



Social Capital and Innovation

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MOTIVATION

We want to continue to identify factors affecting economic growth and development by analyzing what has promoted innovation. Social media usage has increased connectivity between people which has increased economic connectivity. Social capital refers to networks, norms, and trust within a society.

QUESTION

Do social capital and economic connectivity measured from social media correlate with innovation levels?

DATA

Used data from social capital atlas, which collected privacy-protected data on 72.2 million user between age 25 to 44 years from Facebook. The innovation intelligence data is pulled from StatsAmerica which is under US economic development administration. The measurements include innovation and entrepreneurship indices to help advance economic development strategies.

CONTACT INFORMATION

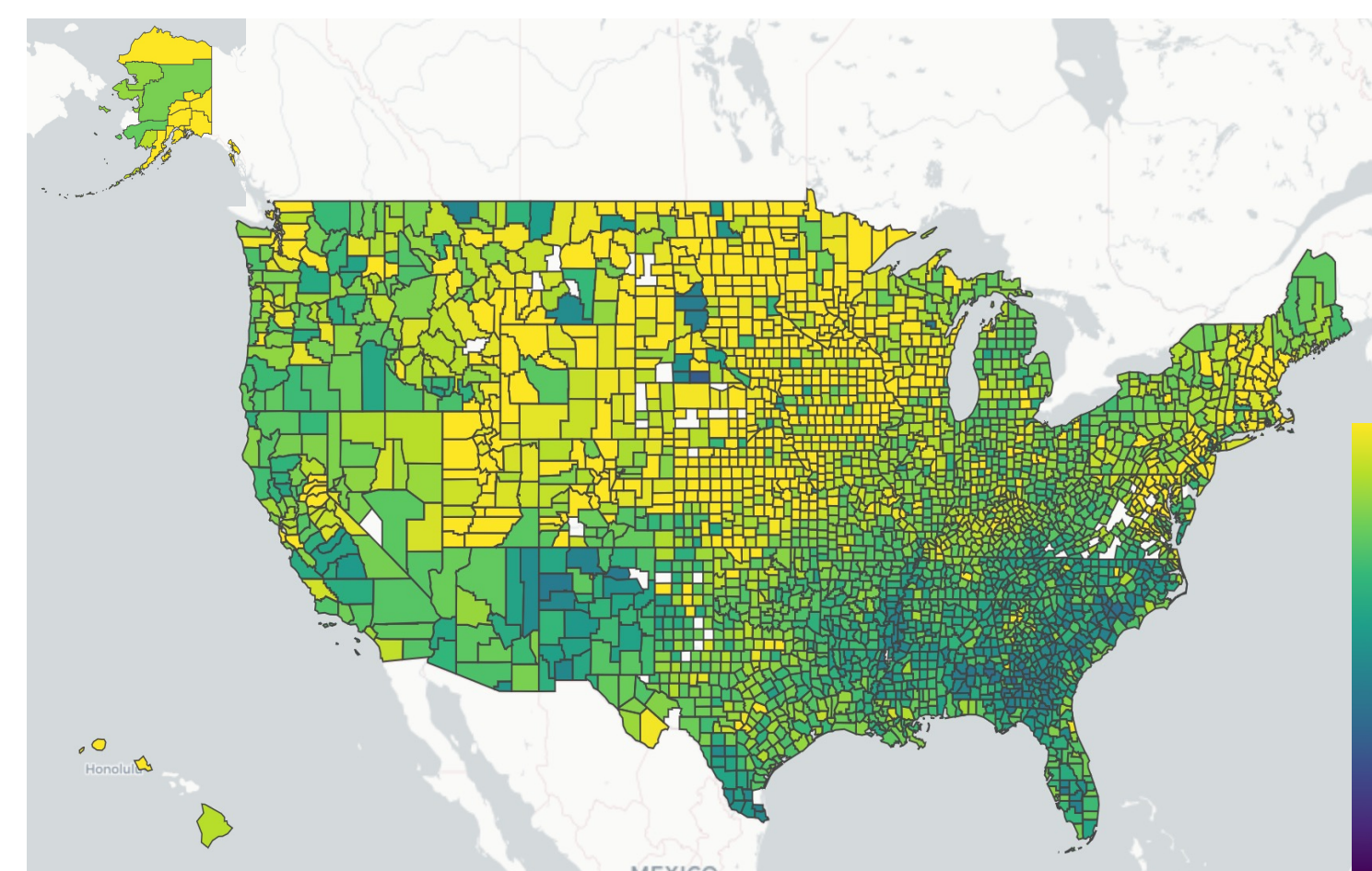
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HYPOTHESIS

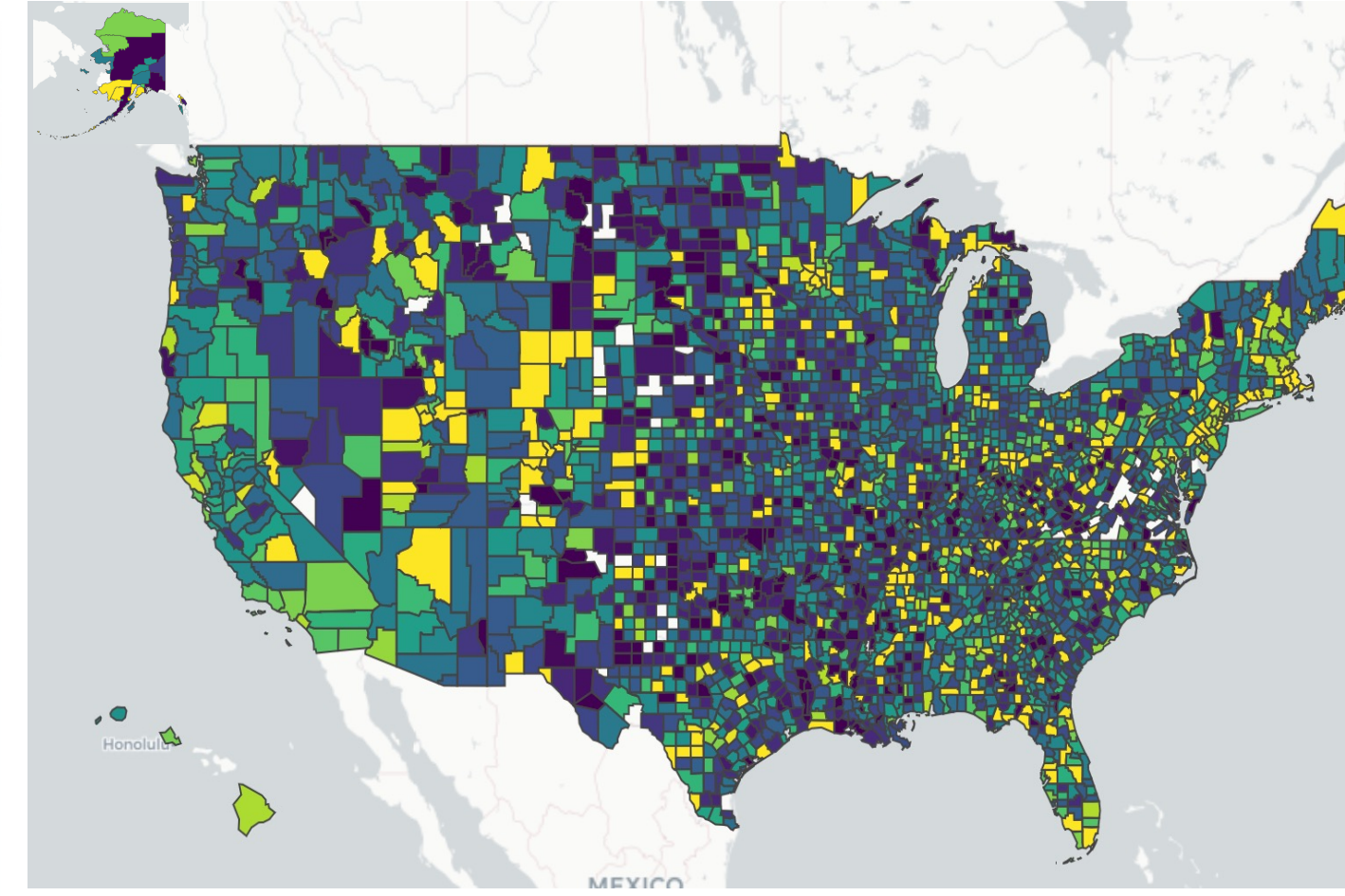
If economic connectivity measured from social media increases, then innovation intelligence measured by patent diffusion, average annual venture capital, and job growth ratio should increase as well. The prediction of more connected areas should have a higher flow of ideas and resources to promote innovation.

Maps

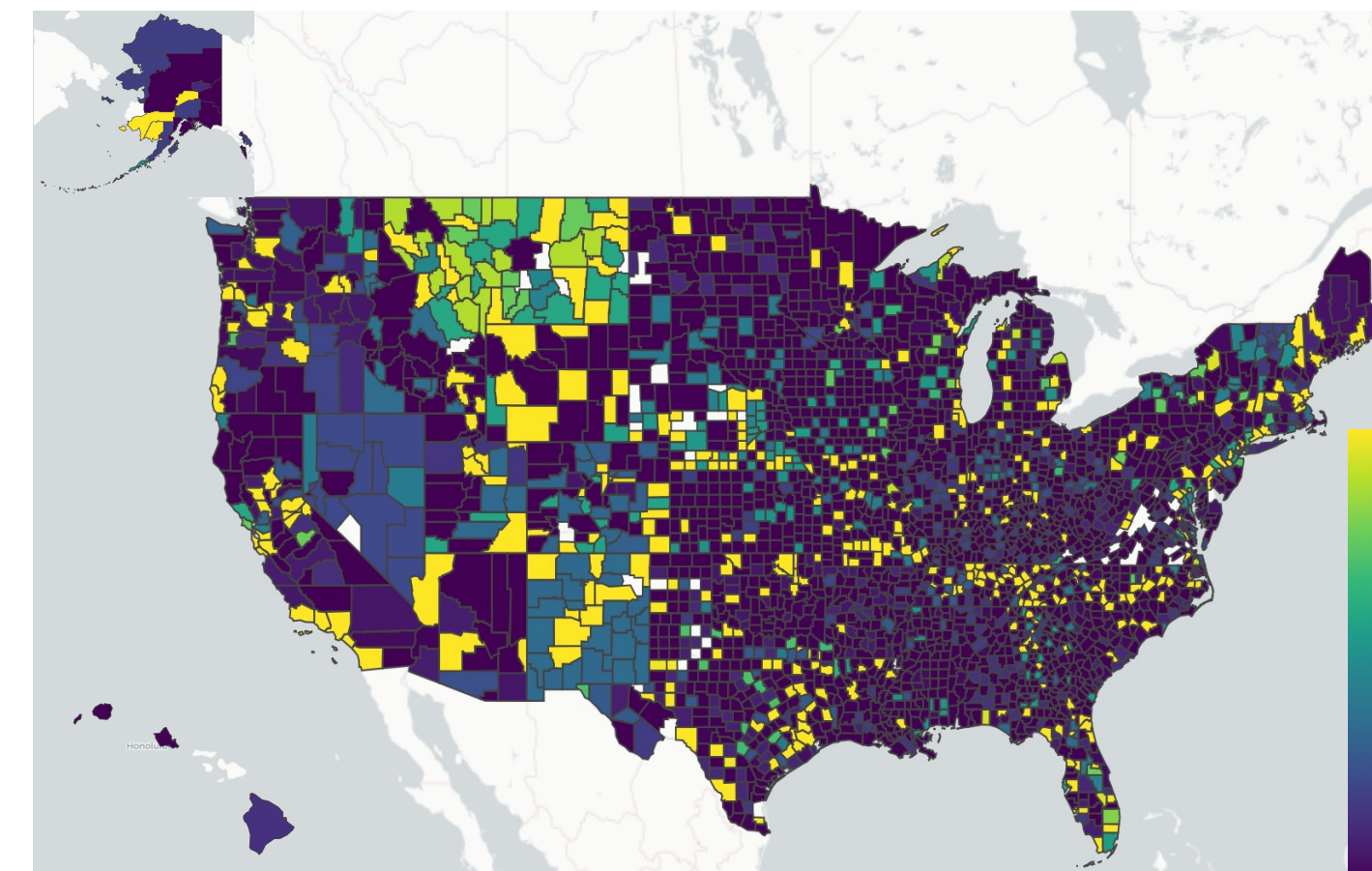
Economic Connectivity



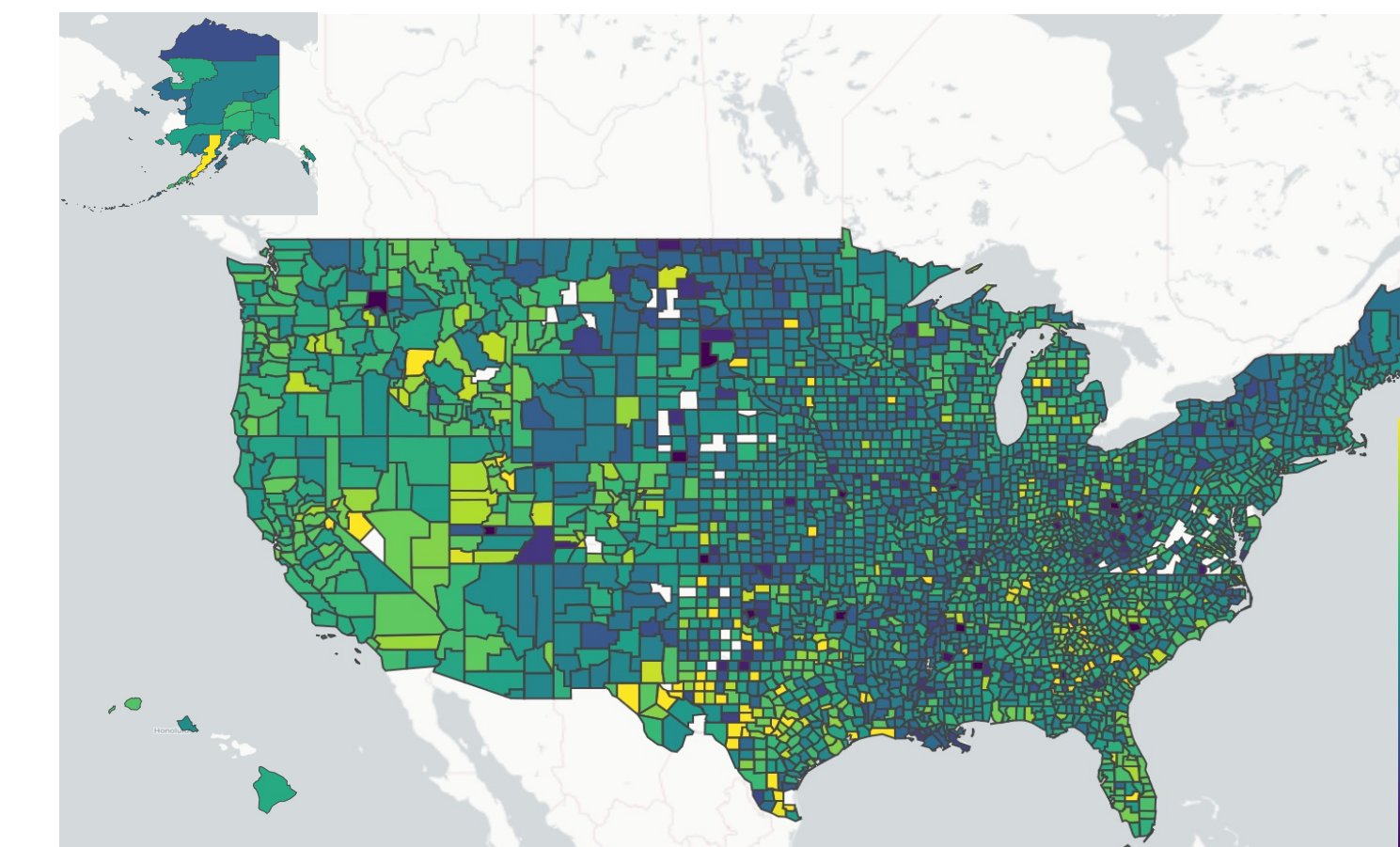
Patent Technology Diffusion



Average Annual Venture



Job Growth Ratio



METHOD

Created linear regression models for economic connectivity and innovation intelligence measurements: patent technology diffusion, average annual venture capital, and job growth to population growth ratio.

Results

	Patent Technology Diffusion	Average Annual Venture Capital (Scaled by GDP)	Job Growth to Population Growth Ratio
Correlation Coefficient	-0.011	-0.032	-0.019
Model Score	0.0001	0.0010	0.0004
MAE	0.194	5.000	0.072
MSE	0.089	196.072	0.013
RMSE	0.298	14.003	0.116
Graph			

CONCLUSIONS

Social media measured economic connectivity does not correlate with patent technology diffusion, average annual venture capital, or job growth ratio, which are representing innovation intelligence. Although the results reject the initial hypothesis, there is more research to be conducted. Other datasets such as LinkedIn or Twitter data might reflect a different result due to the purpose of the application differing from Facebook.