

Analysis of Regional Safety Index Based on Public Data: Focusing on Suwon City

Mun-kyu Lee

Department of Electrical and Computer Engineering, Sungkyunkwan University,
Suwon 16419, Republic of Korea
munkyu@g.skku.edu

Ye-seul Jeong

Software developing group, CASELab co.
Ltd., Suwon , Republic of Korea
dptmf35@caselab.co.kr

Tae-yong Kuc

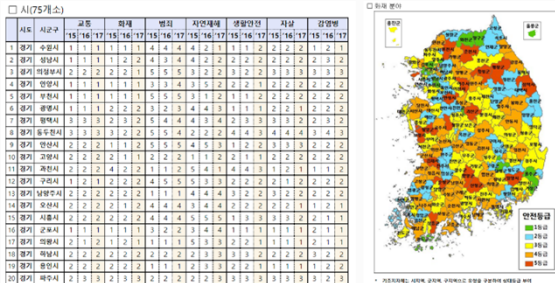
Department of Electrical and Computer Engineering, Sungkyunkwan University,
Suwon 16419, Republic of Korea
ty.kuc@skku.edu

Introduction

This paper proposes a model to predict the correlation between crime, life safety, and regional safety indices in Suwon-si, Gyeonggi-do, using public data from the National Statistical Office. The aim is to implement efficient policies by calculating their influence in advance, based on feedback such as the Ministry of Public Administration and Security's investigation of the regional safety index.

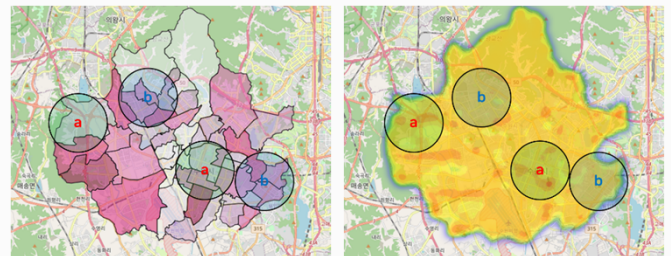
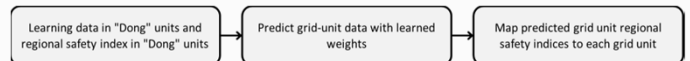
Regional safety index

The Ministry of Public Administration and Security is responsible for ensuring the safety of people from disasters and crimes through local police, firefighting, and autonomy. They collect feedback and use indicators to rank regions and implement policies. The regional safety index serves as feedback for policy review and is analyzed to solve problems in areas with low grades. Customized policies are provided through analysis of various city data.

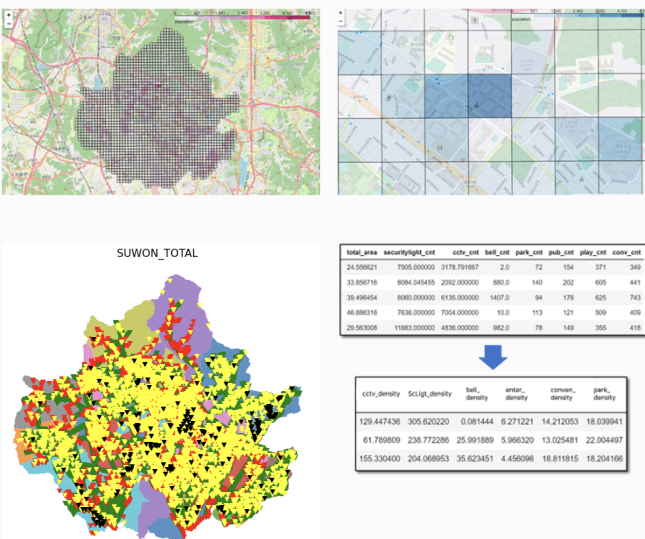


Data Analysis Process

The study aimed to improve policy decision-making by estimating the regional safety index at the grid-unit level using machine learning. The regional safety index enables various analyses, such as identifying areas with a high population but a high safety index, which may be due to transportation hubs or entertainment areas. To identify the factors that influence the regional safety index, the study analyzed controllable and uncontrollable data, such as security facilities, population, and fire occurrence. This analysis helps identify how the regional safety index can be improved by controlling controllable factors.



Define utilization data



Conclusion

The study aimed to identify and solve problems in vulnerable areas of the city by subdividing the existing regional safety index into grid units and controlling certain features through machine learning. However, the data used was limited to Suwon-si, Gyeonggi-do, and there were some errors due to a lack of proper data collection techniques. The study suggests the use of more datasets from various regions for more accurate results in future work.