ECON613 Final Project Proposal

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1 Abstract

This paper documents the suicide rates among different professions in the United States. On the basis of previous descriptive research, we turn to use logit regression and conduct empirical tests. We are able to observe the correlation between professions and suicide rates when controlling individual and profession characteristics. In other words, the correlation reflects the pressure level because other characteristics of professions are potentially controlled. Therefore, we find that different professions will generate different levels of pressure which influence the suicide rates.

2 Motivation

Since most adults spend a lot of time on working, choice on professions can be considered as one of the important factors to analyze suicide rate. According to the study by the Centers for Disease Control and Prevention (CDC), suicide among the U.S. working-age population is increasing by 40% in less than two decades. Nearly 38000 persons in working-age died by suicide in 2017. Finding how professions affect suicide rate is the foundation to prevent suicide during working time. Previous studies have described that people who works in certain fields like farming and fishing field will have highest suicide rate because of profession's characteristics. However, these studies lack empirical tests and other factors besides the occupation choice may also affect the risk of suicide. Therefore, it is significant to analyze the correlation between suicide rate and professions under the control of individual and profession characteristics by using regressions.

3 Literature Review

• The cause of suicide has been the subject of heightened concern. Researchers Phillips & Hempstead (2017) claimed that people with high school degrees had the highest suicide rate. Other Studies found that the male suicide rate was

four times that of women in the US and divorced persons had higher risks of suicide than married people (Murphy, 1998; Kposowa, 2000).

• McIntosh et al. (2016), and Windsor-Shellard & Gunnell (2019) have found that low-skilled occupations like construction and extraction had a higher rate of suicide. Lee et al. (2020) concluded that working long hours had a higher risk of suicide in Korea by connecting the employed workers who have participated in the Korean National Health and Nutrition Examination Survey and the Korea National Statistical Office's death registry data.

•However, since these studies focused on the impact of individual and occupational determinants on the suicide rate, it was unknown whether the profession itself was the cause of the higher suicide rate, and this problem was worth in-depth study.

4 Research Design

We plan to use the mortality data from National Center for Health Statistics, as well as data specifying other profession characteristics like salaries. Our empirical part can be divided into four parts.

Firstly, the basic descriptive fact would be presented. It is shown that different professions have strikingly different suicide rate. What we try to do in the following parts is to identify if professions themselves would contribute to such correlation.

Secondly, we will apply logistic model to capture the effects of individual characteristics on suicide decision. Such data will be extracted from the mortality data and the dependent variable will be a binary variable of death because of suicide or not. The independent variables include age, educational level, gender, etc. ($Suicide = \beta_0 + \beta_1 Age + \beta Educ + \beta_3 Male + \epsilon$)

Thirdly, we add the variables that were significant in step 2 and regress professions on their suicide rates. The suicide rate would be a continuous variable and the profession indicators would be binary variables. In addition to this, other variables that are clearly related to occupation such as salary and average working hours will be included in the model. The different data will be integrated by profession. With all other factors being controlled, we can capture the effect of unobserved profession characteristics, in other words, the pressures of occupations which are hard to quantify.

Fourthly, we use identification strategy of regression discontinuity to verify the causal relationship. We can classify occupations into several broad categories, such as manual work, intellectual activities, and office work. If similar occupations were clustered and distributed in similar positions in the regression, we can claim that the causal relationship holds.