Sydney to move away from CBD model

October 17 2018

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Sydney may soon undergo a transition from a monocentric city with sprawling suburbs radiating from one CBD, to a polycentric model—one marked by several sub-centres—according to a recent study led by a multidisciplinary team at the University of Sydney.

Led by Professor Mikhail Prokopenko, Director of the Complex Systems Research Group, using Greater Sydney Census data, the group found that the transition in urban structure was based largely on residential suburb attractiveness to residents, with populations potentially aggregating around existing major urban areas, notably Parramatta, Campbelltown, Penrith and Gosford.

The study categorised suburb attractiveness by both available services and size of the population, with incomes offset by rent. When deciding where to settle, people considered the utility of living in attractive suburbs as well as the cost of commuting to work.

Conversely, the study showed that transit times were less of an influencing factor on the changing residential model, despite lengthy commutes being a common complaint of Sydney-siders in recent years.

"The model showed that social cohesion is often more important to Sydney residents than transportation costs, and that changes in social attitudes can bring about more abrupt shifts in urban structure, than changes in travel budget", said Professor Prokopenko.

According to Prokopenko, the transition of cities between different patterns of urban settlement has become a central problem in urban planning.

He continued, "Recently, the Greater Sydney Commission revealed a plan to transform Greater Sydney into a tripartite metropolitan area: a western parkland city, a central river city around greater Parramatta, and an eastern harbour city.

"Our study shows that a transition to such a tripartite urban structure is likely to be volatile and needs to be approached carefully.

"Nevertheless, urban planners informed by quantitative models may succeed in steering this transformation and exploiting the resultant gain in efficiency," he concluded.

More information: Emanuele Crosato et al, On critical dynamics and thermodynamic efficiency of urban transformations, *Royal Society Open Science* (2018). DOI: 10.1098/rsos.180863

Provided by University of Sydney