

# Poisson Analysis of Suicide in Japan using Municipal Data

Saki Sugano and Yusuke Matsuki

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## **Abstract**

This paper shows new findings about Japanese suicide in municipality level, introducing the use of regression method based on the Poisson distribution. It compares the performance of usual ordinary least-squared regression (OLS), Poisson regression and a negative binominal (NB) in a study of suicide occurrence in municipalities in Japan. Since late 1990s, economists come to pay attention to high Japanese suicide rate and economic situation in Japan. However, because of data sensitivity, individual suicide data is not opened to researchers in Japan and most of previous literature have been limited to prefectural level analysis or cross-country level analysis. This study is a pioneering work with municipality level data which was disclosed since 2009. Moreover, we introduce the methods of poisson regression for this dataset. The number of suicide is nonnegative integer and relatively rare at municipality level. Thus a Poisson regression model is more suit than OLS and this is the first empirical works on suicide in Japan utilizing a Poisson regression model. The points of this paper are both of rich data and suitable method for the data.