Vulnerable Road Users Safety in Thailand

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Vulnerable Road Users Safety in South East Asia
18 March 2018, Global Forum for Road Traffic Safety
Population: 66,188,503
Registered Vehicle: 37,410,537
Motorcycles: 20,291,305
Driver Licenses: 31,773,271
Total Road Length: 117,386 km.
National Highways: 68,098 km.
Rural Highways: 49,080 km.
Expressway: 208 km.
VKT National Highways: 213,438 MVKT
GDP: 8,830,957 million-baht
Fuel Consumption in Transportation: 30,214 million-litre
Death on the roads
Based on the WHO Global Status Report on Road Safety 2015

Fatalities

Deaths per 100k people (all)

Users ALL 🚗 🚲 🚴

Compare ALL SAME REGION SIMILAR INCOME

Deaths, total

24,237
Estimated by the WHO

14,059
Reported by country/area

36.2
Estimated by the WHO

SAFER ROADS AND MOBILITY

Formal audits required for new road construction projects
No

Regular inspections of existing road infrastructure
No

Policies to promote walking or cycling
No

Policies to encourage investment in public transport
Yes

Policies to separate road users and protect VRUs
No

DEATHS BY ROAD USER CATEGORY

Drivers/passengers in cars and light vehicles (6%)

Drivers/passengers in heavy vehicles (2%)

Pedestrians (8%)

Cyclists (2%)

Other (2%)

Passengers 4-wheeled cars and light vehicles (7%)

Drivers 4-wheeled cars and light vehicles (8%)

Riders motorized 2- or 3-wheelers (73%)

Motorcycle Crashes in Thailand
Number of injuries from motorcycle accidents, 1994 – 2012

Source: Hospital In-Patient Report, Office of Policy and Strategic, Ministry of Public Health and Vehicle Registration Statistics, Department of Land Transport.

Note: Injury data obtained from every province, except for Bangkok.
Fatalities and injuries of motorcycle users in Thailand 2010 - 2012

Source: E-Claim Database from Road Accident Victims Company Limited

By accident type

**DEATH**
- 14,437 cases
- 59.4% Crash with one vehicle
- 30.3% Crash with two or more vehicles
- 4.1% Losing balance/overturn
- 0.8% Hit object/animals
- 0.4% Hit pedestrians

**INJURIES**
- 498,053 cases
- 62.7% Crash with one vehicle
- 30.6% Crash with two or more vehicles
- 1.2% Losing balance/overturn
- 4.7% Hit object/animals
- 0.8% Hit pedestrians

By type of vehicles involved in crashes

**DEATH**
- 7,531 cases
- 33.5% Motorcycle
- 22.8% Bus
- 13.8% Car and pickup truck
- 1.0% Truck
- 0.7% Van
- 4.6% Hit pedestrians
- 57.7% Lost control

**INJURIES**
- 124,268 cases
- 58.4% Motorcycle
- 33.5% Bus
- 13.8% Car and pickup truck
- 2.2% Truck
- 0.7% Van
- 5.2% Hit pedestrians
- 57.7% Lost control
Helmet Use Rate of Motorcycle Users in Thailand*

<table>
<thead>
<tr>
<th>Year</th>
<th>Rider</th>
<th>Passenger</th>
<th>All Riders</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>53%</td>
<td>19%</td>
<td>36%</td>
</tr>
<tr>
<td>2011</td>
<td>54%</td>
<td>24%</td>
<td>39%</td>
</tr>
<tr>
<td>2012</td>
<td>52%</td>
<td>20%</td>
<td>37%</td>
</tr>
<tr>
<td>2013</td>
<td>51%</td>
<td>19%</td>
<td>35%</td>
</tr>
<tr>
<td>2014</td>
<td>51%</td>
<td>19%</td>
<td>35%</td>
</tr>
<tr>
<td>2015</td>
<td>51%</td>
<td>20%</td>
<td>36%</td>
</tr>
</tbody>
</table>

*Data from Road Safety Watch (2015)
Riders under alcohol influence are more likely **NOT** to use helmet.
Recommendations to improve Motorcycle Safety in Thailand

MC Rider Training

MC Rider training is needed before issuing licenses. The training should focus on
• Traffic strategies to reduce perception and reaction failures of MC rider
• Collision avoidance skills (especially frontal impact)
• How to select and use helmet properly

Road and Environment

Need road infrastructure for MC
• Motorcycle lanes or segregated lanes between MC and larger size of OV for highway
• Road design to minimize conflicts at U-turn, intersections, access points
• Study the effect of urban road design on the behavior of riding in the opposite direction
Recommendations to improve Motorcycle Safety in Thailand

Law Enforcement

- Set appropriate speed limit for MC and use appropriate technology for speed enforcement
- Procedures on issuing MC licenses
- Technology on enforcement of helmet wearing

Vehicle

- Need technology for safety equipment for MC
  - Safety equipment to protect frontal impact
  - Technology to improve MC stability
  - Automatic braking / Automatic speed control
Pedestrian Crashes in Thailand
Fatal Accidents in Bangkok

Crash Type

- Car vs MC: 25.93%
- MC runoff road: 19.75%
- Car vs Pedestrian: 12.35%
- MC vs MC: 8.64%
- Car vs Car: 7.41%
- MC hit to fixed object: 7.41%
- Others: 6.17%
- Car hit to fixed object: 3.70%
- MC vs Pedestrian: 3.70%
- Unknown: 2.47%
- Car runoff road: 1.23%
- Car vs Bicycle: 1.23%

16% of Fatal Accidents in Bangkok are Pedestrian Crashes

Source: Bangkok Metropolitan Administration
Pedestrian/Bicyclist Accidents in Bangkok

Most of Pedestrian Crashes occur on two-lane roads with no median

**No. of Lanes**

<table>
<thead>
<tr>
<th>No. of Lanes</th>
<th>Pedestrian</th>
<th>Bicyclists</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>31.38%</td>
<td>36.13%</td>
</tr>
<tr>
<td>3</td>
<td>1.08%</td>
<td>0.65%</td>
</tr>
<tr>
<td>4</td>
<td>28.13%</td>
<td>27.10%</td>
</tr>
<tr>
<td>5</td>
<td>3.55%</td>
<td>1.94%</td>
</tr>
<tr>
<td>6</td>
<td>23.34%</td>
<td>20.00%</td>
</tr>
<tr>
<td>7</td>
<td>0.15%</td>
<td>0.00%</td>
</tr>
<tr>
<td>8</td>
<td>8.04%</td>
<td>11.61%</td>
</tr>
<tr>
<td>Unknown</td>
<td>4.33%</td>
<td>2.58%</td>
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**Median Type**

<table>
<thead>
<tr>
<th>Median Type</th>
<th>Pedestrian</th>
<th>Bicyclists</th>
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</thead>
<tbody>
<tr>
<td>No median</td>
<td>51.78%</td>
<td>61.94%</td>
</tr>
<tr>
<td>Raised Curb Median</td>
<td>26.89%</td>
<td>17.42%</td>
</tr>
<tr>
<td>Flush Median</td>
<td>12.83%</td>
<td>10.97%</td>
</tr>
<tr>
<td>Median w/ Barrier</td>
<td>5.26%</td>
<td>4.52%</td>
</tr>
<tr>
<td>Unknown</td>
<td>2.01%</td>
<td>3.23%</td>
</tr>
<tr>
<td>Depressed Median</td>
<td>1.24%</td>
<td>1.94%</td>
</tr>
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Source: Bangkok Metropolitan Administration
Pedestrian/Bicyclist Accidents in Bangkok

Source: Bangkok Metropolitan Administration
Risk Factors for Pedestrian Traffic Injury in Thailand

- Speed
- Alcohol
- Lack of pedestrian facilities
- Inadequate visibility of pedestrian
- Other factors
Other Factors??

- Lack of enforcement
- Unsafe driving behavior
- Driver/Pedestrian distraction: Use cell phone
- Fatigue driving
- Conflicts b/w pedestrians and vehicles at intersection
- Elderly/young pedestrians
- Driver and pedestrian attitude
Thank you