

# **The effect of ICT on schools' efficiency. Empirical evidence for 23 European Countries.**

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**Abstract.** In the last two decades, ICT use in schools has seen an exponential growth and the COVID-19 emergency accelerated its spread. In this paper we investigate the relationship between ICT and school's efficiency and the mechanisms through which ICT can enhance schools' productivity using PISA 2018 data for 23 European countries. We analyze the role played by the use of ICT and the level of ICT resources and the interaction between these two elements by implementing a network Data Envelopment Analysis model. We complement the analysis through a conditional DEA. This allows to compare schools operating in similar socio-economic contexts and with similar school resources. Therefore, we account for the presence of possible external drivers of schools' efficiency and detect the impact of ICT usage on efficiency. By investigating the role of ICT in schools' efficiency we provide insights to guide the transition of digital technology into learning and educational practices. Further, the paper contains the first systematic literature review of Network DEA applications in education.

**Keywords:** Schools' efficiency; ICT; Network DEA