Assignment 2

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| *Word Count (excluding list of references):* | *992* |

This essay will discuss about the paper “Stratifying and predicting patterns of neighbourhood change and gentrification: An urban analytics approach” based on the given questions

# Describe the epistemological orientation of the author(s)? What aspects of the study can you associate with specific epistemological paradigms

Gentrification is defined as increasingly middle-class people shifting into working-class neighborhoods, which drives up real estate prices and displaces lower socioeconomic residents from these areas (Hamnett, 2003; Lees et al., 2008). The author primarily applies positivism as an epistemological orientation. In the research process, they seek to develop an objective evidence base and emphasize quantitative analytical methods and secondary data. Moreover, using machine learning to understand Gentrification's characteristics and their topological relation. In a word, they identified Gentrification's generality pattern by interpreting and examining empirical materials. Meanwhile, this positivist research is quantitative and ecological. The research uses neighborhoods as the unit of analysis to classify and characterize communities. From this aspect, this research is related to "Geodemography ". Geodemography is a research method that studies the taxonomy of communal generative communities based on comprehensive features composed of characteristics of residents, visitors, or the built environment.

# How to the authors attempt to study neighbourhoods in their characteristics in their study?

This study's research goal was to identify, classify, and predict gentrification areas correctly. To achieve this goal, the authors completed three subtasks. First, design a method for determining and allocating gentrified areas versus non-gentrified ones. Second, predict which neighborhoods are potential gentrification areas. Third, ultimately, establish a repeatable workflow.

The research set the study area scope to London and collected data through three different sources, including ONS, GLA, and CDRC. The analysis process covers four specific stages in total. In the first stage, the author creates a single composite index variable that describes the socio-economic level based on four selected variables. This composite index divides all the LSOAs into three categories as individual outcomes. After this, the second stage only extracts ascending LSOAs areas for analysis. To identify gentrifying areas, the author clustered ascending LSOAs based on nine other change variables and one status variable. The results represent three clusters with significant socio-economic sense: gentrification, incumbent upgrading, and re-urbanization. However, the research only focuses on the gentrification areas to recognize their potential typologies with K-means clustering in the third stage. In the final stage, the author combed typologies with 2001-2010 input variables as input for the random forest classifier, enabling the prediction of the future gentrifying LSOAs.

# Given your answer above, reflect on the strengths and limitations of the study. What spatial and social processes are considered or not considered?

Strengths

The author accurately identified the gentrification neighborhood area as the research object, which laid the foundation for the subsequent multi-stage process. Meanwhile, gentrification is identified with a hierarchical structure framework and explained with specific variables in each stage.

Machine learning enables authors to analyze the data on gentrification from 2001 to 2010, which overcomes the problem of cross-sectional output data due to the interval of census data. Therefore, it constructed a solid framework for understanding the continuous process and patterns of gentrification. However, the results are easily affected by changes in the social process due to the longitudinal nature. Therefore, the author introduced different variables in each stage to reduce the potential error.

The workflow proposed by the author is reproducible. Furthermore, the method code and visualization tools are shared on Github, which promotes open science practice and is very helpful for interdisciplinary learning.

Limitations

Although the author considers multiple scales (neighborhoods, cities) from the spatial perspective, the visualization result could be more evident. Visualization should consider gentrification patterns spatially at micro-, meso-, and macro-scales and map corresponding analysis results.

The methodology of this study has inherent flaws in the positivist paradigm. Firstly, this research lacks consideration of social processes' subjective and hermeneutic aspects. In addition, the subjectivity of individual life is not adequately considered. According to Bourdieu (2008), a person's taste can lead, for example, in housing, art, and food, as the expression of social experience and learning processes is seen as social production. However, these subjectivities' relevance to gentrification patterns has yet to be explored.

The solid spatial framing of the problem set in the research neglects consideration of the broader social context. Moreover, the framework may lead to group fallacy since there is no examination of whether population data would hide variation. The variation may be caused by other factors, as Rowland (2002) found that harassment and eviction, community conflict, and loss of affordable housing will also impact the gentrification process.

# Do you think the authors achieve their research objective? What additional work may be done to contribute to the research field of this study?

The authors achieved three stated research goals. However, two types of comprehensive research using the results of the current study will be discussed.

By identifying and predicting the potential gentrification, additional work could be developed related to individual correlations. For example, by identifying and predicting the potential gentrification, further research could focus on the neighborhood characteristics of individual health in London and provide a systematic assessment of potential health effects. Similar studies have been conducted in the United States by Alinade et al. (2002); their research demonstrates the impact of gentrification and neighborhood socioeconomic rise on the US public health and healthcare domains, although these two domains do not explain the neighborhood change process perfectly.

The social problem caused by gentrification could be discussed—the most typical phenomenon is displacement. Displacement includes the phenomenon of indirect replacement caused by rent or home price increases, which is a concern for planners and policymakers (Marcuse, 2015). Further study could attempt to define and measure this causal relationship. This research process can be broken down into two parts. 1) Investigate the socioeconomic characteristics difference between immigrants and emigrants. 2) pair socioeconomic and demographic data with physical surveys of neighborhood conditions or residents' perceptions, reducing the flaw of ignoring individual subjectivity in the research.

# References

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