

# The Titles and Abstracts

## Presented on the 4th Sophia Research Workshop in Economics

The speakers' titles and abstracts are respectively.  
Each title and abstract are followed by the speaker's name.

①13:05-13:50

**Yuma Noritomo (The University of Tokyo),**

***Research Site Selection Bias: Evidence from the Peruvian Amazon***

Out-of-sample predictions may fail if study sites are purposely chosen due to research feasibility; however, evidence on their failure and the mechanism is scarce. This study analyzes the first large-scale detailed surveys in the remote Peruvian Amazon context to test “research site selection bias,” the extrapolation bias due to endogenous choice of the study site, specifically focusing on the impact of floods as a case-study. Average treatment effects (ATEs) in unresearched communities are predicted based on research-available communities, identified via systematic review, using traditional extrapolation methods. The results reveal the impacts are heterogeneous and significantly adverse for households in such communities. Although adjusting the covariate distribution improves the prediction of ATEs, the preciseness is not consistently accurate, with large standard errors. To reveal the mechanism, studying the selection of researched communities reveals that NGOs' presence and logistical characteristics are systematically different across researched and unresearched communities. The results reject the former as a source of the extrapolation bias, but suggest the latter may matter. The results have implications on the external validity improvements given the research feasibility constraints in remote areas.

②13:50-14:20

**Kohei Kamaga (Sophia University),**

***Generalized Poverty-gap Orderings*** (jointly with Walter Bossert and Susumu Cato)

This paper provides a characterization of a new class of ordinal poverty measures that are defined by means of the aggregate generalized poverty gap. To be precise, we propose to use the sum of the differences between the transformed fixed poverty line and the transformed level of income of each person below the line as our measure. If the transformation is strictly concave, the resulting measure is strictly inequality averse with respect to the incomes of the poor. In analogy to some existing results on inequality measurement, we show that the only relative (scale-invariant) members of our class are based on specific means of order  $r$ . We suggest that our poverty measures can be interpreted as inverse welfare indicators for the poor and derive relative and absolute ethical indices of inequality that correspond to them. In an empirical analysis, we compare the logarithmic variant of our index to two well-established alternative orderings. Unlike numerous indices that appear in the earlier literature, ours do not explicitly depend on the number of poor or on the total population size, thereby ruling out any direct influence of the head-count ratio on poverty comparisons.

③14:35-15:10

**Guanyu Lu (Waseda University),**

***Success and Failure of Voluntary Action Plan: Disaggregated Sector Decomposition Analysis of Energy-related CO2 Emission in Japan*** (jointly with Makoto Sugino, Tetsuya Horie, and Toshi H Arimura)

To accomplish the goal of greenhouse gas reduction, the Japanese Business Federation has implemented the voluntary action plan (VAP). A unique feature of VAP is that the industrial firms or organizations face no financial penalty even if they fail to meet the reduction goal of CO2 emission or energy consumption. This paper evaluates the role of VAP on emission reduction by analyzing a highly disaggregated data from 1980 to 2015 consisting of approximately four hundred sectors, using the logarithmic mean Divisia index method. The results indicate that the increase in CO2 emission from Japanese industries is mainly caused by the increase in indirect CO2 emission. Meanwhile, the structure of energy consumption shifts to electricity from fossil fuels progressively. The decomposition analysis highlights two key points. (1) VAP was ineffective in reducing sectoral emissions with low market concentration. (2) The energy intensity target of VAP do not lead to significant reduction of CO2 emissions compared with other targets. Thus, this paper concludes that the contribution of VAP for emission reduction is limited. Evidence from our research suggests three directions for the future policy design and implication.

④15:10-15:30

**Azusa Okagawa (National Institute for Environmental Studies),**

***Characteristics of Farm-households Adopting Environmentally-friendly Farming Practices in Japanese Agriculture*** (jointly with Tetsuya Horie)

We explored characteristics of farm-households in Japan adopting environmentally-friendly farming practices. The environmentally-friendly farming practices have three types. They are the reduction of chemical fertilizer usage, the reduction of pesticide usage, and inputting compost. We are interested in the relationships between farmers' adoption of those practices and farmers' management scale and distribution channels. We examined the relationships using individual-farm household-level cross-section data from the 2015 Census of Agriculture and Forestry in Japan. We separate the sample of farm-households into four sub-samples. They are samples of households farming only rice, only outdoor vegetables, only greenhouse vegetables, and only fruits. Also, we solely focused on full-time farm-households. We found that as the management scale expands, irrespective of crop types, farmers are more likely to reduce the levels of chemical fertilizer usage from the ones of conventional practices. However, there are thresholds for rice, outdoor vegetables, and fruits farm-households, at which the probability of the reduction of chemical fertilizer usage decreases.

On the other hand, we found the relationship between the decrease in pesticide usage and the management scale only for rice and fruits farm-households. As for the probability of compost usage, we found that it increases as the management scale expands and decreases once the management scales exceed some thresholds. We found the same tendencies over all the crop types. We also examined the relationship between farm households' adoption of those practices and their choice of channels to distribute agricultural products. The distribution channels include selling products via agricultural cooperatives, selling them via other organizations, selling them at the wholesale market, selling them to retailers directly, selling them to the contracted food industry and restaurant, and selling them to contracted consumers and selling to other buyers. Our result shows that farm-households selling their products through distribution channels other than agricultural cooperatives tend to adopt environmentally-friendly practices: using less chemical fertilizer or less pesticide and inputting compost.

⑤15:45-16:10

**Markus Heckel (German Institute for Japanese Studies),**

***The Unconventional Monetary Policy of the European Central Bank*** (jointly with Kiyohiko G. Nishimura)

This paper examines the unconventional monetary policies of the European Central Bank (ECB) from 1999 to 2020 with a focus on open market operations. We apply a principal component analysis to investigate the complexity of monetary policy. We find that four principal components (PCs) explain most of the variance of the ECB's operations of various facilities and measures. The results are robust among different variable sets and time frames. We also find the complexity, measured by the number of PCs needed to explain the variance, differs substantially between four sub-periods of different governorships: Duisenberg (1999-2003), Trichet (2003-2011), Draghi (2011-2019) and Lagarde (2019-present). We observe that open market operations of the Trichet era were the most complex, resulting in an increased number of PCs (four). In contrast, the corresponding number in the other eras has been at most two (Duisenberg and Lagarde) or three (Draghi).

⑥16:10-16:45

**Matthias Schlegl (Sophia University),**

***Structural Unemployment, Underemployment, and Secular Stagnation*** (jointly with Ken-ichi Hashimoto and Yoshiyasu Ono)

In this paper, we show that underemployment and not necessarily high unemployment becomes the main measure of economic slack under secular stagnation. Specifically, persistent underemployment occurs in the search and matching model, provided that households derive utility from holding wealth, and quickly dominates the total employment gap under stagnation. Wage and cost shocks can explain movements of unemployment and underemployment in opposite directions, while demand and supply shocks cause co-movements. Our analysis provides new insights into empirical puzzles such as Japan's seemingly decent employment record and the absence of wage pressures despite low unemployment rates after the Great Recession.

⑦16:45-17:10

**Masashige Hamano (Waseda University),**

***Multi-Product Plants, Product Switching and Macroeconomic Dynamics*** (jointly with Keita Oikawa)

Asymmetric dynamic across products along the business cycle is a salient feature in the data. We use Current Survey of Production (Seisan-Dotai-Tokei in Japanese) to establish the business cycle of plants, products and products varieties. Our theoretical model provides a rich dynamic at product, plant as well as product variety level and hence replicates product adding, dropping and product switching over the plant turnover. In particular, we show that heterogeneous income elasticities across products are the key to generate a substantial heterogeneity in business cycles across products. Further, our estimation results indicate that product specific shocks such as (de) regulation are found to be an important source of heterogeneous pattern of product turnover observed in the Japanese data.