, Andreassen *et al.* (2015) show that fathers are willing to increase their childcare activities time if workplace and cultural barriers are addressed. Paternal leave tends to be higher in countries with high compensations rates (Moss and O'Brien, 2006) and is very low in countries where leave is unpaid (Han *et al.*, 2007).

In terms of paternal leave's long-term effect, several analyses find that fathers how to take paternal leave are more involved in childcare (Nepomnyaschy and Waldfogel, 2007). Furthermore, paternal leave is associated with longer working hours, shorter career breaks, and improved labor market position for women (Keck and Saraceno, 2013). Kotsadam and Finseraas (2012), using Norwegian data, find that paternity leave conducts a more equal division of housework.

3.4.1 Model quantification of the gains of reducing women's unpaid work

A model to quantify the economic effects of policies addressed to reducing burned of unpaid work on women and increasing their participation in the labor force is the following proposed by Alonso *et al.* (2019), a model of structural transformation and marketization of home production adapted to the one proposed by Ngai and Petrongolo (2017). The key elements of the Alonso *et al.* (2019) model are differential productivity growth rates for paid market and unpaid home sector, which lead labor to move out from home production to enter more productive market sectors. The model highlights the role of the rising services sector, where women have an advantage relative to men, in soaking up women labor moving out of the home sector.

In relation to the paid market sector, the model includes two market sectors, i.e., goods (j=g) and services (j=s), where firms produce output using the technology described below:

$$Y_{ji} = A_{ji} \left[\xi_{ji} L_{fji}^{\frac{\eta-1}{\eta}} + (1 - \xi_{ji}) L_{mji}^{\frac{\eta-1}{\eta}} \right]^{\frac{\eta-1}{\eta}} \quad j = g, s$$

L$_{fji}$ and L$_{mji}$ are respectively labor inputs in the production of female and male; A$_{ji}$ is the sectoral productivity parameters that changes across countries i to measure the level of development of countries. ξ_{ji} are the country-specific parameters that capture the comparative advantage of women in a given sector; η is the elasticity of substitution[29] between male and female.

Barriers to the female participation in paid work are wedges that reduce women's wages relative to their output in the market sector. From the first-order condition, it emerges that the relationship between the gender wage ratio and the marginal rate of technical substitution is the follow:

$$\frac{w_{fi}}{w_{mi}} = \frac{\beta_{ji}\xi_{ji}}{1 - \beta_{ji}\xi_{ji}} \left(\frac{L_{mji}}{L_{fji}} \right)^{\frac{1}{\eta}}$$

The wedge parameter β$_{ji}$ < 1 represents the existence of policies or their lack used as barriers to women labor force participation, and so increase their unpaid work hours.

Considering the unpaid house sector, the joint utility of the household depends on consumption of good and services produced on the market (c$_{gi}$ and c$_{si}$), services produced within household (c$_{hi}$), and leisure (L$_{li}$):

$$U\left(c_{gi}, c_{si}, c_{hi}, L_{li}\right) = \ln c_j + \phi \ln L_{li}$$

---

[29] The elasticity of X with respect to Y is $E_Y^X = \frac{dX}{dY}\frac{Y}{X}$. It represents the change in the ratio of the use of goods with respect to the ratio of their marginal values.

c_i is a composite consumption of good and services, where c_{zi} is a CES aggregator[30] of market-produced services and home-produced services:

$$c_i = \left(\omega_i c_{gi}^{\frac{\epsilon-1}{\epsilon}} + (1 - \omega_i) c_{zi}^{\frac{\epsilon-1}{\epsilon}} \right)^{\frac{\epsilon}{\epsilon-1}} ; \quad c_{zi} = \left(\alpha_i c_{si}^{\frac{\sigma-1}{\sigma}} + (1 - \alpha_i) c_{hi}^{\frac{\sigma-1}{\sigma}} \right)^{\frac{\sigma}{\sigma-1}}$$

Home services are produced by using male and female labor:

$$c_{hi} = A_{hi} \left[\xi_{hi} L_{fhi}^{\frac{\eta-1}{\eta}} + (1 - \xi_{hi}) L_{mhi}^{\frac{\eta-1}{\eta}} \right]^{\frac{\eta}{\eta-1}}$$

Household leisure is composed by male and female leisure time:

$$L_{li} = \left[\xi_{hi} L_{fli}^{\frac{\eta_1-1}{\eta_1}} + (1 - \xi_{li}) L_{mli}^{\frac{\eta_1-1}{\eta_1}} \right]^{\frac{\eta_1}{\eta_1-1}}$$

So, the budget constraint of household is the following:

$$p_{gi} c_{gi} + p_{si} c_{si} = w_{fi}\left(L_{fi} - L_{fhi} - L_{fli} \right) + w_{mi}\left(L_{mi} - L_{mhi} - L_{mli} \right)$$

A competitive equilibrium is defined by market wages (w_{fi}, w_{mi}), market prices (p_{gi}, p_{si}), consumption (c_{gi}, c_{si}), and time allocation $\left\{ L_{fji}, L_{mji} \right\}_{j=g,s,h,l}$ such that the representative firm maximizes profits, subject to technology Y_{ji}; and the representative household maximizes utility

---

[30] Constant elasticity of substitution (CES) aggregator; has as advantage that it separates the consumption-saving problem from the choice between different consumption goods.

$U\left(c_{gi}, c_{si}, c_{hi}, L_{li}\right)$, subject to c$_i$, c$_{zi}$, c$_{hi}$, L$_{li}$; given the optimal choices of firms and households, market wages and prices clear the market in each sector and the labor market for each gender:

$$c_{ji} = Y_{ji} \qquad\qquad \text{with } j = g, s$$

$$L_{bgi} + L_{bsi} = L_{bi} - L_{bhi} - L_{bli} \qquad \text{with } b = f, m.$$

3.5 Policies to reduce and redistribute unpaid work

As stated in paragraph 3.2, the first analysis of time allocation between genders within households was conducted by Becker (1965, 1981). He used the idea that the traditional division of labor within the household is efficient due to lower wages of women in the labor market. Therefore, specializing one member of the couple in paid work and the other in unpaid work was the optimal solution. However, theory moves from the unitary Becker's model (1965) to the view that decisions are taken within a non-unitary framework (Chiappori, 1988, 1997; Apps and Rees, 1996; Donni, 2003, 2008).

In discussing an economic case for an equal distribution of unpaid work, the affordability, availability, and quality of social infrastructure play an essential role in the interaction between unpaid and paid work and fertility behaviors. For example, fertility behavior models in the Seventies predict that an increase in the schooling level of women and wage rates increase their labor supply and reduce fertility. However, evidence from the Eighties shows that the cross-country correlation between fertility and labor market participation of women changed from negative to positive and became more volatile (Del Boca *et al.*, 2005). Thus, if supported by appropriate family-friendly policies, an increase in women's employment does not necessarily conduct to significant fertility declines (Bjorklund, 2007).

Datta-Gupta *et al.* (2008) study the effects of family reconciliation policies in the Nordic states and find that they have positive impact on fertility, this thanks to an alleviation of the pressure between domestic and market work faced by women. Pylkkanen and Smith (2003) find some evidence that family policies can promote women labor supply and more equal

division of the role between fathers and mothers. Father parental leave take-up carries out an essential role in the timing of employment of women after childbirth in Sweden.

Mortvik and Spant (2005) find a positive correlation between fertility and attitudes supporting gender equality in work environment. Adsera (2004), using developed countries data, finds that lower penalties derived from childbearing labor market breaks induce higher fertility rates. Keck and Saraceno (2013) show that the long and well-paid leaves do not have a negative effect on the mothers' employment in the medium term, instead too short parental leave may disincentivize labor market participation of women. Moreover, a high rate of coverage while a child is under three years age increases significantly the mothers' employment in the medium run, instead high childcare costs are related to lower employment rates. Therefore, the most effective policy to let mother to remain in paid work is to furnish generous provision of childcare services for children under the age of three.

The work of Pacelli *et al.* (2013) confirms that policies that have the aim of helping women to reconcile family and work are useful in increasing employment of women without reducing fertility and they may reduce employment penalties after motherhood.

Thus, there is the necessity to promote the reduction and the redistribution of unpaid work. Reduction means promoting investment in time-saving technology and infrastructure and increasing public and care services, e.g., promoting better access to public services, child care, and care for elderly individuals. Redistribution means adopt family-friendly working policies such as maternity leave public subsidies of fourteen weeks, an equal amount of maternity and paternity leave, and family-friendly working conditions that allow parents to balance their working hours and caring responsibilities.

4. CONCLUSION

Unpaid care work refers to tasks such as cooking, doing housework, caring for children, older people, and sick people where the person doing this work is not paid. The term also includes the work done for the family and the voluntary activities, where individuals assist other households or communities. The word "unpaid" stresses that the individual performing this activity is not remunerate; the term "care" is used to indicate that the activity provides what is necessary for the well-being, health, maintenance, and protection of something or someone; and "work" is to indicate that the activity has a cost in term of mental and physical effort and in terms of time resources.

Unpaid care work can be seen as an important social indicator, and as stated by Stiglitz *et al.* Report (2009), "household production constitutes an essential aspect of economic activity; ignoring it may lead to incorrect inferences about changes and levels in well-being." Thus, it emerges the necessity of measuring, valuing, and accounting it, facts that could be challenging due to its non-monetary value and its private nature -usually taking place within the household.

"The attempt to account for unpaid work continues to be important, as current labor market trends raise new questions about the links between paid and unpaid work and about their distribution and boundaries" (Benerìa, 1999). The increasing participation of women in the paid labor force has strengthened the importance of the distribution of unpaid and paid work within the household, and this is a crucial gender equality issue. Moreover, the high incidence of part-time work and underemployment results in cyclical combinations of paid and unpaid work, which affect men and women in different ways. Therefore, measures of these changes are essential to assessing variations in living standards and contributions to well-being

The main evidence at the world level and European level of the distribution by gender of paid and unpaid work. Data show that across the world, and with no exceptions, women dedicate more time than men to unpaid care work. In particular, the average time devoted by women to the three forms of unpaid care work, namely, care services, domestic work, and volunteering or community services, at the global level is 277 minutes (19.7 percent of a 24-hour day). The world average of time devoted to unpaid care work by men is instead 111 minutes (7.7 percent of a 24-hour day). The gaps in the relative contributions of women and

men to unpaid care work can be found in every country, and in none of them, it is reached parity at 50 percent to the contribution of men to unpaid care work. As at the world level, also in European countries, women are more involved than men in unpaid care work. Time spent on family care and household activities for the whole population vary between 3 and 4 hours on average across countries, with the highest gender gap in Turkey (3 hours and 16 minutes more for women than men) and Italy with 2 hours and 47 minutes.

The main consequences on women of this unequal distribution of unpaid work are that the unequal distribution of caring and household responsibilities between men and women translates into unequal opportunities in terms of time to participate equally in paid market activities and so that the amount of time devoted to unpaid work is negatively correlated with female labor force participation; that unpaid care work is related to the quality of female employment: the unequal amount of time spent by women in caring responsibilities increases the probability that they will be engaged in part-time or vulnerable employment; and that gender inequalities in unpaid responsibilities are related to gender wage gaps.

Several different theoretical perspectives try to explain the process through which unpaid care work is allocated among household members such as utility models of time allocation, bargaining models, social exchange theory, and "Doing gender" theory.

Evidence from economics studies highlight that where women have most of the responsibilities for unpaid care work, they are less likely to be engaged in paid work. Those who are active in the labor market are more likely to be addressed in informal or part-time employment and earn less respect to males. Thus, it is possible to affirm that gender inequalities in unpaid care work lead to higher gender gaps in labor outcomes.

The unequal distribution of unpaid care work between genders can be attributed to four leading root causes: policies and social institutions, the economic environment, the availability of technology and infrastructure, and social norms. Especially social norms strongly influence the distribution of unpaid care work between women and men. Social norms shape the traditional role carried out by women, often result in the unequal distribution of care activities and place women within the household as their primary role limiting their opportunities to have multiple roles in society due to the lack of resources and time.

Thus, there is the necessity to promote the reduction and redistribution of unpaid work, especially to reduce the double burden on women. Reduction means promoting investment in time-saving technology and infrastructure and increasing public and care services, e.g.,

promoting better access to public services, child care, and care for elderly individuals. Redistribution means adopt family-friendly working policies such as maternity leave public subsidies of fourteen weeks, an equal amount of maternity and paternity leave, and family-friendly working conditions that allow parents to balance their working hours and caring responsibilities. There is still much work to do about the recognition and redistribution of unpaid care work and, thus, the opportunity for developing further future researches on this topic.

5. References

Abel, E. K., & Nelson, M. K. (1990). Circles of care: An introductory essay. Circles of care: Work and identity in women's lives, 4-34.

Abraham, K., Mackie, C. (2005). Beyond the market: Designing non-market accounts for the United States. *The National Academies Press*.

Adsera, A. (2004). Changing fertility rates in developed countries. The impact of labor market institutions. Journal of population economics, 17(1), 17-43.

Agarwal, B. (1997). "Bargaining" and gender relations: Within and beyond the household. *Feminist economics*, 3(1), 1-51.

Aguiar, M., & Hurst, E. (2007). Measuring trends in leisure: The allocation of time over five decades. *The Quarterly Journal of Economics*, 122(3), 969-1006.

Akerlof, G. A., & Kranton, R. E. (2000). Economics and identity. The quarterly journal of economics, 115(3), 715-753.

Alderman, H., Chiappori, P. A., Haddad, L., Hoddinott, J., & Kanbur, R. (1995). Unitary versus collective models of the household: is it time to shift the burden of proof? *The World Bank Research Observer*, 10(1), 1-19.

Alesina, A., Giuliano, P., & Nunn, N. (2013). On the origins of gender roles: Women and the plough. *The quarterly journal of economics,* 128(2), 469-530.

Alexander, P., & Baden, S. (2000). Glossary on macroeconomics from a gender perspective. *BRIDGE (development-gender), Institute of Development Studies, University of Sussex.*

Allen, S. M., & Daly, K. J. (2007). The effects of father involvement: An updated research summary of the evidence. *Centre for Families, Work & Well-Being,* University of Guelph.

Alonso, C., Brussevich, M., Dabla-Norris, M. E., Kinoshita, Y., & Kochhar, M. K. (2019). Reducing and Redistributing Unpaid Work: Stronger Policies to Support Gender Equality. *International Monetary Fund.*

Altonji, J. G. (1986). Intertemporal substitution in labor supply: Evidence from micro data. *Journal of Political Economy*, 94(3, Part 2), S176-S215.

Andreassen, L., Di Tommaso, M. L., & Maccagnan, A. (2015). Do Men Care? Men's Supply of Unpaid Labour (No. 201545). University of Turin.

Angrist, J. D., & Evans, W. N. (1996). Children and their parents' labor supply: Evidence from exogenous variation in family size (No. w5778). *National bureau of economic research*.

Antonopoulos, R. (2008). The unpaid care work-paid work connection. *Levy Economics Institute, Working Papers Series.*

Anxo, D. (2007). Time allocation between work and family over the life-cycle: a comparative gender analysis of Italy, France, Sweden and the United States. *Institute for the Study of Labor*.

Anxo, D., Mencarini, L., Pailhé, A., Solaz, A., Tanturri, M. L., & Flood, L. (2011). Gender differences in time use over the life course in France, Italy, Sweden, and the US. Feminist economics, 17(3), 159-195.

Apps, P., & Rees, R. (1996). Labour supply, household production and intra-family welfare distribution. *Journal of Public Economics*, 60(2), 199-219.

Apps, P., & Rees, R. (1997). Collective Labor Supply and Household Production. *Journal of Political Economy*, 105(1), 178-190.

Apps, P., & Rees, R. (2001). Household production, full consumption and the costs of children. *Labour Economics,* 8(6), 621-648.

Arpino, B., Pronzato, C., & Tavares, L. (2010). All in the family: informal childcare and mothers' labour market participation (No. 2010-24). *ISER Working Paper Series*.

Ashenfelter, O., & Heckman, J. (1974). The estimation of income and substitution effects in a model of family labor supply. *Econometrica: Journal of the Econometric Society*, 73-85.

Atkinson, M., & Boles, J. (1984). WASP (Wives as Senior Partners). *Journal of Marriage and Family,* 46(4), 861-870.

Attanasio, O., Low, H., & Sánchez-Marcos, V. (2008). Explaining changes in female labor supply in a life-cycle model. *American Economic Review,* 98(4), 1517-52.

Azcona, G., & Valero, S. D. (2018). Making women and girls visible: gender data gaps and why they matter. *New York: UN Women*.

Badgett, M. V., & Folbre, N. (1999). Assigning care: Gender norms and economic outcomes. *Int'l Lab. Rev.*, 138, 311.

Baker, M., & Milligan, K. (2008). How does job-protected maternity leave affect mothers' employment? Journal of Labor Economics, 26(4), 655-691.

Becker, G. (1973). A Theory of Marriage: Part I. *Journal of Political Economy*, 81(4), 813-846.

Becker, G. S. (1965). A Theory of the Allocation of Time. *The economic journal*, 75(299), 493-517.

Becker, G. S. (1981). A Treatise on the Family. *Harvard university press.*

Beneria, L. (1992). Accounting for women's work: The progress of two decades. *World development,* 20(11), 1547-1560.

Benería, L. (1995). Toward a greater integration of gender in economics. *World Development*, 23(11), 1839-1850.

Beneria, L. (1999). The enduring debate over unpaid labour. *Int'l Lab. Rev.,* 138, 287.

Benería, L., & Roldan, M. (1987). The crossroads of class and gender: Industrial homework, subcontracting, and household dynamics in Mexico City. *University of Chicago Press.*

Bergmann, B. R. (1974). Occupational segregation, wages and profits when employers discriminate by race or sex. *Eastern Economic Journal*, 1(2), 103-110.

Berk, S. F. (1985). The gender factory: The apportionment of work in American households. *Springer Science & Business Media.*

Bertrand, M. (2011). New perspectives on gender. *In Handbook of labor economics* (Vol. 4, pp. 1543-1590). Elsevier.

Bianchi, S. M., Milkie, M. A., Sayer, L. C., & Robinson, J. P. (2000). Is anyone doing the housework? Trends in the gender division of household labor. *Social forces*, 79(1), 191-228.

Bielby, W. T., & Baron, J. N. (1986). Men and women at work: Sex segregation and statistical discrimination. *American journal of sociology*, 91(4), 759-799.

Bird, C. E., & Fremont, A. M. (1991). Gender, time use, and health. Journal of Health and social Behavior, 114-129.

Bittman, M., & Pixley, J. (2020). The double life of the family: myth, hope and experience. *Routledge, Taylor and Francis Group.*

Bittman, M., England, P., Sayer, L., Folbre, N., & Matheson, G. (2003). When does gender trump money? Bargaining and time in household work. *American Journal of sociology,* 109(1), 186-214.

Björklund, A. (2007). Does a family-friendly policy raise fertility levels?

Blau, F. D., & Kahn, L. M. (2007). Changes in the labor supply behavior of married women: 1980–2000. *Journal of Labor economics*, 25(3), 393-438.

Blau, F. D., Ferber, M. A., & Wimkler, A. E. (1998). Thle Economics of Women, Men, and Work.

Bloemen, H., & Stancanelli, G. (2014). Market hours, household work, child care, and wage rates of partners: An empirical analysis. *Review of Economics of the Household*, 12(1), 51-81.

Bloemen, H., Pasqua, G., & Stancanelli, S. (2010). An empirical analysis of the time allocation of Italian couples: Are they responsive? *Review of Economics of the Household*, 8(3), 345-369.

Blundell, R., & MaCurdy, T. (1999). Labor supply: A review of alternative approaches. *Handbook of labor economics, 3,* 1559-1695.

Blundell, R., Meghir, C., & Neves, P. (1993). Labour supply and intertemporal substitution. *Journal of Econometrics*, 59(1-2), 137-160.

Bonke, J., Datta Gupta, N., & Smith, N. (2003). Timing and Flexibility of Housework and Men and Women's Wages. IDEAS Working Paper Series from RePEc, *IDEAS Working Paper Series from RePEc*, 2003.

Bonke, J., Deding, M., Lausten, M., & Stratton, L. S. (2007). Intrahousehold specialization in housework in the United States and Denmark (*IZA Discussion Paper* 2777). Bonn, Germany: IZA.

Borjas, G. J. (1980). The relationship between wages and weekly hours of work: The role of division bias. *The Journal of Human Resources*, 15(3), 409-423.

Boserup, E. (2007). Woman's role in economic development. *Earthscan.*

Bridgman, B., Duernecker, G., & Herrendorf, B. (2018). Structural transformation, marketization, and household production around the world. *Journal of Development Economics*, 133, 102-126.

Brines, J. (1994). Economic dependency, gender, and the division of labor at home. *American Journal of sociology*, 100(3), 652-688.

Bryan, M., & Sevilla-Sanz, A. (2011). Does housework lower wages? Evidence for Britain. *Oxford Economic Papers*, 63(1), 187-210.

Bryson, V. (2008). Time-use studies: A potentially feminist tool. *International Feminist Journal of Politics*, 10(2), 135-153.

Budig, M. J. (2002). Male advantage and the gender composition of jobs: Who rides the glass escalator? *Social Problems*, 49(2), 258-277.

Budig, M., & England, P. (2001). The wage penalty for motherhood. *American Sociology Review Vol. 66*, pp. 204-225

Budlender, D. (2004). Why should we care about unpaid care work?

Budlender, D. (2008). The statistical evidence on care and non-care work across six countries (No. 4). *Geneve: United Nations Research Institute for Social Development.*

Burda, M., Hamermesh, D., & Weil, P. (2006). The Distribution of Total Work in the EU and US. IDEAS Working Paper Series from RePEc, *IDEAS Working Paper Series from RePEc, 2006*.

Burda, M., Hamermesh, D., & Weil, P. (2007). Total Work, Gender and Social Norms. IDEAS Working Paper Series from RePEc, *IDEAS Working Paper Series from RePEc, 2007*.

Bygren, M., & Duvander, A. Z. (2006). Parents' workplace situation and fathers' parental leave use. *Journal of Marriage and Family*, 68(2), 363-372.

Cabrera, N. J., & Tamis-LeMonda, C. S. (Eds.). (2013). Handbook of father involvement: Multidisciplinary perspectives. Routledge.

Caucutt, E. M., Lochner, L., Mullins, J., & Park, Y. (2020). Child skill production: Accounting for parental and market-based time and goods investments (No. w27838). *National Bureau of Economic Research*.

Chant, S. (1997). Women-headed households: Diversity and dynamics in the developing world. *Springer.*

Chapman, K. A. (2015). Economic development and female labor force participation in the Middle East and North Africa: A test of the U-shape hypothesis. *Gettysburg Economic Review*, 8(1), 3.

Charmes, J. (2015). Time use across the world: Findings of a world compilation of time use surveys. *UNDP Human Development Report Office, background Paper*, New York.

Charmes, J. (2019). Definition and Measurement of Work and Unpaid Care Work. In *Dimensions of Resilience in Developing Countries* (pp. 143-157). Springer, Cham.

Charmes, J. (2019). The Unpaid Care Work and the Labour Market. An analysis of time use data based on the latest World Compilation of Time-use Surveys. *Geneva: ILO*.

Cherlin, A. (1996). Public & Private Families: An introduction.

Chiappori, P. (1997). Introducing Household Production in Collective Models of Labor Supply. *Journal of Political Economy*, 105(1), 191-209.

Chiappori, P. (1997). Introducing Household Production in Collective Models of Labor Supply. *Journal of Political Economy*, 105(1), 191-209.

Chiappori, P. A. (1988). Rational household labor supply. *Econometrica: Journal of the Econometric Society,* 63-90.

Chiappori, P. A. (1988). Rational household labor supply. *Econometrica: Journal of the Econometric Society*, 63-90.

Chopra, D., & Zambelli, E. (2017). No Time to Rest: Women's Lived Experiences of Balancing Paid Work and Unpaid Care Work. *Institute of Development Studies*.

Coleman, J. (1988). Social Capital in the Creation of Human Capital. *American Journal of Sociology*, 94, S95-S120.

Coltrane, S. (2000). Fathers' Role at Home is Under Negotiation. *Chronicle of Higher Education,* 45(6), B8-B8.

Connelly, R., & Kimmel, J. (2009). Spousal influences on parents' non-market time choices. *Review of Economics of the Household*, 7(4), 361-394.

Cundiff, J., & Vescio, T. (2016). Gender Stereotypes Influence How People Explain Gender Disparities in the Workplace. *Sex Roles*, 75(4), 126-138.

Datta Gupta, N., Smith, N., & Verner, M. (2008). The impact of Nordic countries' family friendly policies on employment, wages, and children. *Review of Economics of the Household*, 6(1), 65-89.

Deere, C. D. (2020). Household and class relations. *University of California Press.*

Del Boca, D., Aaberge, R., Colombino, U., Ermisch, J., Francesconi, M., Pasqua, S., & Strøm, S. (2014). Labour Market Participation of Women and Fertility: The Effect of Social Policies.

Del Boca, D., Pasqua, S., & Pronzato, C. (2005). Fertility and employment in Italy, France, and the UK. Labour, 19, 51-77.

Del Boca, D., Pasqua, S., & Pronzato, C. (2008). Motherhood and market work decisions in institutional context: a European perspective. *Oxford Economic Papers*, 61(suppl_1), i147-i171.

Donni, O. (2003). Collective household labor supply: Nonparticipation and income taxation. *Journal of Public Economics*, 87(5-6), 1179-1198.

Donni, O. (2008). Labor supply, home production, and welfare comparisons. *Journal of Public Economics,* 92(7), 1720-1737.

ECOSOC, U. (2012). Gender Statistics: Report of the Secretary-General. *E/CN, 3(2013)*, 10.

Elson, D. (1994). Micro, Meso and Macro: Gender and Economic Analysis in the Context of Policy Reform. The Strategic Silence: Gender and Economic Policy, edited by Isabella Bakker *(Atlantic Highlands, New Jersey,* 1994), 33-46.

Elson, D. (2017). Recognize, reduce, and redistribute unpaid care work: how to close the gender gap. In *New Labor Forum* (Vol. 26, No. 2, pp. 52-61). Sage CA: Los Angeles, CA: SAGE Publications.

Elson, D. (Ed.). (2000). Progress of the World's Women: UNIFEM Biennial Report. *United Nations Development Fund for Women.*

England, P. (1982). The failure of human capital theory to explain occupational sex segregation. *Journal of human resources*, 358-370.

England, P. (2009). 2. The Separative Self: Androcentric Bias in Neoclassical Assumptions. In Beyond economic man (pp. 37-53). *University of Chicago Press.*

England, P., & Folbre, N. (1999). The Cost of Caring. *The Annals of the American Academy of Political and Social Science*, 561, 39-51.

England, P., Farkas, G., Kilbourne, B. S., & Dou, T. (1988). Explaining occupational sex segregation and wages: Findings from a model with fixed effects. *American Sociological Review*, 544-558.

Esping-Andersen, G. (2002). Towards the good society, once again? Why we need a new welfare state, 1-25.

Esquivel, V. (2013). Care in households and communities: Background paper on conceptual issues, *Oxford: Oxfam.*

Evertsson, M. (2004). Facets of gender: Analyses of the family and the labour market *(Doctoral dissertation, Institutet för social forskning (SOFI)).*

Fedick, C. B., Pacholok, S., & Gauthier, A. H. (2005). Methodological issues in the estimation of parental time–Analysis of measures in a Canadian time-use survey. *Electronic International Journal of Time-Use Research,* 2(1), 67-87.

Ferber, M. A. (1986). The economics of women, men, and work. *Englewood Cliffs, NJ: Prentice-Hall.*

Fernández, R. (2007). Culture as Learning: The Evolution of Female Labour Force Participation Over a Century. IDEAS Working Paper Series from RePEc, *IDEAS Working Paper Series from RePEc*, 2007.

Fernández, R., Fogli, A., & Olivetti, C. (2004). Mothers and sons: Preference formation and female labor force dynamics. The Quarterly Journal of Economics, 119(4), 1249-1299.

Ferrant, G., Pesando, L. M., & Nowacka, K. (2014). Unpaid Care Work: The missing link in the analysis of gender gaps in labour outcomes. *Boulogne Billancourt: OECD Development Center.*

Ferrant, G., & Nowacka, K. (2015). Measuring the drivers of gender inequality and their impact on development: the role of discriminatory social institutions. *Gender & Development,* 23(2), 319-332.

Figart, D. M., & Mutari, E. (1998). Degendering work time in comparative perspective: Alternative policy frameworks. *Review of Social Economy*, 56(4), 460-480.

Finland, O. S., Varjonen, J., Niemi, I., Hamunen, E., & Pääkkönen, H. (1999, September). Proposal for a satellite account of household production. *OECD meeting of National Accounts Experts,* Paris.

Fogli, A., & Veldkamp, L. (2011). Nature or nurture? Learning and the geography of female labor force participation. *Econometrica,* 79(4), 1103-1138.

Folbre, N. (1994). Children as public goods. *The American Economic Review*, 84(2), 86-90.

Folbre, N. (1994). Who pays for the kids? Gender and the structures of constraint (Vol. 4). *Taylor & Francis US.*

Folbre, N. (2006). Measuring care: Gender, empowerment, and the care economy. *Journal of human development*, 7(2), 183-199.

Folbre, N., & Weisskopf, T. (1998). Did father know best? Families, markets and the supply of caring labour in Avner Ben-Ner and Louis Putterman (eds.) Economics, Values and Organizations.

Fontana, M., & Wood, A. (2000). Modeling the Effects of Trade on Women, at Work and at Home. World development, 28(7), 1173-1190.

Gardiner, J., Himmelweit, S., & Mackintosh, M. (1975). Women's domestic labour. *New Left Review*, 89(1), 47-58.

Gimenez-Nadal, J. I., & Molina, J. A. (2013). Parents' education as a determinant of educational childcare time. *Journal of Population Economics*, 26(2), 719-749.

Glass, J., & Camarigg, V. (1992). Gender, parenthood, and job-family compatibility. *American Journal of Sociology*, 98(1), 131-151.

Goldin, C. (1989). Life-cycle labor-force participation of married women: Historical evidence and implications. *Journal of Labor Economics*, 7(1), 20-47.

Goldin, C. (1991). The role of World War II in the rise of women's employment. *The American Economic Review*, 741-756.

Goldin, C. (1994). The U-shaped female labor force function in economic development and economic history (No. w4707). National Bureau of Economic Research.

Goldin, C. (1994). Understanding the gender gap: An economic history of American women. Equal employment opportunity: labor market discrimination and public policy, 17-26.

Goldin, C. (2006). The Quiet Revolution That Transformed Women's Employment, Education, and Family. *American Economic Review*, 96(2), 1-21.

Goldscheider, F., Bernhardt, E., & Lappegård, T. (2015). The Gender Revolution: A Framework for Understanding Changing Family and Demographic Behavior. *Population and Development Review*, 41(2), 207-239.

Goldschmidt-Clermont, L. (1989). Unpaid Work in the Household: a review of economic evaluation methods (No. 305.4 G623). *International Labour Office*, Ginebra (Suiza).

Grassi, F., Landberg, J., & Huyer, S. (2015). Running out of time: The reduction of women's work burden in agricultural production. *Rome: Food and Agricultural Organization of the United Nations.*

Greenstein, T. N. (2000). Economic dependence, gender, and the division of labor in the home: A replication and extension. *Journal of Marriage and Family*, 62(2), 322-335.

Grogger, J. (2003). The effects of time limits, the EITC, and other policy changes on welfare use, work, and income among female-headed families. *Review of Economics and statistics*, 85(2), 394-408.

Grogger, J., & Michalopoulos, C. (2003). Welfare dynamics under time limits. *Journal of Political Economy*, 111(3), 530-554.

Gronau, R. (1973). The intrafamily allocation of time: The value of the housewives' time. The American Economic Review, 63(4), 634-651.

Gronau, R. (1977). Leisure, home production, and work - the theory of the allocation of time revisited. *Journal of political economy*, 85(6), 1099-1123.

Grossbard-Shechtman, A. (1984). A Theory of Allocation of Time in Markets for Labour and Marriage. *The Economic Journal,* 94(376), 863-882.

Grossbard-Shechtman, S. (2003). A consumer theory with competitive markets for work in marriage. *The Journal of Socio-economics*, 31(6), 609-645.

Gupta, S. (1999). Gender display? A reassessment of the relationship between men's economic dependence and their housework hours. *In annual meeting of the American Sociological Association, Chicago.*

Gupta, S. (1999). The effects of transitions in marital status on men's performance of housework. *Journal of Marriage and the Family*, 700-711.

Guryan, J., Hurst, E., & Kearney, M. (2008). Parental Education and Parental Time with Children. *Journal of Economic Perspectives*, 22(3), 23-46.

Gutiérrez-Domènech, M. (2010). Parental employment and time with children in Spain. *Review of Economics of the Household,* 8(3), 371-391.

Haddad, L., Hoddinott, J., & Alderman, H. (1998). Intrahousehold resource allocation in developing countries: Models, methods, and policies. *Food and Nutrition Bulletin*, 19(1), 71-72.

Hallberg, D., & Klevmarken, A. (2003). Time for children: A study of parent's time allocation. Jo*urnal of Population Economics*, 16(2), 205-226.

Hamermesh, D. S. (2003). Timing, togetherness and time windfalls. In Family, household and work (pp. 1-23). *Springer, Berlin, Heidelberg.*

Han, W. J., Ruhm, C. J., & Waldfogel, J. (2007). Parental leave policies and parents' employment and leave-taking (No. 3244). *Institute of Labor Economics* (IZA).

Heckman, J. (1974). Life cycle consumption and labor supply: An explanation of the relationship between income and consumption over the life cycle. *The American Economic Review*, 188-194.

Heckman, J. (1974). Shadow prices, market wages, and labor supply. *Econometrica: journal of the econometric society*, 679-694.

Heckman, J. J. (2014). Sample selection bias as a specification error with an application to the estimation of labor supply functions (pp. 206-248). *Princeton University Press.*

Hegewisch, A., & Gornick, J. C. (2011). The impact of work-family policies on women's employment: a review of research from OECD countries. Community, Work & Family, 14(2), 119-138.

Hersch, J., & Stratton, L. (1994). Housework, Wages, and the Division of Housework Time for Employed Spouses. *The American Economic Review*, 84(2), 120-125.

Hersch, J., & Stratton, L. (1997). Housework, Fixed Effects, and Wages of Married Workers. *The Journal of Human Resources*, 32(2), 285-307.

Hochschild, A. Russell, & Machung, A. (2012). The second shift: working families and the revolution at home. *New York, N.Y.: Penguin Books.*

Holcombe, R. G. (1997). A theory of the theory of public goods. *The Review of Austrian Economics*, 10(1), 1-22.

Hotz, V. J., Kydland, F. E., & Sedlacek, G. L. (1988). Intertemporal preferences and labor supply. *Econometrica: Journal of the Econometric Society*, 335-360.

Howard, J. A., & Hollander, J. A. (1997). Gendered situations, gendered selves: A gender lens on social psychology (Vol. 2). *Rowman & Littlefield.*

ICPQL (Independent Commission on Population and Quality of Live). (1996). Caring for the future: Making the next decades provide a life worth living. *Report of the Commission on Population and Quality of Life. Oxford, Oxford University Press.*

INSTRAW (United Nations Research and Training Institute for the Advancement of Women). (1991). Methods of collecting and analyzing statistics on women in the informal sector and their contributions to national products: Results of regional workshops. *INSTRAW/BT/CRP.1. Santo Domingo. United Nations.*

Ironmonger, D. (1996). Counting outputs, capital inputs and caring labor: Estimating gross household product. *Feminist Economics*, 2(3), 37-64.

Ironmonger, D. (2004). Bringing up Bobby and Betty. Family Time: The Social Organization of Care". *London: Routledge*, 93-109.

Jacob, B. A., & Ludwig, J. (2012). The effects of housing assistance on labor supply: Evidence from a voucher lottery. *American Economic Review*, 102(1), 272-304.

Jenkins, S. P., & O'Leary, N. C. (1995). Modelling domestic work time. *Journal of Population Economics*, 8(3), 265-279.

Joshi, H. (1990). The Cash Opportunity Costs of Childbearing: An Approach To Estimation Using British Data. *Population Studies*, 44(1), 41-60.

Joshi, H. (1998). The opportunity costs of childbearing: More than mothers' business. *Journal of Population Economics*, 11(2), 161-183.

Juhn, C., & Murphy, K. M. (1997). Wage inequality and family labor supply. *Journal of labor economics*, 15(1, Part 1), 72-97.

Juster, F., & Stafford, F. (1991). The Allocation of Time: Empirical Findings, Behavioral Models, and Problems of Measurement. *Journal of Economic Literature,* 29(2), 471-522.

Kabeer, N. (1994). Reversed realities: Gender hierarchies in development thought. *Verso.*

Kalenkoski, C., Ribar, D., & Stratton, L. (2005). Parental Child Care in Single-Parent, Cohabiting, and Married-Couple Families: Time-Diary Evidence from the United Kingdom. *American Economic Review,* 95(2), 194-198.

Kalenkoski, C., Ribar, M., & Stratton, D. (2009). The influence of wages on parents' allocations of time to child care and market work in the United Kingdom. *Journal of Population Economics*, 22(2), 399-419.

Karimli, L., Samman, E., Rost, L., & Kidder, T. (2016). Factors and Norms Influencing Unpaid Care Work: Household survey evidence from five rural communities in Colombia, Ethiopia, the Philippines, Uganda and Zimbabwe. *Oxfam GB*.

Katz, E. (1997). The Intra-Household Economics of Voice and Exit. *Feminist Economics*, 3(3), 25-46.

Keck, W., & Saraceno, C. (2013). The Impact of Different Social-Policy Frameworks on Social Inequalities among Women in the European Union: The Labour-Market Participation of Mothers. *Social Politics*, 20(3), 297-328.

Kidder, T., & Pionetti, C. (2013). Participatory Methodology: Rapid Care Analysis-Guidance for Managers and Facilitators, *Oxford: Gendered Enterprise and markets Programme, Oxfam GB*.

Killingsworth, M. R. (1983). Labor supply (Vol. 17, pp. 103-204). *Cambridge: Cambridge university press.*

Killingsworth, M. R., & Heckman, J. J. (1986). Female labor supply: A survey. *Handbook of labor economics (Vol.1)*, 103-204.

Kimmel, J., & Connelly, R. (2007). Mothers' time choices caregiving, leisure, home production, and paid work. Journal of Human Resources, 42(3), 643-681.

Kleven, H., Landais, C., Posch, J., Steinhauer, A., & Zweimüller, J. (2019, May). Child penalties across countries: Evidence and explanations. *In AEA Papers and Proceedings* (Vol. 109, pp. 122-26).

Kohn, A. (1990). The brighter side of human nature: Altruism and empathy in everyday life. *Basic Books.*

Kooreman, P., & Kapteyn, A. (1987). A Disaggregated Analysis of the Allocation of Time within the Household. *Journal of Political Economy*, 95(2), 223-249.

Kotsadam, A., & Finseraas, H. (2011). The state intervenes in the battle of the sexes: Causal effects of paternity leave. *Social Science Research,* 40(6), 1611-1622.

Krueger, A. B., & Meyer, B. D. (2002). Labor supply effects of social insurance. *Handbook of public economics*, 4, 2327-2392.

Lechman, E., & Kaur, H. (2015). Economic growth and female labor force participation– verifying the U-feminization hypothesis. New evidence for 162 countries over the period 1990-2012.

Lloyd, C. B. (1975). Sex, discrimination, and the division of labor. *New York: Columbia University Press*

Lucas-Thompson, R. G., Goldberg, W. A., & Prause, J. (2010). Maternal work early in the lives of children and its distal associations with achievement and behavior problems: a meta-analysis. *Psychological bulletin*, 136(6), 915.

Lundberg, S. (1988). Labor supply of husbands and wives: A simultaneous equations approach. *The Review of Economics and Statistics,* 224-235.

Lundberg, S., & Pollak, R. (1993). Separate Spheres Bargaining and the Marriage Market. *Journal of Political Economy,* 101(6), 988-1010.

Lundberg, S., & Pollak, R. A. (1996). Bargaining and distribution in marriage. *Journal of economic perspectives,* 10(4), 139-158.

Lundberg, S., & Pollak, R. A. (2008). Family decision-making. In L. Blime and S. Durland (Eds.), The New Palgrave dictionary of economics, 2nd Edition. *New York: Palsgrave MacMillan*.

Lundberg, S., & Rose, E. (2000). Parenthood and the earnings of married men and women. *Labour Economics*, 7(6), 689-710.

MacDonald, M., Phipps, S., & Lethbridge, L. (2005). Taking its toll: The influence of paid and unpaid work on women's well-being. *Feminist Economics*, 11(1), 63-94.

Macpherson, D. A., & Hirsch, B. T. (1995). Wages and gender composition: why do women's jobs pay less? *Journal of labor Economics,* 13(3), 426-471.

MaCurdy, T. E. (1981). An empirical model of labor supply in a life-cycle setting. *Journal of political Economy*, 89(6), 1059-1085.

Maestre, M., & Thorpe, J. (2016). Understanding Unpaid Care Work to Empower Women in Market Systems Approaches, *The BEAM Exchange*.

Maher, J. (2009). Accumulating care: Mothers beyond the conflicting temporalities of caring and work. *Time & Society,* 18(2-3), 231-245.

Mahony, R. (1995). Kidding ourselves: Breadwinning, babies, and bargaining power. *Basic Books*.

Manser, M., & Brown, M. (1980). Marriage and household decision-making: A bargaining analysis. *International economic review*, 31-44.

Maurin, E., & Moschion, J. (2009). The social multiplier and labor market participation of mothers. *American Economic Journal*: Applied Economics, 1(1), 251-72.

Mcginn, K., Ruiz Castro, M., & Lingo, E. (2019). Learning from Mum: Cross-National Evidence Linking Maternal Employment and Adult Children's Outcomes. *Work, Employment and Society*, 33(3), 374-400.

Mencarini, L., & Tanturri, M. L. (2004). Time use, family role-set and childbearing among Italian working women. *Genus*, 111-137.

Mills, M., Mencarini, L., Tanturri, M. L., & Begall, K. (2008). Gender equity and fertility intentions in Italy and the Netherlands. *Demographic research*, 18, 1-26.

Mincer, J. (1962). Labor force participation of married women: A study of labor supply. In Aspects of labor economics (pp. 63-105). *Princeton University Press*.

Mincer, J. (1985). Inter-country comparisons of labor force trends and of related developments: an overview. *Journal of labor economics, 3(1, Part 2)*, S1-S32.

Mincer, J., & Polachek, S. (1974). Family Investments in Human Capital: Earnings of Women. *Journal of Political Economy*, 82(2), S76-S108.

Minnich, E. (2010). Transforming Knowledge. 2Nd Edition. *Temple University Press*.

Miranda, V. (2011). Cooking, caring and volunteering: unpaid work around the world. *OECD Social, Employment and Migration Working Papers, No. 116, OECD Publishing*

Moffitt, R. A. (2002). Welfare programs and labor supply. *Handbook of public economics (Vol. 4)*, 2393-2430.

Molyneux, M. (1979). Beyond the domestic labour debate. *New Left Review*, 116(3), 27.

Morrison, C., Jutting, J., Dayton, J., & Drechsler, D. (2008). Measuring Gender (in) Equality.

Mörtvik, R., & Spånt, R. (2005). Does gender equality spur growth?. Organisation for Economic Cooperation and Development. The OECD Observer, (250), 14.

Mroz, T. A. (1987). The sensitivity of an empirical model of married women's hours of work to economic and statistical assumptions. *Econometrica: Journal of the econometric society*, 765-799.

Nations, U. (2005). Guide to producing statistics on time use: measuring paid and unpaid work. *New York: Department of Economic and Social Affairs of the United Nations Secretariat.*

Nepomnyaschy, L., & Waldfogel, J. (2007). Paternity leave and fathers'involvement with their young children: Evidence from the American Ecls–B. Community, Work and Family, 10(4), 427-453.

Ngai, L. R., & Petrongolo, B. (2017). Gender gaps and the rise of the service economy. *American Economic Journal: Macroeconomics,* 9(4), 1-44.

Noddings, N. (2013). Caring: A relational approach to ethics and moral education. *University of California Press.*

Olivetti, C., & Petrongolo, B. (2017). The economic consequences of family policies: lessons from a century of legislation in high-income countries. *Journal of Economic Perspectives*, 31(1), 205-30.

Osmond, W. M., & Thorne, B. (1993). Feminist theories: The social construction of gender in families.

Pacelli, L., Pasqua, S., & Villosio, C. (2013). Labor Market Penalties for Mothers in Italy. *Journal of Labor Research*, 34(4), 408-432.

Palmer, I. (1994). Social and Gender Issues in Macro-economic Policy Advice. *Social Policy Series No. 13. GTZ.*

Pasqua, S., & Mancini, A. (2012). Asymmetries and interdependencies in time use between Italian parents. *Applied Economics*, 44(32), 4153-4171.

Perrons, D. (2000). Care, paid work, and leisure: rounding the triangle. *Feminist Economics,* 6(1), 105-114.

Pigou, A. C. (1932). The economics of welfare. *Palgrave Macmillan*.

Pollak, R. A. (2003). Gary Becker's contributions to family and household economics. *Review of Economics of the Household*, 1(1), 111-141.

Presser, H. (1994). Employment Schedules Among Dual-Earner Spouses and the Division of Household Labor by Gender. *American Sociological Review*, 59(3), 348-364.

Pylkkänen, E., & Smith, N. (2003). Career Interruptions Due to Parental Leave: A Comparative Study of Denmark and Sweden. *IDEAS Working Paper Series from RePEc*, 2003.

Rapoport, B., Sofer, C., & Solaz, A. (2011). Household production in a collective model: Some new results. *Journal of Population Economics*, 24(1), 23-45.

Razavi, S. (2005). The relevance of women's unpaid work to social policy in developing countries. In *Global Conference on Unpaid Work and the Economy: Gender, Poverty and the Millennium Development Goals* (pp. 1-3).

Razavi, S. (2007). The political and social economy of care in a development context: Conceptual issues, research questions and policy options. *Trabajo y empleo*.

Reid, M. G. (1934). Economics of household production.

Rendlemann, J., & Rendleman, J. (1986). Caring: A Feminine Approach to Ethics and Moral Education. In The Personalist Forum (Vol. 2, No. 2, pp. 147-150). *University of Illinois Press.*

Ribar, D. C. (1992). Child care and the labor supply of married women: Reduced form evidence. Journal of human resources, 134-165.

Rizavi, S. S., & Sofer, C. (2010). Household division of labor: Is there any escape from traditional gender roles?

Robinson, John P., Bianchi, Suzanne M., & Presser, Stanley. (2001). Family Interaction, Social Capital, and Trends in Time Use (FISCT), 1998-1999: [United States]; Version 1.

Ross, C. E. (1987). The division of labor at home. *Social forces*, 65(3), 816-833.

Sabatelli, R. M., & Shehan, C. L. (1993). Exchange and resource theories. S. 385–411 in: Pauline G. Boss, William J. Doherty, Ralph LaRossa, Walter R. Schumm und Suzanne K. Steinmetz (Hg.): Sourcebook of family theories and methods. A contextual approach.

Samuelson, P. A. (1954). The pure theory of public expenditure. *The review of economics and statistic*s, 36(4), 387-389.

Sawhill, I. V., & Guyot, K. (2020). The Middle Class Time Squeeze.

Sayer, L. C. (2001). Time use, gender and inequality: Differences in men's and women's market, nonmarket, and leisure time. *University of Maryland, College Park*.

Schafer, D., & Schwarz, N. (1992). The value of household production in the federal republic of Germany. *Federal Statistical Office,* Wiesbaden.

Schotter, A. (1981). The economic theory of social institutions. *Cambridge Books*.

Sen, A. (1985). Commodities and capabilities. *Amsterdam: North-Holland*.

Sen, A. (1992). Inequality reexamined. *Delhi Oxford University Press*.

Sen, A. (2009). The idea of justice. *Cambridge (Mass.): The Belknap press of Harvard university press*.

Shelton, Beth Anne. (1992). Women, men, and time: gender differences in paid work, housework, and leisure. *New York: Greenwood Press*.

Shivakumar, S. (1997). Valuing women's work: Theoretical constraints in determining the worth of household and other non-market activity. *In Workshop on Integrating Paid and Unpaid Work into National Policies, organized by UNDP, United Nations Statistical Division, UNIFEM, the Ministry of Foreign Affairs of the Republic of Korea, and the Women's Development Institute, and held in Seoul (pp. 28-30)*.

Smith, J. P., & Ward, M. P. (1985). Time-series growth in the female labor force. *Journal of Labor Economics, 3(1, Part 2)*, S59-S90.

Sorrentino, C. (1983). International comparisons of labor force participation, 1960-81. *Monthly Lab. Rev.*, 106, 23.

Sousa-Poza, A., Schmid, H., & Widmer, R. (2001). The allocation and value of time assigned to housework and child-care: An analysis for Switzerland. *Journal of Population Economics*, 14(4), 599-618.

South, S., & Spitze, G. (1994). Housework in Marital and Nonmarital Households. *American Sociological Review,* 59(3), 327-347.

Stark, A. (2005). Warm hands in cold age–on the need of a new world order of care. *Feminist economics*, 11(2), 7-36.

Stiglitz, J. E., Sen, A., & Fitoussi, J. P. (2009). Report by the commission on the measurement of economic performance and social progress.

Thomas, D. (1990). Intra-household resource allocation: An inferential approach. *Journal of human resources*, 635-664.

Twiggs, J. E., McQuillan, J., & Ferree, M. M. (1999). Meaning and measurement: Reconceptualizing measures of the division of household labor. *Journal of Marriage and the Family*, 712-724.

Ullmann-Margalit, E. (2015). The emergence of norms. *Oxford: Oxford University press.*

UNDP (United Nations Development Programme). (1995). Human Development Report 1995. *New York, NY, Oxford University Press.*

Van Staveren, I. (2005). Modelling care. *Review of Social Economy,* 63(4), 567-586.

Waldfogel, J. (1997). The effect of children on women's wages. *American sociological review*, 209-217.

Waldfogel, J. (1998). Understanding the" family gap" in pay for women with children. *Journal of economic Perspectives*, 12(1), 137-156.

Ward, D. (1993). The kin care trap: The unpaid labor of long-term care. *Socialist Review*, 23(1), 83-105.

Waring, M. & Steinem G. (1988). If women counted: A new feminist economics. San Francisco*: Harper & Row.*

Weinrobe, M. (1974). Household production and national production: an improvement of the record. *Review of Income and Wealth*, 20(1), 89-102.

Welch, F. (1997). Wages and participation. *Journal of Labor Economics, 15(1, Part 2)*, S77-S103.

Wellington, A. J. (1993). Changes in the male/female wage gap, 1976-85. *Journal of Human resources*, 383-411.

West, C., & Zimmerman, D. (1987). Doing Gender. *Gender & Society*, 1(2), 125-151.

Wilkie, J., Ferree, M., & Ratcliff, K. (1998). Gender and Fairness: Marital Satisfaction in Two-Earner Couples. *Journal of Marriage and Family*, 60(3), 577-594.

Williams, J. (2001). Unbending gender: Why family and work conflict and what to do about it. *Oxford University Press.*

Wood, C. (1997). The First World/Third Party Criterion: A Feminist Critique of Production Boundaries in Economics. *Feminist Economics*, 3(3), 47-68.

World Bank. (2014). World development indicators 2014. *The World Bank.*

Zhelyazkova, N. (2013). Male use of parental leave in Luxembourg: Empirical analysis of administrative records.

Zilanawala, A. (2013). Women's time poverty: Differences by family structure, employment, and gender ideology, *Columbia University*.

Zukewich, N. L. (2003). Using time use data to measure and value unpaid caregiving work.

6. APPENDIX

North Africa (3 countries /3 surveys)	Arab countries (4 countries /5 surveys)	Sub-Saharan Africa (10 countries /13 surveys)	Eastern Asia (5 countries /12 surveys)	South-Eastern Asia and the Pacific (4 countries /9 surveys)	Southern Asia (3 countries /3 surveys)	Central and Western Asia (5 countries /6 surveys)	Latin America (12 countries /15 surveys)	Northern, Western and Southern Europe (22 countries /42 surveys)	Eastern Europe (6 countries/ 7 surveys)	Northern America (2 countries /19 surveys)
Algeria (2012)	Iraq (2007)	Benin (1998) (2015)	China (2008)	Australia (1992) (1997) (2006)	India (1998-99)	Armenia (2008)	Argentina (Buenos Aires) (2005)	Albania (2010-11)	Belarus (2014-15)	Canada (1992) (1998) (2005) (2010) (2015)
Morocco (2011-12)	Oman (2007-08)	Cameroon (2014)	Japan (2001) (2006) (2011) **(2016)**	Cambodia (2004)	Iran, Islamic Republic of (2009)	Azerbaijan (2008) (2012)	Chile (2015)	Austria (2008-09)	Bulgaria (2009-10)	United States (2003) (2004) (2005) (2006) (2007) (2008) (2009) (2010) (2011) (2012) (2013) (2014) (2015) (2016)
Tunisia (2005-06)	Occupied Palestinian Territory (1999-2000) (2012-13)	Cabo Verde (2012)	Korea, Republic of (1999) (2004) (2009) (2014)	New Zealand (1998-99) (2009-10)	Pakistan (2007)	Kazakhstan (2012)	Colombia (2012-13)	Belgium (1999) (2005) (2013)	Hungary (1999-2000) (2009-10)	
	Qatar (2012-13)	Ethiopia (2013)	Mongolia (2007) (2011)	Thailand (2004) (2009) (2014-15)		Kyrgyzstan (2010)	Costa Rica (2004)	Denmark (2001)	Moldova, Republic of (2011-12)	
		Ghana (2009)	Taiwan, China (2004)			Turkey (2006) (2014-15)	Cuba (2001)	Estonia (1999-2000) (2009-10)	Poland (2003-04)	
		Madagascar (2001)					Ecuador (2012)	Finland (1979) (1987) (1999) (2009)	Romania (2011-12)	
		Mali (2008)					El Salvador (2010)	France (1974) (1986) (1999) (2010)		
		Mauritius (2003)					Mexico (2002) (2009) (2014)	Germany (2001-02) (2012)		
		South Africa (2000) (2010)					Panama (2011)	Greece (2013-14)		
		Tanzania, United Republic of (2006) (2014)					Paraguay (2016)	Ireland (2005)		
							Peru (2010)	Italy (1988-89) (2002-03) (2008-09) (2013-14)		
							Uruguay (2007) (2013)	Latvia (2003)		
								Lithuania (2003)		
								Macedonia, the Former Yugoslav Republic of (2014-15)		
								Netherlands (2005-06)		
								Norway (1970) (1980) (1990) (2000) (2010)		
								Portugal (1999)		
								Serbia (2010-11)		
								Slovenia (2000-01)		
								Spain (2002-03) (2009-10) (2010-11)		
								Sweden (2000-01)		
								United Kingdom (2000) (2005) (2015)		

Table 1: List of Time-use Surveys by region and year (Source: Charmes, 2019).

90

Cabo Verde 392 73 25
Mexico 251 153 19
Colombia 195 192 6
Costa Rica 312 68 5
Chile 224 94 30
Azerbaijan 316 29 2
Iraq 300 45
Peru 258 68 13
Moldova, Republic of 270 34 26
Turkey 234 41 55
Tunisia 288 32 6
Albania 270 43 1
Algeria 282 30
Armenia 266 46
Australia 239 64 8
Uruguay 222 68 19
Lithuania 267 26 15
Iran, Islamic Republic of, urban average 305 2
Italy 286 19
Portugal 258 23 21
Serbia 266 25 10
Panama urban 201 85 15
Morocco 300
Bulgaria 267 16 15
India 297
Poland 243 39 13
Occupied Palestinian Territory 217 59 17
Ethiopia 231 47 13
Belarus 242 34 15
Mongolia 232 54 4
Pakistan 231 55 1
Slovenia 251 30 5
Ireland 185 94 7
Latvia 239 24 14
Mauritius 229 44 4
Greece 229 28 20
Kyrgyzstan 250 20 5
Oman 274
Ecuador 273
Germany 227 27 15
Austria 222 39 8
Hungary 240 28 0
Romania 264
United States 187 42 35
Spain 211 36 16
Estonia 217 31 13
Canada 194 39 24
Argentina (BA) 183 58 16
Japan 222 27 5
Netherlands 191 42 21
New Zealand 199 48
Kazakhstan 246
Denmark 197 35 11
Mali 241
Sweden 203 37
Tanzania, United Republic of 198 41 1
China 203 31 3
France 201 31 2
United Kingdom 180 32 20
Norway 188 42
South Africa 195 29 5
El Salvador 136 49 43
Macedonia, the Former Yugoslav Republic of 201 22 1
Madagascar 187 28 7
Benin 189 32
Ghana 155 53 12
Paraguay 144 63 7
Belgium 186 29
Cameroon 170 38 4
Finland 178 27 6
Qatar 199
Cambodia 188
Korea, Republic of 146 40 2
Thailand 139 31 3
Taiwan, China 168

Minutes per day 0 100 200 300 400 500 600

- Providing unpaid domestic services for own final use within household
- Providing unpaid caregiving services to household members
- Providing community services and help to other households

Table 2: Time spent by women in the three categories of unpaid care work. Country average, 75 countries (Source: Charmes, 2019).

Country	Providing unpaid domestic services for own final use within household	Providing unpaid caregiving services to household members	Providing community services and help to other households
Cabo Verde	204	22	20
Moldova, Republic of	169	8	23
Sweden	168	26	15
Denmark	151	20	15
Norway	149	31	15
Australia	130	27	21
Canada	131	18	14
Estonia	144	1	14
United States	122	19	27
Slovenia	145	1	10
Lithuania	141	8	17
Bulgaria	142	6	16
Germany	137	10	17
Poland	127	15	15
Chile	101	41	13
Belarus	124	13	14
France	130	14	4
Serbia	126	10	12
Austria	118	19	9
Mexico	79	58	9
Latvia	126	5	12
New Zealand	122	19	
Finland	121	11	7
Mongolia	111	20	8
Peru	101	26	9
Netherlands	95	19	19
Uruguay	88	35	10
Belgium	117	15	
United Kingdom	101	15	15
Ireland	91	29	9
Panama urban	97	23	8
Hungary	114	12	1
Spain	93	21	12
Romania	125		
Ethiopia	87	8	30
Colombia	51	66	3
Azerbaijan	103	10	3
Oman	115		
Kazakhstan	111		
Qatar	110		
Italy	97		1
Greece	81	4	12
Costa Rica	82	19	
Kyrgyzstan	82	9	9
South Africa	88	5	3
China	80	1	3
Argentina (BA)	66	1	5
Turkey	45	22	5
Macedonia, the Former Yugoslav Republic of	71	8	6
Ecuador	78	37	
Iran, Islamic Republic of, urban average	75		2
Japan	63	8	6
Portugal	61	6	10
Cameroon	53	14	7
Mauritius	56	13	4
Ghana	40	11	17
Paraguay	33	28	3
Tanzania, United Republic of	52	9	3
Armenia	54	9	
Iraq	52		
Thailand	44	10	2
Occupied Palestinian Territory	35	9	11
Tunisia	42	8	4
Algeria	42	4	
Albania	45	2	
Madagascar	36	8	7
Morocco	43		
El Salvador	4	28	
Benin	39	3	
Taiwan, China	41		
Korea, Republic of	27	10	2
India	31		
Pakistan	17	9	2
Mali	21		
Cambodia	18		

Minutes per day
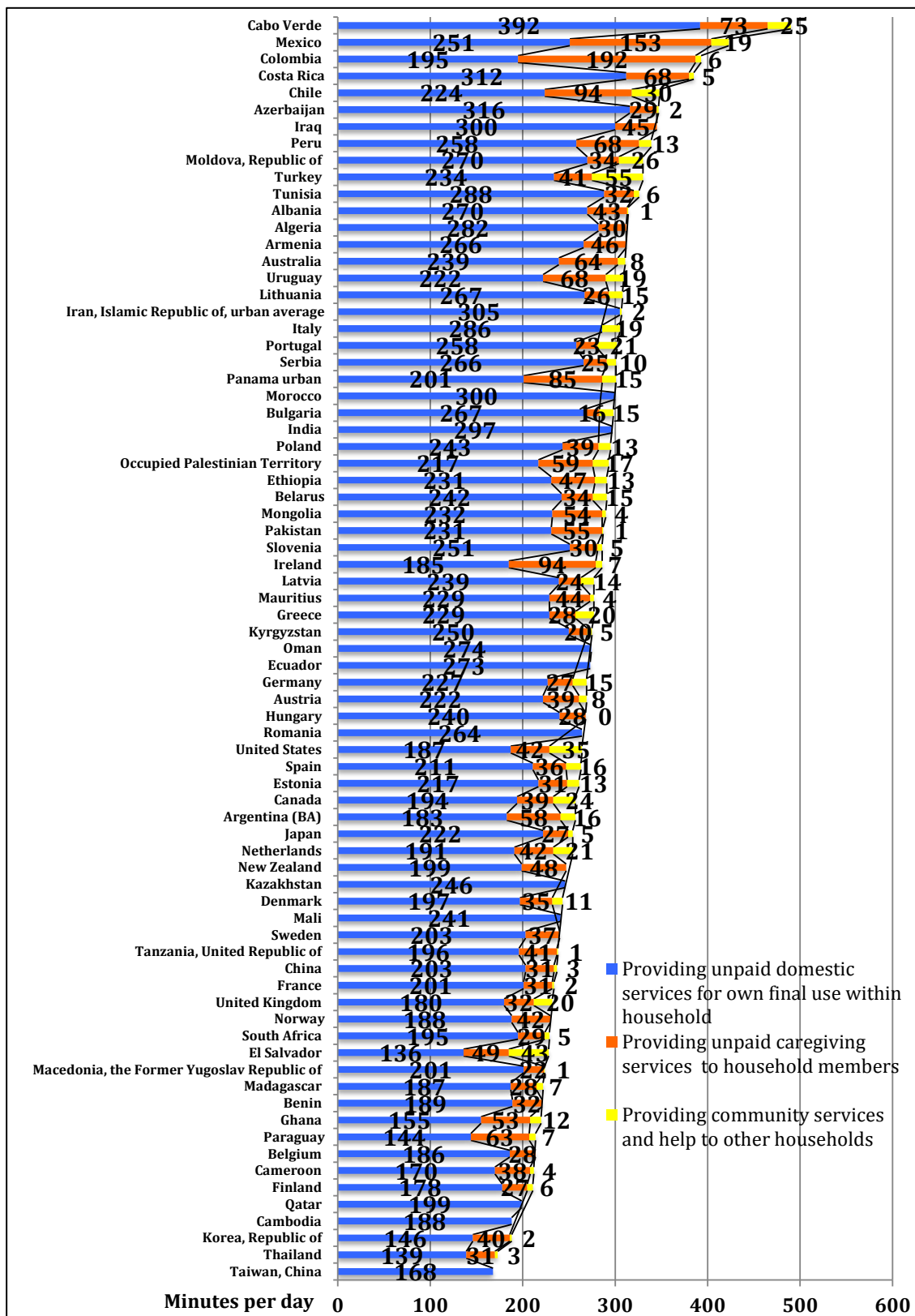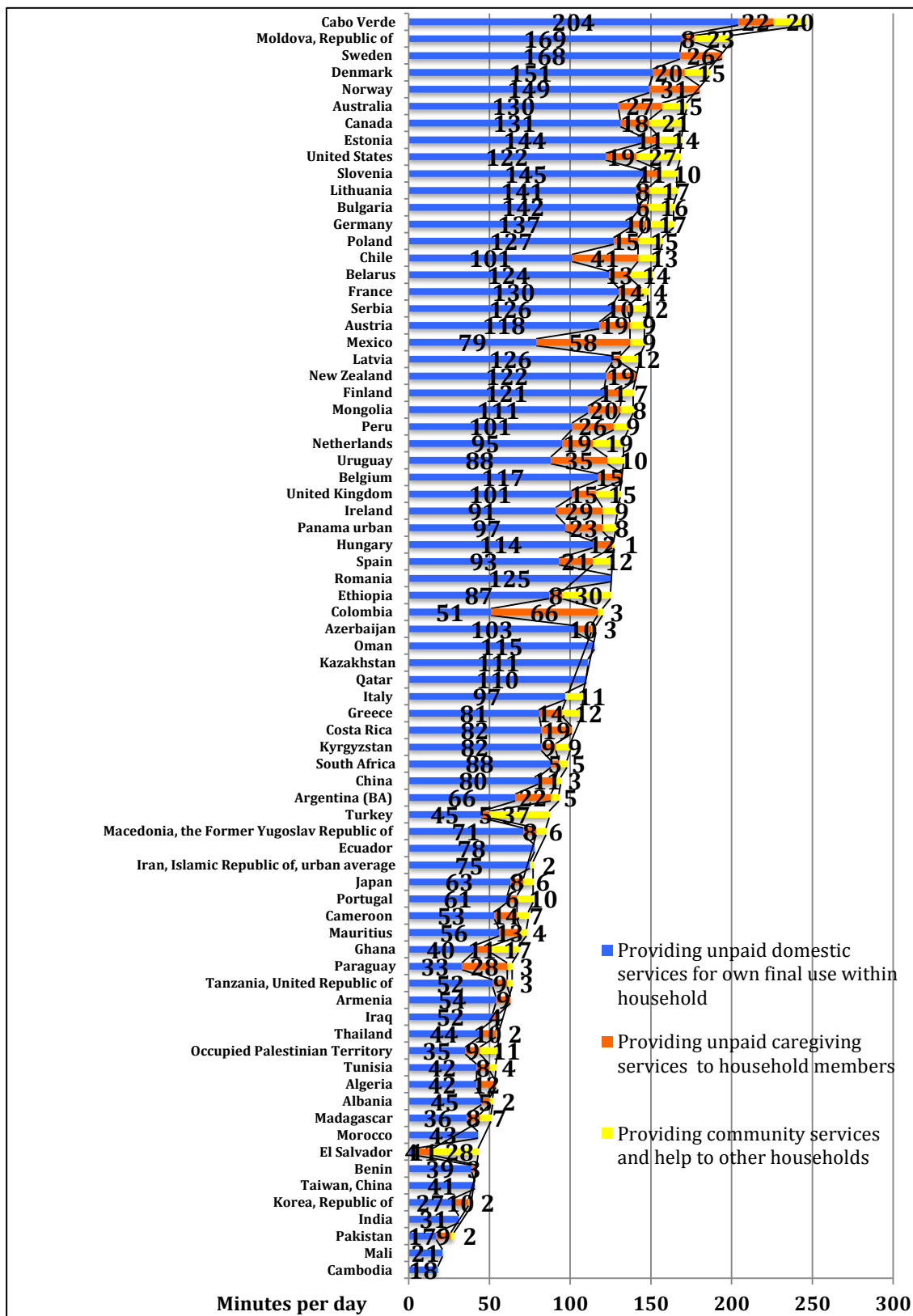
Table 3: Time spent by men in the three categories of unpaid care work. Country average, 75 countries (Source: Charmes, 2019).

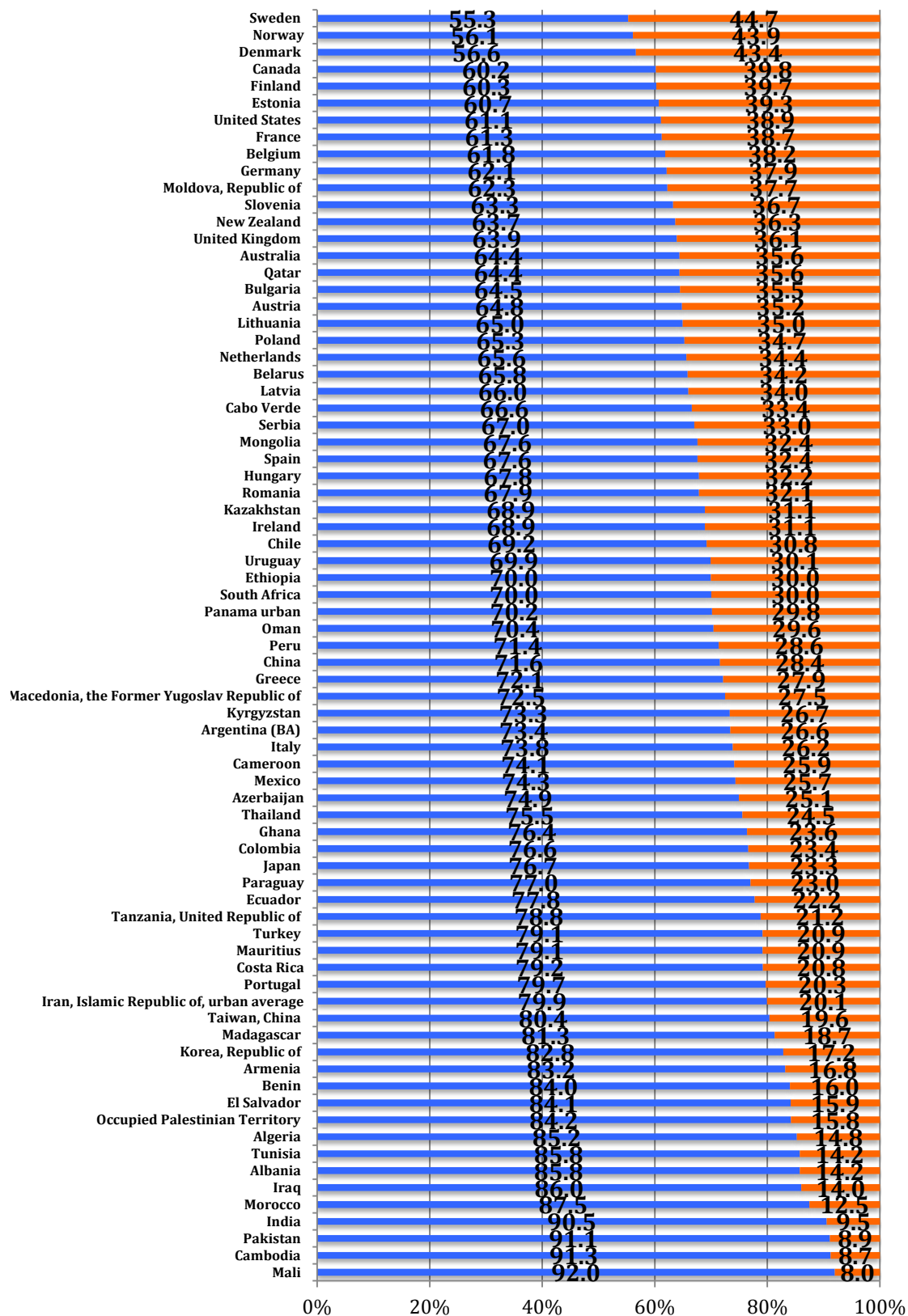Table 4: Share of total unpaid care work of women and men. Country average, 75 countries (Source: Charmes, 2019).

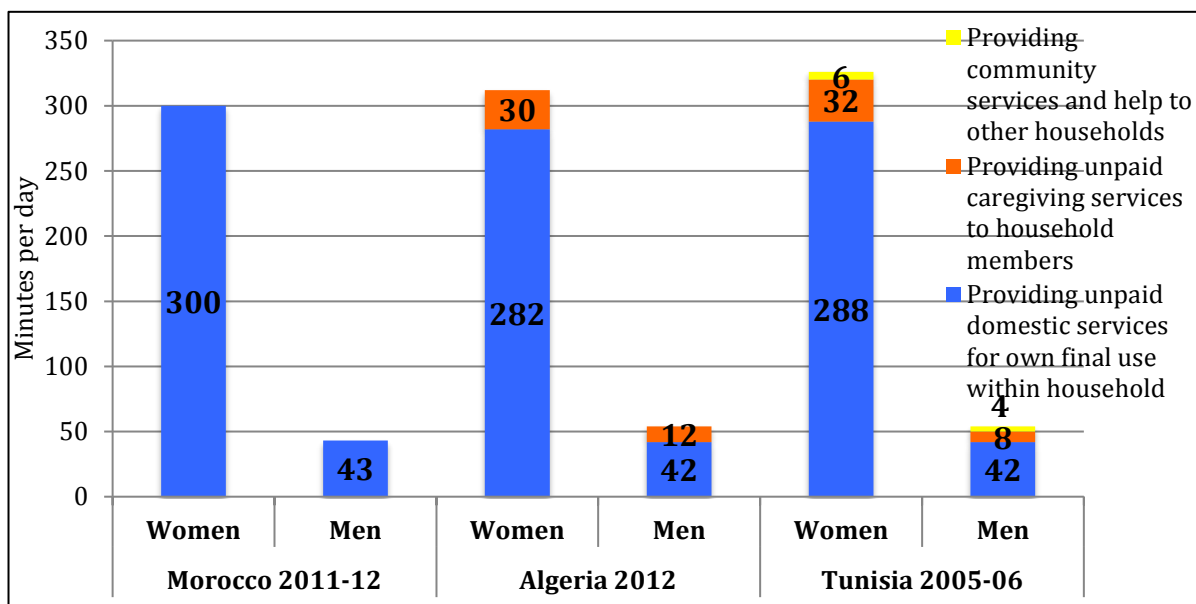| Country	Women (%)	Men (%)
Sweden	55.3	44.7
Norway	56.1	43.9
Denmark	56.6	43.4
Canada	60.2	39.8
Finland	60.3	39.7
Estonia	60.7	39.3
United States	61.1	38.9
France	61.3	38.7
Belgium	61.8	38.2
Germany	62.1	37.9
Moldova, Republic of	62.3	37.7
Slovenia	63.3	36.7
New Zealand	63.7	36.3
United Kingdom	63.9	36.1
Australia	64.4	35.6
Qatar	64.4	32.9
Bulgaria	64.5	35.5
Austria	64.8	35.2
Lithuania	65.0	35.0
Poland	65.3	34.7
Netherlands	65.6	34.4
Belarus	65.8	34.2
Latvia	66.0	34.0
Cabo Verde	66.6	33.4
Serbia	67.0	33.0
Mongolia	67.6	32.4
Spain	67.6	32.4
Hungary	67.8	32.2
Romania	67.9	32.1
Kazakhstan	68.9	31.1
Ireland	68.9	31.1
Chile	69.2	30.8
Uruguay	69.9	30.1
Ethiopia	70.0	30.0
South Africa	70.0	30.0
Panama urban	70.2	29.8
Oman	70.4	29.6
Peru	71.4	28.6
China	71.6	28.4
Greece	72.1	27.9
Macedonia, the Former Yugoslav Republic of	72.5	27.5
Kyrgyzstan	73.3	26.7
Argentina (BA)	73.4	26.6
Italy	73.8	26.2
Cameroon	74.1	25.9
Mexico	74.3	25.7
Azerbaijan	74.9	25.1
Thailand	75.3	24.9
Ghana	76.4	23.6
Colombia	76.6	23.4
Japan	76.7	23.3
Paraguay	77.0	23.0
Ecuador	77.8	22.2
Tanzania, United Republic of	78.8	21.2
Turkey	79.1	20.9
Mauritius	79.1	20.9
Costa Rica	79.2	20.8
Portugal	79.7	20.3
Iran, Islamic Republic of, urban average	79.9	20.1
Taiwan, China	80.4	19.6
Madagascar	81.3	18.7
Korea, Republic of	82.8	17.2
Armenia	83.2	16.8
Benin	84.0	16.0
El Salvador	84.1	15.9
Occupied Palestinian Territory	84.2	15.8
Algeria	85.2	14.8
Tunisia	85.8	14.2
Albania	85.8	14.2
Iraq	86.0	14.0
Morocco	87.5	12.5
India	90.5	9.5
Pakistan	91.1	8.9
Cambodia	91.3	8.7
Mali	92.0	8.0

Table 5: Time spent by women and men in the three categories of unpaid care work by region: Northern Africa, 3 countries
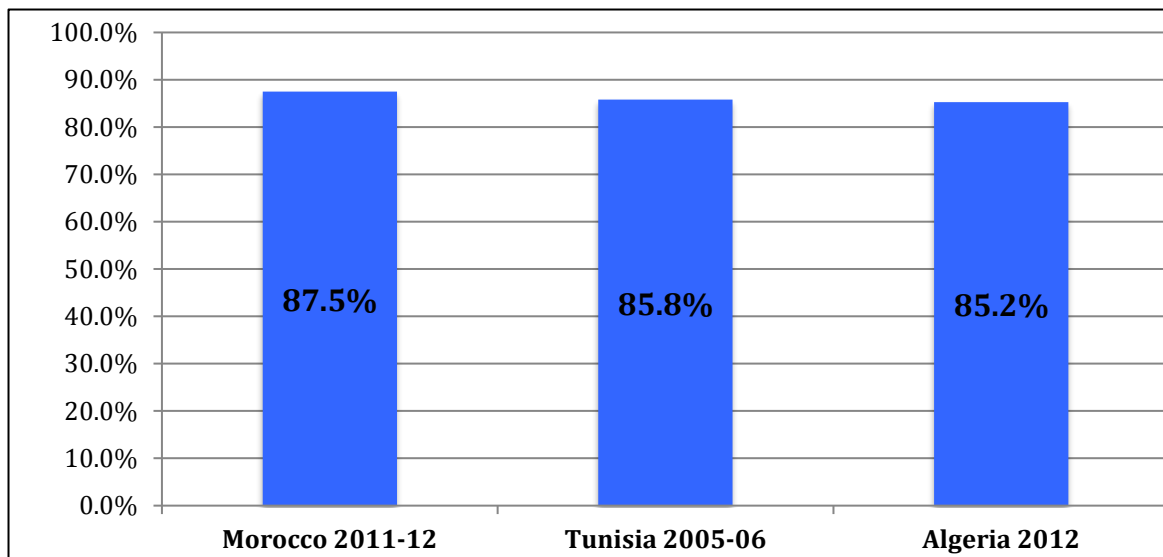

Table 6: Share of women in total unpaid care work by region: Northern Africa, 3 countries
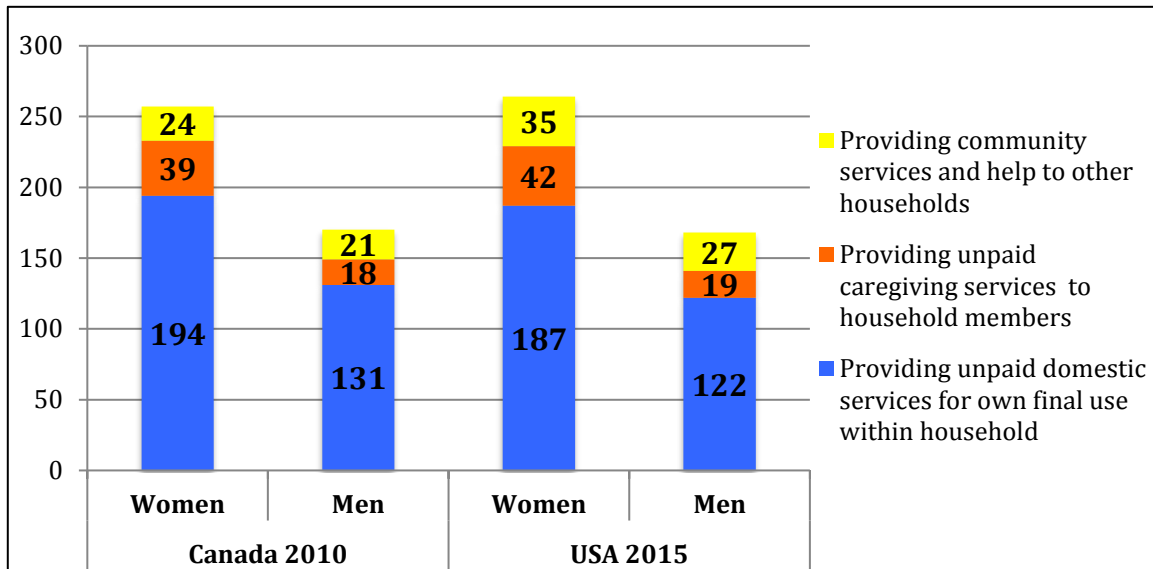
Table 7: Time spent by women and men in the three categories of unpaid care work by region: Northern America
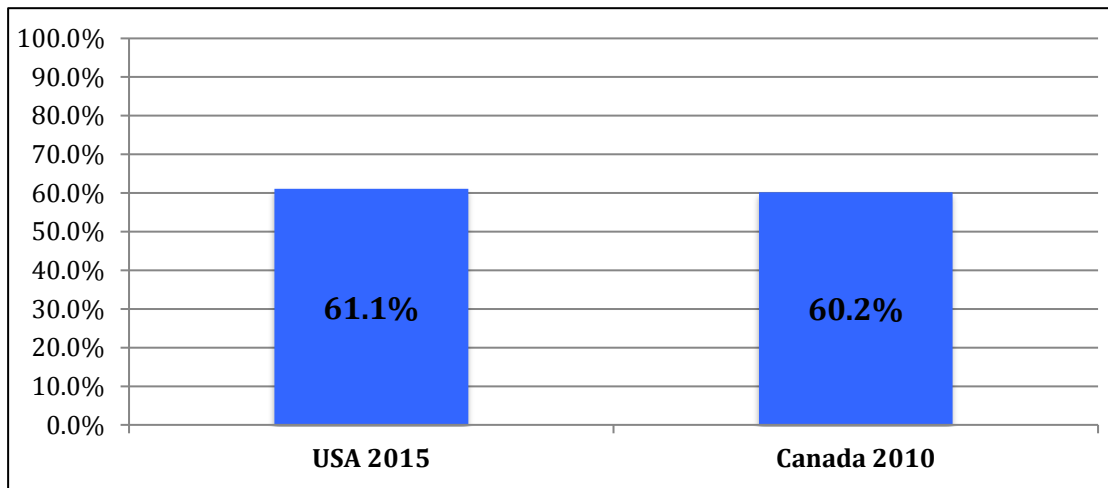

Table 8: Share of women in total unpaid care work by region: Northern America

Table 9: Time spent by women and men in the three categories of unpaid care work by region: Eastern Asia, 5 countries

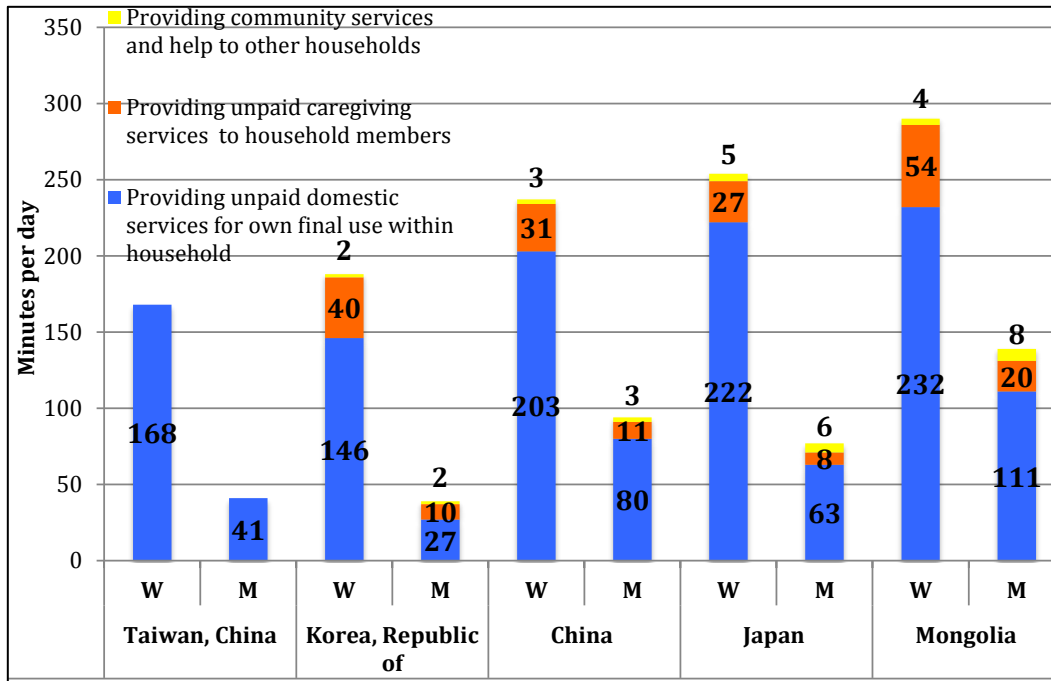Table 10: Share of women in total unpaid care work by region: Easter Asia, 5 countries
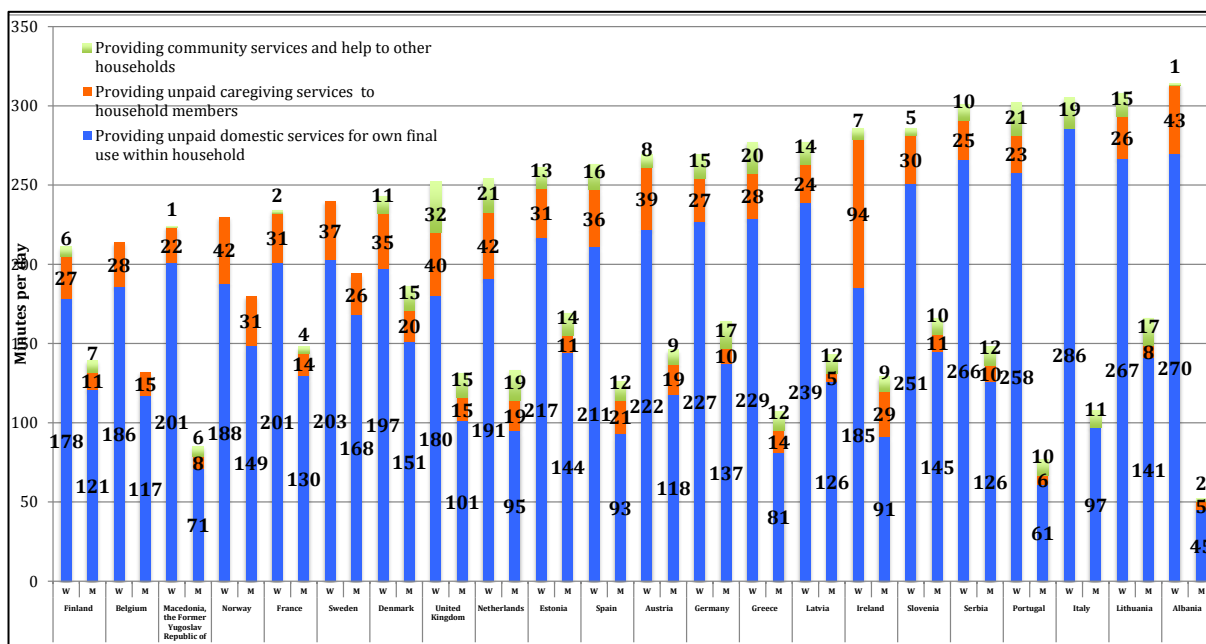
Table 9: Time spent by women and men in the three categories of unpaid care work by region: Europe, 22 countries.
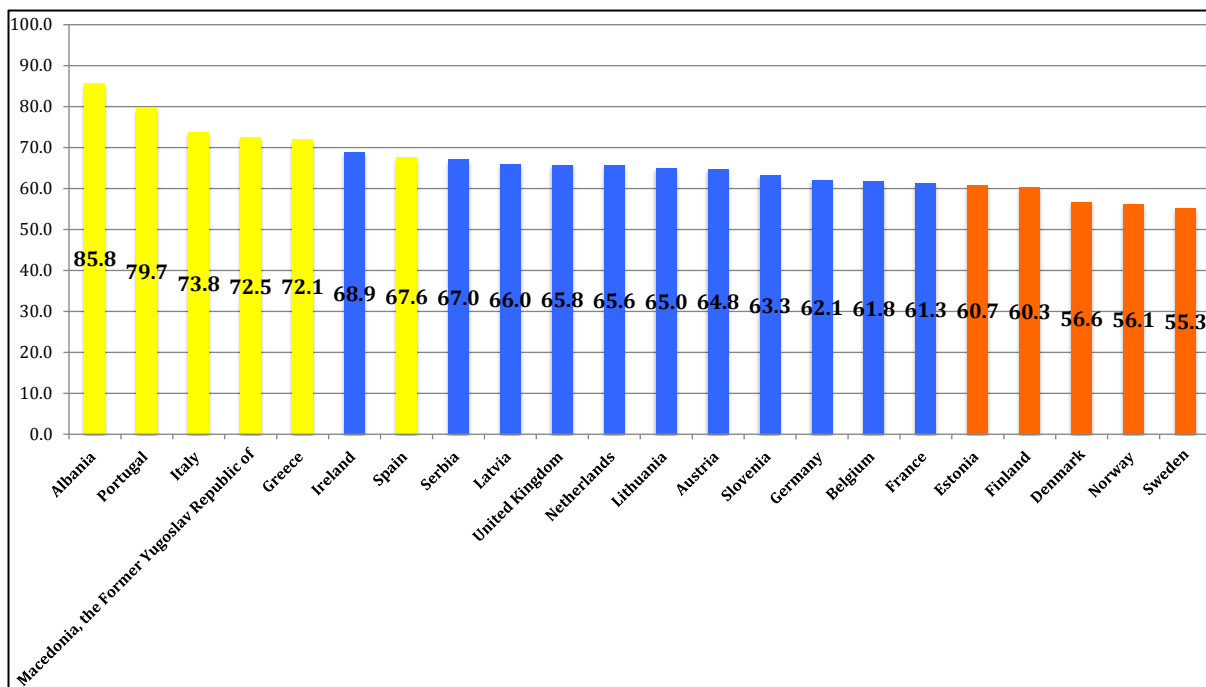
Table 10: Share of women in total unpaid care work by region: Northern (in red), Southern (in yellow), and Western (in blue) Europe, 22 countries

97

Table 11: Share of women in total unpaid care work by region: Developed countries (high income), 33 countries.

Table 12: Share of women in total unpaid care work by region: Emerging countries (middle income), 36 countries.

Benin	Madagascar	Tanzania, United	Mali	Ethiopia	Cabo Verde
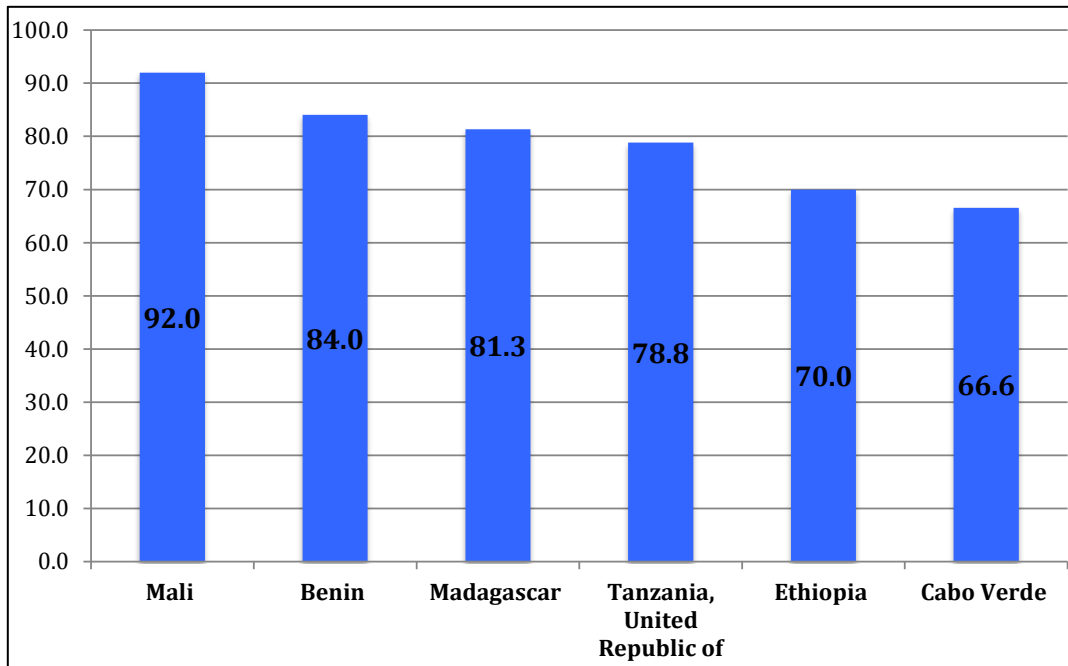
Table 13: Share of women in total unpaid care work by region: Developing countries (low income), 6 countries.
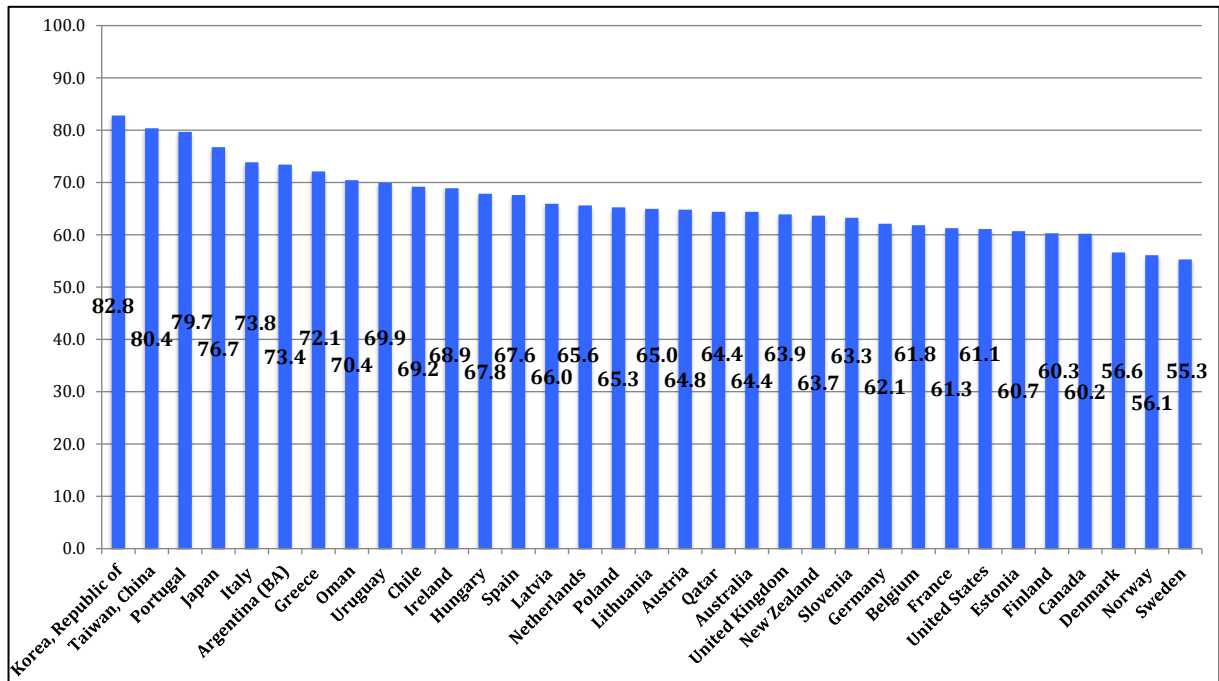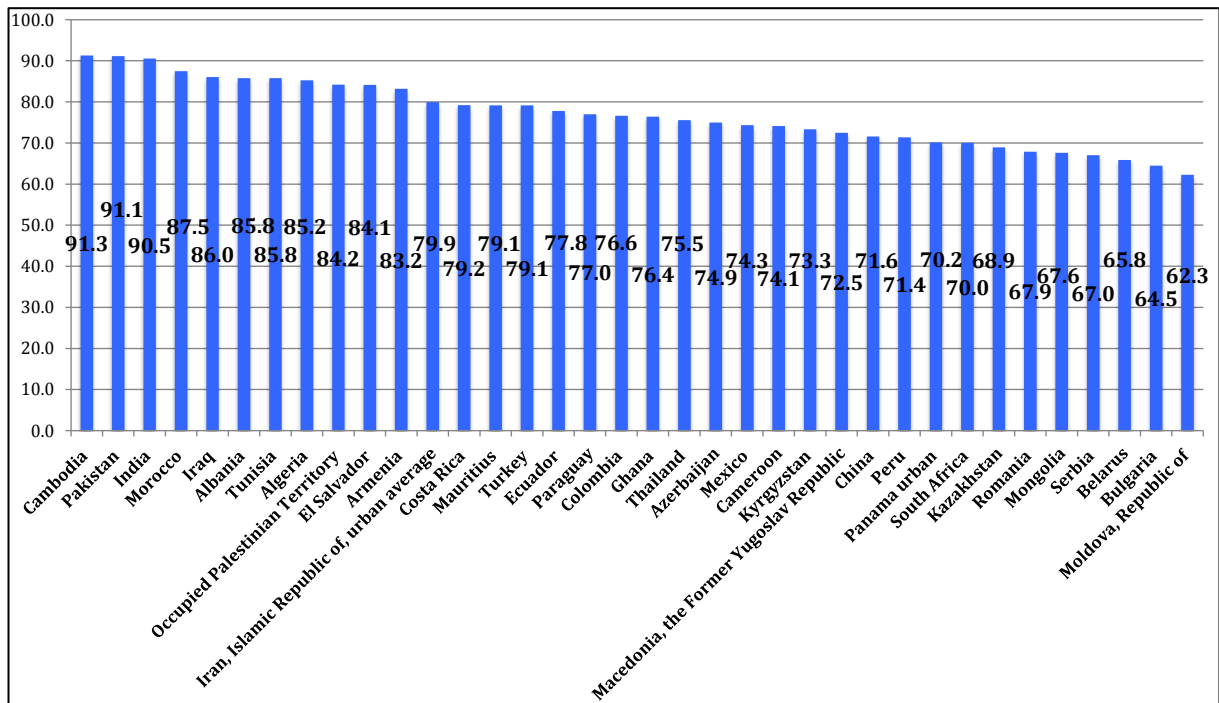
	Males	Females	Total population
Netherlands	02:27	03:29	02:59
Luxembourg	02:14	03:54	03:07
Finland	02:32	03:41	03:08
United Kingdom	02:27	03:50	03:11
Germany	02:35	03:50	03:15
Belgium	02:42	03:58	03:23
Greece	02:07	04:28	03:31
France	02:53	04:04	03:33
Estonia	02:52	04:05	03:35
Spain	02:36	04:36	03:43
Austria	02:47	04:32	03:46
Poland	02:48	04:33	03:46
Hungary	02:55	04:43	03:56
Italy	02:22	05:09	04:01
Romania	02:45	05:02	04:03
Norway	02:43	03:30	03:07
Turkey	01:43	04:59	03:50
Serbia	02:33	04:48	03:51

Table 14: Participation time per day in family care and household activity, by gender, (hh mm, 2008 to 2015) (Source: Eurostat (online code: tus_00age)).

	Household and family care, males	Household and family care, females
Luxembourg	80,8	94,2
Greece	71,6	94,6
Spain	77,2	94,8
France	82,1	94,8
Italy	69,7	95,4
Belgium	86,5	95,6
Estonia	83,1	95,7
Germany	88,5	96,3
Netherlands	88,8	96,3
Romania	78,9	96,3
Austria	81,5	96,4
United Kingdom	88,9	96,8
Finland	93,0	97,3
Hungary	85,9	97,4
Poland	86,4	97,9
Norway	91,8	98,3
Turkey	53,4	95,0
Serbia	77,5	96,6

Table 15: Participation rate per day in family care and household activity, by gender, (hh mm, 2008 to 2015) (Source: Eurostat (online code: tus_00age)).

	Paricipation time, men	Participation time, women	Gender gap
Netherlands	02:39	03:43	01:04
Finland	02:44	03:55	01:11
Germany	02:45	04:00	01:15
Luxembourg	02:20	04:00	01:40
United Kingdom	02:26	04:01	01:35
Belgium	02:50	04:08	01:18
France	02:55	04:13	01:18
Estonia	03:03	04:14	01:11
Austria	02:54	04:39	01:45
Greece	02:13	04:43	02:30
Poland	02:54	04:50	01:56
Spain	02:46	04:57	02:11
Hungary	03:04	04:57	01:53
Romania	02:48	05:14	02:26
Italy	02:27	05:30	03:03
Norway	03:01	03:46	00:45
Serbia	02:46	05:08	02:22
Turkey	01:49	05:22	03:33

Table 16: Participation time per day in unpaid work (main activity), by gender, (hh mm, 2008 to 2015) (Source: Eurostat (online code: tus_00npaywork)).

	Laundry and ironing males	Laundry and Ironing females	Food management, males	Food management, females
Estonia	3,5	21,6	48,2	76,6
France	4,3	37,2	47,9	77,0
Italy	1,5	47,3	42,3	78,4
Poland	4,5	37,1	52,0	78,5
Belgium	6,9	47,7	43,2	79,7
Luxembourg	11,8	55,1	56,0	80,4
Spain	4,8	44,8	38,3	81,1
Greece	2,7	54,5	43,5	81,3
Hungary	2,5	42,5	60,9	84,4
United Kingdom	10,3	44,6	44,6	85,0
Germany	10,2	43,5	43,3	85,1
Romania	3,5	54,3	36,7	85,5
Austria	9,6	61,1	29,8	86,9
Finland	9,1	41,6	40,5	87,9
Netherlands	7,9	44,5	53,6	90,9
Norway	13,0	49,3	69,5	86,2
Turkey	1,1	27,7	19,0	88,1
Serbia	2,7	50,6	31,4	88,5

Table 17: Participation rate per day household chores, by gender, (percentage, 2008 to 2015) (Source: Eurostat (online data code: (tus_00educ).

	Childcare, except teaching, reading and talking, males	Childcare, except teaching, reading and talking, females	Teaching, reading and talking with child, males	Teaching, reading and talking with child, females
Greece	6,3	14,1	10,0	10,9
Romania	5,9	15,4	7,0	10,1
Germany	9,5	16,3	7,2	13,0
Finland	12,0	18,7	8,4	14,7
Hungary	8,6	19,3	15,4	21,7
Italy	8,6	21,1	10,0	14,2
Luxembourg	12,1	21,1	8,4	14,7
Belgium	14,0	22,7	8,8	14,2
Austria	12,3	23,0	15,2	23,6
Estonia	9,9	23,2	7,8	15,4
Netherlands	16,0	23,3	9,0	14,7
Spain	17,1	26,0	11,0	13,9
United Kingdom	13,4	26,2	9,3	16,4
France	14,0	26,5	9,1	14,7
Poland	13,4	26,5	16,4	24,3
Norway	21,2	26,4	11,5	17,0
Serbia	7,9	18,4	8,5	12,4
Turkey	6,0	31,7	12,5	20,9

Table 18: Participation rate per day in childcare, by gender, (percentage, 2008 to 2015), (Source: Eurostat (online data code: (tus_00educ).

	Construction & repairs, males	Construction & repairs, females
Italy	5,1	0,6
Poland	8,5	0,7
Romania	12,5	0,9
Spain	6,0	1,4
Hungary	10,7	1,5
Greece	12,8	1,9
Luxembourg	9,4	2,2
Estonia	14,8	2,7
Austria	13,2	2,9
United Kingdom	9,9	4,0
France	17,0	4,2
Germany	13,2	4,8
Belgium	13,8	5,0
Netherlands	14,1	5,2
Finland	20,9	6,5
Norway	20,8	5,8
Turkey	3,3	0,6
Serbia	12,3	1,3

Table 19: Participation rate per day in construction, by gender, (percentage, 2008 to 2015) (Source: Eurostat (online data code: (tus_00educ).