

## Agglomeration in the Development of Industries: A Study of Positive Feedback Loops in the Scaling of Metropolitan Areas

Alexander P. Lyte

Luis Bettencourt and Geoffrey West

Economic growth theory has evolved significantly in the past few years with the integration of productivity as an endogenous factor in macro-level growth and the realization of nonlinear scaling effects from increasing metropolitan populations. While cities tend to have relatively equal distributions of professions across various metropolitan sizes and spaces, horizontal and vertical clustering of industries has been observed in many cities often due to the positive effects of economies of agglomeration. One interesting question is why some industries cluster in certain areas, and how this might be influenced by the makeup of professions in these areas. This phenomenon may be partially explained by the effects of positive feedback loops and nonergodic path development in the growth of cities. My research will utilize theories of increasing returns and path dependence to explain the agglomeration of industries in major U.S. metropolitan areas.