Què funciona
contra la pobresa?
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Presentation

What Works in Reducing Child Poverty?A survey of recent evidence

Public policies to mitigate early childhood poverty

ivàlua
Institut Català d'Avaluació de Polítiques Públiques

unicef
per a cada infància

Generalitat de Catalunya
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Projecte de recopilació, anàlisi i transferència d'evidència per a millorar les polítiques públiques destinades a mitigar la pobresa infantil

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Què funciona?

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1. Introduction

The fight against child poverty should be a priority in the political agenda of all governments. Experiencing poverty as a child has certainly an individual cost in terms of cognitive and non-cognitive development as well as in well-being and other health related outcomes (see Almond et al. 2018 and Currie and Almond 2011 for a survey of related studies). In addition, child poverty imposes a large, long run burden to societies in terms of lower capital accumulation and productivity, crime and health expenditures (see Holzer et al. 2008 for an estimation of the cost of child poverty in the US). Therefore, the high and increasing trends in child poverty during the last decades urge for the implementation of public policies to alleviate adverse early life experiences.

This document presents a summary of recent scientific evidence regarding public policies that may help in alleviating early child poverty. Child poverty is a multidimensional phenomenon that should be addressed from several perspective. The current document focuses on interventions design to mitigate economic poverty among household with young children. The focus is on interventions that are particularly relevant at early stages of life (i.e. from birth to age 3), as the returns to early age interventions have been proved to be the most cost-effective (Heckman 2015). The survey is focused on interventions or experiences from countries that are, to a large extent, comparable to the economic, social and legal situation of Catalonia. However, it is important to be aware of idiosyncrasies of each context in extrapolating the results.

2. Motivation

In 2021, a 30% of children in Catalonia under the age of 16, or three in ten children, were living at risk-of-poverty (Idescat 2021).[1] Moreover, the risk of poverty among children presents an upward sloping trend and it has increased by about 7 percentage points in the last decade. The covid-19 pandemic may have even worsened the situation.

Childhood is a critical period of an individual's life. Child poverty has been shown to have important adverse effects on child's development. Some examples include negative educational and cognitive outcomes, social and emotional behavior problems, poor economic outcomes as adults, and poor health outcomes. Poverty is also heavily correlated across generations.

[1] The poverty risk is defined as a percentage of individuals living in households with an income level below the poverty threshold, defined at the 60% of the income median.

Moreover, the social costs of child poverty are remarkable in terms of economic growth and other social cohesion measures.

Several studies have shown that children in low-income families have worse cognitive, non-cognitive and health outcomes after controlling for other parental characteristics such as education, ability or social networks that also correlated with family income (Cooper and Stewart 2013 and 2017). This evidence highlights the direct role of income poverty on children's life trajectories. Hence, public policies designed to alleviate the economic situation of poor households should be beneficial to children and provide large social returns.

This article revises the extensive literature that analyzes the impact of different public policies aimed at reducing child poverty and altering the life trajectories of the most disadvantaged. The revision focuses on three main set of policies. We first revise the literature on labor market policies and the effects on parental employment prospects. We then move to programs that raise family income by means of taxes or transfers. Finally, we concentrate on the public provision of child care assistance. The selection of studies is restricted to those with evidence on industrialized and developed countries, and to studies that employ causal inference to gauge the effects of the programs.

The current revision of the literature is mainly focused on policies design to alleviate the economic situation of children at an early age (i.e. 0-3 years olde). Several studies prove that starting earlier has the greatest returns. In the words of James Heckman (2015): "Making wise investments in early childhood development programs for disadvantaged children from birth to age five produces benefits far in excess of costs. Doing so will produce better education, health, social and economic outcomes and reduces the need for expensive social spending on prisons and special education. It is a vision that promotes economic growth and economic opportunity".

The study will emphasize the importance of high-quality universal childcare from 0 to 3 years old to improve the cognitive and non-cognitive development of disadvantaged children. It will also stress the importance of income support programs to families with children and labor market policies, such as parental leave permit and flexible work arrangements, to facilitate the family-work balance in the presence of young children. The survey extensively documents the recent evidence regarding the design and impact of these policies on children's development and well-being.

3. Description of the programs under study

This literature review focuses on three different types of public policies that may help in alleviating the living conditions of the most disadvantaged and in favoring the development of poor children. Most of the policies affect the earlier stages of an individual's live (i.e. 0-3 years old) such as parental leave policies, flexible work arrangements, income support programs or childcare subsides.

Labor market policies

The first set of programs is related to policies that improve the employability of parents with young children. Of all factors driving child poverty, the labor market situation of parents is an important determinant of the economic conditions in which children develop. Parents' labor market participation can contribute to children's well-being not only by enhancing the family's material situation, but also because it can help in establishing a family routine and in providing stability to the life of children.

A well-functioning labor market should reduce the risk of poverty. Several programs have been implemented to increase the employability of individuals with a high risk of labor market failure. In this revision, we will focus on **active labor market policies** that include a set of interventions that assist unemployed workers in searching for a job and provide training to the most disadvantaged. The existence of a **minimum wage** is another policy design to reduce inequality in labor market earnings. We will explore the pros and cons of this policy. **Parental leave permits** are a powerful instrument to maintain the labor market attachment of women after giving birth and can foster the employability of mothers with young children (i.e. 0-3 year old). Recently, paternity leave permits have also been introduced in many countries with the aim of fostering men's participation in childcare and promote gender equality. We will revise the evidence on the consequences of these parental entitlements. Finally, the outbreak of the covid-19 pandemic has affected the organization of work. A larger percentage of workers are now working at least some days from home. Also, working schedules have become more flexible to facilitate work-family balance. We will also revisit the evidence on the importance of **space and time flexibility** for the professional development of parents with young children.

Income support programs

The existing evidence suggests that while effective, it may take a while for most of the previous cited labor market policies to have real effect on the employ status of parents and thus on their labor market earnings. Alternative policies are designed to provide income support to parents in a shorter-term horizon. Transfer programs that increase families' resources

when children are young have been found to have long-run effects on the children's development, health, and human capital attainment. The most popular of these policies is the **income credit** support for working parents under the Earned Income Tax Credit in the US. Recently, there has also been an increasing support for **universal income** transfer programs as means to reduce income inequality resulting from poor and instable labor markets, and to overcome the administrative barriers that limit the take up rate of targeted programs. The literature on the impacts of universal income transfer is scarce and we will briefly revise it.

Subsidized child care

In-kind transfers are also popular policies to fight child poverty. Among them, the most contrasted alternative is the **public provision of child care at an early age**. There is an extensive literature that evaluates the introduction and extensions of free or subsidized child care. This policy is ex-ante well received because it may not only foster the development of children but it may also have positive effects on maternal employment. A key element in determining the sign of the effect of this policy is the quality of available child care. If subsidized child care substitute alternative forms of care of higher quality, it may adversely affect children's outcomes.

Finally, it should be highlighted that a society that invests and promotes a high-quality and universal **education and health system** is most likely to present lower rates of poverty (and child poverty). Public funded essential services are crucial to promote intergenerational mobility by providing equality of opportunities for all citizens.

4. Relevant questions

The literature review is motivated by the need to understand the effect of alternative public policies on young children's life trajectories, with an emphasis on the disadvantage sub-population. With this aim, we select policies that are targeted to this group or that investigate the presence of heterogenous effects of universal policies.

In summarizing the literature, we seek to answer the following questions:

1. Which are the effects of different policies on the outcomes of children (e.g. cognitive and non-cognitive skills, well-being, health), with an emphasize on children 0 to 3 years old?

2. Do different children respond differently to the same policy (i.e. is there heterogeneity in the response?)? Or which sub-population groups are more likely to benefit from a particular policy?

3. Which are the key elements in the design of the policies that work in reducing early child poverty?

4. Are there indirect or unexpected effects associated to early child poverty reduction programs?

5. Literature Review

In this section we revise the existing literature on the evaluation of policies to fight early child poverty (i.e. 0-3 year old). The revision is based on evidence for developed countries, mainly the US, Western European and Scandinavian countries. We select studies that employ rigorous statistical techniques to gauge the effects of the programs. Accordingly, we focus mainly on studies that exploit introduction or changes in policies where a treatment and control group can be easily identified (i.e. "quasi-natural" experiments) and impact evaluation methodologies (e.g. Difference-in-Differences, Regression Discontinuity or Instrumental Variables) to obtain causal estimates. The large majority of revised studies are published in prestigious international economic and sociological journals.

For most children, parents are the most important people in their lives, and it is the economic status of parents that determines whether children are poor or not. There is now convincing evidence suggesting that income matters for children's life trajectories and that these income effects may be largest among economically disadvantaged families (Dahl and Lochner 2012). It has also been well-documented that poverty deteriorates children's cognitive and non-cognitive abilities, health, and well-being (Almond et al. 2018 and Currie and Almond 2011). Thus, raising the income of the poor may enhance children's development, improve their chances of success in the labor market during adulthood and increase intergenerational mobility.

There are many alternatives in which governments can intervene to ameliorate the economic conditions of the most disadvantaged families with young children. Below we summarize the effect of the policies that have been shown to be more effective in fighting poverty and improving children's life. We classify the different interventions into three main blocks: labor market policies, income support programs and subsidized childcare.

Labor market policies

In a survey for different OECD countries, Thévenon et al. (2018) show that maternal and parental employment and the quality of their jobs are key factors in explaining cross-country differences in the evolution of income

for poor families. According to their calculations, while 9% of families on average across the OECD are poor when at least one parent has a job, the poverty rate rises to 60% when the family is jobless. Moreover, their analysis of long-term trends highlights a negative correlation between maternal employment, family joblessness and child poverty. In a simulation exercise, the authors suggest that family poverty rates could be reduced (by almost half from 11% to 5.4%) if all parents from poor families were to be in paid employment. That said, in Spain, as well as in other European countries including the UK, Italy, Portugal, Romania among others, the majority of children in poverty live in a household where at least one adult is in work (using EU-SILC data).[2]

The effects of parental job losses are also estimated by Oreopoulos et al. (2008) using exogenous variation in plant closure. The authors report that children whose fathers were displaced from employment have annual earnings during adulthood about 9% lower than similar children whose fathers did not experience an employment shock. These estimates indicate that policies that promote employment opportunities and ensure decent and legal work are powerful tools to fight child poverty. Below we summarize the policies that have been shown to be more effective in increasing parental employability and reducing family poverty (see Table 1 for a brief survey).

Table 1: Labor market policies to foster parental employment and reduce poverty

Authors	Country	Program	Identification strategy	Results
Card, Klueve and Weber (2018)	Several industrialized countries	Job search assistance, training programs, subsidized public and private employment	Meta-analysis	ALMP have zero effects on the short term and some positive effect in the longer term. Training programs are the most effective in increasing employability.
Gindling (2018)	Low and middle-income countries	Increases in minimum wages	Literature review	If people earning the minimum wage are heads of low-income households, higher minimum wages are likely to reduce poverty.

[2] For Spain see Lanau and Lozano (2022).

Olivetti and Petrongolo (2017)	Industrialized countries	Labor market policies to foster maternal employment	Literature review	Policies that make it easy to be a working mother (subsidized childcare, or in work-benefits) may matter more than the length of leave or the payments that new parents receive while out of the labor force.

Source: Elaborated by the author.

Active labor market policies (ALMP) are popular strategies to ease a wide range of labor market problems, including youth unemployment and persistent joblessness among displaced adults. Training and job search assistance programs, employment subsidies and similar policies have been in use for well over 50 years. In their most recent meta-analysis, Card et al. (2018) gauge the effectiveness in increasing employability of job search assistance, training and subsidized public and private employment. The study concludes that on average, the effects of the different ALMP in the short term are close to zero and become more positive 2-3 years after completion of the program. Another important finding is that the larger gains result from programs that promote human capital accumulation. From these results we conclude that while well-functioning labor market are key to reduce family poverty, it may take a long time for active labor market programs to have real effects on parental employment.

Another popular labor market policy aimed at reducing the dispersion in labor market earnings is the introduction or increase of **minimum wages**. The effectiveness of this policy in reducing poverty depends on the characteristics of the labor market. In an extensive survey of low and middle-income countries, Gindling (2018) summarizes the pros and cons of introducing and raising minimum wages. Two main conclusions emerge from the survey that are also applicable to industrialized and developed countries. First, minimum wages target the formal sector workers many of whom do not live in poor households. In many countries, family members in the poorest households are largely involved in the informal economy and thus will not collect the economic gains from a minimum wage increase. Second, a substantial increase in the minimum wage may reduce employment in the formal sector and crow-out workers to the informal

sector, with worse labor market and economic conditions.[3] Accordingly, this wage policy will only be effective if people earning the minimum wage are heads of low-income households.

Policies that foster and protect maternal employment and those aimed at reducing the child penalty (i.e. the drop in earnings among women after the birth of the first child) are promising alternatives to reduce child poverty (Rossin 2011).[4] Increasing trends in maternal employment have been shown to be negatively correlated with child poverty rates (Thévenon et al. 2018). **Maternity leave permits** are aimed at addressing the challenges faced by working mothers and their newborn children. Many authors have revisited the nature and the design of parental leave permits. An excellent survey by Olivetti and Petrongolo (2017) concludes that shorter (up to about one year according to the authors' estimations), rather than longer, maternity leave permits have less adverse effects on mothers' employability. Their revision also suggests positive effects on maternal employment from subsidized child care and in-work benefits, two policies that will be discussed in detail in the next sections. The revision of the literature about parental allowances in high-income countries suggest that policies that make it easy to be a working mother may be more beneficial than the length of leave or the payments they receive while out of the labor force.

Other authors have also highlighted that long period of parental leave are not only detrimental to maternal employment, but they also do not seem to have additional positive effects on children's outcomes. Table 2 summarized the results of studies based on extensions of the maternity leave permit in several countries: in Germany from 2 to 6 months in the late 1970s, and from 6 to 10 months in the mid-1980s (Dustman and Schoenberg 2012); in Denmark from 14 to 20 weeks in the mid-1980s (Rasmussen 2010); in Sweeden form 12 to 15 months in the late 1980s (Liu and Skans 2010); and in Austria from 12 to 24 months in 1990s (Danzer and Lavy 2012). These studies show little evidence of positive effects on children. These finding suggest that the emphasis should really be on assuring that all mothers are able to take at least a short-paid leave after childbirth as well as for child illness.

[3] See the work by Lacuesta et al. (2019) on the impact of the increase of the minimum wage in 2017 for the Spanish case.

[4] This is particularly important as in work poverty is highest in households with children and one worker.

Table 2: Summary of studies investigating the impact of maternity/parental leave programs

Country	Outcome	Outcome measured at ages	Increase in parental leave at ages	Finding
Canada: Baker and Milligan (2010)	Motor/Social Development	Up to 24 months	6-9 months	No effect
Canada: Baker and Milligan (2015)	Cognitive and Behavioral Development	4-5 years	6-9 months	Behavior: no effect. Cognitive: small, negative effect.
Germany: Dustmann and Schonberg (2012)	Selective high school wages	Teenagers	2-10 months	No effects
Denmark: Rasmussen (2010)	High school graduation GPA	Teenagers	4-5 months	No effects
Sweden: Liu and Skans (2010)	High school grades and test scores	16 years	12-15 months	No effects
Norway: Carneiro et al. (2010)	High school dropouts	As old as 29 years	8-12 months	Reductions in school dropout rates.

Source: Baker (2011)

More recently, many countries are progressively entitling some weeks of **parental leave to fathers**. While the policies are effective in increasing the take-up rate and fathers' involvement in child care, their labor market effects are limited (Farré and González 2019 and Patniak 2019). However, there is evidence that entitling some weeks of parental leave to fathers may promote a more gender egalitarian family model with positive effects for the dynamics of gender inequality in the future generations (Farré et al. 2022). The effect of paternity leave permits on children's development is still scare and at the time of the survey there is no convincing evidence that can be referred to.

Some form of **flexibility at the workplace** is also very relevant for the employment of parents with young children. Recent evidence suggests that time and space flexibility may foster females (and mothers) employment (Dolado et al. 2021). There is also evidence that an important part of the earnings gender gap in some sectors or occupations could be explained by women taking fewer hours of overtime and more hours of unpaid time off than men (Bolotnyy and Emanuel 2018). Women, especially those with dependents, are more likely to pursue schedule conventionality, predictability and controllability than men (Azmat et al. 2020). This evidence suggests that policies or interventions that favor labor market flexibility to facilitate the work-family balance may also benefit maternal employment and contribute to fight child poverty.

Policies that improve parental employment prospects are a promising alternative to alleviate child poverty. However, most labor market policies, particularly those related to employment activation, may take a long term before they can have real effects on parental income and labor market behavior. Income transfers or in-kind benefits programs may be a more effective way to reduce child poverty in the short-term. We summarize the most remarkable policies in the next sections.

Box 1: The intergenerational transmission of income poverty

In a survey of the literature on intergenerational mobility, Solon (1999) estimates that the correlation between fathers' and sons' earning is about 0.4. However, the process that generates the intergenerational correlation in income is not well understood. One possibility is that differences in income among the younger generation result from differences in parental monetary investments during childhood. But differences in family income may also reflect differences in innate parental characteristics that are transmitted across generations. To which extent this correlation reflects the importance of monetary versus innate family background characteristics? Parents from high-income families may have some characteristics, such as high ability or motivation, that independently have a positive effect on the development of their children. Oreopoulos et al. (2008) try to isolate the direct effect of family income on the intergenerational correlation of income by exploiting exogenous variation in plant closure. The authors first show that displacement leads to permanent reductions in family income. Next, they compare the outcomes of sons whose fathers experienced a negative employment shock to the outcomes of those whose fathers were not lay off. This comparison reveals that the sons of fathers who were displaced have annual earnings as adults that are about 9% lower than similar children whose fathers were not. The results are driven by the experiences of children at the bottom of the family income distribution. These results highlight the importance of economic shocks and family income during childhood for latter developments.

Income support programs

Labor market policies may be the most cost-effective way to alleviate poverty reduction (Currie 2016). However, it may take a while for these policies to affect parents labor market behavior and earnings, and some socioeconomic groups may even be irresponsive or unreachable by these policies (Card and Hyslop 2005 and Heckman 1994). Several papers have shown that income received when a child is young has stronger lasting impacts than does income received during later childhood or adolescence (Cunha and Heckman 2008). Impacts on early child development may translate into improved human capital accumulation and eventually higher wages. Thus, income support programs may be an alternative to remediate the negative effects of parental joblessness (Cunha and Heckman 2007). Table 3 summarizes the main results of income supports programs against child poverty.

A recent study by the National Academies of Sciences, Medicine and Engineering (2019) "A Roadmap to Reducing Child Poverty" by means of a simulation exercise shows that income support programs are much more effective than work oriented programs in reducing child poverty. The authors of the study estimate that these programs can reduce poverty substantially (though far from the targeted objective of 50% in the US). In contrast, programs tied to work, such as raising the minimum wage or implementing a training program, or other safety nets are able to reduce child poverty by less than 10%. Finally, the study concludes that a child allowance ($3000 per child per year) would produce the largest poverty reduction in the US among the other alternatives considered in the study.

There is a large menu of **income support programs**. In this revision, we will distinguish between **universal** versus **targeted or means-tested** programs. Universal programs are designed to reduce increasing inequality trends caused by important labor market inefficiencies and to reduce the complexity of the welfare safety nets existing in most developed countries. However, these programs are obviously expensive and direct a much larger shares of transfers to middle-income rather than poor households. Targeted or means-tested programs, while being more cost-effective, are very often subject to high administrative barriers that disincentivize take-up (Currie 2004) and may create incentives to remain in the eligibility group and reduced efforts to escape poverty (Murray 2016, Hoynes and Rothsetin 2019, Kearney and Mogstad 2019). Analyzing the pros and cons of universal versus targeted or means-tested income support programs is out of the scope of this literature review. For an up-to-date discussion on this issue, the author recommends the work by Hoynes and Rothstein (2019), Kearney and Mogstad (2019), and Daruich and Fernández (2021). The relevant finding for the current analysis of child poverty is that transfer programs that increase families' resources when children are young have been found to have long-run effects

on children's development, health and human capital attainment. Below we revise the effect on child outcomes of the most popular programs.

An interesting case study to compare the effect of universal and means-tested income support programs is Canada as the country has simultaneously implemented both types of policies. Baker et al. (2021) investigate whether income support programs reduce child poverty and labor supply among single mothers within the context of the 2015 expansion of the Canadian Universal Child Care Benefit (UCCB) and the 2016 introduction of the income tested Canada Child Benefit (CCB). In 2006, the Canadian government introduced the Universal Child Care Benefit which provided all families with up to $1,200 per year for each child under the age of 6. In 2015 the program was extended to $1,920 per year and child under the age of 6 and complemented with the introduction of an allowance of $720 per year for each child aged 6 to 17. The Canadian Child Benefit introduced in July 2016 consisted of a tax-free benefit of $6,400 per year for each child aged 0-5, and $5,400 a year for each child aged 6-17 for families with income below $30,000. The size of the CCB substantially decreases with the level of family income (see Baker et al. 2021 for a detailed description of the policy). To be eligible for CCB, families must file income tax returns each year even if family income is zero.

By means of a difference-in-differences analysis, Baker and co-authors (2021) compare single mothers to single childless women as single mothers have historically had the highest poverty rates. The authors find that both reforms reduced child poverty, although the means-tested CCB program had the greatest effect. According to the reported estimates in the study, the Low Income Measure (LIM) of poverty for single mothers relative to single childless women declined by 1.2 percentage points following the UCCB expansion, while it decreased by 5 percentage points following the introduction of the CBB. In addition, the authors highlight that none of the programs affected maternal labor supply on either the extensive or the intensive margin.

In a previous study, Milligan and Stabile (2011) evaluated the effects on children's outcomes of the Canada Child Tax Benefit (CCTB). This program was replaced in 2015 by the previously discussed CCB. Until 2016, the Canada Child Tax Benefit (CCB) was a flat benefit for all families with children, including nonworkers, that varied by the number of children and slowly decreased with family income. The annual maximum per child of the CCTB in 2005 was $1,228 for families with children 0 to 17. They also evaluate a second program, the National Child Benefit program, that is defined at province level. The details of each provincial program are detailed in the Appendix in Milligan and Stabile (2011). In short, two provinces have transfers unrelated to earnings, two provinces have earnings-related benefits, and three provinces have both. Exploiting the cross-province and

time variation in the design of the benefit programs and an instrumental variable strategy the authors report positive effects on test scores, and on several measures of both child and maternal mental health and well-being, as well as a few measures of child physical health. Quantitatively, their estimates suggest that an increase of $1,000 in child benefits leads to a 2.7 percentage point decrease in the probability of having repeated a grade at age 4 to 10. For the math scores measured at ages 4 to 6, the estimated effect is of 6.9 percent increase of a standard deviation for an increase in $1,000 of benefits. It is important to highlight that the effects are concentrated among low-educated families.

In the US, a very popular income support program to reduce family poverty is the Earned Income Tax Credit (EITC). This is an income support program for working parents that expanded greatly since 1990. The EITC provides a refundable transfer to lower income working families through the tax system. These refundable tax credits function rather like a Conditional Cash Transfer program in that they are mainly available to families who work and file a tax return, that is, they are conditional on working. The income transfers are significant. For example, among families with two or more children eligibility extend to annual earnings over $40,000, and average credit (in 2008) for these recipient families was $2,563. There is evidence that the EITC lifts 6 million person (including 3 million children) from poverty, more than any other program (Chuck et al. 2015).

In a very cited paper, Dahl and Lochner (2012) estimate the effect of one of the largest expansions of the EITC program that between 1993 and 1997 increased family income by 20%, or approximately $2,100. The authors find that a $1,000 increase in income raised combined math and reading test scores by 6 percent of a standard deviation. The gains are larger for children from disadvantaged families. Hoynes et al. (2015) also examine the potential health benefits of the EITC. The authors find that an increase of $1,000 in after-tax income is associated with a 0.17 to 0.31 percentage point decrease in low-birth-weight status.

Another group of income support policies are the near cash programs supplying food aid. In the US, there is the Supplemental Nutrition Assistance Program (SNAP). Eligibility requires satisfying income and asset tests, and benefits can be used to purchase most grocery store food goods. A family's benefit is equal to the difference between the federally defined maximum benefit level for a given family size and the amount that the family is deemed to be able to afford to pay for food on its own according to the benefit formula (essentially 30 percent of cash income, less some deductions). Hoynes et al (2016) find that the roll out of the program increased birth weights and reduced the incidence of metabolic syndrome (i.e., obesity, high blood pressure, diabetes, etc.) which in turn increased economic self-sufficiency.

Finally, in developing countries, there have been numerous evaluations (most of them based on randomized controlled trials) of conditional cash transfer (CCT) programs. These programs required participants to enroll their children in school, get regular medical revisions, etc.. as a transfer recipient condition. These interventions have been shown to have short-run effects on outcomes such as infant mortality and school enrollment, but there is still uncertainly about their long-term effects on learning, completed education, labor market earnings or other measures of health (see Almond et al. 2018 and Fizbein and Schady 2009 for a detailed revision of these programs).

Table 3: The effect of income support programs on child outcomes

Authors	Country	Program	Identification strategy	Results
Milligan and Stabile (2011)	Canada	Canada Child Tax Benefit (means-tested income, unconditional on working)	Instrumental variables: simulated child benefit transfer.	$1,000 increase in child benefits increases math test scores by 6.9 percent of a standard deviation
Dahl and Lochner (2012)	United States	Earned Income Tax Credit (conditional on working)	Difference-in-Differences (exploiting expansion in the generosity of the program).	$1,000 increase in child benefits increases math test scores by 6 percent of a standard deviation
National Academies of Sciences, Medicine and Engineering (2019)	United States	Hypothetical Unconditional Child Allowance of $3,000 per child and year.	Simulation exercise based on estimated parameters from previous literature.	The most effective policy to reduce child poverty.
Hoynes, Miller and Simon (2015)	United States	Earned Income Tax Credit (means-tested, conditional on working)	Difference-in-Differences (exploiting expansion in the generosity of the program).	A $1,000 increase in child benefits (through the EICT) least to a 2 to 3 percent decline in low birth weight probability.

Source: Elaborated by the author.

Income support programs are a more immediate and direct strategy to reduce family poverty than the labor market policies described in the previous section. The Canadian experience that combines universal and means-tested income support programs indicates that the latter group of programs, heavily targeted at income and unconditional on working, are more successful at improving children's early life outcomes. However, targeted programs may generate unforeseen incentives for people to qualify or remain eligible. The Earned Income Tax Credit in the US, a targeted program conditional on working, has proved to be a useful tool to modify children's trajectories while incentivizing parental employment. However, conditional on working targeted programs have the risk of leaving uncovered the very poor and the least attached to the labor market. Accordingly, while there is grounded evidence that income transfers received at an early stage of life are beneficial to revert poor children's life trajectories, one should be aware of the expected and unexpected effects on parental behavior related to the design of these programs

Box 2: Welfare, the earned income tax credit, and the labor supply of single mothers

In the US, between 1984 to 1996 substantial changes to the tax and welfare programs were introduced to provide incentives for single mothers to work. The largest change was the tenfold increase in credit provided through the Earned Income Tax Credit (EITC). The Medicaid program also expanded by increasing the number of children covered by 77 percent and that of adults by 35 percent. Coverage was conditional on being nonwelfare recipient and having a family income near the poverty line, thus making work more attractive for low-income single mothers. Cash assistance to single parents through Aid to Families with Dependent Children (AFCD) also became more generous and imposed work requirements to encourage single mothers to work. There were also other changes in the Food Stamp programs, child care and training programs. Single mothers responded to these changes by working more. Meyer and Rosenbaum (2001) assess the effect of alternative programs in rising maternal labor supply. A detail examination of alternative policies indicates that EITC and other tax changes account for over 60 percent of the 1984 to 1996 increase in weekly and annual employment of single mothers relative to single women without children. Changes to welfare programs were less important but still account for a substantial share of the employment increases. Changes in Medicaid, training, and child care programs play a considerable smaller role. These findings suggest that policies that "make work pay" are effective in increasing work by single mothers.

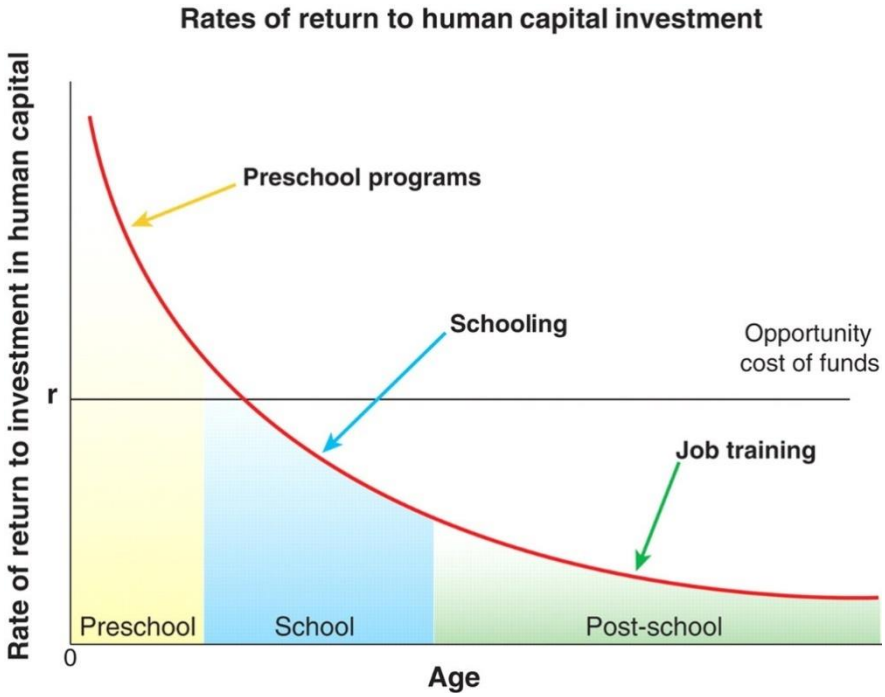
Subsidized child care

A large literature has highlighted the potential for early intervention programs to improve children's short and long-run outcomes (Doyle et al. 2009). Early family environments strongly correlate with children's cognitive and non-cognitive abilities. Thus, early in life environments that do not stimulate these skills may place children at an early disadvantage. Heckman (2006) argues that disadvantage is more likely to result from the lack of cognitive and non-cognitive stimulation given to children than simply from the lack of financial resources.

Figure 1 summarizes the findings of a large literature showing that the rate of return of human capital investment programs for disadvantaged children is much larger if conducted early in life. Remediation programs for adolescents and young adults are much more costly in producing the same level of skill attainment in adulthood. This is reflected in the Figure by the fact that a segment of the red curve lies below the opportunity cost of funds (the horizontal line fixed at r).

High-quality center-based programs appear to be effective and have the potential to influence many domains including education, income, employment, health, and future health behaviors (Currie and Almond 2011, Almond et al. 2018). Publicly subsidized quality child care can be a win-win because it fosters parental employment and promotes child well-being. There is a vast literature that investigate the short- and long-term implications of subsidized child care. Most studies agree on that the final effect on children's development depends on the quality of the child care option being replaced by publicly subsidized formal care. Therefore, it is not surprising that most studies find large gain of high-quality childcare among children from disadvantaged families, while the effects are null or even negative for children of highly educated families. Below we summarize the most relevant studies conducted in this area of research.

Figure 1: Rate of return of human capital investment programs at different stages of life.



Source: Heckman (2006). Note: The red decreasing curve plots the payout per year per dollar invested in human capital programs at different stages of the life cycle.

The opportunity cost is the return from funds if they were not invested for purposes unrelated to disadvantaged children.

A first strand on the literature focuses on experimental evaluations of programs consisting on intensive services delivered by well-trained and well-supervised staff. These programs are addressed to a small number of very disadvantage children. Most studies have found that these early interventions have long-lasting effects on schooling attainment and other outcomes such as teen pregnancy and crime, even if the effects on cognitive scores are modest. It should be noticed that the care alternative for children in these programs was generally no preschool (i.e. informal care by relatives). Maybe, the most cited of these programs is the Perry Preschool Program, an experimental intervention conducted in Ypsilanti Michigan in the 1960s involving 123 low-income African American children. Of these children 58 were randomly allocated to a high-quality preschool program at ages 3 and 4, while the remaining 65 remained untreated. Individuals involved in the experiment have been periodically surveyed and the results of the program are quite remarkable. Treated individuals bettered the control group in a variety of outcomes ranging from test at primary and secondary school ages, employment rates, and home ownership by the age of 27 and 40 (Berrueta-Clement et al. 1984 and Schweinhart 2004). Evidence from other experimental interventions in the US such as the Early Training Project, the Carolina Abecedarian Project, and Milwaukee Project, generally support these findings (see Table 4). Some of these studies also highlight that the gains of early intervention intensive programs is larger for girls (Anderson 2008).

Table 4: Effects of intensive high-quality child care program on the most disadvantaged

Study/program name	Data, program description, and study design	Results
Carolina Abecedarian analysis at 21 years of age (Barnett and Masse, 2007)	Preschoolers: full-day child care. School age: parent program Sample sizes: T=57, C=54 Age 21: T=53, C=51 Age of participation in program: Entry: 6 weeks to 3 months old Exit: 5 to 8 years	Follow up at 21 years of age: Grade retention: T=34%, C=65% Special education: T=31%, C=49% High school dropout: T=33%, C=49% College attendance: T=36%, C=13%

Study/program name	Data, program description, and study design	Results
A reevaluation of early childhood intervention – Abecedarian, Perry Preschool and Early Training Project – with emphasis on gender differences and multiple inference (Anderson 2008)	Abecedarian: T=57, C=54 Perry: T=58, C=65 ETP: T=44, C=21 Ages of entry: Abecedarina/Perry/ETTP: 4.4 mo./3yrs./3-4yrs	A summary index constructed using measures of IQ, grade repetition, special ed., high school, college attendance, employment, earnings, receipt transfers, arrests, convictions, drug use, teen pregnancy, marriage. Effects on summary index for girls 5-12: ABC/Perry: increase by 0.45/0.54 SDs. Effects on summary index for girls 13-19: ABC/Perry/ETP: increase by 0.42/0.61/0.46 SDs. Effects on summary index for women over 21-40: ABC/Perry: increase by 0.45/0.36 SDs No statistically significant effects on males of any age.

Source: Almond and Currie (2011).

A concern regarding this evidence is that the size of the targeted group is very small. Also, these are high-intensive, high-quality programs that may be very expensive to sustain at a larger-scale of coverage. To evaluate the effects related to larger-scale interventions we can consider the Head Start, a US federally funded program that provides preschool education, health care and social assistance to low-income families. Eligibility is largely income-based. In 2010 over 900,000 children were enrolled at a cost of over $7 billion dollars, or $7,600 per child (US Department of Health and Human Services). Most of the studies that evaluate this program employ observational data and program evaluation techniques. An example is Garces et al. (2002) where using data from the PSID and a panel of siblings document that whites who attend the Head Start are significantly more likely to complete high school, attend college and have higher earnings than their sibling who did not attend the program. The US Department of Health and Human Services (2010) conducted an experimental investigation comparing children eligible for Head Start to children who were not provided access but who enrolled in other programs chosen by their parents. The

study reports short-term positive effects for treated children in cognitive skills and health, that largely disappear by the end of the first grades.

The evaluation of high-quality early intervention programs provides fairly unambiguous evidence of positive effects on children's development. The only concern is the fade-out of the impact of Head Start. Perhaps, the take-away from this research is the importance of maintaining the quality of the interventions as scale grows, or that there is heterogeneity in the effect of the program (i.e. the effect of early interventions is smaller for the marginally more advantaged children also affected by large-scale programs).

Many develop countries outside the US opt for universal childcare programs where all children are eligible for subsidized childcare. The evidence on the effects of universal subsidized childcare range from positive to negative. A revision of the literature suggests that this heterogeneity responds to two main factors, namely, the quality of the subsidized childcare and that of the alternative forms of care available to children. Regarding the first factor, studies conducted in Germany or Denmark with and adult-to-child ratio of 1:3 deliver more positive effects of subsidized early child care than those conducted in Italy, where the child care system is characterized by higher ratios (i.e. 1:4) (Fort et al. 2020 and Chetty et al. 2011). As for the second factor, it should be noticed that the majority of children served by universal programs are not the disadvantaged (Cornelissen et al. 2018). Although well-educated parents could provide their children with high-quality home environments, they may opt for formal child care due to their own career concerns and labor market involvement. In contrast, mothers from disadvantaged or minority backgrounds not only face higher relative child care costs but also have lower incentives to participate in the labor market. Moreover, the family environment of disadvantage children may deprive their exposure to peers and the learning activities provided in formal child care, and thus delay their development. Consequently, most of the studies summarized below report gains from early child care attendance mostly among the most disadvantage children, while the effects are negative for children of affluent families. These studies also find higher gains of universal child care exposure on measures of motor and social skills, than on language or other cognitive and non-cognitive skills where the one-to-one interactions may be more relevant (Felfe and Lalive 2018).

Next we focus on a detailed revision of the existing studies on the effects of early universal child care attendance on children's development. A summary of the findings can be found in Table 5.

Table 5: Summary of studies investigating the impact of public universal child care programs

Country	Outcome	Outcome measured at age	Finding
Canada: Baker et al. (2008)	Behavior	2-4 years	Negative effect
Canada: Lefebvre et al. (2008)	Cognitive-PPVT	4-5 years	Negative effect
Canada: Kottelenberg and Lehrer (2014)	Behaviour	2-4 years	Negative effect at mean Positive effect for low-income children
Denmark: Gupta and Simonson (2010)	Non-cognitive	7 Years	No effect for preschool Negative effect of family daycare for low-income males
Norway: Havnes and Mogstad (2011, 2015)	Educational attainment, earrings	30-40 years	Positive effect: low income children main beneficiaries, negative for high income children
Italy: Fort et al. (2020)	IQ scores	8 – 14 years	Negative effects among relative affluent children
Germany: Felfe and Lalive (2018)	Motor, social and language skills.	6 years	Positive effects on motor skills for all children Positive effects on language skills of boys and immigrant children
Germany: Cornelissen et al. (2018)	Readiness to enter school	6 years	Positive effects for minority children

Source: Elaborated by the author.

For Italy, Fort et al. (2020) exploit the admission process to the Bologna day care system, a high-quality public day care program offered in one of the richest cities in Italy. They find that one additional day care per month at age 0-2 reduces the intelligence quotient (IQ) by 0.5% (4.7% of a standard deviation) at age 8-14 in a relatively affluent population. The magnitude of the negative effect increases with family income. Similar negative impacts are found for personality traits. The authors argue that the findings are consistent with the hypothesis from psychology that children in day care experience fewer one-to-one interactions with adults, resulting in more negative effects in families where such interactions are of higher quality.

For Canada, the Quebec's Family Policy introduced publicly regulated, heavily subsidized childcare and early education for children aged 0-5 starting in 1997. Initially, the subsidy was $5 per day and later increased to $7. The evidence from the rollout of this program is decidedly mixed. Baker et al. (2008) find a strong response to the subsidy in terms of maternal employment and the likelihood of using care, but a negative effect on children non-cognitive development and a negligible impact on cognitive test scores. A subsequent evaluation by Baker et al. (2015) show that these non-cognitive deficits persisted to school ages, and also that cohorts with increased child care access subsequently had worse health, lower life satisfaction, and higher crime rates later in life. Lefebrve et al. (2008) report negative mean impacts on children's vocabulary scores, which have been shown to be a good predictor of schooling attainment in early grades. Kottelenberg and Lehrer (2014) refine this inference, confirming negative impacts on behavior at the mean, but positive effects for the most disadvantage children. In interpreting the evidence related to the effects of the Canadian expansion in child care, it is important to understand who was affected by the program. As discussed by the authors of the studies, poor children were already eligible for child care subsidies prior to the expansion of the program. Thus the marginal child affected by the program and that serve as the basis for the identification of the effects, is probably a child who would have stayed at home with his or her middle-class, married, mother, and instead was put into childcare. Moreover, given the large and sudden inflow of children into childcare, the marginal child care slot made available by the program was of low quality. Accordingly, the results of these investigations should be viewed as a consequence of moving middle class children from home care to relatively poor quality formal care.

For the US, Gormley and Gay (2005) examine the effects of Oklahoma's universal pre-K program, which is run through the public schools and is thought to be of high quality. They take advantage of strict age cutoffs for the program and compare children who had just attended for a year to similar children who were ineligible to attend because they were slightly younger. They find a 52% gain in pre-reading skills, a 27% gain in pre-writing skills, and a 21% gain in pre-math skills. The impact of the program tends to

be largest for Hispanics, followed by blacks, with little impact for whites. Children who qualify for a free lunch have larger impacts than other children. These results suggest that a high-quality universal pre-K program might well have positive effects.

For Germany, Cornelissen et al. (2018) study the effects of a reform during the 1990s in Germany that entitled every child in Germany to a heavily subsidized half-day child care slot from age 3 to school entry at age 6. They results suggest that the German childcare system acts as an equalizer benefiting children of disadvantaged families the most in terms of school readiness.

Also for Germany, Felfe and Lalive (2018) exploit a reform that induced school districts to expand early child care. From 2005 onward, German authorities channeled substantial funding into school districts to expand early child care. The expansion process initially occurred unevenly across districts. Two years after the reform, some districts offered an early child care slot to 25% of all children while other districts offered a slot to only 5%. Four years after the reform, however, all districts were able to accommodate approximately 25% of all children. The authors find that the reform fosters motor skills for all children and language skills for boys and immigrant children.

For Norway, Drange and Havnes (2015) use child care assignment lotteries to estimate the effect of child care starting age on early cognitive achievement in Oslo. Getting a lottery offer lowers starting age by about four months, from a mean of about 19 months in the control group. Lottery estimates show significant score gains for children at age seven. Complementary evidence indicates that the lottery increased mothers and fathers labor supply, and thus the formal care slot offered by the lottery replaced informal care by jobless parents.

In two complementary studies, Havnes and Mogstad (2011 and 2015) examine the effect of a Norwegian reform that extended publicly funded preschools. The reform implemented in 1975 led to a large expansion of subsidized childcare. All children 3-6 years old were eligible regardless of their parents' employment and marital status, and available childcare slots were in general allocated according to length of time on the waiting list. For identification they compare the adult outcomes for 3 to 6 year old before and after the reform, from municipalities where child care expanded a lot and municipalities with little or no increase in childcare coverage. It is important to notice that before the reform childcare was provided by informal care arrangements (such as friends, relatives, and unlicensed care givers) servicing the excess demand.

Havnes and Mogstad (2011) document large positive effects of subsidized childcare on children's adult outcomes, measured at their 30s. According to

their calculations, the additional 17,500 child care places produced about 6,200 years of education. They also find that children exposed to child care delayed child bearing and family formation as adults. The heterogeneity analysis indicates that most of the effect are driven by children with low-educated mothers, and that most of the labor market attachment and earnings gains are from girls. Their findings suggest that good access to subsidized child care can increase intergenerational mobility and even reduce the gender gap in the next generation. Further details of the earnings effect are provided in Havnes and Mogstad (2015), where they report that the positive effects of the reform are concentrated in the poorest households and that the effects are indeed negative for children in the richest households.

For Denmark, Gupta and Simonson (2010) exploit variations across municipalities in guaranteed access to center-based preschool (versus family day care). They find that, compared to home care, being enrolled in preschool at age three does not lead to significant differences in child outcomes at age seven no matter the gender or the mother's level of education. Family day care, on the other hand, seems to significantly deteriorate outcomes for boys whose mothers have a lower level of education. They also find that longer hours in non-parental care lead to poorer child outcomes.

This revision of the literature demonstrates that in fact hours in child care replace some other form of care for the child. If the type of care that is being replaced is worse than that in the child care center, one should expect improvements in child outcomes and vice versa. These findings could have important implications for the case for universal childcare programs, since the benefits of providing subsidized child care to middle a upper-class children are unlikely to exceed the costs. However, income matters to. To the extent that childcare allows women to work and earn more, their higher earnings may also benefit their children and could possible offset a mild negative direct effect of child care.

6. Summary

Childhood is a critical period for an individual's development. Intervention to alleviate poverty at early ages have been proved to be effective in improving the living conditions of the most disadvantaged and in altering their life trajectories.

In this article, we revise the existing literature that evaluates policies and programs designed to reduce child poverty and their associated effects on children's outcomes. We focus on three types of interventions: i) labor market policies, ii) income support programs and iii) subsidized child care

provision. The selection of articles has been restricted to those focused on developed countries and that employed rigorous causal inference estimation techniques to gauge the effects of the different interventions.

It is hard to assess which is the best policy to reduce child poverty as the estimated effects very often varies across countries and population subgroups. The aim of this literature review is to summarize the main results associated to popular policies that have been implemented in countries with a socio-economic structure similar to the Catalan case. When possible, we will also highlight the pros and cons of alternative policy instruments.

We have started the revision by stressing the importance of labor market earnings in determining child poverty. In this sense, policies aimed at fostering the employment opportunities of parents should be well-received. Among these policies, those addressed at incentivizing human capital accumulation and training seem very promising. However, the earning benefits of these program for poor households may only arise in a long-term horizon. The revision of labor market policies also stresses that parental leave entitlements and flexible work arrangements that facilitate the work-family balance should be made available to workers. These family-friendly policies will promote the employment and earning opportunities of parents with young children.

While labor market policies are necessary, they may take a while to have real effects on poverty reduction. Income support programs may be more effective in the short term. Credit transfer to working parents under the Earned Income Tax Credit scheme in the US has resulted in very positive gains for children's development and health, while incentivizing parental employment. The Canada Child Benefit, a heavily income means-tested and unconditional on working income support program, has also shown satisfactory result in mitigating the adverse effects of poverty. Evidence on the effectiveness of universal income support programs on children's development is much scarcer and the very few experiences such as the Canadian one report less promising results.

Finally, high-quality subsidized child care may have large benefits on the most disadvantaged children, for whom very often the alternative forms of care are of lower quality. Moreover, child care policies may also benefit maternal employment and positively affect family income. This positive income effect resulting from the availability of subsidized childcare may attenuate the adverse effects documented for children of highly educated parents when replacing parental care by a less personalized formal form of care.

7. Discussion and Practical implications

According to the most recent statistics from the Idescat (2021), 445.400 children below age 16, or a 30% of individuals in this age range, were living at risk of poverty in Catalonia (i.e. in households with incomes below the 60% of the median equivalized disposable income after social transfers). These figures may be even more pessimistic after the outbreak of the covid-19 pandemic. Child poverty does not only negatively affect the well-being and development of the affected population, but it also has large costs for the society. Therefore, it is urgent to take action to reduce the incidence of poverty among the youngest ones.

From the previous revision of the literature, we have learnt that parental joblessness is a strong predictor of child poverty. Thus, policies that foster employment among the most disadvantaged are strongly encouraged. This is particularly relevant in the Catalan context, where the labor market is characterized by a high degree of fix term contracts and a high rate of short and long term unemployment (Hupkau and Ruiz-Valenzuela 2021). According to the revision presented in the previous sections, the most effective of these policies are related to human capital accumulation and training of the marginalized population. However, the effect of these policies on poverty reduction may only arise in a relatively long-time horizon.

Income support programs are an alternative to alleviate child poverty in the short-run. Providing credit to families through the tax system, following the design of the EITC in the US or the CCB in Canada, could be an effective way to improve the life trajectories of disadvantaged children while maintaining parental incentives to work.

Subsidized public child care may also be an option to compensate the negative effects associated to scarce economic parental resources. The experience in other countries indicates that children from the most disadvantaged families largely benefit from high-quality early child care intervention programs. In addition, the free provision of formal care can foster maternal employment and increase family income. In the light of these findings, a Catalan universal child care program would help in alleviating some of the negative consequences of child poverty. The success of this type of program crucially depends on its quality (i.e. the adult-to-child ratio), and the sub-group of the affected population. According to the Idescat, during the academic year 2019/2020 a 61% of children were enrolled in formal education at age 2 (a 38,7% in private and a 22.3% in public formal care). A universal child care program may crow-out some users of the private to the public sector. If the quality in both care alternatives is similar, negative effects on children development are not expected. A universal child care program is also expected to increase the enrollment rate of children

who are in non-institutionalized care, a 39% according to the Idescat in 2019/2020. If these children disproportionality belong to disadvantaged families that by means of the program replace low-quality informal care by high-quality formal care, a universal child care program can largely succeed in improving the life trajectories of an important fraction of the Catalan population. Moreover, the positive effects that a universal child care program may have on maternal employment will also help in reducing material poverty in a relative short span of time.

As noticed earlier, parental employment is a key determinant of child poverty. Well-functioning labor markets that protect workers and guarantee high quality jobs are undoubtfully a necessary condition to keep poverty at low levels. Moreover, the recent experience of the covid-19 has highlighted the importance of time and space flexibility to balance the work-family life. Labor market policies that allow parents to pursue their professional aspirations while taking care of their children are also needed. Based on previous international experiences, we are quite confident that the design of the current parental leave permit that has equalized the duration of the leave for men and women will have important social (and maybe economic) benefits. However, more flexibility at the workplace (and lower economic returns to presentism and working long hours) and the existence of leaves to take care of sick children would also largely benefit workers with young children.

Finally, societies with high-quality education and health systems also have lower child and adult poverty rate, and higher rates of intergenerational mobility. Accordingly, educational and health policies addressed to children but also to the adult population should be at the very top of the political agenda of the government.

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