

Analysis of Factors Affecting Child Safety During Primary School Commutes in Seoul



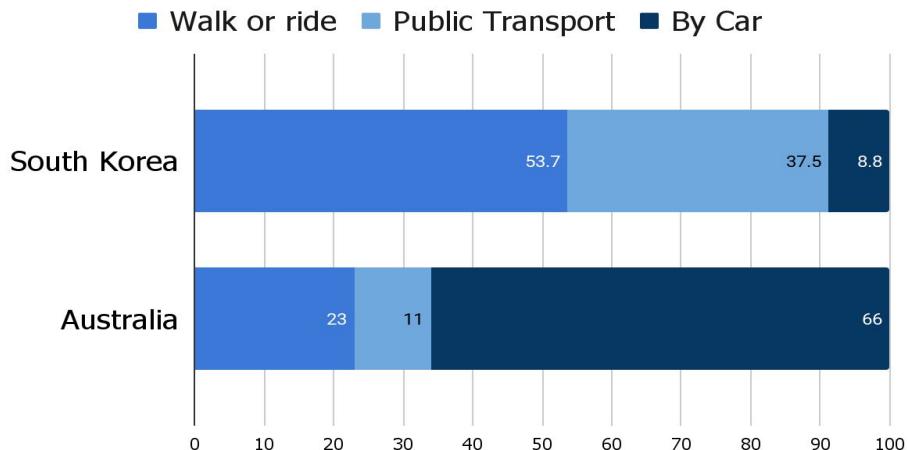
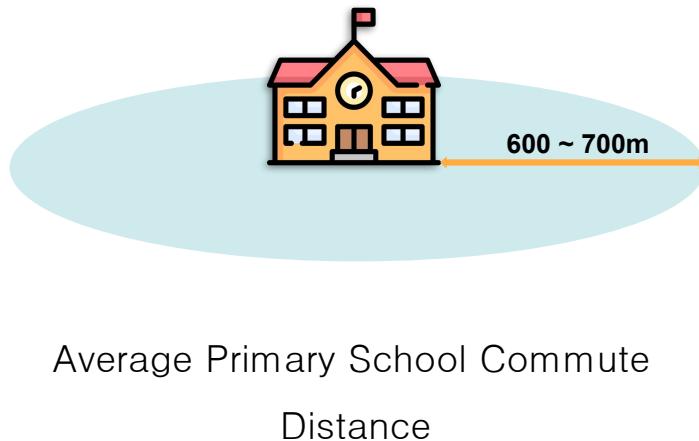
Joon (Hyunjoon Kang)
Grace (Goeun Hwang)
Sophia (Heejae Lee)

안전韓



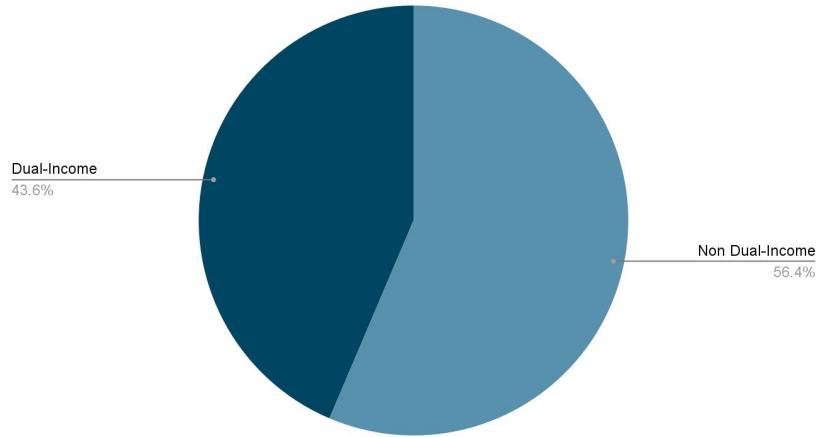
2020/06/08 06:04:05PM 13.3V 17km/h Unknown

School Commute Methods of Elementary Students in Australia and South Korea

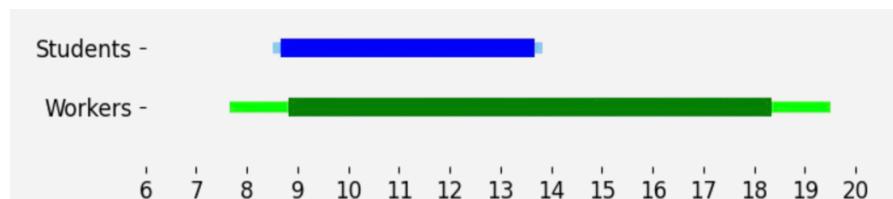


School Commute Methods of Elementary Students : Parents' Supervision?

Status of Dual-Income Households in Seoul



Comparison of School and Work Schedules



There is a significant gap between children's school start time and parents' commuting time.

Traffic conditions in Seoul



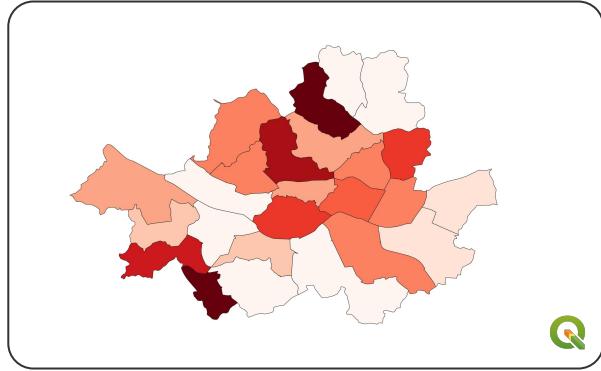
We want to know

WHAT causes accidents

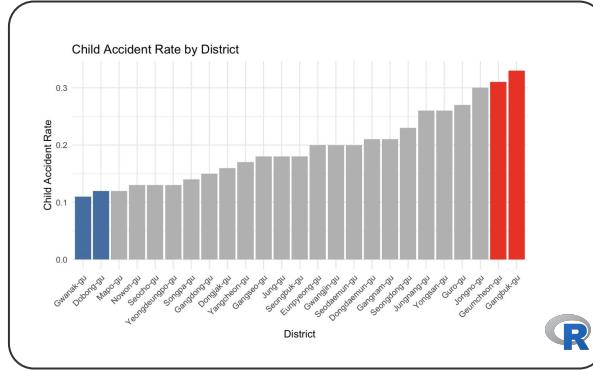


of children's commuting in Seoul

Analysis Process



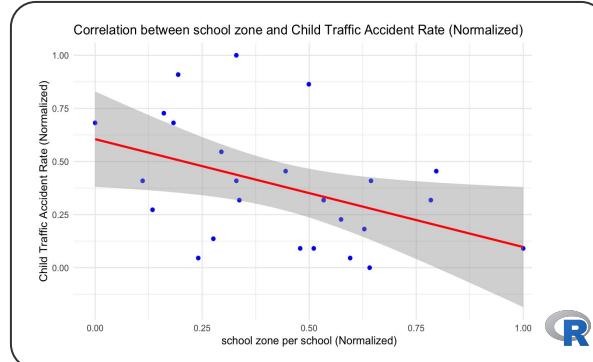
1. Analyze Child Traffic Accident Rates



2. Select Two Region With The Highest & Lowest Accident Rates



3. Explore Various Factors in Students' Commutes



4. Extract Factors Correlations

1. Analyze Child Traffic Accident Rates (Data Sources)



Seoul Children's Traffic Accident Statistics

provides key statistics on children's traffic accidents in Seoul, including accident counts, fatalities, and injuries.

[Seoul Open Data Plaza](#)

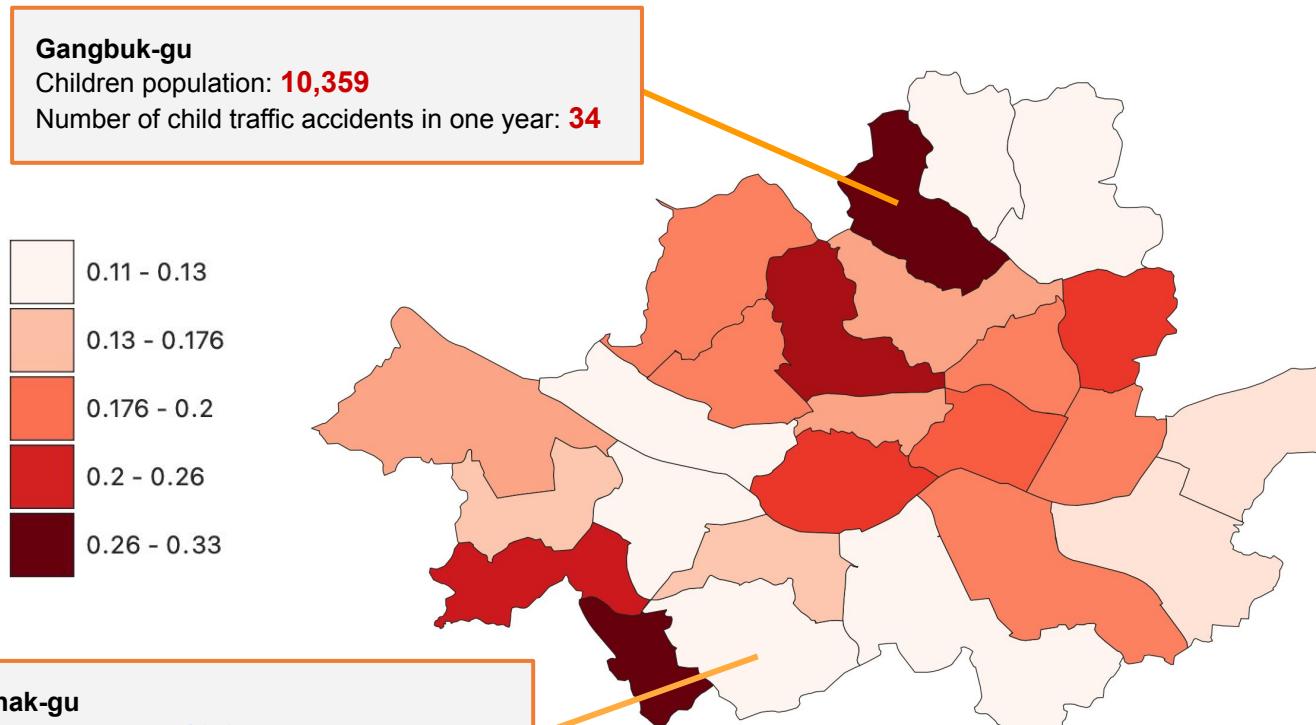


Population Status by Age and Administrative District

provides the age-specific population distribution of South Korea.

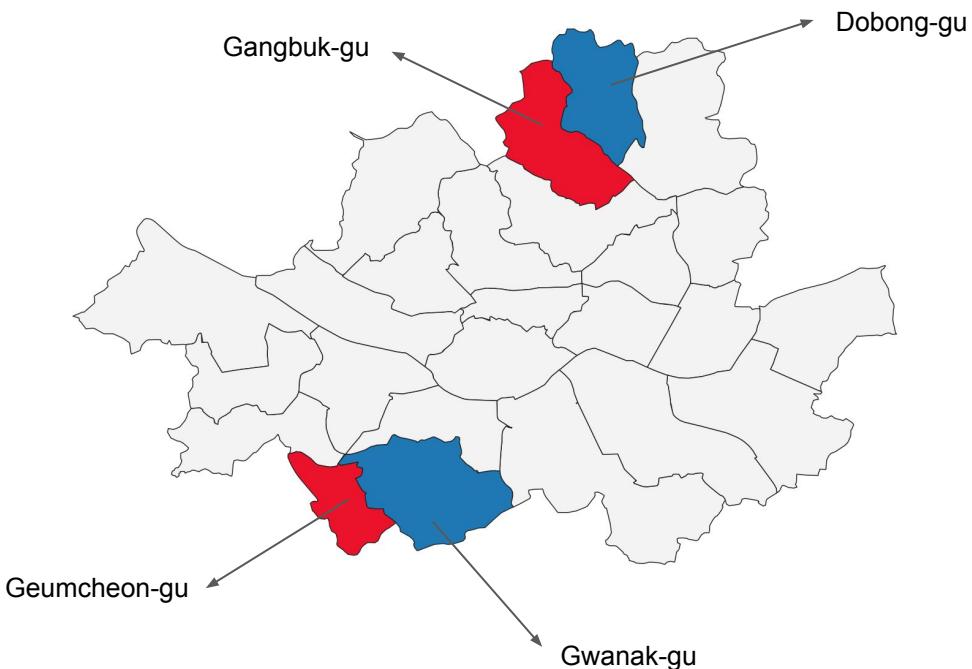
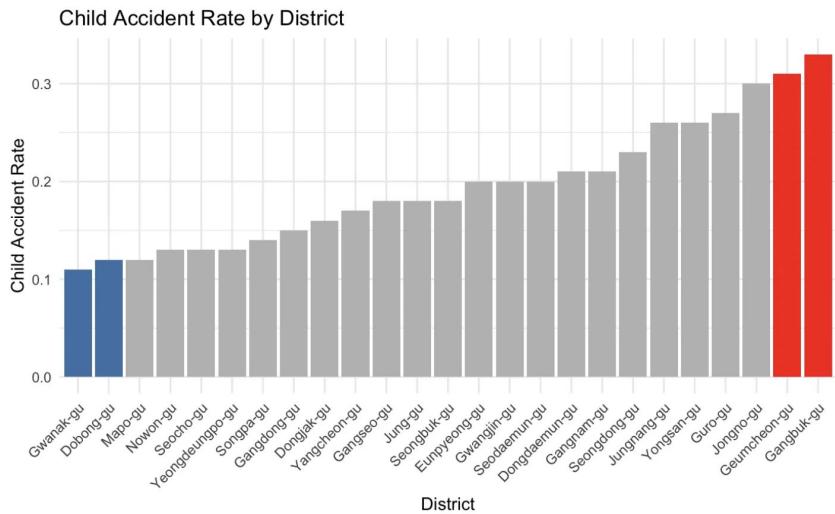
[Ministry of the Interior and Safety](#)

1. Analyze Child Traffic Accident Rates



2. Select Two Region With Highest & Lowest Accident Rates

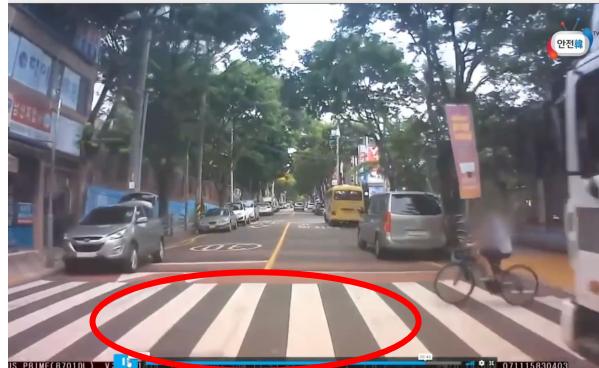
Select two areas with the highest and lowest accident occurrences.



3. Explore Various Factors in Students' Commutes



3. Explore Various Factors in Students' Commutes



1. Crosswalks



2. School Zones



3. Illegal Parkings

3. Explore Various Factors in Students' Commutes (Data Sources)



Walking Network Spatial Information by District in Seoul

Information on crosswalks, overpasses, bus stops, and subway entrances along main roads

[Seoul Open Data Plaza](#)



National School Zone Standard Data

Information on zones designated to protect children by limiting vehicle speed to within 30 km/h

[Data Portal](#)



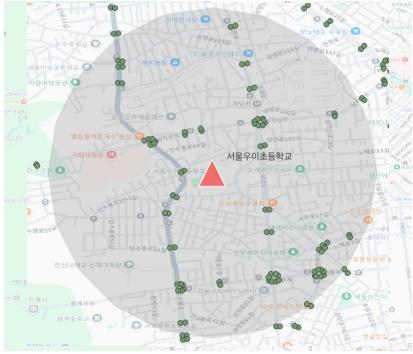
Illegal Parking Enforcements Data in Seoul

Location information of vehicles parked in no-parking zones

[Seoul Open Data Plaza](#)

4. Extract Factors Correlations: Crosswalks

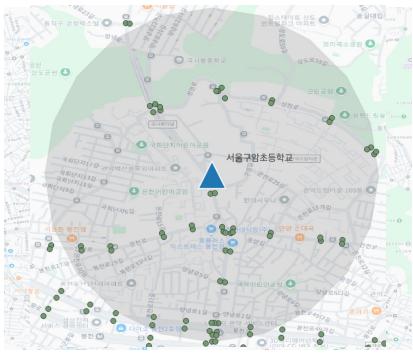
Low-accident areas tend to have less crosswalks within a 700m radius around schools.



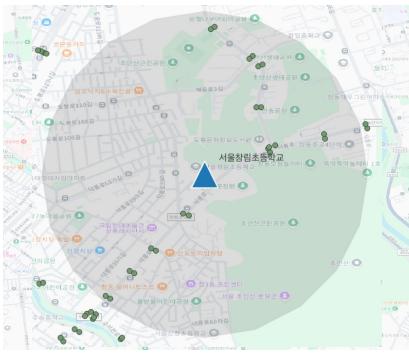
High-A



High-B



Low-A



Low-B

School	Number of crosswalks
High-A	56
High-B	39
Low-A	34
Low-B	15



High-accident areas' school



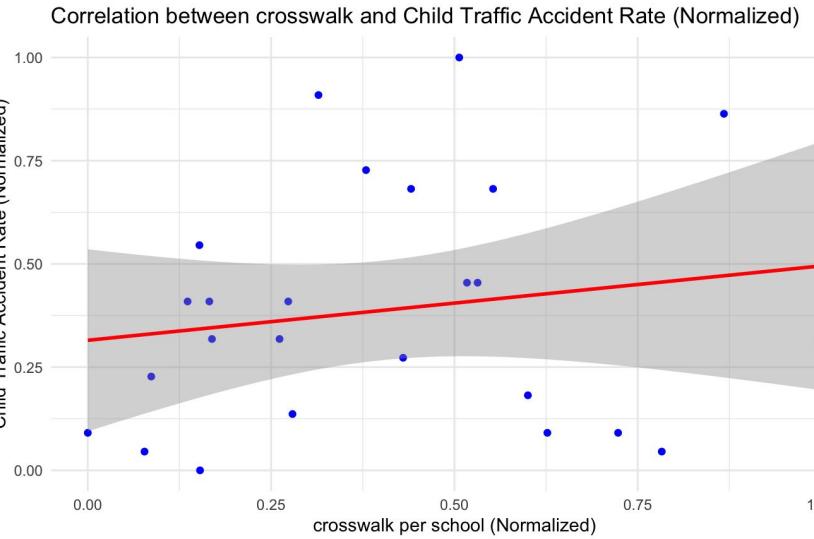
Low-accident areas' school



Crosswalk

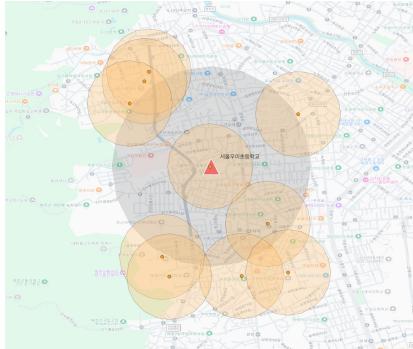
4. Extract Factors Correlations: Crosswalks

Low-accident areas tend to have less crosswalks within a 700m radius around schools.

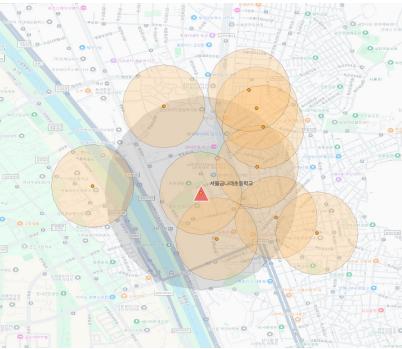


4. Extract Factors Correlations: School Zones

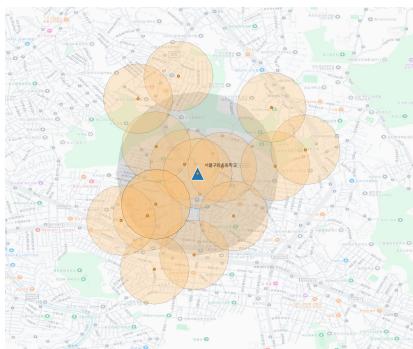
Low-accident areas tend to have more school zones within a 700m radius around schools.



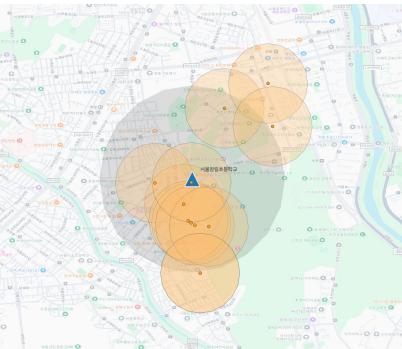
High-A



High-B



Low-A



Low-B

District	Number of school zones
High-A	6
High-B	8
Low-A	11
Low-B	11



High-accident areas' school



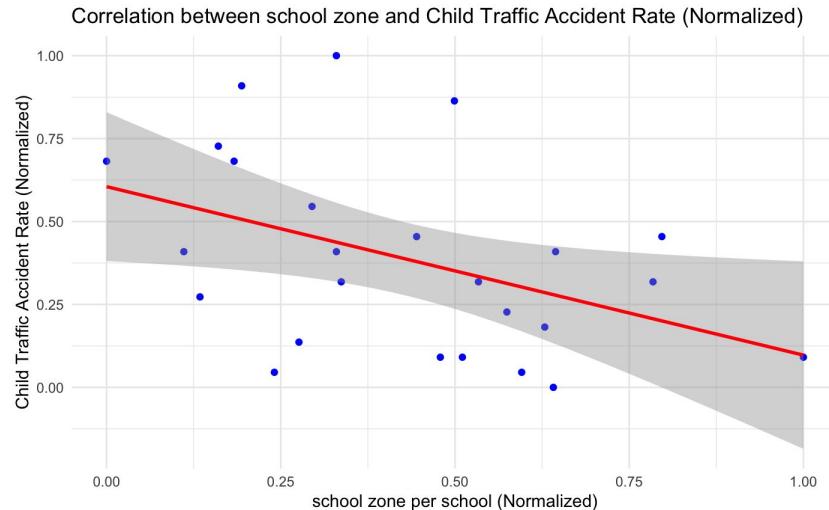
Low-accident areas' school



School zone

4. Extract Factors Correlations: School Zones

Low-accident areas tend to have more school zones within a 700m radius around schools.



4. Extract Factors Correlations: Illegal Parkings

Low-accident areas tend to have less illegal parkings within a 700m radius around schools.



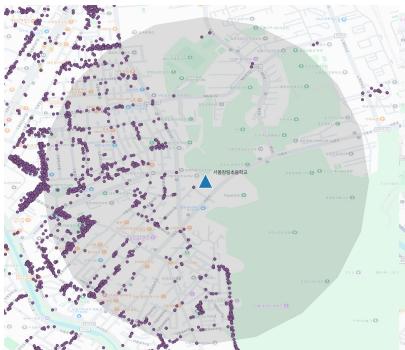
High-A



High-B



Low-A



Low-B

District	Number of illegal parkings
High-A	18,143
High-B	10,738
Low-A	11,105
Low-B	11,673



High-accident areas' school



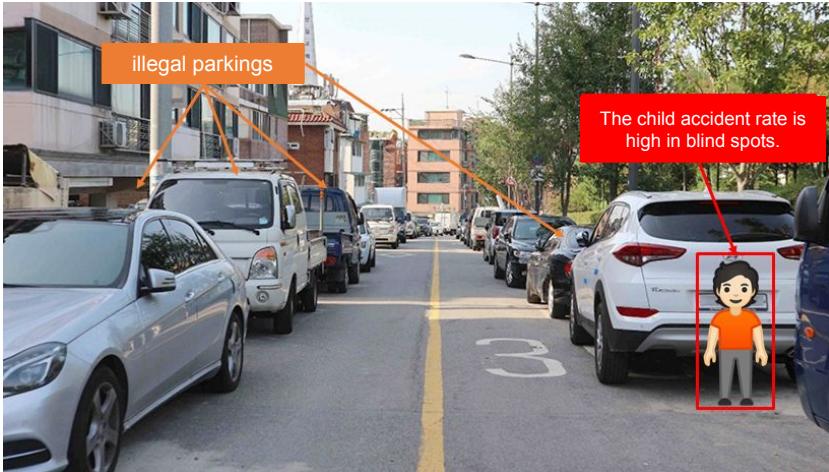
Low-accident areas' school



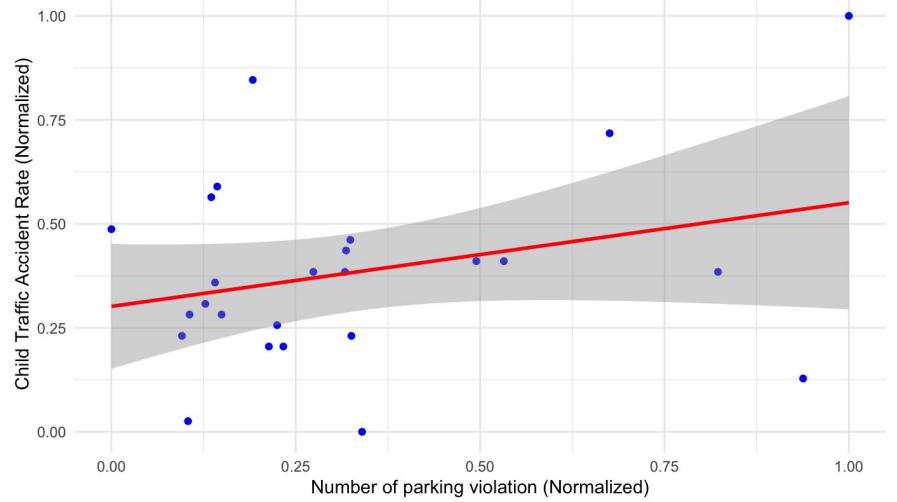
Illegal Parking

4. Extract Factors Correlations: Illegal Parkings

Low-accident areas tend to have less illegal parkings within a 700m radius around schools.

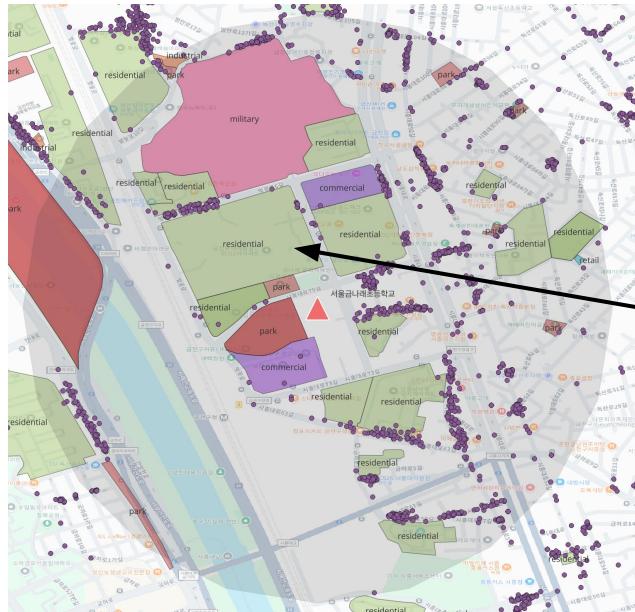


Correlation between Number of parking violation and Child Traffic Accident Rate (N)



4. Extract Factors Correlations: Illegal Parkings

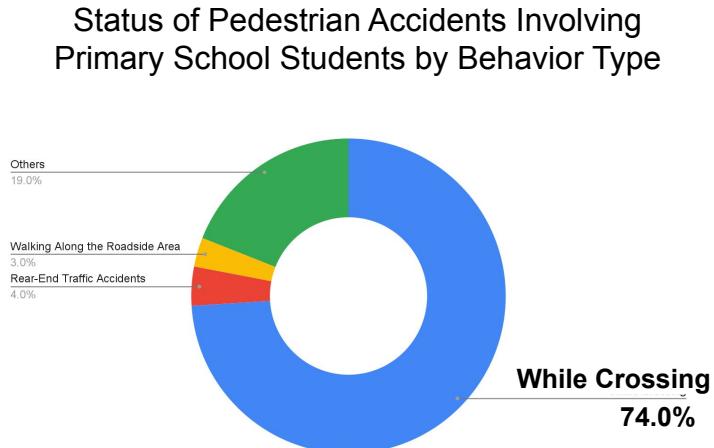
Illegal parkings tend to decrease when schools are near residential complexes, such as large apartment complexes.



District	Number of illegal parkings
High-A	18,143
High-B	10,738
Low-A	11,105
Low-B	11,673

Suggestion 1: Crosswalks

Requires and accelerates the addition of crosswalk safety assistances such as drones, robots, etc.

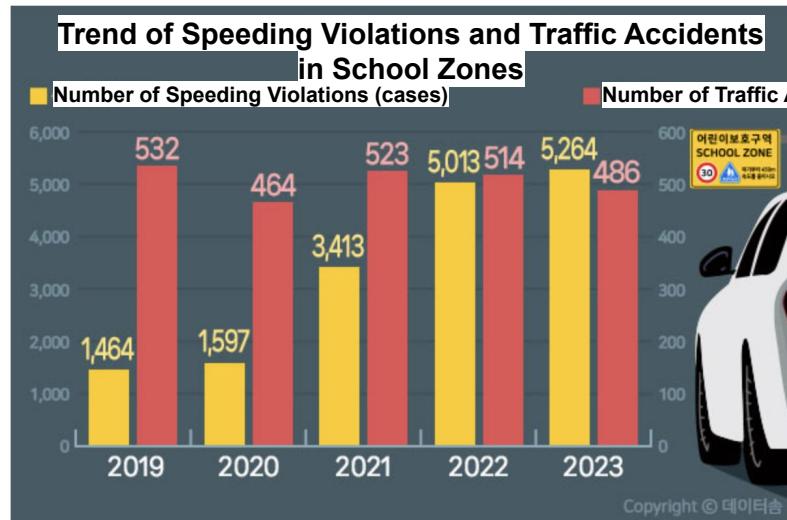


Suggestion 2: School Zones

Drivers' overall awareness and attitudes towards school zones and speed limits need to change fundamentally

School zone speed violations surge... accidents still occur

Reporter Jang Yoon-hee | Posted 2024.10.02 09:16 | Comments 0



(Data = National Assembly member Han Byeong-do's office, Korea Expressway Corporation traffic accident analysis system)

Suggestion 3: Illegal Parkings

Multi family housing around the school also seem to need adequate parking spaces



Multi Family Housing Illegal Parkings



Large Residential Complexes Underground Parking lots



Legal framework for parking spaces in residential area

Conclusion

Key Factors

Crosswalks, School zones, Illegal parking

Solutions

**Improve pedestrian and parking space infrastructure
& raise driver awareness.**

Action

Implement policies & technology for a safer walking environment.