Lecture 9: Geographic Data and Night Lights

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Presentation Slides

Recording

Q: Numbers don't lie! How true is the claim that data isn't always the truth and can be incorrect?

A: Hah. Quantitative data are constructed, and we should always be trying hard to understand the processes -- political, social, and technological -- that go into producing the data. Take nothing without questioning!!

A: Another way of saying that is that lies are sometimes told in numbers (i.e., falsified statistics) but even when they are "accurately" and "objectively" collected, they are inevitably shaped by the ways they are collected.

A: As David is saying now, the issues of comparability are important. It's the reason to be thoughtful about how exactly you use the data. As with any other data source, you need to be critical about the ways in which the processes of data construction limit the types of questions we can answer (and the confidence that we can have in those answers).

Q: Can satellite data be used in prediction and regression models?

A: Yes, satellite data are used frequently in this way. Some kind of spatial aggregation is required, of course."

Q: What should be the DN measure to identify urban areas?

A: There are a lot of approaches that people use. The upcoming lecture in this course by Martina Kirchberger will address this, but depending on the question you are asking, a good measure seems to be the Eurostat "degrees of urban" classification.

Q: To what extent is the nightlights measure a good measure of economic activity in developing countries (especially in Africa) given that the main economic activity tends to be agriculture?

A: As David has already suggested, the differences in economic structure surely matter both for estimating **levels** and **growth rates** of economic activity. An interesting point is that agriculture in different parts of the world varies in labor intensity and hence in the population densities that we find in rural areas. For instance, agriculture in the US midwest is highly productive but takes place in rural areas that are very sparsely populated (and therefore not very light). It would be difficult to make very confident conclusions about agricultural output based on lights across countries... But perhaps **within** locations it might still be useful.

Q: Do we have models to use night light to measure social outcome such as health and education (infrastructure for example?). Also share with us some best machine learning models, if your some, to try our country specific context.

A: I think the issue here is that all of these things will be correlated with income per capita, imperfectly. The issue is always figuring out whether the elasticities are stable across time and across locations.

A: So night lights will correlate with both levels and growth rates of these social outcomes, but it's hard to know how well we could use them as an ""accurate"" measure of these variables.