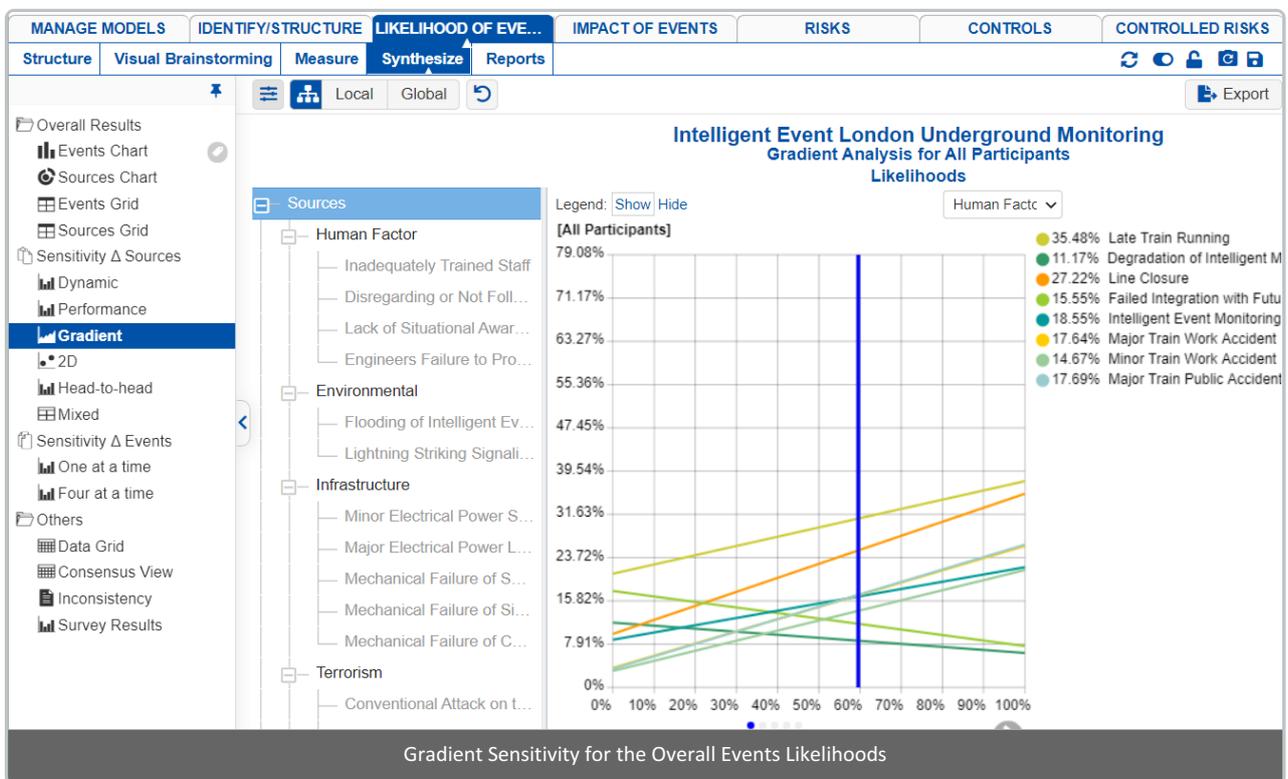# Likelihood: Gradient Analysis

Overview

The gradient analysis for Likelihood shows the rate of change of the likelihoods of events due to the change in the likelihood of one of the threats.

In Riskion, we refer to **threats**, **causes**, **hazards**, and **sources** interchangeably. While they may have slightly different nuances depending on the context in which they are used, they serve the same purpose -- they are all threats/sources of risk (for Risk Events) or sources of opportunity (for Opportunity Events).

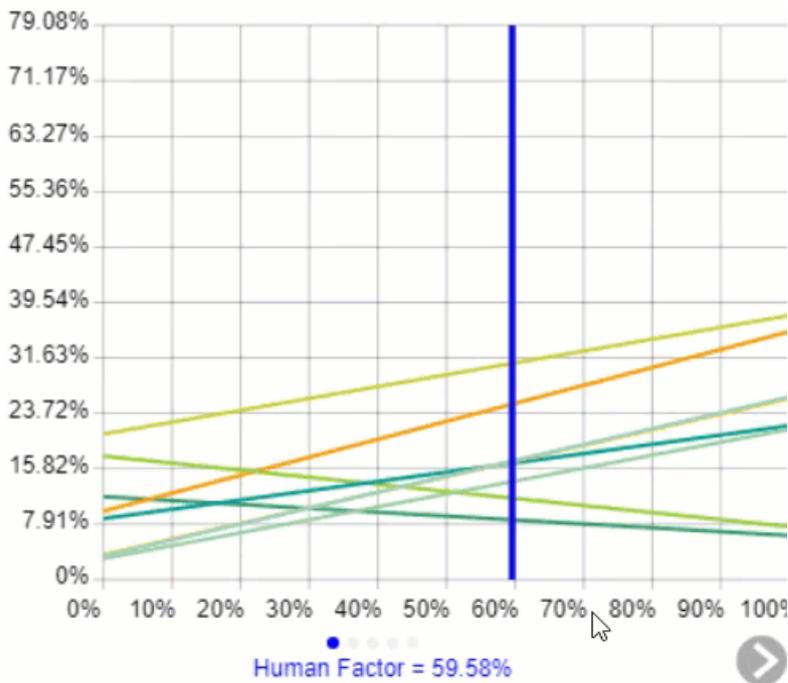In our sample model, we are using the terminology "Source(s)".

Gradient Sensitivity for the Overall Events Likelihoods

Gradient sensitivity is composed of:

- A source on the x-axis -- which can be selected from or a pulldown menu
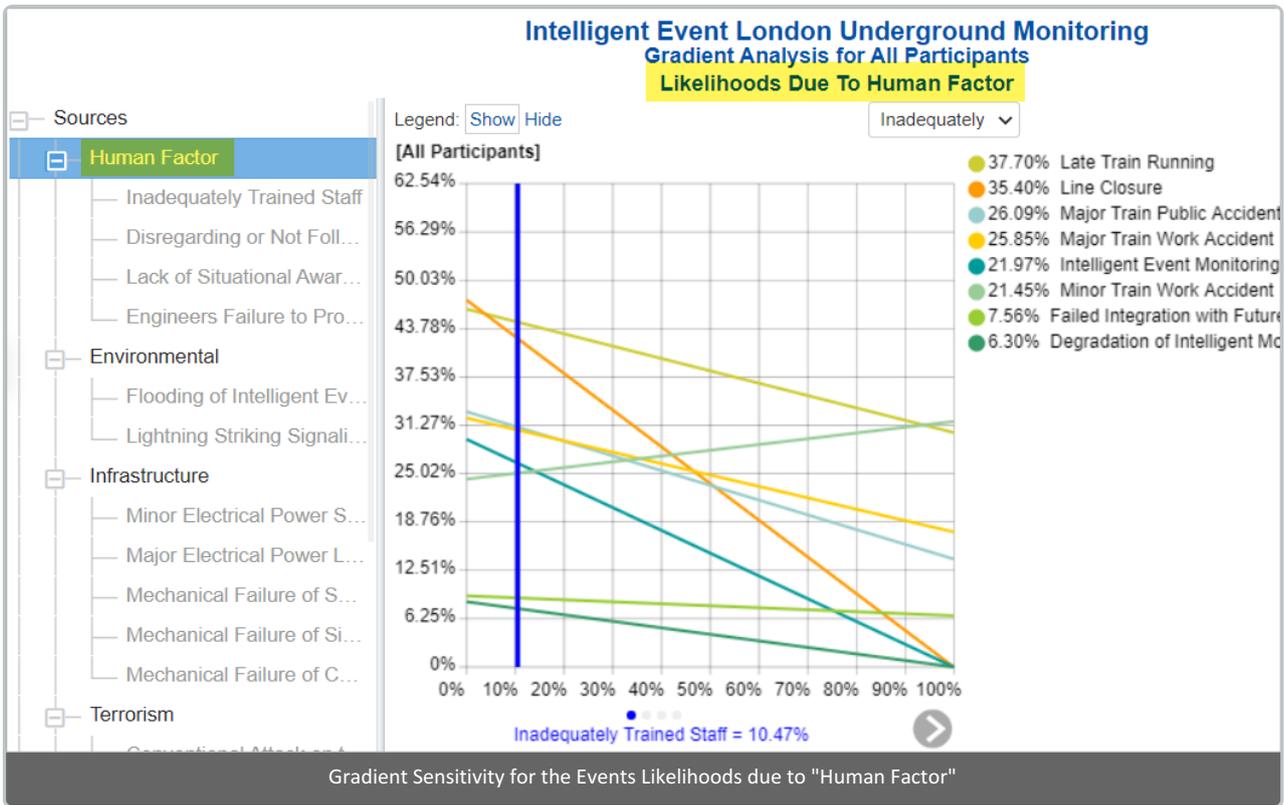
Human Factor = 59.58%

- A curve for each of the events
- A vertical blue bar representing the likelihood of the source being considered.

You can temporarily alter the relationship between the events and their sources by dragging the blue vertical bar left or right. The original impacts are represented by the vertical gray bar.

All Participants

- 35.48% Late Train Running
- 27.22% Line Closure
- 18.55% Intelligent Event Monitoring Network Shut Down
- 17.69% Major Train Public Accident
- 17.64% Major Train Work Accident
- 15.55% Failed Integration with Future Monitoring System Network
- 14.67% Minor Train Work Accident
- 11.17% Degradation of Intelligent Monitoring System Physical Assets

Human Factor = 59.58%

After temporarily changing the likelihoods of one or more of the sources, you can press the reset icon.

By selecting an element in the hierarchy other than the top node, you can see the results due to this element rather than the overall results due to the "Sources" node.

Intelligent Event London Underground Monitoring
Gradient Analysis for All Participants
Likelihoods Due To Human Factor

Legend: Show Hide | Inadequately ▼

[All Participants]

Value	Label
37.70%	Late Train Running
35.40%	Line Closure
26.09%	Major Train Public Accident
25.85%	Major Train Work Accident
21.97%	Intelligent Event Monitoring
21.45%	Minor Train Work Accident
7.56%	Failed Integration with Future
6.30%	Degradation of Intelligent Mc

Inadequately Trained Staff = 10.47%

Gradient Sensitivity for the Events Likelihoods due to "Human Factor"

The gradient analysis above shows all the event likelihoods due to the selected node Human Factor.

You can show the local and global source's likelihoods on the Source Hierarchy at the right using the Local-Global buttons:

Sources	All Participants	
	Local	Global
Sources		
Human Factor	59.58%	59.58%
Inadequately T...	10.47%	6.24%
Disregarding o...	45.18%	26.92%
Lack of Situati...	15.42%	9.19%
Engineers Fail...	13.97%	8.32%
Environmental	19.94%	19.94%
Flooding of Int...	2.03%	0.4%
Lightning Striki...	1.08%	0.22%
Infrastructure	23.38%	23.38%
Minor Electrica...	19.22%	4.49%
Major Electrica...	7.91%	1.85%

You can hide the Sources Hierarchy at the left using

Click to show/hide the toolbar options:

> **DIDN'T SEE WHAT YOU ARE LOOKING FOR?** Try enabling the Advanced Mode switch at the bottom of the page, this will show the advanced options on this page.

Select Participants and Groups

You can select to display results for **one** participant or group using

Clicking the button will open a window where you can select a participant or a group.

You can use the prev and the next buttons to cycle through each participant or group.

Filter Events

By default, all events are displayed.

You can select to display the top or bottom 5, 10, or 25 events based on the "All Participants" group likelihoods.

The Advanced filter, allows you to select a specific number for the top N, and base it on another group or participant.

The select /deselection option, allows you to check/uncheck the events.

The filter by events attributes, filter the events base on the attributes specified on the Events page.

The show risks only / Show opportunities only are applicable for the Mixed model where events can be Risk or Opportunity.

Advanced Mode Options