**NATIONAL RESEARCH UNIVERSITY HIGHER SCHOOL OF ECONOMICS**

FACULTY OF ECONOMIC SCIENCES

BACHELOR’S PROGRAMME ECONOMICS

**PROJECT PROPOSAL**

**CAN WE INSURE OUR HAPPINESS?**

Daeun Han, BEC184

Advisor:

Vitalijs Jascisens, Assistant Professor

Department of Applied Economics

MOSCOW

2022

**Introduction**

# Problem Statement.

# Happiness or subjective well-being of older adults has become a crucial problem for an aging society (WHO 2021). While population ageing began in high-income countries (for example, in Japan, around 30% of the population is over 60 years old, according to Statistical handbook of Japan 2021), the largest change is presently occurring in low- and middle-income countries. Therefore, all countries confront significant hurdles in ensuring that its health and social systems (pensions, healthcare, and long-term care systems) are prepared to make the most of this demographic transformation (International Labor Organization 2014; WHO 2021).

Over the previous century, many countries have made significant progress in upgrading their social insurance systems, and a considerable amount of literature has been published on the effect of social insurance on the health (Bailey & Goodman-Bacon 2015; Kim & Kwon 2014; Timmermans, Orrico & Smith 2014; Pak 2021). Yet, the literature related to the effects of social insurance on happiness or subjective well-being is limited.

In this paper we investigate the impact of the National Health Insurance expansion reform on older individuals' happiness. We use South Korea as an example: rapid population aging [[1]](#footnote-1), old age poverty, high suicide rate[[2]](#footnote-2), and low life satisfaction of Korean seniors, as well as health insurance with universal health coverage, make this country an ideal testing ground to see how mental health coverage affects seniors' life satisfaction and mental health.

We use panel data on social security benefits, subjective well-being measures, and socioeconomic status from the Korean Longitudinal Study of Aging (KLoSA), which covers the whole Korean population over 45. These figures span a 15-year period, from 2006 to 2020.

# Background: National health insurance

Korea's social security system is made up of three parts: social insurance, public assistance, and social welfare services. The social insurance system is a system that guarantees the health and income of the people by coping with the social risks that occur to the people through the insurance method. Social risk means disease, disability, old age, unemployment and death. These social risks are factors that make the economic life of social members and their dependents unstable. Therefore, the social insurance system anticipates and responds to social risks, thereby ensuring the people's economic life.

When it comes to mental health, many Koreans still find it difficult to walk through the doors of a hospital. To change this perception and reduce the economic burden, health insurance benefits have been expanded to include mental health. Mental health insurance coverage has been in effect since July 2018. From July 1, 2018, the co-payment has been reduced when consulting a psychiatrist. In the case of individual counseling centered on treatment, the out-of-pocket cost was reduced from 11,400 won ($9.30 USD) to 7,700 won ($6.28 USD). In addition, the cognitive behavioral therapy costs required for panic disorder and post-traumatic stress disorder were reduced to 16,500 won ($13.46 USD) per time. The cost of therapy before application is 50,000 ($40.80 USD) to 260,000 won ($212.17 USD) per therapy, which is 3 to 16 times the reduced price.

# Professional significance. Firstly, we will contribute to the empirical literature on the approach using the difference-in-difference method. Secondly, our results may be helpful to policymakers to improve quality and access to health security program.

# Literature Review

Previous research has shown that social security systems such as social pensions and health insurance have a positive impact on people's health and health treatment. Pak (2021) investigated the influence of social pension growth on the health of older individuals in order to better understand the mechanics of national pensions and their impacts. The author used data from the Korean Longitudinal Study of Aging to create difference-in-difference models in which the treatment group is made up of people over 65 who are eligible for a social pension and the control group is made up of people under 65. In 2014, a basic pension expansion reform was carried out. The results showed that after the reform, there was an average decline of 8-9 percent in the number of people who were depressed. Furthermore, expanding basic pensions has a positive impact on mental health by increasing financial satisfaction. On the other hand, national pension expansion did not affect grip strength and self-rated health, i.e. physical health. Author relates it to the small effectiveness of the reform, as written in Ruger and Kim (2007). According to Ruger and Kim (2007), this indicates that Basic Pension brings the small amount of benefits. Although the healthcare system is universal, people still bear high out-of-pocket expenses, so some of them forgo necessary medical services. People who have multiple chronic conditions or who need to undergo surgery or rounds of expensive treatments over an extended period of time are more likely to avoid paying for healthcare. Although doubling the monthly allowance was a significant improvement over the previous plan, the additional benefits of Basic pension may not be enough to meet unmet healthcare needs. Beneficiaries may have instead spent their pension on relatively low-cost medical services, such as local clinic visits and oriental medical services, which may improve quality of life but are unlikely to improve physical strength or self-rated general health.

Kim and Kwon (2014) investigated how the expansion of cancer patients' benefit coverage affects income-related disparities in health-care utilization. The government began vigorously implementing programs to enhance National Health Insurance (NHI) benefit coverage around 2005. In 2005, the NHI system cut cost sharing for catastrophic illnesses including cancer and cardio-cerebrovascular diseases from 20 to 10%, and the benefit package for cancer patients was enlarged to cover sophisticated therapy and pricey medications. Researchers compared cancer patients as a treatment group with liver disease patients as a control group using the triple difference approach on claims data from the National Health Insurance Program (NHI) from 2002 to 2004 and 2006 to 2010. The extension of NHI benefits coverage led to an increase in outpatient care utilization among cancer patients across all income groups, but with a bigger rise among low-income groups. Following the expansion of NHI benefit coverage for cancer patients, low-income patients used more outpatient and inpatient health services than high-income patients. Furthermore, the strategy resulted in a lower decline in inpatient care utilization for the low-income group, whereas it decreased for other income levels. It's possible that the gain in equality is due to the fact that low-income people are particularly sensitive to cost-sharing. Low-income people had to pay a larger proportion of their income than high-income people, even though the cost was the same, therefore copayments were a bigger deterrent for the poor than for the rich in using health care. At the same time, high-income people are more likely to buy supplemental private insurance, resulting in a lower net price. As a result, expanding the benefit coverage of public health insurance can reduce the impact of private insurance while improving equity in health care utilization. Overall, the authors conclude that the extension of NHI benefits coverage improved income-related equality in health care utilization, favoring low-income patients.

The volume and distribution of asset holdings, as well as consumption, are heavily influenced by social insurance schemes (Gruber and Yelowitz 1999). The constraints of the United States' Medicaid program, according to Gruber and Yelowitz (1999), are a primary predictor of low-income households' savings behavior. The Medicaid program reduced the wealth of eligible households by almost 16 percent in 1993. According to studies, the Medicaid program not only reduced savings but also increased consumption among qualified low-income households. However, there is significant skepticism about using social insurance policies alone to explain the level and distribution of wealth in the United States. Overall, the authors suggest that Medicaid has a little impact on asset ownership.

A number of studies have begun to examine factors of elderly adults’ depression like socioeconomic status. Park et al. (2017) studied the depression in South Korea by comparing the prevalence of depression diagnosis between Medical Aid and health insurance beneficiaries in an outpatient setting in Korea. Medical Aid recipients were more likely than health insurance recipients to be diagnosed with depression, according to the findings. Because low-income families are eligible for the Medical Aid program, it's probable that socioeconomic status has an impact on the occurrence of depression. At the same time, variables like being a woman and living in a rural area were linked to a higher risk of depression diagnosis. The fact that people in rural locations have a higher risk of depression could be attributable to their lower socioeconomic level. Jones and Urasawa (2014) illustrate that poverty in South Korea is concentrated among the elderly. Korea's old population had an average income of only 60% of the national pay, significantly below the OECD average of 86 percent. Following disease and incapacity, economic hardship is the second most common reason for older people considering suicide. The high poverty rate among the elderly is linked to a drop in family assistance before other private and state sources of old-age income develop. Korea's rapid population aging has left it less equipped than many OECD countries, where population aging and the establishment of public pension systems took place over time. Overall, it is important to take into consideration socioeconomic status, social relationship, and health status to examine the effect of social insurance on mental health of elderly people.

**After reading your literature review I do not .understand what is your contribution.**

# 

# Methodology

# Data. Korean Longitudinal Study of Aging (KLoSA) was conducted in 2006 by sampling and surveying general household residences among middle-aged and older adults aged 45 and over living in areas other than Jeju Island. The ageing research panel aims to measure and understand the social, economic, psychological, demographic and health status of the elderly and produce primary data that policymakers will use to establish effective socio-economic policies.

# The original sample was 10,254 randomly sampled persons aged 45 and over (born before 1961) nationwide except Jeju Island in 2006. Primary surveys were conducted biennial, and six follow-up surveys have been completed. In the fifth survey, a sample of 920 people born in 1962 or 63 was newly added. The original panel in 2006 is called the existing panel, and the fifth additional sample is called a new panel. The sample retention rate of the current panel showed a stable trend at 77.6% as a result of the seventh follow-up, and the number of valid samples that can be analysed is 6,136. In the case of new panels, three surveys have been conducted so far, the sample retention rate is 89.4%, and the adequate sample size is 804. Therefore, the combined sample that participated in the seventh introductory survey was 6,940, and the number of deaths was 551 (successful death survey). In 2020 the eighth primary survey was completed.

# Measures of mental health. As variables for mental health, the depression status variable and the depression scale CES-D10 were used. The depression status variable is whether or not the person has experienced depression continuously for two weeks or more in the past year. If individuals respond ‘experienced’ and ‘took an antidepressant’, it is judged that they have depression. This variable was in the 1st~4th survey, but it was deleted in the 5th~6th. The variable was restored in the 7th for linkage.

# KLoSA's 1st~4th wave CES-D10 questions were extracted from the Korean version of CES-D 20 (Anderson form), and the 5th and subsequent CES-D 10 (Boston form) was developed for the elderly chronically ill. This is the Korean version of CES-D10d, abbreviated and used in Korean among the 20 questions of CES-D in the United States.

**Treatment and control group.** The mental health effect of the health insurance reform is estimated by comparing changes in health outcomes of the treatment and control groups before and after the reform in 2018. We use a linear difference-in-difference (DD) model. People diagnosed with depression (depression status variable = 1) are assigned to the treatment group, and control group consists of people who do not suffer from depression. As the changes were related to only national health insurance beneficiaries, the Medical Aid beneficiaries were excluded. Data from 2018 - 2020 was used.

**Control variables.** We use control variables in order to solve the selection bias problem. As control variables, the frequency of meeting close people, economic status, education, current number of surviving children, marital status, age, overall quality of life, residential area were used (Park et al. 2017) .

# Results

Table 1 presents OLS estimation result for the difference-in-difference model. The results show that there is a positive effect of the reform on mental health (coefficient for interaction variable depression \* year\_2020 equals -.627). This suggests that the development of social insurance is necessary for improving elderly mental health. We can observe that education and number of children do not affect the mental health unlike other control variables.

Table 1.

Regression with mental health status.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| w08sumcesd | Coef. | | St.Err. | t-value | | p-value | [95% Conf | | Interval] | | Sig |
|  | 0 | | . | . | | . | . | | . | |  |
| Depression | 1.955 | | .121 | 16.18 | | 0 | 1.718 | | 2.192 | | \*\*\* |
|  | 0 | | . | . | | . | . | | . | |  |
| Year\_2020 | -.346 | | .029 | -11.98 | | 0 | -.403 | | -.29 | | \*\*\* |
|  | 0 | | . | . | | . | . | | . | |  |
| Depression \* Year\_2020 | -.627 | | .179 | -3.51 | | 0 | -.977 | | -.277 | | \*\*\* |
| Education | .001 | | .022 | 0.05 | | .958 | -.041 | | .044 | |  |
| Marital Status | .068 | | .016 | 4.26 | | 0 | .037 | | .1 | | \*\*\* |
| Age | .015 | | .003 | 5.78 | | 0 | .01 | | .021 | | \*\*\* |
| Social life | .135 | | .006 | 20.97 | | 0 | .122 | | .148 | | \*\*\* |
| Region | .097 | | .025 | 3.89 | | 0 | .048 | | .146 | | \*\*\* |
| Children | -.002 | | .018 | -0.09 | | .927 | -.037 | | .033 | |  |
| Economic Status | -.018 | | .001 | -18.16 | | 0 | -.02 | | -.016 | | \*\*\* |
| Constant | .684 | | .204 | 3.36 | | .001 | .284 | | 1.083 | | \*\*\* |
|  | | | | | | | | | | | |
| Mean dependent var | | 1.488 | | | SD dependent var | | | 1.895 | |  |  |
| Overall r-squared | | 0.169 | | | Number of obs | | | 10320 | |  |  |
| Chi-square | | 1736.706 | | | Prob > chi2 | | | 0.000 | |  |  |
| R-squared within | | 0.049 | | | R-squared between | | | 0.201 | |  |  |
| *\*\*\* p<.01, \*\* p<.05, \* p<.1* | | | | | | | | | | | |
|  | | | | | | | | | | | |

# 

**Reference**

Bailey, M. J., & Goodman-Bacon, A. (2015). The War on Poverty’s Experiment in Public Medicine: Community Health Centers and the Mortality of Older Americans. *The American Economic Review*, *105*(3), 1067–1104.

Gruber, J., & Yelowitz, A. (1999). Public health insurance and private savings. *Journal of Political Economy*, *107*(6), 1249-1274.

International Labour Organization. (2014). Social protection for older persons: Key policy trends and statistics.

Jones, R. S., & Urasawa, S. (2014). Reducing the high rate of poverty among the elderly in Korea.

Kim, S., & Kwon, S. (2014). The effect of extension of benefit coverage for cancer patients on health care utilization across different income groups in South Korea. *International journal of health care finance and economics*, *14*(2), 161-177.

Pak, T. Y. (2021). What are the effects of expanding social pension on health? Evidence from the Basic Pension in South Korea. *The Journal of the Economics of Ageing*, *18*, 100287.

Park, H., Song, I., & Shin, J. Y. (2017). High Prevalence of depression diagnosis among medical aid beneficiaries: a Korean health insurance database study. *Asia Pacific Journal of Public Health*, *29*(8), 692-697.

Ruger, J. P., & Kim, H. J. (2007). Out-of-pocket healthcare spending by the poor and chronically ill in the Republic of Korea. *American Journal of Public Health*, *97*(5), 804-811.

Statistics Bureau of Japan. (2021). Statistical handbook of Japan 2021. *Ministry of Internal Affairs and Communications.*

Timmermans, S., Orrico, L. A., & Smith, J. (2014). Spillover effects of an uninsured population. *Journal of Health and Social Behavior*, *55*(3), 360-374.

WHO. (2021, October 4). *Ageing and health.* <https://www.who.int/news-room/fact-sheets/detail/ageing-and-health#:~:text=Common%20conditions%20in%20older%20age,conditions%20at%20the%20same%20time>.

World Bank Group Korea Office Newsletter. (2015). *World Bank experts discuss Korea’s rapid population aging.* https://thedocs.worldbank.org/en/doc/384691483516624614-0070022017/original/KoreaNewsletter1.pdf.

Yun, S. J. (2022). NMHC jeongsingeongang donghyang vol.26 [NMHC Mental Health Trends vol.26]. *The National Mental Health and Welfare Commission.*

1. Korea's working-age population drop is among the fastest in East Asia and the Pacific region (World Bank Group Korea Office Newsletter 2015). [↑](#footnote-ref-1)
2. South Korea’s elderly suicide rate is approximately three times higher than the average elderly suicide rate in OECD countries (Jones & Urasawa 2014). [↑](#footnote-ref-2)