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The Impact of Economic Inequality on Early School Dropout

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The overall improvement, recorded in recent years, at European and national level, of the early school leaving, should not cause neglect of two aspects: the strong weight of *internal disparities* (9.6% is the European average, 11.5% is the average in Italy*)* and *the lack of skills*; in all European countries, low levels of socio-economic status are accompanied by high percentages in terms of poor skills. De facto, the condition of socio-economic, cultural. and educational poverty of the family very frequently represents the main "barrier" for a student, that feeds (and does not contrast) the early school leaving. Furthermore, this paper initiates a first reflection on the role of digitalisation, certainly, decisive in reducing the digital divide, as one of the multiple aspects of the implicit dispersion, but it means a resource or rather a limit in relation to the explicit one.

Keywords: dropout, education, digitalisation, family background

Introduction

The overall improvement, recorded in recent years, at European and national level, in term of early school leaving, should not cause neglect of two aspects. The first is that the distances between countries remain wide both at European Union (EU) level and in our country. Moreover, while the "explicit" abandonment has decreased after COVID pandemic, both at European and national level, the "implicit" one has increased. Namely, students, while completing their course of study, do not achieve adequate skills. It is important, first of all, to emphasise that the aggregated data minimise the problem of the early school leaving. In order to understand the phenomenon in its entirety, therefore, it is necessary to start from disaggregated data at European, national and regional level (Section 1).

The dispersion is a particularly visible phenomenon especially among students in condition of fragility, i.e. of socio-economic, cultural family disadvantage. In fact, we speak of "dispersion from a low family background", when the cause of dispersion, of the distance from school stems from the reduced level of education of the parents, rather than from the condition of economic poverty of the family or even from the lack of particular assets, such as personal computers, internet access, and more. The indicator used internationally to measure the background level of the students is the *Economic, Social, and Cultural Status Index:* Pupils starting from more favourable conditions achieve "on average" higher results than disadvantaged pupils and vice versa (Section 2). If it is true that the family often plays a key role in the process of distancing from the main educational institution, it is also true that the policies to combat the early school leaving cannot fail to consider this starting point. Nevertheless, the actions against the dispersion, especially in the context if school policies, do not always go in the right direction, as they seem to underestimate the role played by the

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socio-economic and cultural status on school participation of students at risk.

In particular, this paper initiates a first reflection on school policies centred on *digital innovation*, certainly, decisive in reducing the *digital divide*, in putting a brake on the phenomenon of implicit dispersion of a lack of skills and knowledge, but compared to explicit dispersion, is digital divide a resource or rather a limit? What are the effects on the school-family relationship? This will be analysed in Section 3. Brief consideration and final conclusions follow.

The Early School Leaving: The Size of the Phenomenon

The "Explicit" Early School Leaving

The early school leaving means the lack, incomplete, or irregular use of the education and training services by young people of school age. It is a complex phenomenon that is structured over time through the repetition and/or addition of different phenomena that precede the definitive abandonment[1]. The European Union estimates that the rate of school dropout will have to be *below 9%* by 2030 (Europe 2020 Strategy, the target to be achieve has been, as is clear, lowered by one point) compared to 9.6% recorded in 2022. If we have to take into account the last decade, from 2012 to 2022, we see how, according to Eurostat data, the European trend of young people, aged 18-24, who have not completed the second cycle of studies and who are not engaged in vocational training course *(Elet, Early Leavers From Education and Training)*, is constantly decreasing (3.0 percentage point of the total) at least until 2020, in the post-pandemic period, although the dropout rate has remained almost stable (Figure 1).

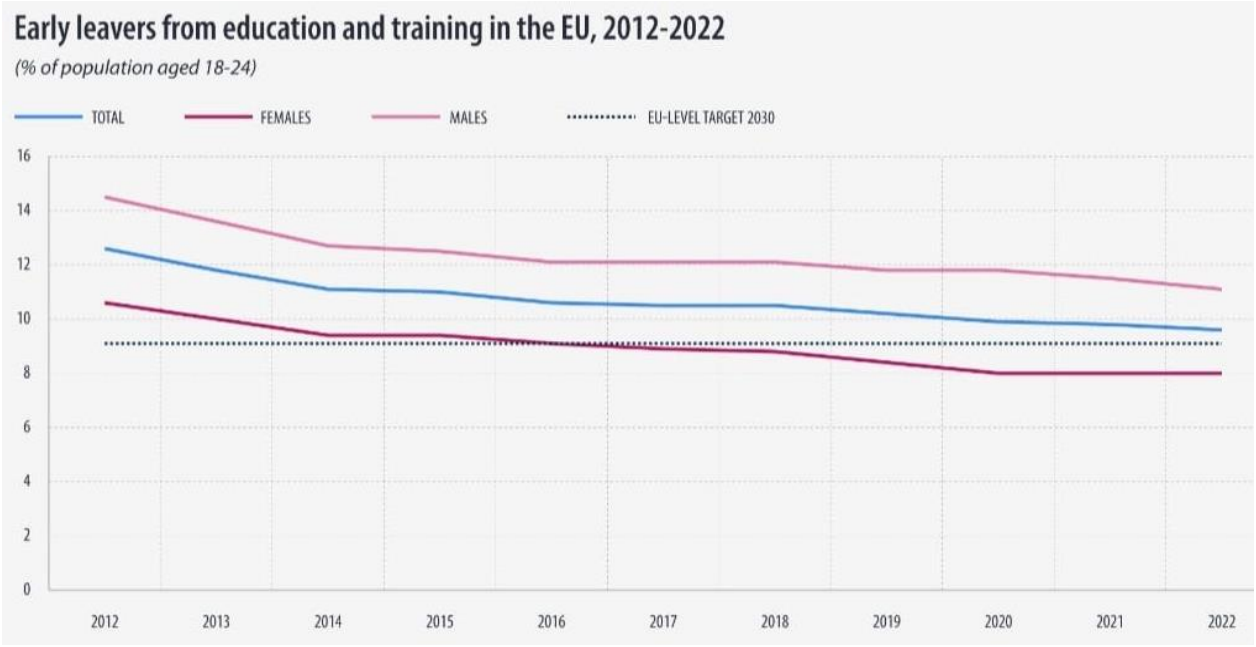

Figure 1. Early leavers from education and training in the EU, 2012-2022. Source: Eurostat data.

[1] Frequent transfer and changes of location; delays, repeated absences and irregular attendance; difficulty in adapting to the rules, request and schedules of the school institution; difficulty of relationship of children with peers and teachers; difficulty in collaborating with the families; low participation, disinterest, low motivation of children in the classrooms, learning difficulties, low performance, accumulation of failures; rejection and repetitions (Falzarano & Verde, 2022).

The European target, as attainable, is, however, highly ambitious, considering that 2030 is now at the door and the intrinsic transformation must necessarily be carried out in synergy, on a national basis and above all, as already reiterated, at territorial, intra-regional level.

If we look at the situation at the level of individual European country, the gap in terms of dropout rate becomes more evident. In particular, in the year 2022, 18 countries are below the European 2030 target, but as many countries are still above 9% (Figure 2).

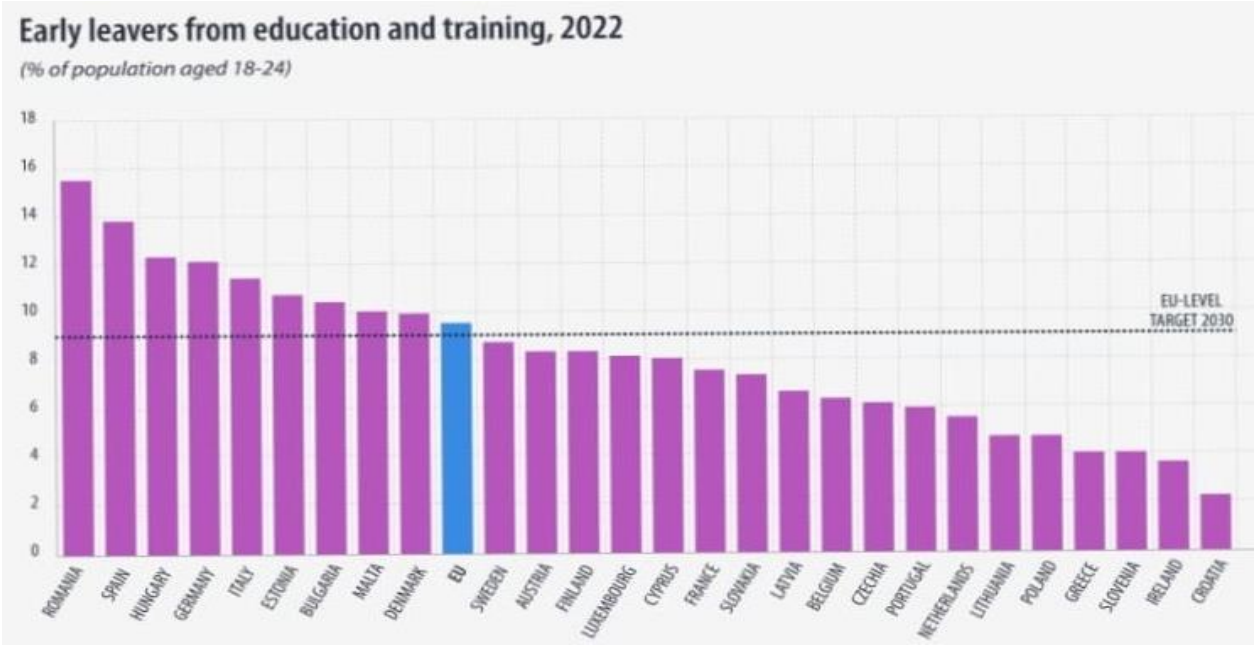

Figure 2. Early leavers from education and training, year 2022. Source: Eurostat data.

Romania and Spain record the highest abandonment rates, followed by Hungary and Germany, in third and fourth place respectively. In fifth place, Italy. Compared to previous years, there is an improvement. The phenomenon is decreasing, in the period from 2010 to 2022; it has, in fact, gone from 18.6% in 2010 to 11.5% in 2022 (Source: Eurostat).

In spite of that, our country, beyond the measures taken, invested resources, and ad hoc policies, has managed to stem, only to a small part, the phenomenon, which is not adequately detected, if the Elet[2] indicator is used alone. In 2022, the abandonment rate in Italy, equal to 11.5%, remains, however, above the EU average (equal to 9.6%). In addition, the territorial gaps remain wide, in 2022, the abandonment of studies before the completion of the upper secondary education and training course, affected 15.1% of 18-24-year-olds in the South, 9.9% in the North, and 8.2% in the Centre. Specifically, according to Istat data, again in 2022, in two regions, Sicily and Campania, over 15% of young people left school ahead of time. On the island the share is close to 19%, while in Campania it stands at 16.1%. Sardinia and Puglia follow with almost 15% of early exits. In Figure 3 that follows the territorial gaps are shown in percentage values.

[2] The Elet, so used in Europe, cannot be considered a real indicator of abandonment or dispersion, but an indicator that detects the *low degree of education* of a certain group of populations. On this point, reference is made to the criticism reported in Musella (2023).

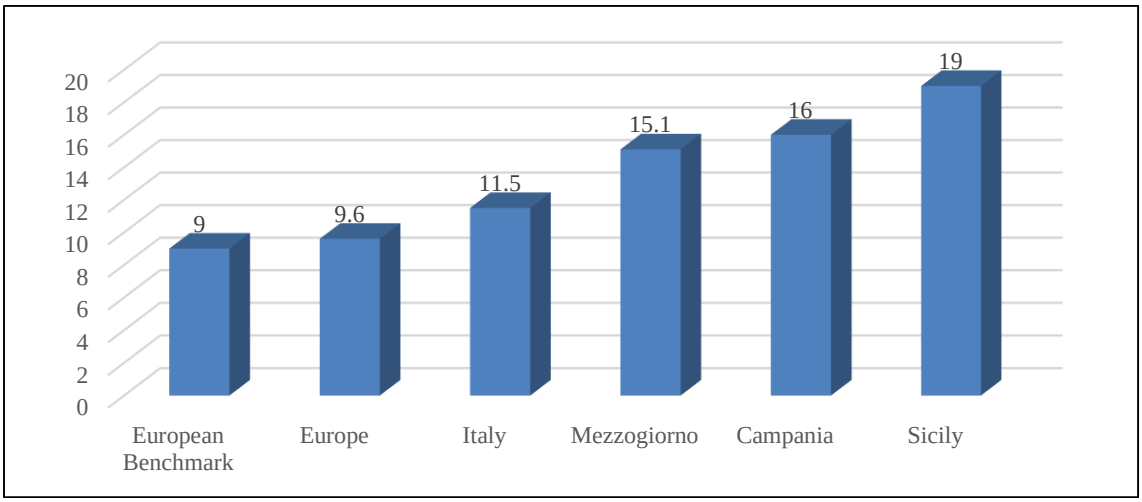

Figure 3. Explicit dispersion: Territorial gaps. Values %. Source: Eurostat and Istat data, authors' elaboration.

The "Implicit" Early School Leaving

Then there are also pupils who go to school, but do not learn. Or they learn badly, little, or irregularly. Although these young people do not make numbers in the main statistics on explicit school leaving, we can in a way include them among the "dispersed". Even when they manage to obtain a degree, in fact, these young people find themselves facing adult life without having the basic skills necessary to exercise active citizenship, to continue their studies, or to undertake a professional path. We can define this type of dispersion as implicit[3]. A form of dispersion that follows a very specific logic, according to which "*dispersion is not only empty benches*".

At the European level, concerning the implicit dispersion, we can derive information from the latest report of the European Commission (2022) on the achievement of competences (EU-level targets). This report highlights, on the one hand, how high it is in some countries, the level of "poor skills" (combined underachievement in reading, maths, and science) and, on the other hand, how much more marked this figure is, up to six times more, for those who come from a disadvantage socio-economic background. In all European countries, low levels of socio-economic status are accompanied by high percentages in terms of poor skills, which confirms what has been said above on the effects of economic poverty on both explicit and implicit dispersion.

Romania and Bulgaria are the countries that are characterised by the widest gap in terms of reduced skills by socio-economic status (on average about 30%); on the contrary, countries such Estonia and Finland register the lowest levels in terms of poor skills (an average of less than 10%). Italy is part of the group of countries with better skills in reading, maths, and science; the level of poor skills (average value) is, in fact, lower than the European one (4.1 against the EU average 5.6) (Figure 4).

Anyway, the Italian situation is not so good, when the data are disaggregated, both at territorial level and with regard to individual skills in Italian language and mathematics (uncombined skills). According to a recent study of #conibambini Observatory, in collaboration with Openpolis, the skills of secondary school pupils, for the exam's tests 2023, are still inadequate. The data refer to "adequate" level of skills in the Italian language, whose percentage in 2022 was 52% versus 64% in 2019 (pupils attending secondary school, Class V); in territorial perspective, the percentage of those whose level of Italian language is at Level 1 (according to

[3] In Italy, the data on the skills actually acquired are collect through the evidence of the research body INVALSI (National Institute for the Evaluation of the Educational System of Education and Training).

INVALSI tests) is higher in the municipalities of the South, about a one third (33%); Enna and Crotone register a percentage of 40% at a minimum level of Italian language (Source: Openpolis data processing—Con i Bambini based on INVALSI data).

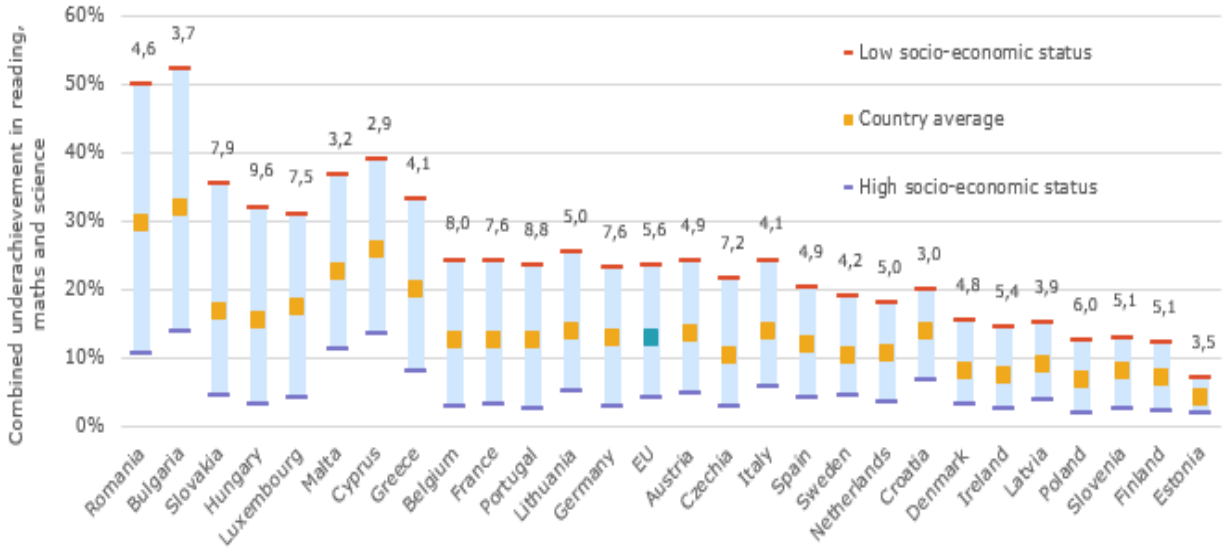

Figure 4. Poor skills. Average values by socio-economic status. Year 2022.
Fonte: European Commission "Education and Training Monitor, Comparative Report 2022".

According to INVALSI data, the percentage of inadequate skills is 44.1% in 2023 (40.1% in 2018) (ASVIS Report 2023). Also in this respect, as far as the Italian panorama is concerned, there are considerable differences between the regions of the North and those of the South.

There are still many pupils with difficulties in achieving adequate preparation (in Campania there are 25% of students in difficulty (2019/2020-term secondary school of 1st grade)) (Garante dell' Infanzia, 2022 Report).

In general, in the Mezzogiorno the share of implicit dispersion is close to 20% in Campania, while it is less than 2% in Trentino-Alto Agide/Südtirol (Annual Report 2023. La situazione del Paese, Istat). The territory to which it belongs counts, but the social, economic, and cultural environment of the family of origin also counts. Indeed, in line with what is recorded at European level, in all the subjects tested by INVALSI it appears that the score decreases proportionally with the decrease of socio-economic and cultural status. In the following paragraph, the role of the family background on implicit dispersion, or rather on levels of learning, will be better clarified.

The Economic, Social, and Cultural Status and Levels of Learning

As already mentioned in the previous paragraph, the socio-cultural and economic characteristics of the students and families play a very important role in the levels of learning and the skills achieved, up to the first year of school. As is well known, the implicit dispersion (in terms of poor skills), but also the explicit dispersion, is the result of a series of contributory factors, first of all, of a socio-economic and cultural nature, as *individual and family-type risk factors* (INVALSI Open, 2020). In other words, the family background level certainly goes to fuelling early school leaving but at the same time, the dispersion and the school dropout have a strong impact on the general educational impoverishment of the individual. We could define it "*educational trap*" that condition in which a child, an adolescent, at a disadvantage level, who attends intermittently, with little profit or who leaves

a school, finds himself deprived, both of the right to formal education and of a lesser use of other educational opportunities of a social, cultural sporting type… (in the school, extracurricular and family context).

The socio-cultural and economic condition, the so-called background, therefore has considerable predictive value on the result achieved by students (OECD, 2007). The indicator that is used internationally that can measure the background level of the students is the *Economic, Social and Cultural Status Index* (ESCS in brief), developed by the OCSE.

Since 2022, in Italy INVALSI starting from this model has created an ESCS index, based on the characteristics of national surveys, in order to photograph the social, economic, and cultural situation of the families of the students participating in the texts. This is an important step forward, with a view to overcoming the national standardisation of the evaluation, which has been widely discussed and is still being discussed.

In particular, the ESCS[4] attempts to "*identify students in frailty conditions who show signs of potential situations of discomfort, fragility and abandonment*" (INVALSI Open site).

It is based on three components:

- The *employment status of the parents*: The employment status of the father and mother exerts some influence on the economic and cultural environment in which the pupils live outside the school and this is particularly relevant for primary school pupils. In fact, it is known that at this age the weight of the family context is very important, perhaps even more than other moments in the life of the students in which the concept of extracurricular environment takes on a broader sense, although deeply influenced by the socio-economic condition of the family of origin.
- The *level of education of the parents* expressed in years of formal education followed calculated according to international standards (*International Standard Classification of Education*): Parental education is considered in literature to be even more influential than occupational status on learning levels.
- The *possession of certain material assets* intended as variables of proximity to an economic-cultural context conducive to learning: The use of data relation the possession of certain tangible goods is considered by more researches to be the best tool for measuring the student's family economic well-being, especially in studies education (OECD, 2007). The attention is focussed on the detection of the presence or absence of a certain type of goods at home (quite place to study; computer; desk; books and encyclopedia; internet at home; a personal room); this, in fact, seems to capture, better than income, the level of economic well-being of the family, as the possession of certain assets is the reflection of a more stable patrimonial solidity of the family.

The index is standardised with national average equal to 0 and standard deviation equal to one and is categorised into four modes ordered by Low, Medium-Low, Medium-High, High.

According to the data reported in the Art. 3 of the Decree of the Ministry of Education of 8 August 2022, No. 220, referring to the year 2020/2021, the values of the ESCS fluctuate:

1. For the primary school:

from a minimum of -2.62 to a maximum of 1.82; the threshold value LOW corresponds to -0.2387;

2. For the secondary school of I grade:

from a minimum of -2.82 to a maximum of 1.79; the threshold value LOW corresponds to -0.1969;

3. For the secondary school of II grade:

[4] The data to calculate the ESCS are collected in part through the students' questionnaires provided to pupils during the conduct of the INVALSI test; further data are instead provided by the school secretariats.

from a minimum of -2.86 to a maximum of 1.78; the threshold value LOW corresponds to -0.3534 (Source: Decree of the Ministry of Education, 08.08.2022).

In addition, the socio-economic-cultural status of students in the South (where the dispersion rates are higher) is on average lower than that of students in the Centre and North- Italy. Numerous researches (Save the Children, 2022; INVALSI reports) then highlight how *low background level leads to low levels of learning*. In other words, test results are worse in cases of low ESCS index scores. The economic and social poverty of both the family and the contexts (neighbourhoods, municipalities, regions) has a major impact on the learning of skills. It is appropriate to specify, still, that the relationship between the status index and the results in the INVALSI tests does not necessarily imply a cause-effect relationship. The presence of a relationship between these two variables does not mean that a student from a less favourable background necessarily has low results and the students who have a socially advantaged situation systematically achieve better results, but only indicates that on average pupils starting from more favourable conditions achieve higher results than disadvantaged pupils and vice versa.

That is said, it is clear that by analysing the background data it is possible to better understand the socio-economic and cultural characteristics of the territories and therefore to program ad hoc interventions in order to better counter some phenomena, such as the one examined in this paper. Nevertheless, anti-dispersion actions, within the framework of policies, above all in education sector, do not always go in the right direction, as they seem to largely underestimate the role played by the socio-economic and cultural status of the family on the active and collaborative school participation of the student. In particular, in the following paragraph a very first reflection will be initiated on a specific action to contrast the dispersion, both explicit and implicit, which lays the foundations on the "digitalisation of the school".

Digital Innovation and School-Family Relationship

Before going into the reflection on the vicious circle "low background dispersion", "digitalisation in the school environment", "weakening of the school-family relationship", please refer to the National Digital School Plan (introduced by Art. 1 of Law 2015, No. 107) on the innovation of the school system, for and in-depth framework of 35 actions through which in Italy the Ministry of Education and Merit aims to change learning environments and promote digital innovation in the school[5].

As far as digitalisation is concerned, the target set at European level for 2030 is 80% of citizens with at least basic skills in relation to the various domains, including information and data literacy. According to DESI (Index of Digital Economy and Society, 2023) which monitors the progress of EU countries on digital skills, Italy is still at the 45.60% age group 16-74 years (at least basic skills in digital field), while with regard to the use of internet, it goes from 69.01% in 2018 to 82.94% in 2023 (age 16-74).

[5] The plan is divided into four fundamental steps: *connectivity, tools and environments, skills and content, accompaniment and training* (Ministry of Education and Merit) through the funds of the PNRR, Italia Domani program, part of Next Generation EU. The total investment of 17.59 billion euro is aimed at creating a school that is not only sustainable and safe but also innovative and inclusive (Futura-La Scuola per l'Italia di Domani). Specifically, the skills sectors aimed to reduce spatial gaps and contrast the early school leaving (1.5 billion) through territorial monitoring strategies (tutoring, counselling, and active and professional guidance) in order to reduce the percentage of the dropout rate. The D.M. 170 of 24 June 2022 allocated fundings equal to 500,000,000,00 on a regional basis according to the latest data processed by Istat at regional level, including the rate of ELET 18-24 years; again, resources, divided on a regional basis, through indicators such as the rate of fragility in learning (implicit dispersion) (INVALSI). A total share of resources of 51.16 % was allocated to the Mezzogiorno for educational institutions of I and II degree. Source:https://www.miur.gov.it/documents/20182/50615/Piano+nazionale+scuola+digitale.pdf/5b1a7e34-b678-40c5-8d26-e7b646708d70?version=1.1&t=1496170125686.

Unfortunately, there is also a "southern issue" on the subject of digital innovation. According to the Index of Digital Development recently developed by Benecchi et al.'s (2023) "Digitalisation in Italy: Evidence From a New Regional Index", for Italian regions, there is a strong regional digital divide that covers five dimensions:

(i) infrastructure and network utilisation (*Connectivity*);

(ii) the digital skills of population (*Human Capital*);

(iii) the use of internet services by households (*Use of Internet*);

(iv) the integration of ITC by businesses (*ICT Integration*);

(v) the level of digital services offered by local government (*E-government*).

In particular, according to the results of the studio by Benecchi et al., it is the southern regions that are lagging behind in the most of the aforementioned digital dimensions. Specifically, Sicily, Calabria, Basilicata, and Molise are the regions that register the lowest levels of Regional DESI Index (Figure 5).

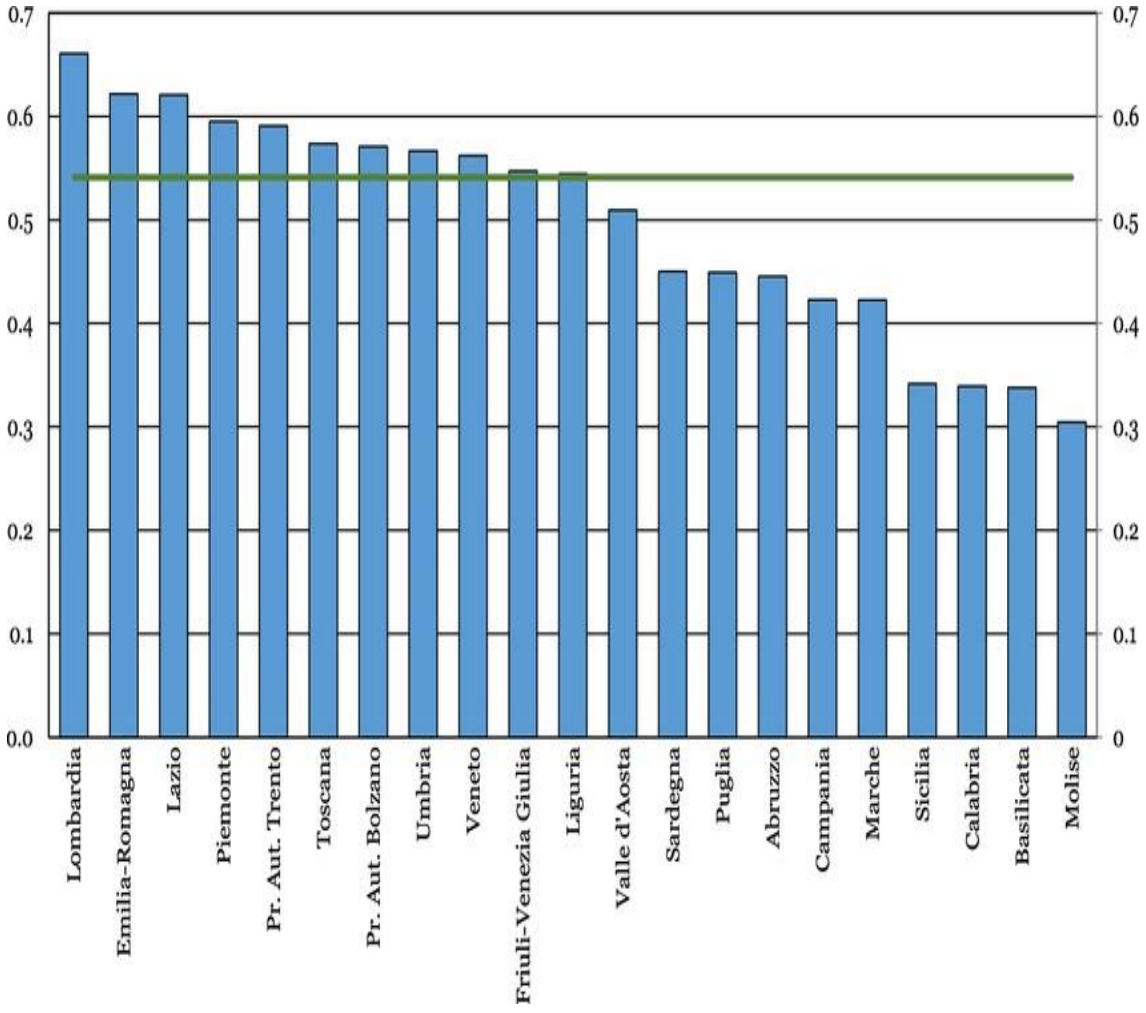

Figure 5. Regional DESI. Source: Benecchi et al. (2023).

This figure is also confirmed by Ista data (2023), according to which the geographical context strengthens the digital differences, the gap between the Centre-North and the South, as already anticipated; it is, in fact, more and more marked. The delay of the South is 74.8% compared to the other regions, where Lombardy and the

Autonomous Province of Trento register higher percentages, respectively 53.1% and 56.5%, while Campania (32.3%) and Calabria (32.2%) are placed in the last places (compared to the use of the internet).

The Istat data (2023), moreover, confirm the *socio-economic* discriminant in the use of the ITC concerning the *high cost of technological instrumentation* that accounts for 29.8% of cases. Not only that, the *degree*, as a key indicator, outlines a picture of a strong percentage deficit in web browsing between those with an upper secondary diploma (90.3%) and those with a middle school license (66.2%)[6]. The "Buona Scuola" will try, therefore, albeit in part, to bridge the strong "digital divide" that characterises our country, which also fights social inequalities, educational poverty, and the strengthening of equal opportunities (Di Pietro, 2021).

If, on the one hand, digitalisation will certainly be able to simplify and improve the quality of learning process, innovating it; to intervene on transversal competences, to improve school spaces and environments, to innovate obsolete teaching methodologies, and much more. On the other hand, it will weaken the human *face to face* relationship with families, especially those at high risk. As was highlighted in Section 2. The Economic, Social, and Cultural Status and Levels of Learning, to influence the socio-economic status there is the low level of education and income which entails a scarce or absent endowment of material goods including PC and internet connection; households with low socio-economic and cultural status therefore have neither tools or digital skills to maintain and/or build a solid fiduciary relationship with the school. If the latter will have to resort to new communication technologies to interact with school staff, there is a risk of fuelling explicit dispersion from low background rather than countering it. It must be clear that by intervening on the enhancement of the different digital dimensions, it will benefit the students (especially from difficult territories) who "attend" the school, in terms of strengthening human capital, soft skills, and other (reduction of implicit dispersion); this type of intervention does not help to bring back to school those who have dispersed in time or those who are about to disperse/dropout of the school for purely familiar reasons. Where, in fact, the barrier is precisely the "family", in the sense that it is the latter at the origin of dispersion before and of abandonment after, because it fails or does not want or is not in a position to reach the full awareness of own children's school life, what effect might have the possibility of accessing to the information contained in the electronic register, such as grades, disciplinary notes, being informed in real time about child's absence at school, being able to book an online interview with the teachers, or being able to know the Education Offer Plan, published on the school's website, if not none?

The concern therefore is that with the process of digitalisation in the school environment the *school-family relationship* (already fragile) will come out strongly impoverished. It cannot be disregarded by the fact that the school-family educational alliance is defined by two dimensions: the frequency of contacts[7] and the quality of the teacher-parents relationship[8] (Capperucci, Ciucci, & Baroncelli, 2018). When the parent-teacher connection is frequent and of high quality, a synergy is set in motion that allows parents and teachers to align themselves with educational value of the school for the social and psychological development of children (Pirchio, Tritrini, Passiatore, & Taeschner, 2013).

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[6] On the point, cf. Digital Agenda "What Is the Digital Divide, New Social and Cultural Discrimination", 2020; "Digital Inequality at Home. The School as a Compensatory Agent", 2021.

[7] Think of the participation of families in class assemblies, collegial meetings; the involvement of parents in laboratory activities conceived and carried out at school, or even training meetings within the framework of specific projects with experts.

[8] Among the quality indicators: emotional tone, satisfaction, communication, degree of agreement, appreciation/respect, trust, support (interest and comfort), cooperation.

The "Buona Scuola" is called upon to create *opportunities for interaction* between parents and teachers and to implement diversified strategies aimed at concretely recovering the bidirectionality of the "*school-family*" and "*family-school*" relationship.

Conclusions

A fact: A minor with a low family background sees his or her right to learn, to train, to develop skills and competences, to cultivate his or her aspirations and talents, deprived or otherwise compromised. This is an infringement of rights to study, but also the general lack of "educational opportunities". Few opportunities negatively affect the growth and well-being of the child. In other word, children and adolescents living in disadvantage contexts, characterised by family discomfort, job insecurity, and material deprivation, have, on the one hand, few opportunities for learning in the family; on the other hand, more likely to get out of educational school circuits.

The phenomenon exists. The European and national data on school dropout, explicit and implicit, confirm this. The southern regions are characterised by high dispersion, low background, and low level of digitalisation. We need to take action by braking, counteracting, and deviating in an appropriate and concrete way. School policies centred on digitalisation respond to other purposes. The connection between school and family must be realised through the sharing of a common education project, explicitly shared. In other words, parents and teachers, despite the diversity of roles and the separation of contexts of action, are called to communicate around thoughts and feelings about the student and his or her "development". The more the connection between the two systems is "strong and direct", the more the child/boy development potential in the school context increases and the success in learning is promoted. What has been said is even more true if the family is in condition of fragility, far from implementing educational paths and projects.

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