The Internet brings people into big cities, new study suggests
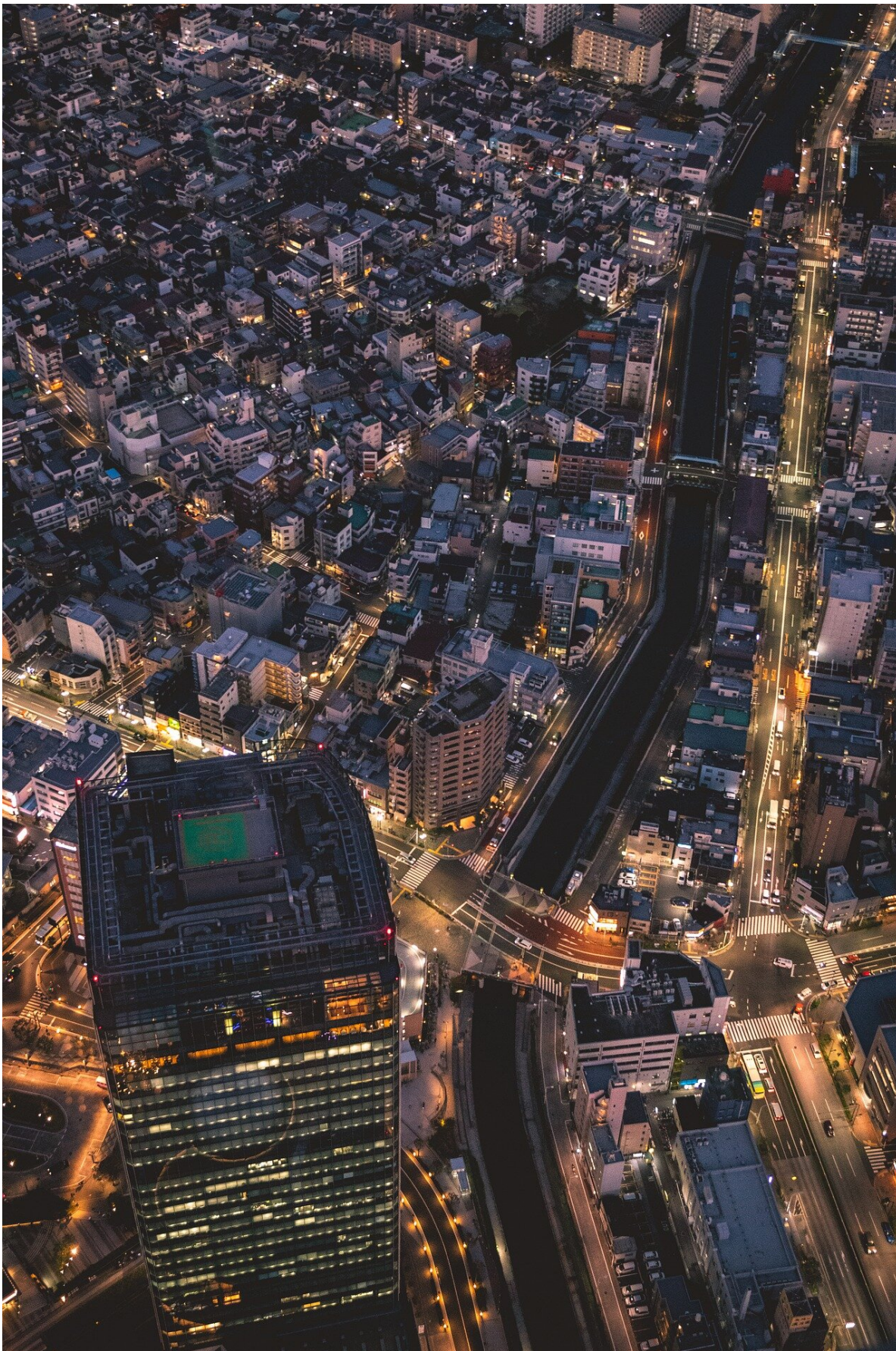
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The widespread proliferation of the internet and information and communication technologies (ICT) has drawn people into urban centers, according to new research.

Despite being able to access data at the drop of a hat or speak face-to-face to people on the other side of the world, the evolution of technological capabilities hasn't led to an exodus from cities. In fact experts at the University of Bristol have found quite the opposite; that the increased adoption of ICT has resulted in national urban systems—cities within a country—that are characterized by higher population concentrations.

Traditionally, firms in similar fields are known to cluster together to reduce productions costs—a pattern known as economies of agglomeration. However as cutting-edge digital technologies have matured considerably, their impact has not been to disperse urban populations but instead reinforce them. The findings, published today in the scientific journal *PLOS ONE*, suggest that ICT adoption and the accumulation of businesses in city center are complementary rather than substitutable.

Dr. Emmanouil Tranos of Bristol's School of Geographical Sciences and Yannis M. Ioannides of Tufts University in Massachusetts tested the effect of internet usage and internet speed on the changes over time in rankings of micropolitan and metropolitan areas in the US, and of built-up areas in the UK for their research.

Dr. Tranos, lead author of the paper, said: "Geographers, planners and urban economists explored the spatial footprint of the internet at its early stages. Their theories were conjectural and even fanciful then, and included the emergence of telecottages, borderless countries and even the end of cities.

"Today, 25 years after the commercialization of the internet, we know that those narratives overstated the potential of the internet and other digital communication technologies to supplement face-to-face interactions and diminish the cost of distance. The high and steadily increasing urbanization rates prove otherwise.

"The results instead favor a complementary relation between the internet and agglomeration externalities, meaning the internet and ICTs have not pushed people out of big cities, but rather attracted more people towards them."

The researchers hope that these findings will be able to inform urban policy going forward. The ability of the internet and digital communications to further enhance agglomeration economies can be used as a tool to support urban growth. In addition, the indication that such effects might be stronger for smaller and less dense urban areas, at least in England and Wales, might be helpful to further orient digital strategies towards such locations.

Dr. Tranos added: "Although this paper was written before COVID, the results are highly relevant for the current period when internet and digital technologies have supplemented face-to-face interactions.

"The next steps involve assessing the changes that the rapid digitalization, caused by the pandemic, may create to cities and urban systems."

More information: "Ubiquitous digital technologies and spatial structure; an update" *PLOS ONE*, 2021.

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