Safehur Driving Risk Improvement Program

@ BPCL – Bijwasan Depot

(PROGRAM RECOMMENDATIONS)

Safehur Recommendation 1 → Involvement of Key Stakeholders

Observation

- Excellent participation from Depot Operations, Health/Safety/Environment Team and Drivers
- Limited involvement of S&D team, although it continuously engages with drivers

Recommendations

Following stake holders are key to driver engagement:

i.Fleet Owner	• Has strong professional control over drivers, can impact their driving behaviour
Depot S&D	• Engages with drivers daily, can impact driver communication and feedback to enhance effectiveness of Transport Safety and Driver Management processes
Regional HR	• Link Driving Risk to soft &/or hard incentives for best performing drivers • Driver incentivization being a centralized program is best managed by Regional HR
Driver's Family	• Counselling insights show that driving profession is strongly influenced by family. • Test hypothesis that driver's family will be pivotal to reducing driving risk

Safehur Recommendation 2 →Integration of Structured Data Insights into Business Processes…1

Observations and Recommendations (from Structured Data)	
Daily Performance Visibility to drivers	• Provide daily visibility of previous day performance (Driving Risk Score, Deviations, Emerging Risk Trends) to drivers
•Maintain & Update Individual Risk Profiles	• Driving risk profile is the core data for driver engagement (counselling, focussed area coaching, etc.), and benchmarking drivers' performance
Pre-screening Criteria	• Driving Risk score should be mandatory screening criteria for new drivers. • Each incumbent driver must clear the minimum requirements
Associate Soft Benefits with Driving Behaviour	• Benefits and penalties should be associated with daily driving risk, for e.g. link trip allocation priority to previous day score

Safehur Recommendation 2 →Integrate Structured Data Insights into Business Processes…2

Incentivisation Programs for Safe Driving

For an effective driver incentivization program:

- Drivers need to 'earn' incentives by demonstrating daily Safe Driving.
- Integrate Driver Risk Profiles with respective financial inclusion needs

Contours of Safehur Incentivisation Programs

Safehur: Financial Inclusion benefit comprises products (of 1-year tenure)

- Money-Back (return of premium) Life Insurance products
- Systematic Investment Plan (SIP) products
- Family Protection Plan (Health Insurance)

The financial solutions are 'accumulative' and proportional to driver's risk performance.

- *Money-Back Life Insurance*: Sum Insured is enhanced periodically, based on driver's risk behaviour
- *SIP*: Periodic investment is based on the driver's risk behaviour
- *Family Protection Plan*: Sum Insured is enhanced periodically, based on driver's risk behaviour

Safehur Recommendation 3 → Integrate Unstructured Data Insights into Business Processes…1

Objective: Integrate unstructured data insights into business processes

Observations *(Counselling Insights)*

"Bharat Benz" Factor	• As drivers had greater control in Bharat Benz trucks, so took more risks (late/hard braking, closer tailgating, etc.)
Impact of Festivals	• Unusually high deviations on festival day (Karva Chauth), because of additional trips' allocations on Saturdays coupled with the need to reach home early
"Bad Roads" Factor	• Few drivers plying regularly on a poorly maintained road stretch of 3-4 kms, negotiated at high speeds, especially during early morning hours, increasing their accident risk.
"End-of-Month" Impact	• Drivers were allocated additional trips in this period; also Delhi traffic is chaotic • Increased workload and higher fatigue in this period led to higher deviations
"Making Fun Of" Factor	• Safe drivers who were 'late' to the depot, were ridiculed, this 'cultural' effect institutionalized bad driving among new drivers

Counselling Impact: A single 1-to-1 counselling session with drivers improved their driving skills by 63% and driving behaviours by 58%.

Safehur Recommendation 3 → Integrate Unstructured Data Insights into Business Processes…2

Observations *(from unstructured data)*

- Specific interventions will pre-empt impact of micro/ local factors that lead to deviant driving.
- Such behaviours should be developed as ‘case studies’, shared with and sensitized to all drivers

Recommendations

Driver Engagement	• Increase frequency of personalized driver interactions • Driver counselling process should target 12 hours/year/driver
Integrate Unstructured data with Safe Transportation Data Lake	• Organize unstructured data from driver engagement processes for impact analysis and devising accident prevention policies • Automate data collection for sustainable Safe Transportation programs

Significant value can be created for Safe Transportation Programs by integrating following datasets:

- Safehur driving risk data + Safehur data from driver engagement programs
- Offline data repositories consisting of the drivers’ database and the historical lorry accidents’ data
- Data from Driver-related business processes, such as S&D, Safety, Compliance, Driver Feedback, etc.

Safehur Recommendation 4 →Road Accidents: Historical Data and Analytics

Observation

Correlation between historical accidents' data and Safehur Driving Risk data wasn't computed or analysed, as offline accident data was outside the scope of the program

Recommendations

To build a comprehensive, data-centric framework for sustainable improvements in transportation safety :

- Define and classify accidents
- Improve data repository of historical accidents with accident investigation details
- Correlate accident data analysis with other data-points, including structured data (Safehur), unstructured data (driver counselling), driver database, trip data, etc.

Safehur Recommendation 5 → Lorry Drivers: Professional and Social Data about drivers

Observation

The Scope-of-work of the Safehur Program did not include data and information about drivers, hence could not correlate risk profiles of drivers with their past professional data and social attributes.

Recommendations

To create a data-centric Safe Transportation framework, the Transportation Safety Data Lake should include professional and social information of drivers

- **Professional data about drivers includes**
  - Employment history
  - Past accidents and challans
  - Trainings and coaching attended
- **Drivers' social data includes**
  - Demographic data
  - Educational and family background

Safehur Recommendation 6 → Regulated Conditions of Safehur Program…1

Observation

Safehur program was conducted under reasonably controlled and sanitized conditions. Key program characteristics were:

Program comprised of only 20 drivers, but with a mix of dealer-linked and market operated trucks.

Program was conducted in Delhi; with good road infrastructure & traffic surveillance, rash driving is low here.

All drivers are locals and go back home daily.

In Delhi, a single accident can harm company reputation, so both staff & drivers have good safety orientation.

Safehur Recommendation 6 → Regulated Conditions of Safehur Program…2

Recommendation

Safehur program should be conducted under diverse conditions to demonstrate program sustainability.

Depots should be selected based on the following mix:

- Historically high accident rate with low compliance to road safety, transportation safety practices, etc.
- High proportion of floating population among drivers
- Servicing both long (average daily movement of 250+ kms) and short routes.
- Servicing regions with poorly maintained roads and in-disciplined traffic conditions.

All depot drivers should be included in the program.

- This will help establish correlation between driving risk and demographic and professional profile (age, education, experience, dealer or transporter-employed, etc.) of drivers.

Program should be observed for a longer period of time, preferabley12-months.

- This will provide a full cycle of data on driving risk patterns and correlations between driving behaviour and cyclical parameters (weather, contract validity, etc.).

Safehur Recommendation 7 → (Re)defining the operational & business metrics on Transportation Safety & Compliance…1

Objective: Institutionalize Leading Indicators of Driving Risk across the Transportation network

Observation

Current metric for Transportation Safety is Accident Rate, a Lagging Risk Indicator that is useful for Post-mortem Investigation and Accident Analysis

Safehur focuses on “Leading Indicators of Risk” for accident prevention, as it

- Provides opportunity for early detection of deviant driving
- Focuses on correcting such behaviour
- Brings a risk mitigation approach

In the Safehur 2-month Program,

- Leading Indicators of Risk were defined and validated
- Driving risk was normalized and validated across varying road and traffic situations
- Leading Risk Indicators were used to benchmark Driving Behaviour & input for one-on-one counselling

Safehur Recommendation 7 → (Re)defining the operational & business metrics on Transportation Safety & Compliance…2

Recommendations
Standardize and institutionalize the interpretation of Leading Risk Indicators to all Depots, pan-India
Use Leading Risk Indicators' framework to benchmark Depots on Transportation Safety & Compliance
Design and implement driver-specific insights and intervention

Safehur Recommendation 8 → Demonstrate Sustainability, Scalability, Replicability & Effectiveness of Safehur Program

Observation

The 2-month program demonstrated Safehur's capability to discipline rash drivers using technology & data analytics. Demonstrating program sustainability was outside its scope.

Recommendations

- Conduct second program to demonstrate Safehur's fitment with the larger BPCL objectives

Program Objective

- To demonstrate Sustainability, Scalability, Replicability and Effectiveness of Safehur program

Program Design

- Duration: 12-month
- Coverage: 800-1000 drivers across 5 Depots

Program Metrics: Demonstrate program effectiveness by measuring reduction in Accident Risk

- For this Safehur program will bring innovative solution features, including Driver Engagement, Driver Incentivization and Offline Data Analytics

Safehur Recommendation 9 → Challenge of Floating Population of Drivers

Observation

The Floating Population challenge can be solved through a mix of:

- Early screening / identification of drivers likely to ‘float around’
- Identification of conditions responsible for driver attrition, and
- Targeted driver-centric interventions, including driver engagement programs &t incentivize safe driving

Recommendations

Safehur is well-placed to solve the Floating Population Challenge, by

- Developing early-warning, analytical models to classify drivers with high propensity to float around.
- Designing and institutionalizing Driver Engagement Program
- Designing and supervising Driver Incentivization Program

SAFEHUR

Incentivizing safe driving

THANK YOU