

Universities, Population, and Regional Innovation

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Abstract

Cities with large populations enjoy a variety of advantages for agglomeration of innovative activity. Among these advantages are large pools of educated labor, thick markets for non-labor inputs to innovation, knowledge spillovers and developed transportation and communications infrastructures. If areas hosting universities have some of these attributes normally associated with large cities, can the presence of a university provide a similar foundation for regional innovation? This paper incorporates university presence into an analysis of the relationship between population and innovation. Our results suggest that universities and population may enhance different pathways to regional innovation. Universities enhance human capital inputs to innovation while greater population enhances factors that increase the innovation productivity of human capital -- increasing, for example, knowledge spillovers thick markets for non-labor inputs to innovation. In addition, in less populous places, innovation appears to respond differently to population and university location. Changes in population are associated with larger changes in rates of innovation in these areas. Finally, doctoral degree granting institutions appear to have a greater impact on human capital formation in moderately populated and less populated counties, even if much of that human capital appears to be directed at production of additional human capital, rather than production of patentable innovations.

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