

Terms of Reference for a Consultant (ToR)
Economist/Research Analyst (Short-Term Consultant)
Measuring Technology Adoption in Developing Countries

1. Summary

The World Bank's Finance, Competitiveness and Innovation Global Practice is looking for an Economist to work on a research program on "Measuring Technology Adoption in Developing Countries: Constraints, Opportunities and Policy Responses". The program is hosted at the Firm Capabilities and Innovation unit of the Finance, Competitiveness and Innovation Global Practice. The objective of the project is to improve our measurement and understanding of technology adoption in developing countries. The findings of the project aim at supporting the design and implementation of operational programs for facilitation the adoption of technologies in developing countries.

2. Background

Technology is at the center of the policy and media debate about the present and future of economic development. Talks of the fourth industrial revolution are common buzzwords in any policy discussions, even if many developing countries have yet to adopt widely the technologies associated with the third and second revolution. While the rapid and wide diffusion on new disruptive technologies that characterizes an industrial revolution is becoming a common phenomenon, adoption, especially on those countries further from the technological frontier, is poorly understood. A new industrial revolution raises new development opportunities and challenges that are still difficult to predict, but without understanding the real extent of technology adoption and the main sources that constrain or unable adoption, it is difficult to design the policies that could lead to new opportunities for developing countries. A deeper understanding of the meaning of these new technologies towards developing countries requires appropriate tools and methodologies to measure their diffusion.

3. The project

The World Bank is seeking to fill this gap in our understanding of the process of technological adoption by developing a new tool to measure the extent of technological adoption at the firm-level. The project is developed in four stages. In the first stage, the survey questionnaire was developed jointly with leading academics and industry specialists and tested. In the second stage, the questionnaire has been piloted for a representative sample of firms in five countries. In the third stage, the survey is being implemented in 4 more countries. The results of the data collected will be summarized in a report, that will also include a review of the different policy instruments to support technology adoption.

Specifically, the main objective of this project is to provide evidence-based information to improve the policies that foster technology adoption and innovation in developing countries. Specifically, this objective is attained in three stages:

- Stage 1. Developing and piloting a new methodology to quantify technology adoption and measure technology gaps between firms and sectors, across diverse levels of complexity.
- Stage 2. Collecting the first round of firm-level data from developing countries to understand the main impediments of technology adoption for those countries.
- Stage 3 Collecting firm-level data from additional countries.
- Stage 4 Developing a report on challenges and opportunities of technology adoption in developing countries in an era of Industry 4.0.

The project has completed stage 1 and 2 and has started the countries of stage 3 and prepare the background material for the report.

4. Main tasks and responsibilities

The consultant will work on the various activities required in the second and, particularly, third stage of the project. Under the guidance of the TTLs of the Project, it is expected from the consultant to perform the following activities with the respective deliverables:

1. Prepare literature review requested by the team.
2. Support the team on the preparation of the questionnaires in CATI.
3. Manage the project databases.
4. Perform empirical analysis for country notes.
5. Prepare charts and tables.
6. Prepare drafts and reports for the project.
7. Prepare presentations.
8. Other activities that supervisors consider, within the scope of the consultancy.

5. Requirements

The consultant should present the following minimum requirements:

- Advanced Degree in Economics or related field with focus on innovation and technology adoption. PhD candidates and recent graduates interested on the topic of innovation and technology adoption are preferable (Master's degree required at minimum).
- Strong analytical and quantitative skills with good knowledge in applied statistics and management of large data base.
- Experience in working with firm-level data and micro surveys.
- Excellent command of STATA and other statistical software, Microsoft Excel, Word, PowerPoint, is essential.
- Communication and Team Skills: High level of personal and professional integrity. Self-starter. Strong ability to function well in a multi-cultural environment and working in teams.
- Ability to write and speak fluently in English.
- Results-oriented personality with proven problem-solving skills, and strong communication skills.

6. Contract time frame and supervision

The consultant will work as a short-term consultant over the period between February 2021 – June 2021, with the possibility of extension for 1 or 2 years, based on performance and business need. The consultant will report to Marcio Cruz (Senior Economist), Xavier Cirera (Senior Economist), and Diego Comin (consultant).

7. Deadline for application and selection process

Interested candidates, please send your CV and cover letter to Barbara Nalugo (bnalugo@worldbank.org), copying Marcio Cruz (marciocruz@worldbank.org), by January 27, 2021. Only short-listed candidates will be interviewed.