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Maritime related services: Experiences of stakeholders

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ABSTRACT

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Keywords:

maritime related services, stakeholders' experiences, Danao City port, case study. This study is qualitative research, employed a single case study research in exploring experiences of the stakeholders in Danao City Port, Cebu. A descriptive case study was utilized where an in-depth interview with the informants was conducted. Out of the responses, significant statements were extracted and given core meanings in order to come up with emergent themes. There were twenty (20) stakeholders involved. Eight (8) of them were trucking drivers from different trucks operators/rolling companies in the Philippines. Two (2) of them are business operators traveling at least three times a week to and from Camotes island via Danao City port. Ten (10) personnel were composed of a group as a family-owned small business enterprise that used to travel bound for Camotes via Danao City Port. After thorough validation and formulation of significant statements based on informants' experiences, the researcher came up with two (2) overarching themes. The two (2) overarching emergent themes comprising of two (2) positive and one (1) negative emergent themes. The positive themes are: 1) Comfortable and Safe Seaport in the Lens of the Passengers and 2) Efficient Roll-On and Roll-Off Services: A Bridge of Economic Activity. Meanwhile, the negative theme is Long Queue of Cargo Trucks: An obstruction Along the National Road.

Furthermore, on the recommendations for the improvement of maritime related services had there themes: On Expanding the Port Area: A Means to Prevent Road Obstruction, and On Convincing More Shipping Lines to Ply Larger Ships: A Means for Economic Growth. These themes holistically describe the stakeholders' experiences of the maritime related services at Danao City port.

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1. Introduction.

Maritime, inland or river ports, ports are essential pieces of infrastructure that serve a wide range of customers, including freight shippers, ferry operators, and private boats. One of the main functions of a port is facilitating the domestic and international trade of goods, often on a large scale. It plays a vital role in serving as a model of a multimodal transport system, in tandem with its stakeholders, such as shipping lines, shippers, terminal operators, land transport carriers, and logistics service providers.

Maritime transport plays a pivotal role in international logistics chains and facilitates economic growth between regions and countries (Clark et al., 2004). Fueled by globalization and containerization, international seaborne trade volumes reached 10.7 billion tons in 2017, with a growth rate of 4 percent over the last five years. Shipping also accounted for more than 80 percent of the world's merchandise trade transport (Romeo, 2016). Even though maritime transport has been regarded as an environmentally - friendly mode of transport in terms of emissions per kilometer, given the share of maritime transport in total world trade, its impacts on the environment are not negligible.

With global environmental laws for sea transportation being created and implemented, such as the MARPOL standards (Zhang, 2016) port face more significant pressures to comply with regulatory and societal requirements for operational sustainability. Ports are under increasing strain to meet regulatory and societal demands for long-term operating viability. Ports have been forced to take proactive measures in this area because it has become a critical factor for shipping corporations

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when deciding which port to use (Ding, et al., 2019). A port that operates at a high degree of sustainability is more likely to receive support from the government, communities, and the general public, as well as potential marine sector investors (United Nations Conference on Trade and Development [UNCTAD], 2015). As a result, ports have had to undertake increasingly costly investments to comply with regulations and improve their corporate social responsibility image (Acciaro, 2015). However, given that port operators will ultimately aim to increase profits and only invest where necessary. In contrast, sustainable port development strategies potentially require a heavy financial investment. It is still unclear if the concept of port sustainability is successful or has yielded positive outcomes.

In ports and related industries, a conflict between sustainable management and economic gain continues to arise (Geerlings & Vellinga, 2017). Previously published literature on port sustainability performance reflected an understanding of global sustainable development issues in the context of ports, such as incorporating sustainability challenges into operational practices and strategies and increasing sustainability performance capability from a management standpoint.

Ports are vital nodes in the supply chain and transportation network. While efficient ports are vital to the economic development of a particular country or area, port authorities should balance environmental protection and social issues. The supply chain and transportation network rely heavily on ports. While adequate ports are critical to a country or region's economic development, they must balance against environmental protection and social concerns (Zheng & Luo, 2021).

Ports are more crucial than ever before in logistics systems. On the one hand, they are significant because their primary activity, commodities loading and unloading, is critical to international trade and transportation. They are, nonetheless, crucial because their activity accounts for a significant portion of the entire chain cost. For these reasons, port activity is increasingly required to fit perfectly into the logistics chains of which seaports are an integral part. In practice, this is by far not always the case. One of the essential phenomena preventing a match between ports and their logistics chains is congestion. The rapid development of maritime transportation networks meets international trade demands while rendering them high risk and disruption concerns, particularly at ports, being the bottlenecks of the whole flows (Jiang et al., 2021).

A seaport typically has a significant number of internal bottlenecks, each of which can result in a queue: pilot service, towing service, locks, loading and unloading quays, bunkering, etc. In practice, it is sheer impossible to observe every bottleneck separately to conduct counts, let alone impose the appropriate congestion (Song & Panayides, 2012).

Camotes Islands is 255.7 km away via Central Nautical Highway from the port of Danao, which is much more-costly than maritime transport, which is 56.70 nautical miles. Everybody in the world benefits from shipping, yet few people realize it. We ship food, technology, medicines, and memories. As the world's population grows, particularly in developing countries, low-cost and efficient maritime transport has an essential role in growth and sustainable development.

In Danao City, local officials issued many ordinances to address the complaints regarding the port of Danao. Among those complaints are: (1) the need to maximize the availability of better transportation to and from the island, (2) the influx of tourism and migrants, and (3) the development of facilities, particularly resorts. The lack of satisfaction from the stakeholders alarmed the government; among these concerns are the fixerfilled ticketing systems in ports, the lack of proper parking lots, not enough waiting areas, and lack of security. Shoddy service of the shipping lines may be taken for granted due to lack of port competition. The demand of Jonalia Shipping lines' service covers the Danao to Camotes and vice-versa sea transportation. The management tends not to improve its facilities and services because of the high demand; thus, people don't have any choice but to conform to their poor and lack of quality service towards the stakeholders. The government Issues center to the Port gave enormous tourism, especially in the Island of Danao and Camotes.

The quality of the services in ports is highly monitored to sustain the stakeholders' demand, thus making the transportation market on the Port satisfying to every stakeholder. Motivated by such a crisis, the researcher, who is a marine engineer, a maritime instructor, and an onboard training supervisor in a state university, would like to analyze the maritime-related services and stakeholders' experiences of the Danao City Cebu northern Port bound for Camotes Islands and vice versa. The result of this study can provide a scientific basis for the port managers, staff, and managers in any private organization in establishing and conforming obligations to satisfy the demands of the public as to their quality services system.

2. Methodology.

2.1. Design.

This qualitative research employed the single case study research design in exploring experiences of the trucking drivers, passengers and small-medium enterprise owners using the Danao City Port, Cebu. A descriptived case study was utilized where an in – depth interview of the informants were conducted. Out of the responses, significant statements were extracted and given core meanings in order to come up with emergent themes.

The most appropriate and recognized approach of this research is a case study for the purpose of exploring the experiences of stake holders which used Danao City port as the gateway to and from Camotes Island. The study collected data through the use of researcher-made interview guide for semi-structured face to face interviews with the selected stake holders of Danao City Port, Cebu.

2.2. Environment.

Danao City port is operated under the supervision of Cebu Port Authority with conventional ro-ro and passenger facility. The terminal has a one hundred fifty (150) seater capacity, with Cebu Port Authority (CPA) collection office, amenity center, ro-ro ramp and parking area. It is located along central nautical highway to Northern Cebu. Danao port has a total area

of 2,909 square meters with a berthing space alongside of 125 meters. The average rolling cargoes inbound per month is 2988 metric tons and an outbound of 3061 metric tons. Embarking passenger is 14859 and disembarking passenger of 14315.

2.3. Informants.

The research informants of the study were stake holders using the Danao City port as the gateway to and from Camotes Island. There were twenty (20)stake-holders involved. Eight (8) of them are trucking drivers from different trucking operators/rolling companies in the Philippines; two (2) are business operators travelling at least three (3) times a week to and from Camotes island via Danao City port and ten (10) personnel in a group as a family owned small business enterprise who used to travel bound for Camotes Via Danao City port.

2.4. Instruments.

The instrument was an interview guide with the aid of audio recorder and diaries. An audio recorder was utilized to ensure that every details of answer during the individual in-depth interview and focused group discussion relayed by the informants were fully recorded, and a diary for them to signed afterwards for records purposes. The content of the diary is a transcription of the audio recorded testimony of the informants. The study also used informed consent form and explained the content of the informed consent to the key informants legibly. Then, the principal informants expressed their consent to be the research informants through signing the informed consent form (located in Appendix A).

The interview guide questions are a semi-structured guide and which was examined, reviewed, rectified, validated and approved by the members of the panel. It consists of open-ended questions as significant guides during interview.

2.5. Procedures.

The instrument was an interview guide with the aid of audio recorder and diaries. An audio recorder was utilized to ensure that every details of answer during the individual in-depth interview and focused group discussion relayed by the informants were fully recorded, and a diary for them to signed afterwards for records purposes. The content of the diary is a transcription of the audio recorded testimony of the informants. The study also used informed consent form and explained the content of the informed consent to the key informants legibly. Then, the principal informants expressed their consent to be the research informants through signing the informed consent form (located in Appendix A).

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2.6. Data Collection.

I gathered the data from in-depth interview and focused group interview with the aid of audio recorder. Prior to the interviews, I explained the purpose of interview and the data collection method. The interview questions were introduced to each participant's prior the conduct of interviews. I was the one who conducted the interviews. All interviews were audio recorded and were transcribed into texts.

2.7. Analysis of Data.

I analyzed the data using the Colaizzi's strategy of descriptive phenomenological data analysis where themes were extracted out from the significant information is accumulated from the informants. Further, I, with the help of my adviser scrupulously observed the seven steps of Colaizzi's strategy of descriptive phenomenological data analysis:

First step, transcript: horizontalization. I read and re-read closely the informants transcript to obtain the entire sense of the content and highlighted significant statements that responded the three research sub-problems, which were the following: the positive experiences of stake holders in Danao city port, the negative experiences of stake holders and its recommendation. Second step, significant statement extractions. I meticulously created all the significant statements and phrases on the lived experiences of the informants. The statements and phrases were written and encoded on a separate paper according to their transcript, page and line numbers. Third step, formulation of meanings. I formulated meanings out from significant statements and created phrases. Fourth step is the organization of cluster themes. I grouped all formulated meaning into cluster themes which reflected a peculiar structure of theme. Fifth step is statement of identification. At this stage, I supported comprehensive definitions to all emergent themes extracted derived from the cluster themes of formulated meanings. I incorporated all the themes as a whole structure to extrapolate the phenomenon pertaining to the experiences of the stake holders. Sixth stage is relationship validation. In this stage, I rechecked the relationship of the extracted cluster themes and the emergent themes to toughen the description of formulated meanings.

3. Results.

After methodical and tedious generation of the formulation of the core meanings using the thematic content analysis of Braun and Clarke (2006), one hundred ten (110) significant statement, were generated and re-grouped into fortyfour (44) formulated meaning, the formulated meaning comprising of twenty-four positive experiences (24), seven (7) negative experiences and thirteen (13) recommendations of informants. Regrouping to come up with thirteen (13) positive cluster themes with six (6) sub-themes, four (4) negative cluster themes with one (1) sub-theme and ten (10) cluster themes with four (4) sub-themes as informant recommendations. The researcher decided to regroup the statement to formed emergent themes. On the other hand, there are two (2) overarching emergent themes were generated. The two (2) overarching emergent

themes comprising of one (1) Positive and Negative Experience of the Informants on Maritime Related Services with three (3) sub themes, and one (1) Recommendation of Informants to Improve the Maritime Related Services with two (2) sub themes that gives implication to the problem and sub- problem of this study. The overarching emergent themes with the sub-themes are arranged from positive and negative then recommendations are as follows:

I. Positive and Negative Experiences of the Informants on Maritime Related Services.

- Comfortable and Safe Seaport in the Lens of the Passengers.
- 2. Efficient Roll-On and Roll-Off Services: A Bridge of Economic Activity.
- 3. Long Queue of Cargo Trucks: An obstruction Along the National Road.

II. Recommendations of Informants to Improve the Maritime Related Services.

- 1. On Expanding the Port Area: A Means to Prevent Road Obstruction.
- 2. On Convincing More Shipping Lines to Ply Larger Ships: A Means for Economic Growth.

4. Discussion.

Innovation of Port Infrastructure and Services. The informant's experiences and recommendation of Danao City port plays significant bases of the port management of Danao under the supervision of Cebu Port Authority to innovate or expand the port area to prevent congestion in the national road. The informants' recommendation has an impact on the stakeholder's life and on the local and national government. The continuous development of port infrastructure has a significant influence on port efficiency, logistical improvement, and stakeholders' choice decisions. Developing adequate port infrastructure, improving port efficiency and other logistical improvements have a significant influence on the port choice decision. Then, identifying the most influential attributes considered by stakeholders, exporters, and importers when choosing a port is crucial when planning major infrastructure projects.

Strengthening Partnership with Shipping Company. The

Danao City Port should have more partners in the shipping company in order to satisfy the need of the public most especially to the trucking services. They should have at least three (3) to five (5) shipping company is that will use Danao City port in transporting both cargoes and passengers to and from Camotes Island. The cooperation between port management and shipping companies should be strengthened to fill the gap and to satisfy the need of the local and international tourist bound for Camotes Island. The port management shall take a look on the size of vessels plying to Danao-Camotes route taking into account the needs of the stake holders concerning to the vessel trucking capacity. Most of the informants and stakeholders say that Danao City is the only gateway to Camotes in terms of

trucking services. They wanted more vessels services to accommodate their needs in trucking and other related services. The management should look into the dynamics needs of stake holders thru passenger and cargo operations in Danao City port as this is one of the vital roles in the port management.

Conclusions and Recommendations.

This study on the experiences of the stakeholders as they used the Danao City port noted some commendable suggestions and issues from the informants that merit possible interventions in planning for the port operations development. These interventions are potential problems for interested researchers such as:

Researcher may venture into quantitative study on the impacts of Danao City Port Operation amidst Pandemic. Some stake holders transporting Danao to Camotes and vice versa were affected against port standard health protocols in the embarking and destination Port. This is one of the most imperative topics that maritime related services play a vital role.

Another possible topic is an evaluative study of port shipping operation. The portshipping operation is a valid source of experiences and issues that can provide better ideas for the port development and innovations. Benchmarking the International Ship and Port Facility Code (ISPS) core objective can be one of the interested topics considering the Port security plays an important role in the public thus maritime related services has significant affects.

The integration of local small business entities into the port operation would help local business entrepreneurs. This could be another interesting topic the next researcher could dig into. The impact of the port operation on the external and internal stake holders before pandemic and during pandemic hence, Danao Port play the most essential role in helping the transportation of goods to and from Camotes Island and to different portion in the whole Philippines.

Lastly, researchers may delve into the issues raised by the informants regarding political relationship between two different parties that may hamper the continuous development of the port operations. These problems can really affect the port operations and the public commuters hence they are part of the management. Last November 23, 2020 Philippine Port Authority (PPA) issued an Administrative Order No. 08 series of 2020 with a subject revised guidelines on the Transfer of the Management and operation of PPA Ports to Local Government Units (LGU's) under Presedential Decree 857 as amended, OGCC opinion No 010, Series of 1996 and Opinion No.210 Series of 1997 and PPA Board Resolution 2957. Republic Act No. 7621 signed on June 26, 1992 to specifically administer all ports located in Cebu Province, effectively separating these ports from the PPA system. CPA began operations and officially took over all Cebu ports on January 1, 1996.

In line with this legal basis, the Local Government Unit [LGU] manned by the local officials can exercise the local control to manage the port operation and maintenance in accordance with the existing policy of the Philippine Port Authority

that is why the relationship between local officials both LGUs and province level key officials and the port management should be unified as this will promote good governance and management across the Danao City port contributing for the better improvement through additional infrastructure and innovation that has significant effect on maritime related services of the Danao City port. There are more interested topics for research for this issue most especially the transition period the impact study should be consider.

References.

Books

Geerlings, H. & Vellinga, T. (2017). Sustainability. *Ports and Networks*. Abingdon, UK; New York, NY, USA: Routledge.

Guest, G., MacQueen, K.M. & Namey, E.E. (2011). *Applied thematic analysis*. Thousand Oaks: Sage Publications, Incorporated.

Lun, Y. V., Lai, K. H. & Cheng, T. E. (2010). *Shipping and logistics management*. London: Springer.

Meersman, H., & Van de Voorde, E. (2013). The relationship between economic activity and freight transport. In Ben-Akiva, Meersman & Van de Voorde (Eds.), *Freight transport modelling*. West Yorkshire, England: Emerald Group Publishing Limited.

National Research Council, Committee on Climate Change, US Transportation, Transportation Research Board, Division on Earth & Life Studies. (2008). *Potential impacts of climate change on US transportation: Special report 290* (Vol. 290). Washington, D.C.: Transportation Research Board.

Song, D. W. & Panayides, P. (2012). *Maritime logistics:* A complete guide to effective shipping and port management. Philadelphia, USA: Kogan Page Publishers.

Journal Articles

Acciaro, M. (2015). Corporate responsibility and value creation in the port sector. *Int. J. Logist. Res. Applicat.* 18 (3), 291–311.

Blauwens, G., Vandaele, N., Van de Voorde, E., Vernimmen, B. & Witlox, F. (2006). Towards a modal shift in freight transport? A business logistics analysis of some policy measures. *Transport Reviews*, 26(2), 239-251.

Braun, V. & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3, 77-101.

Bucak, U., Başaran, İ. M. & Esmer, S. (2020). Dimensions of the Port Performance: A Review of Literature. *Journal of ETA Maritime Science*, 8(4), 214-240. https://doi.org/10.5505/jems.2020.76598

Castelein, R. B., Geerlings, H. & Van Duin, J. H. R. (2019). Divergent effects of container port choice incentives on users' behavior. *Transport Policy*, 84, 82-93.

Clark, X., Dollar, D. & Micco, A. (2004). Port efficiency, maritime transport costs, and bilateral trade. *Journal of Development Economics*, 75(2), 417-450.

Connelly, L. M. (2016). Trustworthiness in qualitative research. *Medsurg Nursing*, 25(6), 435.

Cullinane, K., Wang, T. F., Song, D. W. & Ji, P. (2006). The technical efficiency of container ports: Comparing data envelopment analysis and stochastic frontier analysis. *Transportation Research Part A Policy and Practice*, 40(4), 354-374.

Dimitriou, L. (2021). Optimal competitive pricing in European port container terminals: A game-theoretical framework. *Transportation Research Interdisciplinary Perspectives*, *9*, 100-287.

Ding, J. F., Kuo, J. F., Shyu, W. H. & Chou, C. C. (2019). Evaluating determinants of attractiveness and their cause-effect relationships for container ports in Taiwan: users' perspectives. *Maritime Policy & Management*, 46(4), 466-490.

Elo, S., Kääriäinen, M., Kanste, O., Pölkki, T., Utriainen, K. & Kyngäs, H. (2014). Qualitative content analysis: A focus on trustworthiness. *SAGE Open*, *4*(1), 2158244014522633.

Francisco, K. A. & Tanaka, M. (2020). The Philippines' Roll-on/Roll-off Policy and its Impact on Household Income. *The Journal of Development Studies*, *56*(5), 984-998.

Gibbs, D., Rigot-Muller, P., Mangan, J. & Lalwani, C. (2014). The role of seaports in end-to-end maritime transport chain emissions. *Energy Policy*, *64*, 337-348.

Hales, D., Lee Lam, J. S. & Chang, Y. T. (2016). The balanced theory of port competitiveness. *Transportation Journal*, *55*(2), 168-189.

Haralambides, H. E. (2002). Competition, excess capacity, and the pricing of port infrastructure. *International Journal of Maritime Economics*, 4(4), 323-347.

Haralambides, H. E., Verbeke, A., Musso, E. & Benacchio, M. (2001). Port financing and pricing in the European Union: theory, politics and reality. *International Journal of Maritime Economics*, *3*(4), 368-386.

Hidalgo-Gallego, S., Núñez-Sánchez, R., & Coto-Millán, P. (2017). Game theory and port economics: A survey of recent research. *Journal of Economic Surveys*, 31(3), 854-877.

Hiranandani, V. (2014). Sustainable development in seaports: A multi-case study. *WMU Journal of Maritime Affairs*, *13* (1), 127-172.

Huang, Q., & Hu, L. (2019, November). Research on Calculation of Port Optimal Anchorage Demand Based on Queuing Theory. In *IOP Conference Series: Materials Science and Engineering* (Vol. 688, No. 2, p. 022027). IOP Publishing.

Jeevan, J., Chen, S. L. & Lee, E. S. (2015). The challenges of Malaysian dry ports development. *The Asian Journal of Shipping and Logistics*, *31*(1), 109-134.

Jiang, C., Fu, X., Ge, Y. E., Zhu, S., Zheng, S. & Xiao, Y. B. (2021). Vertical integration and capacity investment in a two-port system. *Transportmetrica A: Transport Science*, 17(4), 1431-1459.

Kawasaki, T., Hanaoka, S., Saito, Y., & Tagawa, H. (2021). Port choice problem in a linear city: Application to Manila and Batangas ports in the Philippines. *Maritime Transport Research*, 2, 100010. https://doi.org/10.1016/J.MARTRA.2021.10-0010.

Mertens, D. & McLaughlin, J. (2004). Other quantitative approaches: Causal comparative, correlational, single-case, and survey research. *Research and Evaluation Methods in Special Education*, 69-94.

Notteboom, T. E. (2006). The time factor in liner shipping services. *Maritime Economics & Logistics*, 8(1), 19-39.

Olesen, P., Powell, D., Hvolby, H. H., & Fraser, K. (2015). Using lean principles to drive operational improvements in intermodal container facilities: A conceptual framework. *Journal of Facilities Management*, *13*(3), 266–281. https://doi.org/10.1-108/JFM-09-2014-0030/FULL/XML

Park, H. C. (2021). A study on the policy priorities for the enhancement of the trans-shipment competitiveness of the Port of Busan. *Journal of Navigation and Port Research*, 45(2), 75-86.

Peterson, T. C., McGuirk, M., Houston, T. G., Horvitz, A. H. & Wehner, M. F. (2008). Climate variability and change with implications for transportation. *Transportation Research Board*, *90*, 2-3.

Pham, T. Y., Jeon, J. W., Dang, V. L., Cha, Y. D. & Yeo, G. T. (2016). A longitudinal analysis of concentration developments for container terminals in Northern Vietnam. *The Asian Journal of Shipping and Logistics*, 32(3), 157-164.

Prabowo, A. R., Bae, D. M. & Sohn, J. M. (2019). Comparing structural casualties of the ro-ro vessel using straight and oblique collision incidents on the car deck. *Journal of Marine Science and Engineering*, 7(6), 183.

Puig, M., Wooldridge, C., Michail, A. & Darbra, R. M. (2015). Current status and trends of the environmental performance in European ports. *Environmental Science & Policy*, 48, 57-66.

Rathman, D., Tijan, E. & Jugović, A. (2016). Improving the coastal line passenger traffic management system by applying information technologies. *Pomorstvo*, 30(1), 12-18.

Romeo, B. (2016). International relations development strategies from the perspective of maritime freight transport development. *Universitatii Maritime Constanta*. *Analele*, 17 (25), 201.

Santos, A. M. P., Mendes, J. P. & Guedes Soares, C. (2016). A dynamic model for marginal cost pricing of port infrastructures. *Maritime Policy & Management*, 43(7), 812-829.

Song, D. W. & Lee, S. W. (2017). Port governance in Korea: Revisited. *Research in Transportation Business & Management*, 22, 27-37.

Stopford, M. (2002). Shipping market cycles. *The Handbook of Maritime Economics and Business*, 2, 235-258.

Strandenes, S. P. (2004). Port Pricing Structures and Ship Efficiency. *Review of Network Economics*, *3*(2). https://doi.org/-10.2202/1446-9022.1047

Strandenes, S. P., & Marlow, P. B. (2000). Port pricing and competitiveness in short sea shipping. *International Journal of Transport Economics/Rivista internazionale di economia dei trasporti*, 315-334.

Tongzon, J. L. & Ganesalingam, S. (1994). An evaluation of ASEAN port performance and efficiency. *Asian Economic Journal*, 8(3), 317-330.

Tran, N. K. (2011). Studying port selection on liner routes: An approach from logistics perspective. *Research in Transportation Economics*, 32(1), 39-53.

Wahyuni, S., Taufik, A. A., & Hui, F. K. P. (2020). Exploring key variables of port competitiveness: Evidence from In-

donesian ports. *Competitiveness Review*, *30*(5), 529–553. https://doi.org/10.1108/CR-11-2018-0077/FULL/XML

Wang, Y., Jung, K. A., Yeo, G. T. & Chou, C. C. (2014). Selecting a cruise port of call location using the fuzzy-AHP method: A case study in East Asia. *Tourism Management*, 42, 262-270.

Yousefi, H. (2013). Strategic planning for port development: Improvement of container transit from the Iranian southern ports terminals. *TransNav, International Journal on Marine Navigation and Safety of Sea Transportation*, 7(3).

Zheng, S. & Luo, M. (2021). Competition or cooperation? Ports' strategies and welfare analysis facing shipping alliances. *Transportation Research Part E: Logistics and Transportation Review*, 153, 102429.

Internet Sources

Alamoush, A., Balini, F. & Dalaklis, D. (2020). Framework for port sustainable supply chain management and its contribution to the United Nations' sustainable development goals. In *Proceedings of the International Association of Maritime Economists (IAME) Conference 2020 in Hongkong*. Retrieved November 10, 2020 from https://bit.ly/3wwI0mg.

Chan, W. Y. T. & Yip, T. L. (2010). Port spatial development and theory of constraints. In *Proceedings of the International Forum on Shipping, Ports and Airports (IFSPA), Hong Kong* (pp. 421-430). Retrieved June 25, 2020 from https://bit.ly/-3MQg9DI.

De Langen, P.W. (2004, January 22). The performance of seaport clusters: A framework to analyze cluster performance and an application to the seaport clusters of Durban, Rotterdam and the Lower Mississippi. *Research in Management*. Erasmus University Rotterdam. Retrieved August 13, 2021 from http://hdl.handle.net/1765/1133.

Dinu, O., Dragu, V., Ruscă, F., Ilie, A. & Oprea, C. (2017, August). Intermodal transport and distribution patterns in ports relationship to hinterland. In *IOP Conference Series: Materials Science and Engineering* (Vol. 227, No. 1, p. 012038). IOP Publishing. Retrieved June 20, 2020 from https://bit.ly/3zBF76z.

Dragu, V., Dinu, O., Ruscă, A., Burciu, Ş., & Roman, E. A. (2017, August). Queuing theory models used for port equipment sizing. In *IOP Conference Series: Materials Science and Engineering* (Vol. 227, No. 1, p. 012040). IOP Publishing. Retrieved June 20, 2020 from https://bit.ly/3Ht9LkM.

Executive Order No. 170-B, s. 2005 | GOVPH. (n.d.). Official Gazette of the Republic of the Philippines. Retrieved June 14, 2021 from https://bit.ly/3tBOzmN.

Llanto, G. M., Basilio, L. Q. & Basilio, E. L. (2005). *Competition policy and regulation in ports and shipping*. Retrieved June 23, 2020 from https://www.econstor.eu/handle/10419/127-883.

Llanto, G. M., Navarro, A. M., Detros, K. C., Ortiz, M. & Kristina, P. (2013). *Customs brokerage services and trade facilitation: A review of regulatory coherence*. Retrieved June 23, 2020 from https://www.econstor.eu/handle/10419/126942.

Merk, O. & Notteboom, T. (2013). The Competitiveness of Global Port Cities: The Case of Rotterdam/Amsterdam, The

Netherlands. Retrieved June 27, 2020 from https://bit.ly/3yFhutm.

Monteiro, J. L., Santoso, P. I., & Prabowo, R. (2021). Maritime industry-ports and supporting activities: literature review. In *IOP Conference Series: Materials Science and Engineering* (Vol. 1010, No. 1, p. 012019). IOP Publishing. Retrieved June 20, 2021 from https://bit.ly/3MQ4RiT.

Taghavi, M., Irannezhad, E., Schrobback, P., Moghaddam, M., Prato, C. G. & Nave, R. (2017). In *Proceedings of the Australasian Transport Research Forum 2017 in Auckland, New Zealand*. Retrieved on August 1, 2020 from https://bit.ly/3FL5-

ok9.

Tongzon, J. L. (2018). Regulatory challenges in the Philippine logistics industry. Retrieved June 25, 2020, from https://www.think-asia.org/handle/11540/8173.

United Nations Conference on Trade and Development (2015). *Review of Maritime Transport 2015*. Retrieved May 20, 2020 from https://bit.ly/3MNG5Qq.

Zhang, X. (2016). *Analysis of the incentives in environmental strategies implementation in Chinese ports*. Retrieved June 20, 2020 from https://thesis.eur.nl/pub/37243.