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Make good use of big data: A home for everyone

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ABSTRACT

The ongoing COVID-19 pandemic should teach us some lessons at health, environmental and human levels toward more fairness, human cohesion and environmental sustainability. At a health level, the pandemic raises the importance of housing for everyone particularly vulnerable and homeless people to protect them from the disease and against other similar airborne pandemics. Here, I propose to make good use of big data along with 3D construction printers to construct houses and solve some major and pressing housing needs worldwide. Big data can be used to determine how many people do need accommodation and 3D construction printers to build houses accordingly and swiftly. The combination of such facilities- big data and 3D printers- can help solve global housing crises more efficiently than traditional and unguided construction plans, particularly under environmental and major health crises where health and housing are tightly interrelated.
owner and who needs a home (i.e. tenant or homeless); a kind of formal census on people who need housing and people who do not, based on ownership/rental records. Such census, however, might raise some privacy issues that should be respected in all circumstances in a good balance between providing adequate service and fulfillment to privacy protection laws. Once the number of people in need of accommodations is known, and predicted for future needs too, the authorities of urban development can set up urban plans for house construction to meet the housing projected needs. To build houses more efficiently than traditional construction ways, the industry of 3D construction printers can be considered in current and future city construction plans. While this industry is not yet fully optimized for house construction/printing, it can be a solution of choice for the future- along with big data- to solve housing crises worldwide over the upcoming years. Big data will allow to determine how many people would need homes at a city’s or a country’s level, and 3D house construction printers will allow to build houses accordingly and rapidly.

It is somewhat surprising to see wealthy countries tremendously investing in less priority fields than housing citizens where thousands of people are still homeless and/or living in substandard houses particularly under harsh weather conditions or pandemic diseases. The current worldwide Corona Virus Disease 2019 (Covid-19) and its subsequent lockdown highlight the paramount need to solve home crisis for those who have no adequate accommodation. Homelessness is a collective responsibility that is still failing to be tackled efficiently even in the most developed countries (Lancet, 2019). Investments to fulfill people’s basic needs and to treat health issues should be on the top priorities in all countries. Big data and 3D housing printers can solve housing crisis more efficiently than ever.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References

Allam, Z., & Dhunny, Z. A. (2019). On big data, artificial intelligence and smart cities. Cities, 89, 80–91.
Bunders, D. J., & Varró, K. (2019). Problematizing data-driven urban practices: Insights from five Dutch ‘smart cities’. Cities, 93, 145–152.
Cirillo, D., & Valencia, A. (2019). Big data analytics for personalized medicine. Current Opinion in Biotechnology, 58, 161–167.
Fitzgerald, R. C. (2020). Big data is crucial to the early detection of cancer. Nature Medicine, 26(1), 19–20.
Guo, H.-D., Zhang, L., & Zhu, L.-W. (2015). Earth observation big data for climate change research. Advances in Climate Change Research, 6(2), 108–117.
Kassens-Noor, E., Vertaalka, J., & Wilson, M. (2019). Good games, bad host? Using big data to measure public attention and imagery of the Olympic games. Cities, 90, 229–236.
Lancet (2019). Housing and homelessness as a health crisis. Lancet (London, England), 394(10205), 1206.
Lim, C., Kim, K.-J., & Maglio, P. P. (2018). Smart cities with big data: Reference models, challenges, and considerations. Cities, 82, 86–99.
Liu, W., et al. (2020). The geography of human activity and land use: A big data approach. Cities, 97, 102523.
Martin, A., Julián, A. B. A., & Cos-Gayón, F. (2019). Analysis of twitter messages using big data tools to evaluate and locate the activity in the city of Valencia (Spain). Cities, 86, 37–50.
Moustafa, Khaled (2017). A clean environmental week: Let the nature breathe. Science of The Total Environment, 598, 639–646. https://doi.org/10.1016/j.scitotenv.2017.04.068.
Moustafa, Khaled (2018). Eating in public transportation: A behavior to avoid for health and sanitary purposes. La Presse Médicale, 47(7–8), 606–610. https://doi.org/10.1016/j.lpm.2018.05.015.
Moustafa, Khaled (2020). Lessons to Learn from COVID-19. Oman Med J. 35(4), Article e159. https://doi.org/10.5001/omj.2020.81.
Pendry, K. (2015). The use of big data in transfusion medicine. Transfusion Medicine, 25(3), 129–137.
Qian, T., Zhu, S., & Hoshida, Y. (2019). Use of big data in drug development for precision medicine: An update. Expert review of precision medicine and drug development, 4(3), 189–206.
Zhao, P., & Hu, H. (2019). Geographical patterns of traffic congestion in growing megacities: Big data analytics from Beijing. Cities, 92, 164–174.