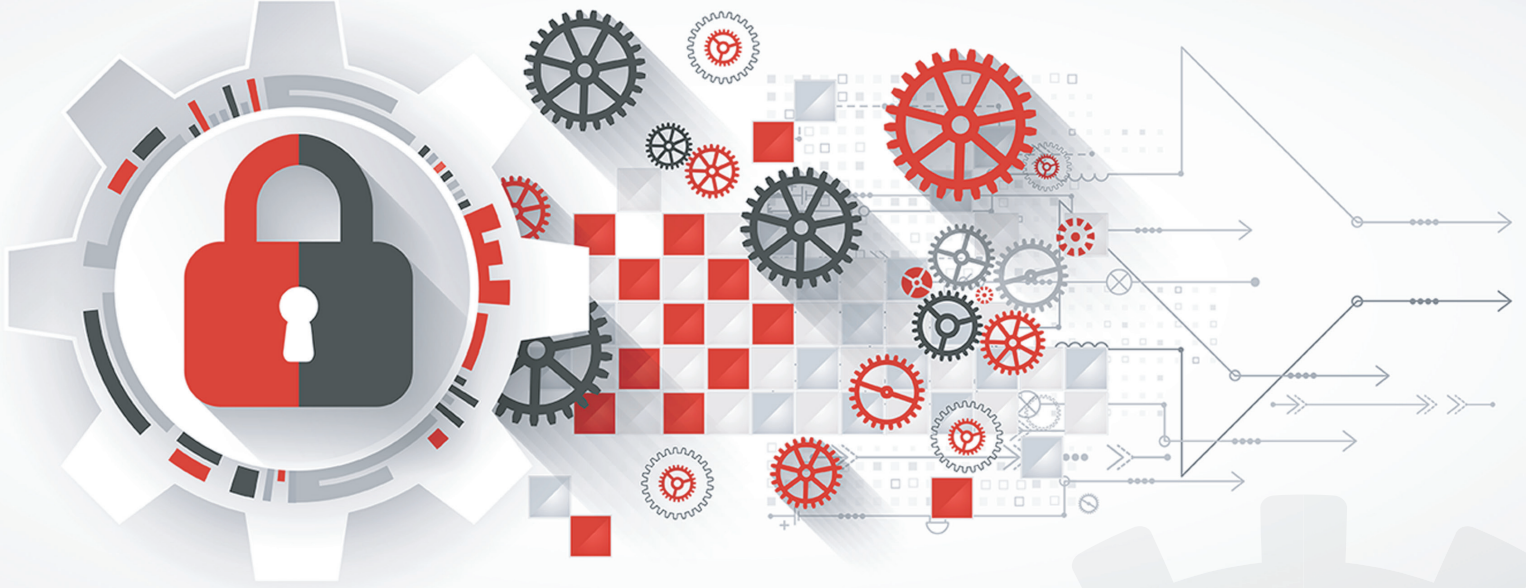




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Prof. Dr. Larry Howard  
Professor in the GBAT Department at SUNY Maritime College

Larry Howard, Ph.D. is a respected, tenured Professor, with several decades of experience in the maritime industry as an entrepreneur, shipping agent, and marketing executive. His dual academic/industry background enables him to apply professional expertise in the areas of conference staging, curriculum development, global logistics, international law, maritime transportation, public advocacy, research, supply chain security, vulnerability assessment, and writing.

Dr. Howard obtained his doctorate from the University of Washington (Seattle) in 1981, specializing in a dual field of Comparative Politics and International Relations, with a focus on International Law. His other doctoral fields were Political Theory and Marine Affairs. He is currently a full, tenured Professor in the Global Business and Transportation Department (GBAT), State University of New York (SUNY) Maritime College. He also chaired the GBAT Department at SUNY Maritime College, from July 15, 2005 to April 17, 2012.

Beginning in 2006, Dr. Howard initiated and directed at SUNY Maritime three annual “Trojan Horse” events, exercise scenarios that tested the vessel security and facility security plans at the college but also involved a collaborative testing of security plans of other participants, including federal, state, and local agencies, and private sector shipping companies. In collaboration with Professor Jeff Weiss, Dr. Howard organized the annual Conference on Cutting-edge Issues in Shipping (known as the “Groundhog Day Event” at SUNY Maritime) that convened for the seventh and last time in February 2012. Recently Dr. Howard and his colleagues staged two Maritime Security Conferences (MARSECON) at SUNY Maritime.

Dr. Howard’s most recent publication, “The Insidious Bond Between Political Correctness and Intolerance,” appeared in the March 2019 issue of New English Review, [https://www.newenglishreview.org/custom-page.cfm?frm=189596&sec\\_id=189596](https://www.newenglishreview.org/custom-page.cfm?frm=189596&sec_id=189596)

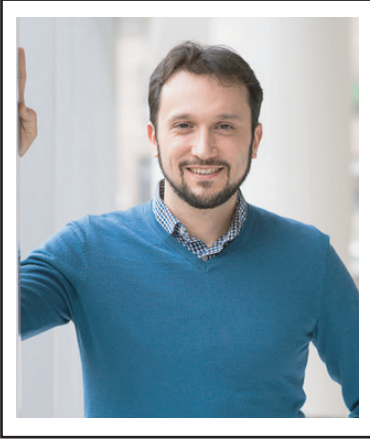
Dr. Howard continues to research, teach, and write in his several fields of interest.



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Prof. Dr. Dr.-Ing. Yilmaz Uygun  
Professor of Logistics Engineering, Technologies and Processes  
Jacobs University Bremen (Germany)

Dr. Yilmaz Uygun is Professor of Logistics Engineering, Technologies and Processes and Head of the Logistics Engineering and Technologies Group at the Department of Mathematics & Logistics at Jacobs University Bremen. He also serves as Study Program Chair of the MSc in Supply Chain Management.

His research focuses on technological and organizational issues related to Industry 4.0. Within his research group he is developing novel 3D printing technologies. Together with his team he is developing big-data driven dynamic simulation models and algorithms to analyze and better manage manufacturing processes and supply networks. Furthermore, he is also analyzing the effects of Industry 4.0 on human labor.

Before being appointed as Professor, he worked as postdoctoral research fellow at MIT's Industrial Performance Center where he analyzed advanced manufacturing innovation ecosystems. He holds a PhD from Dortmund University of Technology (Germany) and a Master's in Logistics Engineering from University Duisburg-Essen (Germany).



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Mehmet SAFALTIN  
General Manager at Schaeffler Turkey

Mehmet Safaltın, born in 1978 in Istanbul, is General Manager & President Industrial of Schaeffler Turkey. Prior to this appointment, he worked as Sales Engineer at Tırsan Trailer between 2003-2004, Sales Coordinator at Rex Ltd. Sti between 2004-2007, and Sales Manager at Schaeffler Turkey between 2007-2017. Since 2017, he serves as General Manager and President Industrial of Schaeffler Turkey.

He went to Kadıköy Anadolu High School, and graduated from Boğaziçi University with a Bachelor's degree in Mechanical Engineering and a subsequent Master's degree in Business Administration at the same university. He is married and has two daughters.

Schaeffler Group is a traditional German manufacturer of rolling element bearings for different industries with an annual revenue of more than 14 billion EUR and more than 90,000 employees worldwide. Schaeffler Group owns the brands INA, FAG and LuK. Schaeffler Group started its activities in Turkey in 1986 by founding INA Rulmanları Tic. Ltd. Şti. and FAG Rulmanları liaison office. In 2001, with the acquisition of FAG by Schaeffler, the two companies started their activities as partners and the company name was changed to Schaeffler Turkey Endüstri ve Otomotiv Tic. Ltd. Sti. Its headquarter is in Istanbul and offers a comprehensive range of products, such as LuK, INA, FAG and Ruville, for the automotive and industrial sectors in Turkey.



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## **AN INVESTIGATION OF HEALTHCARE DISASTER SUPPLY CHAIN MANAGEMENT: A SYSTEMATIC LITERATURE REVIEW**

*Abdüssamet POLATER*<sup>1</sup>

**Abstract** – *The success of healthcare disaster operations is influenced by how healthcare systems manage their supply chain processes. Once a disaster strikes a region, routine supply chain plans do not help healthcare organizations to take immediate actions. As a result, healthcare institutions cannot serve the affected people because of the non-availability of supply. The purpose of this review is to present the literature base of healthcare disaster supply chain management (HDSCM). This study systematically reviews the recent literature to report HDSCM efforts, identify gaps for future research and determine related research questions to be addressed. In this study, Systematic Literature Review approach proposed by Denyer and Tranfield (2009) was used. The studies which have been published within the period 1998 and 2019 were reviewed. The papers were screened in the academic databases such as Wiley, Emerald insight, EBSCOhost, ScienceDirect, SpringerLink, Ovid, Google scholar and Taylor & Francis. There is a lack of academic research which provides a comprehensive theoretical framework to understand HDSCM. Although previous papers focused on specific disasters, managerial and theoretical aspects, to the authors' best knowledge this study is the most comprehensive literature review in HDSCM area.*

**Keywords** – Disaster supply chain, healthcare supply chain, literature review, supply chain management

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**ASSESSING PERFORMANCE OF DEMAND DRIVEN MRP (DDMRP)  
BUFFERS IN A MULTI-ECHELON DISTRIBUTION NETWORK  
UNDER DEMAND UNCERTAINTY**

*Ahmet BALCIOĞLU<sup>1</sup> , Mehmet TANYAŞ<sup>2</sup>*

**Abstract** – Efficient management of the material flows from manufacturing to distribution network plays a significant role in successful supply chains. Integrating manufacturing with distribution plans under demand uncertainty poses a great challenge for any supply chain in making profit while satisfying needs of end customers. The Demand Driven MRP (DDMRP) is a recent, new approach promising better options in management of material flows against current methodologies. DDMRP uses an innovative multi-echelon pull methodology to plan and execute flow of material by using strategically placed decoupling buffers in Bills of Material structure and distribution network. There are several studies in the literature evaluating DDMRP methodology with current methodologies such as MRP and KANBAN, but none has assessed DDMRP in distribution context. Therefore, we address this gap and aim to assess the performance of DDMRP buffers positioned and managed by DDMRP logic in a hypothetical, multi-echelon distribution network. We first model inventory positioning and supply order generation logic of DD MRP by using a rule-based heuristic. Then, we present an optimization-based modelling approach to run different scenarios to test efficiency of DDMRP based strategies in positioning and distributing stocks in multi-echelon distribution network subject to demand variability. We, specifically, compare “Prioritized Share” strategy of DDMRP with the optimal results to see how DDMRP buffers perform in freight and coverage optimization in a distribution network. This study provides insights for DDMRP buffer behavior in a multi-echelon distribution network and indicates possible research gaps for future study.

**Keywords** – Decision support, demand driven MRP, distribution planning, inventory management, multi-echelon distribution, supply chain management

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## **THE IMPACT OF LOGISTICS PERFORMANCE ON GROWTH: EVIDENCE FROM OECD COUNTRIES**

*Özlem SANRI<sup>1</sup> , Ali PİŞKİN<sup>2</sup>*

**Abstract** – Logistics, which has a crucial role in the supply chain process, is the backbone of international trade. As stated by researchers before, trade volumes of countries with better logistics performance are likely to rise much more than others. This performance leads to increase both the competitiveness of countries and companies in the global markets. In this study, it is aimed to form several models that relate the gross domestic product and logistics performance index by using the mediator effect of the competitiveness of countries. This study reveals the mediator effect of the global competitiveness index on the gross domestic product. The analysis examines the Organization for Economic Cooperation and Development countries for the period between 2007 and 2016. Ordinary least squares and panel data methods are used to estimate the models. Data is obtained from the World Bank, the World Economic Forum and the International Monetary Fund. According to the preliminary results, logistics performance index has a significantly positive effect on the global competitiveness index. Also, the global competitiveness index leads to a rise in gross domestic product growth, namely the mediator effect of global competitiveness index is significant for these countries. Therefore, policymakers not only serve the supply chain process by increasing logistics performance via moderating regulations but also positively impact gross domestic product growth by raising the competitiveness of countries and companies.

**Keywords** – Global competitiveness index, international business, logistics performance index, mediator effect, panel data

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## **DATA MINING APPLICATIONS IN MANUFACTURING: A BUSINESS APPLICATION**

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**Abstract** – *Advanced production of business structures implies the introduction of new process steps into traditional process chains. Due to the combination of materials and their functional integration, those process steps show increased complexity. As a result production faces new challenges regarding a constant and high product quality. A widely discussed approach to encounter these new challenges is the analysis of production process data by applying data mining methods. Application fields of data mining in production of business structures, the design of appropriate context-based data acquisition infrastructure and special aspects of business structures production influencing the CRISP-DM data mining workflow are discussed. In this study, data mining techniques have been applied in a company operating in production sector by paying attention to sales quantities, sales channel, production type and production line of products. It is aimed to make production more effective and optimized.*

**Keywords** – Data mining, manufacturing, project planning

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## **CITY LOGISTICS IN DIGITAL ERA: A STUDY ABOUT AIRPORT**

*Hande Begüm DOYDUK BUMİN<sup>1</sup>, Bihter KARAGÖZ<sup>2</sup>, Ebru Beyza BAYARÇELİK<sup>3</sup>*

**Abstract** - Increasing population and business capacity of big metropolitans due to globalization, require new perspectives of city management. For the welfare of inhabitants and business effectiveness, smart and sustainable city concept have emerged and captured great attention of the academic and business world. A Smart Sustainable City is a city with a capacity to satisfy the needs of its citizens, business/ leisure tourists without overrunning the local and global environmental limitations with the help of Information and Communication Technologies (ICT). Logistics is an essential element for sustainable city management. Technological advancements, which can be summarized under industry 4.0, shed light to current city logistics challenges. In this study, airport transportation in a big, chaotic metropolitan like Istanbul will be analyzed. Istanbul, due to its physical and political position do not only beguile Turkish citizens but also it has become a worldwide hub for touristic and business activities. In such a situation, air transportation has become an irrevocable element of city logistics. This study analyzes the air transportation in Istanbul with its embedded breakthrough technologies. There are limited number of studies on the subject of technological airports thus this research utilized a qualitative method with semi structured interviews with open-ended questions. The aim of the study is to examine the technological advancements effectiveness from different stakeholders' perspective.

**Keywords** - Airport, City Logistics, Smart City

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## **EXPLORING A NEW METHOD FOR ACTIVE LOGISTICS, MARITIME AND ENGINEERING EDUCATION**

*Şevket Süleyman İRTEM<sup>1</sup> , Irma YEGINBAYEVA<sup>2</sup> , Boğaç BİLGİÇ<sup>3</sup>*

**Abstract** – Teaching is a fundamental property of academia. A considerable amount of literature has been published on the education system. These studies have reported that many methods have been used up to the present. Recent developments in the field of communication have led to a renewed interest in Logistic, Maritime and Engineering Education. Along with this growth in communication technology, however, there is increasing concern over the industry and academia convergence concepts. All these collaboration concepts have recently been challenged by communication difficulties between industry professionals and university students. One of the most significant current discussion in industry and academia collaboration concept is “distance”. What is not yet clear is the impact of today’s communication opportunities on Logistics and Maritime Education. The aim of this study is to shine new light on these debates through an examination of students who have been thought by Google Classroom for 28 weeks (in two terms). This study provides an exciting opportunity to advance our knowledge of student participation, learning, improving the classroom dynamics, contributions ability of tertiary teachers on the basis of the pedagogical framework.

**Keywords** – Engineering education, google classroom, industry and academia convergence, logistics, maritime, pedagogy, quality teaching and learning,

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## **A DISCUSSION ON CURRENT SITUATION OF TURKISH LOGISTICS SECTOR: A QUALITATIVE ANALYSIS OF LPI 2018**

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**Abstract** – *The Global Logistics Performance, conducted every two years by the World Bank with the support of various institutions and organizations, is a unique tool for comparing the logistics performance of more than 160 countries and helping to set goals for the future. The six components of LPI are; the efficiency of customs and border clearance, the quality of trade and transportation infrastructure, arranging competitively priced shipments, the competence and quality of logistics services, the ability of track and trace consignments and frequency with which shipments reach consignees within scheduled or expected delivery times. Turkey was ranked forty-seventh in the logistics performance index as of 2018. Comparing to the previous performance index it is observed that there is a serious decline in Turkey's ranking This decline in Turkey's overall ranking requires the questioning of the problems experienced in the logistics sector, and suggests solution to the current problems. In order to discuss the problems of logistics sector of Turkey, a panel was held with a wide participation from different areas of the sector in expert level. In the panel which was held under two sessions, customs and infrastructure, and international shipment and logistics service quality titles were discussed. During the panels, the data obtained by using the brainstorming method by the help of a moderator. Then the data were subjected to Content Analysis and Swot Analysis. Thus, the problems reflected in LPI and the suggestions to these problems were revealed in the evaluation and conclusion section.*

**Keywords** – Customs and border policies, logistics, logistics infrastructure, logistics performance index, logistics service quality, tracking and tracing the shipments,.

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## **AUTOMATIONAL OBJECT TRACKING SYSTEM DESIGN IN LOGISTICS SECTOR**

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***Abstract** – Recently, many objects; Informality, distrust, and object-induced dangers are often seen. With the object tracking System (NTS) developed in accordance with the Ministry legislation within the scope of the study, ensuring that all objects produced or imported in our country are monitored under one roof and the objects are is aimed to serialize and merge to monitor. In the first phase of the study; NTS analysis was conducted and the processes, hardware and software needs, modules, software architecture and mobile application were designed in this context. In the second phase of the study; object serialization module has been created. In the first step of the module; The machine has been designed, developed and integrated into the software and created an automated system. In the second step of the module; in accordance with the ministerial legislation, a dynamic matrix was designed and the Pseudrandom algorithm and the singular serial code algorithm were created. Then, thanks to the socket programming, the integration with the label printer is provided. In the third phase of the study; the object merge module has been created. In this context; Legislation-appropriate serial transport container code (SSCC) structures were created and the software was developed. The NTS prepared within the scope of the study; is an automated infrastructure system designed for the realization of value-added transactions. This system differs from other systems by coding two axes without disrupting the forms of finished objects and provides the creation of pallet, parcel, object hierarchical structure.*

*Keywords* – Merging, OTS (Object Tracking System), pseudrandom algorithm and serialization.

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## **IDENTIFYING THE ISSUES RELEVANT TO THE ADOPTION OF ELECTRIC VEHICLES IN URBAN FREIGHT TRANSPORT IN TURKEY**

*Dilay ÇELEBİ<sup>1</sup> , Şükrü İMRE<sup>2</sup> , Funda KOCA<sup>3</sup> , Burcu MENEMENCİOĞLU<sup>4</sup>*

**Abstract** – Analyses of the potentials of electric mobility in commercial transport have shown that concerning trip patterns and daily mileage, Electric Vehicles (EV) are suitable for urban freight transport and city logistics. Depending on the way electricity is produced, the deployment of EV could significantly reduce exhaust and noise emissions. However, this potential is not being exploited, and there are only a few vehicles in use in commercial fleets. The aim of this paper is to obtain an in-depth understanding of stakeholders' attitudes related to technical and operational barriers, as well as potential policy measures and action areas, which can foster the transition towards EVs in urban freight operations in Turkey. The analysis is developed through review of literature and the feedback gathered from a workshop with sector representatives, local government officials, and academicians, which took place in fall 2018 in İstanbul. The evaluation of the workshop results show that there is a clear lack of easy available and reliable information on factors affecting the EV adoption decision. The core problem is that experiences from successful use cases are missing and companies have no reliable information on real costs of electric vehicles. The main strengths of the EFVs are related to low fuel costs, reduced noise, and lower environmental impact. The main weakness is economic, particularly high initial purchasing costs of EFVs, besides some uncertainties in the technical and operational performance.

**Keywords** – City logistics, electric vehicles, urban freight transport

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## **COLLABORATIVE FORECASTING IN SUPPLY CHAINS: A CONTENT ANALYSIS**

*Gülşah ŞİŞMAN<sup>1</sup> , Burcu KAVUKÇU<sup>2</sup>*

**Abstract** – *It is crucial to achieve high supply chain performance in today's competitive business environment. For that reason, many firms should integrate the sub-processes of supply chain in a convenient way. In general, the all integrative actions in supply chain can be explained as collaboration. Collaboration plays a crucial role beyond the boundaries of the firms including customers and suppliers. Especially, forecasting is one of the most collaboration needed function of supply chain management. Because of the fact that unrealistic forecasting may result in serious supply and demand problems for producers, customers and suppliers. Collaborative forecasting is such a method that all the information, experience and knowledge are shared between the shareholders of the chain in order to avoid the potential supply and demand problems and to have more accurate forecast. Recently, collaborative forecasting attracts the attention of the academic researchers. For that reason, the purpose of this research is to investigate the studies that deal with the concept of collaborative forecasting in supply chain management to determine the variables that affecting this topic in positive and negative way. Additionally, a comprehensive content analysis was conducted in this research. The data of this study was obtained from international research databases (Google Scholar, ELSEVIER Science Direct, SpringerLink etc.). Finally, it is thought that this content analysis about collaborative forecasting in supply chain will contribute the new studies related to this subject and future literature.*

**Keywords** – Content analysis, forecasting, supply chain, supply chain management

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## **ROLE OF BLOCKCHAIN IN THE SUPPLY CHAIN INTEGRATION**

*Halil KARLI<sup>1</sup>*

**Abstract** – Supply chain integration has become increasingly important in recent years. One of the main objectives of the supply chain members is to increase the transparency in the supply process and to make the process more sustainable. Technology makes significant contributions to the integration of chain members. In this context, “blockchain” technology appears. Blockchain technology is a system for decentralized and transactional data sharing of participants who do not trust each other. Thanks to Blockchain, the parties can negotiate without having to rely on a central organization or each other. Blockchain technology is used in the fields of finance, healthcare, utilities, government, and supply chain. Blockchain technology enhances the knowledge and competence of the consumer, manufacturer, and supplier about the product and supply chain. The objectives of this article are to; the reasons why integration is crucial and the advantages it provides for supply chain members will be revealed. Then, the main problems encountered in the formation of a fully integrated supply chain will be mentioned. Finally, general information about blockchain technology will be given, and solutions of blockchain technology will be explained to the problems encountered in supply chain integration.

**Keywords** – Blockchain, integration, supply chain, sustainability, traceability, transparency

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## **LOGISTIC APPLICATION ON MARINE ANIMAL TRANSPORTATION**

*Melisa SEVİM<sup>1</sup> , Okan TUNA<sup>2</sup>*

**Abstract** – Logistics is one of the most critical sectors of the global world. The most basic activity of logistics is transportation. Transport activities are usually carried out by road transport, air transport, railway transport and maritime transport. Each mode of transport has different advantages and weaknesses to the other. Road transport is notable for transportation to almost everywhere without need of a station, port or airport, for being relatively inexpensive and for the advantage of being able to carry almost anything. One of the things that can be carried by the road transport is aquacultural livestock. First of all, the transport of marine species are different from other types of transports which are being transported alive. The fish, which are loaded alive in the transportation, must be delivered alive to the destination. For this purpose, the continuity of conditions that require vitality during transport is necessary and choosing the right transportation equipment is crucial. In this study, a transport activity of a hatchery (Egamar) operating in Akbük, Aydın, within the scope of live fish transport, has been examined by case study. The case study is about transporting sea bream fingerlings from the hatchery to the customer for cage growth of the fish. All the transportation conditions were recorded and compared for the optimal results. And as a result, it has been suggested that Egemar should be more careful about the stock density and the anesthetic agents to be used as recommended. In this case study the transportation due was 2 hours, so the results were not essential. But it would cause irrecoverable results If the transportation time gets longer. Because even a small change effects the quality of the transportation.

**Keywords** – Logistics, marine life, road transport, sea bream, sea creature logistics

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## **CURRENT APPROACHES IN SUPPLY CHAIN RISK MANAGEMENT**

*G. Serap ÇEKEROL<sup>1</sup> , Özer COŞMAN<sup>2</sup>*

**Abstract** – *Within the last three decades, businesses have started to focus on their fundamental competencies in order to ensure their continuity in the market they are in, be competitive and reduce the risks that affect them especially with globalization, the fluctuations occurring in world trade and economies, decrease in the product life, political instability, wars and rapid development of digital networks. Particularly, the increasing numbers of actors in the networks of supply chain and the expansion of supply chains into larger areas have made the management of supply chain activities more complex, and therefore the management of supply chain has become a substantial issue for both researchers and practitioners. Factors which are negatively affecting supply chains and causing deterioration in supply chain activities are defined as risk and are often divided into two in the literature, as macro risks and micro risks. The risk usually depicts itself within different dimensions and forms in the supply chain network of businesses, and the risk factors in these different dimensions are dramatically seen as the reasons of failure in the operations of businesses. Supply chain risk management is defined as the identification and management of risks to achieve business objectives through an understanding which includes in supply chain members. Today, businesses are even more in to supply chain risk management. Furthermore, reactive thinking internalized in the traditional supply chain risk management has been replaced by proactive thinking, and businesses are trying to shape their supply chains in a structure which is safe and non-fragile. In this study, macro and micro risks have been examined in detail, and current risk types faced by businesses have been discussed.*

**Keywords** – Supply chain, supply chain risk, supply chain risk management

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## **A LITERATURE REVIEW ON SALES AND OPERATION PLANNING MATURITY MODEL**

*Sevda SARGIN<sup>1</sup> , Batuhan KOCAOĞLU<sup>2</sup>*

**Abstract** – *In today's variable markets, it is even more important for companies to meet customer demands in the right place and at the right time. However, demand forecasting, stock levels and capacity levels are also more difficult to adjust. In the event of increased demand, a company may decide to expand its capacity and production, but the situation in a volatile market may change rapidly. Companies are often struggling with the synchronization of functional areas involved in planning and operations. The implementation of S & OP (Sales and Operations Planning) has become vital for companies to keep up with competition. A way to simplify implementation and evaluate the current state of the S & OP process is to use maturity models. In this study, it is aimed to scan and investigate the existing S&OP Maturity models in the literature. Research gaps have been identified and recommendations for future studies are presented.*

**Keywords** – Integrated business planning, maturity model, S&OP, sales and operation planning

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## INVENTORY MANAGEMENT AT AN ENGINE MANUFACTURING COMPANY

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Zehra Düzgit<sup>6</sup>, Ayhan Özgür Toy<sup>7</sup>

**Abstract** –The purpose of this study is to determine the optimum stock levels of raw materials at an engine manufacturing company. Raw materials under consideration are primarily used in manufacturing but they may also be sold to customers. Our site visit indicates that the company keeps very high levels of stock for some items with various reasons which increase their inventory holding costs. For some other items there is sometimes insufficient stock, which causes manufacturing delays and increases underutilization costs. The main cause for these is the variability in demand. Hence, the company has opportunity to optimize their inventory control policies and reduce their costs. The main research question that needs to be answered in this study is “How to optimize stock levels of raw materials?” by answering “How much to order?” and “When to order?” in order to minimize total ordering and inventory holding cost. Demand distributions of each raw material are determined based on past data. A Monte-Carlo simulation is employed to determine the best order quantity and reorder point of raw materials. Our numerical study indicates that cost savings are unignorable.

**Keywords** – Monte-Carlo simulation, Order quantity, Raw material, Reorder point, Stock level

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## **A LITERATURE REVIEW OF BLOCKCHAIN TECHNOLOGY AND BIG DATA APPLICATIONS IN FOOD INDUSTRY**

*Şebnem İNDAP<sup>1</sup>*

**Abstract** – *Blockchain is an emerging technology, which has become a focus of attention for academic community, governments, financial institutions and for industries like energy, health-care, food and agriculture. Blockchains or distributed ledgers can allow authenticated data communication between each member in a supply chain without the intermediation of a trusted central organization. The main challenges in global food supply chains are sustainability and safety. On the other hand, food fraud has become a major problem throughout the global food industry. Blockchain technology together with the internet of things (IoT) and big data can improve transparency -from farms and producers to consumers- and traceability of food quality and safety as well as reducing food fraud. Blockchain technology and big data has also applications in food industry such as sustainable water management, shelf-life prediction and supply chain decisions. In this study, blockchain technology, blockchain based IoT and big data applications in various industries are examined with the literature review method. As a result, various suggestions have been made for the application of blockchain technology and big data in food industry.*

**Keywords**–Big data, blockchain technology, food industry, internet of things (IoT)

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## **SUSTAINABLE HULL SOLUTION FOR GLOBAL MARITIME LOGISTICS**

*Şevket Süleyman İRTEM<sup>1</sup> , Irma YEGINBAYEVA<sup>2</sup>*

**Abstract** – *A major problem in the shipping industry is related to frictional resistance and power penalties coming from ship hull conditions. Without effective fouling control coatings, the accumulation of marine growth on the hull will be slowing down the ship due to increased drag and hence increasing the fuel consumption and carbon footprints. The latter is an important endeavour to limit the global temperature rise according to international conventions. Therefore, there is a huge commitment on ship operations with particular interest in obtaining efficient hull coatings with optimal hydrodynamic performance not only as newly applied but also under “in-service” or real-life conditions. Within this context testing of new generation marine coatings necessitates the use of reliable experimental facilities to assess the hydrodynamic performance of marine coatings under the realistic testing environments. This study will review the recent research conducted on commercial coatings. It will also describe the role of coatings for the environment and their importance in the global supply chain.*

**Keywords** – Marine coatings, frictional resistance, fouling, antifouling efficacy, environment, sustainable supply chain, global maritime logistics

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## **CITY LOGISTICS NETWORK PLANNING FOR A MULTI- OBJECTIVE AUTOMOTIVE INDUSTRY PROBLEM**

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**Abstract** – City logistics focuses on optimizing logistics and transport activities in urban areas while considering traffic congestion, environment, and energy consumption. With the increase in urban population, the efficiency and effectiveness of the freight deliveries in city areas are becoming more critical. Although all stakeholders share common objectives of transporting goods in the urban area, each stakeholder can have different priorities considering their conditions. This paper is aimed to treat city logistics modeling for Istanbul by using multi-objective linear programming that considers the different objectives of the stakeholders by integrating goal programming and fuzzy Choquet Integral approaches, in a multi-level supply chain for the automotive industry. The objective functions are minimization of total transportation costs, total inventory holding costs, penalty costs for delayed products and emission level in urban area. It is solved by goal programming, and also fuzzy Choquet Integral method is embedded for the third objective function. The application of the model is realized on city logistics for a company in the automotive industry. This proposed model makes selection decisions among the fuel vehicles and electric vehicles in urban freight transport and also calculates the amount of the products that have to be transported between facilities, the amount of the delayed products and the inventory level for main warehouses in each time period. Finally, the results are discussed under different scenarios.

**Keywords** – City logistics, Fuzzy Choquet Integral, linear programming, network planning.

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## **THE EFFECT OF THE INFORMATION TECHNOLOGY, LOGISTICS SERVICE QUALITY AND THE INNOVATION ABILITY ON THE FIRM PERFORMANCE**

*Yeşim BAŞARAN<sup>1</sup> , Nagehan UCA<sup>2</sup>*

**Abstract** – *The information technology has become the most important priority subjects for the companies in the consistent changing and developing business environment. The values that information technologies bring to the firms have revealed the necessities of converting the aspects of companies into this field. In addition, the innovation capabilities and logistics service quality of the companies are considered as important determinants of their competitiveness. These factors help businesses to differentiate from competitors, achieve a competitive advantage and thus affect their performance in a positive way. In this study the effect of the information technology, logistics service quality and innovation ability on the firm performance have been studied for the logistics companies in Turkey. The Proposed Model and hypostesis have been analysed by Structural Equality Model (SEM) on the study. The results obtained were revealed.*

**Keywords:** Information technology, logistics service quality, innovation ability, structural equation model

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## **ALLOCATIONS TO HUB LOCATIONS AND CAPACITATED VEHICLE ROUTING PROBLEM**

*Zühal KARTAL<sup>1</sup>*

**Abstract** – In various many-to many distribution networks such as airline, cargo delivery and telecommunication systems, hub facilities play an important role. In the hub and spoke networks, the flow between origin and destinations is routed through the hub facilities. These facilities serve as sorting, transshipment and consolidation points in many-to-many distribution systems. In order to exploit the substantial economies of scale, the flow is accumulated at the hub facilities. In the classical hub location problem, it is assumed that only one vehicle operates between each demand center and hub pair. However, over the years, this assumption has been adapted to deal with various real life problems. Sending separate trucks from a hub to each demand center can be assumed an unnecessary and expensive way. Also, it is obvious that allocating separate vehicles between each demand node and hub is rather costly in terms of investment on the total number of vehicles. This paper introduces mixed integer programming formulations for hub location and routing problems with capacity considerations on vehicles. The formulation is derived from p-hub median location and routing problems with simultaneous pick-up and delivery, for the cases of when the locations of the hubs known and unknown. We consider these problems are in the single allocation scheme. Some computational results and analysis with capacity constraints are shown on the Turkish dataset.

**Keywords** – Hub location problems, hub location and capacitated vehicle routing problems, mixed integer programming, vehicle routing problems

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## **GREEN SUPPLY CHAIN AND REVERSE LOGISTICS ACTIVITIES IN PHARMACEUTICAL SECTOR**

*Mücahit Abdullah ORHAN<sup>1</sup>*

***Abstract** – With the development of the health sector, the ease of transportation of the patients to the drug brought about an increase in drug consumption. As a result, uncontrolled consumption of drugs threatens the environment and human health. The medication is expired because of the side effects of the medications they use at home or because they use less. As a result, the method they apply for disposal is often a wrong method. In order to prevent this, solutions are produced with green supply chain and reverse logistics activities. In this study, the processes of green supply chain and reverse logistics activities in the Turkish pharmaceutical industry were examined and a system dynamics model with a dynamic approach was developed. This model was examined in terms of system dynamics and the process of disposal of drugs was investigated. Within the framework of the research, the solution was aimed by taking into consideration the process of disposal of pharmaceutical wastes.*

*Keywords* – Green supply chain management, reverse logistics, system dynamics.

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## **VULNERABLE LINK OF THE AIRLINE SUPPLY CHAIN: AIRLINE CATERING MANAGEMENT**

*Murat ÇEMBERCİ<sup>1</sup> , Mustafa Emre TAŞÇI<sup>2</sup>*

**Abstract** – Air transportation, as the most expensive channel of logistics, provides a premium service not only for the worldwide cargo transportation but also for the passengers who are often referred to as ‘self-loading freight’. As worldwide airline revenue in 2018 hit \$821 billion which was 1% of the world GDP and with 4,3 billion carried passengers, air transportation has had a significant impact on the economies of numerous countries. The perception of the service quality for the passengers depends greatly on criteria such as seat comfort, on-board food quality and entertainment, cabin crew behavior, lounges, baggage handling, reliability, as well as safety and security. For the airline, to accommodate all these services is a critical matter of supply chain management which should be a cooperation shared with service provider stakeholders. Airline catering management is the one of the most vulnerable links of the airline supply chain which plays a crucial role on passenger’s perception of airline branding and service quality. Considering the catering infrastructure in airports, combining over 10.000 ingredients for food production from raw material to final product, each step is a logistical issue until the loading of all services to airplanes within the preserved cold chains of high loaders. Airline catering companies also provide an important function for supporting on-board entertainment and cabin crew training. The aim of this study is to investigate the effect of the catering services on airline service quality.

**Keywords** – Airline service management, aviation industry, catering management, supply chain

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## **THE ROLE OF BLOCK CHAIN TECHNOLOGY ON THE DIGITAL TRANSFORMATION OF THE SUPPLY CHAIN**

*Nazlı ÇALIK<sup>1</sup> , Nagehan UCA<sup>2</sup>*

**Abstract** – Trade in global markets progresses in rapid flow according to the developing technology. In the literature review it was seen that; the integrated management of the supply chain, starting from the procurement process to the end user, affects the performance of firms. The intended competitive advantage can only be achieved with a well-designed knowledge management structure in supply chain management. Especially with Industry 4.0, information technologies have been intensively used to increase supply chain performance and digital transformation has accelerated. Developments in information technologies are reflected in the supply chain capabilities of companies. It has been seen that block chain technology can play a role in ensuring accurate and reliable information flow in the supply chain. In this study, the role of block chain technology on the digital transformation of the supply chain is discussed.

**Keywords** – Blockchain, digitalization, digital supply chain, supply chain transformation

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## **SIR, HOW CAN I GET A JOB IN LOGISTICS SECTOR? SKILL BIASED APPROACH TO LOGISTICS LABOR INDUSTRY**

*Nesli ÇANKIRI<sup>1</sup> , Esra İŞBİLEN DURU<sup>2</sup>*

**Abstract** – Industry 4.0 applications, which are called the fourth industrial revolution and which are thought to cause structural changes in the structure of labor, are important for the competitiveness of today's companies. Nowadays, it is not enough for companies to invest only in technology. They also need the competence to adapt this technology to their business processes and have the competence to solve the potential problems with an innovative perspective. The aim of this study is to conceptually interpret the changes in the logistics labor industry that are experienced already and expected to be experienced in the future. Considering the changing organizational structures and business practices, it is expected that both blue-collar and white-collar personnel should have firm-specific skills, as well as technology-based general skills. These expectations have some implications both for the employees and employers. Employees are expected both to develop skills in company-specific issues and to adopt technological innovations to their business in a continuous learning process. In terms of firms, finding the personnel who have the necessary competencies and keeping the working staff are getting more and more difficult. In line with the purpose of the study, the evaluations of the working and employing aspects of the present logistics industry will be interpreted in terms of the basic concepts of the skill-based approach, dilemma of skill shortages and over-qualifications.

**Keywords** – Industry 4.0, logistic labor industry, skill biased approach

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## **MEASURING CORPORATE SUSTAINABILITY PERFORMANCE: AN EXAMPLE OF FURNITURE COMPANY**

*Nadide ŞAHİN<sup>1</sup> , Neslihan DEMİREL<sup>2</sup>*

**Abstract** – *The human-nature relationship, which had started with the history of humanity, became more complex following the Industrial Revolution. Rising consumption of nature and environmental damages increased environmental and social concerns globally. Due to increasing role of enterprises in development, their impacts on social and environmental areas have parallelly arisen and corporate sustainability has become the main topic to achieve sustainable development. Minimizing the negative impacts of corporations in relation to sustainability has become an area of intense interest both in practice and academic fields. Regarding the framework of those mentioned above, the objective of this study is measuring corporate sustainability performance of a leading company in the furniture sector in Kayseri and advancing the understanding of the measurement of corporate sustainability using multi-criteria decision making methods. To evaluate sustainability performance of the company, analysis criteria are selected and gathered based on Global Reporting Initiative, United Nations Global Compact and the literature. Economic, environmental and social dimensions of sustainability between years 2013-2018 are evaluated with Entropy Method for weighting criteria objectively and Technique for Order Preference by Similarity to Ideal Solutions (TOPSIS) Method for ranking alternatives. Analysis results has showed that 2018 is the best performance year for economic and social performances while 2016 is the best performance year for environmental performance.*

**Keywords** – Corporate sustainability, Entropy, Performance measurement, TOPSIS

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## **THE EFFECTS OF SUPPLY CHAIN ORIENTATION, SUPPLY CHAIN STRATEGY AND SUPPLY CHAIN INTEGRATION ON SUPPLY CHAIN PERFORMANCE**

*Onur ÇETİN<sup>1</sup> , Elif GİLANLI<sup>2</sup> , Nevin ALTUĞ<sup>3</sup>*

**Abstract** – Successful implementation of Supply Chain Management includes several concepts such as Supply Chain Orientation, Supply Chain Strategy and Supply Chain Integration. Supply Chain Orientation is considered as a management philosophy of supply chain management and it includes trust and commitment of supply chain partners. Supply Chain Strategy includes long term decisions in order to provide customer satisfaction. Lean Supply Chain Strategy aims to form efficient supply chains by eliminating waste and minimizing cost. Supply Chain Integration is another important concept to ensure desired performance of the supply chain. Logistics integration aims to integrate the flows in the supply chain. Literature suggests causal relationships between these variables. This research aims to analyze the effects of Supply Chain Orientation, Supply Chain Strategy and Supply Chain Integration on Supply Chain Performance. In order to achieve this purpose, a survey is carried out among manufacturing companies in Trakya Region. The data is analyzed using structural equation modeling. Findings suggest significant relationships between these variables and these relationships are consistent with the literature.

**Keywords** – Supply chain strategy, supply chain orientation, supply chain integration, supply chain performance

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## **THE RELATIONSHIP BETWEEN CORPORATE SOCIAL RESPONSIBILITY AND ORGANIZATIONAL CITIZENSHIP IN LOGISTICS SERVICE PROVIDERS'**

*Özlem SANRI<sup>1</sup>*

**Abstract** – *The interest towards corporate social responsibility has increased rapidly in recent years. Most of the logistics providers integrate their social and environmental concerns in their operations and in their relations with their stakeholders voluntarily. Also, the stakeholders make pressure on logistics companies for developing socially and environmentally responsible strategies and policies. There is a body of literature on corporate social responsibility issues in relation to logistics function, but the CSR perception of employees is yet to be explored. The extra behaviors shown by employees are evaluated under organizational citizenship concept which improves efficiency. Thus, the aim of this paper is to explore the relationship between corporate social responsibility perception of employees and organizational citizenship behavior in logistics industry. The sample of the study is obtained from the website of “Association of International Forwarding and Logistics Service Providers” members’ database. Survey method is used to analyze the relationship. The findings provide an insight into interrelations between corporate social responsibility and organizational citizenship. Logistics practitioners can understand the importance of corporate social responsibility from the employees’ point of view and organizational citizenship. Both of these concepts are significant for a logistics company’s sustainability.*

**Keywords** – Corporate social responsibility, logistics service providers, organizational citizenship behavior

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## INTEGRATING COLD STORAGE ROOM ASSIGNMENT WITH SHIPPING OPERATION FOR EFFECTIVE WAREHOUSE MANAGEMENT

Qing LU<sup>1</sup>

**Abstract** – Cold storage warehouse design is a complex and challenging task. This study examines a cold storage room reassignment problem of a logistics service provider with both chilled and frozen rooms. With the evacuation of a large customer, who once took nearly half of the warehouse capacity, the company has to relocate its cold /chilled rooms and readjust shipping dock assignment accordingly. Examining past energy consumption data surprisingly shows a strong connection between energy consumption and the outdoor temperature. Further investigation has found that one chilled room faces a parking area directly, and the opening of both gates during the shipping operation has exposed the chilled room to external heat and contributed to the correlation between energy consumption and outdoor temperature. A relocation of the chilled room and the new dock assignment would then reduce energy consumption significantly and loading time of trucks as well. The study highlights previously neglected interaction between warehouse design and the shipping operation. In assigning chilled and frozen rooms in a cold storage warehouse, managers should integrate related shipping operations with internal processes for cost efficiency and operation sustainability.

**Keywords** – cold chain, cold storage warehouse, dock assignment, energy efficiency, warehouse design

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## **ELASTICITY IN LOGISTICS THROUGH THE EYES OF MANAGERS**

*Esra Nur GÖKHAN<sup>1</sup> , Zainab BEIROUTY<sup>2</sup>*

**Abstract** - Each business seeks for a competitive advantage to win the market race and in logistics Customization to the customer maximum preferability can really make a difference. Consumer's demand for Customization in shipping, tracking cargo, prices and even shipping quantity have pushed logistics companies to invent the concept of elastic logistic which means the flexibility in aligning logistics capabilities with customer needs. Or simply; words, it's the ability to provide the customer with his own preferences in shipping through a flexible cloud-based supply chain fixes adjusting companies to market alterations to meet the consumer's demand at lower costs enhancing the customer's experience through digitalizing the supply chain process offering a real time visibility option In this study; we are examining the impact of the manager's foresight of logistics companies on performance through conducting a qualitative research trying to see their opinion about digital and elastic supply chain processes and what are their plans and tactics to co-op with the new era of digitalization and customization. The study aims to come up with best procedures and plans to move from the classic supply chain operations to the fully elastic digital logistics operations.

**Keywords-** Elastic logistics, digital logistics, logistics management

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## SMART FLIGHT MODEL FOR VIRTUAL INTERLINING: TURNA.COM CASE

Biket ERGÜNEŞ<sup>1</sup>, Yiğitalp ERTEM<sup>2</sup>, Samir GULİYEV<sup>3</sup>, Abdulkadir KIRMIZI<sup>4</sup>,  
Zeynep ZENGİN ALP<sup>5</sup>

**Abstract** – Today, if there is no direct flight between two cities or when direct flight is too expensive, passengers can fly with connecting flights that airlines offer, or they can buy two or more tickets and make the connection by themselves. These two approaches have major advantages and disadvantages. In travel industry, some airlines make commercial agreements with other airlines to provide connecting flights to passengers so that one can fly from one airport to another through alternative routes. On the other hand, it is possible to combine the flights of the airlines that do not have a contract with each other to find more advantageous connecting flights in terms of price or flight duration. However, as there are many alternatives to creating such routes, it is very difficult for the passenger to do it manually by himself and achieve the best results to save costs. In addition, since the flights are not related through a contract, any flight delay in previous legs may cause the passenger to miss the next connected flight which would cost both time and money for the passenger. At Turna.com, an online travel agency based in Turkey, we developed the Smart Flight model for Virtual Interlining where we connect the flights of airlines having no contract between them with a guarantee for missed connections. We developed an algorithm based on shortest path algorithms and implemented the infrastructure required to manage the big data to find the most advantageous routes and present them to the passengers within seconds after their flight search on Turna.com web site. The routes created by this model are found to be on average 30% cheaper than those of the airlines with a contract between them.

**Keywords** – Flight connections, shortest path algorithm, smart flight, turna.com, virtual interlining

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## **ENVIRONMENTAL PERFORMANCE EVALUATION OF SUPPLIERS: A CASE STUDY ON WHITE GOODS INDUSTRY**

*Hande OĞUZ<sup>1</sup> , Banu DEMİREL<sup>2</sup>*

**Abstract** – *The challenging issues of sustainability and the negative impacts of climate change enforces companies not only to pursue pro-environmental practices but also to manage their supply chain in a more environmentally responsible way. This necessity also requires the integration of purchasing function within a strategic approach with the pro-environmental focus in the decision making process. Hence, the overall objective of this study is to provide a framework which aims to integrate environmental thinking into the supplier selection and evaluation process within a case study. The case study will be conducted on a firm in white goods industry in Turkey and data will be collected via in-depth interviews, a focus group study and document examination. The framework constructed as a result of the extensive literature review and the data collected will be prioritized by using Analytic Hierarchy Process (AHP). This framework is believed to serve as a decision support tool for companies in their green supply chain efforts in terms of supplier evaluation and selection.*

**Keywords** – Environmental Performance Evaluation, Green Supply Chain Management, Supplier Selection, Supply Chain Management, Sustainability

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## **INTERNATIONAL COMMERCIAL TERMS (INCOTERMS) AND COMPARISON/CHANGES OF RULES FROM PAST TO TODAY**

*Yurdagül MERAL<sup>1</sup>*

***Abstract** – Incoterms, (International Commercial Terms) are published by International Chamber of Commerce and the current (2010) rules consist of 11 rules. These worldwide accepted rules aim to apply the same standard rules globally, to avoid misunderstandings arising from different laws/rules of different countries. First published in 1936, these rules have been revised to be updated as per new requirements, in 1953, 1967, 1976, 1980, 1990, 2000 and lately in 2010. The planned new revised incoterms is named as Incoterms 2020. This study aims to give a brief evolution of incoterms rules and compare the latest version of the rules with the past. Expected finding is with new rules are that the key points, the reasons of changes and recommendations to enable logistics to issue transport documents according to the new rules will be given.*

*Keywords:* Import Export Management, Incoterms, ICC

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## **STRATEGIC VALUES AND CHALLENGES OF GREEN SUPPLY CHAIN MANAGEMENT APPROACHES**

*Elif KORKMAZ<sup>1</sup>, Elif ÇİRKİN<sup>2</sup>*

**Abstract** – Strategies through sustainability, eco-friendly operations throughout the factory level to the end customer, elimination of wastes, in-depth green supply chain management approaches have been vital for business organizations seeking to cope up with adverse environmental conditions. Therefore, organizations have been eminently heading towards these strategies while postulating enhancement of customer satisfaction, cost reduction achievement of profitability, improvement quality and reliability of operations. However, organizations in Turkey yet have been struggling in the transition to green supply chain management approaches. Therefore, within the scope of this study, strategic values and challenges of green supply chain management approaches for the firms will be evaluated by building a theory on how these approaches can establish and maintain a competitive advantage. Moreover, a case study will be conducted within the beverage company located in Izmir regarding general understating of the company's supply chain management structure as well as adaptability and applicability of green approaches on the supply chain management. Thus, the outcome of this study is expected to pave the way for organizations facing issues while the transition to green supply chain management approaches.

**Keywords** – Consciousness, Environmental Sustainability, Green Supply Chain Management, Green Management Approaches.

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## **NEW OPPORTUNITIES THROUGH THE ADOPTION OF INDUSTRY 4.0 IN VARIOUS INDUSTRIAL CONTEXTS**

*Elif ÇİRKİN<sup>1</sup>, Elif KORKMAZ<sup>2</sup>*

**Abstract** – *Technology and innovation have been shaping the way individuals live and organizations do businesses while fulfilling the requirements of people, processes, and production structures. Such emerging technological advancements as the Internet of Things and Cyber-Physical Systems attain a place in manufacturing environments, which lead to a fourth industrial revolution. Industry 4.0 is a concept that enables: to virtualize work environment, to deploy resources, to foster competitiveness and productivity, and to run processes in a flexible, efficient and greenway. Implementing Industry 4.0 requires combining such key factors as horizontal integration within related corporations, vertical integration within business functions including marketing and sales, finance and accounting, production, human resource, research and development, and the end to end digital harmony of engineering through the entire value chain. Additionally, an important factor is the focus on sustainable and manageable Industry 4.0 operations. Within the scope of this study, the history of the industrial revolution will be studied and different aspects of Industry 4.0 will be highlighted. The potential benefits and opportunities in logistics systems quality, customer satisfaction, profitability, and competitiveness stemming from Industry 4.0 shall be analyzed in various industrial contexts such as automotive, health, and food by determining value chain structure of particular companies.*

**Keywords** – Cyber Physical System, Industry 4.0, Innovation, Internet of Things, Virtualization

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## **HUB WAREHOUSE LOCATION SELECTION FOR DISASTER LOGISTICS IN CASE OF HATAY PROVINCE IN TURKEY: A MULTIPLE HYBRID STUDY**

*Nigâr YEŞİLÇAYIR<sup>1</sup>, Gülşah AYVAZOĞLU<sup>2</sup>, Sefa ÇELİK<sup>3</sup>,  
İskender PEKER<sup>4</sup>*

***Abstract**--Aim of this study is the selection of optimal hubwarehouse for disaster logistics in case of the province Hatay in Turkey. Disasters are adverse events, that cause physical, economic and social losses. The main objective is to provide fast and effective humanitarian and at the lowest cost with no profit motive. Different alternatives have to be evaluated in terms of multiple criteria, based on the subjective opinions and experiences of cooperating relevant institutions. To obtain more sensitive, reliable and defensible measurements by providing more flexible evaluation methods, Fuzzy Multi Criteria Decision Making methods were preferred. First, FAHP is used to determine the weights of the Criteria then the Alternatives ranks by Fuzzy Promethee, TOPSIS and VIKOR respectively. According to results of the study it is determined that emergency and disaster probability is the most important criteria and alternative 3 (Kırkhan Province) is the best alternative for hub warehouse location selection.*

*Keywords* – FAHP, FuzzyPromethee I-II, Fuzzy TOPSIS, Fuzzy VIKOR, HubWarehouse

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## **SENTIMENT ANALYSIS OF TWITTER POSTS RELATED TO U.S. AIRLINES BY USING TEXT MINING**

*Burhan KAYIRAN<sup>1</sup>, Batuhan ÇULLU<sup>2</sup>, Ömür Yaşar SAATÇIOĞLU<sup>3</sup>*

**Abstract** – Social media is a tool in which people reflect their thoughts and feelings about their experiences and situations. In addition, individuals share their opinions with the public about the products and services they purchased. Twitter is one of the popular social media platform where persons instantly share their experiences about the interactions with products as well as services they get. In respect, twitter is not only a popular culture platform, it is also an up to date data bank with posts related to serious issues such as politics and economy etc. Businesses find the opportunity to observe the expectations which will affect customer satisfaction on current and potential customers by analyzing tweets that shared in the twitter about themselves. In summary, social network data is becoming an effective and up-to-date indicator for businesses to learn about public sentiment about themselves. In this context, our study focused on the analysis of 14849 tweet expressions related to 6 airline companies in the U.S by text mining techniques. As a result of this study, it is aimed to reveal the positive and negative opinions of twitter users regarding the services provided by these 6 U.S. airline companies.

**Keywords** – Customer Satisfaction, Rapidminer, Sentiment Analysis, Text Mining, U.S. Airlines

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