

FACULTY DEVELOPMENT PROGRAM on

Advanced Research Methods in Marketing Application of Artificial Intelligence & Machine Learning



in collaboration with

Centre of Applied Blockchain and Digital Transformation

&

Internal Quality Assurance Cell (IQAC)

PROGRAM DETAILS



The graphic features a dark blue background with white and orange accents. It includes three circular portraits of faculty members: Dr. Gobinda Roy, Dr. Arunava Bandyopadhyay, and Dr. Arghya Ray. A large circular image shows the IMI Kolkata building. The text is arranged in a structured layout with bullet points and a QR code.

Online Faculty Development Programme

Advanced Research Methods in Marketing

Application of Artificial Intelligence & Machine Learning

Contents

- ✓ AI/ML regressions in marketing research
- ✓ Decision Tree
- ✓ Random Forest
- ✓ Bayesian regression Models
- ✓ Logistic regressions

Intendent Participants

- ✓ Faculty members
- ✓ Doctoral students
- ✓ Working Professionals

Registration



in Collaboration with Centre of Applied Blockchain and Digital Transformation & IQAC

May 17 to 19, 2024 **IMI Kolkata**

DATE: 17th to 19th May 2024

Program Directors and Resource Persons: 1. Dr. Gobinda Roy

2. Dr. Arghya Ray

3. Dr. Arunava Bandyopadhyay

Program Co-ordination: 1. Ms. Satabdi B. Chakraborty

2. Ms. Indrani Paul

Panel Discussion Experts: 1. Dr. Nirmalya Bandyopadhyay

Professor, Fore School of Management, New Delhi

2. Dr. Tirthankar Nag,
Professor, IMI Kolkata

3. Dr. Swagato Chatterjee
Senior Lecturer, Queen Mary University of London

NO. OF PARTICIPANTS

Total 49 participants (including 17 Faculty members and 32 doctoral scholars)

AFFILIATIONS OF PARTICIPANTS

Category	Institute_name_or_affiliation
Doctoral Scholars	Indian Institute of Technology, Kharagpur
Doctoral Scholars	Indian Institute of Technology, Hyderabad
Doctoral Scholars	National Institute of Technology, Durgapur
Doctoral Scholars	Indian Institute of Management Shillong
Doctoral Scholars	Indian Institute of Management Sambalpur
Doctoral Scholars	Indian Institute of Management Indore
Doctoral Scholars	IIFT Kolkata
Doctoral Scholars	MICA
Faculty Members	Lal Bahadur Shastri Institute of Management, Delhi
Faculty Members	DELHI school of economics
Doctoral Scholars	The Maharaja Sayajirao University of Baroda
Faculty Members	XLRI
Doctoral Scholars	St. Xavier's University, Kolkata
Faculty Members	University B.T. and Evening College Cooch Behar
Faculty Members	St. Joseph's Institute of Management
Doctoral Scholars	Chandigarh University
Doctoral Scholars	Chandragupt Institute of Management Patna
Faculty Members	NSHM Business School
Doctoral Scholars	Pondicherry University
Doctoral Scholars	Amity University, Lucknow campus
Faculty Members	Sandip University
Faculty Members	ICFAI Business School
Faculty Members	Symbiosis Centre for Information Technology
Doctoral Scholars	Jaipuria Institute of Management, Jaipur
Faculty Members	IQ City United World School of Business
Doctoral Scholars	DMS, Kannur University
Doctoral Scholars	Kannur university
Faculty Members	JAIN UNIVERSITY

PROGRAM SCHEDULE

Day 1 | 17 May, 2024 | Friday

Time	Topic	Session content	Instructor
10:00 AM – 10:10 AM	Welcome Address		Director -IMIK
10:15 AM – 11:15 AM	Overview of R and Python	Basic of R and Python programming environment	Dr. Arghya Ray
11:30 AM - 12:30 PM	AI/ML regressions in marketing research	Overview of application of AI/ML regressions in research	Dr. Gobinda Roy
12:40 PM - 1:40 PM	Decision Tree (DT)	Introduction to Decision Trees, Decision Tree Construction, Handling Categorical and Continuous Data, Test accuracy of the result (Creation of Confusion matrix)	Dr. Arghya Ray

Day 2 | 18 May, 2024 | Saturday

Time	Topic	Session content	Instructor
10:00 AM – 11:00 AM	Decision Tree (DT)	Visualizing the test set result, application in research	Dr. Arghya Ray
11:10 AM - 12:10 PM	Random Forest (RT)	Ensemble Learning and Random Forest Overview, Random Forest Construction	Dr. Gobinda Roy
12:20 PM -13:20 PM	Random Forest (RT)	Parameter Tuning, Feature Importance and Interpretability, and application in research	Dr. Gobinda Roy
Lunch Break			

2:20 PM - 3:20 PM	Bayes Regressions (BR)	The Basics of Bayesian Statistics, Introduction to Bayesian Regression, Bayesian Simple Linear Regression, Bayesian Multiple Linear Regression	Dr. Arunava Bandyopadhyay
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Day 3 | 19 May, 2024 | Sunday

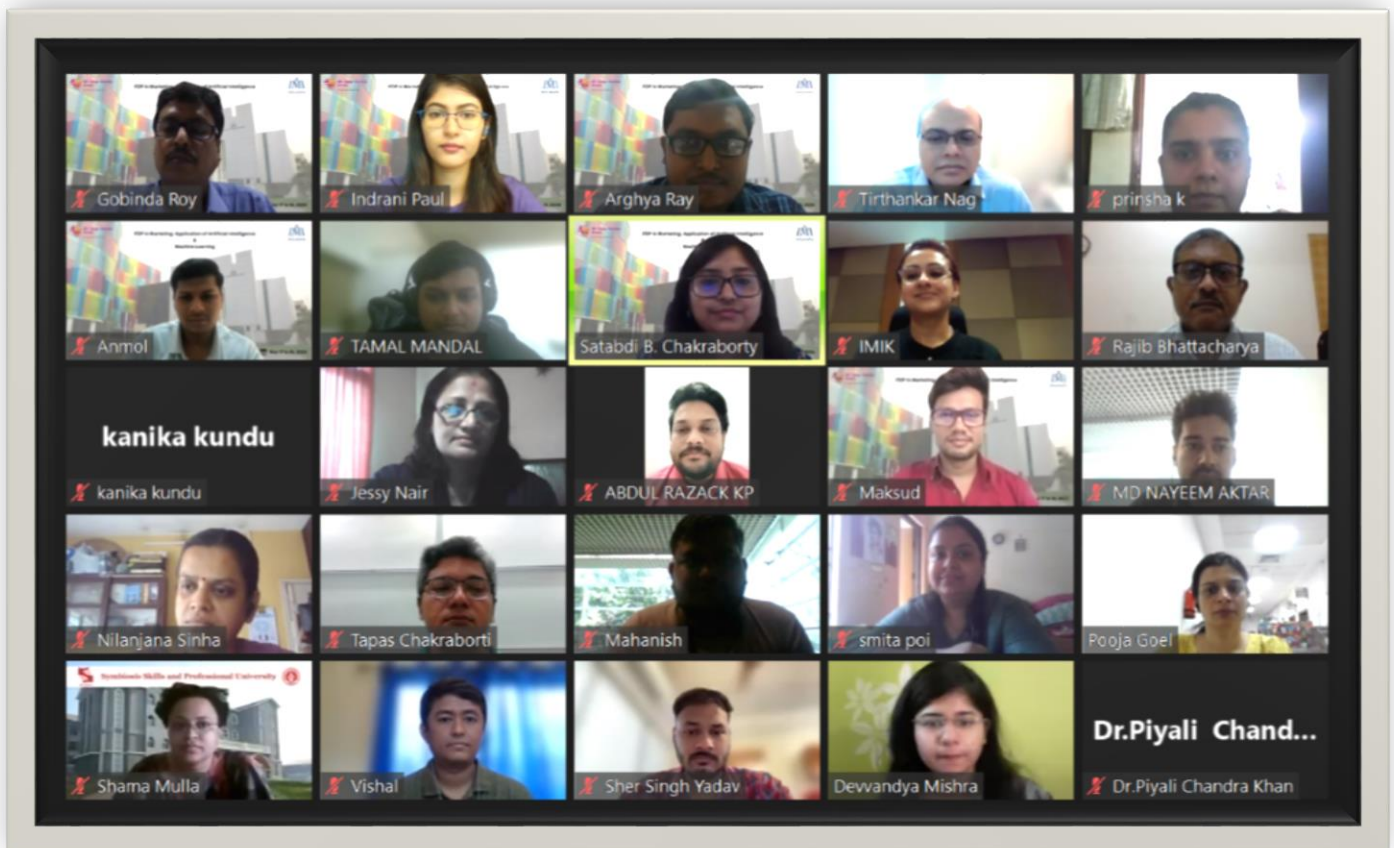
Time	Topic	Session content	Instructor
10:00 AM – 11:00 AM	Bayes Regressions (BR)	Fitting the Bayesian Model, and application in research	Dr. Arunava Bandyopadhyay
11:20 AM - 12:20 PM	Logistic Regressions (LR)	Introduction to Logistic Regression, Model Interpretation and Inference, Model Evaluation and Performance Metrics, and application in research	Dr. Arunava Bandyopadhyay
12:30 pm – 13:30 PM	Publication Strategy	How to publish in top marketing journal	Panel Discussion

FDP EVENT SEQUENCE

DAY 1 | 17 MAY, 2024

1. Inauguration & Photo Session:

The online inauguration session was graced by the presence of Director of IMI Kolkata, Dr. Mohua Banerjee, Dean Research IMI Kolkata, Dr. Tirthankar Nag and program directors Dr. Gobinda Roy, Dr. Arghya Ray, Dr. Arunava Bandyopadhyay along with other faculty members of IMI Kolkata and participants of the FDP. Dr. Banerjee delivered the Welcome Address to the participants in FDP, followed by an online group photo session in the zoom platform.



Picture Summary: Group photo taken after the inauguration session

1. Session 1 & 2: Basic of R and Python programming and overview of AI/ML regressions

The first session was focused on Basic of R and Python programming environment for the participants before starting with the hands-on practice using relevant dataset. The session was taken by Dr. Arghya Ray. Installing guideline for the software's were sent to the participant beforehand. In the second session, Dr. Gobinda Roy discussed the basic overview of application of AI/ML regressions in research with relevant example of research papers from marketing.

2. Session 3: Introduction to Decision Tree (DT)

Dr. Roy discussed the Decision Trees, focusing on the Decision Tree Construction, Handling Categorical and Continuous Data, Test accuracy of the result (with the help of Creation of Confusion matrix)

Recording

3

1. Three converging trends in Research – rise of AI/ML regressions

- **Trend 1: Rise of Big data:** Volume, variety, velocity, veracity and Variability (Hair et al., 2014) → New area of Analytics
- **Trend 2: Statistical model vs. data mining model** → Statistical model vs. algorithmic model (Breiman, 2004)*: **Stat model/data model** focus on model fit and acceptability; Algo model – focus on process to prediction. ANN, RF, DT
- **Trend 3: Causal inference:** “Cause and effect” in non-experimental situation. (Pearl, 2009) → Structural Causal model (graphical representation of model): CB-SEM, PLS-SEM. GSCA-SEM.

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Participants Chat Share Screen Record Reactions Apps Whiteboards Notes

Leave

Picture Summary: Session taken by Dr. Gobinda Roy on basics of AI/ML regressions

DAY 2: 18th May 2024

3. Session 4: Applications of Decision Tree (DT) in Marketing

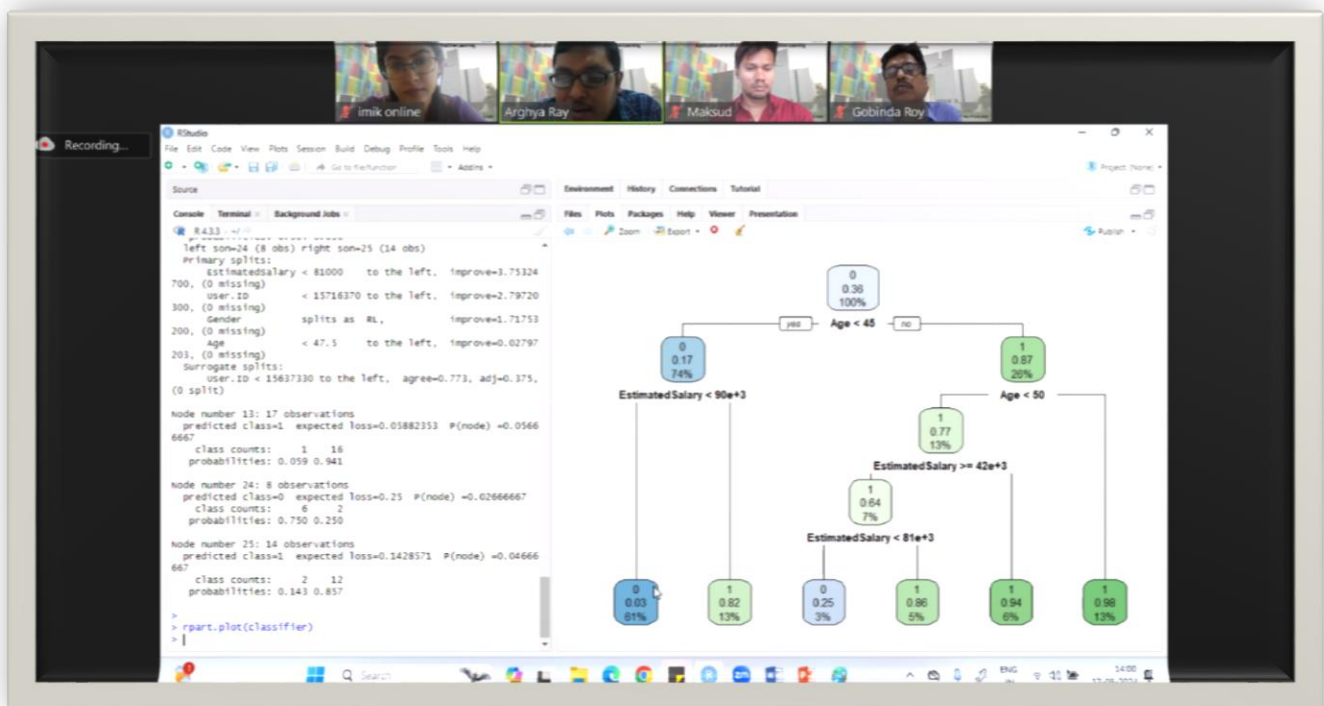
Day 2 started with the exploration of applications of Decision Tree (DT) in Marketing. The hands-on session was conducted using R software.

4. Session 5 & 6: Use of Random Forest in marketing research

Dr. Gobinda Roy delivered an engaging lecture on applications of Random Forest in marketing research as a tool of AI/ML regression. The session focus on ensemble learning and random forest overview, random forest construction, Parameter Tuning, Feature-Importance and interpretability and application in research

5. Session 7: Use of Bayes Regressions (BR)

Dr. Arunava took the session on use of Bayes Regressions (BR) in marketing research, emphasizing the basics of Bayesian Statistics, Bayesian Simple Linear Regression and Bayesian Multiple Linear Regression



Picture Summary: Session taken by Dr. Arghya Ray on Decision Tree (DT)

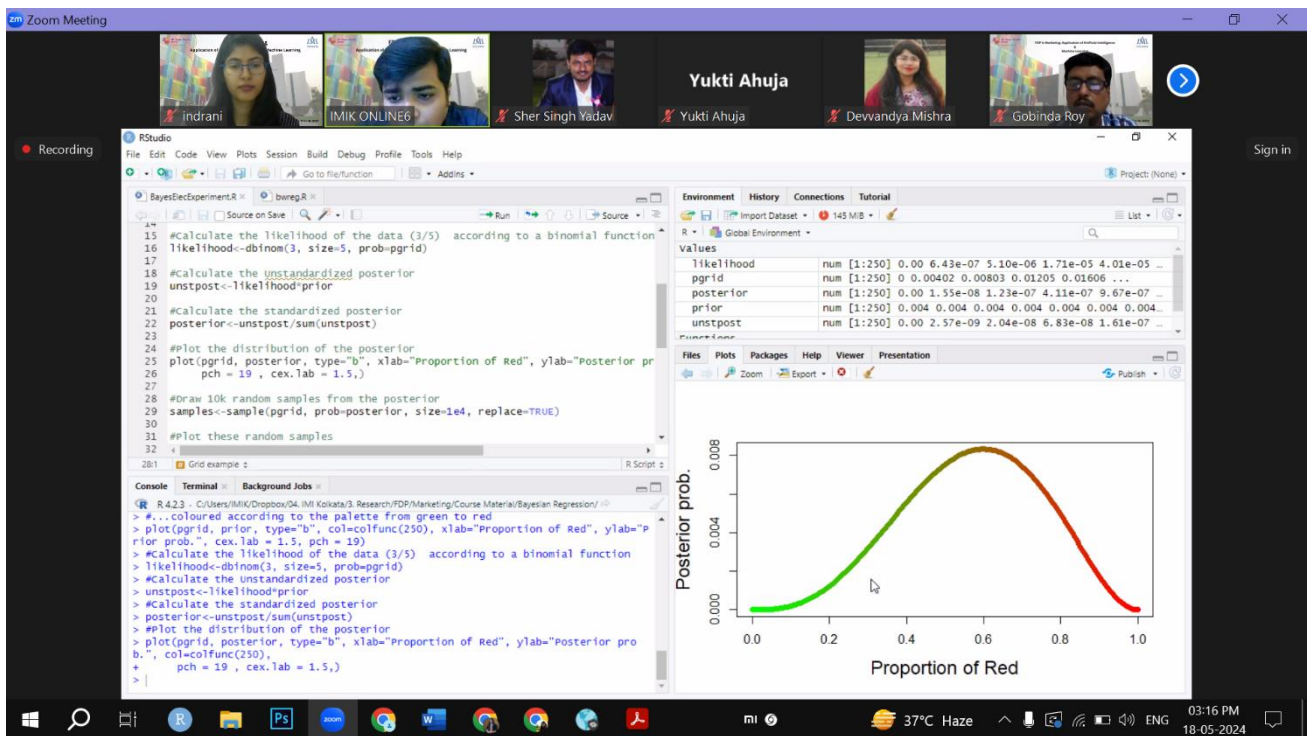
DAY 3: 19th May 2024

6. Session 8: Bayes Regressions (BR) application:

Following the previous session with basics of BR, Dr. Arunava, extends the discussion on the application of BR in marketing research with hands-on practices using R software. The data set for practice in the session had been shared well before the session started for a smooth learning and practice session.

7. Session 9: Logistic Regression:

In the final lecture session of the FDP, Dr Arunava discussed the basics of Logistic Regression. This session emphasized on model interpretation and inference, model evaluation and performance metrics, and application in research using relevant high quality research articles.



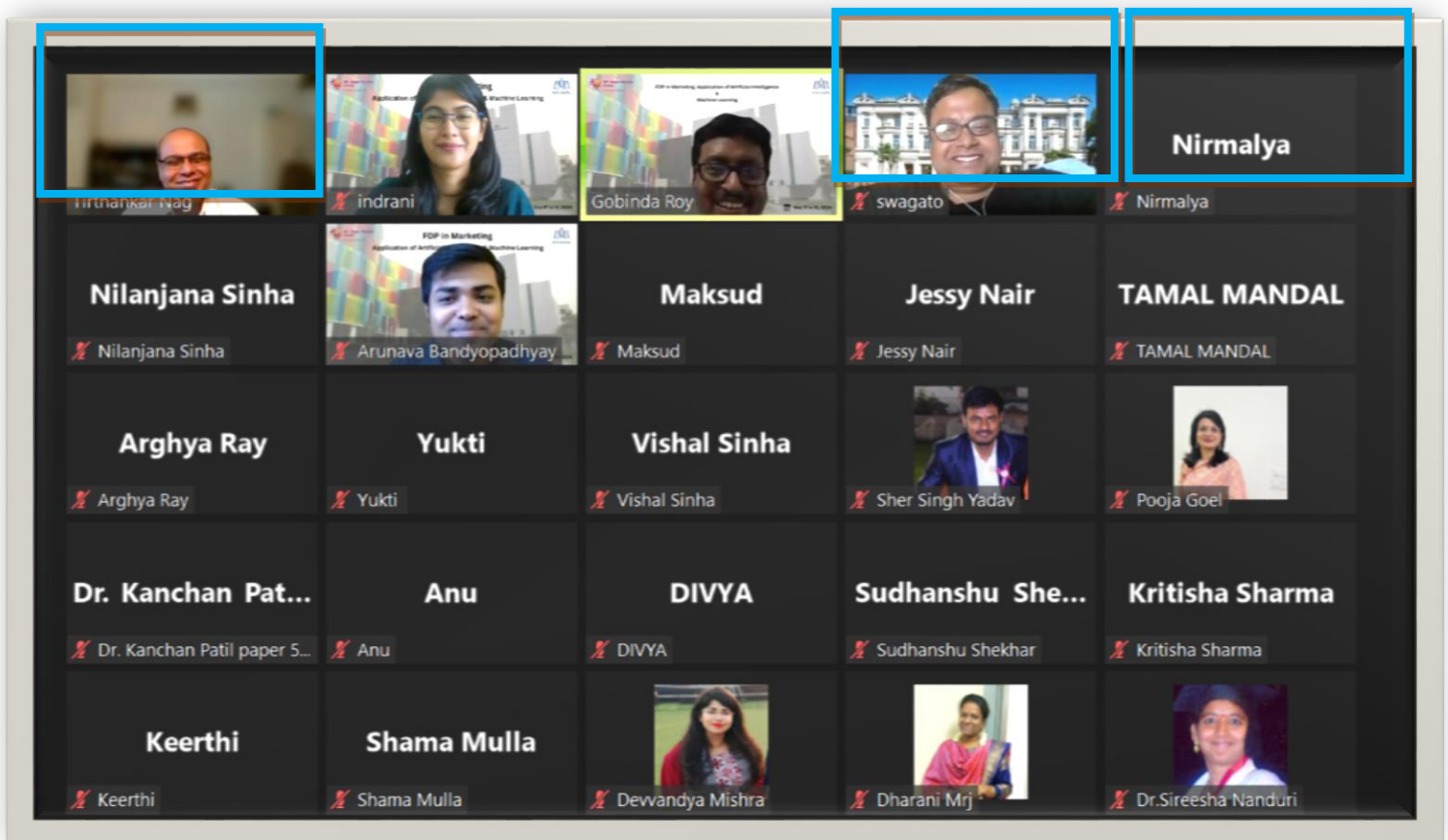
Picture Summary: Session taken by Dr. Arunava Bandyopadhyay on Bayes Regressions (BR)

8. Session 10: Panel Discussion & Valedictory Session

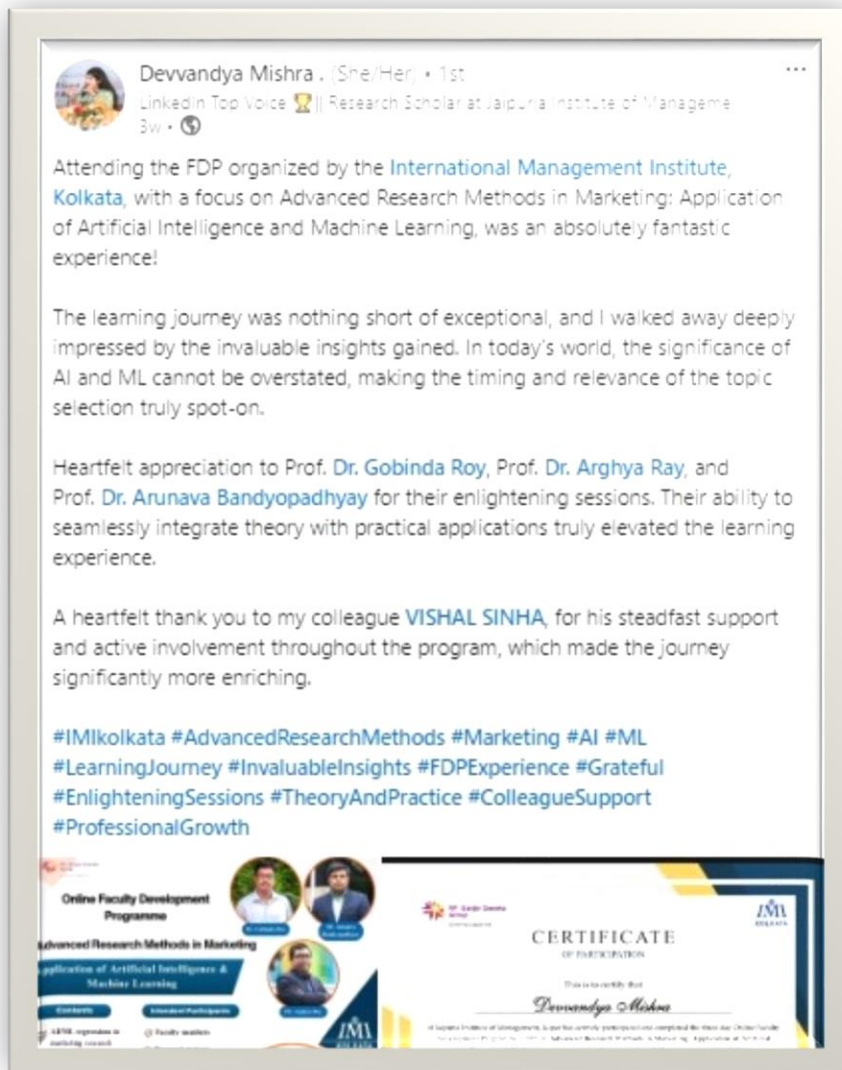
After the lecture sessions, a panel discussion was organized. The topic was “publication strategy of how to publish in top marketing journal”. The expert panel members Professor Nirmalya Bandyopadhyay, Professor Tirthankar Nag and Dr. Swagato Chatterjee shared their experience being the editor in chief of journals. Dr. Swagato Chatterjee, Senior Lecturer at Queen Mary University, London has been invited as an eminent researcher in the field of digital marketing and analytics. Prof. Nirmalya Bandyopadhyay, chief editor of Abhigyan. Also highlighted many significant points, EICs look for in a potential manuscript. Dr. Gobinda Roy moderated the whole session. The participants clarified their doubts regarding the publication processes from the eminent panel members.

At

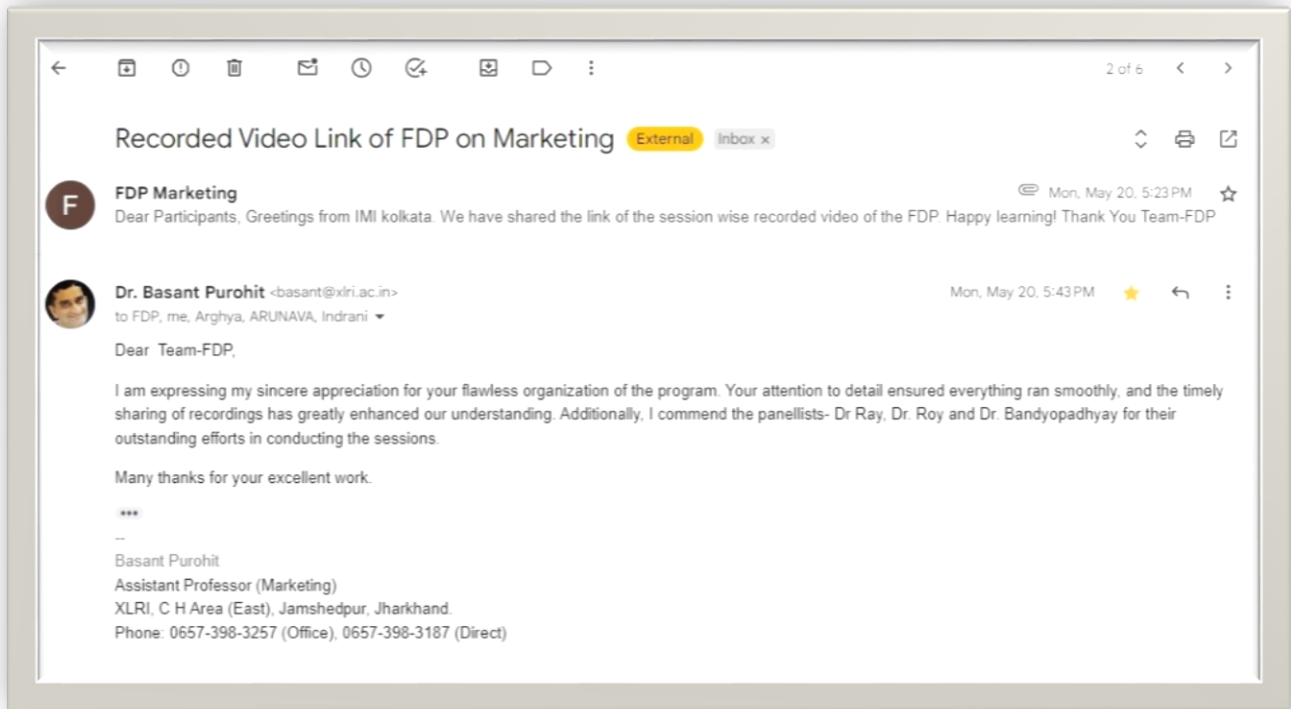
Picture Summary: Panel discussion with the panel members and participants



At the end of the FDP, the participants shared their feedback through google form regarding the sessions. Almost everyone has shared positive feedback with some suggestion such as they requested for a series of such engaging sessions to be conducted in future in the offline mode or in the summer or winter break. The session was concluded with a valedictory speech by Dean of Research, IMI Kolkata, Dr. Tirthankar Nag followed by a vote of thanks by Dr. Gobinda Roy.



Picture summary: Feedback received in LinkedIn from participant (Doctoral Scholar)



Picture summary: Feedback received in email from participant (Faculty)