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The Mundel and Objective Matrix Model of Productivity Measurement at PT Adi Perkapalan

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Abstract

The development of shipping sector especially in ship construction project is ship building or ship production will continue to increase from time to time. The productivity management is needed because it is important. The productivity calculation by using Mundel Model can be known from the decreasing of productivity index which is Galley part. The result of calculation by using the objective matrix (OMAX) method shown that there is an enhancement in the percentage of productivity total in 2017 but it is for the weight ratio of service which is services area and the third part. The improvement

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Tuesday, April 23, 2019

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Wednesday, April 24, 2019

Workshop on Risk Management, Plenary Session, Paper Presentation, Closing Ceremony

Thursday, April 25, 2019

City Tour (Karimun Jawa)*

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Ministry of Research, Technology and Higher Education

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The Mundel and Objective Matrix Model of Productivity Measurement at PT Adi Perkapalan

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Abstract. The development of shipping sector especially in ship construction project is ship building or ship production will continue to increase from time to time. The productivity management is needed because it is important. The productivity calculation by using Mundel Model can be known from the decreasing of productivity index which is Galley part. The result of calculation by using the objective matrix (OMAX) method shown that there is an enhancement in the percentage of productivity total in 2017 but it is for the weight ratio of service which is services area and the third part. The improvement and evaluation are needed to be done to achieve a better productivity standard. There some proposals to the management to do an action to improve the productivity.

1. Introduction

The development of the ship construction model in the shipping sector especially for the ship building and the ship production will continue to increase and it is important to increase its productivity of the management. By fulfilling the company's orientation to the increased profitability, the company has to improve its efficiency and productivity of production by fulfilling the production capacity in order to absence of waste due to additional working hours and other costs.

The shipyard industry is the most important industry in supporting sea transportation within the framework of maritime development. Shipyard industry as a provider of ships for sea transportation. In addition, the ship industry also helped repair the ship (repair). In 2015 the ASEAN free market was put in place, therefore trade in Indonesia will grow rapidly. This spurred the shipyard industry to further increase the productivity of this industry both in the fields of maintenance, repair and new shipbuilding. Therefore, it is necessary to measure productivity which aims to increase productivity that has been obtained and is the basis of planning for increasing productivity in the future.

So far, there is no particular method used to measure productivity used in the construction of new vessels. Therefore, there needs to be an appropriate productivity measurement model for the construction of new vessels, in this study the model used is the objective matrix (omax) model, which is a productivity measurement that continues to use its physical measurements without being transformed into financial measures. basic work units such as workers, time spent, material and amount of use of the machine. Then the Mundel Model method from the form of the index proposed by Marvin E. Mundel, namely by measuring input productivity is calculated according to each stated that basically the Mundel model can use one formula in the application of productivity measurements at the enteIDRrise level which can also contribute to benchmarking from the Omax model.

The formulation of the problem in this study is How to determine the productivity measurement of the construction of new ships using the mundel and omax models at PT. Adi Shipping, what factors influence the increase in productivity decline.

Revisiting Supply Chain System with Deteriorating Items and Transportation Cost

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Abstract. Supply chain system with deteriorating items and transportation cost with environmental consideration has recently become a popular research stream. This study revisits a supply chain system with deteriorating items and transportation cost. Processing the defective items, which increases cost, affects supply chain decisions. We present an integrated inventory model involving a three-stage supply chain and defective items with no shortage. We then derive the minimal total cost considering supply chain integration and deteriorating items. Numerical examples are provided to illustrate how these models can be applied in practice. Sensitivity analysis is performed to gain more insight on changing parameters in the numerical studies.

1. Introduction

Due to increasing globalization, firms face a highly rapidly changing industrial conditions. The objective of our study is to determine the optimal cycle time and the replenishment policy for the integrated system which minimizes the average total cost per unit time. The motivation for looking at such models comes from the competitive environment and greater information transparency between suppliers, manufacturers, and retailers in the supply chain. Some researches on three-stage supply chain model were done by the following researchers. Ben-Daya et al. [1] explored the joint economic lot sizing problem in the context of a three-stage supply chain. Sana et al. [2] investigated a three-stage supply chain consisting of multiple suppliers, multiple manufacturers, and multiple retailers. Neither of them considered deteriorating items and logistic cost. Chung et al. [3] developed an integrated two-stage production–inventory deteriorating product model, in which stock-dependent, imperfect items and just-in-time delivery were considered.

In this study, we developed a generalized mathematical model considering three-stage supply chain for deteriorating items considering transportation cost. Our objective is to minimize the total system cost per unit time. We illustrate the process with a numerical example and analyzed the sensitivity of crucial parameters to provide managerial insights.

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Campus Sustainability Practice Assessment: An Empirical Finding from Jönköping University, Sweden

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Abstract. The role of higher education institutions (HEIs) nowadays in promoting sustainability has outspread over the past decades. This is a result of abundant declarations and conferences about the need for sustainability in higher education. As consequences, several HEIs have integrated sustainability into their curricula, research, programs, projects, partnerships, and assessments. The objective of the research is to assess the campus sustainability practice of Jönköping University, which is located in Jönköping, Sweden. The assessment includes three pillars of campus sustainability, i.e., environmental management, public participation and social responsibility, and research and teaching as well. The assessment is considered could yield various benefits, not only for the university but also for the stakeholders, surrounding society, as well as for the academic purposes.

1. Introduction

Since Stockholm Declaration in 1972—it is acknowledged as the initial declaration about sustainability in higher education, there is a growing number of higher education institutions (HEIs) which have incorporated sustainability into their research, curricula, operating activities, assessments, as well as reporting [1],[2]. The sustainability term could be viewed as an attempt to balance and harmonize the environmental concerns with social and economic issues [3]. In a more formal way, sustainable development can be defined as a "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" [4].

The HEIs are regarded to be in a unique position to address this challenge. Even though they mostly engage in education—not in the field of environment, social, and even not intended to gain much profit—but they are expected to offer an education to the students with knowledge that could have effects to the environment and influences on local communities [5]. Due to this circumstance, i.e., that HEIs could not embrace three pillars of sustainability (environmental, economic, and social); hence, a sustainable university is defined differently. There is a shared understanding that a sustainable university entails a balance between environmental issue, public participation and social responsibility, and teaching and research in policy formulation [6]. It does make sense as the economic pillar is substituted by teaching and research.

Several studies stressed out the need for sustainability in HEIs, see for example [7]-[9]. Some HEIs believe that this is a challenge to start formulating a sustainable campus program [10], while others employ to implement some established campus sustainability assessment tools or reporting, such as ISO 14001 (e.g., [11]-[13]), green building initiative [14], eco-management and audit scheme (EMAS) [15],

Modelling and Analysis of Manufacturing Process Layout

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Abstract. Manufacturing layout is an arrangement of more than two elements in a manufacturing plant. Process layout shows the layout of elements which running certain process cycle at a certain sequence. Through simulation software, process layout can be simulated and predicted the outcome of the certain model layout before it is implemented. An activity that is conducted in this study such as time study, line balancing and production line re-layout. Furthermore, lean manufacturing tools such as takt time calculation and Yamazumi chart is utilized in order to improve the mechanism in this study. Commercial software is used in order to simulate a model of manufacturing layout and increase the efficiency in the model. These simulated results were compared with the current process layout. The proposed new production plant layout showed promise in its application. However, approaches and layout models need to be evaluated in application to ensure usability so that it is effective and efficient in its performance. The layout of the proposal has increased overall line efficiency which shows an increase of 19%.

1. Introduction

Model is a corporeal, scientific, or rational representation of a system, phenomenon, or process while replication is a model that is applied from time to time. Simulation makes the model and illustrates how certain objects or phenomena will occur. This is advantageous for testing, study and exercise where real-world systems or ideas can be expressed in the form of a model. Modelling and simulation provide virtual repetition of goods and procedures and represent the product or process in an operationally existing and legal environment [1]. Practise of models and use of recreations can reduce costs and risks of life cycle activities.

Modelling simulations are often used in various engineering fields. In various conditions that occur and various systems, various models are cast-off applied. In grouping simulations, there are some differences significance between the types of models that are being and will be simulated, and between the types of database structures used to run the software doing the simulation [2]. System simulation is the application of models and systems. Models can be re-designed and tested with; usually, not optimal, high costs or not having aesthetic value to do in the system that will be run. The application of the model can be identified, and therefore, the specification that are interrelated with the actual behavior of the system or subsystem can be concluded by an analysis. In its broadest understanding, simulation is a software to analyze the optimization of a system, which is currently and proposed for improvement, over a period of time. Simulations are carried out before the existing system is implemented or when a innovative system is built in order to improve the old system, this is done to