To address the increasing concerns of pedestrian-vehicle crashes at crosswalks with pedestrian countdown signals (PCS), this study presents the field observation results of more than 3,000 pedestrians' choices at 11 urban crosswalks when they encounter the pedestrian signals. The dataset is divided into two groups based on the weighted average of violation rate (25%) to take the high variance of pedestrian violation rate across crosswalks into account. Logistic regression model is applied to identify factors that would significantly impact individual’s compliance decision. The analysis results from logistic regression show that more than 3,000 pedestrians’ choices across crosswalks have a relatively consistent set of critical factors that may contribute to a pedestrian’s non-compliance decision.

### Data Collection

- **Dominance Analysis**
  - The likelihood of the null model (i.e., $\hat{\lambda}_0$).
  - The likelihood of the fitted model with the intercept and independent variable $X_i$.

- **Results of Dominance Analysis**
  - The likelihood of the null model ($\hat{\lambda}_0$) is significantly lower than the fitted model ($\hat{\lambda}$) for each variable.

- **Logistic Regression**
  - The factors with statistical significance or signs vary between groups.
  - The factors of gender, having children, and wearing a formal dress are significant in the low-violation group.
  - The factors of age group, observing other non-compliance behaviors, and being a pedestrian are significant in the high-violation group.

- **Conclusions**
  - This study has presented the observation results of more than 3,000 pedestrians’ responses to the “Don’t Walk” message at 11 crosswalks and identified a set of critical factors that may contribute to a pedestrian’s non-compliance decision.
  - More than 3,000 pedestrians’ responses to the “Don’t Walk” message at 11 crosswalks and a set of critical factors that may contribute to a pedestrian’s non-compliance decision.