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Editorial

I hope that all you had a productive summer. As promised, the JADE Letter has reverted to a biannual cycle. The current issue features the following. Tomoya Matsumoto provides an impressive recap of the JADE Conference in April 2023, which was a milestone for JADE. I look forward to continued progress in JADE 2024. Kazuki Motohashi provides a literature review on the nexus among the environment, development, and health, and introduces his fascinating research in India. His article is an encouraging introduction to this important, but less-studied topic. Readers can learn how to address challenging research questions through an effective research design that incorporates geospatial data. Yuki Higuchi discusses exploratory fieldwork to identify good research questions and hypotheses. Practical writing on this critical step in empirical research is highly desirable, but uncommon. Readers, particularly graduate students and young scholars, can obtain valuable information and tips based on his experiences. I look forward to articles on the next steps following this exploratory fieldwork in future issues. Kazuki and Yuki's contributions exemplify the exciting research conducted by JADE members on different subjects. Finally, following the work reorganization among JADE board members, Yoko Kijima stepped down from the JADE Letter editorship, although she kindly continues to advise me in the editorial work. I thank Yoko for her pleasant and diligent work as co-editor. Feedback on the current issue and suggestions for future issues are welcome. Enjoy reading!

Yoshito Takasaki, Editors, JADE Letter

The Fifth JADE Conference 2023 Recap

Tomoya Matsumoto Otaru University of Commerce

The fifth JADE Conference was held on April 1-2, 2023 at Sanjo Kaikan, University of Tokyo. The

conference program committee consisted of Tomoya Matsumoto (Chair), Otaru University of Commerce; Yuko Nakano, Tsukuba University; and Yuki Higuchi, Sophia University. This event was the first in-person conference after online meetings over the past three years, due to the COVID-19 pandemic. This was also the first joint in-person conference with the Centre for Economic Policy Research (CEPR), the Trinity Impact Evaluation Unit (TIME), and the Center for International Research on the Japanese Economy (CIRJE). We invited Profs. Eliana La Ferrara, Oriana Bandiera, and Robin Burgess from CEPR and Profs. Gaia Narciso, Carol Newman, and Michael King from TIME. The joint conference attracted more presentation applications globally, than the JADE conferences held earlier. Eventually, we obtained 93 paper submissions, 17 of which were selected by the program committee for conference presentations. The conference included 70 in-person and over 90 online attendees. High-quality studies covering various developmental issues were presented, and constructive discussions were conducted over two days.

Since its establishment, the JADE conference has been expected to provide a platform for Japanese development economists to enhance their research quality through interactions and friendly competition in the research community in Japan and across the world, disseminate the results of Japanese development economics research widely to academia and society globally, and foster young researchers. I believe that the conference fitted JADE goals well, which is evident from the enthusiasm and excitement of the participants in the discussions. This year, unlike the usual JADE conference, we did not assign a discussant to each presentation. Instead, we accommodated more presentation slots and allotted more time for floor discussion. The arrangement functioned well, given the competent presenters and academically relevant discussions, with active participants.

This conference seems to reflect a recent global trend in development economics. Most of the studies presented included empirical research aimed at identifying causalities, mainly through randomized controlled trials, but also employing natural experiments and observational data with econometric techniques. I am also impressed by the research quality of young researchers. The studies presented here were screened by the JADE, CEPR, and TIME program committees and selected based purely on their research quality. The fact that many of the selected papers were written by young researchers indicates the high quality of their studies. I expect that they will lead development economics in Japan. At the same time, I thought that I have to work hard to avoid being left behind.

I also want to mention two JADE award winners at the conference.

Hayami Award

The award was established to honor the late Dr. Yujiro Hayami, a leading development and agricultural economist in Japan, and to foster young development economists based in Japan.

The third Hayami Award was awarded to Professor Junichi Yamasaki (Kobe University). The study title is "From Samurai to Skyscrapers: How Transaction Costs Shape Tokyo (co-authored with Kentaro Nakajima and Kensuke Teshima)."

This study examines how historical land fragmentation has influenced modern Tokyo's urban development. By combining 150-year-old historical maps with recent cadastral ones, land price data, and firm-level microdata, the authors investigate whether the transaction costs for land assembly or splitting continue to impede efficient land use. They employ OLS and RDD analyses, finding that land sizes persist and that historically unfragmented lots exhibit higher current land prices and productivity. This trend is observed mainly in the city center, especially subsequent to the availability of skyscraper technology. This research underscores the persistence of transaction costs in land-use efficiency and highlights the implications for urban development policies, especially in rapidly growing low- and middle-income countries. The study is deemed original, well-executed, and significant for both, development economics and broader economic insights, thereby deserving the Hayami Award.

The award winner, Prof. Yamasaki, commented as follows:

"Thank you to the committee members and organizers who made this event possible. I feel honored to receive the Hayami Award, and I appreciate my co-authors, RAs, public and private foundations, and the data providers, who supported this project.

I also have personal feelings about receiving this award in front of my supervisors, Yasu Sawada and Robin Burgess. I am very happy to share this moment with them. Finally, I would like to receive this award not only as an achievement, but also as encouragement for future work. Thank you very much."

Fuwa Award

Inheriting the legacy of the late Professor Nobuhiko Fuwa, who passed away at a young age after producing a series of outstanding research achievements in various fields of development economics,

including gender and poverty issues, we aim to honor the contributions of researchers who have excelled in the field of "Improving the Status of Women in Developing Countries."

The second Fuwa Award was awarded to Professor Masahiro Shoji (University of Tokyo). According to the selection committee, he made remarkable contributions to the understanding of women's empowerment in developing countries through unique empirical microstudies. His work focuses on the following three key areas: First, he explores how Bangladeshi microcredit programs enhance women's resilience during natural disasters, through a contingent repayment system. Second, in collaboration with Tsubota (2022), he investigates the working conditions of trafficked child sex workers in Bangladesh, shedding light on their vulnerabilities and advocating for protective policies. Finally, Shoji's recent study (2022) examines the influence of early-life socioeconomic conditions on non-cognitive skills, revealing that early exposure to adverse weather impacts individuals' beliefs in life control, particularly for women. His research contributes to academic fields and underscores the need for policies supporting disaster-affected children, fostering noncognitive skills, and empowering women to navigate the changing circumstances, thereby well deserving the Fuwa Award.

The award winner, Prof. Shoji, commented as follows:

"It is my great pleasure and honor to receive the Fuwa Award. I would like to express my sincere gratitude to Professor Otsuka and the Selection Committee members for their consideration of this study. I am also grateful to my supervisors, co-authors, colleagues, and family. I have worked on two projects on gender violence in Bangladesh. In the first project, I and my co-authors estimate a structural model to examine the impact of strictly prohibiting adult prostitution on the demand for, and supply of, child trafficking. The second project focuses on the spillover impact of media reports of gender violence, acid attacks against women, and female autonomy. I look forward to presenting these projects in future."

In conclusion, the conference was successful. I thank all the presenters, participants, JADE board members, and supporting staff. I hope that this conference becomes a steppingstone for the development of development economics in Japan.



Opening remarks by Prof. Eliana La Ferrara (Harvard University)



The 3rd Hayami Award Winner, Professor Junichi Yamasaki (Kobe University), is in the middle, flanked by President of JADE, Prof. Keijiro Otsuka (Kobe University), on the left, and the program

committee Chair, Professor Tomoya Matsumoto (Otaru University of Commerce), on the right side.



The 2nd Fuwa Award Winner, Prof. Masahiro Shoji (University of Tokyo), is in the middle, flanked by President of JADE, Prof. Keijiro Otsuka (Kobe University), on the left, and Fuwa Award Selection Committee Chair, Professor Yasuyuki Sawada (University of Tokyo), on the right.



The fifth JADE conference was held in front of Sanjo Kaikan, University of Tokyo, on April 2, 2023.

Environment and Health in Developing Countries

Kazuki Motohashi Assistant Professor, Hitotsubashi University

Economic development can impact the environment by increasing negative externalities (e.g., environmental pollution and greenhouse gas emissions) or by fostering the adoption of technologies that can mitigate these negative externalities. Conversely, the environment can influence economic development; for instance, climate change and environmental pollution can diminish labor productivity and agricultural output. Thus, environment and development are interconnected and

entail tradeoffs.1

Research focusing on the interplay between environment and development has gained popularity in the field of development economics. This is because developing countries not only tend to contribute more to environmental pollution, but are also more vulnerable to its effects than developed countries. Households and firms in these countries possess limited capacity and funding to invest in mitigating negative externalities and implementing defense measures against adverse impacts.

Economic development and environment are intricately linked to human health. Firstly, human health is the primary objective of economic development. This has led to the implementation of various health programs in developing countries, including those focusing on water and sanitation, vaccination, and healthcare. Secondly, environmental pollution and extreme weather events resulting from climate change undermine human health by increasing morbidity (such as diarrhea and asthma) and mortality.² Therefore, we can argue that development programs can directly improve health outcomes, but at the same time, they can also indirectly affect health outcomes through increasing or mitigating environmental pollution. To capture this interrelationship, it is essential to approach these issues holistically, framing them as "environment, development, and health."

In this column, I illustrate the multiple connections between environment, development, and health, based on my research. I then introduce recent geospatial data and GIS techniques that can be utilized to examine the intersection of the environment and health in developing countries. Finally, I conclude this column by proposing potential future research directions.

How Economic Development Influences the Environment and Subsequently Health

Development programs and projects are designed to enhance human welfare through improvements in income, human capital, etc. Numerous field experiments, although often with limited geographical coverage, have demonstrated the efficacy of these programs.

However, as these development programs and projects are scaled up to larger regions, potentially evolving into nationwide policies, they can trigger unintended negative externalities. Recent studies have highlighted these unintended outcomes in the form of environmental pollution and natural resource depletion. For instance, Alix-Garcia et al. (2013) revealed that cash transfers in Mexico led to increased deforestation owing to the consumption of land-intensive goods. Similarly, Garg et al.

¹ This column focuses more on the issues of environmental pollution (e.g., water pollution) and climate change, reflecting my research topics. But I would like to note that there are many studies looking at the intersection of development and natural resources (e.g., deforestation, biodiversity, groundwater). To understand the topic more comprehensively, I suggest that readers refer to several review papers, including Greenstone and Jack (2015) and Jayachandran (2022).

² Conversely, environmental policies aimed at mitigating environmental pollution and addressing climate change can lead to improved health outcomes.

(2022) showed that the establishment of rural roads results in enhanced agricultural fires and air pollution, driven by labor migration from agriculture, and the adoption of fire-based, labor-saving, yet polluting technologies to clear agricultural lands. Unintended environmental pollution can subsequently give rise to adverse health effects, as exemplified by the heightened infant mortality rate, as reported by Garg et al. (2022).³

Expanding on the existing literature, Motohashi (2023a) shows the unintended consequences of nationwide latrine construction as part of the sanitation policy, known as the Swachh Bharat Mission, (SBM) in India. Prior research on sanitation has demonstrated the health benefits of latrine construction by drawing on field experiments (Cameron et al. 2021, 2022). However, I illustrate that large-scale construction can amplify water pollution externalities through the improper disposal of fecal sludge in rivers. This analysis is made feasible by utilizing nationwide administrative data on latrine construction and geospatial water quality data.

Exploiting variations in soil characteristics across different districts and varying increases in latrine coverage, I found that SBM increases river pollution by 72%.⁴ While it does lead to an overall reduction in diarrheal mortality, this positive health impact diminishes by two-thirds in areas with lower fecal sludge treatment capacities, where water pollution externalities are correspondingly more pronounced. This result suggests that water pollution externalities partially offset the positive health effects, showing that development can heighten environmental pollution and subsequently jeopardize human health.

Furthermore, I demonstrate that these water pollution externalities can be alleviated through complementary investments in fecal sludge treatment, that is, sewage treatment plants. This suggests that the Indian government should not focus solely on constructing latrines, but should also strengthen these efforts with adequate infrastructure to avert these negative externalities.

How Environment Influences Economic Development and Subsequently Health

Environmental pollution and extreme weather events under climate change (e.g., extreme

³ Other studies examining the development-environment-health nexus include Gendron-Carrier et al. (2022) and Motohashi (2023a). However, these studies are relatively limited in number when compared to research solely focusing on the environment-health nexus (impacts of environmental policies on health like Greenstone and Hanna (2014)) and the development-health nexus (impacts of development programs on health like Alsan and Goldin (2019)).

⁴ Specifically, I use geographical variation in Available Water Capacity (AWC), a proxy for the soil infiltration rate, as an instrument for the number of latrines. Higher soil infiltration rates (lower AWC) increase the risk of groundwater contamination in nearby wells from the fecal sludge accumulated in latrines. To address this risk, an official technical guideline, which became effective since the SBM's inception, requires either greater distances between latrines and wells or the addition of impervious materials inside latrines in areas with high infiltration rates. So, lower AWC increases the difficulty and cost of latrine construction after the SBM started.

temperatures and floods) have negative impacts on economic development. For example, extreme temperatures have been demonstrated to damage agriculture (Colmer, 2021) and labor productivity (Somanathan et al., 2021) in developing countries. One significant question revolves around whether the impact of extreme weather events constitutes a "level effect" (a one-time effect that is subsequently reversed in the following period) or a "growth effect" (a persistent effect that continues into future periods). The existing literature points to a short-run negative "level effect" (Colmer, 2021; Somanathan et al., 2021).

However, little is known about the persistent growth effects and the potential positive outcomes of adaptive investment in technologies. My ongoing project, Motohashi (2023b), illustrates this persistent positive effect through a health channel. Specifically, this study investigates the impact of extreme temperatures on latrine investment in India. On the one hand, extreme temperatures can positively influence latrine investment by intensifying the discomfort associated with walking outside for open defecation (discomfort channel). This heightened discomfort increases the likelihood of latrine construction as an adaptive behavior. Conversely, extreme temperatures can negatively affect latrine investment by reducing income and exacerbating financial constraints on such investments (income channel). If the net effect is positive, this influence should endure, because latrines are continually used as durable goods over multiple years.

Drawing on presumably random year-to-year temperature variations, my preliminary results indicate that extremely cold and hot temperatures increase latrine investments, and this effect persists over years. This result is consistent with the discomfort channel, wherein households construct latrines to avert open outdoor defecation under extreme weather conditions. Based on this result, a back-of-the-envelope calculation demonstrates that an additional day of extreme temperatures decreases diarrheal mortality by 0.3-2.7% through increased latrine investment, an unexpected indication of the positive health effects attributed to extreme temperatures.⁵ The lesson from this study is that, under climate change, extreme temperatures can deter outdoor health-damaging behaviors (such as open defecation and using unsafe open wells), while promoting the adoption of indoor technologies (such as toilets and tap water), which can lead to improved health outcomes.

Geospatial data and GIS programming Useful for Research on Environment, Development, and Health

Geospatial data and geographic information system (GIS) programming are becoming necessary tools in the study of development, environment, and health. This is because many environmental and health datasets are geocoded and must be geospatially matched to other datasets for empirical analysis. The aforementioned studies used various types of geospatial data.⁶

⁵ The back-of-the-envelope calculation involves multiplying the estimated coefficient from this analysis by the estimated net positive effect of latrine construction on health in Motohashi (2023a).

⁶ Many papers on environment, development, and health focus on emerging countries, including India,

- Alix-Garcia et al. (2013): identified deforestation, using satellite data that captures forest coverage.
- Garg et al. (2022): detected agricultural fires, using satellite data of infrared radiation, coupled with infant mortality data geocoded by the National Family Health Survey.
- Colmer (2021), Somanathan et al. (2021), Motohashi (2023b): compiled temperature readings from monitoring stations into gridded temperature data.
- Motohashi (2023a): identified water pollution, using water quality readings (especially fecal coliforms) at monitoring stations along rivers.
- Other types of geospatial data that have been used in other studies.
 - Air pollution measured by satellites and monitoring stations (Gendron-Carrier et al., 2022)
 - o Groundwater levels (Sekhri, 2014)

If you are interested in using geospatial data, I suggest that you begin by searching for papers that employ similar datasets. Once the data sources are identified and obtained, the subsequent step usually involves employing GIS programming to clean and analyze the geospatial data for matching with other datasets. The prominent GIS software and programming languages include ArcGIS, QGIS, R, and Python (I predominantly use R). Noteworthy references that I consider valuable include, "R as GIS for Economists" and "Causal Inference with Spatial Data: ArcGIS 10 for Economics Research."

Suggestions for Future Research on Environment, Development, and Health

I suggest potential directions for future research in the fields of environment, development, and health, drawing on my previous research experience.

One involves assessing the effectiveness of market-based environmental policies (such as emissions trading and carbon taxes) in the context of developing countries by using field experiments. These policies may encounter obstacles, such as capacity constraints and corruption; however, they could prove effective by drawing lessons from the experiences of developed countries. A recent exciting study by Greenstone et al. (2022) demonstrates that emission markets for particulate matter from industrial plants can succeed, based on a field experiment conducted with a local regulator in Gujarat, India.

China, and Brazil, which publish high-quality and readily accessible environmental data. These countries are also increasingly grappling with challenges related to environmental pollution. In my experience in working with water quality data, I was able to access data from hundreds of monitoring stations in India on their website. However, obtaining the same data for Bangladesh proved to be challenging, as we had to visit local offices of the Ministry of Environment to acquire the data. This difficulty might be mitigated when using satellite data, although using satellite data as a proxy for water quality remains a challenge.

Another approach involves the exploration of real-time and high-frequency environmental data. This approach can reveal the speed of pollution spillovers across spatial dimensions, such as downstream water pollution. This finding prompts consideration of the optimal speed of governmental responses to pollution externalities to mitigate health implications. Real-time water quality data has recently been investigated, as evidenced in the "Ideas for India" blog post.

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Economics Fieldwork⁷

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1. Introduction

An economist has many tasks in the field. In the case of primary data collection, tasks include finding a research question, designing a survey, training and monitoring data collectors, and so on. In the case of an RCT, an economist should also design an experiment and coordinate with program implementers. When secondary data are used, an economist may visit a statistical office to obtain and verify the data.

In this article, I discuss exploratory fieldwork to find a research question, which should be conducted in the early stage of research. When referring to fieldwork, many experienced researchers may recall such exploratory fieldwork. Exploratory fieldwork aims to develop a hypothesis to be quantitatively tested.

Development economists in Japan have a tradition of emphasizing fieldwork, and this recognition is shared in the recently published book "The Next Generation of Empirical Research in

⁷ I thank Mari Tanaka for sharing her tutorial slides on fieldwork presented at the 25th Japan Labor Economics Conference in 2022.

Economics,⁸" which was edited by JADE members. I contributed a chapter to the book, and what struck me after reading the entire book was that many economists in other fields share the same recognition. A labor economist, Prof. Masaru Sasaki, clearly remembers the words of the Late Prof. Kazuo Koike, a leading scholar in the field, "You guys need to get into the field more."

Although the importance of fieldwork is well recognized, it is difficult to systematize its methodology. Economics is a structured discipline, wherein econometric knowledge and skills can be acquired through textbooks. However, to the best of my knowledge, there are no textbooks on fieldwork in economics.⁹ In other words, the only way to acquire fieldwork expertise is to gain experience.

My advice for graduate students and young researchers is to 'jump into the field.' Initially, you probably encounter many difficulties, and make mistakes. As you brush up on your field sense, you gradually learn where to visit, what to observe, how to find informants, and how to conduct informal interviews. I would also strongly advise you to take advantage of any opportunity to accompany your supervisor or any experienced researcher in the field. The best way to acquire tacit fieldwork knowledge is through on-the-job training.

In this article, I first discuss the importance of exploratory fieldwork. I then briefly describe how it proceeds. As a specific tip, I recommend the writing of a trip report.

2. Why Fieldwork?

First, a good research question is crucial for any study. Preliminary hypotheses can be developed based on experience and existing research; however, whether they are relevant or worth testing must be confirmed in the field. While fieldwork is almost mandatory when collecting primary data, I advise visiting the field whenever possible, even when analyzing secondary data.

Second, what you see and hear in the field will help you write the Introduction and Setting sections. You can motivate your research questions based on your stimulating experience in the field. The information collected in the field provides a lively explanation of your setting. It usually takes years from when the initial fieldwork is conducted, to writing the paper, because it is necessary to first collect and analyze data. Hence, I recommend that you write a trip report (I explain the details at the end of the next section); otherwise, you will have completely forgotten your excitement by the time you write your paper.

Third, research questions found through fieldwork help you write an application for a research grant. In the application form for JSPS/Kakenhi, there is a section to write "the circumstances leading to the conception of the present research proposal," where you can explain that the hypothesis was developed in the field. Furthermore, one of the selection criteria is the state of preparation for the

⁸ This Japanese book was published in 2023 by Nippon Hyoron Sha. See the publisher's website: <u>https://www.nippyo.co.jp/shop/book/9082.html</u>.

⁹ In the fields of sociology and anthropology, there are many textbooks on fieldwork. While their fieldwork aims to obtain detailed information about a particular subject (often one that is omitted from formal surveys), economists aim to find a general pattern.

research. The fact that you have already conducted fieldwork will most likely cast a favorable impression on reviewers.¹⁰ You might wonder whether you can afford to conduct fieldwork before obtaining a grant, but you can procure money from your university or a private foundation. I am certain that exploratory fieldwork will increase the chances of winning grants.

3. Overview of Fieldwork

I explain the preparation for fieldwork, what you should do in the field, and what you should do after returning home.

3-1. Before the Field

First, you need to find a local collaborator. You could require an interpreter outside of Japaneseor English-speaking countries.¹¹ Moreover, a respondent will not join an interview with unknown foreigners. Given the requirement to subsequently contract data collection, a local researcher as a coauthor would be most desirable. When outsourcing data collection to third parties, one needs to monitor the data collection carefully, as such parties have an incentive to quickly complete data collection; however, a local collaborator-cum-coauthor has an aligned incentive with you to collect high-quality data.¹² It is easiest to work with a local economist because you can use the same "language," but interdisciplinary collaboration is also possible. I am successfully working with environmental scientists in Bangladesh.

Once a local collaborator is identified, the next step is to develop preliminary hypotheses. Existing research and experience are important sources of information. Additionally, the opinions of experts and practitioners, local contextual information, media reports, and documentaries on current issues can be helpful. In my experience, I interviewed an NGO worker who had just returned from the field, before conducting exploratory fieldwork for Rohingya refugees in Bangladesh.

Based on these preliminary hypotheses, you plan where to visit, whom to talk to, and what to ask. Questions can be borrowed from existing surveys. If possible, it is recommended to make appointments with important informants in advance; however, since emails sent from abroad are often ignored, we usually need to jump into them in the field.

3-2. In the field: Finding a Research Question

Many problems tend to arise in the field. You may have difficulty finding and meeting a relevant informant, your interview request may be rejected, or the questions you have prepared in advance may not work. Respondents can only answer what they know, using their terminology. You should be

¹⁰ For more tips on applying for JSPS/Kakenhi, you may refer to Prof. Kazushi Takahashi's article in the March 2023 issue of the JADE Newsletter, available at <u>http://www.jade.gr.jp/activities.html</u>.

¹¹ I have conducted fieldwork in Vietnam, the Philippines, Bangladesh, Tanzania, South Africa, and Argentina, but I speak only English. It is embarrassing that I speak very little Vietnamese although I have visited Vietnam more than 10 times...

¹² Although I personally do not have experience, Mari hired a local monitor of data collectors when she contracted the data collection to a non-coauthoring organization.

flexible in the field and make many trials and errors until you obtain the relevant and important information.

Additionally, it is common to hear different stories from what was previously anticipated. Important information may be contained therein and should never be ignored or unheard. The purpose of fieldwork is to develop a hypothesis by integrating existing knowledge and new information obtained in the field.

One of my recent experiences include visiting Vietnam with Mari in March 2023. Our initial hypotheses were on firms' digitalization, and we successfully interviewed manufacturers, IT start-ups, and business consultants. However, we found that we need to substantially change the research question because manufacturers do not really need what we thought they would, and IT start-ups and business consultants cannot provide the relevant support that we expected. We returned home, brainstormed again and read papers. When we returned to Vietnam in July, we successfully found interesting research questions. You may think that our first fieldwork in March was a failure, but I do not think so. We learned a lot in the field, which constituted an important stepping-stone.

Note that even when you are asked by an aid organization to evaluate its project, I recommend conducting exploratory fieldwork. Instead of simply listening to the person in charge, who is mostly located in Japan or other developed countries, you can talk to the project beneficiaries and the implementing experts in the field. This provides a sense of whether the intervention is likely to be effective. In other words, fieldwork will help develop the hypothesis that doing A will improve B.

3-3. In the Field: Preparing for a Survey

Once a research question has been found, the next step is to prepare for a survey. The most important task is to sketch the questionnaire. You have to think what the main variables are and what kind of data should be collected to construct them. The wording of the key questions is important. You should repeatedly test the questions in the field so that the respondents can easily understand what is being asked and provide reliable answers.

Depending on available time in the field, you may spend time on the questionnaire and/or with data collectors. Regarding the questionnaire, you must consider what other information should be collected, and accordingly develop its overall structure. The flow of the questionnaire is important, and should allow respondents to speak comfortably. Poor flow increases respondent burden and reduces data quality. It is also important to minimize the length of the questionnaire. When one begins to design a questionnaire, one is tempted to ask this and that, and becomes anxious about whether to include additional queries, just in case. However, the longer the questionnaire, the more tired the respondents become, and the lower the quality of the data. You should be aware of the trade-off between the length of the questionnaire and the quality of the data.^{13,14}

¹³ I suspect that respondents of the World Bank's multi-purpose survey with a 50-page questionnaire provided reliable information. Even farmers with relatively low opportunity cost could tire and wish to finish the interview as soon as possible by providing random or partial answers.

¹⁴ In a recently published Japanese book by Prof. Keijiro Otsuka, he discusses the importance of a

Regarding the data collector, if your local collaborator conducts the survey, you can share your research questions and plan the survey. Online communication becomes easier with Zoom, which helps prepare for the survey; however, it is important to share the initial understanding, which can be done better in person. If you need to outsource the data collection, J-PAL, IPA, or IGC's local office may be an option, although I do not have any work experience with them. Alternatively, you may consider a private consulting firm. In any case, you should meet potential data collectors in person, and evaluate their capacity and reliability.

When conducting an RCT, the data collector should be different from program implementer to mitigate the experimenter demand effects. Hence, the coordination for an RCT involves at least three parties (i.e., researchers, program implementers, and data collectors) and is usually more difficult and time consuming than the preparation for a survey. I recommend meeting program implementers and data collectors as much as possible in the field to build relationships and form common understanding.

3-4. After the Field

The last but important part of exploratory fieldwork is writing a trip report. A trip report is different from a field note that is used during fieldwork. A trip report summarizes your fieldwork, and the main content is your hypothesis and an explanation of how it was derived (i.e., what information or observation led to the hypothesis). You also need to note what data require to be collected. In addition, you must write about any other important points that you saw or heard in the field. This will help you write the Setting section of your paper. Unless you summarize the important information, it is difficult to recall your memories from your scribbled field notes.

In my opinion, it is not necessary to record every detail of each interview. It is more important to summarize important points soon after the fieldwork, when your memories are fresh. If you could start writing the report while still in the field, it would be even better. As you write down, you may realize that you have forgotten to collect important information. If you could collect additional information before returning home, you could reiterate and write a better trip report.

4. Conclusion

Even after discovering a research question through exploratory fieldwork, there is still a long way to go. You need to finalize and pre-test the questionnaire, program CAPI (if used), design the sampling scheme and compute power, apply to the IRB, write the pre-analysis plan (if needed), train and monitor the data collectors, and so on. I have much to write about them too, but I do not have the space. There are many useful tips on the technical aspects of these tasks on the World Bank's blog: https://blogs.worldbank.org/impactevaluations/survey-methods-curated-blogs.

Finally, I repeatedly advise researchers to jump into the field. Fieldwork is fun, and one can enjoy food, drinks, culture, nature, people, and so many. Unlike a mature country, such as Japan,

questionnaire on p.p. 6-8, saying that the study is more than 50% complete if a good questionnaire is developed. This book was published in 2023 by Toyo Keizai. See the publisher's website: <u>https://str.toyokeizai.net/books/9784492315514/</u>.

developing countries offer experiences of vibrant development every time you visit. Conducting repeated fieldwork is like constructing your own "panel" data. Fieldwork is tough, but I love it. If you have any questions about fieldwork, I am happy to discuss them.

