

An assessment of Child Multidimensional Deprivation in Greece

Written for UNICEF Greece Country Office by Lucia Ferrone (lucia.ferrone@gmail.com) – University of Florence, Italy in 2022.

Executive summary

To design and implement effective policies, the process of defining and measuring poverty and deprivation is a crucial step in identifying and profiling the poor and deprived individuals. Understanding what drives poverty and what makes individuals and families poor and/or deprived is essential in building sustainable, resilient societies. At the same time, the recognition that poverty encompasses a concept that is broader than monetary metrics has been long accepted in both academia and the international and national organizations.

In 2020 about one in three children was at risk of poverty or social exclusion (AROPE). This however does not tell us exactly how much children are, indeed, poor and/or deprived, as the indicator is a composite one that combines several aspects: family income, work participation, material deprivation, and social exclusion. The Child Poverty Deep Dive produced by UNICEF highlighted several other critical aspects of children's lives, regarding their health, their access to quality education, adequate nutrition, and so on.

The aim of this work is to illustrate how a multidimensional child poverty (MDCP) measure can be constructed with available and routinely collected data. To this end, the data from EU-SILC 2020 were used. The goal is to show what a specific MDCP measure can highlight about the situation of children in Greece

The multidimensional poverty measure has been defined using the **Multiple Overlapping Deprivation Analysis (MODA)** developed by UNICEF. It uses **7 dimensions of deprivations**, corresponding to important domains for children: **Dwelling, Sanitation, Leisure, Education, Information, Nutrition, and Health**. Indicators of deprivation are defined differently for children of different ages. Multidimensional poverty is defined as children being deprived in 2 or more deprivations.

Multidimensional poverty affects 34% of children in Greece. The most important correlates of multidimensional poverty for children are 1) living in a family in the bottom 40% of the income distribution 2) living in a single-parent family 3) living in a large family (3 or more children) and 4) being a child of immigrant parents (extra EU). Place of residence and gender play no significant effect, while age has a small effect, as older children are less likely to be deprived.

The dimension with the highest share of deprived children is **Leisure, with over 55% of children deprived**, followed by **Dwelling and Nutrition**. Young children under 4 are the most deprived, mainly due to the high rate of deprivation in the dimension of **Education**, which for this age group is measured by access as at least one hour of formal childcare per week (over 85% of small children are deprived).

From a policy perspective, there is a clear need to address the lack of income, though social protection programs that are effective, and not necessarily targeted to only the lowest part of the income distribution. Results show that being in the bottom two quintiles of the income distribution has a considerable effect on the likelihood of a child of being multidimensionally poor.

These results are in line with the results found by other analysis. The advantage of building a specific measure are twofold: first, using a measure that is more tailored to children specific deprivation (to the extent possible) ensures that **results are more robust and more relevant to children**, while other indexes often mix outcomes and inputs not relevant to children. Second, building such a measure allows one to **analyze the overlap of different deprivations**, understanding where more urgent actions are needed, and whether they need to be addressed in a multisectoral way.

Finally, the main limitation of the measure lies with the data: the EU-SILC is a household-based survey that is not designed specifically for children. As such, key information remains unavailable and many of the indicators used are tied to the notion of affordability, and, therefore, to income. There is a need to complement the available data with more child-focused data collection.

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Introduction

In 2020 about one every three child was at risk of poverty or social exclusion (AROPE). This means that one third of children lived in families that did not have enough income or access to certain goods and services, or adequate participation to the labor market. This however does not tell us exactly how much children are, indeed, poor and/or deprived. The Child Poverty Deep Dive produced by UNICEF highlighted several other critical aspects of children's lives, regarding their health, their access to quality education, adequate nutrition, and so on.

To design and implement effective policies, the process of defining and measuring poverty and deprivation is a crucial step in Identifying and profiling the poor and deprived individuals. Understanding what drives poverty and what makes individuals and families poor and/or deprived is essential in building sustainable, resilient societies. The occurrence of multiple structural crisis in just the last few years has made it even more urgent to understand vulnerabilities and how to address them.

The recognition that poverty encompasses a concept that is broader than monetary metrics has been long accepted in both academia and the international and national organizations. It follows from the notion that development is more than the mere growth of the GDP. The revolutionary work of Amartya Sen (1981; 1990) has broadened our understanding of economic and social progress, and contributed to making the notion of human development a cardinal point of the development agenda.

The notion of multidimensional poverty has become ubiquitous, and has been recognized by the Agenda 2030's Sustainable Development Goals (SDGs), the Report of the Commission on the Measurement of Economic Performance and Social Progress (Stiglitz et al., 2009), and, more recently, by the Atkinson Commission's report on Monitoring Global Poverty (World Bank, 2017).

Target 1.2 of Goal 1 of the SDGs aims to:

“By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions.”

While defining the target of poverty reduction, SDG 1 explicitly recognizes three fundamental aspects of poverty: 1) that it needs to be measured and reduced in all its dimensions, 2) that it needs to take into account different groups of people affected by poverty: men, women, and children, and 3) that international estimates of global poverty need to be complemented by national poverty lines, both monetary and multidimensional.

The main EU indicator for SDG 1 is the AROPE indicator: at-risk-of poverty and social exclusion. The indicator is composite, and it includes several sub-conditions: an income below the at-risk-of-poverty threshold (60% of the median of the distribution), severe material and social deprivation, and finally, living in a household with very limited participation to the labor force.

While an important indicator, as many household-level indicators it is not best suited to measure child deprivation and poverty, as many household-based indicators of poverty.

Specific measurements of multidimensional child deprivation have been developed and increasingly used in the past decade. Gordon et al. (2003) first developed a child-specific multidimensional poverty measurement methodology at the request of UNICEF, known as the Bristol Approach. That study measured multidimensional child poverty (MDCP) across 46 developing countries, anchoring MDCP to the notion of deprivation of basic human needs and child rights and defining absolute child poverty as deprivation in at least two out of seven dimensions among food, safe drinking water, sanitation facilities, health, shelter, education, and information. Subsequent studies operationalizing the MDCP from the child rights

perspective include that of Roelen, Gassmann and de Neubourg (2010) in Vietnam. Building on these studies, UNICEF developed its own multidimensional child poverty measure based on child rights in the domains of child survival, development, protection, and participation (Biggeri and Cuesta, 2020). The resulting measure, the Multiple Overlapping Deprivation Analysis (MODA) (de Neubourg et al, 2013), focuses on the type and number of deprivations experienced simultaneously by each child, rather than on the proportion of children deprived in each dimension, respectively.

A specific version of the MODA methodology was developed by Chzhen and colleagues at UNICEF Innocenti (Chzhen et al, 2013; 2016). That work aimed at showing how multidimensional child poverty can be applied to high income countries, and in particular to European countries. It used the specific child deprivation module run by Eurostat in 2009 with the EU-SILC survey, and applied a cross-country methodology (i.e., the same methodology for all countries in the EU). The same methodology has been applied in an update of the same study (Chzhen et al, 2017) using data from 2014 finds that in Greece almost 40% of children are deprived in 2 or more dimensions.

Unfortunately, until last year (2021) the child deprivation module was available only for 2009 and 2014, as well as 2013 in Greece. However, Eurostat has recently established that it should have a three-year rotation period, so it will be more frequent: this will allow for a more frequent monitoring of child deprivation and multidimensional poverty. The latest data (2021) is however not available yet, and hence the same methodology cannot be applied. The aim of this work is therefore to exemplify how a multidimensional child poverty measure can be constructed using frequently available data, such as the EU-SILC, even if the child deprivation module is not available, and what it can highlight about the situation of children in Greece. It is not meant to be used as an official measure, but instead to stress how children can be vulnerable to multiple deprivations at the same time.

Lastly, the main aim of a MDCP measure is not to substitute existing measures or to provide different and 'better' numbers, but rather to complement existing measure with information that can be used to better monitor the situation of children and, ultimately, improve policy making.

Theoretical framework

The multidimensionality of poverty and deprivation has long been recognized, and both academia international bodies and organizations have increasingly adopted a multidimensional perspective in analyzing and addressing poverty and wellbeing, including the European Union. In the last decade, studies on multidimensional child poverty and deprivation have proliferated. While traditionally poverty is firmly linked to some form of monetary measurement, multidimensional poverty incorporates material (and non-material) deprivation indicators, composing composite measures and indices.

The most relevant theoretical approaches to multidimensional poverty and deprivation are the capabilities and basic needs approaches. They have been the first to show the limitations of a purely monetary approach in capturing deprivations (Hicks and Streeten, 1979; Sen, 1999; Biggeri and Mehrotra, 2011). Empirically, several studies have found that deprivation in several relevant dimensions (for example, health, education, nutrition) often does not overlap with monetary poverty, further demonstrating the limits of the monetary approach to fully capturing the conditions of individual or familial deprivation (Laderchi, 1997; Atkinson 2003; Bourguignon and Chakravarty, 2003; Laderchi et al., 2003; Alkire and Santos 2013; Alkire 2014, Burchi et al., 2018; Cuesta, Jellema and Ferrone 2020).

The indexes used in the literature to measure wellbeing and deprivation can be distinguished by the dimensions of wellbeing used, the subject of the analysis (countries, households, individuals), the weighting of their variables, and aggregation methods (Alkire and Foster, 2011; Alkire 2018).

Parallel to the measurement of MDP for the whole population, specific measurements of multidimensional child deprivation have been developed and increasingly used in the past decade. Gordon et al. (2003) first developed a child-specific multidimensional poverty measurement methodology at the request of UNICEF,

known as the Bristol Approach. Subsequent studies have operationalized the MDCP from the child rights perspective (es. Roelen, Gassmann and de Neubourg, 2010). Building on these studies, UNICEF developed its own MDCP measure based on child rights in the domains of child survival, development, protection, and participation (de Neubourg et al., 2013; Biggeri and Cuesta, 2020). The resulting measure, the Multiple Overlapping Deprivation Analysis (MODA), focuses on the type and number of deprivations experienced simultaneously by each child, rather than on the proportion of children deprived in each dimension, respectively.

The European Union has developed two main indicators to measure poverty and deprivation: the At-risk-of poverty rate (AROP) and the At-risk of poverty and social exclusion rate (AROPE).

Core elements of Multidimensional Deprivation Measurement

Any MDD measure should include the following core elements:

- Dimensions: the domains of the measure, such as Health, Education, Nutrition, etc.
- Indicators with thresholds: indicators are what defines a dimension in practice. They need to have a threshold that defines deprivation. For example, a child is deprived in Education if she does not attend school.
- Aggregation function: how dimensions and indicators are aggregated into a final measure
- Weights: the importance that is given to each dimension and/or indicator.
- Cut-off(s): similar to a poverty line, a cut-off define who is multidimensionally poor vs. who is not.

Dimensions are fundamental in defining the MDP measure from a more conceptual standpoint. They can be capabilities, or basic needs, or human rights, or defined by a participatory approach. They should reflect the domains that are important to define deprivation and poverty. The main methodologies and indexes of MDD all define similar dimensions: health, education, nutrition, some form of living standards, access to water, access to sanitation. Dimensions should mostly reflect outcomes rather than inputs. For example, including income or monetary poverty among the dimensions, risks being misleading, in that it mixes a mean with an end.

Indicators are *how* dimensions are operationalized in practice. They will inevitably reflect data availability; however, data availability should not be the sole justification for them. The choice for or against an indicator may change the incidence and the nature of the observed deprivation. It matters, for example, whether access to education is measured by formal enrolment, by actual attendance or by school attainment (or by a combination of indicators). An important distinction should be made between indicators and what are correlates of deprivation. Living in a rural area, for example, can make a person or a household more likely to suffer a particular deprivation, but it is not a deprivation in itself. In general, characteristics of a person that cannot be changed such as disability, orphanhood, migration status, etc., should not be treated as deprivation, as they are states of being.

Some indicators are already defined in the binary space (*i.e.*, they are either 0 or 1, for example a child either goes to school or not). Others will require the definition of a threshold. While not necessarily true for all approaches to multidimensional poverty (see for example Biggeri and Bortolotti, 2020), most common methodologies rely on binary indicators of deprivation that require a defined threshold. A threshold can be defined by national or international standards or by other considerations, such as the distribution of the indicator itself.

Finally, a MDD measure is defined by using an aggregation function. An aggregation function is how indicators and/or dimensions are aggregated to make up the final measure. The major difference is between measures that aggregate indicators directly and measures that have an intermediate step aggregating indicators first into dimensions. The latter requires first to define what is deprivation in each

given dimension. This step can be useful to complement the MDD analysis with a dashboard and overlapping analysis: describing the share of deprived people in nutrition, education, etc. However, it increases the complexity of the measure.

In this study, we will use the MODA approach, which requires a three-steps process: defining indicators, aggregating indicators into dimensions, summing dimensions. The final measure (from 0 to K, where K is the maximum number of dimensions possible) can be then analyzed at each cut-off, i.e., at each number of dimensions. For example, at $k=2$, we can observe how many children are deprived in 2 or more dimensions.

Differences with EU indicators

What is, then, the difference, with standard measures of poverty and deprivation such as the AROP or AROPE rates, or the material deprivation rate?

The main difference lies in the conceptual background and the methodology. First, the conceptual background is rooted in human development and children's rights. Dimensions and indicators of deprivation need to be defined in a way that is relevant for children's rights and well-being. This implies, for example, that indicators such as low work intensity are not relevant for children as *outcomes* of deprivation, but are rather *drivers* of child deprivation. In other words, the lack of work of adults in the family is not a deprivation per se, for children, but rather a -very likely- determinant of deprivation. Second, according to Eurostat definition, deprivation is defined as lack of something only if the reason is the inability of the family to afford it. However, if we consider children's right as our primary framework, the reason for lacking an item that is deemed important for children's development, becomes irrelevant.

Finally, dimensions of deprivation for children needs to be defined clearly in each domain: indicators such as the severe material and social deprivation of Eurostat incorporate several domains of deprivation (housing conditions, inability to afford adequate nutrition, etc) and while they provide a good indicators as to the general welfare of the family, they risk hiding differences in deprivation that could be relevant to children and to design effective policies for children. This, however, is problematic when analyzing the well-being of specific groups, such as children or women, as the needs of people differ depending on their age and as the intra-household resource distribution is not always equal.

Data and methodology

This work uses data from the 2020 EU-SILC survey for Greece. The construction of the MDD measure and the analysis uses the household register (EL20D), the household file (EL20H), the individual register file (EL20R), and the personal file (EL20P)¹. The three files have been merged following Eurostat guidelines. Data were handled according to Eurostat guidelines, as well as following the Hellenic Statistical Authority (ELSTAT) official recoding manual (ELSTAT, 2020). Data were elaborated according to the MODA methodology described above: first defining binary indicators, and then aggregating them. Missing values were left missing, with no attempt on imputation. Analysis was carried out in Stata 17.

The full sample contains 32,962 observations, of which 4,281 (13%) are children and adolescents under 18. The main characteristics of the sample are reported in table A1 in appendix.

The table below (Table 1) illustrates the indicators chosen for this exercise and to which dimension and age group they refer to. The table reports also the name of the variable available in the EUSILC microdata. The indicators have been chosen among the household and individual variables or the EU-SILC, and the table report the corresponding indicator code in the last column. Most indicators are the same as the one defined by Eurostat, or a modification of it. The main difference is that not all indicators chosen here are reported in Eurostat public tables and reports, but they are still part of the data collection and available in the EU-SILC micro-data. This is due to the fact that the goal and focus of this work are different. The second main difference and limitation is that the data used here does not contain the specific child deprivation module. This is indeed a limitation compared to the work done previously by UNICEF (Chzhen,20..). Until recently, the child deprivation module was seldom included, which made it difficult to have timely data. The latest one for Greece was in 2014. With the recent revision of the SDGs indicators by Eurostat, the child module is supposed to run every 3 years, which will allow for better analysis. The data has been collected in 2021 in Greece, but is however not yet available. The absence of specific information limits the scope of the analysis of multidimensional child deprivation. The goal of the present work therefore to 1) provide an assessment on the multidimensional deprivation of children in Greece with the available data at the present moment 2) illustrate how such a MDD measure can be constructed, even in the absence of specific indicators 3) provide a baseline for discussion around multidimensional child deprivation in Greece using a child-centered measure.

The definition of indicators was discussed with UNICEF Greece, among a list of possible indicators. The rationale was to follow as possible the principles reported in the section above, as well as balance information with synthesis, *i.e.* not use too many indicators per dimension. It was not possible to find indicators for all age groups for all dimensions: namely, there are no suitable indicators for education for children 13 to 15 years old, as EU-SILC in general it does not provide a lot of information at individual level for household members younger than 16. Several indicators have been adapted from household information. Some indicators are different from the EU-SILC ones, although they share the same name. For these indicators, the Eurostat code is reported in parenthesis. Overcrowding is defined as having more than 2 people per sleeping room. This is different from the Eurostat indicator that specifies a combination of age, gender, and rooms². The indicators for access to information are marked as deprivation if they are not available, *whatever the reason*, *i.e.* whether the household is not able to afford it, or 'another reason' is

¹ Permission to access the microdata was obtained by EUROSTAT in May 2022.

² "A person is considered to be living in an overcrowded household if the house does not have at least one room for the entire household as well as a room for a couple, for each single person above 18, for a pair of teenagers (12 to 17 years of age) of the same sex, for each teenager of different sex and for a pair of children (under 12 years of age)."

marked as a response. The same applies to the deprivation in leisure activities and friends and family: it is recorded as deprivation regardless of the reason.

At the same time, not all dimensions of deprivation apply equally to all age groups: access for information is more relevant for children of school age and after, while it is less important for younger children. Following the MODA life-cycle approach, we have defined different indicators for different age groups, whenever possible.

All indicators are coded as 1 if the child is deprived, *i.e.*, he/she has no access the good or service represented by the indicator, and 0 otherwise. For example, a child deprived in the childcare indicator, if he/she does not have access to at least one hour of formal childcare a week.

This results in a number of deprivation different between age groups, due to the different age specifications of education and information. The total number of deprivation goes from 5 for children younger than 1, to 7 for adolescents 16-17 years old. This is summarized in table 2 below. Ideally, the number of dimensions should be balanced between age groups. However, the two dimensions concerned have only one indicator each per age groups, therefore they should not affect the general headcount too strongly. Additionally, the first age group is composed exclusively of children under 1 years of age, which has a very limited number of observations (42), very unlikely to bias the final results. Results are nonetheless reported by age groups, in addition to national averages, to allow better comparison and identification of deprived children.

Table 1: Dimensions and indicators

| Dimensions | Indicators (deprived if a child...) | Age group | Eurostat code | EU-SILC variable(s) |
|-------------|-----------------------------------------------------------------------------------|-----------|------------------------------------|---------------------|
| Education | Has no formal childcare | 1-3 | ilc_camnforg0 | rl030, rl040, rl050 |
| | Is not enrolled in Pre-school education | 4 to 6 | educ_uoe_enra10 | rl010 |
| | Has less than 25hrs a week of compulsory school | 7 to 12 | educ_uoe_enra0 | rl020 |
| | Has not completed lower secondary | 16-17 | tps00197 | pe040 |
| Information | Has no access to tv, telephone, or computer | 7-17 | ilc_mddu01, ilc_mddu02, ilc_mddu03 | hs070, hs080, hs090 |
| Nutrition | Lives in a household that cannot afford protein with meal | 0-17 | ilc_mdcs03 | hs05 |
| Health | Lives in a household where more than one person report unmet medical/dental needs | 0-17 | (hlth_silc_14, hlth_silc_09) | ph040, ph060 |
| | Reports unmet medical/dental needs | 16-17 | hlth_silc_14, hlth_silc_09 | ph040, ph060 |
| Sanitation | Lives in a household with no indoor toilet or shared | 0-17 | ilc_mdho03c | hh091 |
| | Lives in a household with no indoor bathroom or shared | 0-17 | ilc_mdho02c | hh081 |
| Dwelling | Lives in an overcrowded dwelling: >2 people per sleeping room | 0-17 | (ilc_lvho_or) ilc_lvho04 | hh030, |
| | Lives in a dwelling has leaking roof/damp floor | 0-17 | ilc_mdho01 | hh040 |
| | Lives in a household that cannot keep the dwelling adequately warm | 0-17 | ilc_mdcs01 | hh050 |
| Leisure | Lives in a household that cannot afford vacation one time a year | 0-15 | ilc_mdcs02 | hs040 |
| | Has no regular leisure activity | 16-17 | ilc_mdcs11a | pd060 |

Source: author's elaboration based on EU-SILC 2020 and Chzhen et al, 2016.

Table 2: Dimensions per age group

| Age | 0 yo | 1 to 3 | 4 to 6 | 7 to 12 | 13 to 15 | 16-17 |
|------------|-----------|-----------|-----------|-------------|-------------|-------------|
| Dimensions | Nutrition | Education | Education | Education | Information | Education |
| | Health | Nutrition | Nutrition | Information | Nutrition | Information |

| | | | | | | |
|------------------------|-----------------------------------|---------------------------------------------|---------------------------------------------|----------------------------------------------------------|---------------------------------------------|----------------------------------------------------------|
| | Sanitation Dwelling Leisure | Health Sanitation Dwelling Leisure | Health Sanitation Dwelling Leisure | Nutrition Health Sanitation Dwelling Leisure | Health Sanitation Dwelling Leisure | Nutrition Health Sanitation Dwelling Leisure |
| N of dimensions | 5 | 6 | 6 | 7 | 6 | 7 |

MODA uses a three-step approach to construct the final measure: first, children are defined as (not)deprived in each indicator, according to the defined threshold. Following the framework of multidimensional deprivation, we consider deprivation as lack of access, or lack of enjoyment of the specified good or service (see table 1). In the second step, indicators are aggregated into dimensions, thus defining *unidimensional* deprivation, that is: whether the child is deprived in that specific dimension. Finally, dimensions are added up, creating an index between 0 to K, where K is the maximum number of dimensions a child can be deprived in. In this case, it will be 7. Multidimensional child deprivation is thus defined by choosing a cut-off, similarly to what is done with a poverty line: it could be just one deprivation, meaning that all children deprived in at least one dimension are considered deprived, or at least two, or higher. Because we are defining *multidimensional* deprivation, the threshold is usually chosen at *2 or more dimensions* of deprivation, i.e., a child is defined as multidimensionally poor if they are deprived in *at least 2 dimensions*. Any cut-off point could potentially be chosen, but 2 is the most widely used. The whole distribution of deprivation is nonetheless reported for transparency.

The proportion of children who are multidimensionally deprived gives the *multidimensional child poverty headcount (H)*, similar to the conventional poverty headcount: the proportion (in percentage) of children who are deprived according to our chosen cut-off. Beside the headcount, it is important to also report the *intensity (A)* of deprivation: that is, the average number of deprivations experienced by those who are deprived. The concept is similar to that of the poverty gap. The aim is to measure *how much* exactly are deprived the multidimensionally deprived children. As an example, if 10% of children are multidimensionally deprived (i.e., deprived in 2 or more dimensions), but the intensity of deprivation is 3.5 out of 5 total, it means that those children are intensely deprived, and need urgent attention. Conversely, we can have 30% of multidimensionally deprived children whose intensity is 2.1: this means that on average, while there are more children who are deprived, their deprivation is less strong. The policy implications are different, since in the first case there is a need to tackle several issues at once, and probably focus on a specific subset of children. In the second case, it is more likely that the driver of deprivation lies in one or two key issues. This is the example of Bosnia-Herzegovina (Chzhen and Ferrone, 2017), where the major cause of multidimensional poverty among children was the widespread issue of poor sanitation facilities.

One important intermediate step is the aggregation of indicators into dimensions: there are several ways in which it can be done. It is a key step because it holds theoretical and practical implications. In MODA, the method used is usually the union approach: a child is deprived in a dimension, if they are deprived in *any of the indicators* that define that dimension. For example, a child will be deprived in the Sanitation dimension, if they are deprived in the toilet indicator *or* the bath indicator. The union approach is a commonly used method, for example it is used in the construction of the AROPE and other Eurostat indicators. This method has the important implication of not allowing substitution between indicators, i.e., a non-deprivation in one indicator does not 'make up' for deprivation in other indicators within the same dimension. The reasoning for applying this to MDCP lies in the human rights framework: if we are defining basic rights for children, then a good outcome in one cannot compensate for a failure in another one.

The practical implications are mainly two: this method generally results in higher headcounts of multidimensional poverty (Hjelm et al, 2016; Carraro and Chzhen, 2019). Indicators need to be balanced between dimensions, avoiding having dimensions with a very large number of indicators (unless they are defined differently for different age groups, such as Education in our case). Secondly, the union approach implies that if a child who is already deprived in one indicator becomes deprived in another indicator of the same dimension, the measure does not change. This is true for all headcount measures (for example, the poverty rate does not increase if a poor becomes poorer), but still presents a limit to the measure.

The following section will present the results based on the methodology and data presented.

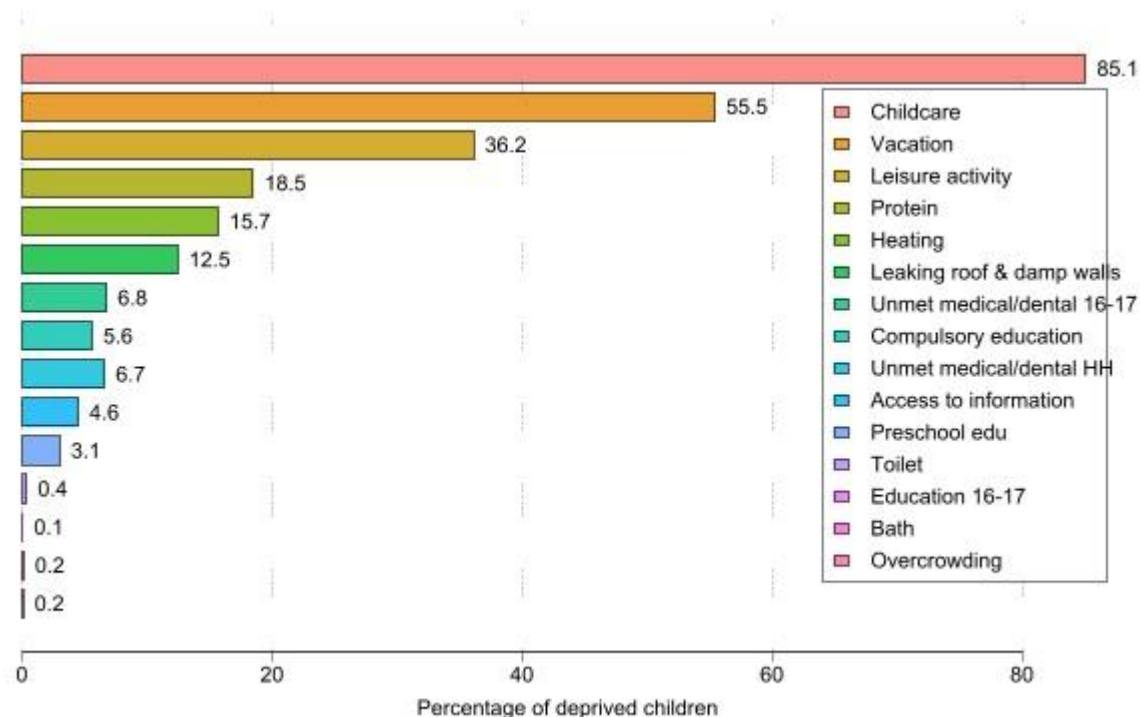
Results

Indicators and dimensions

Figure 1 below shows the prevalence of deprivation for each indicator. The indicator with the highest prevalence is childcare (85%), followed by vacation (55%), and lack of regular leisure activity for adolescents (36%). The prevalence for the subsequent indicators drops dramatically: deprivation of a protein meal (18.5%), time for friends and family /16%) and lack of sufficient heating (15.7%). Deprivation in structural variables such as availability of bath and toilet is very low, as well as overcrowding (all are less than 1%). However, house problems such as leaking roof and damp walls affect 12.5% of children. These results suggest already that deprivation among Greek children is concentrated in a few key dimensions and areas: access to childcare, as noted also in the Deep Dive, is one of the major issues facing children in Greece. The ability to afford vacations, as well as a protein meal, are tied to income, and can be addressed through financial aid. Figure 2 shows the same results but divided by type of area of residence: densely populated, intermediate, and thinly populated area. The pattern follows the national averages, and there does not seem to be a stark difference between the areas, although children living in densely populated areas are generally better off than children in thinly populated areas.

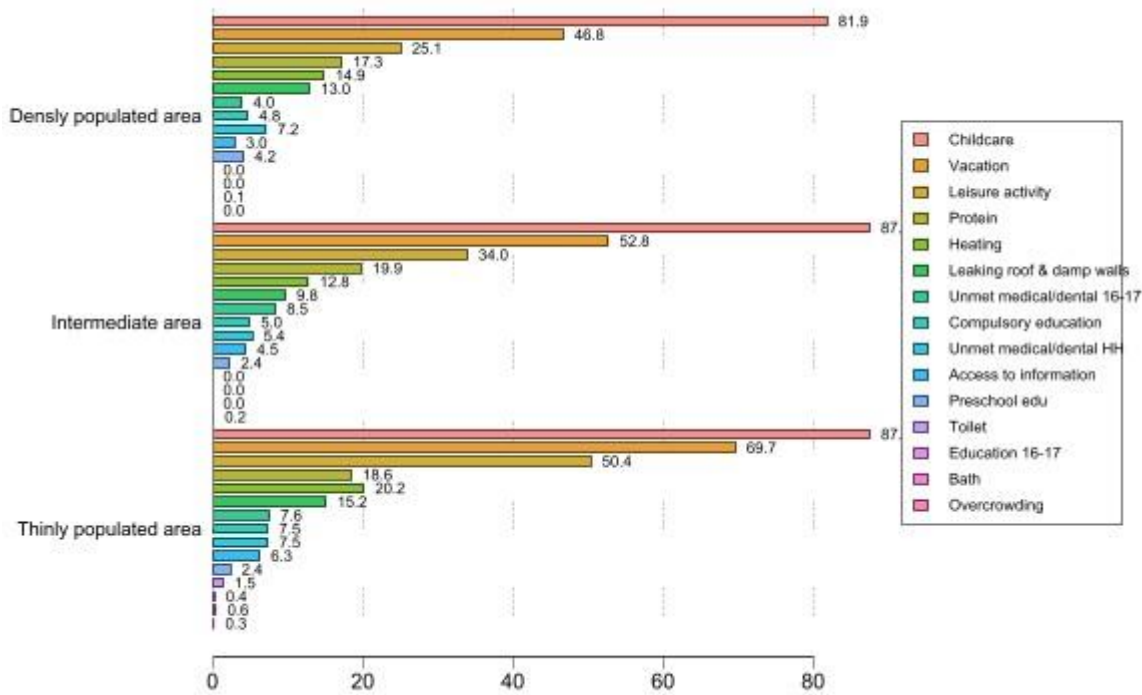
Table A2 in Appendix shows the full distribution of indicators by background characteristics: deprivation in childcare is especially high for children living in the islands and Crete, and for children living in large families, as well as children of at least one non-EU immigrant parent.

Figure 1: Prevalence of deprivation in indicators, national averages



Source: Author's elaboration on EU-SILC 2020.

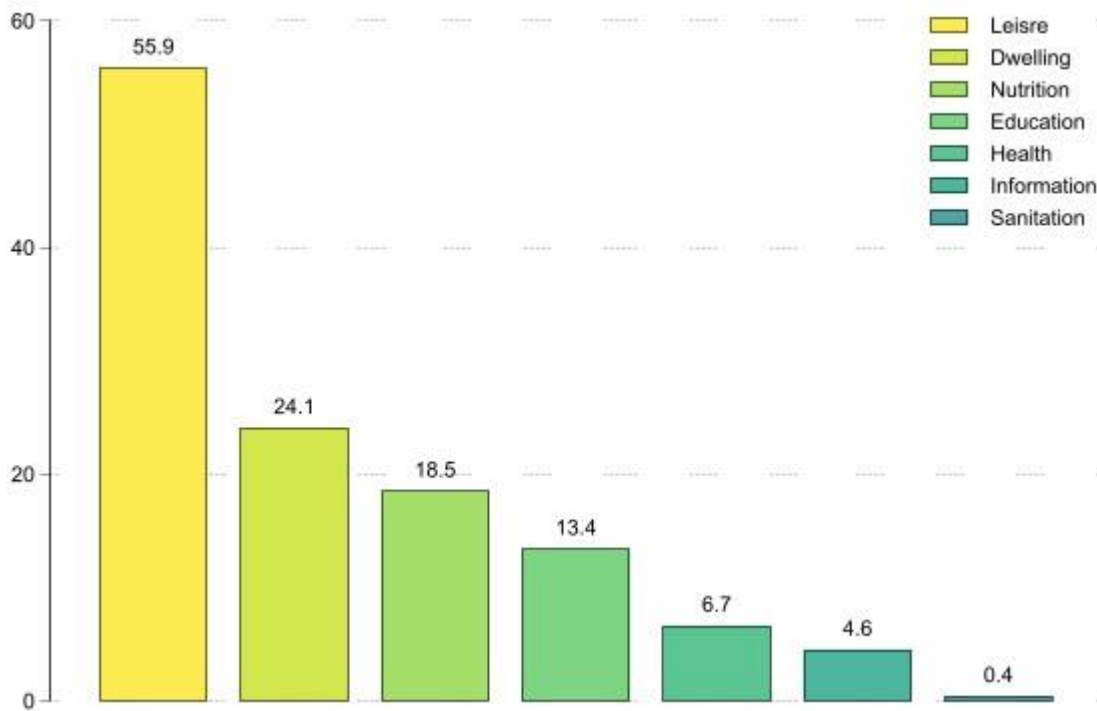
Figure 2: Deprivation in indicators by area of residence



Source: Author's elaboration on EU-SILC 2020.

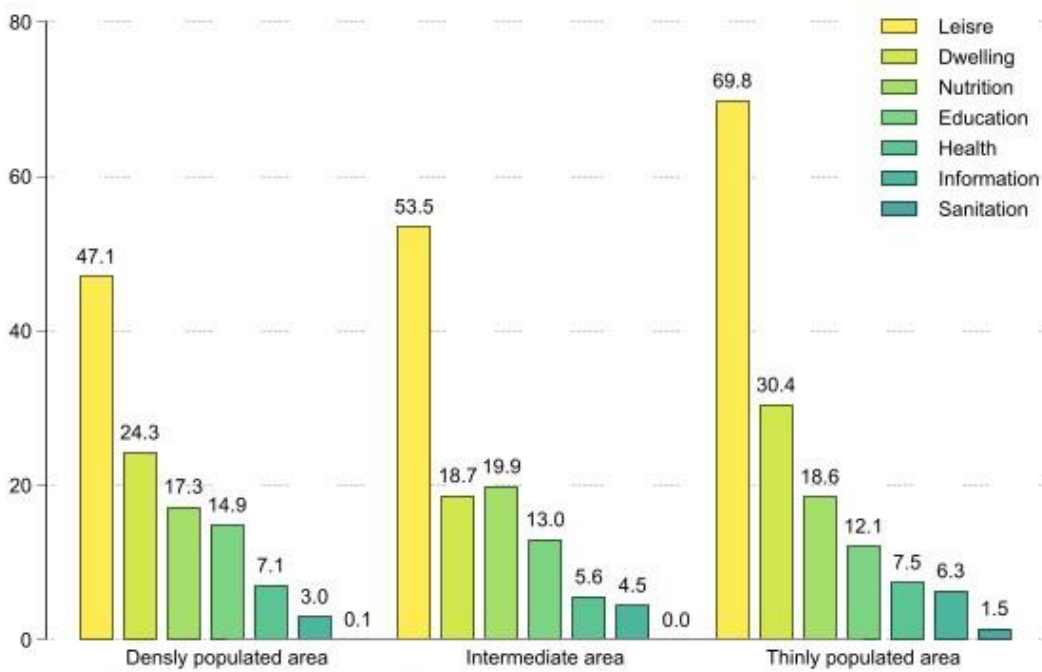
Considering dimensional deprivation (figure 3), the highest deprivation is found in the Leisure dimension (55.7%), as expected given the high prevalence of deprivation in both the vacation and the leisure activity indicators. Deprivation in the dimension of Education, on the other hand, is not high at 13.4%. Despite the very high prevalence of deprivation in the childcare indicator, the dimension headcount remains low because it is defined over a much larger group of children, while the childcare indicator concerns only the group of children between 1 and 3 years old. The second highest dimension is the Dwelling dimension (24.1%). This is due to the relatively high prevalence of both household problems and heating indicators. Figure 4 shows the prevalence of dimensional deprivation by area: children in densely populated areas are less deprived in Leisure. Children in intermediate areas are, however, better off in Dwelling and Education, while children in both intermediate and thinly populated areas are worse off in Nutrition. Figure 5 shows dimensional deprivation by age group (in the dimensions defined for each age group). As expected Education has a high headcount for young children, while it is low for older age groups.

Figure 3: Dimensional deprivation, national averages



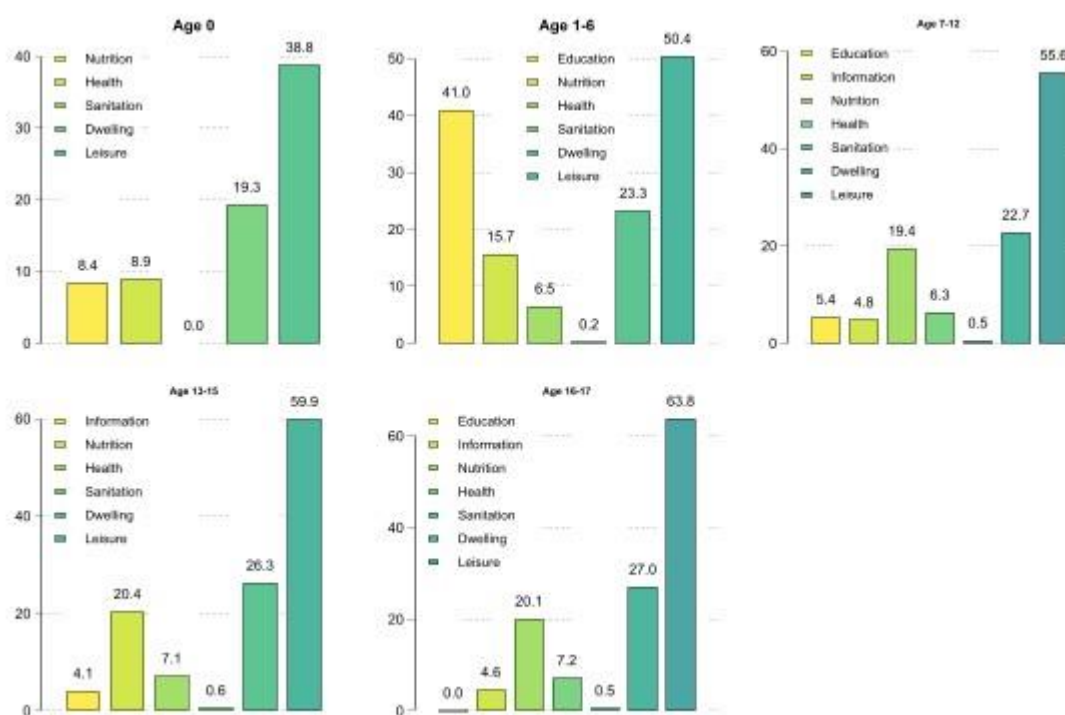
Source: Author's elaboration on EU-SILC 2020.

Figure 4: Dimensional deprivation by area of residence



Source: Author's elaboration on EU-SILC 2020.

Figure 5: Dimensional deprivation by age group



Source: Author's elaboration on EU-SILC 2020.

Table 3 reports the dimensional deprivation by the different background characteristics. The first part shows the deprivation by macro-region (NUTS 1 definition). Children in Attiki are better off, on average, than children in other regions, but they are more deprived in Education with respect to Northern and Central Greece, they are also the most deprived in Health. Children in Northern Greece are the most deprived in Sanitation, although it is still a very small share (1.4%). Children in Islands and Crete are the most deprived in Education, and Information, and the second deprived in Leisure, after Central Greece. This geographical heterogeneity of results speaks to the different drivers of deprivation: Education and Health are more directly related to the availability and accessibility to services, and children in more crowded areas or where services are more expensive, are more likely to be deprived. The second section of the table shows the deprivation in each dimension by financial indicators: being in the bottom 40% of the income distribution are the most deprived in each dimension, followed by children in households that have outstanding debts. but other characteristics remain more relevant than the region of residence. Children of immigrant parents (one or both parents are extra-EU immigrants) and children living in large families, are all children with higher-than-average dimensional deprivation, as well as children of single parents. In particular, children in large families are almost two times more likely to be deprived in Nutrition than the national average, and children of immigrants are almost double as likely to be deprived in Dwelling. There are no substantial gender differences, but girls are less deprived in Leisure, Education, and to a lesser extent in Dwelling and Nutrition, while they are more deprived in Health.

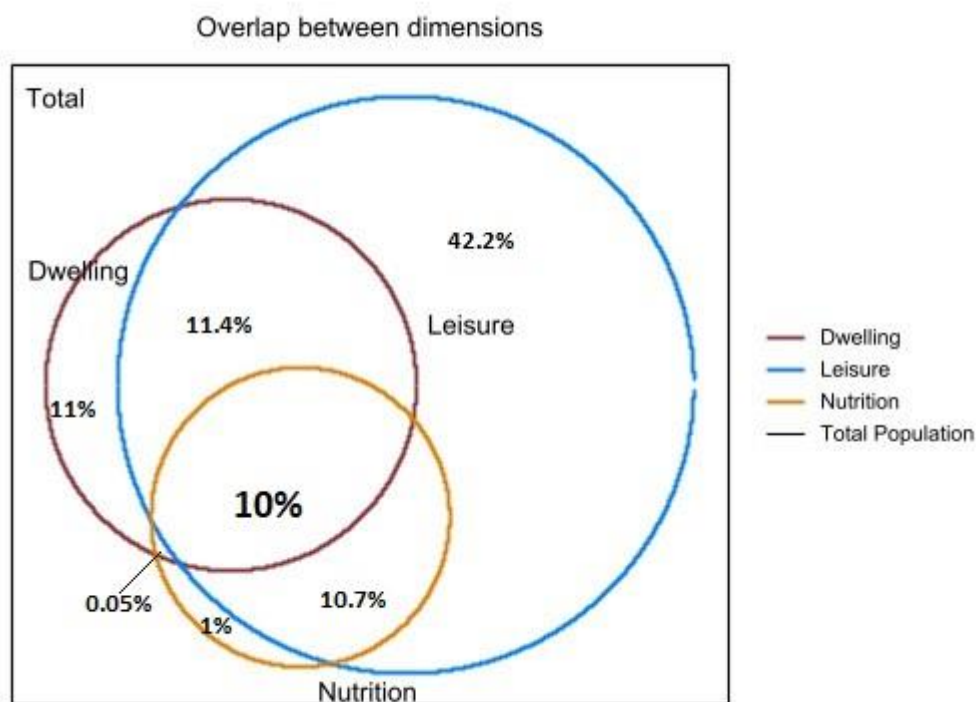
Table 3: Dimensional deprivation by background characteristics

| | Dwelling | Sanitation | Leisure | Information | Education | Nutrition | Health |
|-----------------------------------|-------------|------------|-------------|-------------|-------------|-------------|------------|
| Total | 24.1 | 0.4 | 55.9 | 4.6 | 13.4 | 18.5 | 6.7 |
| Macro-Region (NUTS 1) | | | | | | | |
| Attiki | 20.7 | 0.0 | 41.6 | 4.2 | 14.6 | 16.6 | 8.1 |
| Islands & Crete | 25.4 | 0.5 | 66.3 | 6.6 | 18.2 | 16.3 | 5.4 |
| North Greece | 25.1 | 1.4 | 59.8 | 3.6 | 11.5 | 22.0 | 7.1 |
| Central Greece | 27.4 | 0.1 | 67.0 | 5.1 | 11.6 | 18.6 | 4.8 |
| Financial indicators | | | | | | | |
| Bottom 40% of income | 42.0 | 1.0 | 85.7 | 11.5 | 15.6 | 42.1 | 10.3 |
| Difficult to make ends meet | 25.6 | 0.5 | 61.2 | 5.0 | 13.2 | 20.5 | 7.3 |
| HH has arrears on payments | 36.2 | 0.4 | 75.3 | 8.2 | 13.8 | 32.9 | 10.2 |
| Housing cost is a burden | 24.3 | 0.3 | 56.3 | 4.4 | 13.5 | 18.7 | 6.8 |
| Background characteristics | | | | | | | |
| Boys | 24.6 | 0.5 | 57.6 | 4.5 | 14.6 | 19.0 | 6.3 |
| Girls | 23.6 | 0.4 | 54.0 | 4.6 | 12.2 | 18.1 | 7.0 |
| Single parent | 44.0 | 2.1 | 78.7 | 7.6 | 9.4 | 32.6 | 7.7 |
| Low ed parents | 29.6 | 0.6 | 68.7 | 6.3 | 12.1 | 25.4 | 8.8 |
| Large family | 29.1 | 2.8 | 77.0 | 8.5 | 11.0 | 48.3 | 14.9 |
| At least one parent extra-EU | 42.3 | 0.0 | 76.3 | 12.2 | 17.9 | 40.1 | 7.0 |

Source: Author's elaboration on EU-SILC 2020. Means are weighted by household weights.

Finally, a multidimensional deprivation measure allows to understand how the dimensional deprivations overlap each other. Figure 6 shows the overlap of the three highest deprivation: Leisure, Dwelling, and Nutrition. As we can see, the degree of overlap between the three dimension is not high: 10.3%. Still, one child in ten is deprived in all three dimensions. The overlaps between Leisure and Dwelling, and Leisure and Nutrition are both similar, 11% and 10.7% respectively, while the overlap of Dwelling and Nutrition is virtually 0.

Figure 6: Overlap between Dwelling, Leisure, and Nutrition

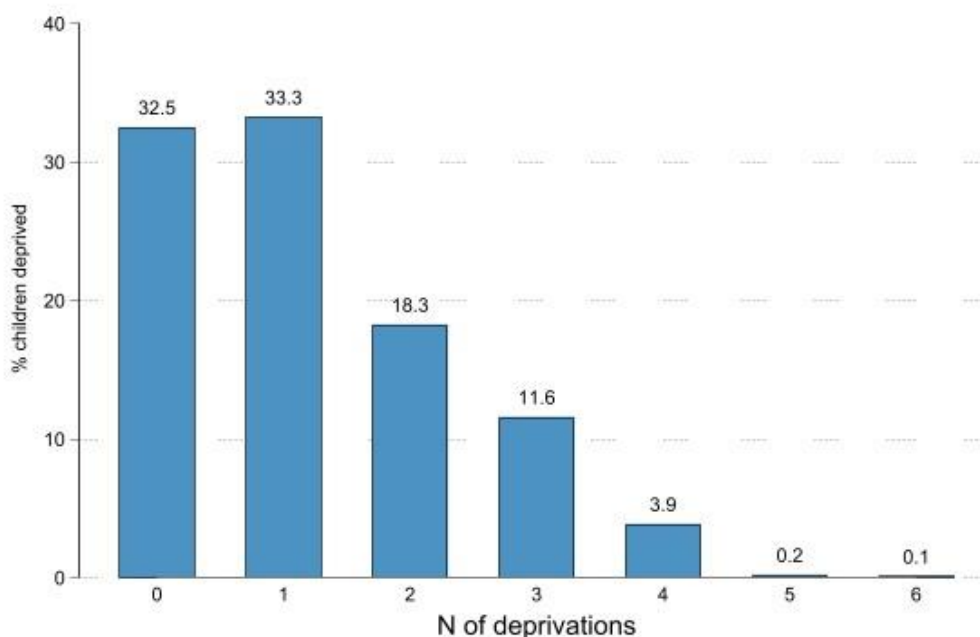


Source: Author's elaboration on EU-SILC 2020.

Multidimensional child poverty

This section reports the results for the headcount of multidimensional child poverty, as well as the intensity of deprivation. Figure 7 shows the distribution of deprivation according to each number of dimensions. One third of children is not deprived in any dimension, while one third is deprived in exactly one dimension. The share of deprived children drops after one, becoming 18% in 2, 11.6% in 3, 4% in 4, and then to almost 0 for the highest count of deprivations. As the dimensional deprivation has showed before, most of the deprivation experienced by Greek children is concentrated in one or two dimensions, while the simultaneous occurrence of more deprivation is less common.

Figure 7: Share of children deprived in each number of deprivations

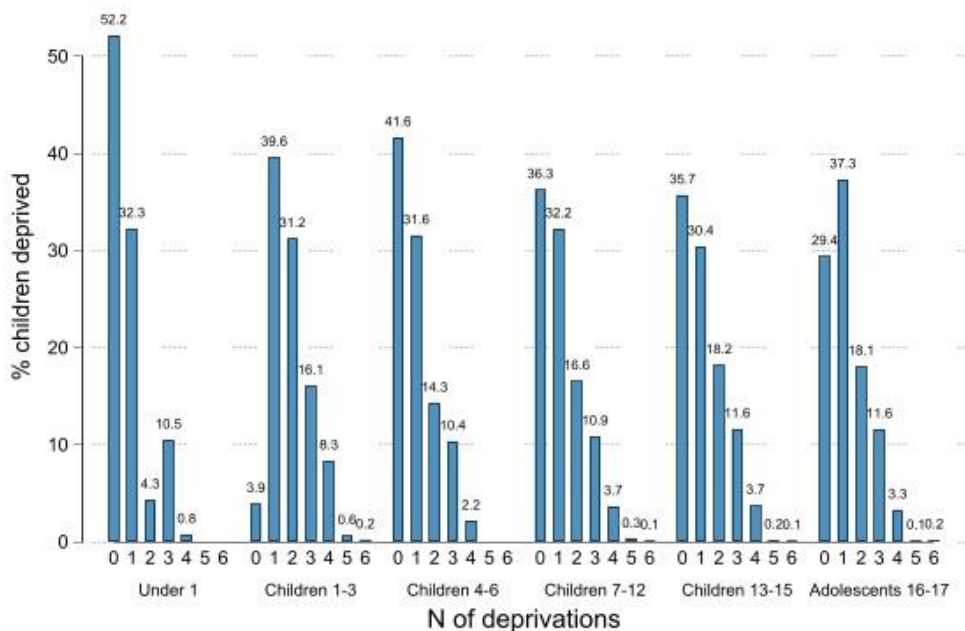


Source: Author's elaboration on EU-SILC 2020.

Figures 8 and 9 show the same distribution by age group and region, respectively. Over half of very young children are not deprived in any number of deprivations, while almost all children 1 to 3 years old are deprived in at least one dimension. Adolescents are the second most deprived group. Children living in the Islands and Crete are the most likely to be deprived in at least one dimension, while children living in Attiki are the least likely. The next table (table 4) reports the multidimensional headcounts for each possible cut-off, together with the intensity of deprivation. 34% of children are deprived in 2+ dimensions, which means that there are 34% of multidimensionally poor children in Greece. This number almost doubles for children in low-income households (65%), and in large families, as well as children of immigrant parents. Additionally, 9 out of 10 children in low-income households experience at least one deprivation (91%). Among household with financial difficulties (low income, have arrears on payments, has difficulty to make ends meet, housing cost is a burden) children in low-income households and households that have arrears on payments are the worst off, The average intensity of deprivation is 2.6, showing that the extent of multidimensional poverty is contained. Intensity is also relatively stable for the different categories, although higher for children of immigrants, poor children, and children of single parents.

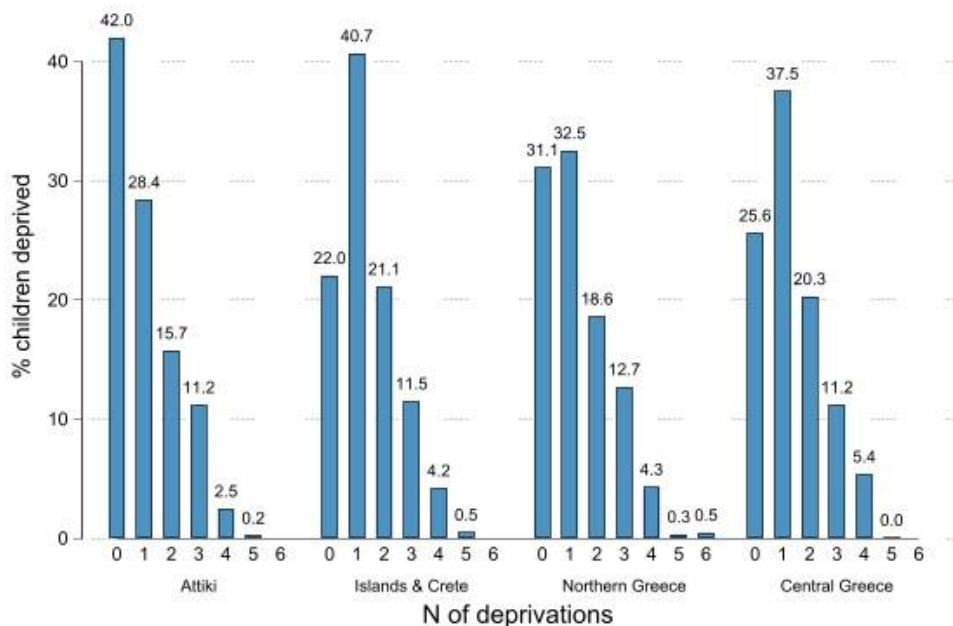
One important fact is that, as already stated, the headcounts at higher cut-offs are much lower: 16% of children are deprived at the cut-off of 3+, and less than 5% at the cut off of 4+. However, 35% of children of immigrants are deprived at the cut-off of 3+, 36% of children living in poor families, and 28% of children living with single parents.

Figure 8: Share of deprived children in each number of deprivations by age group



Source: Author's elaboration on EU-SILC 2020.

Figure 9: Share of deprived children in each number of deprivations by NUTS 1 region



Source: Author's elaboration on EU-SILC 2020.

Table 4: Multidimensional headcounts and intensity

| | Deprived in 1+ | Deprived in 2+ | Deprived in 3+ | Deprived in 4+ | Deprived in 5+ |
|---------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Total | 67.46 | 34.19 | 15.90 | 4.27 | 0.37 |
| Children under 3 | 91.92 | 52.96 | 24.06 | 8.46 | 0.85 |
| Children 4-6 | 58.36 | 26.81 | 12.51 | 2.16 | 0.00 |
| Children 7-12 | 63.73 | 31.50 | 14.94 | 4.08 | 0.42 |
| Children 13-15 | 64.28 | 33.87 | 15.68 | 4.06 | 0.31 |
| Children 16-17 | 70.60 | 33.29 | 15.21 | 3.62 | 0.33 |
| Boys | 69.01 | 36.50 | 16.14 | 3.94 | 0.17 |
| Girls | 65.80 | 31.71 | 15.64 | 4.62 | 0.58 |
| Dense areas | 62.80 | 31.26 | 15.47 | 2.84 | 0.31 |
| Intermediate areas | 63.28 | 32.08 | 13.81 | 4.40 | 0.26 |
| Low pop area | 78.39 | 40.45 | 18.94 | 5.91 | 0.57 |
| Single parent | 84.47 | 56.85 | 27.69 | 7.28 | 2.56 |
| Low ed parents | 77.14 | 44.32 | 21.76 | 6.05 | 0.46 |
| Large family | 87.76 | 64.48 | 25.18 | 7.72 | 2.37 |
| At least one parent extra-EU | 85.38 | 60.60 | 35.34 | 9.70 | 0.71 |
| Bottom 40% of income | 91.37 | 64.77 | 36.33 | 10.81 | 1.12 |
| Difficult to make ends meet | 71.71 | 37.43 | 17.44 | 4.72 | 0.41 |
| HH has arrears on payments | 84.55 | 51.61 | 28.91 | 8.62 | 0.79 |
| Housing cost is a burden | 67.97 | 34.42 | 15.91 | 4.22 | 0.37 |
| Intensity of deprivation | | | | | |
| Total | 1.81 | 2.60 | 3.30 | 4.12 | 5.35 |
| Children under 3 | 1.94 | 2.63 | 3.39 | 4.11 | 5.26 |
| Children 4-6 | 1.71 | 2.55 | 3.17 | 4.00 | 5.26 |
| Children 7-12 | 1.80 | 2.62 | 3.31 | 4.14 | 5.32 |
| Children 13-15 | 1.84 | 2.60 | 3.29 | 4.11 | 5.40 |
| Children 16-17 | 1.75 | 2.58 | 3.27 | 4.15 | 5.60 |
| Boys | 1.82 | 2.56 | 3.26 | 4.07 | 5.59 |
| Girls | 1.80 | 2.66 | 3.34 | 4.16 | 5.27 |
| Dense areas | 1.79 | 2.60 | 3.20 | 4.11 | 5.00 |
| Intermediate areas | 1.80 | 2.58 | 3.34 | 4.06 | 5.00 |
| Low pop area | 1.85 | 2.64 | 3.37 | 4.17 | 5.78 |
| At least one parent extra-EU | 2.25 | 2.76 | 3.29 | 4.07 | 5.00 |
| Bottom 40% of income | 2.24 | 2.75 | 3.34 | 4.14 | 5.35 |
| Difficult to make ends meet | 1.84 | 2.61 | 3.30 | 4.12 | 5.35 |
| HH has arrears on payments | 2.07 | 2.75 | 3.34 | 4.13 | 5.38 |
| Housing cost is a burden | 1.81 | 2.60 | 3.30 | 4.12 | 5.35 |

Source: Author's elaboration on EU-SILC 2020.

Table 5: Multidimensional deprivation headcounts and intensity by Regions (NUTS1 classification)

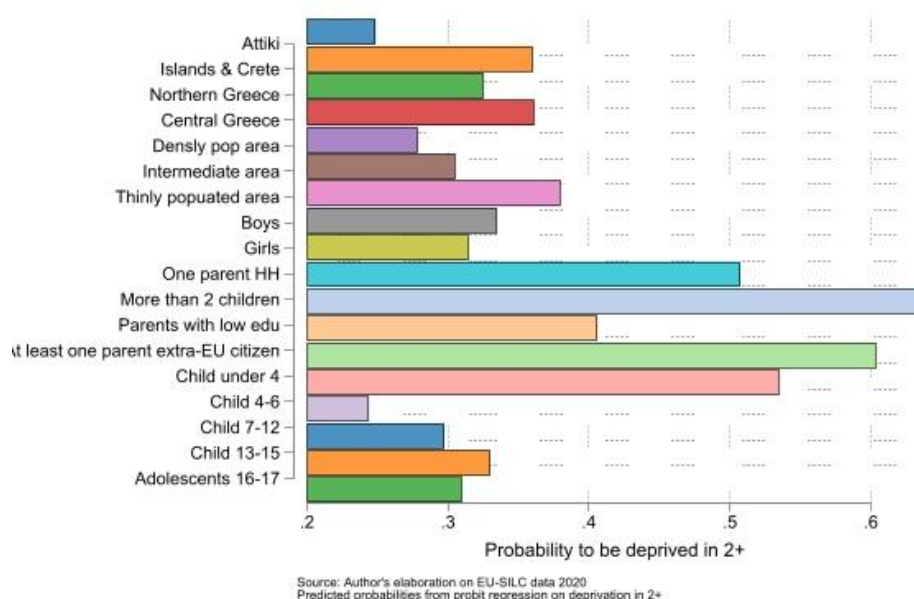
| | Deprived in 1+ | Deprived in 2+ | Deprived in 3+ | Deprived in 4+ | Deprived in 5+ |
|---------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Attiki | 58.01 | 29.61 | 13.88 | 2.70 | 0.23 |
| Islands & Crete | 77.97 | 37.29 | 16.18 | 4.69 | 0.50 |
| North Grecece | 68.89 | 36.37 | 17.77 | 5.08 | 0.79 |
| Central Greece | 74.40 | 36.89 | 16.61 | 5.42 | 0.05 |
| Intensity of deprivation | | | | | |
| Attiki | 1.80 | 2.57 | 3.21 | 4.08 | 5.00 |
| Islands & Crete | 1.75 | 2.57 | 3.32 | 4.10 | 5.00 |
| North Grecece | 1.88 | 2.66 | 3.36 | 4.25 | 5.59 |
| Central Greece | 1.79 | 2.60 | 3.33 | 4.01 | 5.00 |

Source: Author's elaboration on EU-SILC 2020.

Among regions, children in Islands and Crete have the highest headcount (37.3%), but children in Northern Greece have the intensity (2.7): this implies that children in Northern Greece have a higher degree of overlapping deprivations, but still there are no dramatic geographical differences.

To help illustrate the correlations between background characteristics and MD deprivation, the next figures illustrate the relationship between the background characteristics of children and the probability to be MD deprived (cut-off of 2+) (Figure 10). It is easy to see that living in large families, in single-parent families, and being a child of immigrants, all dramatically increase the probability to be multidimensionally deprived.

Figure 10: Correlation between background characteristics and the probability to be MD deprived (2+)



Finally, what is the relationship between multidimensional child deprivation and household material deprivation, as defined by Eurostat? The two measures share several indicators, so there is a strong correlation between the two. However, it is important to understand the extent to which they overlap.

Figure 11 shows how the probability of a child to be MD deprived changes with the number of household deprivations.³ The probability increases as the number of household deprivations increase, showing a strong correlation, as expected. However, the line is not perfectly straight. Most importantly, at the cut-off of 7 deprivations, the number used to define severe deprivation in the EU, the probability of a child to be multidimensionally deprived is around 70%. Figure 12 illustrates the same phenomenon: children in the IV quadrant, with the yellow dots, are multidimensionally deprived, while their households are not defined as deprived according to the EU indicator. Vice-versa, there are fewer children in the II quadrant, in dark blue, *i.e.* children living in severely deprived household who are not, themselves, multidimensionally deprived. This result shows why it is important to develop a measure that is targeted to children, along side the conventional household indicators.

³ HH deprivations are constructed following Eurostat definition (https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Material_deprivation#:~:text=The%20material%20deprivation%20rate%20is,to%20lead%20an%20adequate%20life, accessed October 19, 2022)

Figure 11 Probability to be multidimensionally deprived by number of household deprivations

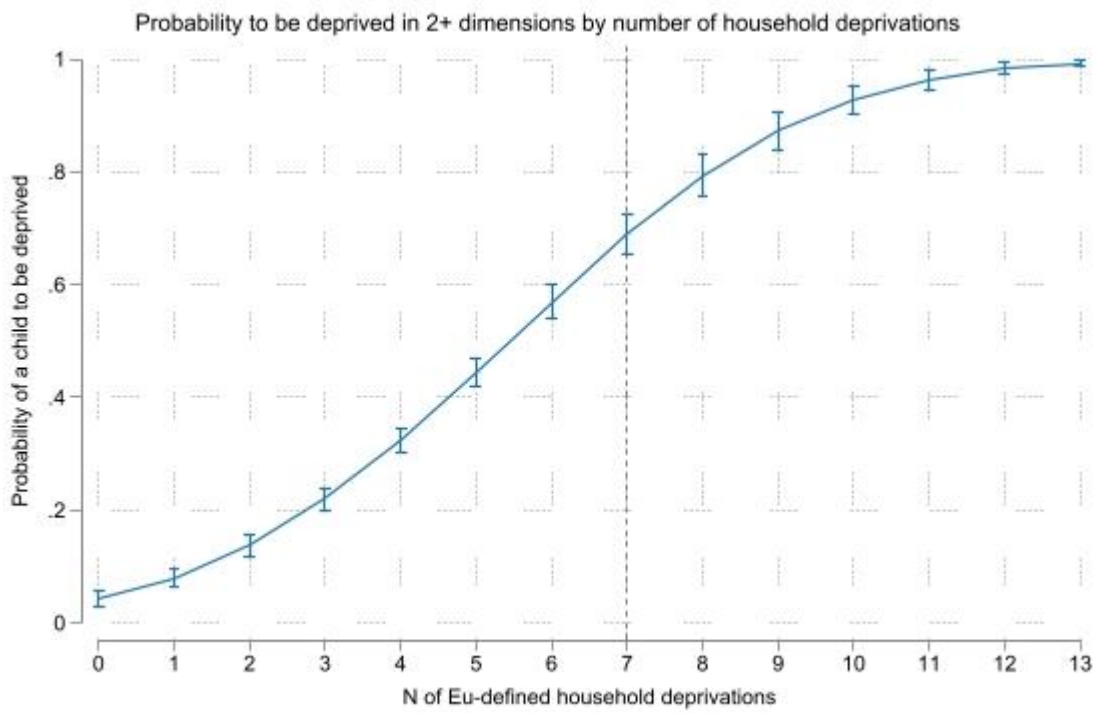
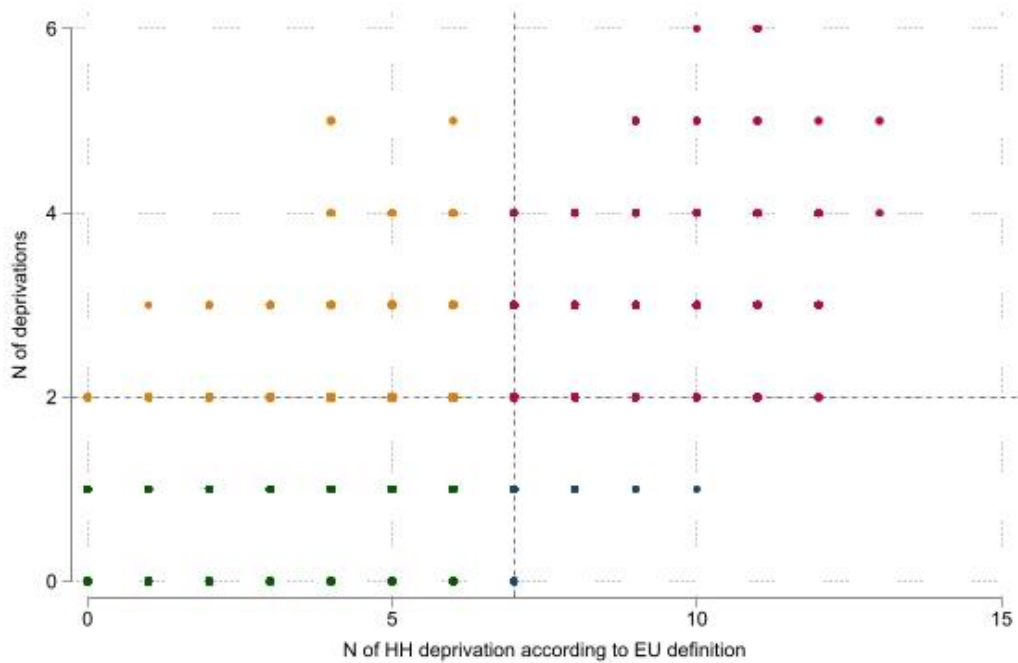


Figure 12: Overlap between child MD deprivation and household deprivation (EU)

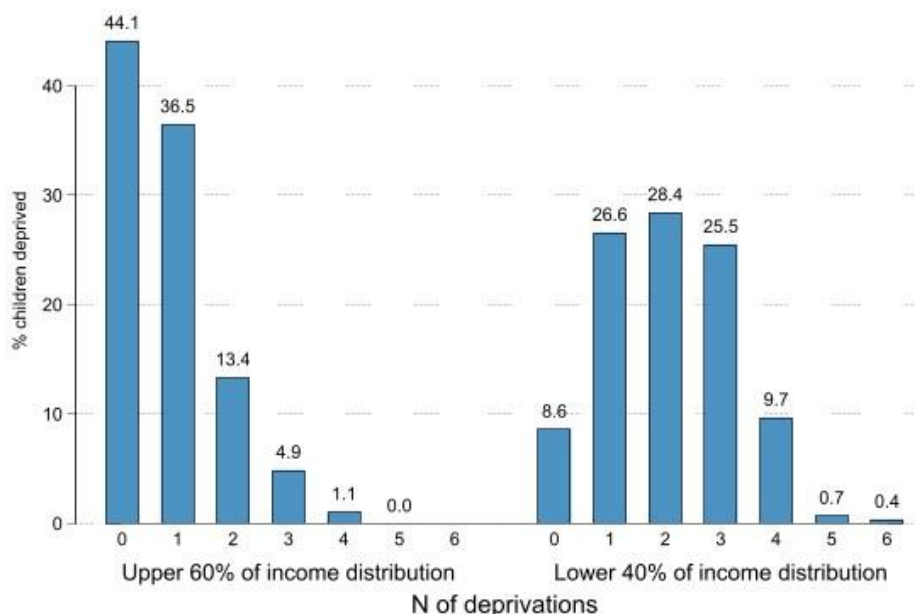


Multidimensional child deprivation and financial indicators

How does multidimensional poverty compare with indicators of financial distress and income vulnerability poverty? This section discussed the relationship between MD child deprivation and four indicators of financial distress and income vulnerability: having a family income in the bottom 40% (or, the bottom two quintiles), having arrears in payments, housing costs being a heavy burden, and not being able to make ends meet.

The figure below (Figure 13) shows the distribution of the number of deprivations by the income of the family: the bottom 40% versus the upper 60% of the distribution⁴. The difference between the two distributions is striking: 44% of children living in the richer part of the income distribution do not experience any deprivation, while only 8.6% of the poorer children are not deprived. Over a half of the poorer children experience 2 or 3 deprivations, and almost one in ten experiences four deprivations. The importance of income is also confirmed by figure 14, that shows the predicted probability of being multidimensionally deprived (deprived in 2+), by increasing levels of disposable income, for each region. The probability to be multidimensionally poor decreases dramatically with even small increase in family income, until a value of around 25'000 euros – where the line starts curving, indicating that an increase in income does not substantially reduce the likelihood of deprivation. The overlap between regions is almost complete, indicating that income is a much stronger predictor of multidimensional deprivation than region of residence. However, when we look at the combined effect of income with the immigration status of the parents (Figure 15), we observe a different dynamic: children of immigrant parents from outside the EU (one or both parents) have a higher probability to be MD poor at all levels of income, until a disposable income of about 40'000€⁵.

Figure 13: Number of deprivations by level of income

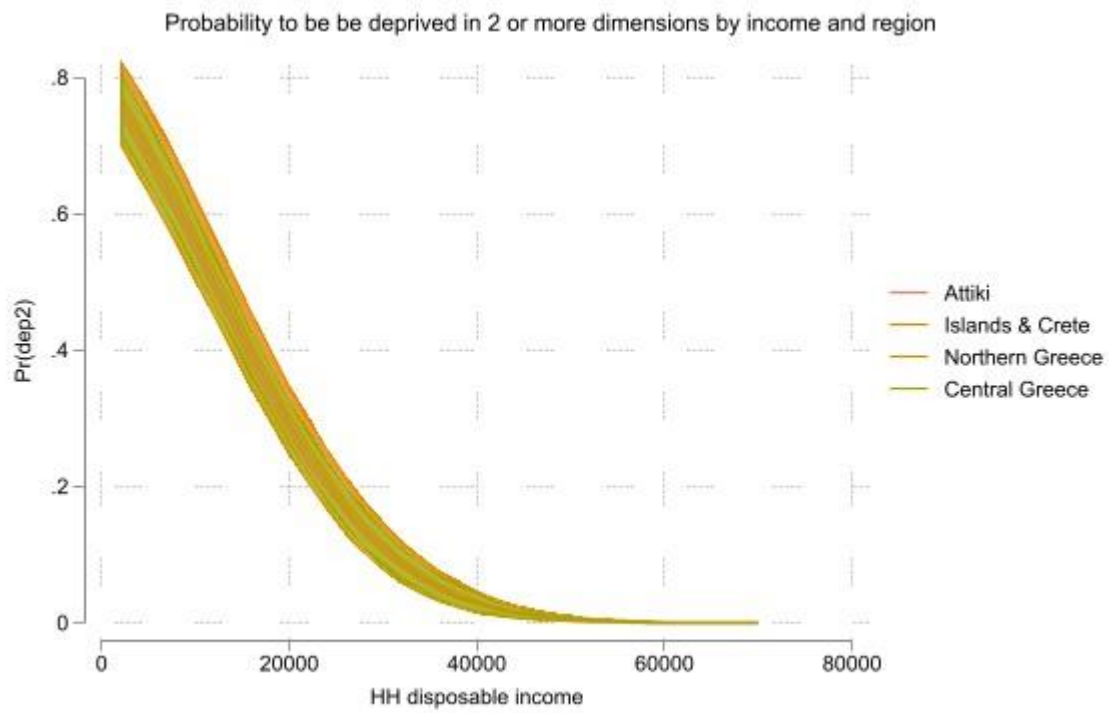


Source: Author's elaboration on EU-SILC 2020

⁴ The analysis uses disposable income as provided in the EU-SILC 2020 data. Here we use quintiles of distribution instead of the relative poverty to avoid discrepancies with the calculated Eurostat rates of relative income poverty.

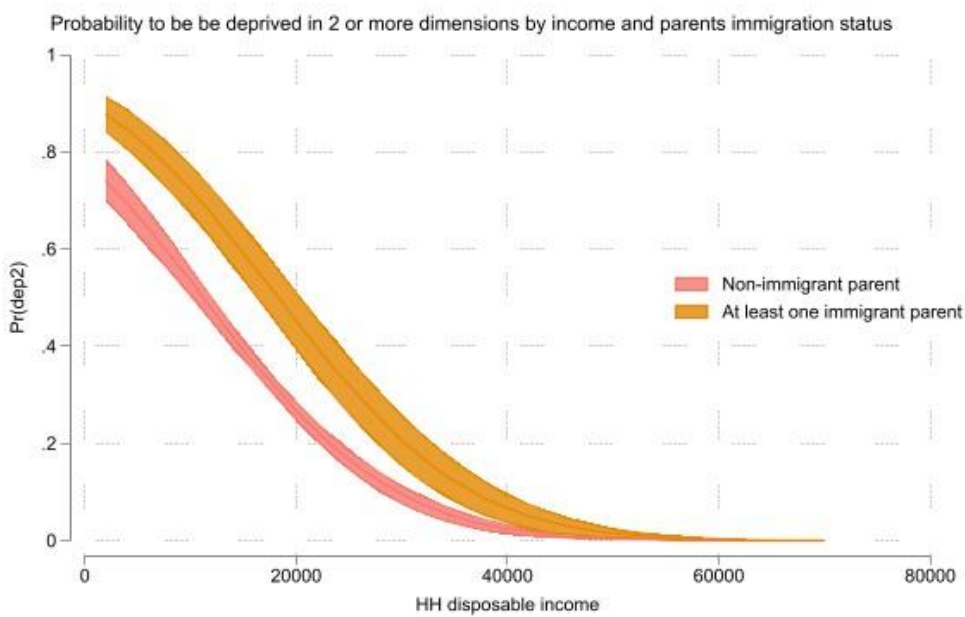
⁵ In both figures the results are derived from a multivariate regression, therefore 'holding constant' the other background characteristics

Figure 14: Probability of MDP by level of income by regions



Source: Author's elaboration on EU-SILC 2020

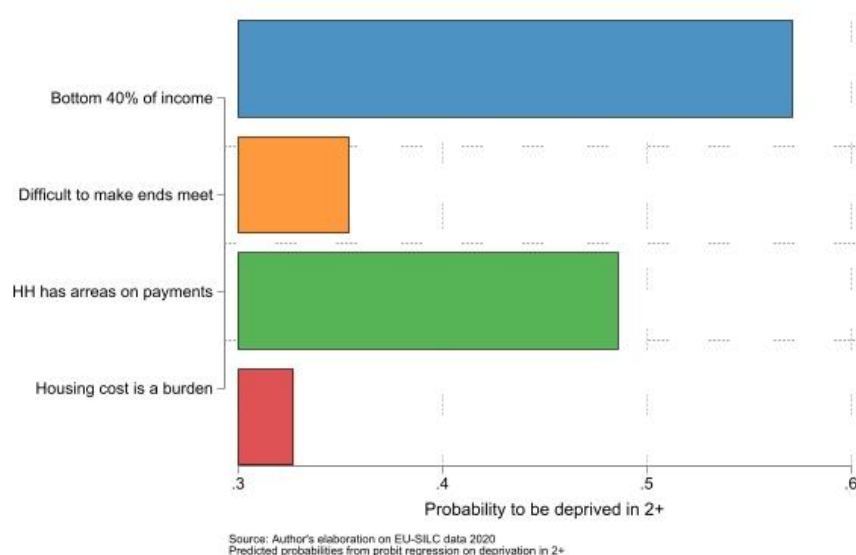
Figure 15: Probability of MDP by income and immigration status of parents



Source: Author's elaboration on EU-SILC 2020

Among the financial indicators, the second one most correlated with deprivation is having arrears on payments (Figure 1, while the indicators about whether housing cost is a burden and difficulty to make ends meet have a much lower relation with deprivation. Part of the reason is probably due to the more subjective nature of these two indicators.

Figure 16: Correlation of financial indicators with MD deprivation



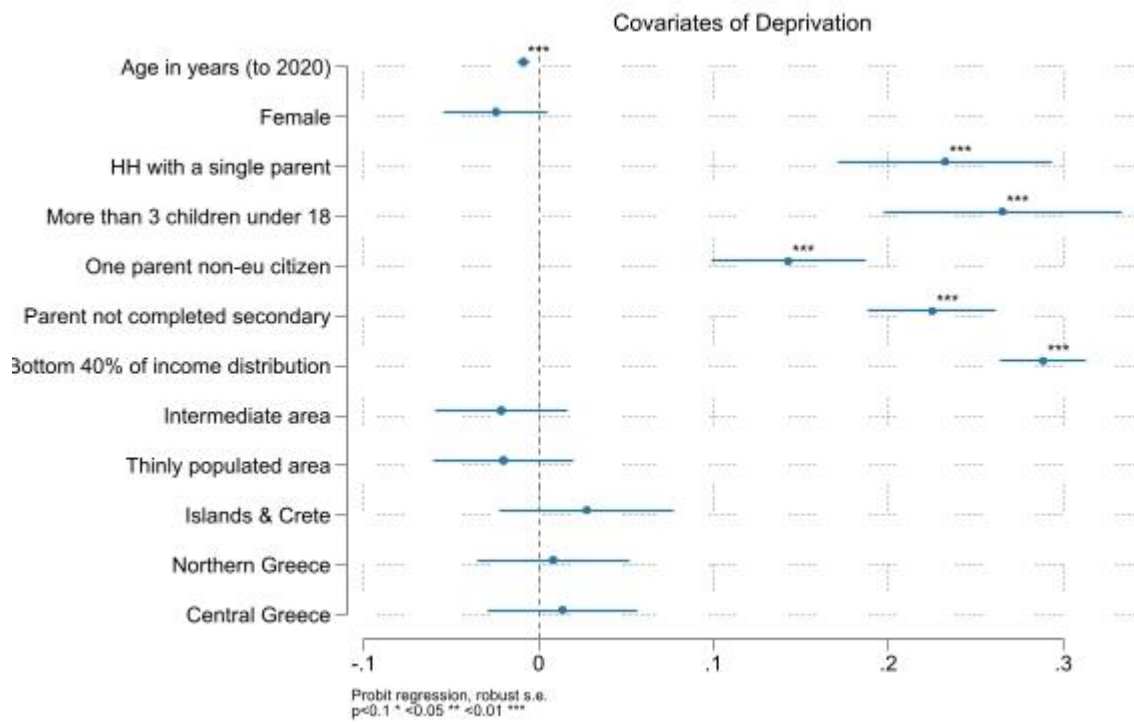
Multivariate analysis of multidimensional child deprivation

The question is then what is the relationship between multidimensional child poverty and the whole set of background characteristics. We cannot here draw causal links or claims, but we can show what are the characteristics associated with multidimensional poverty, when holding the rest constant.

Figure 17 shows the results of a multivariate regression, in terms of marginal effects, *i.e.*: what is the relationship between each characteristic and the probability to be MD deprived. Multiplying the results per 100 gives the effect in *percentage points*. When holding all other variables constant, the location of residence does not have any significant effect, and neither does the gender of the child. Age has a small negative effect: being a year older decreases the probability to be MD deprived by a few percentage points. When controlling for all the others, it appears clearly that the most important factor is income: children in the bottom 40% of the income distribution have almost *30 percentage points higher probability* to be multidimensionally deprived. Other important predictors of MD deprivation are living in large families and single parent families (around 25 percentage points increase), while being a child of immigrants increases the probability of multidimensional poverty by about 15 percentage points: a lower effect than what is obtained by correlations.

These results point to the fact that the most important factor to address is lack of income, followed by single parent households and large families. However, it is also important to be reminded that several of these groups can overlap with each other. We have seen above how income and immigration interact (figure 15).

Figure 17: Covariates of multidimensional child deprivation (2+)



Source: Author's elaboration on EU-SILC 2020

Conclusions

In this report we explored the possibility of constructing a multidimensional child poverty measure for Greek children, using available and routinely collected data. To this end, the data from EU-SILC 2020 were used. The multidimensional deprivation measure has been defined using the Multiple Overlapping Deprivation Analysis (MODA) developed by UNICEF. It uses 7 dimensions of deprivations, corresponding to important domains for children: Dwelling, Sanitation, Leisure, Education, Information, Nutrition, and Health. Multidimensional deprivation is defined as being deprived in at least 2 dimensions.

One third of Greek children are multidimensionally deprived (34%). However, the average intensity of deprivation (i.e., the average number of deprivations of deprived children) is contained at around 2.6 deprivations, indicating that deprivation is concentrated in a few dimensions; the dimension with the highest share of deprived children is Leisure, with over 55% of children deprived, followed by Dwelling and Nutrition. Young children under 4 are the most deprived, mainly due to lack of access and use of childcare (over 85% of small children are deprived in childcare, defined as at least one hour of formal childcare per week). Territorial differences are not significantly high, both in terms of macro-regions (NUTS1) and in terms of urbanization level (densely populated areas vs intermediate and thinly populated areas). The most important correlates of multidimensional deprivation for children are 1) living in a family in the bottom 40% of the income distribution 2) living in a single-parent family 3) living in a large family (3 or more children) and 4) being a child of immigrant parents (extra EU).

These results are in line with the results found by other analysis, mainly the Child Poverty Deep Dive (UNICEF, 2021), and by other indexes, such as the rate of children AROPE (31.5% of children were at risk of poverty or social exclusion in 2020). There are however advantages in building a specific measure for MD deprivation for children: using a measure that is more tailored to children's specific deprivation (to the extent possible) ensures that results are more robust and more relevant to children, while other indexes often mix outcomes and inputs not relevant to children. When compared with the severe household deprivation measure as defined by Eurostat, almost 19% of children are classified as not deprived, while being multidimensionally deprived. The reverse (children not classified as MD deprived but living in severely deprived households) are less than 3%. Defining dimensions divided by age groups allows to understand better how different issues interlinks for children of different ages. Additionally, building such a measure allows one to analyze the overlap of different deprivation, understanding where more urgent actions are needed, and if they need to be addressed in a multisectoral way, or not.

The policy implications of the findings are several.

- 1) There is a clear need to address the lack of income. As highlighted in the Deep Dive, Greece has in place several social protection programs that are effective, but they lack harmonization and should be expanded to include a broader portion of families with children. Results show that even being in the bottom two quintiles of the income distribution, without being necessarily poor as defined by the AROP index, has a considerable effect on the likelihood of a child of being multidimensionally poor.
- 2) When targeting social protection and other social programs, a special attention needs to be devoted to children. Targeting policies based solely on household indexes is likely to leave out a substantial group of children, as exemplified by the mismatch between household severe deprivation and child deprivation.
- 3) Supporting families' income cannot be done solely through social assistance and protection: policies to support a full labor force participation need to be put in place consistently, including policies to improve low wages and underemployment, with specific inclusion provisions for minorities and marginalized categories

- 4) Disadvantages can and often do overlap and compound one another. Vulnerable groups such as immigrants, single parents, and large families need to have stronger support, and barriers to access should be removed for these groups. As we have shown, income alone does not compensate the effect of being a child of immigrant parents, which makes it particularly important to remove other barriers in access to services, housing, and so on.
- 5) A strong intervention related to access to basic services and goods is needed: deprivation is high in access to childcare, and in the Dwelling dimension, speaking structural inequalities in access to heating and adequate housing. This type of deprivation cannot be solved by income support alone but need to be addressed specifically when they are due to infrastructure failure, and/or lack of adequate regulation.

Finally, there are also several limitations to this analysis: the data is not specifically targeted to children, as the EU-SILC does not collect a lot of information for younger members of the household. The more frequent use of the child deprivation module (that should be soon available) could improve this. However, the fact remains that the EU-SILC it is mainly focused on income and living conditions, therefore it concerns mainly questions of lack of expenditure power (i.e., inability to afford certain goods and services), work and job market outcomes, and so on. This poses a limit to an effective multidimensional child deprivation measure, which should concern also access to services irrespective of the ability of the family to afford them, such as basic healthcare and nutrition, effective learning, among others. If most indicators are related to affordability, then the fact that income is one of the major drivers of MD deprivation is not surprising. Most importantly, the information does not add much relevant evidence for policy making. Lastly, an important drawback of the EU-SILC, as of many households survey, is that it does not capture children not living in households, and children of marginalized groups such as children living in refugee camps and Roma children (for the latter, the issue is that we do not have any way to recognize them, and although an important ethical point, it poses a limit to the analysis). These issues cannot be solved in the short term, however they need to be highlighted, and the need for specific assessment of marginalized groups should be a priority.

While it is important to be able to build a MD deprivation measure using available and routinely collected survey data, it would also be relevant to collect data more directly relevant to children. Many high-income countries do not collect survey data on several issues because either they are not deemed relevant (for example, child labor), or administrative data exists (vaccination). However, administrative data does not allow to analyze overlaps between deprivations, and it may still not be complete. Second, some issues perceived as irrelevant may be relevant for some groups, or it may become relevant in time. It therefore becomes important, especially in light of the SDGs and the effort to monitor child-relevant SDGs, to find ways to collect more detailed data on the situation of children.

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Appendix

Table A1: Background characteristic of the sample

| | Total | Children under 4 | Children 4 to 6 | Children 7 to 12 | Children 13 to 15 | Adolescents 16- 17 |
|---------------------------------------|-------|---------------------|-----------------|---------------------|----------------------|-----------------------|
| Female=1 | 48.2 | 42.8 | 49.8 | 49.3 | 48.3 | 47.9 |
| Densely populated area | 36.5 | 43.5 | 37.8 | 35.6 | 34.4 | 33.5 |
| Intermediate area | 34.7 | 33.3 | 37.3 | 34.8 | 32.5 | 36.0 |
| Thinly populated area | 28.8 | 23.2 | 24.9 | 29.6 | 33.0 | 30.5 |
| Attiki | 35.7 | 44.9 | 37.7 | 35.7 | 31.3 | 31.5 |
| Islands & Crete | 12.0 | 12.4 | 13.1 | 11.1 | 11.6 | 13.5 |
| Northern Greece | 27.3 | 24.9 | 28.0 | 27.0 | 27.4 | 29.3 |
| Central Greece | 25.0 | 17.9 | 21.1 | 26.3 | 29.7 | 25.7 |
| Single parent | 6.0 | 2.9 | 3.7 | 6.1 | 7.6 | 9.0 |
| More than 3 children under 18 | 5.8 | 5.3 | 3.7 | 7.3 | 5.0 | 5.3 |
| Parent not completed secondary | 67.9 | 56.1 | 66.1 | 68.5 | 71.1 | 75.1 |
| One or both parents non-eu Citizen | 11.4 | 13.2 | 13.0 | 11.0 | 10.2 | 10.3 |
| Bottom 40% of income distribution | 32.7 | 36.3 | 30.7 | 32.5 | 33.0 | 31.7 |
| Making ends meet is difficult | 90.4 | 87.0 | 90.4 | 90.2 | 92.0 | 92.0 |
| HH has been in arrears on payments | 42.4 | 39.1 | 42.3 | 42.1 | 42.6 | 46.3 |
| Housing cost/repayment is a burden | 98.7 | 99.1 | 98.6 | 98.7 | 98.8 | 98.4 |

Means are weighted by household weights. Age groups 1 and 2 are combined.

Table A2: indicators average by characteristic

| | Total | Boys | Girls | Dense areas | Intermediate areas | Low pop area | Attiki | Islands & Crete | North Greece | Central Greece | Bottom 40% of income | Single parent | Low ed parents | Large family | At least one parent extra-EU |
|-------------------------------------------------|-------|------|-------|-------------|--------------------|--------------|--------|-----------------|--------------|----------------|----------------------|---------------|----------------|--------------|------------------------------|
| Housing: overcrowding | 0.2 | 0.2 | 0.1 | 0.0 | 0.2 | 0.3 | 0.0 | 0.0 | 0.3 | 0.3 | 0.5 | 0.4 | 0.2 | 0.0 | 0.0 |
| Housing: leaking roof | 12.5 | 12.6 | 12.4 | 13.0 | 9.8 | 15.2 | 12.1 | 13.1 | 13.6 | 11.5 | 18.5 | 21.7 | 14.2 | 15.1 | 23.0 |
| Housing: no heath | 15.7 | 16.3 | 15.1 | 14.9 | 12.8 | 20.2 | 12.1 | 15.9 | 16.5 | 20.0 | 31.7 | 32.0 | 20.8 | 16.2 | 30.9 |
| Bathroom outside or shared | 0.2 | 0.2 | 0.2 | 0.1 | 0.0 | 0.6 | 0.0 | 0.3 | 0.5 | 0.1 | 0.4 | 2.1 | 0.2 | 2.8 | 0.0 |
| Toilet outside or shared | 0.4 | 0.5 | 0.4 | 0.0 | 0.0 | 1.5 | 0.0 | 0.5 | 1.4 | 0.0 | 1.0 | 2.1 | 0.5 | 2.8 | 0.0 |
| Not able to afford vacation | 55.5 | 57.2 | 53.6 | 46.8 | 52.8 | 69.7 | 41.3 | 66.1 | 59.3 | 66.4 | 85.6 | 78.4 | 68.3 | 77.0 | 76.2 |
| Deprivation in leisure | 36.2 | 31.6 | 42.0 | 25.1 | 34.0 | 50.4 | 20.8 | 29.4 | 43.5 | 45.6 | 44.9 | 54.1 | 43.0 | 59.6 | 47.0 |
| No access to info devices | 4.6 | 4.5 | 4.6 | 3.0 | 4.5 | 6.3 | 4.2 | 6.6 | 3.6 | 5.1 | 11.5 | 7.6 | 6.3 | 8.5 | 12.2 |
| Deprived in childcare (1-3yo) | 85.1 | 87.9 | 81.4 | 81.9 | 87.6 | 87.6 | 81.4 | 91.4 | 85.7 | 89.3 | 92.2 | 83.3 | 88.0 | 90.4 | 93.4 |
| Deprived in pre-school (4-6yo) | 3.1 | 1.3 | 4.9 | 4.2 | 2.4 | 2.4 | 4.8 | 1.8 | 0.4 | 4.4 | 4.4 | 0.0 | 4.0 | 0.0 | 5.4 |
| Less than 25hrs/week of school (7-12yo) | 5.6 | 5.6 | 5.7 | 4.8 | 5.0 | 7.5 | 2.0 | 16.8 | 4.1 | 7.4 | 5.3 | 11.7 | 6.0 | 0.7 | 8.1 |
| Not completed lower secondary (16-17yo) | 0.1 | 0.2 | 0.0 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 0.4 | 0.3 | 0.0 | 0.1 | 0.0 | 0.0 |
| Not able to afford protein | 18.5 | 19.0 | 18.1 | 17.3 | 19.9 | 18.6 | 16.6 | 16.3 | 22.0 | 18.6 | 42.1 | 32.6 | 25.4 | 48.3 | 40.1 |
| People in HH have unmet medical or dental needs | 6.7 | 6.2 | 7.2 | 7.2 | 5.4 | 7.5 | 8.1 | 4.9 | 7.1 | 4.8 | 10.4 | 6.7 | 8.9 | 14.2 | 7.3 |
| Has unmet medical or dental needs | 6.8 | 8.8 | 4.3 | 4.0 | 8.5 | 7.6 | 7.5 | 11.9 | 6.0 | 4.5 | 9.1 | 15.3 | 7.1 | 29.8 | 0.0 |

Means are weighted by household weights.

Table A3: Correlates of Multidimensional poverty

| | MD Deprivation |
|---------------------------------------------------------------|----------------------|
| Age in years (to 2020) | -0.009*** (0.002) |
| Gender: Female | -0.024 (0.015) |
| HH with a single parent | 0.232*** (0.031) |
| More than 3 children under 18 | 0.265*** (0.035) |
| One or both parents non-eu Citizen | 0.143*** (0.023) |
| Parent not completed secondary | 0.225*** (0.019) |
| Bottom 40% of income distribution | 0.288*** (0.013) |
| Urbanization: base category is Densely Populated areas | |
| Intermediate area | -0.021 (0.019) |
| Thinly populated area | -0.020 |
| NUTS 1 regions: base category is Attiki | |
| | (0.021) |
| Islands & Crete | 0.027 (0.025) |
| Northern Greece | 0.008 (0.022) |
| Central Greece | 0.014 (0.022) |
| <i>Observations</i> | <i>4,281</i> |

Standard errors in parentheses. Results in average marginal effects. Significance levels: *** p<0.01, ** p<0.05, * p<0.1
Source: Author's elaboration on EU-SILC 2020.

