
ABSTRACTS

doi:10.22306/al.v9i3.304

Received: 01 Mar. 2022; Revised: 31 Mar. 2022; Accepted: 22 Apr. 2022

INTANGIBLE ASSETS IN MODERN TRANSNATIONAL CORPORATIONS IN SERVICE INDUSTRY

(pages 245-253)

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Keywords: transnational corporations, world economy, intangible assets, service sector, service logistics.

Abstract: An analysis of the activities of leading transnational corporations (TNCs) for the period from 2000 to 2020 showed that the transformation of the world economic order leads not only to new rules for conducting international business, but also to the occupation of prevailing positions in the world market by TNCs engaged in the service sector. Therefore, the purpose of the study was a systematic analysis of the impact of intangible assets on the growth of the competitiveness of the service sector and the increase in their market capitalization, revenue and asset value. Based on an in-depth study of statistical data, the authors identified trends that led to an increase in the share of intangible assets in the value of companies; an analysis was made of the presence of TNCs in the service sector in the ratings for assessing the level of revenue and market capitalization (based on the Fortune Global 500); comparison of indicators related to intangible assets with the human development index and the business environment, formed taking into account the existing investment climate (based on AON Empower Results, GIFT, World Investment Report); identified the most promising sectors for the use of intangible assets. Based on the results of the study, uniform principles were formed according to which the management of intangible assets of TNCs should take place, in which an important place is occupied by the use of the potential of intangible assets and the advantages of the triple helix of innovations (education - business - government).

doi:10.22306/al.v9i3.307

Received: 17 Mar. 2022; Revised: 30 Apr. 2022; Accepted: 19 June 2022

THE ROLE OF OPENNESS TO CHANGE IN AUTOMATED PARCEL LOCKER USAGE INTENTION AMONG ONLINE BUYERS IN MALAYSIA

(pages 255-266)

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Keywords: automated parcel locker, time constraint, supplier image, openness to change, intention to use.

Abstract: Automated parcel locker is a self-service technology to facilitate parcel collection and has been introduced in Malaysia in 2016. Although automated parcel lockers have advantages over home delivery, customers still prefer the traditional method. Subsequently, this study aims to explore the role of time constraint, supplier image, and openness to change toward online buyers' intention to use automated parcel lockers. Based on the stimulus-organism-response theory, the study conducted both an online survey and an on-site survey. Two hundred and sixty-five respondents' data were used

for data analysis, and the results indicate that time constraint has a negative influence on openness to change, and supplier image has a positive influence on openness to change. Openness to change was found to mediate the relationship between time constraint and intention to use and between supplier image and intention to use. Automated parcel lockers providers will benefit from the outcomes of this study.

doi:10.22306/al.v9i3.308

Received: 28 Mar. 2022; Revised: 24 May 2022; Accepted: 20 June 2022

FROM CART TO LAYERED ARCHITECTURAL TRANSSHIPMENT MODEL SUPPORTING SMALL AND MEDIUM ENTERPRISES FOR ROAD FREIGHT LOGISTICS

(pages 267-277)

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Keywords: road freight logistics, transshipment, layered architecture, small and medium enterprises.

Abstract: This study proposes a layered architecture of a transshipment model for small and medium enterprises (SME) that supports road freight logistics using rice farmers in Thailand as a case study. The rationale is three folds. First, road freight logistics transportation usually does not apply to SME. Second, existing supply chain logistics models are not appealing to SME in that SME do not have abundant resources to exploit the fullest extent of redeeming features of the models. Third, road freight logistics and transshipment are often incorporated as an integral service operation of a distribution centre to transport goods items from source to destination, which most SME cannot afford the entire service charge. The notion of layering is to make each layer transparent to one another, covering specific transshipment activities that do not overlap with adjacent layers yet keep their operating characteristics closely related. The case study of Thai rice farmers can thus operate and adjust to fit their working scenarios. Contributions of the proposed model are flexible and resilient operations that SME can benefit at less investment but more options to fall back on. Future work should emphasise on transshipment routing research and integration of the proposed model into distribution centre operations management.

doi:10.22306/al.v9i3.309

Received: 08 Apr. 2022; Revised: 25 July 2022; Accepted: 15 Aug. 2022

PRIORITY STRATEGIES SELECTION TO PREVENT MIDDLEMEN DOMINATION IN SHORTENING THE DISTRIBUTION CHAIN

(pages 279-290)

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Keywords: distribution chain, AHP, Liberatore, seaweed, middlemen (tengkulak).

Abstract: Seram Bagian Barat (SBB) Regency is a good location for seaweed cultivation in Maluku Province. The area of land and the amount of seaweed production in the area is vast. However, in one of the giant seaweed-producing areas, the lives of most seaweed farming communities are still below the poverty line and are not prosperous due to the long distribution chain and the dominance of middlemen's role in their business still huge. This study aims to analyse and obtain the best-prioritized strategy to overcome the dominance of middlemen (called tengkulak) in seaweed cultivation using the Analytical Hierarchy Process (AHP) method with the Liberatore approach. From the results of data processing, it was obtained that the best strategy that became a priority for the prevention of domination in seaweed cultivation was the strategy Utilizing marketplaces or digital marketing with the highest weight of 0.483, followed by the strategy Expanding the Role of Regional Companies in Marketing at the Provincial and District with a weight of 0.241, the strategy Activating Cooperatives on a District Scale with a weight of 0.224. The last one is the strategy "The Department of Industry and Trade Regulates the Overall Chain of Commerce" with a weight of 0.036. These results can be used as the basis for policymaking for the Seram Bagian Barat Regency government in shortening the seaweed distribution chain as one of the superior regional commodities so that it can improve the performance of the seaweed supply chain in the future.

doi:10.22306/al.v9i3.310

Received: 11 Apr. 2022; Revised: 01 Aug. 2022; Accepted: 20 Aug. 2022

MODIFIED PROMETHEE V METHOD FOR SUPPLIER PORTFOLIO SELECTION

(pages 291-301)

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Keywords: PROMETHEE V, mixed integer programming, supplier portfolio, flexible constraint.

Abstract: This paper focuses on the problem of supplier portfolio selection where a company has to choose the best possible set of suppliers with respect to various constraints. An intuitive heuristic can suggest to use any of the methods for suppliers ranking and then to put the first one into the portfolio. If some required constraint is not met, then the second supplier according to the ranking is added, and so on, until all the constraints are satisfied. However, such approach can result in a non-optimal decision. The constraints can cause that a combination of the alternatives with lower rankings can be better, than some higher-ranked alternative from the perspective of feasibility. To build the optimization model, the authors of this paper use the PROMETHEE V method: a popular combination of multi-criteria decision making method PROMETHEE and mixed integer programming. However, it is shown that the original PROMETHEE V method, namely the logic under which an objective function is set, is not suitable here and leads to discrimination of suppliers with worse ranking. Therefore, a modification, which brings more reasonable results, is proposed in this paper. A numerical example is used to show the suitability of the proposed approach and compare the results with the original algorithm and also with one prior modification introduced by other authors in the past. The analysis is further supported by a thorough sensitivity analysis using flexible and parametric programming.

doi:10.22306/al.v9i3.313

Received: 07 May 2022; Revised: 03 Aug. 2022; Accepted: 21 Aug. 2022

MODERN MODELS OF ECONOMIC DEVELOPMENT: TRANSFORMATION OF TARGETS, EVALUATION AND CLUSTER ANALYSIS

(pages 303-314)

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Keywords: economic development model, cluster analysis.

Abstract: The key goal of the study is the formation of scientific and methodological approaches to the analysis of modern models of economic development of countries. The features of the models of economic development of countries, their types and specifics are considered, the transformation of indicators of economic development of the countries of the world in the context of global imbalances and volatility is argued. It is proved that the key factor in the sustainable development of the country is economic growth, which ensures the overall well-being of both a separate industry and the country's economy as a whole. The specificity of the transformation of key indicators of the economic development of countries is considered; this served as the basis for substantiating the scientific and methodological aspects of the multidimensional cluster analysis of the target indicators of the economic development of the countries of the world. The scientific and methodological aspects of the multidimensional analysis of the transformation of the target indicators of the economic development of countries were formed, which ensured the structuring of countries into groups of economic development, taking into account the specifics of their functioning and development strategies. The application of the developed approaches based on the economic and statistical multidimensional cluster analysis and indicators of economic development of the countries of the world can be applied in practice. The developed scientific and methodological recommendations will ensure the effectiveness of the formation of economic policies and strategies for the economic development of countries.

doi:10.22306/al.v9i3.315

Received: 20 May 2022; Revised: 21 July 2022; Accepted: 10 Aug. 2022

ENERGY EFFICIENCY OPTIMIZATION OF LAST MILE SUPPLY SYSTEM WITH REVERSE LOGISTICS CONSIDERATION

(pages 315-323)

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Keywords: energy efficiency, metaheuristic optimization, reverse logistics, last-mile system.

Abstract: Last mile supply system takes great importance in the designed supply chain management, especially in the big urban areas, where various goods delivery locations should be tackled. Transportation routes and vehicles play a critical share in the optimization of the energy spent in this system because it is considered a complicated case due to its high solutions possibilities. Also, part of these transport processes is considered reverse logistics, where the goods take the way back, starting from the customer. Using a metaheuristic optimization is usually a good way to increase operations efficiency and save time and energy, next to raising sustainability. Within this paper, the last mile supply system within urban areas focusing on the goods' delivery and collection tasks is presented. The model design is described, mathematical optimization modelling is detailed, and a case study to investigate the impact of using diesel and electric trucks on energy efficiency is solved. After an introduction and theoretical background that includes a brief literature review, the designed system and used methodology are described. The designed system incorporates cloud computing, real routes of vehicles, analysis of collected data, energy consumption optimization, and time windows. Also, a mathematical model is developed with the aim of optimizing the total energy consumption. Real thirty locations in Budapest in the VII district are described and used as a case study for finding the solutions of the optimized taken routes and energy consumption by the genetic algorithm for both diesel and electric trucks. In the end, the results are analyzed and compared against a random solution to clarify the presented optimization's effectiveness.

doi:10.22306/al.v9i3.316

Received: 30 May 2022; Revised: 28 July 2022; Accepted: 15 Aug. 2022

IMPACT ANALYSIS OF URBAN FREIGHT TRIPS GENERATED FROM WHOLESALE MARKET, AHMEDABAD

(pages 325-336)

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Keywords: freight trip attraction, freight trip production, freight transportation, SPSS, wholesale market.

Abstract: Freight transport plays an important role in meeting the domestic needs of the city's inhabitants. But when freight vehicles come into contact with city traffic, it has a negative impact on urban routes, such as extra traffic congestion, noise pollution, air pollution, etc. The aim of the study is to assess the impact of freight transport on the overall traffic of the city. A case study of the wholesale market of Ahmedabad has been considered as a study area. The freight trip models based on the trips attracted and produced by the market are developed on the basis of data collected from establishment surveys and freight vehicle driver surveys. Both the models developed in this study, FTA (Freight Trip Attraction) and FTP (Freight Trip Production), have R Square values of 0.799 and 0.715, respectively. The volume of freight vehicles contributing to the overall traffic flow is also measured by the traffic volume study. Through the data analysis and identification of the impact of freight transportation on city traffic, remedial measures are discussed to reduce the impact of freight transportation.

doi:10.22306/al.v9i3.319

Received: 31 May 2022; Revised: 18 Aug. 2022; Accepted: 02 Sep. 2022

DIVIDEND POLICY AS A SUPPLY OF COMPANY FINANCIAL FLOWS IN THE PERSPECTIVE OF INFORMATION ASYMMETRY AND OWNERSHIP STRUCTURE

(pages 337-343)

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Keywords: dividend policy, controller shareholder, information asymmetry, agency conflict, institutional ownership.

Abstract: Dividend policy is one of the important factors that supply the company's financial flows and operational activities. This study examines the determinants of dividend policy from the perspective of information asymmetry and institutional ownership. The research sample is the companies listed on Indonesia Stock Exchange that pay dividend consecutively from 2016 to 2020. The method of analysis is SEM-PLS operated with WarpPLS 8.0. The results showed that high information asymmetry between company management and shareholders encourages managers to reduce dividend payments for the purpose of providing company capital and production activities. Furthermore, the existence of institutional ownership supports managers' policies and prefers that company profits should be used to supply capital, not be distributed to shareholders. This finding is consistent with the pecking order theory and also implicates the need for a corporate governance system to be improved to give better protection to the investors.

doi:10.22306/al.v9i3.320

Received: 03 Aug. 2022; Revised: 31 Aug. 2022; Accepted: 11 Sep. 2022

ECOLOGICAL SOLUTION OF GOODS PACKAGING FOR B2C LOGISTICS

(pages 345-351)

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Keywords: packaging efficiency, ecological packaging, supply chain management, solution selection.

Abstract: The publication describes the development of a new method suitable for selecting an environmentally friendly packaging solution in B2C logistics, which is currently facing major challenges. The key for developing the new method is the fact that the selection process is greatly influenced by the ecological aspects of the supplier's solution and the efficiency of working with the proposed solution, as these are the key aspects of the future in logistics. In the results and discussion, we will focus on a specific company that currently uses 14-size variants of cardboard packaging. Based on our analysis, we reduced these to four variants and streamlined the process of ordering, handling and storage of cardboards. Using the OEE metrics, we calculated the feasibility of this solution, which was only at the level of 65% compared to the metrics set by the company's management. With the help of the suppliers, we have designed a new solution that was tested under the same conditions using the OEE metrics. In the test, we have reached the level of 98%, which means a 33% increase in efficiency. At the same time, this solution is highly environmentally friendly and does not use polypropylene adhesive tapes, which pollute the environment. We then compared the results and evaluated the best quotes for both types of cardboards. The newly designed solution is only 4.9% more expensive than the currently used type of cardboard. Based on the results achieved, we can conclude that the new method offers companies the most advanced approach to choosing a suitable solution for B2C logistics.

doi:10.22306/al.v9i3.322

Received: 24 June 2022; Revised: 21 Aug. 2022; Accepted: 03 Sep. 2022

MULTIMODAL INTEGRATION MODEL FOR REDUCING NATIONAL LOGISTICS COSTS

(pages 353-360)

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Keywords: logistics costs, multimodal, integration model, transportation, linear model.

Abstract: One way to minimize national logistics costs is to develop multimodal transportation. The steps for multimodal development are forming a linear model for each transportation mode, the simultaneous formation of a linear model, and forecasting and simulation of the minimum transportation costs. Area partition based on distance can be used as a solution for selecting transportation modes in multimodal with a certain distance. It can be useful in reducing transportation costs that only rely on unimodal, namely trucks. The estimation of reducing logistics costs is by forecasting goods that will pass through transportation modes in 2025 and making the simulation. Train or truck is used for short distances such as moving goods from factories or warehouses to transshipment points and from transshipment points to consumers or retailers. Trains, freighters and planes are used as the main routes as needed. The simulation results show that national logistics costs reduce by 17% when using the lowest-cost transportation mode in the area division.
