

## REDUCING COST OF POOR QUALITY VIA NSSR SAFETY / SUPPORT PROGRAMMES



By  
Venkatram K S, AOEC 2025  
v 1.00.2025



**SOCIAL  
ACCOUNTABILITY**

- ☐ Roads & Road Systems
- ☐ Road Arboriculture
- ☐ Road Infrastructure
- ☐ Traffic Engineering (TE)
- ☐ Traffic Control deployments
- ☐ Immersive TE deployments
- ☐ Commuter safety deployments
- ☐ Goods transportation networks/supply chains
- ☐ BSNL/TELECOM deployments
- ☐ BESCOM deployments
- ☐ BWSSB deployments
- ☐ Healthcare services deployments
- ☐ Medical supply services
- ☐ Educational institutions/in-situ sites/campuses
- ☐ EV Infrastructure/Flexi-fuel pumps
- ☐ Automobile dealer networks
- ☐ Automobile service centres/businesses
- ☐ MSME Manufacturers
- ☐ MSME Service deployments
- ☐ Corporate offices/campuses
- ☐ KSFES deployments
- ☐ FESA auditable buildings/sites/complexes
- ☐ Fast Track PRM deployments



## Domains

### NICE roads

- ☐ Border roads
- ☐ Flyovers
- ☐ Bridges
- ☐ Underpasses
- ☐ Link roads, road corridors
- ☐ Ring roads
- ☐ Connecting roads
- ☐ Road
- ☐ Stretch
- ☐ Route
- ☐ Highway

## Mainline Crisis Reduction Model with Active PRM and Passive PRM systems

SMART Vision

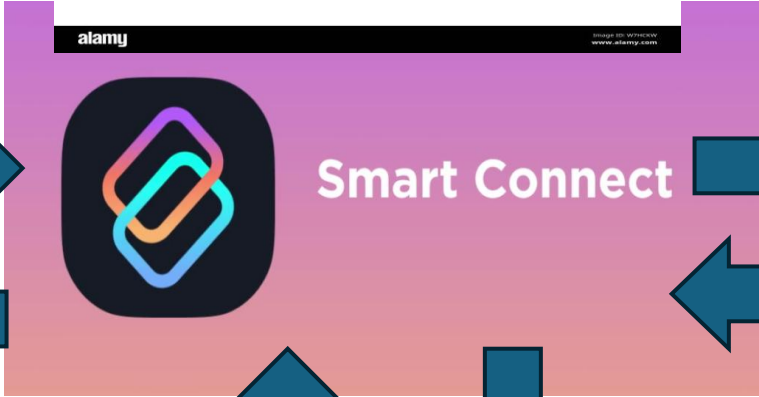
## Focus on Safer Commuting



- ☐ IRSE Editioning
- ☐ QOI/QOP/QOO/QOS design
- ☐ QP/CQI turnover rate
- ☐ Deep Interaction Link PRM level
- ☐ Non-conventional vehicle usage PRM level



KNOWLEDGE  
MANAGEMENT  
INDEX



PROCESS  
CAPABILITY  
INDEX



Accountability/  
AI/BI/CQI

# About the PROJECT Centre

**Name:** Cost of Poor Quality (COPQ) SMART City Model (SCM) Project Centre

**COPQ SCM Registered Ward Number(s):**

(1)

(2)

(3)

**COPQ SCM Analytics and Get Started Kit for:**

(1) SMARTER Ward Accountability - 2025

(2) SMARTER Condition Monitoring and Social Responsibility of the Cost of Poor Quality - 2025

**Safety Programmes: NSSR 2025 for Road Safety**

**Accountability for:**

(1) Event Editioning, Sensitization, Preparedness and Sustainable interest for Road Safety via Driver Fitness, Vehicle Fitness, Road System understanding and Alpha Assistance

(2) AI/BI/CQI in Road Safety solutions

# About the PROJECT Centre

**Name:** Cost of Poor Quality (COPQ) SMART City Model (SCM) Project Centre

**COPQ SCM Registered Ward Number(s):**

(1) (2) (3)

**COPQ SCM Analytics and Get Started Kit for:**

- (1) SMARTER Ward Accountability - 2025
- (2) SMARTER Condition Monitoring and Social Responsibility of the Cost of Poor Quality - 2025

**Co-achieving Support Programmes: NSSR 2025 for in (Karnataka) BBMP, BESCOM, BWSSB, HEALTHCARE/DIAGNOSTICS/SUPPLIES (H-D-S), COPQ-SCM connected BANKS & INSURANCE COMPANIES, FESA (or KSFES)**

**Accountability for Centre of Excellence integration for:**

- (1) Quality of information, Quality of Processes, Quality of Work planning, Quality of Execution and Outcome, Quality of Service
- (2) New or Relevant AI/BI/CQI for Top 10 Quality Promotion solutions

# CoE vision and scope of work

**Help Accountability/AI/BI/CQI for**

**National Safety Social Responsibility  
Top 10 insights for (Road) Safety  
Programmes**

**National Safety Social Responsibility  
Top 10 insights for Co-achieving  
Support Programmes**

# Use Top 10 Analytics in NSSR Programmes for Safety and Support to address the degradation due to climate change or targeted need in 2025-2026 and later

## **Vision:**

Develop a COPQ SCM  
MODEL

**Deliver targeted  
need, analytics,  
reports and case  
studies via a Project  
Centre**



## **Innovation**

Project Analysis to design solutions

---



## **Commitment**

Environmentally Conscious Practices

---



## **Development**

Project Growth Plans

---



## **Implementation**

Call to attention Resolution



# NSSR ROAD SAFETY PROGRAMME 2025 – GET STARTED

Schedule	Details	References
Get Started Registration for membership	Work in progress	
Get Started Kit and Mailer with any MOI/MOU/MOA review	Work in progress	
Undertaking for NSSR Safety and Support Accountability	Work in progress	
Top 10 Questions based on the Time Motion Scale important for the member	Work in progress	
Event Editioning	Work in progress	
Sensitization Editioning	Work in progress	
Knowledge Management Index	Work in progress	
Process Capability Measurement Index	Work in progress	

# NSSR ROAD SAFETY PROGRAMME 2025 – GET STARTED FOR DRIVER FITNESS

[illegible]

# NSSR ROAD SAFETY PROGRAMME 2025 – GET STARTED FOR UNDER THE ACCOUNTABLE HOOD VEHICLE FITNESS

[illegible]

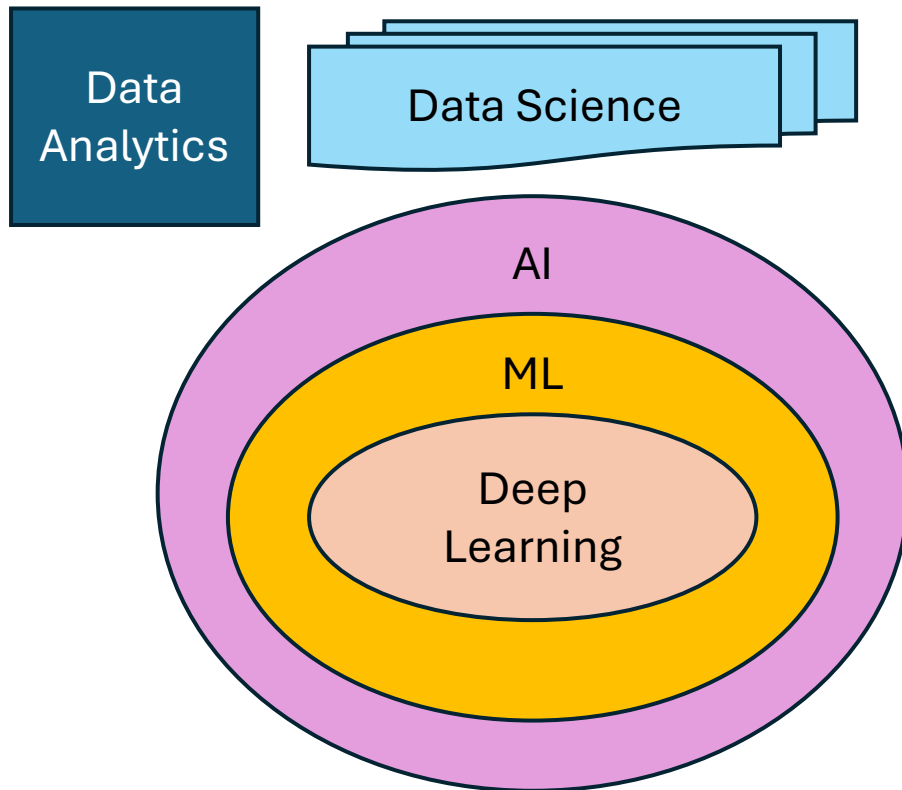
# NSSR ROAD SAFETY PROGRAMME 2025 – GET STARTED FOR ROAD SYSTEM ACCOUNTABILITY

Schedule	Details	References
	Road System Subscribed-Understanding/Indexe Signages-Signboards-Exhibits-Service Anywhere Anyhow Traffic Signs/Guidelines/ Integrated Service Model for Passive Safety & Active Safety / Warehouses/	

# NSSR ROAD SAFETY PROGRAMME 2025 – GET STARTED FOR ALPHA ASSISTANCE AND ACCOUNTABILITY

Schedule	Details	References
	Road System Subscribed-Understanding/ Integrated Service Model for Passive Safety & Active Safety / Mobile Healthcare Units/Field Level Clothing/Wearable Safety	

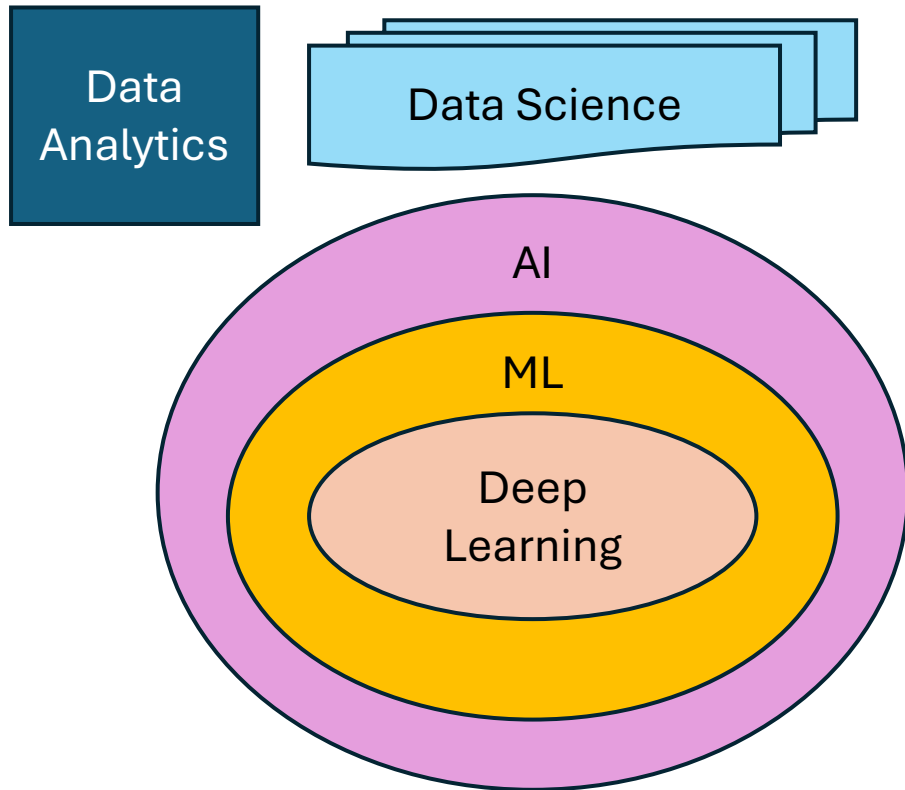
# TOP 10 COPQ SCM ANALYTICS 2025



Data Analytics combines the power of (a) data science, (b) statistical analysis, (c) More advanced computing (for example machine learning) to extract valuable insights from the data, understand trends, make informed decisions and optimize the use of resources and effort in operations

Among the 2 fields of statistical analysis, that is descriptive and inferential statistics, descriptive statistics deals with Exploratory Data Analysis to evince, and dig out insights to create interactive visuals and dashboards.

# TOP 10 COPQ SCM ANALYTICS 2025 – LEARNING (FOR D1, S1)



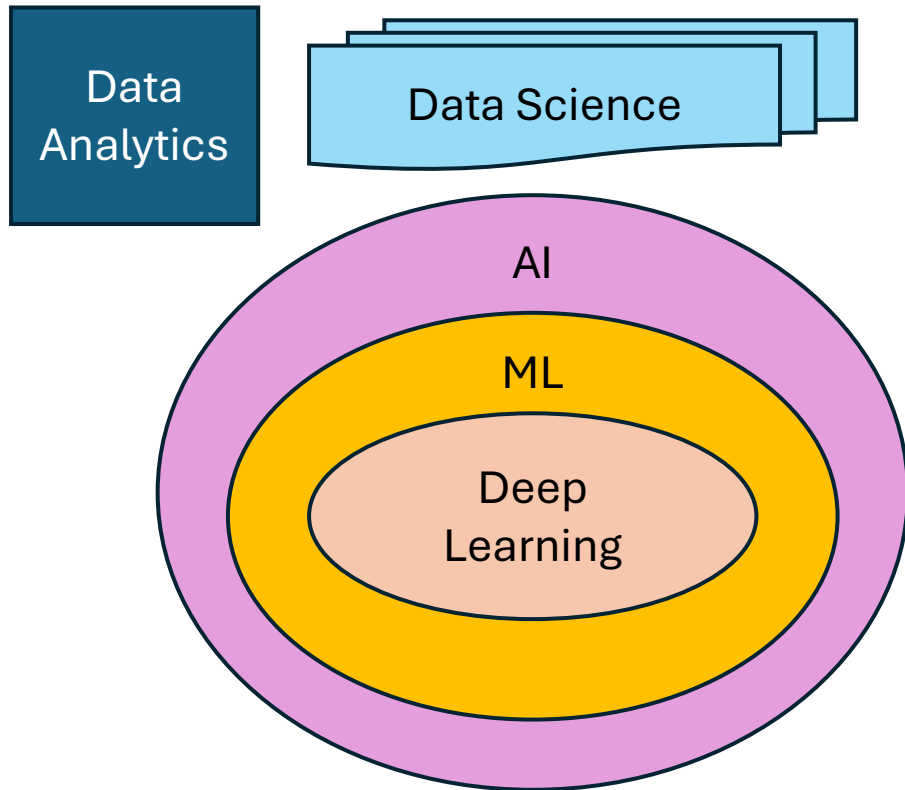
## Data Science Lifecycle

- ☐ Collect data
- ☐ Clean data
- ☐ Transform data
- ☐ Derive insights
- ☐ Develop visualizations

## Cleaning data or handling inherent issues involves

- ☐ Handling Duplicates
- ☐ Handling Outliers
- ☐ Handling Missing Values

# TOP 10 COPQ SCM ANALYTICS 2025 – LEARNING (FOR D1, S1)

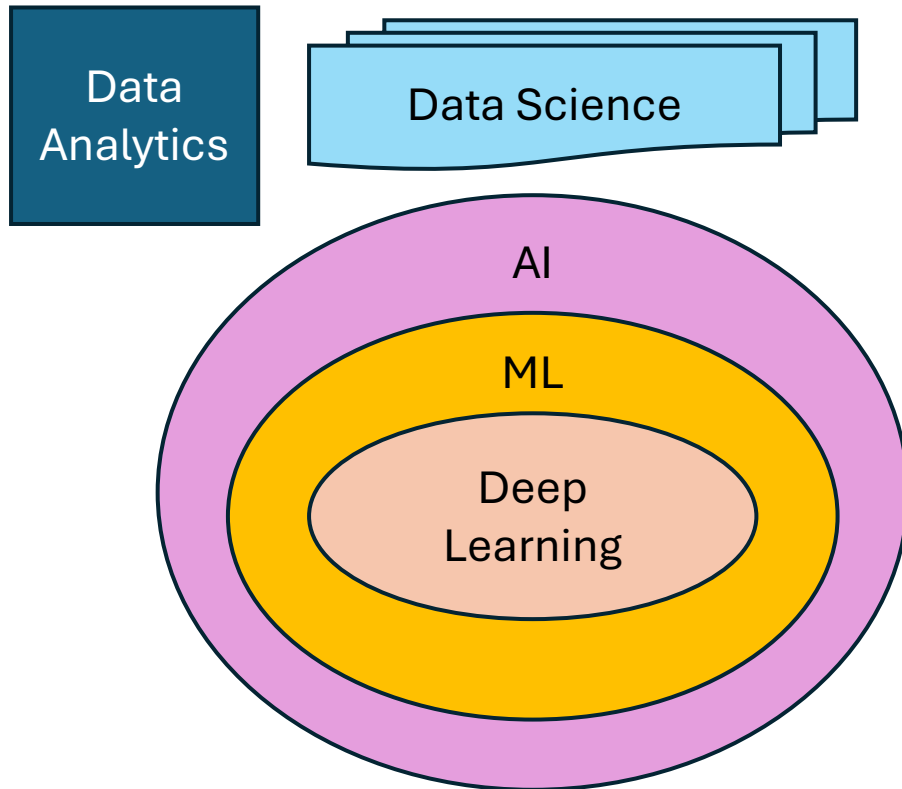


AI or Artificial Intelligence refers to the ability of computers to think and decide like humans, to improve use cases like planning, learning, reasoning, perception and decision making confidence

ML or Machine Learning uses methods of learning like supervised or unsupervised learning to help gain deeper insights to convert business problems, or customer satisfaction problems to data analytics or business analytics problems that improve business modelling, operations and training to help ROI, TCO, and Service Level Agreements



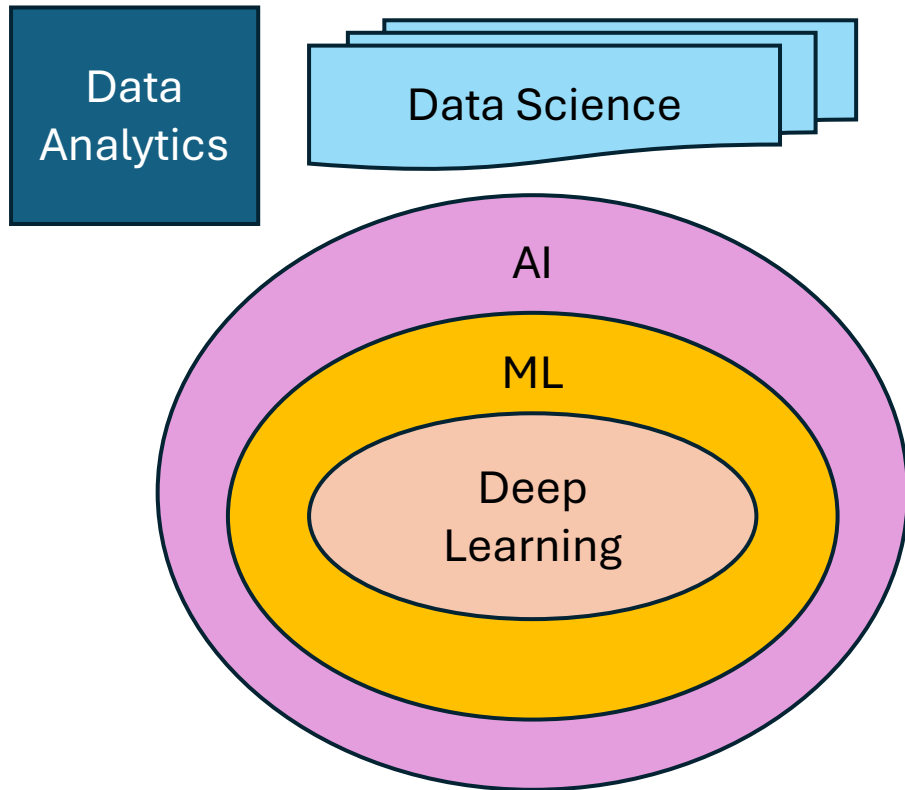
# TOP 10 COPQ SCM ANALYTICS 2025 – LEARNING (FOR D1, S1)



Stages of a solution using data science and analytics:

- ☐ Data identification and including of a data science lifecycle
- ☐ Data science/analytics/insight- generation Model selection
- ☐ Model evaluation
- ☐ Model optimization
- ☐ Model fine tuning
- ☐ Model orchestration
- ☐ Model observability
- ☐ Model surveillance, consistency, learning and automation considering the issue of data drift and/or concept drift or more impactfully the model drift

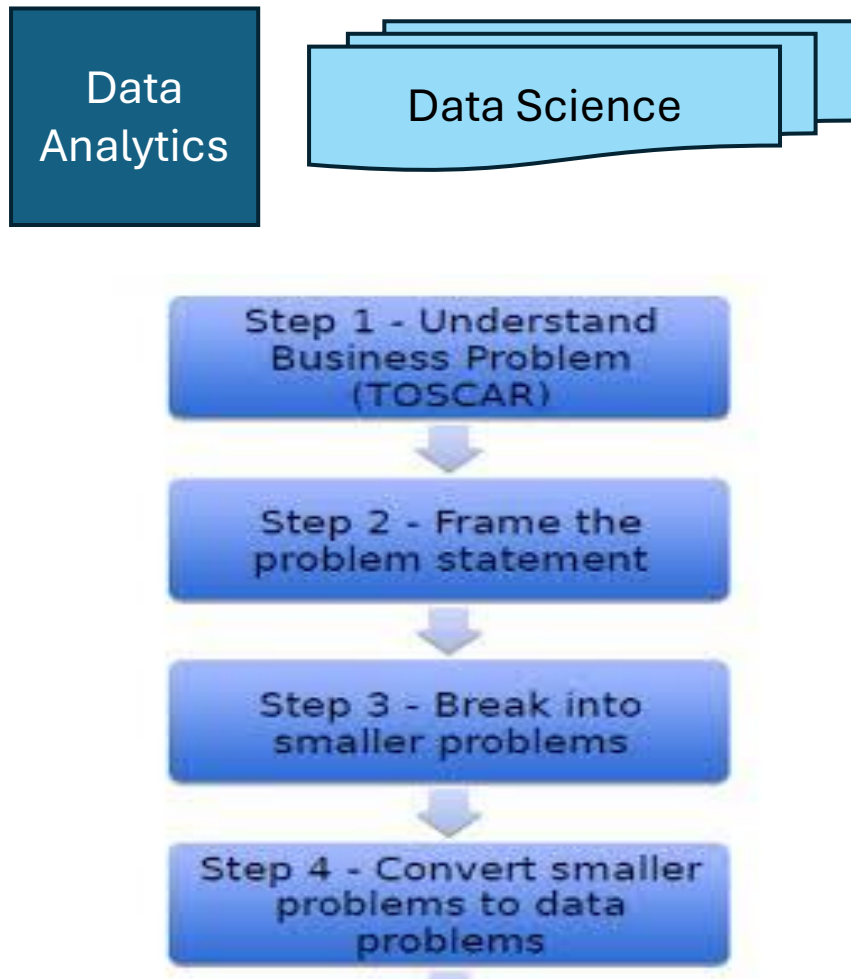
# TOP 10 COPQ SCM ANALYTICS 2025 – LEARNING (FOR D1, S1)



Important Stages of a project using data science and analytics:

- ☐ Feature Extraction
- ☐ Feature Engineering
- ☐ Feature Selection
- ☐ Expectations for performance or confidence for model
- ☐ Model selection
- ☐ Model deployment
- ☐ Model observability

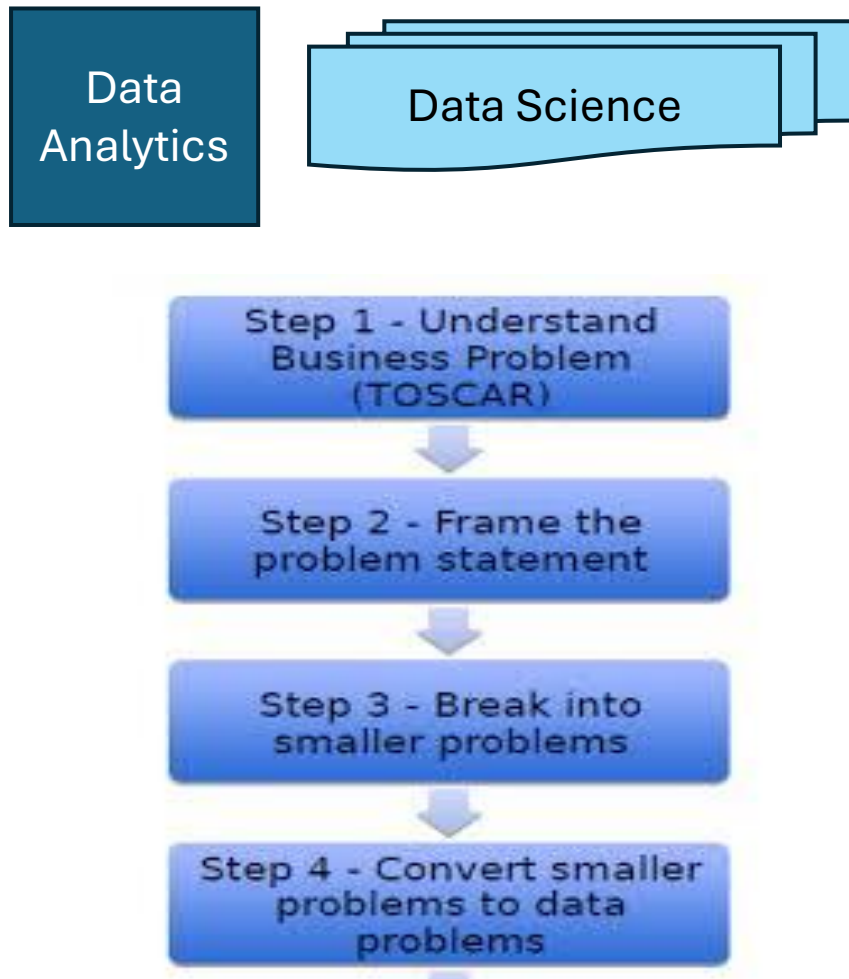
# TOP 10 COPQ SCM ANALYTICS 2025 – LEARNING (FOR D1, S2)



Key Steps for converting a business or customer problem to an analytics problem

- ☐ Define vision and objectives for problem
- ☐ Perceive environment and clarify scope
- ☐ Set Measurable objectives to solve or take actions for the problem
- ☐ Choose different analytics like descriptive, interpretable or diagnostic, predictive, and prescriptive diagnostics
- ☐ Collect and prepare data
- ☐ Analyze and visualize data
- ☐ Develop and implement solutions to enhance business performance, improve operations, efficiency and productivity, improve assessment and preparedness for risk management, evolve/innovate/transform model/processes for new requirements and opportunities

# TOP 10 COPQ SCM ANALYTICS 2025 – LEARNING (FOR D1, S2)



Important Stages for converting a business or customer problem to an analytics problem via principles of

- ❑ Data science / Data Analytics
- ❑ Machine Learning
- ❑ Generative AI (a subfield of AI that creates new content from a set of inputs, data sets using Deep Learning and Neural Networks)
- ❑ The content of outputs from Generative AI include videos, Images, music
- ❑ Agentic AI that enhances transformation potential via multimodal capabilities
- ❑ Use of Large Language Models to improve TCO, ROI, SLA(s), SLO(s)
- ❑ Relevant personalization and innovation for areas of CRM, HRA, SCM, Strategic decision-making)

# TOP 10 COPQ SCM ANALYTICS 2025 – LEARNING (FOR NSSR SAFETY & SUPPORT\_)

Data  
Analytics

Data Science

Step 1 - Understand  
Business Problem  
(TOSCAR)

Step 2 - Frame the  
problem statement

Step 3 - Break into  
smaller problems

Step 4 - Convert smaller  
problems to data  
problems

Case study for NSSR ROAD SAFETY

**CHALLENGE**

**DATA EVALUATION**

**ANALYTICS**

**FINDINGS**

# TOP 10 COPQ SCM ANALYTICS 2025 – LEARNING (FOR NSSR SAFETY AND SUPPORT\_)

Data  
Analytics

Data Science

Step 1 - Understand  
Business Problem  
(TOSCAR)

Step 2 - Frame the  
problem statement

Step 3 - Break into  
smaller problems

Step 4 - Convert smaller  
problems to data  
problems

Case study for **BBMP**

**CHALLENGE**

**DATA EVALUATION**

**ANALYTICS**

**FINDINGS**

# TOP 10 COPQ SCM ANALYTICS 2025 – LEARNING (FOR NSSR SAFETY AND SUPPORT \_)

Data  
Analytics

Data Science

Step 1 - Understand  
Business Problem  
(TOSCAR)

Step 2 - Frame the  
problem statement

Step 3 - Break into  
smaller problems

Step 4 - Convert smaller  
problems to data  
problems

Case study for **BESCOM**,

**CHALLENGE**

**DATA EVALUATION**

**ANALYTICS**

**FINDINGS**



# TOP 10 COPQ SCM ANALYTICS 2025 – LEARNING (FOR NSSR SAFETY AND SUPPORT \_)

Data  
Analytics

Data Science

Step 1 - Understand  
Business Problem  
(TOSCAR)

Step 2 - Frame the  
problem statement

Step 3 - Break into  
smaller problems

Step 4 - Convert smaller  
problems to data  
problems

Case study for **BWSSB**

**CHALLENGE**

**DATA EVALUATION**

**ANALYTICS**

**FINDINGS**



# TOP 10 COPQ SCM ANALYTICS 2025 – LEARNING (FOR NSSR SAFETY AND SUPPORT \_)

Data  
Analytics

Data Science

Step 1 - Understand  
Business Problem  
(TOSCAR)

Step 2 - Frame the  
problem statement

Step 3 - Break into  
smaller problems

Step 4 - Convert smaller  
problems to data  
problems

Case study for **HEALTHCARE/DIAGNOSTICS**

**CHALLENGE**

**DATA EVALUATION**

**ANALYTICS**

**FINDINGS**

# TOP 10 COPQ SCM ANALYTICS 2025 – LEARNING (FOR NSSR SAFETY AND SUPPORT \_)

Data  
Analytics

Data Science

Step 1 - Understand  
Business Problem  
(TOSCAR)

Step 2 - Frame the  
problem statement

Step 3 - Break into  
smaller problems

Step 4 - Convert smaller  
problems to data  
problems

Case study for **SUPPLIES/SUPPLY CHAINING**

**CHALLENGE**

**DATA EVALUATION**

**ANALYTICS**

**FINDINGS**

# TOP 10 COPQ SCM ANALYTICS 2025 – LEARNING (FOR NSSR SAFETY AND SUPPORT \_)

Data  
Analytics

Data Science

Step 1 - Understand  
Business Problem  
(TOSCAR)

Step 2 - Frame the  
problem statement

Step 3 - Break into  
smaller problems

Step 4 - Convert smaller  
problems to data  
problems

Case study for **COPQ-SCM connected EDUCATIONAL INSTITUTIONS**

**CHALLENGE**

**DATA EVALUATION**

**ANALYTICS**

**FINDINGS**

# TOP 10 COPQ SCM ANALYTICS 2025 – LEARNING (FOR NSSR SAFETY AND SUPPORT\_)

Data  
Analytics

Data Science

Step 1 - Understand  
Business Problem  
(TOSCAR)

Step 2 - Frame the  
problem statement

Step 3 - Break into  
smaller problems

Step 4 - Convert smaller  
problems to data  
problems

Case study for COPQ-SCM connected **BANKS &  
INSURANCE COMPANIES**

**CHALLENGE**

**DATA EVALUATION**

**ANALYTICS**

**FINDINGS**

# TOP 10 COPQ SCM ANALYTICS 2025 – LEARNING (FOR NSSR SAFETY AND SUPPORT\_)

Data  
Analytics

Data Science

Step 1 - Understand  
Business Problem  
(TOSCAR)

Step 2 - Frame the  
problem statement

Step 3 - Break into  
smaller problems

Step 4 - Convert smaller  
problems to data  
problems

Case study for COPQ-SCM connected **FESA (or KSFES)**

**CHALLENGE**

**DATA EVALUATION**

**ANALYTICS**

**FINDINGS**

# TOP 10 COPQ SCM ANALYTICS 2025 – LEARNING (FOR NSSR SAFETY AND SUPPORT\_)

Data  
Analytics

Data Science

Step 1 - Understand  
Business Problem  
(TOSCAR)

Step 2 - Frame the  
problem statement

Step 3 - Break into  
smaller problems

Step 4 - Convert smaller  
problems to data  
problems

Case study for SMART WARD MANAGEMENT COMMITTEES

**CHALLENGE**

**DATA EVALUATION**

**ANALYTICS**

**FINDINGS**

# Top 10 Analytics in NSSR Programmes for Safety and Support for the Registered Wards and concerned members





## Indexed Road Safety Purpose – Indexed Green Asset – Indexed Green Asset Service Model

24/7

...

D  
A  
W  
N

T  
O

D  
U  
S  
K

AOEC and NSC feel that SMART Locations/Wards/Cities help people, businesses and society by highlighting “We are accountable for our Social accountability and duty for Road Safety”.

AOEC and NSC call this co-achieving (for National objective programmes or projects) by governments, supporting departments, businesses or people, where Road Safety affects Time, Motion and Supportive ways of meeting our 24/7 needs.

AOEC and NSC’s NSSR Road Safety programme \*Event Edition 4.0” is one example of this.

Attend our soon to be held programme to know more. Our indexed signage solutions can suit A Location/Ward/City or we can do dialled or bookmarked case studies for any need..

AOEC has developed a Centre of Excellence to strategically help coordinate, manage and disseminate information for a Sense of duty, for Voicing out to improve our commuting system

Visit our Road Safety Hub online via our URL <https://venkataoec.wixsite.com/roadsafety-coe>  
Send a SMS/Whatsapp “MHU\_\_\_\_\_”, “**incidence\_\_\_\_\_**”, “**feedback\_\_\_\_\_**”, “**suggestion\_\_\_\_\_**”, “**complaint\_\_\_\_\_**” to +91 (for e.g.) 9342867666 and avail our Road Safety Desk services..



ROAD SAFETY HUB

ROAD SAFETY DESK



I am accountable for  
Road safety as a Commuter  
and as a part of the National  
Social Responsibility for this

ROAD SAFETY OFFERINGS



# Getting to understand the Top 10 Analytics in NSSR Programmes for Safety and Support

<https://venkataoec.wixsite.com/safercommuting>

<https://venkataoec.wixsite.com/roadsafety-coe>

<https://venkataoec.wixsite.com/roadsafety-edu-centr>

<https://venkataoec.wixsite.com/savewater>

<https://venkataoec.wixsite.com/verisafenhealth>

## **Environmental Impact Assessment**

**Our climate change assessment services focus on evaluating the impact of different management concepts that align with sustainable development and growth objectives, ensuring long-term social wellness and environmental sustainability**



भारतीय प्रबंध संस्थान बेंगलूर  
INDIAN INSTITUTE OF MANAGEMENT  
BANGALORE



# Certificate of Participation

This is to certify that

**Venkatram K S**

has attended the workshop on

**Generative AI and Agentic AI**

13 - 14 July, 2025

Jointly organised by

Data Centre and Analytics Lab & Analytics Society of India



**Analytics  
Society of India**

Prof U Dinesh Kumar  
Chair,  
Data Centre and Analytics Lab



भारतीय प्रबंध संस्थान बेंगलूर  
INDIAN INSTITUTE OF MANAGEMENT  
BANGALORE



# Certificate of Participation

This is to certify that

**Aakkash K V**

has participated in the

**Faculty Development Programme**

on

**Machine Learning with Business Applications**

19 - 24 May, 2025



**Analytics**  
**Society of India**

U Dinesh Kumar  
Chair,  
Data Centre and Analytics Lab



M S RAMAIAH  
INSTITUTE OF MANAGEMENT

Bengaluru - 560 054, Karnataka, India.

**POST GRADUATE DIPLOMA IN MANAGEMENT**

THE INSTITUTE AND THE COURSE IS APPROVED BY THE ALL INDIA COUNCIL  
FOR TECHNICAL EDUCATION, PERMANENT INSTITUTE ID : 1 - 36981681

## Merit Certificate

**Aakkash K V**

Reg. No : **211001**

Batch: **2021-2023**

has been conferred a **Silver Medal** in  
appreciation of his/her performance leading to the  
award of **Academic Excellence - 2nd Place.**