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Time-Series Analysis of Port State Control Inspections for Tankers

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Abstract : A tanker is a critical vessel used to transport or store liquids or gases in bulk in maritime shipping. However, it is more dangerous than other types of vessels. Port State Control (PSC) inspection is an important measure to ensure maritime safety when such vessels traveling between ports. However, the current inspection system lacks a useful tool to observe the inspections for tankers and to identify non-random instances in PSC inspections. This study collects the inspection records in Taiwan's ports from 2015 to 2018 and utilizes run charts to map the PSC inspections for tankers in terms of deficiencies. Based on these time-series charts, several patterns of deficiencies are identified. The results demonstrate that run charts are a useful tool to observe how the PSC inspections for tankers are performed. Also, the charts can help port administrations to identify abnormal phenomena for further investigation. Furthermore, with valuable information from the analysis, port administrations can take proactive improvement measures to ensure the safety of tanker shipping.

Keywords : port state control, tanker, run chart, deficiency
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