

**J.C. BOSE UNIVERSITY OF SCIENCE AND TECHNOLOGY, YMCA FARIDABAD**  
NAAC 'A' Grade accredited Haryana State University



## Department of Business Studies Management Development Program on “Business Analytics Using R”

**Held on 23<sup>rd</sup> and 24<sup>th</sup> April 2022**

The Department of Business Studies organised two days Management Development Program on “**Business Analytics Using R**” on **23<sup>rd</sup> and 24<sup>th</sup> April 2022**. The program was attended by 32 participants from academia and industry. More than 20 participants from industries such as Carrier Air conditioning Pvt Ltd, Huges Communication Pvt Ltd, EXL Service, Titan Industries, HCL Technologies, Indian Oil Corp Ltd and Steel Authority of India Limited designated at the level of DGM, AGM, Manager, Assistant Manager were benefited from the program.

The inaugural session was presided over by Vice Chancellor, Prof. Sushil Kumar Tomar. While addressing the participants, the hon'ble Vice Chancellor discussed the relevance of business analytics in recent times. Speaking on this occasion, he applauded the efforts and hard work of chairperson Dr Manisha Goel and organising team members, Dr Rashmi, Dr Shruti, Dr Parveen and Ms Radhika for the initiative taken by the Department of Business Studies for organizing Management Development Program on Business Analytics using R.



In the inaugural of the program, Mr. Parth Kaushik, working as a Data scientist in Deloitte Consulting (USA), Graduated MS - Data Analytics and Management from Illinois Institute of Technology, Chicago was the keynote speaker for the MDP.



During two days of MDP, the sessions were delivered by eminent speakers Dr Sourabh Gupta & Dr Srinivan. Dr. Saurabh, Ph.D. from University of Southern Mississippi, USA, with 18 years of experience in business analytics discussed various facets of business analytics and techniques for business data analysis to the participants. He provided practical exposure of data visualization, sentiment analysis and regression using software JMOVI and R with simulation methods on real-life business case study and datasets. Dr. R. Srinivasan, Professor at KIET School of Management, with more than 35 years of rich academic and industry experience provided hands-on experience of predictive modelling with simulation exercises using monte-carlo techniques.

The Jupyter Notebook displays the following R code and output:

```

> prediction_a = lm(doe~age)
> summary(prediction_a)

Call:
lm(formula = doe ~ age)

Residuals:
    Min       1Q   Median       3Q      Max
-1.3271  -0.4870  -0.5085  -0.6740  -1.5199

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)  2.458322    0.035364  69.515 <2e-16 ***
age          0.231186    0.007621  30.711 <2e-16 ***
---
Signif. codes:  0. '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1.

>
  
```

The bar chart 'Survey sentiments' shows the following approximate counts for each sentiment category:

Sentiment	Count
anger	~1000
anticipation	~1500
fear	~1200
joy	~1800
sadness	~1000
surprise	~1400
trust	~1600

The screenshot displays an Excel spreadsheet with the following data:

Q = Quantity Sold		P = Sale Price / Unit		V = Variable Cost / Unit	
Probability	No. of Units	Probability	Value	Probability	Value
10%	1800	40%	20	30%	15
10%	1900	40%	30	50%	20
20%	2000	10%	40	20%	25
30%	2200	10%	50		
20%	2300				
10%	2500				
TOTAL		100%			

Additional data from the spreadsheet:

- Year 1: Sales 1000, Year Q% 14%
- Year 2: Sales 1100, Year Q% 4%
- Year 3: Sales 1200, Year Q% 6%
- Year 4: Sales 1275, Year Q% -15%
- Year 5: Sales 1100, Year Q% 11%
- Year 6: Sales 1225, Year Q% 13%
- Year 7: Sales 1400, Year Q% 6%
- Year 8: Sales 1325, Year Q% 12%
- Year 9: Sales 1500, Year Q% 5%
- Year 10: Sales 1575, Year Q% 2%
- Year 11: Sales 1600, Year Q% -15%

Summary statistics: F = 3000, B = 0, I = 30000, D = 2000, r = 10%, n periods = 5 years, T (Tax) = 50%. Min = -15%, Max = 18%.

The MDP provided a wider perspective to attendees in identifying prudent decision for their respective organisation based on business analytics. It also enabled learners to apply basic statistics to explore and understand business data & gain knowledge and skills on descriptive and visual analytics to start doing these analytics using R software. Further, it provided hands-on data analysis using software JMOVI and R with simulation methods on real-life business case studies and dataset to the participants. Furthermore, participants gained hands-on experience of sentiment analysis, predictive modelling & monte-carlo techniques with simulation method that enabled them to take appropriated business decisions.

The Zoom meeting grid shows the following participants:

- Row 1: Dr. Somvrat, Dr. Rajesh, Rajesh Singh, Radhika Sharma
- Row 2: SATISH PRAMADH WADHANE, Bhavuk Chikara, Shruvi iPhone, Anmol
- Row 3: Manish Katyal, J, Rahul Chauhan, Radhika Sharma
- Row 4: Anurag's iPhone, Sajni Devi, RAVEEN BHARAL, Vivek Tyagi