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SCIENCE FOR POLICY BRIEF

Meta-analysis of the European Social Fund counterfactual impact evaluations: First quantitative results on education outcomes

Highlights

→ The European Social Fund (ESF) has effectively improved the education outcomes of individuals participating in its programmes.

→ Reports presenting ESF effects on education outcomes find positive and significant impacts in 44% of the cases with 43% of results insignificant and only 13% negative and significant.

→ The share of positive and significant outcomes is even higher for interventions targeting students (68%), and for outcomes such as grades (70%) and progression to the next school year (68%).

→ Using the sample of studies measuring their outcomes in percentage points or percentage changes, preliminary results show that average impacts on various education outcomes are positive at around 3.2 pp or 7.1%, respectively.

→ In addition to its effectiveness in achieving improvements in labour outcomes demonstrated in previous meta-analyses, the ESF also helps in improving education outcomes.

→ The preliminary findings presented in this study are to be verified in the future as additional ESF education studies will be published and included in the ESF meta database.

Background

As one of the European Structural and Investment Funds, the European Social Fund (ESF) aims at enhancing employment and social cohesion in the EU. In the current programming period 2021-2027, it has been extended to ESF+ by incorporating three previously distinct funds: EU Fund for European Aid to the Most Deprived (FEAD), the EU Programme for Employment and Social Innovation (EaSI) and the Youth Employment Initiative (YEI). The broadening of scope within ESF+ also brings about a broader focus of funding beyond its traditional core topic of employment support. This study takes this opportunity to take stock of outcomes achieved by the ESF in the field of education to shed light on the effectiveness of ESF interventions for education outcomes according to estimates in counterfactual impact evaluations (CIEs).

Such CIEs use microeconomic data to analyse the impact of a programme or policy by observing outcomes of interest for programme participants (treatment group) and then comparing them to the most suitable comparison (control) group, thus identifying the policy impact as the difference between these two outcomes.

The vast majority of CIEs on ESF and YEI interventions has analysed employment outcomes. Their effects have been collected in a meta-database and these have been analysed in several recent meta-analysis

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reports (Pompili et al., 2022; Haepp and Serrano-Alarcon, 2024; Haepp et al., 2025). According to the most recent publication covering all 112 ESF CIE reports published until November 2024 meeting the selection standards for coding in the database[1], ESF interventions achieve a positive and significant labour outcome in 56% of cases with 23% of labour outcomes insignificant and 20% of them significant and negative (Haepp et al., 2025).

ESF CIE reports analysing education outcomes still remain less widespread than those focusing on labour outcomes to date. Pompili et al. (2022) concluded that a quantitative analysis of the education reports available at the time was not possible and provided a qualitative discussion of the individual reports. By November 2024, however, the number of education reports fulfilling the inclusion criteria for an ESF meta-analysis had grown further to 26 reports from 11 Member States providing a total of 271 results on either statistical sign and significance or effect size.[2] The current number of estimates therefore allows for a more detailed categorisation of the studies and for first preliminary results regarding the effectiveness of the ESF interventions in various categories.

ESF effects on education outcomes

Overall results

Figure 1 summarizes the share of positive and significant, insignificant, and negative and significant education outcomes for the overall sample as well as by various characteristics of the interventions and study reports. In the complete sample of all 231 education outcomes reporting sign and significance, 44% of findings are positive and significant, while 43% are insignificant and only 13% are negative and significant. In addition to sign and significance of the estimates, it is possible to analyse effect sizes for studies measuring outcomes either in percentage points (pp) or in percentages changes in the different outcomes analysed. Coefficients measuring percentage point changes in education variables on average find an effect of 3.2 pp, while studies measuring outcomes in percentage changes of their respective variable of interest on average find an effect of 7.1% (see Figure 2). These positive average effect sizes therefore confirm the overall dominance of positive effect directions explained above.

Results by intervention and study characteristics

When moving beyond overall averages, there is notable variation in the share of positive, insignificant or negative outcomes depending on specific intervention and study characteristics. It is therefore important to identify which characteristics of the interventions implemented and the studies conducted correspond to better or worse outcomes observed. To this end, the JRC has developed a coding template for ESF education interventions that categorizes the features of all reports with education outcomes into various groups. Figure 1 summarizes the preliminary findings from this exercise for several key categories of the interventions and studies.

In the 2014-2020 programming period, the five European Structural and Investment (ESI) Funds served 11 different thematic objectives, with four of them being addressed by the ESF+. These are promotion of employment (TO 8) or social inclusion (TO 9), investment into education (TO 10), and public administration (TO11)[3]. Interventions that have been classified exclusively under the thematic objective education also yield a larger share of positive and significant education outcomes (47%) compared to interventions with mixed thematic objectives or without a thematic education objective (32%). This variation in the focus of the intervention focus is also reflected in the scope of the studies conducted. Analogous to the intervention design, the study reports are either focused entirely on education outcomes or provide an analysis of education outcomes along with other outcomes, most commonly labour outcomes. It is noteworthy that in such studies with a mixed focus the intervention itself may be a labour market intervention and the education outcome analysed (such as participation in a training programme) may not be the most desirable outcome (compared to, e.g., entry into employment). Reflecting such patterns, studies exclusively analysing education outcomes

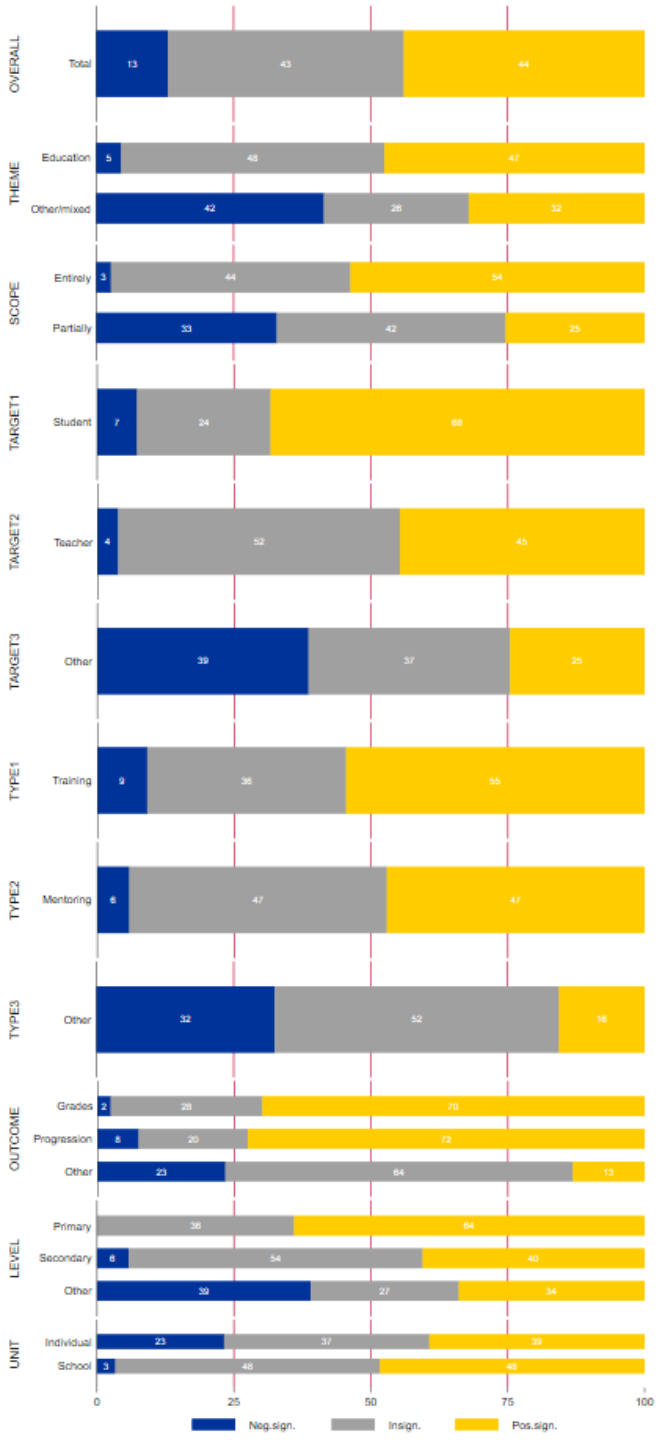
[1] The inclusion criteria for coding in both the labour and education meta-analysis are: 1.) individual-level data (e.g. individuals, firms, teachers, or schools), 2.) clear distinction between treatment and control group, 3.) implementation of some (quasi-)experimental method, 4.) quantitative and objective outcome, and 5.) clear and transparent indication of the direction of the programme effect.

[2] The 11 Member States covered in the CIE education database are: Belgium, Bulgaria, Finland, France, Hungary, Italy, Poland, Portugal, Romania, Spain, and Sweden.

[3] About 72 percent of the outcomes in this analysis are on interventions exclusively focusing on TO 10 (education), while 16 percent are on interventions of TO 8, 9 percent on TO 9, and 3 percent on a combination of TOs. No CIE reports have been published on interventions in TO 11.

yield a positive and significant coefficient in 45% of the cases, while this share is as low as 25% in studies jointly analysing education and non-education outcomes.

Figure 1 – Distribution of sign and statistical significance by intervention and study characteristics[4]



Source: JRC calculations based on ESF education meta database

An additional key aspect of an ESF intervention is the target group of the policy. Being in the field of education, the most common target group in the interventions are students, with more than two thirds of the estimates collected addressing this group. Interventions may simultaneously or independently target teachers or other targets, such as schools, and just over half of the estimates obtained (also) refer to the target teachers. Estimates referring to the target group students are overwhelmingly positive with more than two out of three coefficients being positive and significant (68%). For the target group teachers, slightly more than half of the coefficients are insignificant (52%), whereas also close to half of them are positive and significant (45%). For the remaining target groups, results are positive and significant in only one of four cases (25%) and they are predominantly negative and significant (39%), which corroborates the finding of less positive results when the interventions or studies are not exclusively in the field of education.

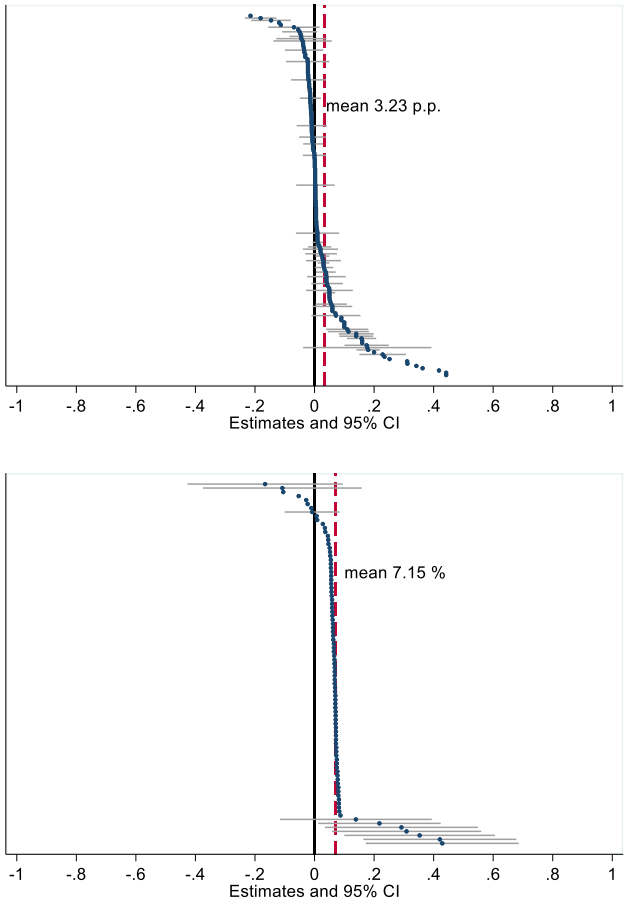
In addition to the target group of an ESF intervention, a further key characteristic is the type of the intervention. Analogous to the key typologies of labour market interventions, interventions yielding education outcomes can most broadly be categorized into those with a training component, such as a skills training course or student training in a specific study subject, those with a mentoring component or those with other components. Notably, interventions can provide a combination of these different support typologies. Outcomes of training interventions are predominantly positive and significant (55%), while coefficients from interventions providing a mentoring component are just as often positive and significant as they are found insignificant (47% each). The combined remainder group of other typologies are predominantly insignificant (52%) and positive and significant in only about one in six (16%) instances.

Frequently analysed outcome variables are grades obtained in study subjects, progression to the next grade, or other outcomes such as participation in education for unemployed individuals. Overwhelmingly positive and significant outcomes are obtained for subject grades (70% positive and significant) as well as for grade progression (72%). On the contrary,

[4] Categories in type and target are not mutually exclusive. Sample sizes are: N(overall): 230, N(entirely): 151, N(partially): 79, N(education): 177, N(other): 53, N(student): 41, N(teacher): 132, N(other target): 57, N(training): 44, N(mentoring): 17, N(other type): 77, N(grades): 83, N(progression): 40, N(other outcome): 107, N(primary): 50, N(secondary): 121, N(other level): 59, N(individual): 112, N(school): 118.

estimates on other outcomes provided mixed results with the majority of them being insignificant (64%).

Figure 2 – Estimated quantitative programme effects on education outcomes (measured in pp or percent)



Source: JRC calculations based on ESF education meta database. The sample sizes are: N(pp): 158, N(%): 91.

ESF education interventions analyse outcomes for different schooling levels, such as primary, secondary, or tertiary. Results obtained for the primary school level are positive and significant in about two out of three cases (64%), but while more than half of the coefficients for the secondary school level are insignificant (54%) and only two out of five (40%) of them are positive and significant. The share of positive and significant results decreases further to 34% for educational contexts that are neither primary nor secondary schools (tertiary or other contexts) and in these context the largest share of estimates is negative and significant (39%).

A final study characteristic that can be analysed is the unit of analysis adopted in the CIE study evaluating the intervention. Analogous to ESF meta-analyses on labour outcomes that cover studies focusing on either individuals or firms, the education meta-analysis retains estimates on either individuals or schools. Estimates obtained when analysing outcomes of individuals are more mixed relative to school level outcomes. Studies analysing outcomes at the level of individuals frequently show positive and significant outcomes (39%), but almost the same share of coefficients is insignificant (37%), and almost one in four outcomes is negative and significant (23%). School-level outcomes are hardly ever negative with close to half of them positive and significant or insignificant (48% each).

Concluding remarks

Similar to the outcomes observed in ESF meta analyses in the field of labour, the ESF also achieves positive results for programme participants in terms of their education outcomes. Among all ESF effects on education outcomes, 44% of findings are positive and significant, while 43% are insignificant and only 13% are negative and significant. When analysing only those studies that exclusively discuss education outcomes, the share of positive and significant coefficients is as high as 54%, which is close to the 56% share in the most recent ESF meta-analysis on labour outcomes. The share of positive and significant education outcomes is also higher when students are directly targeted (68%), for outcomes such as subject grades (70%) and progression to the next school year (72%), as well as earlier on in the education system, such as at the primary school (64%). One limitation of this meta-analysis is the relatively small sample size of interventions from a limited number of Member States. Generalizing these results to other interventions should therefore be done with caution. The preliminary findings in this study are to be complemented and verified in the future as more ESF CIE reports analysing effects on education outcomes across various interventions and Member States will become available.

Related work

This policy brief has been prepared at the Centre for Research on Impact Evaluation (CRIE). CRIE is part of the Competence Centre on Microeconomic Evaluation (CC-ME) and provides scientific expertise and methodological support on Counterfactual Impact Evaluation (CIE) to the Directorate-General for Employment, Social Affairs and Inclusion (DG EMPL) and Member States for the impact evaluations of interventions funded through instruments managed by DG EMPL, namely the European Social Fund (ESF).

More information can be found online: (https://microeconomicevaluation.jrc.ec.europa.eu/crie)

References

Haepp, T., Jessen, J., Pompili, M., and Seebauer, J. (2025), *Meta-analysis of the European Social Fund counterfactual impact evaluations: A comprehensive update including new methodology*, Publications Office of the European Union, Luxembourg, 2025, JRC141819. (https://publications.jrc.ec.europa.eu/repository/handle/JRC141819)

Haepp, T. and Serrano-Alarcón, M. (2024), *Meta-analysis of the European Social Fund counterfactual impact evaluations: Brief update with alternative measures*, JRC Policy Brief, European Commission, Joint Research Centre, Ispra, JRC137571.

Pompili, M., Kluve, J., Jessen, J., Seebauer, J., Gallassi, G. and Peruccacci, E. (2022), *Meta-analysis of the ESF counterfactual impact evaluations (VT/2020/052)*, Publications Office of the European Union, Luxembourg (https://ec.europa.eu/social/main.jsp?catId=738&pubId=8512).

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Quick guide	The data used in the policy brief are the estimates provided in counterfactual impact evaluation (CIE) reports on European Social Fund (ESF) interventions carried out in the 27 EU Member States during the 2007–2013 and 2014–2020 programming periods that have been published up to November 2024. The list of the reports can be retrieved from the Cohesion Open Data platform. The CIEs in these reports provide estimates of the effects of various ESF policy interventions. The estimates, analysing either the complete evaluation sample or subgroups defined by age and gender, and relevant background information have been compiled in a metadatabase (see Pompili et al., 2022). The updated education database employed for this policy brief includes a total of 26 studies and serves to provide a first preliminary overview of the education outcomes achieved by ESF interventions. The 26 studies providing 271 estimates on different outcomes in the field of education are from the following 11 Member States: Belgium (1), Bulgaria (2), Finland (1), France (1), Hungary (2), Italy (2), Poland (7), Portugal (3), Romania (5), Spain (1), Sweden (1).

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