Data to Action:
The UL Safety Index™

Version 1.0 | 08 November 2018 | UL Safety Index Summit - Bangkok
“That which is measured and reported improves exponentially”

- Karl Pearson
The UL Safety Index

Concept
An algorithm to produce a numerical index that quantifies the relative safety of living and working environments for people in a city, state, country or region.

Purpose
Increase awareness
Improve understanding
Stimulate dialog
Improve safety
The model

The Interaction of People + Hazards → Amplified or Mitigated by Socioeconomic Factors and Protective Frameworks → Resulting in Increased or Decreased Rates of Injury, Disability or Death
The algorithm

Index

Drivers

Indicators

Data

The UL Safety Index

Institutions & Resources

- Economic Activity
- Technology
- Education
- Government Effectiveness

Safety Frameworks

- Codes & Standards
- OSH Protections
- Consumer Protections
- Road Safety Frameworks

Safety Outcomes

- Unintentional Injury (9 categories)

Geometric Mean

Arithmetic Mean

Normalization

World Bank

World Economic Forum/UL

UN Development Programme

World Bank

UL/International Standards Organization

UL/International Labour Organization

UL/Consumers International

UL/World Health Organization

Institute for Health Metrics & Evaluation

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Statistical analysis

Normalization
Aggregation
Correlation

Normality
Consistency
Robustness

Sensitivity
Uncertainty
Multi-variate analysis
https://ULSafetyIndex.org

Data Explorer

Resource Library
UL Safety Index – changes for 2018

New Consumer Protection indicator based on joint survey with Consumers International on consumer product safety issues.

Occupational Safety and Health indicator replaces Labor Protections indicator. OSH indicator based on ILO data.

Latest available data used for all indicators.
## Highest and lowest UL Safety Index

<table>
<thead>
<tr>
<th>Highest</th>
<th>Value</th>
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<tbody>
<tr>
<td>Norway</td>
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<tr>
<td>Netherlands</td>
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<td>Sweden</td>
<td>91</td>
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<tr>
<td>Ireland</td>
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<tr>
<td>Luxembourg</td>
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<table>
<thead>
<tr>
<th>Lowest</th>
<th>Value</th>
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<td>Somalia</td>
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<td>South Sudan</td>
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<td>Central African Republic</td>
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<td>Burundi</td>
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<td>Solomon Islands</td>
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UL Safety Index by development status

- Norway
- Israel
- Moldova
- Marshall Islands
- Rwanda
- Somalia
South East Asia
Results - 2018
UL Safety Index – South East Asia
## UL Safety Index Drivers: South East Asia

<table>
<thead>
<tr>
<th>Country</th>
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<td>11</td>
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<td>Vietnam</td>
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</table>

Table displays ranking among countries: lower numbers are better.
Safety Outcomes: South East Asia

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<th>Country</th>
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<th>Earth</th>
<th>Wind</th>
<th>Tech</th>
<th>Health</th>
<th>Weather</th>
<th>Safety</th>
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<td>Philippines</td>
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<tr>
<td>Timor-Leste</td>
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<td>9</td>
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<tr>
<td>Vietnam</td>
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<td>8</td>
<td>3</td>
<td>9</td>
</tr>
</tbody>
</table>

Table displays ranking among countries: lower numbers are better.
UL Safety Index for Thailand

Score
(higher is better)

Rank
(lower is better)
What are the causes of unintentional injury in Thailand?

- Transport injuries: 1,047,963
- Drowning: 213,418
- Falls: 197,880
- Other unintentional injuries: 100,933
- Foreign body: 74,579
- Exposure to mechanical forces: 57,694
- Fire, heat, and hot substances: 41,824
- Poisonings: 9,946
- Exposure to forces of nature: 2,394

* “Disability-Adjusted Life Years (DALYs)” is the measure indicates the gap between current health status and ideal health situation, where the entire population lives to an advanced age, free of disease and disability. (WHO)

• DALY’s for transport injuries are almost 5x any other unintentional injury cause.
• Transport injuries in Thailand are the highest of all countries in South East Asia
Transport injuries
Death rate from transport injuries – South East Asia
Transport injury breakdown – Thailand 2016

Vulnerable road users – motorcyclists and pedestrians – Account for 59% of injuries

- Motor vehicle road injuries, 29%
- Motorcyclist road injuries, 46%
- Pedestrian road injuries, 13%
- Other road injuries, 2%
- Other transport injuries, 7%
- Cyclist road injuries, 3%
Transportation injury key takeaways

- Majority of victims are 15-49 years old.
- Overall trends of DALYs and Deaths per 100K have been stable over time.
- About 46% of transport injuries involve a motorcyclist.
- Stricter enforcement of existing traffic laws may improve safety outcomes.
Drowning
Drowning injury rate in South East Asia

Brunei
Cambodia
Indonesia
Laos
Malaysia
Myanmar
Philippines
Singapore
Thailand
Vietnam

0 100 200 300 400 500 600 700 800 900

DALYs Per 100 K
Drowning rate in Thailand

DALYs Per 100K

Deaths Per 100K
Drowning rate by age in Thailand

**DALYs Per 100K**

- Under 5
- 5-14 years
- 15-49 years
- 50-69 years
- 70+ years

**Deaths Per 100K**

- Under 5
- 5-14 years
- 15-49 years
- 50-69 years
- 70+ years

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Drowning key takeaways

Majority of victims are under 5 years old.

Great progress has been made in reducing drowning of young children.
Application
Application
### Country: India

#### UL Safety Index: 59.85

<table>
<thead>
<tr>
<th>Safety Outcomes</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collision</td>
<td>59.74</td>
</tr>
<tr>
<td>Fires, Heat &amp; Hot Substances</td>
<td>0.00</td>
</tr>
<tr>
<td>Poisoning</td>
<td>65.25</td>
</tr>
<tr>
<td>Other Unintentional Injuries</td>
<td>80.92</td>
</tr>
<tr>
<td>Falls</td>
<td>73.58</td>
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<tr>
<td>Transport Injuries</td>
<td>70.86</td>
</tr>
<tr>
<td>Foreign Body</td>
<td>90.98</td>
</tr>
<tr>
<td>Exposure to Mechanical Forces</td>
<td>66.01</td>
</tr>
<tr>
<td>Exposure to Forces of Nature, Disease</td>
<td>56.36</td>
</tr>
</tbody>
</table>

#### Institutions & Resources: 39.04

- GDP Per Capita: 29.59
- Technology - Networked Readiness: 42.33
- Government Effectiveness: 46.12
- Education: 37.72

#### Safety Framework: 78.74

- UL Standards Index: 100.00
- Consumer Protection: 100.00
- Labor Protections: 36.22

View full data

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Application

Institutions & Resources

• Government Effectiveness
• Infrastructure

Safety Frameworks

• Codes and Standards
• Labor Protections
Application

Institutions & Resources
• Government Effectiveness
• Infrastructure

Safety Frameworks
• Codes and Standards
• Labor Protections

Lack of investment in Fire Service
• Studies suggest India needs 2X fire stations for their population.

Good building & life safety code; poor enforcement
• Overall government reforms
• Code enforcement officials lack authority according to fire chiefs

Basic Labor protections lacking both in law and in practice.
Recommendations

Implement best practices from the Decade of Action for Road Safety

Provide strong Occupational health and safety programs at work

Develop a national strategy for Injury prevention

Continue education and technology investments
Key Takeaways

Science-based model and algorithm.

Intended to stimulate dialog and facilitate sharing safety programs.

We want to partner with the Thai government, safety advocates and others to drive safety improvements.
UL Safety Index Summit
8 November 2018 . Bangkok Thailand


ขอบคุณครับ

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