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# Accelerating Higher Education Expansion and Development (AHEAD) Operation

*University of Moratuwa*

## REQUEST FOR EXPRESSIONS OF INTEREST (Consultancy on Data Modelling & Validation for passenger demand) AHEAD/RA3/DOR/UOM/ENG/DSC/CON/TOR 002)

The Government of Sri Lanka has received financing from the World Bank toward the cost of the Accelerating Higher Education Expansion and Development (AHEAD) Operation and intends to apply part of the proceeds for consultant services. The **services include**:

1. Household Travel Survey for Colombo District
  - 1.1. Update Trip Distribution patterns for the present condition
  - 1.2. Update Trip timing (departure & arrival etc.) of the commuters
  - 1.3. Update modal split under the present condition
  - 1.4. Update the model parameter values such as Value of Time, transport expenses, transit-related parameters
2. Modal shift behaviour under the prevailing post-pandemic and economic crises
  - 2.1. Develop a methodology for collecting modal shifting in the present situation
  - 2.2. Conduct the Revealed Preference Survey for the Western province
  - 2.3. Conduct the data cleaning and Initial Analysis
  - 2.4. Collect the secondary data available in the Sri Lankan Railway
3. Big data Analysis for Travel Pattern Study
  - 3.1. Design, develop and deploy a mechanism to extract railway, bus and taxi GPS data
  - 3.2. Conduct data preprocessing including appropriate data integration.
  - 3.3. Validate the extracted data using suitable techniques
  - 3.4. Design develop and deploy analytical query engine code to extend the existing transport data analytics platform.
  - 3.5. Validate the data with suitable ground truth via data triangulation.
  - 3.6. Support the extraction of processed statistics from the Datawarehousing platform.
4. Travel pattern assessment for Rail Passengers.
  - 4.1. Development of survey plan & forms for capturing the travel pattern & socio-economic data of rail passengers
  - 4.2. Survey selected stations in the Kelani Valley line.

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#### 4.3. Conduct the data cleaning and Initial Analysis

The main duties and responsibilities of the Consultancy on Data Modeling & Validation for passenger demand will be to:

<b>Deliverable NO</b>	<b>Action Item</b>	<b>Description</b>
#1	Inception Report	Data requirements and data collection plan
#2	Interim Report & database	Report on the data collection (Component 1,2 &4)
#3	Presentation 1	Presentation on data collection (Component 1,2 &4)
#4	Draft Final Report	Report of the Data Collection & Initial Analysis
#5	Presentation 2	Presentation on the Data Collection & Initial Analysis – (Components 1,2 &4)
#6	Final Report	Final report with responses to the client's comments on the draft final report - (Components 1,2 &4)
#7	Presentation 3	Presentation on final Report - (Component 1,2 &4)
#8	Big Data Extraction	Extraction of bus, railway, and taxi GPS data from the sources (Component 3)
#9	Data Pre-processing and validation	Design and execute appropriate and suitable data preprocessing and validation of the same (Component 3)
#10	Code development	Developing Appachi SPARK or other code to enable analytical queries. (Component 3)
#11	Data Validation	Data validation via suitable data triangulation approaches. (Component 3)
#12	Documentation	Documentation of all the data and code and also preparation of user support content for the use of the analytics engine to support the GPS-related queries. (Component 3)

**The duration of the service is for 4 months from the date of signing the contract.**

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The Director, Operations Technical Secretariat, AHEAD Project on behalf of the DataSEARCH, University of Moratuwa now invites eligible individuals to indicate their interest in providing the services. Interested individuals must provide information indicating that they are qualified to perform the services.

**Required Qualifications and Experience:**

- Transport Data Analyst & Team Lead (TM) (1 position) must possess a BSc or higher qualification in Transport Planning & Management / Engineering

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More than 6 years of experience in Transport Data Analysis & Travel Demand Forecasting

- Survey Coordinator (1 position) must possess a BSc or higher qualification in Transport Planning & Management / Engineering
- Big Data Analyst (2 positions) must possess a BSc or higher qualification in Computer Science or Information Technology

**Required Professional Competencies:**

- Sound communication skills.
- Ability to interact with academic and administrative staff in the university and undergraduates.
- Ability to coordinate and facilitate the implementation of processes and procedures.
- Ability to analyze and resolve implementation issues effectively.

A consultant will be selected in accordance with the procedures set out in the Government of Sri Lanka's Guidelines on Selection and Employment of Consultants-2007.

Interested consultants may obtain further information at the address below during office hours from 8.30am – 4.00pm.

**Expressions of interest must be delivered or sent through registered post along with a CV in a sealed envelope to the address below, on or before 2.00 pm on 21<sup>st</sup> November 2022.**

The phrase "Consultancy on Data Modeling & Validation for passenger demand - AHEAD/RA3/DOR/UOM/ENG/DSC/CON/TOR 02" should be marked on the top left-hand corner of the envelope.

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**Attn:**

Deputy Director- Procurement,  
Operations Technical Secretariat,  
AHEAD Project,  
First Floor, FGS Building,  
University of Moratuwa.

Tel: 011-2640051 Extension & 1892

Fax: 011-2651699