Data Analytics for Decision Making for Development Sector Professionals

Programme Coordinator: Prof. Sridhar Telidevara

About Programme

The usage of Data Analytics by organizations in development sector is gaining momentum over the past couple of years. The development interventions on a large-scale, like SRLMs, Poverty Alleviation Projects, Healthcare Projects or on a small-scale, like tracking transactions of SHGs in a village, generate rich primary qualitative and quantitative data. The data can be meaningfully leveraged to gain insights into various aspects of managing such programs, policy framing and advocacies, and for monitoring and evaluating the program outcomes through application of appropriate data visualization and rigorous data modeling techniques.

The development managerial decisions—regardless of their functional orientation—are highly complex and application of appropriate analytical tools to data collected in multiple stages and with multiple objectives aids not only evidence-based policy decision making but also helps in effective management of the interventions. This program on data analytics focuses on a wide array of applications of statistical tools and machine learning algorithms to describe and visualize data, run explanatory and predictive models that learn from the past data. The program uses opensource software R apart from EXCEL for conducting the data analysis.

The application of such techniques in the context of developmental programs should be done with utmost care and responsibility else for its deleterious consequences of biasedness, violation of privacy, undesirable and unethical segmentation of the beneficiaries etc. The data analytics team must be sensitized to avoid such discreet application of techniques by promoting awareness for a healthy and responsible data analysis for development. Thus, the need to examine the evidence knowledgeably and critically over and above the importance of gaining insights together make a valuable proposition to practitioners to pursue this program.

Learning Objectives

The objective of the program is to enable employees of development organizations, development practitioners and members of organizations supporting the development sector to learn and apply analytical techniques to study issues of concern to the organizations. The learning objectives of the CEP are to develop skills and build competency in:

1. Descriptive Analytics,
2. Exploratory Analytics, and
3. Predictive Analytics

Expected Learning Outcomes

1. Data preparation for analysis
2. Select appropriate measures for summarizing and visualizing development sector data.
3. Analyze and draw inferences from data using appropriate multivariate statistical methods, datamining and machine learning algorithms using R.
4. Interpret and communicate the results of a statistical analysis
5. The merits and limitations of various statistical techniques and algorithms

Programme Content

The acquisition of analytical capability by an organization is going to be a key driver for effective implementation of projects and programs that are designed to impact the poorest of the poor. The various topics that will be covered in the program are:

Beginner's Module

1. Hands-on working knowledge using EXCEL and R
2. Data handling and preparation of Data
3. Data visualization and Descriptive Stats
4. Multivariate Linear Regression models
5. Introduction to Text Analytics
6. Cluster Analysis

Advanced Module – Machine Learning for classification

1. Logistic Regression/Discriminant Analysis for prediction
2. Factor Analysis
3. CART, k-Nearest Neighbor and Naïve Bayes Algorithms
4. Random Forests
5. Introduction to Topic Analysis
6. Sentiment Analysis

Note: Separate dates will be announced for the Beginner's and Advanced Modules.

Pedagogy

The classroom sessions are data driven and the data sets are chosen from the development sector. Hands-on working using R during the sessions, interactive classroom sessions, pdf presentations for explaining concepts and practice assignments and a one-month project (Optional) are all part of the pedagogy.

Requisites: The participants should bring their own laptops with a minimum of 8 GB RAM.

Beginner's module: It is good to have a basic understanding of statistics but not necessary.

For Advanced Module: Basic Understanding of Statistics is mandatory.

Who Will Benefit?

The program is designed for keeping in mind two cohorts of professionals. The first cohort is frontline and midlevel professionals in developmental organizations who deal with the project specific data for decision making. The second cohort is for faculty from various colleges who intend to hone their skills and apply open statistical software for their research and classroom teaching.

Duration

The programme sessions are designed to deliver the content of the programme effectively over a five-day period for the beginner's module.

Programme Dates

Beginner's Module: August 22-26, 2022 (5 days)

Advanced Module: Prerequisite is Beginner's module (to be announced later)

Programme Fee

Beginner's module: Rs. 20,000 per participant and a maximum of 30 participants per program. The fee is inclusive of lunch and snacks during the program, tuition fee, reading material, stationery, etc.

Advanced Module: Fee to be announced later.

The fee does not include boarding and lodging but the institute can provide assistance to the participants on payment basis directly to the hotel.

Faculty for the Program

1. Prof. Sridhar Telidevara (Programme Coordinator)
   (https://dmi.ac.in/about-faculty/18/Sridhar)

2. Prof. Surya Bhushan (Joint Programme Coordinator)
   (https://dmi.ac.in/about-faculty/3/Surya)

3. Prof. Gaurav Mishra (Joint Programme Coordinator)
   (https://dmi.ac.in/about-faculty/17/Gaurav)

Contact Details

Mr. Subodh Kumar
Manager (CEP)
Development Management Institute (DMI)
2nd Floor, Udyog Bhawan, East of Gandhi Maidan, Patna – 800004
Phone: 0612 – 2324123 Mobile: (+91) 8130025841
Email: cep@dmi.ac.in