Japanese Association for Development Economics 開発経済学会

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The First Hayami Award

The selection committee for the JADE award in development economics in memory of Yujiro Hayami (Hayami Award) selected Dr. Jun Goto’s article titled “Polarized Social Norms Against Corruption: A Social Media Experiment in India (co-authored with Takashi Kurosaki and Yuko Mori)” as the first winner of the award. Dr. Goto’s article was selected from the eligible articles presented at the Third JADE Conference held online on April 17 and 18, 2021. Congratulations, Dr. Goto! The selection committee comments are available here: http://www.jade.gr.jp/HayamiAwardRecipients.html

--- Message from the award winner ---

I first picked up Professor Hayami's development economics textbook when I was a fourth-year undergraduate student. I vividly remember how I was impressed by the process of proving insights based on fieldwork that went deep into developing countries—reinforced by detailed analysis relying on economic theory. Over 15 years have passed since then, and I am truly honored to have received the first Hayami Award, a very prestigious prize.

This paper is based on a field experiment using an original mobile app in India to reveal the process by which news provided through social media polarizes communities and their social norms against corruption. The reason behind this kind of analysis is very strongly related to the issue discussed by Professor Hayami in his textbook—the role of communities in developing countries in economic development. Particularly, it is deeply related to what Professor Hayami pointed out as the "failure of communities": the internalization of mechanisms within communities to improve their efficiency in the face of tensions with other communities. Although the "field" has shifted from rural areas in developing countries to online societies, Professor Hayami's points still have social relevance. I would like to continue my research with the same keen insight and strong passion for poverty reduction in developing countries, such as Professor Hayami.

Finally, I would like to express my heartfelt gratitude to the committee members who selected me, to the professors who guided me, to the co-authors who have always encouraged me, and to my wife, who has always supported me.

--- Message from President ---

The idea of the Hayami Award was born when the core members of JADE discussed the establishment of JADE itself—showing the utmost respect for the late Professor Yujiro Hayami, a pioneer in development economics in Japan. He said that a journal paper is a global public good and that our job, or the job of development economists, is to contribute to the stock of global knowledge by publishing journal articles. Following his spirit, we have offered the first Hayami Award for the highest quality article presented at the JADE Conference. We were pleased that the first Hayami Award was given to Jun Goto for his outstanding article, despite the other qualified articles.

Digitizing Maps

Junichi Yamasaki
Associate Professor, Kobe University

A dataset can be a unique feature of empirical research. Particularly, geographical data are popular for exploiting regional variation for identification strategies or capturing disaggregated outcomes. However, we can only obtain printed maps in many cases—this is especially true in developing countries or historical contexts. This short letter introduces some methods to transform them into digital files (shapefiles) based on my personal experiences.

Scanning

We must be careful with dpi (300 dpi is the standard; 600 dpi may be better in some cases) and format (JPEG is standard; TIFF is finer but heavier; JPEG 2000 is light, but may not be supported by some applications). Besides, the quality of images (noise or rotation) can be improved at this stage by careful scanning.

Georeference

You have to determine the location of the map. One way is to input the latitude and longitude of specific points of the map. For example, in modern maps, we typically know the latitudes and longitudes of corners, as the government specifies them to draw the map. As for historical maps, we must rely on historic buildings or natural features that do not change. Temples, bridges, and mountain peaks are typically helpful.

Modern GIS software, such as ArcGIS or QGIS, can handle this problem. For example, ArcGIS Pro, replacing the legacy software ArcMap, has a "georeference" function where we can place the longitude or latitude for points on the map. We can drop a point on the historical map and base map to set these points as the same location. Be careful of the government's coordinate system to make maps because the longitude and latitude

will point to different locations if the coordinate system changes. We need at least three points to georeference for a simple transformation and more points if we want to correct the map distortion, if any, by more complicated functions such as polynomials.

Making Shapefiles

After georeferencing the map, we can manually trace the shapes of the map, such as building footprints or roads to create polygons or lines. In ArcGIS Pro, we can use the "edit" function to create polygons or lines and find many handy tools like split polygons. For example, I digitized several land registry maps of Tokyo from the 1850s with the help of undergrads RAs, which can make about a hundred thousand polygons for each map (see Yamasaki, Nakajima, and Teshima, 2020).

Figure 1-a: Sample city from the old maps

However, manual work is unfeasible for large-scale projects. Recent developments in machine learning can help us here. With coauthors Masahiro Kubo, Ken Miura, and Michihiro Nakamura, I am digitizing old maps from all over Japan to analyze the time-series pattern of densely developed areas shown in the maps (see the gray areas in Figure 1-a). We used the U-Net algorithm, a standard technique in the deep learning literature, for visual recognition. I first hire RAs to prepare the "training set" by manually selecting the shape of interest from several maps. Next, using the training set, we can estimate the function to predict the shape of interest (Figure 1-b) using the PyTorch package (Paszke et al., 2019). After obtaining the prediction function, we can finally apply it to other >1000 maps to obtain the "predicted" shape of interest automatically.

Figure 1-b: "True" city

Although we are still working, the accuracy of prediction seems satisfactory (Figure 1-b vs. 1-c), and other studies also show a high performance of U-Net when digitizing maps (Heitzler and Hurni, 2020).

Figure 1-c: Prediction

When I started the project in 2020, I was not aware of other projects using machine learning to digitize old maps in this way, but it is a straightforward application of machine learning, and it seems an emerging trend in the urban economics literature (Combes, Gobillon, and Zylberberg, 2021). Generally, we can explore more datasets that are seemingly unfeasible to digitize using deep learning techniques. Of course, as an economist, what to analyze is more important than what to digitize, but I hope this letter will stimulate readers' creativity, reduce the costs of digitizing work, and extend our research frontier.

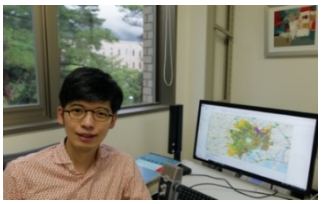

Figure 2: The author in the Lab with a map of Tokyo

Reference

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Yamasaki, Junichi, Kentaro Nakajima, and Kensuke Teshima. “From Samurai to Skyscrapers: How Historical Lot Fragmentation Shapes Tokyo.” TDB-CAREE Discussion Paper Series. Teikoku Databank Center for Advanced Empirical Research on Enterprise and Economy, Graduate School of Economics, Hitotsubashi University, 2021.

Announcements

1. Establishment of Fuwa Award

We are pleased to announce that JADE has established the JADE award in development economics in memory of Nobuhiko Fuwa (hereafter “Fuwa Award”) to remember the achievements of late Professor Fuwa of the University of Tokyo, who passed away on February 16, 2018, at the young age of 56. Professor Fuwa was one of the founding members of JADE. He has made excellent research achievements in development economics. His notable contributions were gender and poverty issues, including his pioneering work on impact evaluations of conditional cash transfer programs for female students in Bangladesh, intra-household resource allocation in India, and poverty research in the Philippines. The Fuwa Award is aimed at honoring and supporting research by scholars who have made remarkable international research achievements in the area that contribute to improving the social status of women in developing countries. The winner of the Fuwa Award is provided an honorable certificate and 100,000 yen with a ten-year time limit. Please visit our association homepage for further details.

Finally, the Fuwa Award is supported by an anonymous donation given to JADE. We cordially acknowledge the donors’ valuable support for JADE. We hope this award will encourage research among association members in the areas of gender and poverty issues.

Two photos for this article by Takashi Kurosaki

2. Donation to JADE

Besides the donation mentioned above, JADE received another anonymous donation for unspecified purposes. JADE acknowledges the contribution by announcing the donation in the Letter.

3. New board member candidates

The election for the Board of Directors and Auditors for the 2021-2023 term selected nine successful candidates as follows (in alphabetical order).

- Yoko Kijima
- Takashi Kurosaki
- Keijiro Otsuka
- Yasuyuki Sawada
- Tetsushi Sonobe
- Aya Suzuki
- Kazushi Takahashi
- Yoshito Takasaki
- Yasuyuki Todo

The new Board will be formally confirmed at the 5th General Assembly of JADE on November 13, 2021.

********** End of the term message from President **********

I believe that JADE has made an excellent start since it was born in March 2019. Despite the difficult time, JADE successfully organized three conferences. I appreciate the contributions of all the members of JADE. I would like to thank the executive members for their dedicated efforts to the management of a young JADE. The current executive members completed the term on September 30, 2021. I hope that JADE will continue to grow both quantitatively and qualitatively under the leadership of new executive members.

Keijiro Otsuka

SPRINGER NATURE

ADVANCING DISCOVERY

[New OA Book]

'African Land Reform Under Economic Liberalisation: States, Chiefs, and Rural Communities' Shinichi Takeuchi (African Studies Center, Tokyo University of Foreign Studies, Eds., Springer

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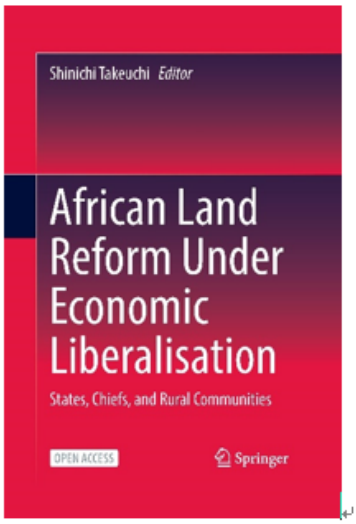

If you have a book proposal, don't hesitate to contact juno.kawakami@springer.com

----- From the editorial office -----

- This is the final issue in the current editorial office. We thank the writers and readers.
- It was my great pleasure to have served as an editor of the JADE Letter together with Otsuki-san. My workload was indeed very light because all the articles were perfect at the time of their submission. Therefore, I did not have to start my reply with the phrase: "I regret to inform you that your manuscript is …," which none of us want to see. I would also like to thank all writers. I look forward to reading the next issue as one of the readers. (KK)
- I feel very honored to have been engaged in editing JADE Letter with Kajisa-san since the first issue. We are grateful to the writers of the articles for generously sharing their cutting-edge knowledge with association members, which has broadened the academic knowledge of the community. I hope for the continued development of the JADE Letter. (TO)

Editors: Kei Kajisa (Aoyama Gakuin University) and Tsunehiro Otsuki (Osaka University)