

## **#23 Topic: Relatedness and resilience of jobs in US cities**

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### **Abstract:**

In 2008, a terrific financial crisis generalized into a massive contraction of the economy and demand for labour, leading to unprecedented job losses worldwide. Many countries have not yet recovered. Certain professions are especially undermined in their resilience capacity. And yet, it can get much worse. Artificial Intelligence and Robotics may massively substitute jobs and reshuffle our entire world economy. Few tasks of the current workforce seem to be left out of becoming automated in a very near future. The small exception are jobs highly relying on creativity, social and emotional intelligence, and cognitive flexibility (Frey and Osborne, 2018, among others). But those skills are especially difficult to transfer, to acquire, and to value, for the same reason they are difficult to standardize and automate, i.e., high concentration of tacit knowledge and knowhow.

Literature on economic resilience has shown us how, independently of the specificities of each regional capability, its level of relatedness with the existing capabilities in the economy favors regional diversification and renewal of capabilities in a city, region, or country (Boschma, 2014, Hidalgo et al, 2018, among many others). Moreover, relatedness seems to operate through different possible mechanisms in the economy. Farinha et al (2019), after unpacking relatedness in three distinct dimensions, shows how local synergies between professions especially fosters regional diversification. Moreover, in face of a generalized crisis, complementarities and local synergies between regional capabilities may provide them a supporting ground through their interdependences. And similarities may enable higher labour flows and adjustments between professions, or recombination of skills, thus fostering adaptation. Notwithstanding, would these mechanisms operate differently depending on the nature of the labour demand shock?

In this Science Jam, I will test the role of complementarities, similarities, and local synergies in the resilience of professions under a massive economic shock. More concretely, of job classes in US regions (MSA) under the past financial and economic crisis. My very preliminary results seem to indicate that similarities strongly favor economic resistance and adaptation of a profession, almost twice as much as complementarities. Finally, given the co-evolving nature of the renewal capacity of a city, I analyze the crossed impacts between the financial crisis event, the levels of relatedness density, and the workforce intensity in jobs that are predicted to have higher demand in the near future.