



KEMENTERIAN PENGANGKUTAN
MALAYSIA



Port state control pattern in Malaysian ports: in light of navigation safety

13th Cooperation Forum
Co-Operative Mechanism for Safety of
Navigation and Environmental Protection in
The Straits of Malacca And Singapore

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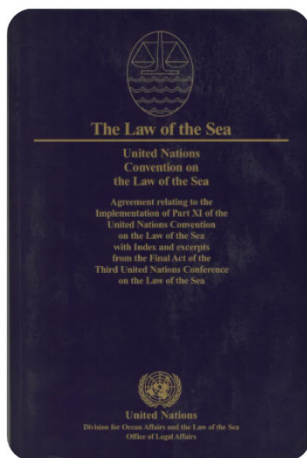
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MARINE
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Outline of presentation



Introduction



Port State Control (PSC)

- ✓ The inspection of foreign ships in national ports,
- ✓ to verify the ship and its equipment comply with the requirements of international regulations,
- ✓ to ensure the ship is manned and operated in compliance with these rules,

Obligation for littoral state

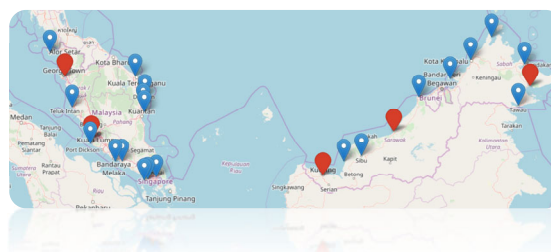
- ✓ Obligation under article 43 of the 1982 UNCLOS
- ✓ PSC is a mechanism for managing navigational safety and environmental risks in the Straits of Malacca and Singapore,

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What is the objective of the study?

1. Determine the PSC inspection pattern in Malaysia,
2. Identify the relationship between;
 - a. port of inspection,
 - b. vessel's flag,
 - c. number of deficiencies,
 - d. detention result, and
 - e. ship risk profile,
3. Empirical analyses on the deficiencies raised by PSCO



Source of data:
Tokyo MOU database

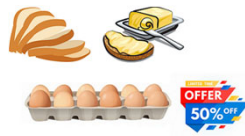
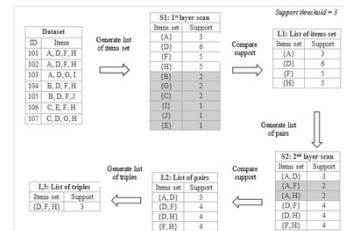
Scope of data used:
2015 – 2019: 6774 inspections
2020 – 2021: 1633 inspections

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Methodology: Association Rule Mining - Apriori Algorithm

- ✓ key techniques used by large retailers to uncover associations between items,
- ✓ to find out associations between different items and products that can be sold together,
- ✓ Association rules can be thought of as an **IF-THEN** relationship.
- ✓ For example, people who buy Bread usually buy Butter too

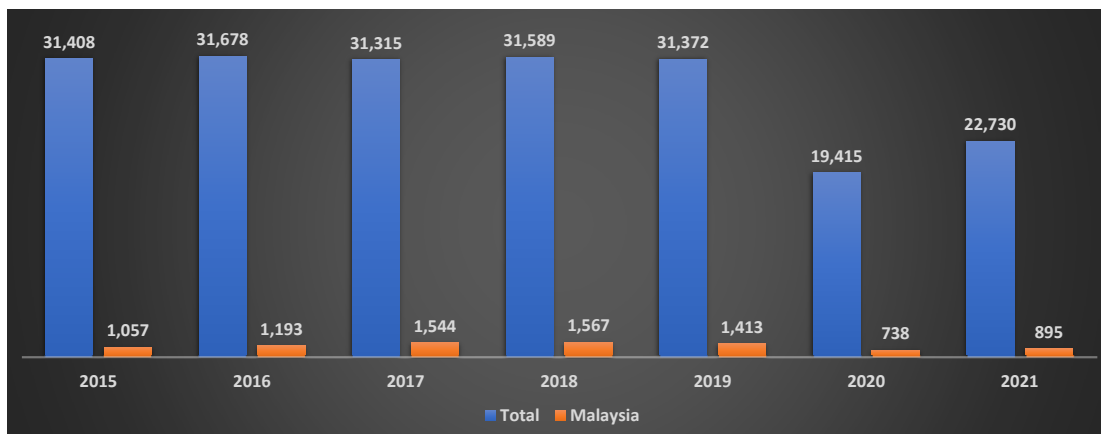


Example of application
If the "High-Risk Ship" calls to "XX Port", the possibility to be detained is very high

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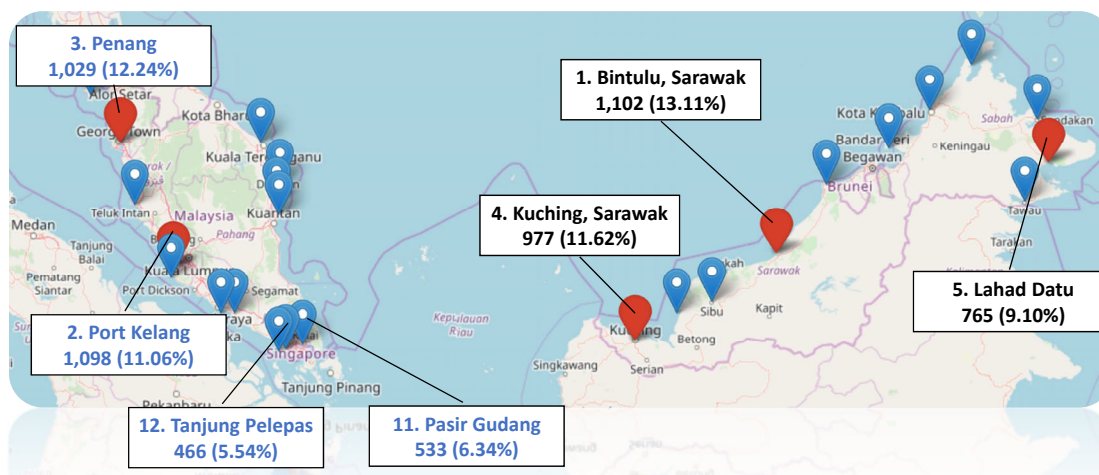
Tokyo MOU inspections



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PSC Inspection by Malaysian ports

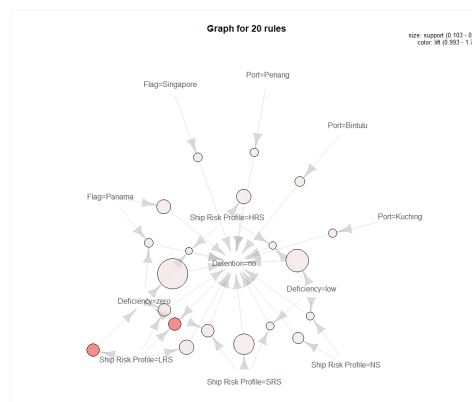


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Finding – overall analysis

- ✓ the inspection exercise mostly found zero deficiency, leading to no detention,
- ✓ most of the ships categorized as LRS were inspected without any deficiencies
- ✓ The inspectors were likely to detain the vessel with a high number of deficiencies
- ✓ Ships with low deficiencies (1 to 5) were never been detained

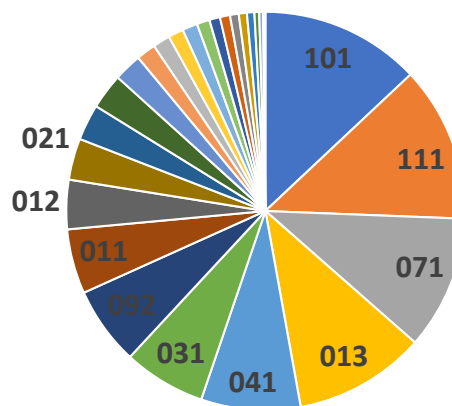


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The top 10 nature of deficiencies raised

CODE	NATURE OF DEFICIENCIES
101	Safety of Navigation
111	Life saving appliances
071	Fire safety
013	Certificate and Documentation - Documents
041	Emergency Systems
031	Water/Weathertight conditions
092	Living and Working Conditions - Working Conditions
011	Certificate and Documentation - Ship Certificates
012	Certificate and Documentation - Crew Certificates
021	Structural Conditions



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The top 10 nature of deficiencies raised

CODE	NATURE OF DEFICIENCIES	*2015 - 2019	*2020 - 2021	**TOTAL
101	Safety of Navigation	13.30%	11.76%	1753
111	Life saving appliances	11.97%	15.24%	1703
071	Fire safety	10.64%	11.80%	1467
013	Certificate and Documentation - Documents	10.85%	9.99%	1441
041	Emergency Systems	7.88%	8.80%	1088
031	Water/Weathertight conditions	6.61%	6.99%	902
092	Living and Working Conditions - Working Conditions	6.65%	5.18%	858
011	Certificate and Documentation - Ship Certificates	5.35%	4.88%	709
012	Certificate and Documentation - Crew Certificates	4.21%	3.14%	539
021	Structural Conditions	3.36%	3.37%	454

* Percentage of deficiencies raised

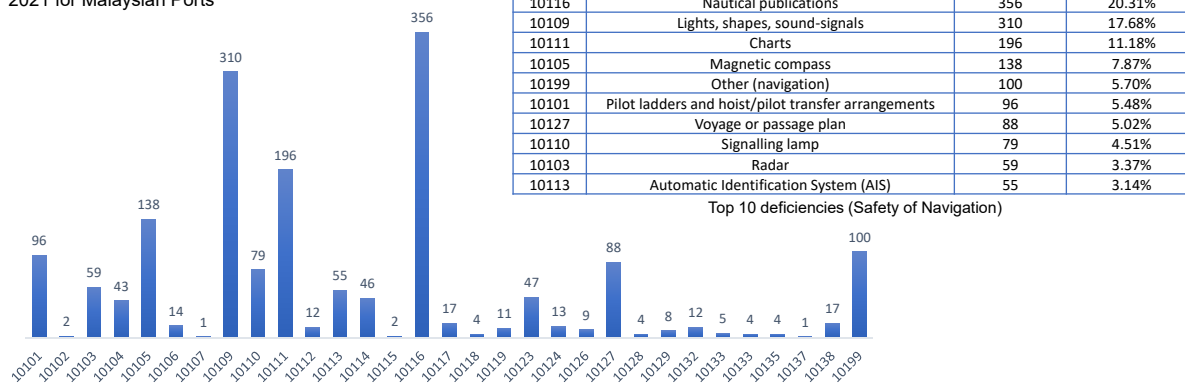
** Number of deficiencies raised from 2015 to 2021

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Nature of deficiency: 101 Safety of Navigation

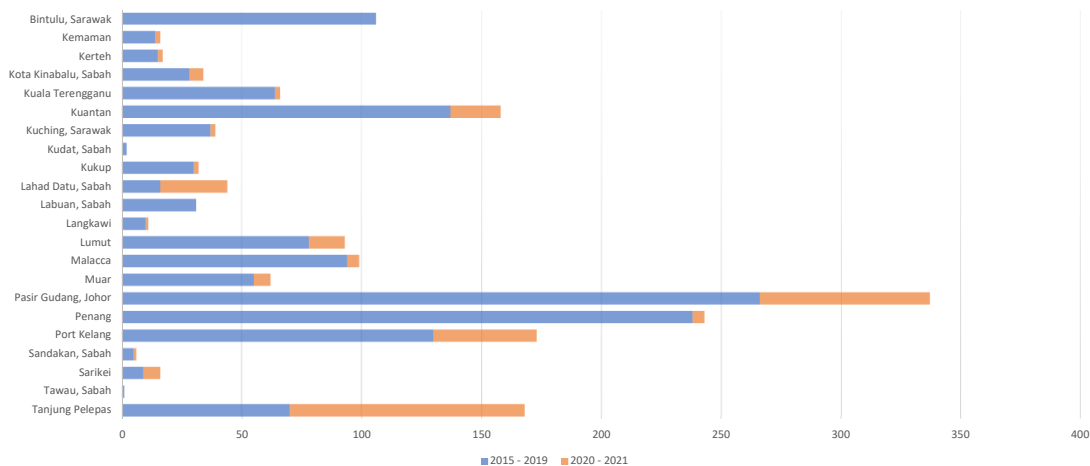
No. of deficiency on Safety of Navigation from 2015 to 2021 for Malaysian Ports



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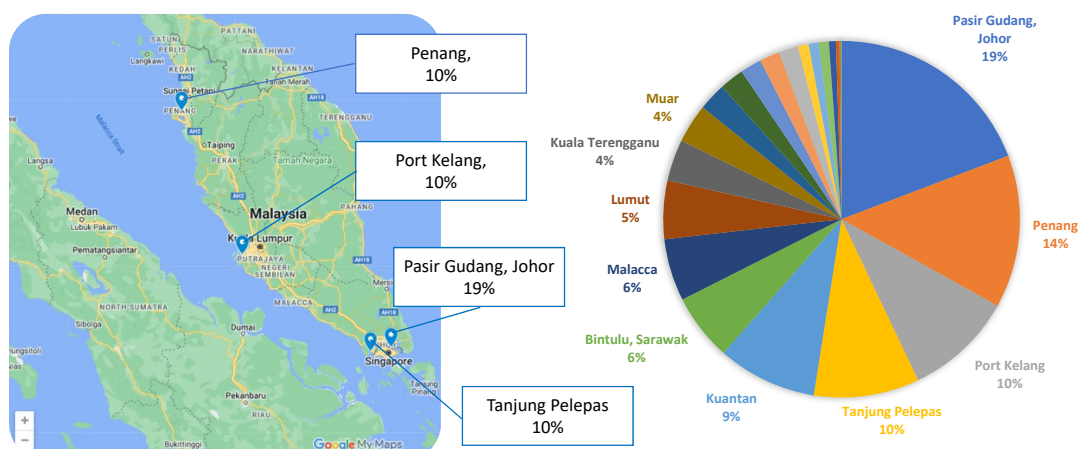
Deficiencies by ports: 101 Safety of Navigation



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Deficiencies by ports: 101 Safety of Navigation



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Top 5 Most frequent detainable deficiency raised in Tokyo MOU Region

NATURE OF DEFICIENCIES	NO. OF DEFICIENCIES 2015 - 2019
Lifeboats (Life saving appliances)	581
Fire-dampers (Fire safety)	475
Oil filtering equipment (MARPOL Annex I)	386
Maintenance of the ship and equipment (ISM)	344
Sewage treatment plant (MARPOL Annex IV)	329

NATURE OF DEFICIENCIES	NO. OF DEFICIENCIES 2020 - 2021
Other (ISM)	161
Fire-dampers (Fire safety)	98
Emergency source of power - Emergency generator (Emergency systems)	86
Lifeboats (Life saving appliances)	86
Maintenance of the ship and equipment (ISM)	81

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Most frequent detainable deficiency raised in Malaysian ports: 101 Safety of Navigation

10101	Pilot ladders and hoist/pilot transfer arrangements
10102	Type approval equipment
10103	Radar
10104	Gyro compass
10105	Magnetic compass
10107	Automatic radar plotting aid (ARPA)
10109	Lights, shapes, sound-signals
10111	Charts
10117	Echo sounder
10124	Life-saving signals
10132	Communication-SOLAS chap. 5
10138	Bridge Navigation Watch Alarm System (BNWAS)
10199	Other (navigation)



CODE 30

Discussion and conclusion

- ✓ Deficiencies analysis shows the significance of safety navigation,
- ✓ In the PSC regime, the safety of navigation is an essential element,
- ✓ The responsibility for assuring navigation safety should be undertaken by all maritime stakeholders,
- ✓ Strengthening the PSC inspection
- ✓ Ensuring the ship complies with maritime conventions,

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THANK YOU

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