United Nations
Educational, Scientific and
Cultural Organization

Organisation
des Nations Unies
pour l'éducation,
la science et la culture

Consultancy contract

Request for written proposal

Reference: GEM Report – Data consultant (10 months)

Request to submit a written proposal for a work assignment with UNESCO

UNESCO is inviting written proposals from Individuals for the work assignment described in Annex A.

To enable you to prepare a proposal for this assignment, please find attached the following document:

- Terms of Reference (see Annex A)

Your written proposal should comprise:

a) A Technical Proposal consisting of:
   - an up to date curriculum vitae,
   - an approach and methodology for the assignment (1-2 pages)

b) The amount to be charged for the assignment should be quoted in US dollars or in Euros for the period:
   1 November 2021– 31 August 2022 **as a monthly fee**.

Please include any costs for travel to Paris as a separate budget line.

Your proposal and supporting documents must be in English. *If the above information is not provided, the application will be considered incomplete and dismissed.*

UNESCO places great emphasis on ensuring that the objectives of the work assignment, as described in the Terms of Reference, are met. Accordingly, in evaluating the proposals for the assignment, attention will focus first and foremost on the technical elements. From those proposals deemed suitable in relation to the criteria set forth in the Terms of Reference, UNESCO shall select the proposal that offers the Organization best value for money.

Your proposal should be submitted by e-mail no later than close of business (18:00) on 8 October 2021. E-mail proposals should not exceed 5MB.

The e-mail should be addressed to

Bilal Barakat bf.barakat@unesco.org

It is the individual's responsibility to ensure that his/her proposal is received by the deadline.

Thank you for your interest in this UNESCO assignment; and we look forward to receiving your proposal.

The Global Education Monitoring Report

Terms of Reference – Data consultant

Background

The Global Education Monitoring Report (or GEM Report), formerly known as the Education for All Global Monitoring Report (GMR), is an editorially independent, authoritative, and evidence-based annual report that monitors progress in education in the Sustainable Development Goals (SDGs), which have been adopted as part of the 2030 Agenda for Sustainable Development. The Report is funded by a group of governments, multilateral agencies and foundations and published annually by UNESCO to serve the international community. It is widely recognised as an indispensable advocacy and technical tool supporting the achievement of SDG 4, which aims to ensure "inclusive and equitable quality education" and promote "lifelong learning for all" by 2030. With its renewed mandate, established in the Incheon Declaration of the World Education Forum in May 2015, the annual GEM Report series will identify effective education policies and analyse major education related themes.

As part of its 2020 review of the SDG indicator framework, the Inter-Agency and Expert Group on SDG indicators (IAEG-SDG) approved the school completion rate by level as additional global indicator 4.1.2 for monitoring target 4.1 on universal primary and secondary schooling. In addition, the Technical Cooperation Group (TCG) on SDG 4 indicators has endorsed the development of model-based estimates for this indicator to overcome issues of infrequent and inconsistent survey data on which its calculation is based. The approach is in line with the UN Statistics Division's call for the SDGs to be monitored through integrating multiple sources of data. The out-of-school rate, indicator 4.1.4, has customarily been based on administrative data. How to integrate these with information from household surveys that allows for greater disaggregation remains an open issue.

Together with the UNESCO Institute for Statistics (UIS), the GEM Report is committed to developing a fully-defined methodology for such model-based estimates for both completion and out-of-school indicators, taking advantage of the experience of global monitoring of health indicators using hierarchical Bayesian modeling.

Objectives

The purpose of the Work is to apply the principle of the Adjusted-Bayesian-Completion Rate (ABC) model methodology to the integration of administrative and household survey data on children in and out of school for monitoring SDG 4.1.4, while also ensuring that completion and out-of-school rate estimates are coherent with each other.

Under the supervision of the GEM Report's Research Officer, the consultant shall carry out a series of activities to:
- Identify and resolve methodological issues arising from the combination of administrative and household survey data in a single model.
- Identify and resolve methodological issues arising from the limited ability to reconstruct school attendance status at earlier times from cross-sectional attendance data.
- Develop and implement a methodology for disaggregation of completion and out-of-school estimates by equity dimensions.
- Develop an out-of-school addition to the existing ABC model website combining background information, documents, and results with an embedded interactive visual dashboard that allows
    o efficient visual identification of problematic input data and estimation outliers for internal

quality control and continuous model improvement, and
- o exploration of results by the public (e.g. comparison with raw survey estimates, exploration of parameters, country trends, survey bias).
- Contribute to the drafting of a results-focused document accessible to non-technical audiences.

Requirements

A minimum of 2 years of relevant professional experience in applied statistics is required. Experience working with large-scale household survey data and education indicators; as well as advanced proficiency in R, STAN, and Bayesian modelling is required. The selected candidate must demonstrate the ability to communicate and document technical information in clear English and preference for the ability to work and communicate in another UN Language.

Deliverables

1. Work plan
2. Detailed methodological proposal
3. Preliminary overall OOS model results
4. Methodological proposal for OOS model disaggregation by equity dimensions
5. Model implementation and results of OOS model disaggregation by equity dimensions
6. Methodological proposal for joint completion and OOS modelling
7. Joint model implementation and results
8. Textual and data content for OOS model web dashboard
9. Technical project report and non-technical results-focused summary