Do androids dream of legislative drafting?
The use of AI and new technologies in legal drafting
-List-

I. What is the difference? Experts vs. Social-data

II. What Have We Gone Through?

III. From Social Big-data to Legislative Reform

IV. What did the Social Big-data show?
Research Aims and Scope

• To analyze maritime risks and seek out ways to better respond to such risks through appropriate policies, government agencies, administrative action, and related legal framework.

• As laws related to maritime safety are spread out in different sectors, including maritime traffic, shipping, crew management, and maritime disaster response.

• This research also aims to identify major risk factors and assess whether existing legal framework allows appropriate responses or not.
To reduce risks at sea effectively, which policy and law should the government prioritize?
## Too Many Laws!

### The Numbers of Maritime Laws in Korea

<table>
<thead>
<tr>
<th>Maritime transport</th>
<th>17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crew</td>
<td>13</td>
</tr>
<tr>
<td>Vessels</td>
<td>36</td>
</tr>
<tr>
<td>Shipwreck</td>
<td>9</td>
</tr>
<tr>
<td>Seaway</td>
<td>9</td>
</tr>
<tr>
<td>Port Shipping</td>
<td>25</td>
</tr>
<tr>
<td>Fishery industry</td>
<td>25</td>
</tr>
<tr>
<td>Domestic Laws(Totals)</td>
<td>134</td>
</tr>
<tr>
<td>International Laws</td>
<td>34</td>
</tr>
</tbody>
</table>
It is not the end!

- It is worth noting that the number of maritime safety accidents in South Korea has been on a steady rise since the Sewol ferry sinking in 2014.
- Apparently there are problems in the overall safety management system in the maritime.
- It needs a more fundamental and comprehensive review of maritime safety regulations.
Since 2014, the numbers of accidents have been increased.

E-National Index,
I. What is the difference? Experts vs. Social-data
This research took a practical approach and focus on maritime risk factors on which the public expresses biggest concerns, identifying their causes and corresponding preventative measures.

This research analyzed “social big data” available on social networks to identify the biggest maritime public safety concerns and any issues raised in responses to such concerns.
Legislative Works Process

Top down

Drawing Issues

- Expert Meeting
- Bibliographic Information
- Judicial Interpretation

Bottom Up

Social data
- Emotions
- Opinions
- Incidents
- Interests

Biggest concerns & Issues
II. What Have We Gone Through?
Researchers identified keywords related to maritime safety issues and composed population to retrieve relevant social data from social data sources (online and network sources).

Based on the 8th National Basic Plan on Traffic Safety and 2015 Maritime Accidents Statistics Yearbook, the researchers made an index for keyword analysis on the factors of accidents.

Keywords analysis was conducted using text mining based on the selected index.

Based on the result of keyword analysis and scenario analysis, researchers were able to make policy recommendations and conduct further review of existing legal framework.
## Procedures and methods of this research

<table>
<thead>
<tr>
<th>Step</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Collecting social data for <strong>population composition</strong></td>
</tr>
<tr>
<td>2.</td>
<td>Making and labelling <strong>index</strong></td>
</tr>
<tr>
<td>2.1</td>
<td><strong>Selection of Major policy target for maritime safety</strong></td>
</tr>
<tr>
<td>2.1.1</td>
<td>8th National Traffic Safety Basic Plan</td>
</tr>
<tr>
<td>2.2</td>
<td><strong>Selection of evaluation index for maritime safety</strong></td>
</tr>
<tr>
<td>2.2.1</td>
<td>Statistical Yearbook of Marine Accidents(2015)</td>
</tr>
<tr>
<td>3.</td>
<td>Derive <strong>influence factors</strong> through SPSS based on <strong>frequency analysis</strong></td>
</tr>
<tr>
<td>4.</td>
<td>Scenario analysis through keyword analysis based on <strong>evaluation index</strong></td>
</tr>
<tr>
<td>5.</td>
<td>Presenting the <strong>policy and legal improvement direction</strong> for marine safety based on the scenarios and influence factors</td>
</tr>
</tbody>
</table>
100 million data

Population of Social Data for Analysis on Maritime Safety

Fly Fishing in the Big Data Lake | 1to1 Media
http://www.1to1media.com
The population selection for the keyword analysis is as follows.

<table>
<thead>
<tr>
<th>Data Analysis Scope</th>
<th>1 Year from January to December 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collection Channel</td>
<td></td>
</tr>
<tr>
<td>Data analysis scope</td>
<td></td>
</tr>
<tr>
<td>1 Year from January to December 2015</td>
<td></td>
</tr>
<tr>
<td>Over 100 million data (total)</td>
<td></td>
</tr>
<tr>
<td>• 8 million news articles</td>
<td></td>
</tr>
<tr>
<td>• 95 million social articles including</td>
<td></td>
</tr>
<tr>
<td>tweets</td>
<td></td>
</tr>
<tr>
<td>• 257 online news sites</td>
<td></td>
</tr>
<tr>
<td>• Online community cafes (Naver, Daum)</td>
<td></td>
</tr>
<tr>
<td>• Twitter</td>
<td></td>
</tr>
<tr>
<td>• Blogs (Naver, Daum, Tstory, Igloos)</td>
<td></td>
</tr>
<tr>
<td>• 15 bulletin boards (Agora, Bbomppu, etc)</td>
<td></td>
</tr>
</tbody>
</table>
Selection of key words to Make up a population

<table>
<thead>
<tr>
<th>Subject term</th>
<th>Key word</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Basic words</strong></td>
<td>(Ocean or sea – 2), (Ship or Fishing boat/vessel or Passenger ship – 3)</td>
</tr>
<tr>
<td></td>
<td>(Marine police or Marine policy or Marine safety or Marine management organization or Ship safety – 6)</td>
</tr>
<tr>
<td><strong>Meaning similar to the word 'Accident'</strong></td>
<td>(+) Marine pollution, Marine fire, Maritime burglary, Maritime terrorism, Marine leisure accidents,</td>
</tr>
<tr>
<td><strong>Meaning similar to the word 'Marine police'</strong></td>
<td>(+) Marine security, Marine rescue team, Marine guards</td>
</tr>
<tr>
<td><strong>Meaning similar to 'Marine management organization'</strong></td>
<td>(+) Navy, National Oceanographic Research Institute, Ocean Policy Department and Office, Marine Environmental Policy, Marine Environment Management Corporation</td>
</tr>
<tr>
<td><strong>Exclusion of idioms (Unused language)</strong></td>
<td>(−) Recruitment, Academy, Examination, Notice, Passing, Expo, Experience, Cultural center, Program, Fair, Competition, Annual salary</td>
</tr>
</tbody>
</table>
Analysis to find out “what causes maritime risk” and “the way to reduce”

Population of Social Data for Analysis on Maritime Safety

- Ship size
- Ship type
- Type of Accident
- Cause of Accident
- Rescue body
- Weather

- Evaluation index 1:
  - Death and Missing Weight(%)  
- Evaluation index 2:
  - Death and Missing scale (people/ships)
- Main key words (Online terms)
# Making Index

**Evaluation index based on reduction targets**

<table>
<thead>
<tr>
<th>Evaluation index 1</th>
<th>Evaluation index 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>(Death and Missing Weight)</strong></td>
<td><strong>(Death and Missing scale)</strong></td>
</tr>
<tr>
<td>Death and Missing Weight(%) = Deaths and missing persons(people) / Total number of casualties(people)</td>
<td>Death and Missing scale(people/ships) = Deaths and missing persons(people) / Total number of accident(ships)</td>
</tr>
</tbody>
</table>

## Selection of key words to measure evaluation index

<table>
<thead>
<tr>
<th>Division</th>
<th>Ship size</th>
<th>Ship type</th>
<th>Weather</th>
<th>Monthly</th>
<th>Rescue organization</th>
<th>Type of accident</th>
<th>Cause of accident</th>
<th>Occurrence area</th>
<th>Ship's material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Death and Missing Weight(%)</td>
<td>less than 5 tons</td>
<td>Fishing vessel</td>
<td>Hwang cheon</td>
<td>7~10 months</td>
<td>Marine police</td>
<td>Capsizing</td>
<td>Weather deterioration</td>
<td>Within EEZ30 miles</td>
<td>FRP</td>
</tr>
<tr>
<td>1.2</td>
<td>1.2</td>
<td>4.2</td>
<td>1.0</td>
<td>0.7</td>
<td>30.7</td>
<td>6.4</td>
<td>5.9</td>
<td>0.85</td>
<td></td>
</tr>
<tr>
<td>Death and Missing scale (people/ships)</td>
<td>100 to 500 tons</td>
<td>Fishing boat</td>
<td>Hwang cheon</td>
<td>11~2 months</td>
<td>Marine police</td>
<td>Capsizing</td>
<td>Weather deterioration</td>
<td>Within EEZ30 miles</td>
<td>ship of iron</td>
</tr>
<tr>
<td>3.0</td>
<td>10</td>
<td>6.8</td>
<td>1.9</td>
<td>1.2</td>
<td>5.4</td>
<td>3.8</td>
<td>3.7</td>
<td>1.7</td>
<td></td>
</tr>
</tbody>
</table>

## Main key word (Online terms)
- Small type, 5 tons
- Fishing vessel and boat
- Typhoon warning
- SPSS (Statistical analysis)
- Marine police
- Capsizing
- Weather deterioration
- EEZ
- Technical terms (drop)
IV. From Social Big-data to Legislative Reform
Analysis Process on Risk at Sea

step 1
- Keyword analysis

step 2
- Grouping analysis (similar meaning)

step 3
- Marine safety impact analysis
- Scenario analysis

Impact analysis standard
- Target, Location
- Cause, Action plan
- Related organization

step 4
- Legislative analysis
### 1st grouping result based on key words

<table>
<thead>
<tr>
<th>Word derived from more than 9 months (Similar meaning)</th>
<th>Group (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wind, Weather, Wave</td>
<td>Weather influence</td>
</tr>
<tr>
<td>South, Jeonnam, Jeju</td>
<td>South</td>
</tr>
<tr>
<td>President, Park Geun-hye, Park Geun-hye president, Park president</td>
<td>president</td>
</tr>
<tr>
<td>Saenuri Party, Opposition party, Minister, Government, Politics, Cheongwadae</td>
<td>Minister</td>
</tr>
<tr>
<td>Mobile, Service, System</td>
<td>Information</td>
</tr>
<tr>
<td>Accident occurring, Boating accident, Safety accident, Marine accident, Naval accident, Marine traffic accident</td>
<td>Accident occurring</td>
</tr>
<tr>
<td>Dead, Children, Missing, Missing person, Damage, Victim, Students</td>
<td>Victim</td>
</tr>
<tr>
<td>Ship, Vessel, Fishing boat, Fishing vessel</td>
<td>Small sized ship</td>
</tr>
<tr>
<td>Passenger ship, Cruise ship, Travel</td>
<td>Sightseeing boat</td>
</tr>
<tr>
<td>Ferry Sewol, Ferry Sewol incident, Sewol disaster, Sewol accident, Ferry Sewol sunk, Special Sewol act</td>
<td>Ferry Sewol</td>
</tr>
<tr>
<td>Sinking, Sinking accident</td>
<td>Sinking</td>
</tr>
<tr>
<td>MOF (Abbreviation), MOF, NSA NIS, Police, Maritime police, Navy</td>
<td>Government agency</td>
</tr>
<tr>
<td>Helicopter, Patrol boat, Diver</td>
<td>Security investigation</td>
</tr>
<tr>
<td>Japan, China</td>
<td>Foreign country</td>
</tr>
<tr>
<td>Safety, Equipment, Hospital</td>
<td>Safety equipment</td>
</tr>
<tr>
<td>Capsizing, Crash, Fire, Illegality</td>
<td>Cause of accident</td>
</tr>
</tbody>
</table>
STEP 2

Grouping Associated keywords to retrieve accidents causes and response
### 2nd grouping result based on 1st grouping result

<table>
<thead>
<tr>
<th>Group(2)</th>
<th>Group (1)</th>
<th>01</th>
<th>02</th>
<th>03</th>
<th>04</th>
<th>05</th>
<th>06</th>
<th>07</th>
<th>08</th>
<th>09</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>Total</th>
<th>Averag e</th>
<th>SD</th>
<th>SD/Avg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accident</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accident occurring</td>
<td></td>
<td>1488</td>
<td>940</td>
<td>1300</td>
<td>2381</td>
<td>963</td>
<td>1999</td>
<td>2119</td>
<td>1089</td>
<td>2237</td>
<td>541</td>
<td>857</td>
<td>1310</td>
<td>17174</td>
<td>1431</td>
<td>586</td>
<td>41%</td>
</tr>
<tr>
<td>Victim</td>
<td></td>
<td>3303</td>
<td>1847</td>
<td>3552</td>
<td>4421</td>
<td>489</td>
<td>2423</td>
<td>1572</td>
<td>1192</td>
<td>5152</td>
<td>1164</td>
<td>1099</td>
<td>1565</td>
<td>27779</td>
<td>2315</td>
<td>1406</td>
<td>61%</td>
</tr>
<tr>
<td>Sightseeing boat</td>
<td></td>
<td>707</td>
<td>895</td>
<td>546</td>
<td>822</td>
<td>299</td>
<td>2033</td>
<td>696</td>
<td>272</td>
<td>499</td>
<td>434</td>
<td>387</td>
<td>367</td>
<td>7957</td>
<td>663</td>
<td>457</td>
<td>69%</td>
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<td>3216</td>
<td>4103</td>
<td>11260</td>
<td>3785</td>
<td>3693</td>
<td>3859</td>
<td>1978</td>
<td>3174</td>
<td>1551</td>
<td>3490</td>
<td>4059</td>
<td>49765</td>
<td>4147</td>
<td>2360</td>
<td>57%</td>
</tr>
<tr>
<td>Small sized ship</td>
<td></td>
<td>2204</td>
<td>964</td>
<td>1402</td>
<td>2011</td>
<td>1136</td>
<td>1940</td>
<td>1504</td>
<td>1437</td>
<td>4890</td>
<td>1618</td>
<td>1553</td>
<td>1634</td>
<td>22293</td>
<td>1858</td>
<td>974</td>
<td>52%</td>
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<tr>
<td>Foreign country</td>
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<td>792</td>
<td>512</td>
<td>795</td>
<td>796</td>
<td>2956</td>
<td>1023</td>
<td>893</td>
<td>597</td>
<td>698</td>
<td>860</td>
<td>845</td>
<td>11520</td>
<td>960</td>
<td>615</td>
<td>64%</td>
<td></td>
</tr>
<tr>
<td>South</td>
<td></td>
<td>1395</td>
<td>461</td>
<td>2127</td>
<td>920</td>
<td>521</td>
<td>630</td>
<td>1022</td>
<td>607</td>
<td>4264</td>
<td>755</td>
<td>590</td>
<td>623</td>
<td>13915</td>
<td>1160</td>
<td>1039</td>
<td>90%</td>
</tr>
<tr>
<td>Capsizing</td>
<td></td>
<td>348</td>
<td>308</td>
<td>232</td>
<td>393</td>
<td>–</td>
<td>237</td>
<td>–</td>
<td>–</td>
<td>1998</td>
<td>243</td>
<td>–</td>
<td>–</td>
<td>3759</td>
<td>537</td>
<td>599</td>
<td>112%</td>
</tr>
<tr>
<td>Crash</td>
<td></td>
<td>320</td>
<td>474</td>
<td>257</td>
<td>524</td>
<td>205</td>
<td>169</td>
<td>306</td>
<td>234</td>
<td>459</td>
<td>196</td>
<td>219</td>
<td>153</td>
<td>3516</td>
<td>293</td>
<td>121</td>
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<tr>
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<td>2204</td>
<td>1643</td>
<td>1212</td>
<td>2273</td>
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<td>2947</td>
<td>872</td>
<td>526</td>
<td>958</td>
<td>674</td>
<td>610</td>
<td>976</td>
<td>15574</td>
<td>1298</td>
<td>756</td>
<td>58%</td>
</tr>
<tr>
<td>Fire</td>
<td></td>
<td>476</td>
<td>141</td>
<td>180</td>
<td>425</td>
<td>178</td>
<td>–</td>
<td>–</td>
<td>210</td>
<td>267</td>
<td>120</td>
<td>352</td>
<td>335</td>
<td>2684</td>
<td>268</td>
<td>117</td>
<td>44%</td>
</tr>
<tr>
<td>Illegality</td>
<td></td>
<td>–</td>
<td>–</td>
<td>157</td>
<td>297</td>
<td>189</td>
<td>299</td>
<td>–</td>
<td>153</td>
<td>403</td>
<td>252</td>
<td>190</td>
<td>175</td>
<td>2115</td>
<td>235</td>
<td>80</td>
<td>34%</td>
</tr>
<tr>
<td>Government agency</td>
<td></td>
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<td>3113</td>
<td>6593</td>
<td>7292</td>
<td>3896</td>
<td>3416</td>
<td>4051</td>
<td>3346</td>
<td>9486</td>
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<td>3764</td>
<td>4756</td>
<td>58206</td>
<td>4851</td>
<td>1891</td>
<td>39%</td>
</tr>
<tr>
<td>president</td>
<td></td>
<td>1138</td>
<td>907</td>
<td>798</td>
<td>2490</td>
<td>772</td>
<td>1205</td>
<td>848</td>
<td>189</td>
<td>587</td>
<td>377</td>
<td>1557</td>
<td>959</td>
<td>11822</td>
<td>985</td>
<td>573</td>
<td>58%</td>
</tr>
<tr>
<td>Minister</td>
<td></td>
<td>3211</td>
<td>2451</td>
<td>2699</td>
<td>4966</td>
<td>2434</td>
<td>2427</td>
<td>2699</td>
<td>965</td>
<td>2073</td>
<td>1420</td>
<td>3532</td>
<td>2241</td>
<td>31118</td>
<td>2593</td>
<td>975</td>
<td>38%</td>
</tr>
<tr>
<td>Weather influence</td>
<td></td>
<td>1011</td>
<td>387</td>
<td>420</td>
<td>630</td>
<td>343</td>
<td>699</td>
<td>1117</td>
<td>967</td>
<td>1850</td>
<td>641</td>
<td>690</td>
<td>646</td>
<td>9401</td>
<td>783</td>
<td>398</td>
<td>51%</td>
</tr>
<tr>
<td>Security investigation</td>
<td></td>
<td>1193</td>
<td>150</td>
<td>2159</td>
<td>364</td>
<td>462</td>
<td>233</td>
<td>131</td>
<td>388</td>
<td>1581</td>
<td>501</td>
<td>379</td>
<td>623</td>
<td>8164</td>
<td>680</td>
<td>606</td>
<td>89%</td>
</tr>
<tr>
<td>Safety equipment</td>
<td></td>
<td>1271</td>
<td>487</td>
<td>852</td>
<td>1531</td>
<td>830</td>
<td>1377</td>
<td>1246</td>
<td>971</td>
<td>1633</td>
<td>910</td>
<td>997</td>
<td>645</td>
<td>12750</td>
<td>1063</td>
<td>337</td>
<td>32%</td>
</tr>
<tr>
<td>Information</td>
<td></td>
<td>381</td>
<td>409</td>
<td>644</td>
<td>650</td>
<td>481</td>
<td>267</td>
<td>271</td>
<td>302</td>
<td>666</td>
<td>228</td>
<td>428</td>
<td>329</td>
<td>5056</td>
<td>421</td>
<td>151</td>
<td>38%</td>
</tr>
</tbody>
</table>
STEP 1

Key words Analysis based on ship size

Frequency of associated keywords regarding **Small vessel**

Frequency of associated keywords regarding **5 tonnage**
STEP 2

Grouping result based on ship size

Machinery & Equipment

Institutions & administrators

Accident location

Boats scale

Accident cause

Preparation plan
### Scenario analysis for improvement of accident by ship size

<table>
<thead>
<tr>
<th>Target (reference value)</th>
<th>Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Within 2 tons</td>
<td>• Engine check</td>
</tr>
<tr>
<td>• Fishing boat/Fishing vessel</td>
<td>• communications equipment</td>
</tr>
<tr>
<td></td>
<td>• Remodeling</td>
</tr>
<tr>
<td>• Machine related:</td>
<td>• Safety check</td>
</tr>
<tr>
<td>• Other related:</td>
<td>• Weather</td>
</tr>
</tbody>
</table>

#### Solution plan

- Prevention activities
- Safety equipment
- Hospital accessibility
Legal Frameworks Related to Maritime Safety Threats

- **Vessel Safety Act**
  - §5-2, §53①
  - Not applied to below 2t

- **Fishing Boats Act**
  - §5
  - §2②, §8

- **Wireless Communication facilities**

- **Vessel Remodeling**

- **Vessel Location System**

- **Outboard facilities, engine room, wireless communication equipment, ship automatic identification system**

- **2.4 ton, fishing boat**

- **Remodeling**

- **Maritime Safety Act**
  - §29
  - §15
  - Not applied to below 2t

- **Small vessel**

- **Safe sailing preventive activities fishing guidance**

- **STEP 4**

박문식, https://cafe.naver.com/boatfish/194593
STEP 1

Key words Analysis based on ship type

Frequency of associated keywords regarding fishing boat (general)

Frequency of associated keywords regarding Fishing boat (angling type)
### Scenario analysis for improvement of accident by ship type

<table>
<thead>
<tr>
<th>Target (reference value)</th>
<th>Cause</th>
<th>Related organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ship</td>
<td>Human factors</td>
<td>Crash, Fire</td>
</tr>
<tr>
<td>Fishing boat</td>
<td>Natural factors</td>
<td>Waves, Wind</td>
</tr>
</tbody>
</table>

- Ministry of oceans & fisheries
- Marine police
- Maritime safety & security division

### Solution plan

- Communication
- Fishing location
- V-PASS
- Patrol boat
- Helicopter

**STEP 3**
STEP 4 Legal Frameworks Related to Maritime Safety Threats

- **Ship Safety Act**
  - § 5-2
  - § 53(1)
- **Fishing Boats Act**
  - § 28-29, 55
  - § 30, 38
  - § 27
- **Maritime Safety Act**
  - § 29(3), § 55.7, § 36
  - § 35, § 53.8, § 35
  - § 14-2
  - § 15(1)(2)(3)
- **Angling Fishing Management Act**
  - § 33(2), § 55

Fishing Boats Act

- Communication, V-Pass
- fishing boat positioning system

Vessel Remodeling

- Wireless Communication facilities

Vessel Location System

- Location Tracking System Inoperative

Fishing boat positioning system

- Long distance fishing

Security, declaration, naval ship aircraft life vest helicopter

Life Unit

- False report and unreport of port entry

Over the boarding quota

- Drunken operation

Captain

Rule of Safe Operation in the Fishing Boat

STEP 4 NEWSIS, photo@newsis.com
STEP 1

Key words Analysis based on cause of accidents

Frequency of associated keywords regarding capsizing

Frequency of associated keywords regarding weather

- Nearby
- Three people
- A ship on board
- Estimate
- Jeonnam
- Communication

- a roundabout route
- about seventy
- a passenger
- transport capacity
- Text service
- Real-time
STEP 3

Scenario analysis for improvement of accident by cause of accidents

<table>
<thead>
<tr>
<th>Cause</th>
<th>Related organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Increase</td>
<td>• Marine police</td>
</tr>
<tr>
<td>• Overboard</td>
<td>• Private diver</td>
</tr>
<tr>
<td>• Number of flights</td>
<td>• Marine safety supervisor</td>
</tr>
<tr>
<td>• illegal operation</td>
<td>• Flight manager</td>
</tr>
<tr>
<td>• Neglect</td>
<td></td>
</tr>
</tbody>
</table>

Solution plan

- **Control**
  - Sail back
  - Flight control
  - Text service

- **Rescue equipment**
  - Evacuation tips
  - Life-saving equipment
  - Machinery equipment
  - Special inspection
Legal Frameworks Related to Maritime Accident Response


• Responses to accidents caused by weather conditions are covered by “Maritime Safety Act”, “Seafarer’s Act”, “Act on Search and Rescue in the Maritime Accidents”, and “Coast Guard Act”.

• Investigations and ex facto accident management are covered by “Act on Maritime Accident Investigation and Tribunal” and “Act on Search and Rescue in the Maritime Accidents”.
Legal Frameworks Related to Maritime Accidents Responses

(1) Capsizing

Vessel Safety Act

- § 31

Vessel Employees Act

- § 2.1

Seafarer’s Act

- § 11①②, §12, §13, §16, §21

Coastguard Act

- § 2.1, § 2.8, § 15, § 16

Search, aircraft, patrol ships, light bombs.

The Act on Search and Rescue in the Maritime Accidents

- § 2.6, § 5②, § 13, § 6, § 26, § 15①, § 43①-1, § 15② § 16, §18①.1

Related Organization

Rescue Activity

STEP 4

Legal Frameworks Related to Maritime Safety Responses

(2) Bad weather

Maritime Safety Act

- §36-2
- § 31, § 38

Coastguard Act

- § 14 ② ③

Seafarer’s Act

- § 14

A roundabout, texting service, cell phone

The Act on Search and Rescue in the Maritime Accidents

- § 10, § 11, § 12

Life-saving facilities

Transport capacity, multiplication

III. What did the Social Big-data show?
Words vs. Factual Records
Small Vessels and Fishing Boats

- Small vessels and fishing boats represent a particular weakness in current safety regulations. Because exemptions in existing legal frameworks create blind spots in safety regulations when it comes to smaller vessels, there is a need to strengthen regulations on small vessels and small fishing boats.

Communication

- There is a need to introduce stronger regulations and appropriate technical developments to better respond to threats posed by a lack, malfunctioning, or deliberate misuse of communication devices on vessels.

Captain

- Taking into account the fact that the ship’s captain plays an important role in maritime disaster response, there is a need to clarify the responsibilities and authorities of the captain, as well as penalties against any illegal actions.
In the case of Korea, the fact that regulatory responsibility is divided between the Coast Guard and MOF may cause redundancy and confusion in the establishment and administration of maritime regulation.

Specifically, there exists overlap in the areas of maritime pollution prevention, maritime accident and disaster response, and maritime traffic regulation.

In the area of maritime accident and disaster response, there is a need to reorganize existing administrative structures to better reflect the needs on the field, to allow for rapid and efficient accident and disaster response.
Reflecting the Views of the “Legislative Consumer”

• This research aims to take a comprehensive review of existing legal framework and administrative organization on maritime security and safety, focusing on the needs and concerns of the public as the final “consumers” of all legislative action.

Finding the Blind Spots in Maritime Safety Regulation

• The research identifies small vessel and small fishing boat safety regulation as blind spots in current regulations, and highlights the need for improvement in these areas.

Effective Legislative Analysis Research Approaches

• This research used Social big-data to derive essential issues to achieve policy and legislative goals based on pure public concerns without experts’ advices and suggests the most urgent and effective approaches for legislative renovation.
Further Research Remaining

Natural Language Analysis and Word Embedding

Legislative Network Analysis

JEON, Jieun (2018)

JEONG, Seungteak (2019)
Thank you!

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