Data Analytics for Development Sector
September 23-27, 2019
Programme Co-ordinator: Prof. Sridhar Telidevara

Introduction

The usage of Data Analytics by organizations in development sector is gaining momentum over the past couple of years. The development interventions either a large-scale, like JEEViKA, or a small-scale, like tracking transactions of SHGs in a village, generate rich primary qualitative and quantitative data which can be leveraged to gain insights into societal problems, policy framing and advocacies, and for monitoring and evaluating the programs 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 will also introduce participants to open source software R apart from EXCEL for conducting the 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

Learning Outcomes:
- Data preparation for analysis
- Select appropriate measures for summarizing and visualizing development sector data.
- Analyze and draw inferences from data using appropriate multivariate statistical methods, datamining and machine learning algorithms using R.
- Interpret and communicate the results of a statistical analysis
- 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:

Module 1
1. Hands-on working knowledge using EXCEL and R
2. Data handling and preparation of Data
3. Data visualization and Descriptive Stats
4. Application of hypothesis testing
5. Multivariate Linear Regression models

Module 2
1. Logistic Regression/Discriminant Analysis for prediction
2. CART, k-Nearest Neighbor and Naïve Bayes Algorithms
3. Cluster Analysis
4. Factor Analysis

Note: Separate dates will be announced for the Module 2 on the topic.

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 are all part of the pedagogy.

Requisites:

Module 1: Basic understanding of simple mathematics

Module 2: Module 1 is a prerequisite for Module 2

Apart from the knowledge, it is advised that participants may bring their own laptops to work on the data during the CEP.

Programme Fee

The programme is fully residential and fee per participants is INR 25,000/- per person (for one module). The fee is inclusive of GST (current rate), boarding, tuition fee, reading material, stationery, etc. Accommodation cost* will be chargeable on actual basis as per the choice of participant.

*Accommodation Cost (checkout 12:00 Noon)

#	Components	Amount **(INR)**
1	Single Occupancy	Rs 4,500 /-
2	Double occupancy	Rs 3,500 /-

Faculty Profile for the Program
https://dmi.ac.in/about-faculty/18/Sridhar
https://dmi.ac.in/about-faculty/3/Surya
https://dmi.ac.in/about-faculty/17/Gaurav

Deadline for the Confirmation of Participation: September 6, 2019

Contact Details

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