



Meta Analysis the Emission of Green Port City : A Literature Review

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ABSTRACT

Air emission not only from waste or gas from chimney of factory or ships in port, but also from leaking gas of freon/chloro in air that can damaging the ozone. Our current understanding of the sources and increase in emissions of leaked refrigerant gases derives from two data sources: ground-based and airborne point measurements, or from reports of the quantity of products manufactured and purchased. Thus, port-related air pollutant emissions and their environmental impacts are not systematically reported. The solution to the environmental impacts of refrigerant gases would therefore pass by a gas which contains no chlorine no fluorine and does not reject any CO₂ emissions in the atmosphere, in brief a green gas. The method used is expected to be able to map the center of the pollutant source.

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1. INTRODUCTION

Global CO₂ emissions from fossil fuel combustion in 2018, were estimated to be 37.1 Gt (gross ton), which is a 2.7% increase over 2017 Li, (2012). This is worrisome as a global average temperature rise of 1.5 °C will easily be exceeded if such increases continue. General public has put the issue of greenhouse gas (GHG) as a priority mitigation, by deployment research of potential reducing emissions, via such routes, over the short term will not prevent serious impact from climate change. All sector of economic country are potential produce the pollutant, include seaport. There is no doubt that ports play an important role in promoting urban economic development ,kourtiti, (2013); however, the negative impacts of their activities, such as emissions (at the regional, national, and global levels), health and safety issues, and resource management, cannot be overlooked. Some city of country, have port that placed in city. And in that port, there are so many activity bussiness to do there, because there are many company, fishing ship are there. It means, so many energy are used there. Port operations use a large number of production resources—non renewable coal, water, and land Karimpour (2019). In addition, the transportation of ships and trucks, operation of machinery, and production operations in port industrial parks cause a lot of environmental pollution, propelling hinterland cities to invest in pollution governance, Feliciano (2012). The establishment of an “emission control area” and “lower tax and duties if carriers use the ultra low sulphur diesel oil” are two of their concrete strategies. Emission sources include ocean-going vessels, local tug boat operators, and land-based emissions from terminal and port operations (diesel-powered rubber tire gantry cranes, tractors, and old trucks), (Lirn, 2012).

In otherhand, air emission not only from waste or gas from chimney of factory or ships in port, but also from leaking gas of freon/chloro in air that can damaging the ozone. Our current understanding of the sources and increase in emissions of leaked refrigerant gases derives from two data sources: ground-based and airborne point measurements, or from reports of the quantity of products manufactured and purchased by parties to the Montreal Protocol. Both approaches have been crucial to the science and policies designed to limit ozone depleting substances (Ghandehari, 2017).

The solution to the environmental impacts of refrigerant gases would therefore pass by a gas which contains no chlorine no fluorine and does not reject any CO₂ emissions in the atmosphere, in brief a green gas (samira, 2012). However where are the source/organisations caused the highest and largest pollutant in the ports is still under observation or the object in this research.

Object of this research are mentioned to

some point as below;

- a. Find out the kind of pollutant and emission that create in port area.
- b. Clasifying the kind of pollutant created and sorting it to be some range with priority scale score
- c. What are solution top reduction some of emission and pollutant which significantly
- d. What the impact of port city related with public facilities

The authors focus on port-related truck traffic in port cities resulting in increased pollutant, lower air quality, deteriorating roads, from fishing ship resulting much emission, and factory in port that resulting water pollutant and emission, all are impact on city/public near port. For thefurther the source of the pollutant can be mapping, and easy to solve when emission has over the air emission limit index.

1. Literature Review

In this section, the conceptual framework are proposed to know how integration among port, city, emission and sustainability of port. Agarwal (2019) conclude the base point from popper (1994) and soni and kadali (2013), as follow;

- a. The framework must suggest not only the elements/constructs under study but also the entire structural relationship between the elements/constructs;
- b. The framework should explain the sequence/phases/process of actions to achieve the research objective;
- c. The framework should represent all the activities/action of different elements/constructs of the framework; and
- d. The framework should provide guidelines for its practical implementation.

According conditions must be categorize the port city green supply chain articles as a framework. Analytical of references must be filtered by word and topic, to avoid the double meaning/ambigue and more focus to the theme. In this research eliminating the journal limit to 42 journal are selected, filtered has to execuce before doing analytical and discussion.

2. Port City

The interactive development system of a port and city is dynamic, with multiple feedback and time-delay factors. These non-linear characteristics often lead to the unrealistic use of linear theory and static points of view to solve problems in the system, Li (2019). Port and city can combined to be stimulant to increase the economic in local area or country. Good management can make port in city to be primary benefit to governance and public. Inspite of benefit are achieved, port also having the impact to city, that ports pollutant can disturb the citizent in air, water or landscape. With the concept of “green development” becoming more popular in recent years, governments,

enterprises, and researchers have been addressing the question of how to reduce waste emissions and energy consumption caused by port-based production operations and port-vicinity industrial parks, and also how to coordinate the benign interaction between ports and cities under the conditions of promoting energy conservation and emission reduction, Li,(2019).

Green ports are guided by the green concept, in that new ports are constructed while promoting environmental health, ecological protection, the rational use of resources, low energy consumption and low pollution. Previous related studies seldom combined the port land sources, cargo delivering trucks and ship emissions. In addition, they usually aimed at the establishment of emission inventories, but did not further evaluate the impact of port related emissions on air quality and the environment. Thus, port-related air pollutant emissions and their environmental impacts are not systematically reported, Zhou, (2020).

3. Green

A study of the current practices of five container ports in Asia and America explored the similarities and differences in their policies on, and concepts and measurements of green ecological port management, Lirn. (2012). Lirn, (2012) also suggest green of port have indicated that residents-sensitive indicators of a port neighbourhood are important to its green performance, including the cases of “ill health associated with freight movement”, “regulation in noise and vibration from discharging equipments”, “infrastructure impact avoidance, biology and wetland impact avoidance, and cold ironing”. Some other scholars have found pollution prevention is an important issue for a port’s green performance (Veloso-Gomes and Taveira-Pinto, 2003; Tsinker, 2004; Zonn, 2005; Wenning et al., 2007; Matishov and Selifonova, 2008), including the lack of any “oil spill contingency plan”, “solid waste dumping management”, or “liquid cargoes spilling contingency plan”; “reducing infrastructure disturbance to marine biology density”; “ecology preservation and environment protection training”; “sediment of port entrance and coast erosion”, and “dredging sediment disposal”

4. Emission

In addition, this pollution also poses a threat to the health of residents in hinterland cities [3]. On the environmental and health protection side, carried out a global assessment of mortality from ship emissions, and found that shipping-related particulate matter (PM) emissions are responsible for approximately 60,000 cardiopulmonary and lung cancer deaths annually, with most deaths occurring near coastlines in Europe, East Asia, and South Asia [8]. Developing ports without an adequate environmental and ecological preservation policy could hurt both the residents and fauna and

flora close to the port [9]. Although the six annexes attached to International Maritime Organization’s (IMO’s) International Convention for the Prevention of Pollution from Ships (MARPOL) 73/78 have indicated actions a port can take to make the port clean and green. Lirn (2013) suggested that as ports are the transfer point between the maritime mode and other modes, the evaluation of green performance has become very important. Frankel (1987) suggested that a port design and development plan should include the following issues:

1. sediment of port entrance and coast erosion;
2. marine biology protection;
3. oil spill;
4. waste dumping in the water;
5. cargo spilling from chemical carriers and tanker;
6. air pollution from bulkers’ cargo handling;
7. aesthetic interference with local community;
8. oil spillage during disconnection of cargo pipeline;
9. noise and vibration from cargo handling;
10. impact on marine fauna during vessel sailing, operation, and anchoring;
11. impact of ballast water on plankton;
12. decreasing number of marine fauna near the port (because of the concentration of marine fauna and flora by the port infrastructures);
13. separation effect during the dredging of the navigation channel;
14. collision and stranding of vessels;
15. interference with recreation boats and fishing boats;
16. pipeline network and its impact on the real estate value of the local community; and
17. interference during construction or renovation of the port facility.

Black (1996) studied the sustainable transportation in the North America and indicated a sustainable transportation system should take the full transportation cost into consideration, which includes air pollution (nitrogen oxide (NO_x), CO₂, CO, SPM, and SO_x), urban ozone, acid deposition, stratospheric ozone depletion, climate change, long-term health, noise, structural vibration damage, and water pollution (marine spills and runoffs) costs. Once the big issue emission is flour carbons, that can making ozone depletion and global warming. Refrigerant gases such as chlorofluorocarbons (CFC), hydrochlorofluorocarbons (HCFCs), and hydrofluorocarbons (HFC) that have dominated the refrigeration and air conditioning sectors for many years contribute significantly to ozone depletion and global warming. The high environmental impacts due to halogenated refrigerant emissions has stimulated a wide debate aimed at the identification of efficient strategies for

the control of these emissionsGenta, (2017).

5. Integration Between Green Port City and Emission

The establishment of an “emission control area” and “lower tax and duties if carriers use the ultra low sulphur diesel oil” are two of their concrete strategies. Emission sources include ocean going vessels, local tug boat operators, and land-based emissions from terminal and port operations (diesel-powered rubber tire gantry cranes, tractors, and old trucks). Singapore port has launched a green port programme to encourage ocean-going vessels calling at Singapore to reduce theemission of pollutants by giving a 15 per cent concession in port dues. Shanghai port Administration Centre published a report on the environmental protection of Shanghai port, and indicated that the Shanghai Municipal port Administration Bureau is responsible for the supervision and management functions of the environmental protection and pollution management of the port (Feng, 2012). The Pacific ports Clean Air Collaborative (PPCAC) group is an advanced cooperative pollution control mechanism between ports, and is based in Los Angeles. PPCAC is a voluntary group of international participants from ports, private industries, and environmental agencies throughout Central America, North America, and Pacific Rim countries. The goal of the PPCAC is to collaborate to develop port environmental protection strategies and evaluate potential port policies and mitigation measures. Another international organization, the International Association of ports and Harbours (IAPH), had its port environment committee launch the World ports Climate Initiative programme, and 59 of its members have given their commitment to reduce their greenhouse gas emissions.

In short, most port authorities (Shanghai, Hong Kong, Singapore, Port of L.A. and L.B., and Kaohsiung, 2012), and international organizations (PPCAC, IAPH) have come up with six green port performance indicators: speed reduction after landfall, cold ironing, using electrically powered equipment, encouraging the use of low-sulphur fuel, a willingness to reuse recyclable resources, and encouraging public transport mode development.

So, the port city could be green for environment factor or other elements, because it will impact to the human or other habitats directly. Port in city has get close supervision from governance or environmental and health conservation activist. In this paper showing the solution how to reduce some of pollutions by data of reference in the emission table indicators, as below.

II. RESEARCH METHODOLOGY

The systematical study literature are used to represent the methode on mapping the problem and source and to know the newest research that published to answer the problem question that accure in this field. (Systematic Literature Review)

Figure 1. Flowchart Filtering Process

process to avoid bias and subjective understanding of Author. This method is complemented by a meta-analysis to see the contribution and statistical relevance of published articles. This research are supports by vosviewer analytical software and 3 search engines, such as Emerald, Scopus and Science Direct.

1. Collecting the Data

The figure 1 are flowchat filtering process on find out suitable articles and eliminates the uncorrelable articles. . First step is selecting the search engine that to used, author used 3 search engine that has provided by Universitas Diponegoro to all students and lecturer. The selecting reason of search engine, because these search engine easy to used, can be saved the history observed. It also fasilitating the bibliometric analysis and trend of it.

2. Selecting and Filtering

The first step on searching process is setting the search engine to giving a limitation of research. The limitations such as, only article has need, article that the research type, english language, only open access and published between 2011 - 2021 (10 years).



Three search engine that use also gave the limitations by keywords inside such as, green port, port city, emission, supply chain and refrigerant emission as second step that gived 1716 articles. The third step is reading titles and keywords each paper, then remaining 864 articles. The Fourth step, reading full abstract, and getting 597 are relevant to be continued filtering. The fifth step is reading full content of papers, and got 394 papers. Reread the paper, and filtering only that truly needed, and got 55 papers. Filtering again by choosing the good article, and got 43 papers. Furthermore, the remaining papers was analyzed deeply. And the last step is determining the result and conclusion of the literature review.

3. Bibliometric Analysis

Bibliometric analysis based on quantitatif research that published on certain journals. Bibliometric analysis is literature measurement method that used statistic method, so that quantitative catagorized. Bibliometric shown further approach on selected item/subject. The total of 42 files are exported from emerald, scopus and science direct with "RIS" format. Its data containing the author, titles, date of published, DOI, abstract, afiliation, keyword reference and journal. The software to support analysis data using VOS Viewer.

4. Grouping

Clustering is once of grouping method. Clustering can clasifying data to be some cluster so that one cluster having the largest similarity or smallest similarity (Tan, 2006). The clustering of data is the most effective way to understand and research the proposed topic. data clustering that supports infrastructure discovery, natural clustering, and data compression (Jain, 2010). In this study, the grouping of journals was based on co-accuracy and co-authorship. Co-accurance-based grouping is used to find the relationship and similarity of several items (words, phrases) in several documents in the analyzed data set. while grouping based on co-authorship is used to find relationships between various studies based on research documents provided by researchers.

III. RESULTS AND DISCUSSION

1. Domination and author correlation

Below Diagram is result of co-authorship by vosviewer. **Figure 2.**

The co-authorship network is an indicator of research collaboration, which is a strategy that can be used to increase the quantity and quality of scientific publications. To see the shape of the co-author's network, "social network analysis" was used, which focused on the interactions that took place between related participants. Co-authorship analysis was used to find the relationship between various studies based on research documents provided by the researcher. In the Green Port City

Emissions study, the total documents obtained were 42 research journals. then conduct a co-authorship analysis with the intended specification being the author, with a minimum limit of 1 document. by using vosviewer software, visualization results from 42 journals obtained 150 items with 42 clusters. From a number of clusters, a close relationship between authors is obtained which is marked with a red line

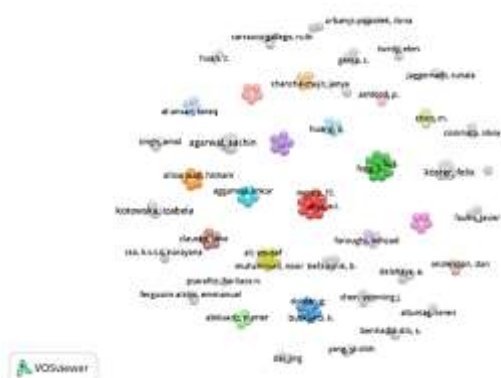


Figure 2. Output of co-authorship analysis

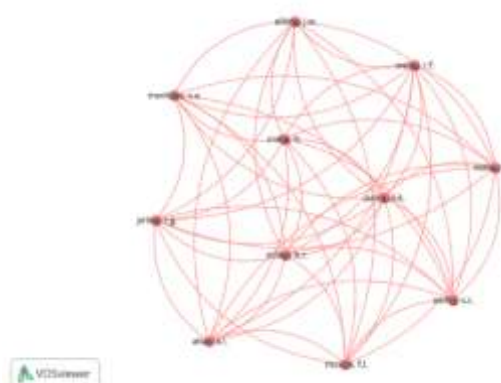


Figure 3. Output of co-authorship analysis

Relation between authors are close to research the emission. In the **figure 3**, all 11 authors review and reseach the emission, green house and port city, that phenomenon are accure in the many places that close with harbour.

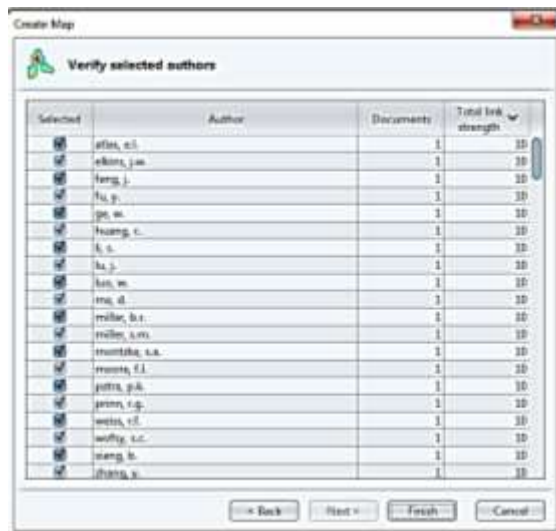


Figure 4. Total Number of Correlation Co-authorship Analysis

The number of correlation between authorship analysis presented in **figure 4**. The name on the table are authors that talk about topic that emission in the port city that cite in their articles. And in **figure 5**, shown the Author country.

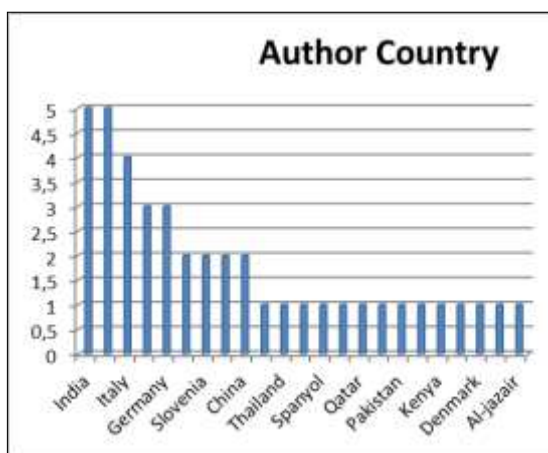


Figure 5. Bar Chart the Authors Country

The country that having dominant number of published journal in this topic is india and italy. Both country take the topic of emission and catagorized to the green, either in logistic or global supply chain.

2. The Dominant Year of Published

The descriptive analysis supported by data of number of journal, that published total 42 journal. From the diagram, it shown trend the fluctuation of graphic

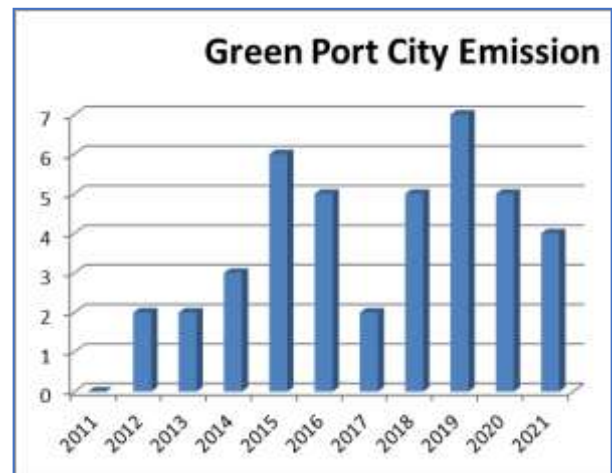


Figure 6. The Number of Journal

3. Domination of Journal cited

The journals on **table 1**. are shorted grouping. There also mentioned type of journal such as : Total Quality Management (TQM), Competitiveness Review (CR), International Symposium on Intelligent Manufacturing and Automation (ISIMA), World Journal of Entrepreneurship, Management and Sustainable Development (WJEMSD), Asian Journal of Shipping and Logistic (AJSL), Benchmarking: An International Journal (BIJ), Advances in freight transportation and logistic (AFTL), International Journal of Physical Distribution & Logistics Management (IJPDL), Management of Environmental Quality (MEQ), The International Journal of Logistics Management (IJLM), International Journal of Operations & Production Management (IJOPM), Sustainability (STN), Journal of Advanced Transportation (JAT), Energy Report (ER), Applied Energy (AE), Advanced Applied Energy (AAE).

No	Title	Type Of Journal	Citation Frequency (Dimentions)
1	Green supply chain management Practices and tools for logistics competitiveness and sustainability	TQM	70
2	The analysis of a simulation of a Portcity green cooperative development based on system dynamics A case study of Shanghai Port ChinaSustainability Switzerland	CR	63
3	Environmental sustainability of logistics service provider an ANP QFD approach	IJLM	57
4	A Multicriteria Analysis for the Green VRP A Case Disc	TR	39
5	Modelling and analysis of barriers affecting the implementation of lean green agile manufacturing system (LGAMS)	BIJ	23
6	A Hybrid Simulation Model for Green Logistics Assessment	ISIMA	21
7	Green Maritime Logistics The-Quest for Win	TR	19
8	Green supply chain management	WJEMSD	12
9	Environmental Performance Indicators for Green Port	AJSL	12
10	Humanitarian supply chain management frameworks	BIJ	11
11	The use of an optimisation model to design a green supply chain A case study of the Thai rubber industry	IJLM	10
12	To greener pastures An action research study on the environmental sustainability of humanitarian supply chains	IJOPM	7
13	Assessment of Emissions Caused by Logistics Handling	TR	5
14	Improvement of the sustainability of ports logistics	AJSL	5
15	refrigeration	AJSL	5
16	Portrelated emissions environmental impacts and their implication on green traffic policy in Shanghai Sustainability Switzerland	STN	4
17	The effect of port gate location and gate procedures on the portcity relation Sustainability Switzerland	STN	3
18	The effect of green shipping	IJLM	3

19	Development of an MCDM framework to facilitate	AJSL	3
20	Refrigerants and their environmental impact substitution of hydro chlorofluorocarbon HCFC and HFC hydro fluorocarbon Search for an adequate refrigerant Energy	IJOPM	3
21	Releases of refrigerant gasses	AJSL	3
22	Dynamic Routing Anticipation of Emission Sensitiveness	TR	2
23	From green energy to green logistics a pilot study	AFTL	2
24	Policies Applied by Seaport Authorities to Create	AFTL	2
25	Mapping Refrigerant Gases in the New York City Skyline Scientific Reports	AJSL	2
26	use of hydrates for cold storage and distribution	AJSL	2
27	Green performance criteria for sustainable ports in Asia	IJPDLM	1
28	Integration of green supply chain management practices in construction supply chain of CPEC	MEQ	1
29	Using a transport portfolio framework to reduce carbon footprint	IJLM	1
30	Key factors of carbon footprint in the UK food supply chains a new perspective of life cycle assessment	IJOPM	1
31	Modeling the enablers of humanitarian supply chain management a hybrid group decision-making approach	BIJ	1
32	Sustainable green supply chain management trends and current practices	STN	0
33	BottomUp-Approach-Ship-Emission-Inventory-in Port of Incheon Based on VTS Data Journal of Advanced Transportation	JAT	0
34	The thematic landscape of literature on supply chain management in India a systematic literature review	BIJ	0
35	A review of cleaner alternative fuels for maritime transportation	ER	0
36	A review of large scale CO2 shipping and marine emissions management	AE	0
37	Cruise industry in the Baltic Sea Region the challenges 2019	TR	0

38	Decarbonising ships planes and trucks	AAE	0
39	A review of carbon dioxide as a refrigerant in refrigeration technology South African Journal of Science	IJLM	0
40	Global emissions of refrigerants HCFC22 and HFC134a Unforeseen seasonal contributions Proceedings of the National Academy of Sciences of the United States of America	IJOPM	0
41	Study and Development of a Complete System for Recovery Recycle and Disposal of Refrigerant Gas from Existent	AJSL	0
42	Greening Logistics Centers The Evolution	AJSL	0

Table 1. Citation of 42 Journals

The further step to proceed the data of 42 citation journals are arrange the methode and solution be a summary, in other to simplify

read and comprehension. The summary consist of no, tittle, reference, model type, solution are shown in the table 2, as below.

No	Title	Reference	Model Type	Solution
1	Green supply chain management	Runala Jaggernath (2015)	GSCM	Framework-utilize eco-friendly yet less costly techniques
2	Green performance criteria for sustainable ports in Asia	Taih-cherng Lirn (2012)	Green Performa Criteria	AHP
3	Integration of green supply chain management practices in construction supply chain of CPEC	Yousaf Ali (2019)	Integration of GSCM practices	multi-criteria decision making (MCDM)
4	Using a transport portfolio framework to reduce carbon footprint	Kristina Liljestrand (2015)	Framework	Using a TPF to reduce carbon footprint
5	Key factors of carbon footprint in the UK food supply chains a new perspective of life cycle assessment	Emmanuel Ferguson Aikins (2020)	Framework	Multilinear Regression (MLR) and Stochastic Frontier Analysis (SFA)
6	Modeling the enablers of humanitarian supply chain management a hybrid group decision-making approach	Sachin Agarwal and Ravi Kant (2020)	HSCMEs	MICMAC analysis
7	Sustainable green supply chain management trends and current	Amol Singh and Ashish Trivedi	Assessment	Environmental Performance

	practices	(2015)		Indicators (EPIs)
8	To greener pastures An action research study on the environmental sustainability of humanitarian supply chains	Mohammad Hossein Zarei, et al (2019)	To Greener Pastures	Research Methodology
9	BottomUp-Approach-Ship-Emission-Inventory-in-Port-of-Incheon-Based-on-VTS-DataJournal-of-Advanced-Transportation	Hyangsook Lee, et al (2021)	VTS Vessel tracking service	EO and FC methods, Energy Output and Fuel Consumption
10	Portrelated-emissions-environmental-impacts-and-their-implication-on-green-traffic-policy-in-ShanghaiSustainability-Switzerland	Yuyan Zhou (2020)	Assessment	WRF-CMAQ model
11	The-analysis-of-a-simulation-of-a-Portcity-green-cooperative-development-based-on-system-dynamics-A-case-study-of-Shanghai-Port-ChinaSustainability-Switzerland	Yan Li (2019)	Sustainable GSCM	Catergorized the literatures
12	The-effect-of-port-gate-location-and-gate-procedures-on-the-portcity-relationSustainability-Switzerland	Marina Zanne (2021)	Assessment	System dinamic Model
13	Environmental sustainability of logistics service provider an ANP-QFD approach	Jasmine Siu Lee Lam dan Jing Dai (2014)	Environmetal sustainability of LSP (logistic service provider)	ANP (Analytical Network Process) +QFD (Quality Function Deployment)
14	Green supply chain management Practices and tools for logistics competitiveness and sustainability	Silvia Cosimato and Orlando Troisi (2015)	GSCM	Perspective
15	Humanitarian supply chain management frameworks	Sachin Agarwal (2019)	HSCM	Framework
16	Modelling and analysis of barriers affecting the implementation of lean green agile manufacturing system (LGAMS)	Rahul Sindhwani (2018)	LGAMS (lean green agile manufacturing system)	total interpretive structural modeling (TISM) and MICMAC (Matriced' Impacts Croise's Multiplication Appliquée a UN Classement) Analysis
17	The effect of green shipping	Erwind Jozef (2019)	Effect of GSPs	partial least squares technique

18	The thematic landscape of literature on supply chain management in India a systematic literature review	Srichandan and Narayana (2020)	Sahu K.V.S.S. Rao	Literature on supply chain management in India	systematic literature review methodology
19	The use of an optimisation model to design a green supply chain A case study of the Thai rubber industry	Janya Chanchaichujit (2015)		GSCM	Linear programming
20	A Hybrid Simulation Model for Green Logistics Assessment	Oumer (2014)	Abduaziz	Green Logistic	system dynamics (SD) and discrete event simulation (DES)
21	A Multicriteria Analysis for the Green VRP A Case Disc	Bartosz (2016)	Sawik	VRP	CPLEX
22	A review of cleaner alternative fuels for maritime transportation	Ahad (2020)	Al-Enazi	Assessment	LCA
23	A review of large scale CO2 shipping and marine emissions management	Hisham (2021)	Al Baroudi	Assessment	Techno-economical
24	Assessment of Emissions Caused by Logistics Handling	Zoran (2016)	Miodrag	Assessment	Formulating in excel
25	Cruise-industry-in-the-Baltic-Sea-Region--the-challenges-_2019_Transportatio	Ilona (2018)	Urbanyi	Perspective	Quisioner
26	Decarbonising ships planes and trucks	Nathan Gray (2021)		Assessment	Research Methodology
27	Development of an MCDM framework to facilitate	Son (2018)	NGUYEN	Framework	MCDM (multi criteria decision making)
28	Dynamic Routing Anticipation of Emission Sensitiveness	Felix Koster (2016)		Dynamic programing	Dynamic Routing Decisions
29	Environmental Performance Indicators for Green Port	Rattaporn Teerawatana & Yi-Chih Yang (2019)		Assessment	EPIs Environmental performance indicator
30	From green energy to green logistics a pilot study	Felice Arena (2018)		Assessment	FEVs (Fully Electric Vehicles)
31	Greening Logistics Centers The Evolution	Ceren Altuntas, Okan Tuna (2013)		Environmetal sustainability of LSP (logistic service provider)	EPIs Environmental performance indicator
32	Green Maritime Logistics The-Quest for Win	Harilaos Psaraftis (2016)	N.	Assessment	UNFCCC, United Nations Framework Conference on

33	Improvement of the sustainability of ports logistics	Elen Twrdy & Marina Zanne (2019)	Assessment	ESPO Research
34	Policies Applied by Seaport Authorities to Create	Izabela Kotowska (2016)	Perspective	Quisioner
35	A-review-of-carbon-dioxide-as-a-refrigerant-in-refrigeration-technologySouth-African-Journal-of-Science	Paul Maina, Huan (2015)	Environmetal sustainability of LSP (logistic service provider)	ANP
36	Global emissions of refrigerants HCFC22 and HFC134a Unforeseen seasonal contributions Proceedings of the National Academy of Sciences of the United States of America	Bin Xiang (2014)	Assessment	Multi Case Study
37	Mapping Refrigerant Gases in the New York City Skyline Scientific Reports	Masoud Ghandehari (2017)	Assessment	CPLEX
38	Refrigerants and their environmental impact substitution of hydro chlorofluorocarbon HCFC and HFC hydro fluorocarbon Search for an adequate refrigerant Energy	Samira Benhadid-Dib & Ahmed Benzaoui (2012)	System dinamic Model	Research Methodology
39	refrigeration	A.P. Fonseca (2018)	Framework	System dinamic Model
40	Releases of refrigerant gasses	Archie McCulloch (2002)	Perspective	Quisioner
41	Study and Development of a Complete System for Recovery Recycle and Disposal of Refrigerant Gas from Existent	Corrado Genta (2017)	Framework	CPLEX
42	use of hydrates for cold storage and distribution	Anthony DELAHAYE (2013)	Environmetal sustainability of LSP (logistic service provider)	MICMAC analysis

Tabel 2. Summary of Methode and Solution

4. Keyword Correlation

Analitical for keyword show the correlation about keyword despite the title and theme of papers is difference each others. Below is picture represented the model. The



Figure 7. The Keyword Correlation, Co-occurrence Analysis

5. Methodology Comparison

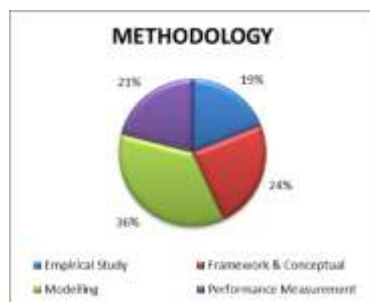


Figure 8. Pie Chart of Methodology Comparison

For whole document has searched and read, can be grouped to be 4 classes according the method approach are used. Empirical study, modelling, framework and conceptual, and performance measurement. The biggest is base on modelling, with 36%, the secondly is framework with 24%, then 21% for performance measurement, and the last is empirical study on 19%. It means, majority of the journals using modelling approachment that each model has the object research had been modelled.

6. Research Scope Mapping

a. Thematik

Thematik analisis shown the grouping of the each journal to some group adoption, perspectiv, barriers and drivers, opportunity, ore framework. In this case, the panelis selecting the methode using framework show in **Figure 9**. All of journal are selected and analyzed, and grouping in Conceptual thematic. The conceptual thematic have 5 branch, perspective, framework, opportunity, barriers and driver, and adoption. Each branch having different criteria. The adoption is include the implementation journal. All of

red lines implicating the dominant keyword that involved to the several journal. All of them having correlation in the emission Topic.

journal are selected and analyzed, and grouping in Conceptual thematic. The conceptual thematic have 5 branch, perspective, framework, opportunity, barriers and driver, and adoption. Each branch having different criteria. The adoption is include the implementation journal.

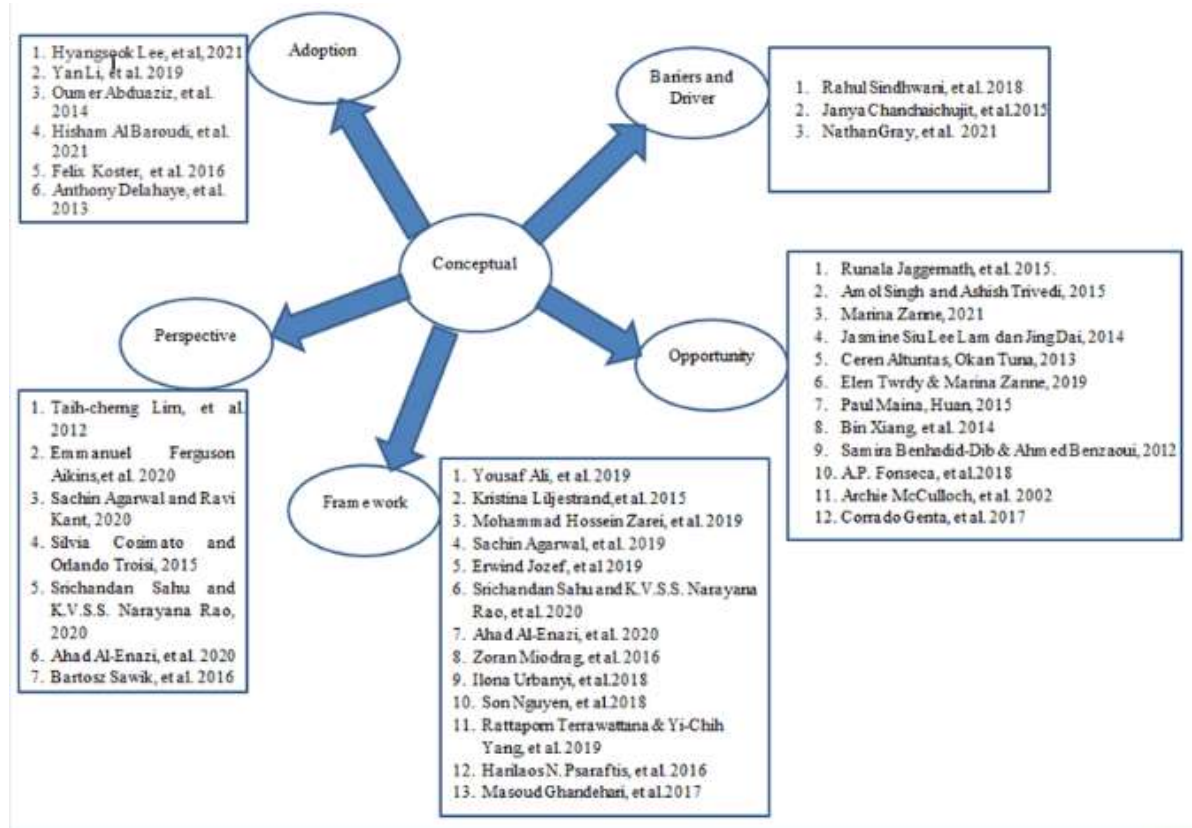
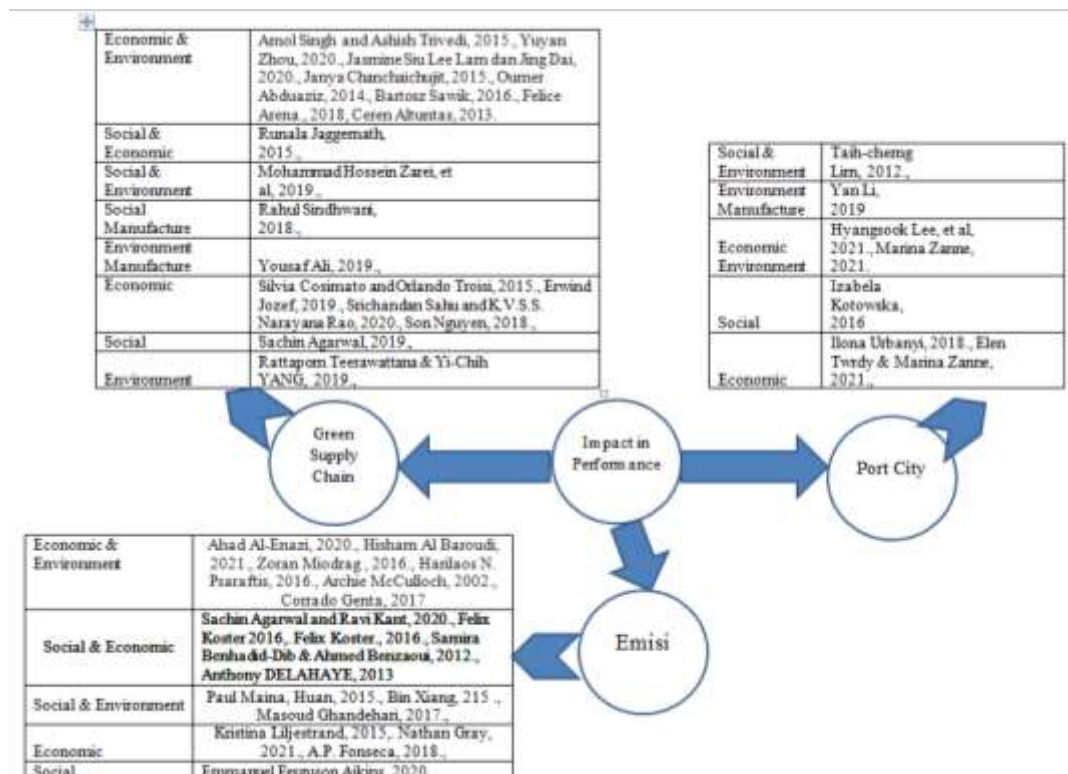


Figure 10. Thematic Analysis



b. Result Tematik Analisis

At **Figure 10** is the advanced process of picture 8, that the result of thematic analysis making the total of journal is separated to be big issued, Green supply chain, Port City, and Emission. The each issued having indicator, economic, social, environment, manufacture or combined of two indicators.

7. Discussion

According literature review of several journals, with the meta analysis applied, that all are port incheon (Lee, 2021), south korea's, shanghai (zhou, 2020), Koper-Slovenia (Zanne, 2021), mentioned getting impact of emission from activity in port on their water, air, soil and public road access. Those pollutions, not only disturbing the habitat surrounded, but also the health of human that work, and life not far from port. The pollution also forced the ozone to be damaged, because the leaks of freon gasses.

The problem of pollution can be solved with the mitigation ways, either framework or deep investigation with modelling. Such as TPF (Kristina, 2013), that used TPF to solved the carbon footprint issue from logistic activity. All activity in port that using energy, are potentially resulting the emission and pollutant. In other case, different ways adopted by (rattaporn, 2019) that making the port to be green with giving the policy about performance indicators for green port in Laem Chabang Port, Taiwan. The big contributor emission of ozone that must not forgeted is hydro chlorofluorocarbon HCFC and HFC hydro fluorocarbon that can destroy ozone (samira, 2012). The world is realize to keep ozone from damage, the once example is making way, how to find out the problem maker. Mapping the refrigerant gases potentially leaked are did by (Ghandehari, 2017), in new york city. In other way, McCulloch making research that using the new variant of cooling gasses with CFC-12 and HFC-134a, that atmospheric concentrations calculated from the emissions estimated here are in good agreement with observations, verifying that the emission functions adequately describe the relationship between the quantities in use,

the atmospheric lifetimes of 100 and 14.6 years, respectively, and the extent of release into the atmosphere.

IV. Conclusion

According the analyzed that has done, so this article can concluding some points of literature review:

1. The research with green port city having some attention of some countries with the number of journal of 42 articles, the author dominant from india and italy.
2. The correlation of the keyword has found, is dominant from refrigerant emission that contribute huge pollutant and impact to the ozone.
3. From result of thematic analyzed, mentioned that the most journal that researched is about green supply chain with the indicator/topic environment economic.

V. The Future Research

The future research making some systematical ways to solve the emission problem with fastest, more effective and efficient. And can making mapping area, which the potentially resulting the pollution, so that preventive measures can solve it.

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