

# Firm Adoption of Industry 4.0 Technologies and Economic Shocks: The Role of Enabling Factors

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Despite a large strand of literature has investigated the drivers of technology adoption, little is known on the role jointly played by enabling technologies and skills, and in particular on how the latter changes in periods of turmoil. In this study, we aim to understand whether and how these enabling factors spur firm adoption of new digital technologies, and how their impact is affected by an economic shock. To this purpose, we use original data from a two-wave survey administered to a sample of Italian firms before and after the Covid 19 pandemic. We show that past investments in enabling technologies (e.g., cloud computing) and enabling technical capabilities, especially when jointly made, significantly foster the likelihood of adopting new digital technologies, such as Artificial Intelligence and Internet-of-Things. Also, the combined effect of such enabling factors has increased after the pandemic. This suggests that, when faced with an economic shock, companies tend to strategically target their investments to areas where they possess technical expertise in order to minimize the risk of investment failure. However, in periods of economic upheaval, companies' technological choices may be constrained by input shortages, especially by the scarcity of skills enabling the implementation of I4.0 technologies.