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METHODOLOGY TO ESTIMATE THE COSTS AND ECONOMIC IMPACTS OF IMPLEMENTING CARE SERVICES IN LATIN AMERICA AND THE CARIBBEAN

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Analysis and simulation of the economic costs and the effects on gross domestic product, employment, and tax revenues of the implementation of care services for children and care-dependent people

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Analysis and simulation of the economic costs and the effects on gross domestic product, employment, and tax revenues of the implementation of care services for children and care-dependent people

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FOREWORD

Comprehensive care systems are the set of policies and programs aimed at implementing a new social organization of care with the purpose of caring for, assisting, and supporting people who require it, as well as recognizing, reducing, and redistributing care work — currently mostly performed by women— from a human rights, gender, intersectional, and intercultural perspective. These systems enable progress toward achieving gender equality, women's empowerment, and the well-being of society. One of its main components is care services.

In this regard, as part of a broader strategy to promote the creation of comprehensive care systems, the UN Women Regional Office for the Americas and the Caribbean and the UN Women Office in Mexico have developed the methodology presented in this document to estimate the costs and returns on investment in care services for children, and the elderly and people with disabilities who are care-dependent[1]. Coupled with the simulator, this methodology is a useful tool for decision making, since it allows the construction of a number of investment scenarios based on different general parameters of coverage, progressivity, and quality of care services, as well as the effects on Gross Domestic Product, employment, and tax revenues.

In the face of the COVID-19 crisis, which made it necessary to promote social co-responsibility for care even more evident, this investment can become a driving force for socioeconomic recovery as it generates a triple dividend: it contributes to the direct well-being of individuals, allows the direct and indirect creation of jobs and facilitates the participation of women in the workforce, which means a return of income for the State via taxes and contributions, in addition to higher incomes for individuals and families.

The methodology has been applied for the first time in Mexico, under the leadership of the National Institute for Women (INMUJERES) of Mexico and in coordination with the Economic Commission for Latin America and the Caribbean (ECLAC). The goal was to carry out three studies that estimate the costs and returns on investment in care services for children aged 0 to 4 and 5 to 14 years old and dependent people over 60 years old in Mexico. These studies conclude that public investment in quality care services is economically viable and fiscally smart[2].

At UN Women, we hope that this methodological work can be used and replicated in other countries and at the subnational level. Hopefully, this will contribute to an informed debate based on empirical data and to the definition of progressive and realistic goals for the construction of care services that allow us to move towards more egalitarian societies leaving no one behind.

María Noel Vaeza
Regional Director for the Americas and the Caribbean, UN Women

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UN Women Representative in Mexico

1. The study is based on the methodology applied globally by UN Women in Uruguay, South Africa, and Turkey: Investing in free universal child care in South Africa, Turkey, and Uruguay: A comparative analysis of costs, short-term employment effects and fiscal revenue in Progress of the World's Women 2019-2020.
2. These studies can be consulted at: https://mexico.unwomen.org/es/digiteca/publicaciones

INTRODUCTION

In different countries of Latin America and the Caribbean (LAC), efforts have been made to implement comprehensive care systems. Although all the countries in the region have developed care services and policies in a heterogeneous manner, the current care deficit makes it imperative to advance in the installation of care systems that, in a comprehensive manner, operate on the factors that make the current social organization of care no longer able to respond to the challenges of the present. Indeed, the current social organization of care is based on a sexual division of labor based on a cultural pattern that prescribes that it is women who are in charge of care and men who go out to generate income. Demographic and cultural changes, new family arrangements, and the economic situation of the countries themselves have repositioned the role of women and their place in society and have made it unfeasible —and unfair— for them to bear the sole responsibility of caring for people in the home.

Therefore, it is necessary to design public policies that alleviate the burden of care for women and families in order to guarantee the right to care for children, and the elderly and people with disabilities who are care-dependent, that is, individuals who require assistance and support to carry out daily activities. The current COVID-19 crisis has deepened and made visible the existing care deficit. The closure of education and care services as part of the confinement measures has further burdened the unpaid care work performed by millions of women. These services are a fundamental component of the care systems[3] offered to guarantee the rights of children, and the elderly and people with disabilities who are care dependent.

Evidently, the development of care services for these population groups has significant economic and fiscal costs. However, evidence shows that public investment in care constitutes a smart fiscal measure, as it not only allows breaking the vicious circle of poverty and exclusion, but can also be transformed into a virtuous circle that generates economic and social returns through the so-called triple dividend of investment in care (UN Women, 2015a and 2015b and UN Women and ECLAC, 2021):

- First of all, investment in care systems contributes directly to people's well-being. Studies show that preschool education and child care can improve the physical and cognitive development of children, especially those from very poor backgrounds. This has lasting effects even into adulthood, as it can impact, for example, individuals' employment and income prospects (Yoshikawa and Kabay, 2015).

- Secondly, investment in care systems can directly and indirectly generate quality jobs. Some studies have shown that any amount invested in child care infrastructure and services can generate up to 2.5 times more jobs than investing the same amount in the construction sector. In addition, it is estimated that 73% of the new jobs created through an expansion of care services would benefit women; in contrast, only 6% of the new jobs created through construction would be for women. On a similar note, quality employment implies a revenue return for the state via tax contributions and social insurance contributions (İlkkaracan et al., 2015).

3. In order to create a care system, it is necessary to develop and articulate the five components of public policy: services, regulations, training of caregivers, knowledge and information management, and communication for the promotion of cultural change.

- Third, investment in care systems facilitates people's participation in the labor force, which especially impacts women. As noted above, time spent on unpaid domestic and care work is currently the main obstacle to women's full participation in the labor market (ECLAC, 2021). Care services are therefore essential for people in paid employment who find themselves at a time in which they need to devote a lot of time to care (for children, the sick, or the elderly) to be able to remain in or return to their jobs. To be effective, services must not only be safe and of high quality but must also be compatible with the needs of working people in terms of location and opening hours. The incorporation of women into the labor market will allow an increase in family income. This will help, in turn, to improve the quality of life of households and activate the economy by boosting consumption and savings capacity, again generating a return to the State through taxes (UN Women, 2015a and 2015b).

In recent years, a methodology has been developed to estimate the costs of providing care services to children and the elderly in order to assess some of their potential spillover effects on GDP, employment, and second-round tax revenues, as well as to develop forward-looking scenarios. This methodology[4] was developed primarily by İlkkaracan, Kim and Kaya (2015) and complemented in some respects by Filgueira in UN Women and INMUJERES (2020a and 2020b).

The objective of this paper is to describe the methodology for the analysis and estimation of the fiscal costs of building quality and universal care services for children and the elderly and people with disabilities who are care-dependent, as well as their potential consequences on GDP, employment, and potential tax revenues. It also describes how to use the Excel module to estimate the care services to be proposed: for children from zero to four years of age; extended elementary school for children from five to twelve years of age; and services for the elderly and people with disabilities who are care-dependent (day care centers, long-stay facilities, and personal home assistants).

We hope that the application of this methodology will contribute to enriching the debate on evidence-based public policy on care and that it will make it possible to outline progressive goals in the development of care services as a key component to the establishment of comprehensive care systems.

4. The study describes the methodology applied globally by UN Women used in Mexico, Uruguay, South Africa, and Turkey (De Henau et al.., 2019).

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1 RATIONALE FOR INVESTING IN CARE SYSTEMS

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Despite their specificities and unequal development, the social protection systems of the countries in the region are built on three pillars: health, education, and social security.[5] These systems, created during the 20th century, represent an attempt by national states to guarantee people's rights to health, education, and social security through public policies.

However, the right to care is something that must also be guaranteed throughout people's lives: we are born and cared for, then we take care of the new generations, the elderly and, at the end of our lives, we will certainly also need care. Thus, in addition to being a component of personal development, care is a key component of the reproduction of society.

In this context, it is worth asking why, as in the case of health, education, and social security, policies were not designed to guarantee the right to care. The answer has to do with the existence of a cultural prescription that establishes a division of social roles in which the responsibility for care is assigned to women in the family sphere, consolidating an inequitable sexual division of labor. The function of caring is confined to the private sphere and placed under the responsibility of women, who have thus been historically excluded from the public sphere.

For decades, this distribution of labor was underpinned by gender inequality; however, economic, social, demographic, and cultural changes began to generate a care deficit that is now evident and makes it necessary to review social protection policies. In fact, over the last five decades, the economies of Latin America and the Caribbean have undergone significant structural changes in labor markets, in the sociodemographic characteristics of households, and even in cultural trends.

Thus, there has been an increase in women's participation in formal and informal labor markets, as well as an increase in female-headed households where women are the main income earners.

The available evidence shows that the income of the population changes throughout the life cycle and that intergenerational transfers of monetary flows are not neutral. These affect economic and fiscal sustainability, the levels of inequality, and the capacity to reduce inter-temporal inequality in a country (Filgueira cited in UN Women and INMUJERES, 2020a). Thus, in general, children and the elderly spend more than they earn, while young people and adults earn more than they spend. In that sense, these are the demographic groups that finance the rest of society through various intra- and intergenerational transfers. This effort is complemented by public transfers for children and the elderly.

In this context, it can be observed that LAC has a demographic bonus due to the fact that, during a phase of the demographic transition, the labor force grows faster than the population dependent on it, which is due to the fall in fertility and the incorporation of women into the labor market. This makes it possible to raise the level of well-being of families, invest in human capital and generate savings opportunities (Bloom, Canning, and Sevilla, 2003). However, the demographic transition in

5. Throughout this section, several of the arguments advanced by UN Women and INMUJERES (2020, 2020a and2020b) are drawn upon.

Latin America and the Caribbean, characterized by a drop in fertility and an increase in life expectancy, implies that, over time, the population that can sustain the economic dynamics and the construction of social protection systems will decrease in relative terms (Saad, Miller and Martínez, 2009). High levels of unemployment and poverty, job instability and precariousness, strong income inequalities, growing demand pressures for various private services, and the demographic transition translate into increasing requirements for additional income; this has encouraged women's participation in the labor market, but under unequal conditions. Restrictions on their time —due to care work— are maintained, which are reflected in the gaps in wages and participation in the formal labor market.

This has also had an impact on the stratified reduction of fertility rates (higher in low-income groups) and on the infantilization of poverty (Rossel, 2013). This interaction between demographic processes and economic dynamics generates different feedback dynamics. For example, in economies where investment in children is limited, increases in productivity and income will also be limited in the future, reducing the rate of economic growth. In contrast, in economies where adults must contribute a high proportion of their income to intergenerational transfers, there are lower savings and, therefore, the virtuous circles between economic growth and investment are limited (UN Women and INMUJERES, 2020a). Thus, private intergenerational transfers where the state has limited capacity to equalize opportunities for new cohorts of populations result in more unequal societies.[6]

To face the end of the demographic bonus, it is possible to use various mechanisms, such as an increase in labor productivity, labor period, migration flows associated with the labor market, and an increase in women's participation (UN Women and INMUJERES, 2020a).

Recently, the importance of intergenerational economic, social, and environmental flows in promoting genuine gender equality, as well as their relevance to economic and social dynamics, has begun to be recognized. Indeed, sustainable development implies that economic, social, and environmental assets are preserved for future generations.

It is therefore essential to advance in the construction of comprehensive care systems so that, in the medium term, they become the fourth pillar of welfare systems along with education, health, and social security, and help to create the material conditions for a new social organization of care and to guarantee the exercise of the right to care for all people.

The following are some of the positive medium- and long-term benefits that investment in care policies will generate:

- In the short term, care policies aimed at girls and boys contribute to their comprehensive development and autonomy; in the long term, to raising cognitive abilities and improving school and work performance and, therefore, to raising productivity and lifetime earnings (Kagan, 2013; Heckman et al., 2010; UN Women and INMUJERES, 2020).

- Caring for dependent elderly and people with disabilities generates savings in healthcare costs by reducing hospitalizations, thus avoiding overburdening healthcare systems, and enabling more efficient investments, which is particularly relevant in the context of an aging population.

- The provision of care services for the aforementioned population groups generates the conditions for the economic autonomy of thousands of women, as it reduces the burden of unpaid care and allows them to join the formal labor market by performing paid care tasks.

- Investment in care policies and the creation of a service economy around them generates returns to society, boosting local economies by improving family incomes.

6. Evidence suggests that, in LAC, funding for children and youth comes primarily from private sources, in contrast to other regions (UN Women and INMUJERES, 2020a).

- The COVID-19 pandemic has affected employment levels globally, particularly for women. Therefore, providing care services to the care-dependent population can generate decent jobs in the short term and thus be a driver of economic recovery.

- In the medium term, care policies have a positive impact on the professionalization and certification of paid workers, increasing their labor skills, income, and productivity. On the other hand, the regulation and formalization of the sector contributes to the strengthening of social security systems.

- Available evidence (UN Women and INMUJERES, 2020b) shows that there is a significant positive association between women's participation in the labor market, convergence in fertility rates across socioeconomic groups, and child poverty. Thus, the greater participation of women in the labor market contributes to the reduction of child poverty.

- This contributes to raising GDP, employment, and second-round tax revenues through the multiplier effects of higher public spending.

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2 DISTINCTION BETWEEN CARE SERVICES AND CARE SYSTEMS

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The terms *"care services"* and *"care systems"* are often used interchangeably. Although the provision of care services that guarantee the exercise of the rights of children and care-dependent people is an indispensable element for the establishment of a care system, the construction of such a system requires the implementation of four additional components in addition to services, as will be shown below.

The constitution of a system that meets the needs of the population and operates on the recognition, reduction, and redistribution of care requires the articulation of policies aimed at all target populations (children, the elderly, people with disabilities, and caregivers).

To achieve this, it is necessary to deploy actions around five components (UN Women and ECLAC, 2021):

- **Services** (public and/or private) provided;
- **Regulations** that are established (services and labor);
- **Training** of caregivers;
- **Management** of information and public knowledge about care; and
- **Communication actions** for the promotion of cultural change.

In order for these care policies to be part of a **system**, it is necessary to develop a governance model that includes the articulation —at the national and territorial level— of all the institutions that carry out actions to provide care to different target populations. This should be a way to efficiently take advantage of the capacities installed at the state and social level, thus developing a management model that tends to move *"from the logic of services to the logic of people"*.

Thus, the estimation of the costs of care services and the impacts they generate in a society has a significant dimension but falls short of the total estimation of the costs and impacts of a care system.

Definition: Care system

A set of policies aimed at implementing a new social organization of care with the purpose of caring for, assisting, and supporting people who require it, as well as recognizing, reducing and redistributing care work -which today is mostly performed by women- from a human rights, gender, intersectional and intercultural perspective.

These policies must be implemented based on inter-institutional coordination from a people-centered approach in which the State is the guarantor of access to the right to care, based on a model of co-responsibility with the private sector, civil society, the community, and families, with shared responsibility between genders (UN Women and ECLAC, 2021).

To make an adequate estimate of this, the following costs should be considered:

- Training and formalization of care workers (an essential aspect for the dignity of the work and to ensure the quality of services).

- Regulation of services and their supervision, as well as the working conditions of female workers.

- Implementation and maintenance of information systems that ensure the efficiency, effectiveness, and transparency of care policies.

- Actions to disseminate the right to care and to promote the co-responsibility of men and women in the care of children and care-dependent people who share the household (mass campaigns, educational actions, etc.).

- Implementation and management of institutional care (technical teams, management inputs, logistics, etc.).

However, providing universal and quality care services is a very important portion of the overall costs of a care system, and is the first concern of decision-makers when defining the investment of resources in contexts of economic constraints from a budgetary point of view. For this reason, the methodology developed below is strictly limited to the care services component.

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3 METHODOLOGICAL BASIS: AN AGGREGATE VIEW

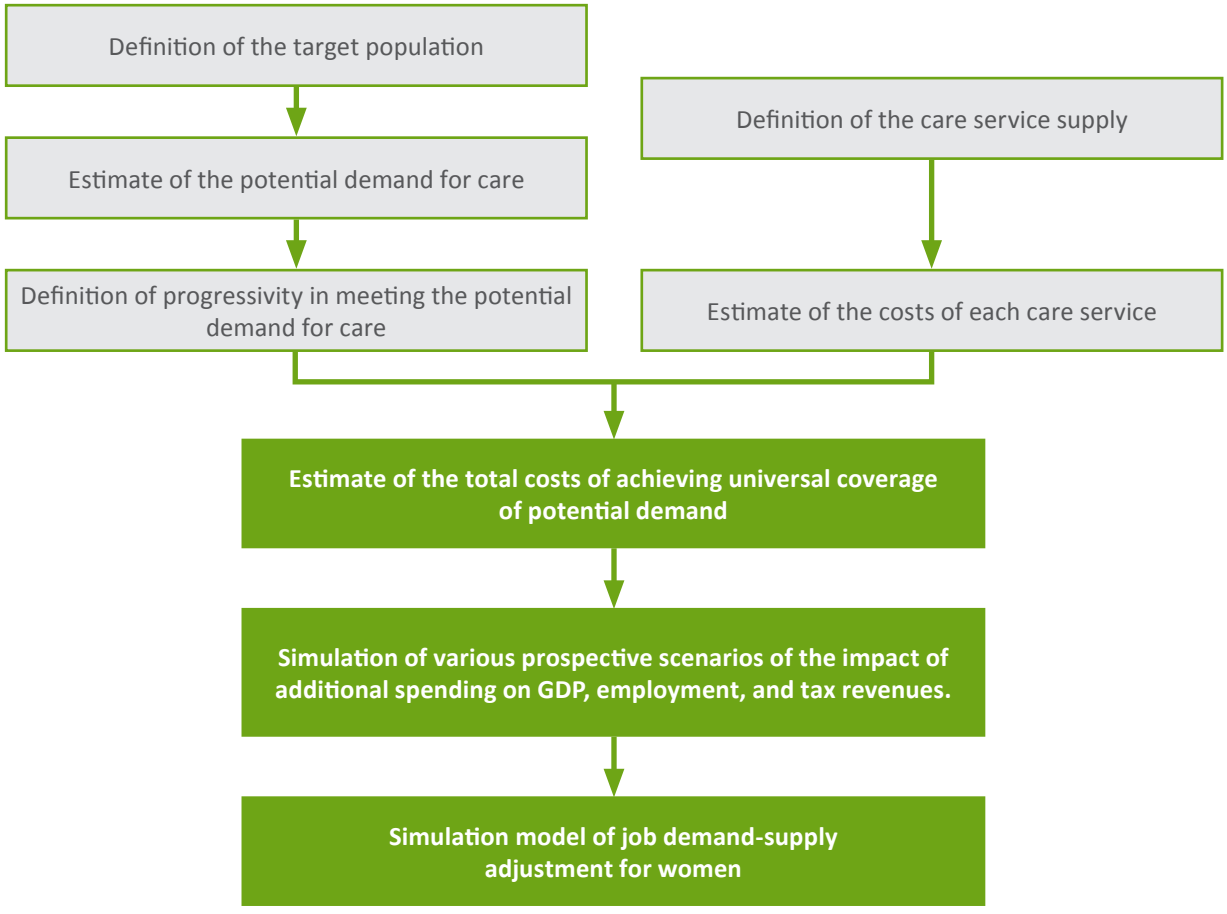
3 METHODOLOGICAL BASIS: AN AGGREGATE VIEW

The analysis and estimation of the fiscal costs and their effects on GDP, employment, and tax revenues of providing universal and quality care services can be done following the methodology developed by İlkkaracan, Kim and Kaya (2015) in the model known as IKK (De Henau *et al.*, 2017; De Henau *et al.*, 2019; Ilkkaracan *et al.*, 2015) and complemented in some respects by Filgueira in UN Women and INMUJERES (2020a and 2020b). This methodology is applied for early care and education services for children from zero to five years of age, for extended elementary school for children from six to 12 years of age, as well as for care-dependent people (long-stay care facilities, day care centers and personal assistants at home).

The methodology to be developed includes the following steps:

1. Estimation of the demand for care services based on the identification of the target population.
   - Operational definition of the demand for care services for infants, children, and care-dependent people.
2. Definition of criteria and scenarios of progressivity in the gradual attention to the demand for care services.
3. Definition of the supply of care services:
   - Identification of the context and general parameters for the implementation of care services for infants, children, and people in a situation of dependency.
   - Operational definition of the service supply of quality care services for infants, children, and care-dependent people.
4. Estimation of the total costs of care services based on a set of variable parameters that allow the identification of different quality and coverage scenarios.
5. Estimate of the total costs of achieving universal and/or near-universal coverage of care services for infants, children, and care-dependent people.
6. Simulation of various scenarios of the impact of additional spending on GDP, employment, and tax revenues from care services for infants, children, and care-dependent people based on cost estimation and an input-output model.
7. Estimating the gross and net cost and potential effects on employment, GDP, and tax revenues from care services for infants, children, and care-dependent people.
8. Estimation of a model to simulate the adjustment of the supply and demand of jobs for women associated with the deployment of care services for infants, children, and care-dependent people (matching model).
9. Construction of prospective scenarios with different levels of coverage, wages, and quality of care services, as well as the costs and impacts on GDP, employment, and tax revenues from the provision of such services for the populations mentioned above.

Figure 1. Outline of the costing methodology and economic impacts



Source: Own elaboration.

Photography: UN Women / Ryan Brown

4 ESTIMATING THE DEMAND FOR CARE SERVICES

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The promotion of a new social organization of care requires the implementation of services for all people in need of care, namely children who are in the process of building their autonomy and the elderly, or people of any age with disabilities, who have lost all or part of their autonomy, i.e., who are care-dependent.

4.1. Childhood from 0 to 12 years old

For the purposes of estimating costs and their potential effects, in the case of the services to be proposed, two age brackets will be distinguished: early childhood (from zero to four years of age inclusive) and childhood proper (from five to 12 years of age).

4.2. Care-dependent people

Dependency can be defined as "the state in which people find themselves who, for reasons linked to the lack or loss of physical, psychological or intellectual autonomy, require assistance and/or significant help from others in order to carry out activities of daily living (e.g., eating, dressing, bathing, using the toilet, etc.), particularly those related to self-care" (UN Women and INMUJERES, 2020).

This definition of dependency is made operational by considering the possibilities of performing various instrumental activities that imply a certain degree of functional dependency. Functional dependency refers to experiencing some difficulty and requiring assistance to carry out activities of daily living (ADLs). There are two types of ADLs: basic activities of daily living (BADLs), which comprise the activities necessary for independent living, such as showering, toileting, dressing, moving around the home, and feeding.

Definition of dependency

Dependency is defined as the state in which people find themselves for a prolonged period of time. For reasons related to the lack or loss of physical, mental, or intellectual autonomy, they require assistance or significant help from other people in order to carry out daily living activities, particularly those related to self-care.

Secondly, there are the instrumental activities (IADLs), which involve greater cognitive and motor complexity, and include using means of communication, shopping, preparing food, cleaning the home, washing clothes, taking medication, traveling outside the home by means of transportation, and talking on the telephone. Thus, a person has functional dependency if he/she has difficulties in at least one BADL, and severe functional dependency if he/she has difficulties in at least two or three BADLs. Measurement of these levels of operative dependency includes the Katz or Barthel indices, the AGGIR scale or the Baremo (Katz, 1983; González-Rodríguez *et al.*, 2017). Thus, for example, the target population can be defined on the basis of a BADL indicator based on five activities: walking, bathing, eating, going to bed, and using the toilet, and an IADL indicator, based on five other activities: preparing food, shopping, taking medicine (Table 1) (UN Women and INMUJERES 2020). The above is expressed as follows:

- % mild or moderate dependency = % difficulty in ((1 or 2 BADL) + (1 or 2 IADL))
- % of severe dependency = % difficulty in ((3 BADLs) + (3 IADLs))

Box 1. Dependency classification according to BADLs and IADLs

BADL	IADL
Bathing Eating or drinking Using the toilet Dress Getting in/out of bed	Preparing hot food Handling money Shopping Health care
Number of BADLs in which they have difficulty	**Number of IADLs in which they have difficulty**
1 (a) 2 (b) 3+ (c)	1 (d) 2 (e) 3+ (f)
Mild Dependency = a + b + d + e Severe Dependency = c + f	

Source: Own elaboration.

Usually, a score is calculated from the instrument that indicates whether or not a person is care-dependent and the severity of the situation. However, not all countries apply these instruments on a massive scale, but they are used to assess the level of care dependency as part of the process of applying for different care services or benefits. Therefore, in order to estimate the potential demand for such services in the design or expansion phase, countries generally use information from specific surveys or from modules applied in the framework of broad coverage surveys.

Photography: UN Women / Ana Silva

5 MODELING OF PROGRESSIVE SCENARIOS FOR CARE DEMAND ATTENTION: BASIC CRITERIA

5 MODELING OF PROGRESSIVE SCENARIOS FOR CARE DEMAND ATTENTION: BASIC CRITERIA

5.1. Progressivity as part of care services design

The implementation of a care policy that covers both infants and care-dependent people requires, in addition to the design and supply of care services, the simultaneous and synchronized implementation of regulatory and supervisory components, human resources training, knowledge and information management, as well as communication actions to promote social and gender co-responsibility in care.

It usually takes several years before these services can be offered and universal coverage is achieved to guarantee access to quality care.

For this reason, and as part of care services design, it is necessary to analyze and define progressive scenarios for their deployment. In their design, both the factors that act as conditions for progressivity and the goals or objectives set by the public policy itself are at work: the former act as a brake; the latter drive its deployment. It is a process of choosing alternatives subject to restrictions, in which the objectives of the policy are constantly being optimized, given the different restrictions faced by its implementation.

Progressivity

Progressivity in the deployment of care services will be understood as an articulated scheme of successive stages that will make it possible to universalize the exercise of the right to care.

The form of the progressivity scheme will be unique to each country, state, or region. It will be difficult to repeat the same number of stages, the scopes in each one of them, the speed of progress in the deployment, the intermediate goals, etc.

In addition, the progressivity scheme may be reviewed and redefined periodically, depending on changes in the policy's objectives and in the factors that condition its deployment.

5.2. Definitions for the design of progressivity in the implementation

The design of progressivity requires several operational definitions of the target population and the degrees of progressivity of the care system.

5.2.1. Definition of the target population

It is important to have an operational definition of the target population, which in this case includes children, particularly during early childhood and primary education, as well as elderly and disabled people with different degrees of permanent dependency (mild, moderate, and severe). These target populations present opposite dynamics in terms of dependency: while dependency increases over time in the case of the elderly and people with disabilities, it decreases over time in the case of children.

This different dynamic has consequences in terms of the progressiveness of care services, since, for example, if one starts with the youngest children and the oldest people in a situation of dependency, the care system will have to provide services for the most severely dependent members of the country. Deploying these services is somewhat more complex and costly. We will return to this issue in the next chapter.

5.2.2. Quantifying the target population

Once the target population has been defined, it is necessary to quantify it in order to design a progressive access to services.

Indeed, each country or region has different population structures and prevalence of dependency simultaneously, which evolve in a different manner over time. Thus, schematically, it can be stated that the potential number of people to be served by care services (target population) can be estimated as follows:

$$Q_{pd}^{t} = \left(\sum_{a=0}^{a=12} P_{a}^{t} + \sum_{a=0}^{a=n} P_{a}^{t} \times pd_{a,d}^{t} + \sum_{a=65}^{a=n} P_{a}^{t} \times pd_{a,d}^{t} \right)$$

Q_{pd}^{t} = Total number of population to be served in year (t)= target population of year (t)

P_{a}^{t} = Total population for simple age (a), in year (t)

$pd_{a,d}^{t}$ = prevalence of dependency by type (d), for simple age (a), in year (t)

The amount of care-dependent people in any given year (t) involves:

- The sum of boys and girls during early childhood and childhood proper, so the summation goes from 0 to 12 and no dependency prevalence factor is multiplied, since what defines it is only age.
- The sum of care-dependent people with disabilities among all age groups of the population (therefore the range of the sum goes from 0 years to "n" years), which requires multiplying the absolute number of people with disabilities by the prevalence factor of dependency for each particular age group.
- The sum of care-dependent elderly people, i.e., the total number of people aged 65[7] or older multiplied by the dependency prevalence factor for each particular age.

7. The age of cutoff is defined based on the provisions of the Inter-American Convention on the Protection of the Human Rights of Older Persons.

Therefore, it is convenient to identify separately the three target populations of the care policy, in such a way that:

1. Infants:

$$Q^{t}_{pd,1} = \left(\sum_{a=0}^{a=12} P^{t}_{a} \right)$$

2. People with disabilities:

$$Q^{t}_{pd,2} = \left(\sum_{a=0}^{a=n} P^{t}_{a} \times pd^{t}_{a,d} \right)$$

3. Elderly people:

$$Q^{t}_{pd,3} = \left(\sum_{a=65}^{a=n} P^{t}_{a} \times pd^{t}_{a,d} \right)$$

In order to estimate the target population, it is necessary to have the following information:

a. Information regarding the current population and population projections for a reasonable period of years, by simple ages.

b. For populations (2) and (3), estimates of dependency prevalence are also required, both by simple age and by degree of dependency (mild, moderate, and severe).

Information on population projections by simple age is generally available, although it is more complicated to obtain information for smaller geographic units (regions, states, districts, etc.) or for certain demographic strata. For example, it is difficult to have information on population projections and their distribution by simple age or age bands for some geographic regions. In this case, one can choose to work with the same distribution by age or age group and with the same projected variation rates for the country aggregate, assuming the risk that the behavior of the smaller units may be different and therefore affect the results.

In this sense, surveys and studies on the prevalence of dependency and its severity levels are available to provide a reasonable and reliable estimate of the potential demand of care-dependent people (elderly and/or with disabilities). These studies can be ordered as described in Table 2.

Box 2. Evaluation of surveys and studies for the definition of the target population

Dimensions covered when studies are available (*)	Length of study	
	Updated	Outdated
Age coverage		
All ages Some age groups (e.g., over 65 years of age)		
Geographic scope		
Total country and smaller units Only for total country		
Coverage by level of dependency		
Open by level Not broken down by level		
There are no population-based studies on the prevalence of dependency		

(*) NOTE: The table does not include other relevant dimensions such as, for example, socioeconomic level, since the studies generally allow for this disaggregation. This may be important as an option for progressivity in the deployment of care services.

Source: Own elaboration.

The best situation for estimating the potential demand for care for dependent people is one in which there are updated studies on the prevalence of dependency with: (i) coverage for all ages; (ii) an adequate geographic disaggregation that allows designing progressivities associated with different regional realities for the same country; and (iii) disaggregation by level of dependency, which is relevant when designing the deployment of care services, which respond to the degree of dependency to be addressed. The least desirable situation is when there is no study of the prevalence of dependency.

Thus, in order to construct information on the prevalence of dependency, specific studies are required based on surveys that inquire about the difficulties and the need for assistance in performing BADLs, complemented in some cases with IADLs.

These studies are relatively expensive, and training is required to collect, process, and analyze the data. For this reason, they are not available in all the countries in the region. Where they have been carried out, they may be of a certain age, since they are done sporadically and do not necessarily cover all ages; similarly, they are generally concentrated on older people, leaving aside younger people with disabilities.

To overcome these obstacles, it is possible to use information from specific surveys or from modules applied as part of broad coverage surveys, which requires combining and analyzing information from different sources from the same country and from countries with similar characteristics as a way of filling information gaps in the estimation of the prevalence and severity of dependency by age.[8] The greater the information challenges, the greater the need to develop

8. To estimate the potential demand for care services and in the absence of specific information, estimates from the Inter-American Development Bank (Medellín, 2020) may be used.

additional assumptions to be incorporated into the estimates and, therefore, the more precautions must be taken with regard to the results to be achieved. Thus, it is important to make explicit the assumptions used and the possible effects they have on the robustness of the estimates made.

5.2.3. Current conditions or starting point for care services

LAC has a heterogeneous development in terms of care services, whether for children or care-dependent people. Thus, it is necessary to have an updated coverage estimate with as much detail as possible, both to locate the services and to identify the ages of the users and their dependency levels, when applicable. This information from the starting point makes it possible to estimate the care coverage gap with greater precision, and therefore to determine with greater certainty the estimate of the effective demand to be met.

5.2.4. Initial deployment horizon

To initiate the implementation of a care system, it is necessary to have a time reference for its deployment, which is generally defined in the political sphere. In this context, it is necessary to set objectives or goals that are usually correlated to government terms and budget availability.

5.2.5. Budget

One element that conditions the design of progressivity is the number of economic resources available, at least for the first phases or stages of its implementation. Evidently, available economic resources are one of the main restrictions to be considered, and they operate as a "ceiling" below which different combinations of progressivity scenarios may exist.

5.3. User eligibility criteria to define alternative progressive scenarios for accessing care services

As with any other public policy, the deployment of a care policy is the consequence of a process of choosing alternatives in the context of budgetary constraints. These types of decisions are complex, since, in addition to budgetary constraints, there is tension between quantity and quality, i.e., reaching the largest possible number of users with the best possible quality of services, under the assumption that the higher the quality, the higher the cost (Medellín, 2020).

The design of progressivity in the implementation of care services considering budgetary and time constraints varies according to the eligibility criteria imposed by the authorities. As follows, the main eligibility criteria are described:

5.3.1. Age of users

This is the main criterion used to define the progressive entry of individuals to the services of a care system. It should be considered that not all of them cover children and care-dependent people. Therefore, the latter can be included from the beginning.

Another alternative to this criterion would be to make age cutoffs within specific demographic groups. For example, starting the rollout only for infants —even privileging at the beginning some particular ages— and older people, for example, those over 80 years of age or another age cut-off point, and then progressing by user groups or age cohorts.

5.3.2. Degree of dependency

In general, this eligibility criterion is complementary to that of age due to the relationship between the degree of dependency and the age of the individuals. The aim is to progressively incorporate users according to the degree of dependency selected.

An alternative is to start with the lowest levels of dependency (older children or people with mild or moderate functional dependency) or with the highest levels of dependency (younger children or those in a situation of severe functional dependency).

5.3.3. Socioeconomic vulnerability status

In this case, the eligibility criterion is based on people's economic deprivation, giving priority, for example, to those who are more economically and socially vulnerable.

For the application of this criterion, it is necessary to have information that allows the socioeconomic categorization of care-dependent people's households or family nuclei in order to establish the potential demand of the care system and the progressiveness of its deployment under the application of this eligibility criterion.

5.3.4. Spatial or geographic criteria

In this case, eligibility and progressivity are determined by the place of residence of the potential users. It is common to find examples associated with care services that are beginning to develop in a particular city, district, or region, either as a result of the initiative of local or state governments, or as part of a general strategy that favors certain regions in particular, for example, rural areas, areas that are difficult to access, or certain urban neighborhoods or districts, etc.

This criterion is sometimes present in the initial phase of care services deployment when it begins with the implementation of a pilot program and is generally developed based on a specific geographic reference and seeks to contemplate both urban and rural realities in order to draw valuable lessons for the following stages.

5.3.5. Additional relevant aspects to consider

Complementarity in the application of the criteria. A first aspect is that the four eligibility criteria mentioned above can be applied simultaneously and in combination, or in stages, operating as layers that define the different scenarios for the progressive deployment of a care system.

Message implicit in the selection of the criteria. The selection of criteria is not neutral in terms of the message that the population can interpret about how relevant the care policy is for the government. Indeed, an option that considers as criteria a combination of age and level of dependency —for example, favoring the total universe of people over 80 years of age who are severly dependent— has the advantage that the deployment of the care policy through the provision of services can cut across the entire target population. This would, in turn, send out a clear message that the aim is to universally guarantee the right to care.

Dependency by age. There is a strong positive correlation between the age of the population and the severity of dependency, which affects the type and costs of care services to be provided by the care system. Indeed, in the case of the care-dependent population, the older the people, the greater the relative weight of severe dependency will be, which in turn requires more complex, personalized, and quality care services. This has a significant unit cost and causes budget constraints to emerge more quickly.

In the case of early childhood and extended elementary school —for example, in day care centers—, the unit cost of care shows an inverse relationship with the age of the child, since the youngest children require a greater intensity of care from the caregiver. The latter decreases with age.

Socio-economic criteria obstacles. Another aspect that affects the possibility of using the socioeconomic criterion is that, for its application, it is necessary to have a specific instrument that allows the socioeconomic categorization of the applicant's household or family nucleus. Although some other information already available may be used (e.g., registry of individuals or families using social programs), it is possible that this information is outdated and an updating process may be necessary. This represents additional costs to be considered in the user identification process.

Role of pilot care programs. The progressive deployment of the care system requires the development of an initial pilot phase. Generally, these pilot programs test several of the system's constituent elements, which will then be scaled up in the following stages. The pilots make it possible to test —in more controlled scenarios— the new services that the system is about to offer, as well as the application processes and instruments for their identification and design, and the operation of inter-institutional coordination bodies.

In general, in order to define the geographic areas where the pilot program will be developed, the following is taken into consideration:

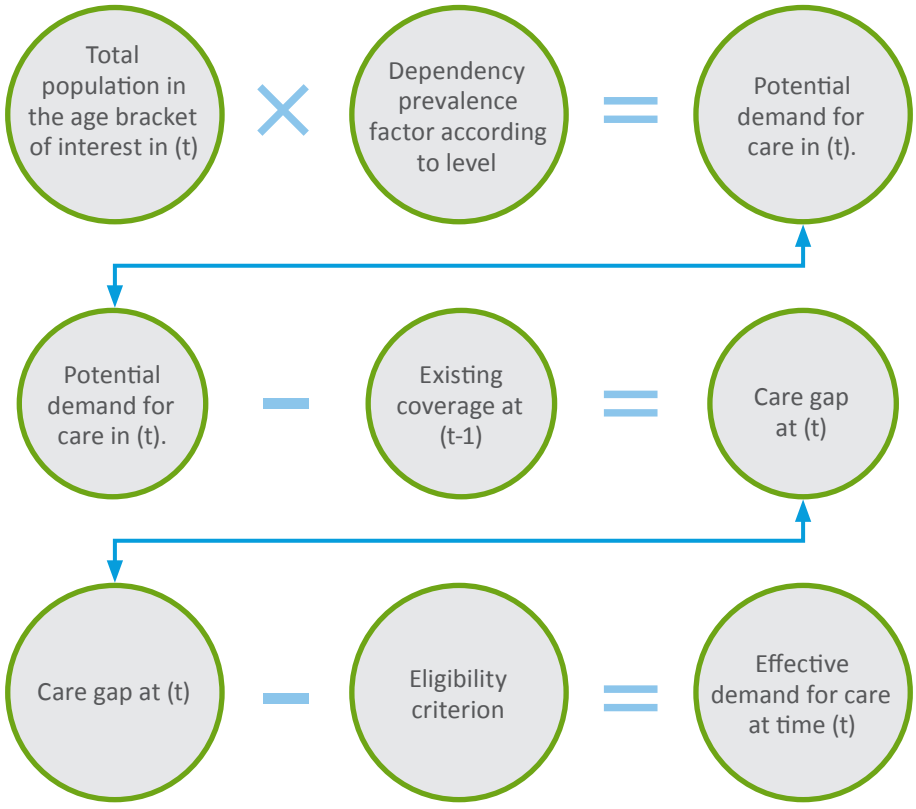
i. There is an adequate number of families that meet the defined eligibility criteria.

ii. There are some care services that can be adapted for incorporation into the care system.

iii. There are local actors or community networks with the capacity to dialogue with families, and who are already working in the community.

Thus, the main elements that make up the demand in a care system are summarized in Figure 2.

Figure 2. Progressivity in the deployment of care services; scheme for the determination of the specific demand for care for a given age bracket, for a given level of dependency, and for a specific time (t)



Source: Own elaboration.

5.4. Operational definition of the demand for care.

In the case of the demand for child care and in order to establish an operational definition, it is necessary to have demographic information for the following age ranges:

- Population between 0 and 2 years old
- Population between 3 and 5 years old
- Population between 6 and 12 years old

In general, there are no major problems in making this information available since it is generated by specialized agencies (official statistics institutes) and is based on census information.

With the demographic projection data, demographic scenarios are constructed for the total target population; thus, it is possible to design how progressively the services coverage of the system in question will be deployed (Table 3), i.e., the demand to be met.

Box 3. Care scenarios for the child population

Year	Early childhood						Childhood		
	0 to 2 years			3 to 4 years			5 to 12 years		
	Total Pop.	coverage %	Covered population	Total Pop.	coverage %	Covered population	Total Pop.	coverage %	Covered population
1									
2									
3									
4									
5									

Source: Own elaboration.

In the case of the elderly and people with disabilities who are care-dependent, the functional measurement of dependency is fundamental. To this end, measurement instruments are developed —for example, dependency scales— that highlight people's abilities to perform BADLs, and sometimes include IADLs and advanced IADLs.

This measurement makes it possible to establish a dependency gradient that classifies people's situation according to their level of care dependency in three categories: mild, moderate, or severe.

This will make it possible to establish the types of services to be offered according to the level of dependency of the individuals. In this way, it is possible to construct the target population by demographic group and for each year of the projected deployment (Table 4).

Thus, with the population projections by relevant age bracket and the levels of progressivity established by year (in this case, five years is used as an example, but it can be done for any period deemed necessary), it is possible to construct the prospective demographic scenarios of the target population, that is, the care-dependent population (Table 5).

Box 4. Demographic structure of the care-dependent population

Year	Population groups	Age bracket				
		0-5	*6-29*	*30-65*	*66-80*	*80 and over*
1	Total					
	Mild + moderate					
	Severe					
2	Total					
	Mild + moderate					
	Severe					
3	Total					
	Mild + moderate					
	Severe					
4	Total					
	Mild + moderate					
	Severe					
5	Total					
	Mild + moderate					
	Severe					

Source: Own elaboration. In the Total row, the number of persons should be entered. In the Mild + moderate and Severe rows, include the percentage of the population in the respective demographic group.

Box 5. Care scenarios for dependent people

Year		0-5			6-29			30 -70			More than 70		
		Total Pop.	coverage %	Covered population	Total Pop.	coverage %	Covered population	Total Pop.	coverage %	Covered population	Total Pop.	coverage %	Covered population
1	Total												
	Mild + moderate												
	Severe												
2	Total												
	Mild + moderate												
	Severe												
3	Total												
	Mild + moderate												
	Severe												
4	Total												
	Mild + moderate												
	Severe												
5	Total												
	Mild + moderate												
	Severe												

Source: Own elaboration.

Photography: UN Women / Ariel Silva

6 PROVISION OF CARE SERVICES FOR CHILDREN AND DEPENDENT PEOPLE

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6.1. Services to meet the demand for care

Once the demand for care services has been analyzed, it is necessary to focus on the services with which it will be met. Although it may seem obvious, it should be pointed out once again that the deployment of services is always carried out gradually, and not only to meet the effective demand for these services based on the gradualness defined for the policy, but also for reasons intrinsic to the services themselves. In fact, in order to offer them, it is necessary to comply with different phases or stages, for example, the construction of infrastructure, establishing bureaucratic processes for purchases, issuing the regulations that support their implementation, as well as carrying out actions to disseminate them among the population, receiving applicants, identifying, and selecting them, etc. All of the above implies months of work before being able to provide them.

Among the care services, two types can be distinguished: those provided in the user's home (home services) or the so-called institutionalized services, those developed in specialized centers or spaces, for example, child care centers or long-stay facilities (Batthyány, 2015).

The provision of institutionalized care services, as well as the way in which they are managed, can vary from fully state-provided and managed models to mixed or fully private models. The question of what the appropriate balance in relation to the degree of public-private participation should be —linked to purposes such as guaranteeing universal access to care services and the quality of care provided— is beyond the scope of this document and will not be addressed here.

The following are the care services prioritized for the care of the defined target populations, i.e., infants, children, the elderly and people with disabilities who are care-dependent.

6.2. Identification of care services for infants (0 to 4 years)

Early childhood care centers for children from zero to four years of age offer early care and education services, in addition to food. For the population between zero and two years of age, the service normally concentrates on child care (also known in some countries as "day care"). In turn, for the population between three and four years of age, it also includes initial education activities.

In terms of the services offered by child development programs and child centers, there are many models of care and management of the target population, of the profiles and remuneration of human resources, of the origin of funding, and of urban and rural centers (Araujo et al., 2013).

For example, a typology of centers can be made according to management models that present differences in five key dimensions: (i) children's age; (ii) number of daily care hours in the center; (iii) child/adult ratio; (iv) caregiver profiles; and (v) professional support teams.

Another possible typology of centers distinguishes between public and private centers:

a. *Publicly funded and managed.* They are fully financed and managed by the State.

b. *Centers with mixed funding and management.* This category includes: (i) privately managed public centers, mostly run by social organizations (this type of center is widespread in several LAC countries); (ii) centers in companies (on-site, in the company itself or nearby), where businessmen, businesswomen, personnel, the State and even social organizations can participate in the provision or management of the service; (iii) community centers, whose provision and management are mostly the responsibility of social organizations, but which receive some type of state support in the provision of inputs or some technical resources.

c. *Privately funded and managed centers.* These include private, for-profit, and not-for-profit companies. Although the provision and management of the service is resolved without state participation, these centers must comply with state regulations on quality standards and curricula, and must even be articulated with the public supply, since users of vouchers or vouchers financed by the state can use them.

These different typologies have an impact on some characteristics of the centers, such as funding sources, infrastructure and equipment, and recurrent costs (human resources, inputs, and materials), which have an impact on fiscal costs and on GDP, employment, and tax revenues. However, it is possible to narrow the differences between centers to analyze costs and their potential impacts on GDP, employment, and tax revenues.

6.3. Identification of child care services (5 to 12 years old)

The care proposal for school-age children (population from five to 12 years of age) involves the development of proposals for extended school hours. This scheme allows us to offer a service that caters to different demographic groups of infants and, at the same time, gives mothers options to free up time to join the formal labor market under better conditions.

Extended elementary school services include public and private offerings that utilize existing primary infrastructure or other facilities. Basically, these centers offer care, feeding, learning, and recreational activities. Extended elementary programs are usually part of the services provided in the context of educational programs.

6.4. Identification of care services for care-dependent people

Demographic trends in LAC have led to the creation of services for care-dependent people that seek to guarantee their right to quality care, combining state provision with the promotion and regulation of private services.

Care services seek to aid and support in the development of activities of daily living to care-dependent people, so that, through professional help adapted to their specific needs, they can develop their lives and delay their loss of functionality. This help or assistance does not replace

the activities that should be provided by professionals from other disciplines, such as health or education.

This study considers the supply of care services for dependent people (the elderly or people with disabilities) considering the services of personal assistants in the home and two institutionalized care services, namely, long-stay facilities and day care centers. These are known as the "care chain for the elderly", since before a person enters a 24-hour daily care service, he or she goes through intermediate services, including day care centers, day or night stays, temporary stays or weekend respite programs.

6.4.1. Day care centers: Institutionalized care service for people with mild or moderate dependency

Day care centers (DCCs) can be considered as "an 'intermediate' socio-health and family support resource between the full-time institutionalization of the care-dependent individual and home care" (Rodríguez, 2006). The DCCs have three differentiating elements in relation to other intermediate resources: (i) they work on cognitive aspects, as a way of delaying deterioration processes, based on specialized care by multidisciplinary teams; (ii) since it is outpatient care, the user does not lose contact with his/her family networks; moreover, he/she manages to strengthen or generate new support and coexistence networks; (iii) it is a service where the family of the adult person receives different types of support through guidance and information to improve family coexistence, and also allows them to free time and care burden, especially for the women in those families.

Currently, there is an interesting range of care models in DCCs (Rodríguez Cabrero, 2006). For example, in the Nordic countries, the centers are aimed at care-dependent elderly people and combine social and instrumental support with health and rehabilitative care. They are mostly publicly provided and are financed with public funds and, in some cases, with user co-payments. Meanwhile, in countries such as France, a certain trend is beginning to be noted in the specialization of care for certain types of dependency, and private provision is becoming more important at the expense of public provision. In Spain, DCCs serve people over 65 years of age, and are oriented towards specialized outpatient therapeutic care in the hands of interdisciplinary teams and family support. In Chile and Uruguay, the centers are managed by social organizations under an agreement with the aim of promoting the autonomy of the elderly, delaying their loss of functionality, and fostering links with the family and social environment through social and health services. In the Chilean case, they are aimed at people over 60 years of age in a situation of social vulnerability and mild dependency, while in Uruguay, the users are people over 65 years of age with mild or moderate dependency (physical or cognitive).

6.4.2. Long-stay facilities: Institutionalized care service for people with severe care dependency

The social function of these centers should be based on respect and recognition of the identity and individuality of the elderly who reside there, encouraging the delay of their loss of functionality and their participation in family and community environments.

These are public or private socio-health services that, on a temporary or permanent basis, provide care for the elderly (who are care dependent) and are managed by either public institutions and non-profit civil society organizations or private for-profit organizations. Among them, the following stand out:

i. *Private non-profit centers.* They are generally managed by civil society organizations and require support from the community and contributions from residents. Through agreements with the State, they could receive economic support and technical advice for projects of social interest and finance personnel training.

ii. *Private for-profit centers.* These centers are financed by monthly fees from the people who reside there. The price per seat varies depending on the quality of the facilities and services offered. The spectrum ranges from residences offering very basic levels of care to "luxury" residences offering an enormous variety of services.

Although users of this type of services may be of different ages and situations with respect to loss of autonomy, for the purposes of this paper, they will be considered as institutionalized care services for people over 65 years of age with severe care dependency.

6.4.3. Personal assistants: In-home care service for people with severe care dependency

The figure of the personal assistant arose in the United States in the post-war period, but nowadays, there are several countries where this type of social and health care services is offered, with their own particularities, depending on the country in question. In Spain, for example, the service has been in development for some years, and by 2006 there were already specific regulations for its implementation. The service is provided through an employment contract between the user (who must be severely dependent) and the person who works as a personal assistant (it can be an individual worker or a company), where the conditions and guidelines of the tasks are established according to the situation and needs of the care-dependent person.

There are also experiences in this area in Argentina and Chile. In the first case, it is a home care service for people over 60 years of age, who must prove that they have insufficient income, that they have no one to care for them, or that they suffer from some type of disability or chronic or terminal illness. In Chile, starting in 2013, the Home Care Program was launched, also aimed at people over 60 years of age with moderate to severe dependency and relatively insufficient income.

Another precedent is Uruguay, where, since 2015, and within the framework of the National Integrated Care System, the Personal Assistants Program has been implemented aimed at people over 65 years of age and severely-dependent people with disabilities. Progressive access to the service was defined according to age, starting with the 0 to 29 years old and 80 years old and over. As in Spain, the service is provided through an employment contract between the user and his or her personal assistant (so far, an individual worker), which establishes the number of hours per month (80 hours) and the rest of the guidelines and tasks.

Photography: UN Women / Ryan Brown

7 THE DETERMINANTS OF THE COST STRUCTURE OF CARE SERVICES

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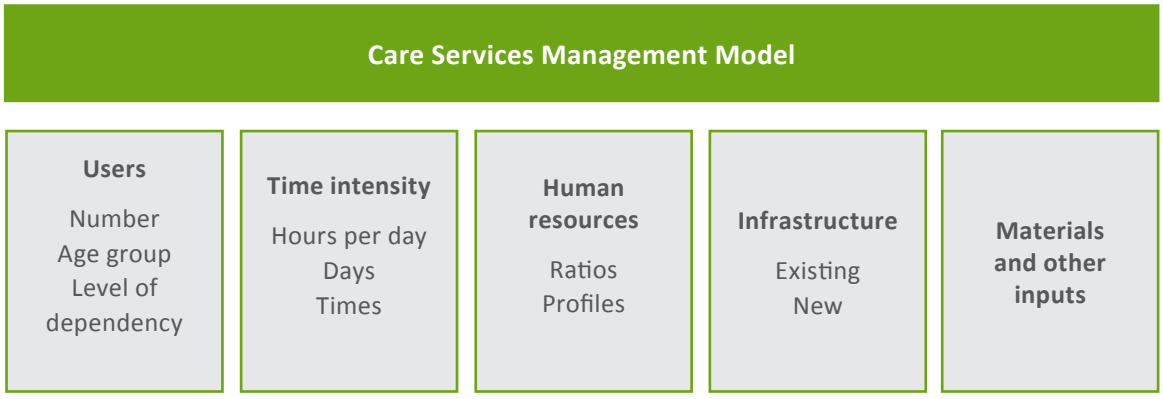
The cost structure of care services has common elements or dimensions to consider that are synthesized in the care services *management model*, which are illustrated in the following figure:

Figure 3.



Source: Own elaboration.

7.1. Care services users

- *Number of users per service unit.* The management model defines the number of people served. Thus, for example, in centers for early childhood care or long-stay facilities for care-dependent people, it is necessary to define the maximum number of persons that can be cared for simultaneously in each of them. Thus, there is a direct relationship between the number of users and the cost of the service.

- *Ages of service users.* In addition to the quantity, it is necessary to define the ages of the users. This aspect is key not only because it can operate as an eligibility criterion for the admission of users, but also because of its consequences on the type of service that will be provided (the higher the level of dependency — sometimes associated with older age— or the younger the age of the children, the more expensive the service will be).

- *Users' level of dependency.* This element, which operates as a criterion of eligibility or access of users to the service (for example, care services such as DCCs are not recommended for people with severe care dependency), has a direct impact on costs, since the higher the level of dependency, the more expensive the care service will be.

7.2. Time intensity of the service

- *Number of hours per day.* This is equivalent to information on the daily hours of care for young children in day care centers or for care-dependent elderly people in the DCCs. This is important, as there may be differences between centers. Thus, the same center may offer different amounts of hours of care (for example, according to the ages of the boys and girls); or there may be differences between centers, i.e., centers of the same type offering different amounts of hours of care. Notably, this number (combined with age or dependency levels) will have consequences on the cost structure of services.

- *Number of days of the week.* A second element to consider is the number of days of the week the service is active. This is relevant not only because of its direct effect on costs (the more days of service, the higher the costs), but also because of the days of the week on which the service is offered, since, for example, service on weekends may have an effect on an increase in salary costs.

- *Timetable in which the service is provided.* Daytime or nighttime service also has an impact on salary costs.

7.3. The service's human resources

- *Intensity of human resources required.* This refers to the ratio between client/caregiver. This ratio between the number of users that a caregiver can serve simultaneously is part of the quality standards defined in each country and is based on the experiences or recommendations of specialized organizations.

The ratios vary according to the type of service; for example, in the case of personal assistants for people with severe care dependency, the recommended ratio is 1 user = 1 personal assistant, but it may also vary according to the level of dependency (for example, the ratio in the DCCs is higher than in long-stay facilities), as well as to the age of the users (in the care of younger children the ratio is lower than in those who are older).

The evidence shows that there is an inverse relationship between ratio and costs, since the lower the ratio, the greater the number of caregivers needed to care for the same number of users, and therefore the higher the costs of the service.

- *Profiles of the required human resources.* This refers to the personnel required for the proper functioning of each service. It is common to consider at least three occupational categories: (i) caregiver (sometimes referred to as educator or assistant who has daily contact with the users); (ii) professionals of various types of discipline, which is modified according to the service in question;[9] (iii) administrative and auxiliary personnel grouping administrators, cooks, drivers, doorkeepers, security guards, or cleaning staff. In this case, there is also a direct relationship between the quality of the service, the different profiles of the human resources involved, and the costs of the service.

9. An extreme case is the personal assistant service, where the only human resource is the assistant or caregiver, and there is no direct participation of other professionals or assistants. Although there are also differences between services -since the professionals required for children's centers are not the same as those required for long-stay facilities- and differences within the same type of services, as in the case of children's centers, where community centers (with low intensity participation of professionals) may coexist with other proposals that include professionals (child psychologists, nutritionists, psychomotor therapists, etc.) as part of the permanent staff.

7.4. Infrastructure required for the provision of the service

Each care service (child care facilities, day care centers, or long-stay facilities) requires a basic infrastructure. In all cases, the required standards are expressed in square meters per person; therefore, the greater the number of people served simultaneously, the greater the facility requirements. The standards also include additional indications of dedicated spaces for specific purposes (e.g., restrooms, staff rooms, psychomotor rooms, etc.).

In principle, there are four ways to solve infrastructure needs:

- *Installed infrastructure.* The first option is to use or repurpose idle space in existing services. This option —in principle very attractive from the cost point of view, since only a few spare parts and adjustments would have to be invested— is not always available, especially when the starting point in terms of coverage is low and a significant increase in coverage is sought.

- *Community infrastructure.* The second option is the adaptation of available community infrastructure. Basically, the idea is to use underutilized community spaces, either because there are hours available during the day or because there are days of the week when they are entirely available.

- *Leased infrastructure.* The third option is the rental or leasing of infrastructure. From the point of view of costs and the possibilities of increasing coverage, it is similar to the case of using community infrastructure. However, it should be considered that it adds a recurring cost to the service due to the payment of rent to the property owner, which is not the case with community spaces.

- *New infrastructure.* This option is the best from the point of view of service quality, since it is very likely that the required quality standards will be guaranteed. However, it requires a significant volume of funds. Yet, in addition to the quality arguments, the multiplier effects that the development of care infrastructure has on economic activity should be added in its favor, along with the fact that it becomes a social asset to the communities where it is developed.

7.5. Materials and inputs necessary for the provision of the service

Care services require various materials and inputs, including a wide range of products that are linked to the type of service, as well as to the intensity and modality of the care provided. For this reason, they are usually estimated as a percentage of human resources costs. For example, the proportion in the cost structure of home services, such as personal assistants, is low, while in services such as long-stay facilities, they can represent a significant part of the total costs, since they offer 24-hour services seven days a week. In this context, it is also relevant to consider food costs.

7.6. Other relevant items to be considered for the provision of the service

Costs may include the application of surveys or instruments for the assessment of dependency, as well as monitoring, technical accompaniment, and supervision of services. These expenditures do not exceed 10% of total costs and are generally invisible because they are absorbed by the public structures of the institutions responsible for policy deployment. However, it is relevant to show its importance and to value it in budgetary terms.

Photography: UN Women / *Ariel Silva*

8 COST STRUCTURE OF CARE SERVICES: GENERAL CONSIDERATIONS

8 COST STRUCTURE OF CARE SERVICES: GENERAL CONSIDERATIONS

8.1. Early childhood care services: Child care center

To estimate the costs of early childhood care, one must start from the operational assumption that each infant receives only one service. With this assumption in mind, the cost structure of the institutionalized early childhood care service (child care center) is presented below.

Users of the service: Children between the ages of zero and five years old.

- *Number of users per service unit.* Early childhood centers require specialized services, so they normally have a specific number of clearly defined users that can hardly be exceeded. Places range from 34 to 136 children. For example, a center can be defined according to the number of children per classroom, considering that for those between zero and two years of age, there are classrooms for 12 children; for the three-year age group, classrooms for 36 children —the same as for the four-year age group; and for the five-year age group, classrooms for 20 children. This implies a total of 104 children per center, with one classroom for each age group.

- *Ages of service users:* from zero to five years old, distinguishing between zero and two and three and five years old.

Time intensity of the service

- *Number of hours per day.* It is common to offer services for four to eight hours a day.
- *Number of days per week:* five.
- *Hours of operation:* morning and/or evening shifts.

Human resources of the service

- *Intensity of human resources required.* The ratios used between users and care staff is highly variable. For example, as an initial approximation, the following ratios can be used: between users and assistants for children to care staff from 3 to 12; from children to educator from 12 to 24; and from children to assistant from 4 to 24. This indicator is modified to suggest improvements in the quality of service.

- *Profiles of the required human resources.* A child care center needs to have a director, an administrative assistant, a psychologist, a nurse, a social worker, a cook, people with technical specialties (psychomotor, music), and janitorial staff. The hours per week requirements vary from 10 to 40 hours; and in the cases of quartermasters, up to 80 hours.

Infrastructure required by the service

- A facility that complies with standards, criteria, and regulations for infant facilities (safety, ventilation, and accessibility) is required.

- For infants from zero to two years old, it is estimated that a space of 0.59 infants per square meter in care rooms; one infant per square meter in multipurpose rooms; and nine infants per square meter in restrooms is needed; for three to five years old, a space use of 0.74 infants per square meter in classrooms; 0.91 infants per square meter in multipurpose rooms; and nine infants per square meter in restrooms.

Materials and inputs required

- Various types of meals are offered depending on the hours of operation.
- Other expense items include miscellaneous materials, electricity, water, and maintenance.

Other items

- This includes, for example, the unit's assessment of the applicants.

8.2. Child care services: Extended hours in elementary education

In this age bracket, it is necessary to assume that children receive primary education, which implies that these services are an extension of the curricular schedule. A below is the cost structure of the institutionalized child care service (extended hours in elementary schools).

Users of the service: Infants between 6 and 12 years old.

- *Number of users per service unit.* The extended elementary schools have quotas that range from 40 to 140 children, depending on the number of children per classroom.
- *Ages of service users:* 6 to 12 years old.

Time intensity of the service

- *Number of hours per day:* four hours.
- *Number of days per week:* five.
- *Hours of operation:* morning and/or evening shifts.

Human resources of the service

- *Intensity of human resources required.* The ratios used between users and care staff vary widely. For example, a ratio of users and child attendants to care staff can be used as an initial approximation from 26. This indicator is modified to suggest improvements in the quality of service.
- *Profiles of the required human resources.* An extended elementary school center needs a director, an administrative assistant, a psychologist, a nurse, a social worker, a cook, staff with technical specialties (psychomotor, music), and janitorial staff. The hours per week requirements vary from 10 to 40 hours; and in the cases of quartermasters, up to 80 hours.

Infrastructure required by the service

- A facility that complies with standards, criteria, and regulations for infant facilities (safety, ventilation, and accessibility) is required. It is common to use primary schools for after-school hours.
- Estimated space usage is 0.74 infants per square meter in classrooms; 0.50 infants per square meter in multipurpose rooms; and nine infants per square meter in restrooms.

Materials and inputs required

- Various types of meals are offered depending on the hours of operation.
- Other expense items include miscellaneous materials, electricity, water, and maintenance.

Other items

- This includes, for example, the unit's assessment of the applicants.

8.3. Care services for dependent people

The estimation of the costs for care-dependent people involves some operational considerations, among which the following stand out:

- Each person is entitled to a single service according to his or her degree of dependency. For example, a person with severe care dependency will be assigned a personal assistant or a place in a long-stay facility. This assumption may be a bit restrictive, since in reality several services can be combined.

- The combination of services between types of dependency is not allowed, i.e., a person with mild or moderate dependency could not occupy a place in long-stay facility. Again, this is a simplifying assumption, since, in fact, people with different degrees of dependency coexist in these centers.

8.3.1. Day care centers

People using the service: Elderly people with mild and moderate dependency, residing in private homes.

- *Number of users per service unit.* As the DCCs are sociotherapeutic spaces, their proposals are open in terms of the number of hours and days that the beneficiaries can participate. For this reason, it is common for coverage to be measured in quotas and not in the number of beneficiaries, and the same quota may be used by more than one user.

Although there is a high variability of users, it is reasonable to establish DCCs with 40 or 50 daily quotas, which can be covered by 80 or 100 different people.

- *Ages of service users:* 60 or 65 years old.

- *Level of dependency of users:* mild and moderate.

Time intensity of the service

- *Number of hours per day:* most frequently four but can be as many as eight.

- *Number of days of the week:* five is the most common.

- *Hours of operation:* usually morning and/or evening shifts.

Human resources of the service

- *Intensity of human resources required.* It is common to consider ratios of eight slots (users participating simultaneously) for each caregiver, but this can be modified according to the quality of the service offered.

- *Profiles of the required human resources.* For a DCC with 40 daily slots, five caregivers, a DCC technical coordinator, and a psychologist are normally required. To this basic team, workshop leaders or health professionals, such as nurses, geriatricians, etc., can be added.

Infrastructure required by the service

- A building is required that meets standards and criteria for accessible facilities (for people with reduced mobility, people with disorientation, etc.), lighting, and adequate ventilation, heating, and cooling.

An estimated 2.5 square meters of space per user. In addition, there are outdoor areas (patios, gardens, green spaces), as well as a dining room, kitchen, restrooms, and a meeting room for the center's work team.

Materials and inputs required

- *Food*. Depending on the length of the daily schedule, a snack (breakfast or afternoon snack) may be considered. Thus, in the case of four-hour DCCs, a snack is included; in eight-hour centers, lunch is added.

- The rest of the expenditure items have a low incidence on costs unless the center's proposal includes the transfer of users. In this case, it is an item that should be estimated separately, as is recommended for food.

Other items

- As in the case of personal assistants, a relevant item may be the evaluation of the applicants by the agency or responsible institution.

8.3.2. Long-stay facilities

Service users: Elderly people with severe care dependency.

- *Number of users per service unit.* Although there is a great deal of variability, it is reasonable to think of centers that do not exceed 80 to 100 people served simultaneously.

- *Ages of service users.* Although it can accommodate people of all ages, an institutionalized care service is recommended for people over the age of 65 or 70.

- *Level of dependency of users:* severe.

Time intensity of the service

- *Number of hours per day:* 24.

- *Number of days of the week:* seven.

Human resources of the service

- *Intensity of human resources required.* In day shifts: five dependent residents for each caregiver; in night shifts, 10 for each caregiver.

- *Profiles of the required human resources.* Technical direction by a person specialized in Geriatric-Gerontological Medicine. If this is not possible, the task may be performed by a general practitioner. A professional in the social area is needed to carry out the actions related to the social function of these centers. To this basic team can be added workshop or health professionals, such as nurses, a cook or cooker, service and cleaning assistants, etc.

Infrastructure required by the service

- A building is required that meets standards and criteria for accessible facilities (for people with reduced mobility, people with disorientation, etc.), lighting, and adequate ventilation, heating, and cooling.

Common rooms (1.5 square meters per resident), bedrooms (five square meters per resident) and their equipment, bathrooms (at a ratio of one for every five incontinent persons), recreation areas, service areas (kitchen, dining room, medicine storage).

Materials and inputs required

- *Food*. Since these are 24-hour centers, two snacks (breakfast or afternoon snack), in addition to lunch and dinner, should be considered.

- The remaining items are estimated as a percentage of human resources costs.

8.3.3. Personal assistant service

Service users: People with severe care dependency.

- *Number of users per service unit:* The recommended ratio is one personal assistant to one user residing in private households.

- *Ages of service users:* all ages.

- *Level of dependency of users:* This service is recommended in the case of severe dependency. However, there may be versions adapted for people with mild or moderate dependency, to support specific activities of the instrumental type, with a lower hourly load.

Time intensity of the service

- *Number of hours per month:* Although there is no defined standard, the most frequent are monthly loads ranging from 40 to 80 hours per month.

- *Number of days per week and hours of operation:* As these are generally labor contracts between the user or his/her family and the individual assistant or the provider company, the monthly hours are distributed by mutual agreement between the parties; there is no defined standard in this regard.[10]

A workload of 40 to 80 hours is used, in order to provide quality care to the care-dependent person, as well as to ensure that caregivers have enough free time to develop their life projects (study, work, leisure, etc.).

It is possible to find other alternatives, where caregivers may have a lower monthly assistance load, for example, 20 hours per month, as is the case of experiences in the Basque Country, which can be assimilated to "respite programs", since with this hourly load they only manage to alleviate the burden of care for families in some specific tasks.

Human resources of the service

- *Intensity of human resources required:* One personal assistant is required for one user.

- *Profiles of the necessary human resources:* The only human resource is the caregiver (personal assistant).

Infrastructure required by the service

- As this is a home care service, no special infrastructure is required, except for the administrative offices.

Materials and inputs required

- *Food:* The service does not include this item.

- *Other*: This may include inputs such as clothing or other materials (gloves, etc.). However, its weight is marginal in relation to the cost of human resources.

Other items

- Depending on the eligibility criteria applied, the process of empowerment of users may be considered. This includes from the application, the evaluation of the unit (through the application of the corresponding instrument), to the signing of the agreement with the person who will act as assistant.

10. The assistance provided does not supplement the activities that correspond to professionals from other sectors (health, education, etc.), nor those that are the responsibility of the primary caregiver.

Photography: UN Women / *Ariel Silva*

9 OPERATIONAL ESTIMATE OF THE COSTS OF CARE SERVICES

9 OPERATIONAL ESTIMATE OF THE COSTS OF CARE SERVICES

9.1. General parameters

The operational estimate of unit costs for care services aimed at infants, children, and care-dependent people includes the identification of various aspects, which, for the purposes of the estimations to be made, operate as parameters of the models (De Henau *et al.*, 2019 and Ilkkaracan et al., 2015). The following tables in this chapter identify each of them. In principle, the following data are required:

a. The economic context, in particular, the gross domestic product (GDP) for the base year and the expected GDP growth rates for the period considered, which will be used later as a relative reference for the estimated costs and effects.

b. Of the population by relevant age brackets, for the period considered (this parameter was analyzed in previous chapters).

Box 6. Gross domestic product and population

Years	GDP and growth rate	Population by relevant age group							
		0 to 2	*3 to 4*	*5 to 12*	*13 to 29*	*30 to 59*	*60 to 69*	*70 to 79*	*80 or more*
1									
2									
3									
4									
5									

Source: Own elaboration.

The operational definition of the supply of care services for children from zero to four and from five to 12 years of age is reflected in a set of parameters summarized in Table 7; those for care-dependent people are presented in Table 8.

These parameters make it possible to configure the management model of the institutionalized care service to be generated. These tables show the parameters to be defined in order to have the specified model, identifying both the current situation and the new configuration to be developed.

It is likely that this will coincide with the current situation or that adjustments will be made in order to improve the quality of care currently provided to infants or children.

Box 7. Parameters for defining care services for infants and children

Parameters	Current	Prospective
Early childhood care services: Child care centers		
Definition of the user population		
Number of user population and percentage of the total population		
Current coverage rate (number and percentage of the potential user population)	1 to 2 years 3 to 4 years	
Cost of current system (estimates) (amount and percentage of GDP)		
Cost per infant of the current system		
Qualification level corresponding to the caregiver profile in the early childhood center.	Example: Secondary	
Hours per week in child care	Example: 35-40 hours	
Ratio of infants to caregiver	Example: 4	
Available infrastructure	Stays (number and m^2)	
Type of center		
Square meters per infant		
Child care services: Extended elementary school		
Definition of the user population		
Number of user population and percentage of the total population		

Parameters	Current	Prospective
Current coverage rate (number and percentage of the potential user population)		
Cost of current system (estimates) (amount and percentage of GDP)		
Practitioner's level of qualification in extended elementary school	Example: High school/college	
Hours per week of extended elementary school	Example: 20 hours	
Ratio infants to staff	20 and necessary personnel with no contact with infants	
Available infrastructure	Centers or schools (number and m2)	
Type of center	Example: general, community or school-based	
Square meters per infant	Example: 10 m^2	

Source: Own elaboration based on UN Women and INMUJERES (2020) and De Henau et al. (2019).

Box 8. Parameters for defining care services for dependent people.

Parameters	Current	Prospective
Long-stay facilities		
Definition of the user population		
Number of user population and percentage of the total population		
Current coverage rate (number and percentage of the potential user population)		
Cost of current system (estimates) (amount and percentage of GDP)		
Costs per care-dependent elderly person		

Parameters	Current	Prospective
Level of qualification of the caregiver for care-dependent elderly people		
Hours per week in care for care-dependent elderly people		
Ratio of care-dependent elderly people to personnel		
Available infrastructure		
Type of units (individuals served)		
Square meters per elderly person		
Day care centers		
Definition of the user population		
Number of user population and percentage of the total population		
Current coverage rate (number and percentage of the potential user population)		
Cost of current system (estimates) (amount and percentage of GDP)		
Costs per elderly person		
Elderly care practitioner level of qualification		
Hours per week in elderly care		
Ratio seniors to staff		
Available infrastructure		
Type of units (individuals served)		
Square meters per user		

Parameters	Current	Prospective
Home personal assistant services		
Definition of the user population		
Number of user population and percentage of the total population		
Current coverage rate (number and percentage of the potential user population)		
Cost of current system (estimates) (amount and percentage of GDP)		
Costs per care-dependent people		
Level of qualification of the care practitioner for care-dependent people		
Hours per week in care for care-dependent people		

Fuente: Elaboración propia.

9.2. Costs of child care services

Care services for children and dependent people include salary costs, inputs, infrastructure, and fixed capital costs (facilities), and taxes and subsidies (Table 9). These costs should be differentiated by type of service (early childhood or childhood proper), and the difference between the costs of public and private services should be considered. For example, it is common for there to be wage differences between public and private sector pay.

9.2.1. Wages and salaries

- The salaries of all personnel involved in the care service are estimated.
- Wages and salaries disaggregate the portion of taxes and Christmas bonus payments.
- The quality of the system is modified by changes in remuneration or population served-to-staff ratios.
- In extended elementary school, the consequences of extended use of existing school facilities are considered, including the current use of two shifts. This involves, for example, adjusting salaries from part-time to full-time or overtime.
- Wages and salaries include three options: 1. Base 2. Medium 3. High, where it is common to make a correspondence between base salary and public salary, high salary, and salary in the private sector and medium salary as the average between the two levels of remuneration.

9.2.2. Food

- Consider the cost of the different types of food (breakfast and/or lunch).

9.2.3. Infrastructure

- Consider two options in the event that infrastructure expansion is necessary: construction or rental.
- Includes differentiated infrastructure, such as infant care room, multipurpose room, restrooms, and kitchen (children per m^2).
- It is common for rental costs to be more heterogeneous at the regional level.
- In extended elementary school, the expansion in the use of facilities is considered, but considering the use of elementary school facilities in two shifts.

9.2.4. Other Expenses

- Include other additional expenses that are identified, such as electricity or water.

Box 9. Aggregate costs of care services for infants and children

Items	Gross costs			Taxes and subsidies			Source
	Base	Medium	High	Base	Medium	High	
Early childhood care services: Child care centers							
1. Salaries and wages (monthly)							
1.1. Educator and/or teacher							
1.2. Psychologist							
1.3. Social Worker							
1.4. Cook (technician)							
1.5. Administrative Assistant							
1.6. Security - janitor							
1.7. Technicians (music, sports, psychomotor)							
1.8. Director							
2. Food (cost/day)							
3. Inputs							
3.1. Stimulation/recreation material	% of total cost = 2%						
3.2. Maintenance and equipment	of total cost = 5%						

Items	Gross costs			Taxes and subsidies			Source
	Base	Medium	High	Base	Medium	High	
3.3. Miscellaneous supplies (electricity, water, etc.)	% of total cost = 10%						
4. Management and administration	% of total cost = 5%						
5. Medical emergency	% of total cost = 5%						
6. Infrastructure							
6.1. Construction m^2							
6.2. Rent m^2							
7. Other Expenses							
Child care services: Extended elementary school							
1. Salaries and wages (monthly)							
1.1. Educator and/or teacher							
1.2. Psychologist							
1.3. Social Worker							
1.4. Cook (technician)							
1.5. Administrative Assistant							
1.6. Security - janitor							
1.7. Technicians (music, sports, psychomotor)							
1.10. Director							
2. Food							
3. Inputs							
3.1. Stimulation/recreation material							
3.2. Maintenance and equipment							
3.3. Miscellaneous supplies (electricity, water, etc.)							

Items	Gross costs			Taxes and subsidies			Source
	Base	Medium	High	Base	Medium	High	
4. Management and administration							
5. Medical emergency							
6. Infrastructure							
6.1. Construction							
6.2. Rent							
7. Other expenses							

Source: Own elaboration.

9.3. Costs of care services for the elderly and people with disabilities who are care-dependent

Care services for the elderly and people with disabilities who are care-dependent include (UN Women and INMUJERES 2020):

- Long-stay facilities
- Day care centers
- Personal home assistants

The first two correspond to institutionalized care services, while the third is a home care service.

The main expenses of these services include salary costs, inputs, infrastructure, and fixed capital costs (facilities), and taxes and subsidies (Table 10). These costs should differentiate between the different types of center or personal home attendant service and are modified according to the quality of the service proposed to be implemented. In addition, the difference between public and private costs must be considered. For example, it is common for there to be wage differences between public and private sector pay.

9.3.1. Wages and salaries

- The salaries of all personnel involved in care services are estimated.
- Wages and salaries disaggregate the portion of taxes and Christmas bonus payments.
- The quality of service is modified by changes in remuneration or population served-to-staff ratios.
- Wages and salaries include three options: 1. Base 2. Medium 3. High, where it is common to make a correspondence between base salary and public salary, high salary, and salary in the private sector and medium salary as the average between the two levels of remuneration.

9.3.2. Food

- Consider the cost of the different types of food (breakfast and/or lunch) according to the type and hours of service.

9.3.3. Infrastructure

- Consider two options in the event that infrastructure expansion is necessary: construction or rental.
- Includes differentiated infrastructure, such as multipurpose room, bathrooms, and kitchen (boys/girls per m^2).
- It is common for rental costs to be more heterogeneous at the regional level.

9.3.4. Other Expenses

- Include other additional expenses that are identified, such as electricity or water.

Box 10. Aggregate costs of care services for dependent people

Items	Gross costs			Taxes and subsidies			Source
	Base	Medium	High	Base	Medium	High	
Long-stay facilities							
1. Salaries and wages (monthly)							
1.1. Caregiver							
1.2. Psychologist							
1.3. Nurse							
1.4. Cook (technician)							
1.5. Administrative Assistant							
1.6. Security - janitor							
1.7. Technicians (music, psychomotor, etc.)							
1.8. Director							
2. Food (cost/day)							
3. Inputs							
3.1. Stimulation/recreation material							
3.2. Maintenance and equipment							
3.3. Miscellaneous supplies (electricity, water, etc.)							
4. Management and administration							
5. Medical emergency							

Items	Gross costs			Taxes and subsidies			Source
	Base	Medium	High	Base	Medium	High	
6. Infrastructure							
6.1. Construction m^2							
6.2. Rent m^2							
7. Other Expenses							
Personal home assistant services							
1. Salaries and wages (monthly)							
1.1. Caregiver							
2. Other Expenses							
Day care centers							
1. Salaries and wages (monthly)							
1.1. Caregiver							
1.2. Psychologist							
1.3. Social Worker							
1.4. Cook (technician)							
1.5. Administrative Assistant							
1.6. Security - janitor							
1.7. Technicians (music, psychomotor, etc.)							
1.8. Director							
2. Food							
3. Inputs							
3.1. Stimulation/recreation material							
3.2. Maintenance and equipment							
3.3. Miscellaneous supplies (electricity, water, etc.)							

Items	Gross costs			Taxes and subsidies			Source
	Base	Medium	High	Base	Medium	High	
4. Management and administration							
5. Medical emergency							
6. Infrastructure							
6.1. Construction							
6.2. Rent							
7. Other Expenses							

Source: Own elaboration.

This set of information can be summarized in tables that reflect the cost structure of care services for children and dependent people disaggregated into concepts that will later be included in the input-output matrix in their respective branches (Tables 11 and 12).

Box 11. Costs of child care services (infants and children)

Concept	Branch			
	Wages and salaries	Food	Construction	Others
Intermediate inputs				
Gross value added				
Compensation of salaried employees				
Gross operating surplus				
Taxes net of production subsidies				
Gross production value				
Employment				

Source: Own elaboration.

Box 12. Costs of care services for dependent people

Concept	Branch			
	Wages and salaries	Food	Construction	Others
Intermediate inputs				
Gross value added				
Compensation of salaried employees				
Gross operating surplus				
Taxes net of production subsidies				
Gross production value				
Employment				

Source: Own elaboration.

9.4. Estimate of the costs of universal and quality services for infants and care-dependent people

Estimating the costs of a care system for infants, children, and care-dependent people allows for an assessment of the cost of scaling up to a universal system, which determines the magnitude of the fiscal cost (De Henau et al., 2019 and Ilkkaracan *et al.*, 2015). The gross costs of a system of universal services and quality of care can be obtained by estimating:

- The costs of a universal service system, from which must be subtracted the expenses already incurred.
- The additional cost of building a universal service system based on the current coverage and cost of care services for infants, children, and care-dependent people.

The definition of the quality of services is obtained by modifying the parameters of:

- Wages and salaries
- Ratios between users and staff

This may include the gradual phasing of the implementation of care systems.

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10 MACROECONOMIC MODEL AND INPUT-OUTPUT MATRIX

10 MACROECONOMIC MODEL AND INPUT-OUTPUT MATRIX[11]

The fiscal costs of providing care services for children and for the elderly and people with disabilities who are care-dependent represent an additional public expense. This leads to an increase in final demand, which has a multiplier effect on the economy by inducing an increase in purchases in the economy as a whole.

In this way, it is possible to simulate the consequences of developing care services for children and for elderly and people with disabilities who are care-dependent in the economy based on the use of input-output models.

10.1. Macroeconomic simulations and input-output (IO) model

Public spending for the implementation of care services for children and dependent people represents an increase in final demand. This increase in final demand leads to a higher level of output and employment that can be estimated through impact multipliers on output, value added, and/or employment in the context of an input-output model.

In this sense, it is possible to simulate the macroeconomic consequences of the increase in final demand associated with the increase in public spending due to the increase in care services:

- GDP and value added.
- The generation of direct, indirect, and induced employment.
- Additional tax collection.

UN Women has designed three simulation tools that estimate the costs and returns on investment of care services for children aged 0 to 4 years; for children aged 5 to 14 years; and for the elderly and people with disabilities who are care-dependent.

The tools are developed in the form of an Excel macro in which, by entering the necessary values in each of the fields, the calculation of the desired estimates for the total computation of care services in a given territory is automatically performed.

These simulations make it possible to construct various prospective scenarios on the final consequences of investment in care services, i.e., to recognize that initial public spending has relevant effects on output growth, job creation, and even tax revenue. These effects are particularly relevant, as they show a more complete picture and allow us to qualify the initial expenses. For example, it is possible to identify that part of the initial expenditure is subsequently recovered through new tax revenues resulting from a higher level of GDP and employment.

Thus, the effects of additional public spending that results in an increase in final demand on GDP, employment, and additional tax revenues can be estimated based on an input-output (IO) model (Miller and Blair, 2009).

11. This section has been edited for publication. For the original version detailing the macroeconomic model and the input-output model that has been developed, please contact UN Women Mexico.

This calculation considers different policy definitions and variables for each of the target populations:

- Basic definitions of the policy: time horizon of the initial deployment of care services and the target population (early childhood from 0 to 4 years old, childhood from 5 to 12 years old, and people over 60 years old and/or people with disabilities who are care-dependent. The analysis can be performed for one or several populations simultaneously.

- Technical policy definitions: services with which each target population is projected to be served based on existing services or the development of new services, and the expansion criteria for the coverage of care services for each population.

- Identification of the starting point based on existing records or data: estimation of the potential demand, the current coverage of the supply of services, and the care gap for each target population by care services.

- Operational parameters: progressiveness in the gradual attention of each target population, definition of the effective demand for care services and definition of parameters of the management model for each care service (human resources, infrastructure, materials, among others).

- Quality parameters of care services, including salaries, number of people cared for per caregiver, current expenditure, investment in infrastructure and expenditure on food.

Subsequently, based on the above definitions, the following is determined:

- The coverage and care service scenarios with their different quality parameters.

- Cost estimation: the Excel macro simulates the costs that would be charged for these services taking into account different scenarios for a given period of time.

- Estimation of the effects and impacts of additional spending on care services and the potential direct effects on GDP, employment, and tax revenues.

The simulations with the input-output matrix are based on several assumptions, among which the following stand out:

- Relative prices remain constant.
- Technology, which is reflected in the technical coefficients, is constant.
- Supply is elastic.

To learn more about the simulation tool, please contact UN Women Mexico.

10.1.1. Gross production multiplier, value added, and employment

The construction of a synthetic sector of care services for children and care-dependent people makes it possible to identify potential modifications in the final demand of the sectors of the input-output matrix that correspond basically to expenditures in:

- Wages and salaries.
- Food.
- Construction.
- Others (electricity, water, inputs).

These sectors have different supply linkages and different labor intensities and therefore have different output and employment spillovers.

Thus, this synthetic sector indicates the sectors of the input-output matrix where final demand increases as a consequence of the expansion of social infrastructure by applying the expenditure integration method through the already established branches so as not to violate the asymmetry of the IO matrix (Antonopoulos *et al.*, 2011).

Thus, the total additional expenditure is in gross terms and is distributed among the branches identified and includes taxes and subsidies. Additionally, the proportion of imports is extracted by imputing import ratio values with respect to total intermediate input. This makes it possible to simulate (Antonopoulos *et al.*, 2011):

1. A direct impact on GDP and employment resulting from an increase in final demand in a sector *i*.

2. An indirect impact on GDP and employment derived from the increase in production in the economy as a whole.

3. An induced impact on employment in the closed Leontief model.

10.2. The new tax collection

The increase in public spending due to the supply of care services leads to an increase in the value of production, value added, and employment, which translates into an increase in tax revenue (De Henau et al., 2019, Antonopoulos, 2011) due to the:

- Overall increase in tax revenue from taxes on additional income generated (there are different tax rates depending on income level).

- Increase in tax revenues derived from indirect consumption taxes (value added, VAT).

- Increase in tax revenues from social security contributions derived from new jobs in the formal sector.

Thus, it is necessary to estimate these potential tax revenues based on:

1. *Tax revenue to wages and salaries.* These are obtained by applying the current social security rates to the wages and salaries of the new jobs generated.

2. *Tax revenues derived from indirect consumption taxes.* These are obtained by considering the new value of consumption resulting from the additional increase in income. For this, it is necessary to have a consumption function that relates the path of consumption to the evolution of income.

Thus, spending on care services induces an increase in income, which translates into an increase in consumption and, therefore, an increase in tax revenue associated with the value added tax.

The econometric estimation of the consumption function must consider the order of integration of the series and, therefore, use some cointegration procedure. The value-added tax rate is applied to the increase in consumption to obtain tax revenues derived from indirect taxes.

10.3. Identification of labor demand for women (matching model)

The creation of care services leads to an increase in the demand for jobs, which may have a bias in favor of female employment depending on the type of occupations requested.

The estimation to obtain an adjustment between the supply and demand of female jobs can be done based on a matching model. When there is no matching, there is a mismatch between job vacancies and job seekers or unemployed people, so if those people were looking for another job or had other skills, then unemployment would have been lower. Then, we observe the incompatibility or the existence of a weak match between the characteristics of workplaces (required skills, competencies, etc.) and the characteristics of job seekers (gender, skills, education level, and location preferences).

Blanchard and Diamond (1989) point out that the matching function is analogous to a production function and is consistent with the idea that new jobs and workers may differ in their geographic location and characteristics and that, for example, regions with a high rate of job destruction may not coincide with those with higher rates of job creation. It can also be estimated as a probit model, where the dependent variable is the situation of moving from unemployment to employment, or a multinomial model, where different types of situation (unemployment, formal employment, informal employment) are considered. Thus, the information strategy will depend on the availability of information, so it is essential to have employment surveys, and the model has to be estimated by segmenting the information of the educational market.

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11 PROSPECTIVE SCENARIO ESTIMATION

11 PROSPECTIVE SCENARIO ESTIMATION

As mentioned in previous chapters, the analysis of the costs and effects of providing care services for children and dependent people requires the construction of various prospective scenarios that make it possible to identify the consequences of different rates of deployment of these services and of the quality options implemented.

The forward-looking scenarios considered are based primarily on modifying the following parameters (De Henau *et al.*, 2019 and Ilkkaracan *et al.*, 2015):

- Participation rates and gradualness in the services offered to children and care-dependent people of different ages.
- Different levels of wages and salaries (salary costs corresponding to social security contributions, sick pay, and vacation pay), reflecting changes in the quality of the system.
- Personnel working time, expressed in the same unit of measurement as wages and salaries.
- Ratios between users (children and care-dependent people) and staff.
- The type of educational centers for early childhood and extended elementary school, day care centers, and long-stay facilities. This includes size and basic features, such as specialized areas or square footage per user.
- Number of hours of service provision per week and per year or the time spent at the center, such as part-time and full-time.
- Food costs and type of food (snacks, lunches, dinners).
- The infrastructure to be used considering its remodeling or expansion or the purchase or rental of facilities. It is possible to consider the process of building, expanding, or renting infrastructure according to the increase in coverage.

This set of information, equivalent to the parameters of the estimation models, makes it possible to develop different prospective coverage scenarios, whose parameters vary depending on the type of prospective design required for the deployment of services, as illustrated in Table 16.

Box 16. Parameters for the construction of prospective scenarios for children and care-dependent people by type of service

Management model - items	Scenario 1	Scenario 2	Scenario "n"
Participation rates and gradual coverage of the potential demand for services	Number and rate	Number and rate	Number and rate
Wages and salaries	Amount	Amount	Amount
Staff working time	Hours	Hours	Hours
Ratio or ratios between users and personnel	Ratios	Ratios	Ratios
Type of center	Description and m^2 per user	Description and m^2 per user	Description and m^2 per user
Number of hours of service provision	Hours	Hours	Hours
Food costs	Amount	Amount	Amount
Construction costs	Amount	Amount	Amount

Source: Own elaboration.

Estimates of the costs of care services, simulations with the input-output model, and potential tax revenues can be summarized in the following tables.

Box 17. Early Childhood Care Services Outcome Synthesis

Outcomes	Year 1 (BAU[a])	Year 2	Year 3	Year 4	Year 5
Coverage 0-2 years					
Coverage 3-4 years					
Wage costs center					
Preschool salary costs					
Total salary costs					
Construction costs					
Food costs					
Total gross costs					
% Gross GDP in infants					
Net financing gap after subtracting from the gross cost: expenditure already spent, direct and indirect revenue and additional revenue derived from the input-output matrix (IOM).					
Impact on GVP after IOM (%GVP)					
Total additional jobs (direct, and direct and indirect IOM)					
Individuals served					

Note:
aBAU: reference inertial scenario (business as usual)

Source: Own elaboration.

Box 18. Summary of child care services outcomes

Outcomes	Year 1 (BAU)	Year 2	Year 3	Year 4	Year 5
Coverage 6-12 years					
Salary costs					
Total salary costs					
Construction costs					
Food costs					
Total gross costs					
Gross GDP in extended elementary school					
Net financing gap after subtracting from the gross cost: expenditure already spent, direct and indirect revenue and additional revenue derived from the input-output matrix (IOM).					
Impact on GVP after IOM (%GVP)					
Total additional jobs (direct, and direct and indirect IOM)					
Individuals served					

Note:
aBAU: reference inertial scenario (business as usual)

Source: Own elaboration.

Box 19. Synthesis of results of care services for dependent people in day care centers

Outcomes	Year 1 (BAU)	Year 2	Year 3	Year 4	Year 5
Coverage					
Salary costs					
Total salary costs					
Construction costs					
Food costs					
Total gross costs					
% gross GDP in day centers					
Net financing gap after subtracting from the gross cost: expenditure already spent, direct and indirect revenue, and additional revenue derived from the input-output matrix (IOM).					
Impact on GVP after IOM (%GVP)					
Total additional jobs (direct, and direct and indirect IOM)					
Individuals served					

Note:
aBAU: reference inertial scenario (business as usual)

Source: Own elaboration.

Box 20. Synthesis of results of care services for dependent people in long-stay facilities

Outcomes	Year 1 (BAU)	Year 2	Year 3	Year 4	Year 5
Coverage					
Salary costs					
Total salary costs					
Construction costs					
Food costs					
Total gross costs					
Gross GDP in long-stay facilities					
Net financing gap after subtracting from the gross cost: expenditure already spent, direct and indirect revenue and additional revenue derived from the input-output matrix (IOM).					
Impact on GVP after IOM (%GVP)					
Total additional jobs (direct, and direct and indirect IOM)					
Individuals served					

Note:
aBAU: reference inertial scenario (business as usual)

Source: Own elaboration.

Box 21. Summary of results of personal assistant at home as a service

Outcomes	Year 1 (BAU)	Year 2	Year 3	Year 4	Year 5
Coverage					
Salary costs					
Total salary costs					
Construction costs					
Food costs					
Total gross costs					
% GDP in personal assistants					
Net financing gap after subtracting from the gross cost: expenditure already spent, direct and indirect revenue and additional revenue derived from the input-output matrix (IOM).					
Impact on GVP after IOM (%GVP)					
Total additional jobs (direct, and direct and indirect IOM)					
Individuals served					

Note:
aBAU: reference inertial scenario (business as usual)

Source: Own elaboration.

The following table provides a summary of the overall system of care services for infants and the elderly.

Box 22. Summary table of care services costing

Dimensions	Year 1	Year 2	Year 3	Year 4	Year 5
Early childhood					
Total costs					
% of GDP of total costs					
Funding gap after subtracting gross cost and potential tax collection					
Total jobs generated					
GVP					
Individuals served					
Extended elementary school					
Total costs					
% of GDP of total costs					
Funding gap after subtracting gross cost and potential tax collection					
Total jobs generated					
GVP					
Individuals served					
Day centers					
Total costs					
% of GDP of total costs					
Funding gap after subtracting gross cost and potential tax collection					

Dimensions	Year 1	Year 2	Year 3	Year 4	Year 5
Total jobs generated					
GVP					
Individuals served					
Long-stay facilities					
Total costs					
% of GDP of total costs					
Funding gap after subtracting gross cost and potential tax collection					
Total jobs generated					
GVP					
Individuals served					
Personal home assistants					
Total costs					
% of GDP of total costs					
Funding gap after subtracting gross cost and potential tax collection					
Total jobs generated					
GVP					
Individuals served					
Total costs					
Total % of GDP of total costs					
Total funding gap after subtracting the gross cost and potential tax collection					

Dimensions	Year 1	Year 2	Year 3	Year 4	Year 5
Total jobs generated					
Total GVP					
Total number of people served					

Source: Own elaboration.

Likewise, the jobs generated can be classified by gender (Table 23), based on the current demand conditions by gender, by sector or through the matching model.

Box 23. Jobs by gender

Year	Total employment	Men	Women
Year 1			
Year 2			
Year 3			
Year 4			
Year 5			

Source: Own elaboration.

CLOSING REMARKS

The construction of comprehensive care systems in the region is a major task if we are to successfully meet the challenge of reducing poverty and inequalities in our countries.

As the fourth pillar of social protection, the development of the care vector —along with education, health, and social security— is key to guaranteeing the well-being of children, the elderly, and people with disabilities who require assistance and support for being care-dependent.

The COVID-19 pandemic has brought new challenges and negative economic effects, and in order to face them and emerge from the crisis, States must implement countercyclical measures. In this context, the creation of thousands of jobs, especially for women, as a result of the installation of care services, could be one of the drivers of economic recovery and reactivation.

Thus, this document has presented a methodology that not only makes it possible to establish the costs of the services that have been proposed for the reference populations, but also to project the positive impacts on the economy of an investment in care services. With the above, we seek to leave aside unilateral perspectives that only identify the costs of a policy and do not evaluate the social and economic benefits it may have.

Providing care services is a smart fiscal measure that can generate a triple dividend: it can improve the social and economic conditions of children and care-dependent people, reduce gender gaps in wages and women's participation in the labor market, and have positive effects on GDP, employment, and tax revenues.

REFERENCES

Antonopoulos, R., Kim, K., Masterson, T. and Zacharias, A. (2011). *Investing in Care: A Strategy for Effective and Equitable Job Creation.* Levy Economics Institute Working Paper No. 610. New York: Bard College.

Araujo, M.C., López-Boo, F., Puyana, J.M. (2013). *Panorama sobre los servicios de desarrollo infantil en América Latina y el Caribe*. BID.

Blanchard, O. and Diamond, P. (1989), "The Beveridge Curve", *Brookings Papers on Economic Activity*, 1(1989), 1-60.

Bloom, D., Canning, D. and Sevilla, J. (2003). *The Demographic Dividend: A New Perspective on the Economic Consequences of Population Change*. Santa Monica, CA; Arlington, VA; Pittsburgh, PA: RAND Corporation.

Batthyány Dighiero, Karina (2015). *Las políticas y el cuidado en América Latina*. Serie Asuntos de Género N° 124. ECLAC.

ECLAC (2021). *Panorama Social 2020*. ECLAC.

Davinson, J., Hendry, D.F., Srba, F. and Yeo, S. (1978). Econometric modelling of the aggregate time-series relationship between consumer´s expenditure and income in the United Kingdom, *Economic Journal*, 88, pp. 661-692.

De Henau, J., Himmelweit, S. and Perrons, D. (2016). *Investing in the care economy: A gender analysis of employment simulation in seven OECD countries*. Brussels: International trade unions Confederation (ITUC).

------ (2017). *Investing in the care economy: simulating employment effects by gender in countries in emerging economies*. Brussels: ITUC.

De Henau, J. and Himmelweit, S. (2016). "Developing a Macro-Micro Model for Analysis of Gender Impacts of Public Policy." Presentation given at the Gender and Macroeconomics conference, staged by the Levy Economics Institute of Bard College, New York, March 9-11.

De Henau, J. (2017a). "The Short-Term Employment and Fiscal Effects of Investing in Universal Child care: A Macro-Micro Simulation Analysis for the UK". Paper presented at the Levy Economics Institute of Bard College workshop on Gender Macroeconomics, New York, September 13-15.

De Henau, J. (2017b). "Costing a Feminist Plan for a Caring Economy: The Case of Free Universal Child care in the UK." *Lives after Austerity: Gendered Impacts and Sustainable Alternatives for Europe,* H. Bargawi, G. Cozzi and S. Himmelweit (eds.), 168-188. London: Routledge.

De Henau, J., Himmelweit, S., Lapniewska, Z. and Perrons, D. (2016). "Investing in the Care Economy: A Gender Analysis of Employment Stimulus in Seven OECD countries." Women's Budget Group Report to the International Trade Union Confederation, Brussels, March.

De Henau, J., Budlender, D., Filgueira, F., İlkkaracan, I., Kijong, K. and Mantero, R. (2019). *Investing in Free Universal Child care in South Africa, Turkey, and Uruguay: A comparative analysis of costs, short-term employment effects and fiscal revenue*. New York: UN Women.

Deaton, A.S. (1977). “Involuntary saving through unanticipated inflation, *American Economic Review,* 67, pp. 899-910.

Dickey, D. and Fuller, W. (1979). “Distribution of the estimators for Autoregressive time series with a unit root”, *Journal of the American Statistical Association*, 74, pp. 427-431.

Fabris, J. E. (2016). “Multiplicadores y encadenamientos de la economía argentina. Un análisis a partir de la matriz de insumo producto”, *Revista de Investigación en Modelos Matemáticos Aplicados a la gestión y la economía,* year 3, pp. 3366-3325.

González-Rodríguez, R., Gandoy-Crego, M. and Díaz, M.C. (2017). “Determinación de la situación de dependencia funcional. Revisión sobre los instrumentos de evaluación más utilizados”. *Gerokomos* [online]., vol.28, n.4, pp.184-188. ISSN 1134-928X.

Heckman, J., Pinto, R., & Savelyer, P. A. (2013). “Understanding the mechanism through which an influential early childhood program boosted adult outcomes, *American Economic Review*, 103(6), pp. 2052-2086.

Heckman, J., Moon, S, Pinto, R., Savelyer, P. and Yaritz, A. (2010). “The rate of return to the highscope Perry Preschool Program,” Journal of Public economics, 94, (1-2), pp. 114-128.

IIkkaracan, I and Kim, K. (2018). *The employment generation impact of meeting SDG targets in early childhood care, education, health, and long-term care in 45 countries*. ILO Discussion Paper. Geneva: International labor organization.

İlkkaracan, I., Kim, K., & Kaya, T. (2015). *The Impact of Public Investment in Social Care Services on Employment, Gender Equality and Poverty: The Turkish Case*. Istanbul and New York: Istanbul Technical University Women’s Studies Center and Levy Economics Institute at Bard College.

INEGI (2013). *Matriz de insumo producto, Sistemas de cuentas naciones de México: Fuentes y metodologías*. Mexico: INEGI.

Johansen, S. (1995). *Likelihood based inference on cointegration in the vector autoregressive model*. Oxford: Oxford University Press.

Kagan, L. (2013). *¿Qué es calidad en el desarrollo infantil temprano y en la educación? Diálogo Regional de Política. Calidad en los servicios de atención a la primera infancia*. Washington D.C: BID.

Katz, S. (1983). “Assessing self-maintenance: Activities of daily living, mobility and instrumental activities of daily living”, *JAGS*, 31(12), 721-726.

Lefebvre, P. and Merrigan, D. (2008). Child care policy and the labor supply of mothers with young children: A natural experiment from Canada, *Journal of Labor Economics*, 26(3), pp. 519-48.

Leontief, W. (1986). *Input-output analysis*, 2nd ed. New York: Oxford University Press.

Masterson, T. and Kim, H. (2010). “Statistical matching using propensity scores: Theory and Application to the Analysis of the distribution of income and wealth”, *Journal of Economic and Social Measurement*, 35(3-4), pp. 177-96.

Medellín, Nadin (2020). *Simulador de costos de sistemas de atención a la dependencia: una aplicación para América Latina y el Caribe*. IADB. https://publications.iadb.org/publications/spanish/document/Simulador-de-costos-de-sistemas-de-atencion-a-la-dependencia-Una-aplicacion-para-America-Latina-y-el-Caribe.pdf

Miller, R.E. and Blair, P.D. (2009). *Input-output analysis: Foundations and extensions*, 2nd edition. New York: Cambridge University Press.

Münich D., Svejnar J., and Terrell K. (1998) 'Worker-Firm Matching and Unemployment in Transition to a Market Economy: (Why) Are the Czechs More Successful than Others?', The William Davidson Institute Working Paper No. 107, University of Michigan Business School

UN Women (2015a). *El Progreso de las Mujeres en el Mundo 2015-2016*. UN Women.

UN Women (2015b). *Igualdad de género, desarrollo infantil y creación de puestos de trabajo: Cómo aprovechar el "triple dividendo" de los servicios de educación y cuidados en la primera infancia.* UN Women.

UN Women and ECLAC (2021). *Hacia la construcción de Sistemas Integrales de Cuidados en América Latina y el Caribe. Elementos para su implementación.*

UN Women and INMUJERES (2020). *El cuidado de las personas mayores en situación de dependencia en México: propuesta de servicios, estimación preliminar de costos e identificación de impuestos económicos.* UN Women Mexico with the technical support of ECLAC. Working paper.

UN Women and INMUJERES (2020a). *Costing study of care interventions in Mexico. Rationale and estimation of costs and effects on the product, employment, and tax revenues of the Child Care System.* UN Women Mexico with the technical support of ECLAC. Working paper.

UN Women and INMUJERES (2020b). *Estudio de costeo de intervenciones de cuidado en México. Fundamentación y estimación de costos y efectos en el producto, en el empleo y en los ingresos fiscales de la extensión del tiempo escolar en educación primaria.* UN Women Mexico with the support of ECLAC. Working paper.

Pesaran, M.H. (2015). *Time series and panel data econometrics.* Oxford University Press.

Phillips, P.C.B. and Perron, P. (1988). "Testing for a unit root in time series regression, *Biometrika* 75, pp. 335.346.

Rodríguez Cabrero, G. (2006). "Los 'Centros de Día' como recurso asistencial para las personas en situación de dependencia", *Revista de Humanidades*. Madrid, Spain

Rossel, C. (2013). *Desbalance etario del bienestar. El lugar de la infancia en la protección social en América Latina.* Serie Políticas sociales N°176. ECLAC.

Saad, P.M., Miller, T. and Martinez, C. (2009). "Impacto de los cambios demográficos en las demandas sectoriales en América Latina", *Revista Brasileira de Estudos de População*, 26(2), 237-261.

Torre, L., Alvarado, J. A. and Quiroga, M. (2017). *Matrices de insumo-producto regionales. Una aplicación al sector automotriz en México*. Documento de Investigación, No. 2017-12. Banco de México.

Yoshikawa, H. and Kabay, S. (2015). *The Evidence Base on Early Childhood Care and Education in Global Contexts.* Paris: UNESCO.

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A series of three studies of costing and returns on investment in care services have been carried out aged 0 to 4 and 5 to 14 years old and dependent people over 60 years old in Mexico. To view these studies, as examples of scenarios that can be simulated with the methodological tool, visit: https://mexico.unwomen.org/es/digiteca/publicaciones

Costs, returns, and effects of a universal, free, and quality child care system in Mexico.

Costs, returns y effects of the extension of school time in elementary education in Mexico.

Care for dependent elderly people in Mexico: Service proposal, preliminary cost estimate and identification of economic impacts

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