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Benchmaking in logistics: Literature Review

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ABSTRACT: In this paper, review of relevant literary sources shall be made in order to collect verified scholarly data on topics that relate to the problem in hand. Hence, the chapter shall find and present scholarly information on topics like the meaning of logistics and the challenges it faces, benchmarking performance in logistics, its importance, processes included in it, challenges in benchmarking and development of KPI (Key Performance Indicators). Companies in the logistics sector have lost a lot of performance points due to the non-use of the benchmarking approach. In this context, among the challenges of this research is to broaden the understanding of the link between the practices of benchmarking and logistics in order to improve the performance of logistics companies.

Keywords: Logistics, Benchmarking, performance, KPI, AHP.

Abbreviations: KPI, Key Performance Indicators; AHP, Analytic hierarchy Process; DEA, Data Environment analysis; SCOR, Supply chain operations and reference model.

I. INTRODUCTION

In any economy, companies have a great interest in taking a close look at this "benchmark" tool which should be an integral part of managing organizations, because as a result of globalization, customers have grown, but the also offers, for large as well as for small and medium-sized businesses.

It is therefore necessary to adapt it to the contexts of the company, taking into account its internal constraints (cultural, political, social). You should also be aware that SMEs, due to their small size, do not really have the opportunity to benefit from internal benchmarking.

It is therefore inevitable that they will compare themselves with the outside to seek new ideas, improve their practices and thus increase their market share.

This research aims to study the literature relating to the impact of Benchmarking on the logistics sector and how it contributes to improving the competitiveness of an organization.

II. LOGISTICS

Historically, the term 'logistics' has derived from the word 'logistician' and dates back to the time of Napoleon Bonaparte. During that time, logistics indicated towards the role of the chef whose responsibility was to find accommodation for the troops during the time of Napoleon Bonaparte [1]. In the later period, logistics was defined by [2] as the 'collection of activities that concern receipt of the right kind of product or services in the right quantity and quality in the right place'. The purpose of this systematic approach is to ensure that the products or services are delivered to the right customers at the right time and at the right cost.

Logistics can thus be understood as a part of supply chain management processes which intends to ensure that effective forward and reverse flow as well as storage of goods and services take place between their point of origin and the point of consumption so that customer expectations are successfully met [3]. In contemporary terms, logistics indicates towards the activity that concerns effective management of the flow of products or services from their point of origin to point of consumption [4].

A. Challenges in logistics

The contemporary logistics industry faces some prominent challenges. They are as follows:

(i) High fuel cost: High fuel cost is a grave problem for the logistics industry. The reason for this is that freight movement, which is the most important part of the logistics chain, is largely dependent upon expensive and finite fossil fuels, predominantly the diesel fuel. The single factor that determines the retail price of diesel fuel is the price of crude oil. Thus, rise in the price of crude oil increases the transport prices [5]. This leads to the increment of the logistics cost too. As companies look for alternatives to attain cost effectiveness, so finding out cost effective transportation solutions become a challenging affair [6].

(ii) Increasing customer expectations: Meeting customer expectations is very important for the logistics industry in order to remain competitive. Thus, the ability of the logistics companies to be able to cater to the needs of the customers accurately and meet their expectations precisely is becoming more and more significant [7] the expectations of the customers belonging to this logistics industry are ever changing. Both as individual customers and as businesses, this increasing customer expectation is a challenge for the

logistics sector. Customers want their products or services to reach them faster, more flexibly and without any delivery charge. Added to this pressure, the logistics industry is further burdened by the pressure to better service at an ever lower cost [8].

(iii) Management of manpower: Management of skilled manpower is another cardinal problem of the logistics industry. The recent needs of the logistics industry is that high degree of professionalism of the workforce is necessary for managing flow of goods and services from the point of origin to the point of destination is essential. Nonetheless, while on hand finding properly skilled manpower is a challenge that plagues the logistics industry, on the other hand appointing right manpower forces and retaining them within the organization is another challenge [9] .This finding has been further expanded in the study of [10] which shows that even though the logistics sector is in search for skilled laborers to occupy various organizational positions, the local labor market faces tremendous dearth of laborers who do not have full range of knowledge and technical, practical and job oriented skills that are essential for the modern logistics industry. Thus, developing a fully functional logistics chain becomes impossible for these organizations due to scarcity of appropriate manpower.

(iv) Environmental issues: Management oriented integration of all the logistics functions and processes connected with an organization for making it more modernized and opening it to new opportunities. However, the logistics sector is plagued with adverse environmental issues. Basically, pollution is created at every step of the logistics system. For instance, when raw materials are used for creating utilities, pollutants are created as by-product of the procedure. Again, the process of transportation of raw materials and products along different parts of the logistics chain in fuel powered vehicles also involves emission of CO_2 and other affluent [11].

However, while there is a growing demand for attaining sustainability in logistics chain, complexity related to the process makes it further challenging. One hand attaining sustainability means there be internal effort within the organization, on the other hand it also demands collaboration of other agents participating in the value chain. Balancing both these ends smoothly creates challenges [12].

(v) Continuous need for technology development: The need to innovate continuously and adapt new technology and knowledge is the next challenge that affects the modern logistics industry. The present trend to become more and more digitized and opportunity to tap big potentials in future have created huge changes within the logistics industry. Every organization operating in the sector aspires to adopt state-of-the-art measures like automation, networking and digitizing in their logistics functions order to stay ahead of their competitors [13]. Since innovation is imperative for the sector in order to sustain in the industry and survive for a longer span. This puts constant burden on the organizations operating in the sector [14].

(vi) Need for efficient reverse logistics: Greater emphasize is being put by the modern logistics sector upon is organizations to implement efficient reverse logistics [15]. Implementation of reverse logistics has become the key to improve the profitability of organizations operating in the logistics industry. Reverse logistics is actually a resource intensive process which emphasizes upon backward movement of products or services towards their point of origin. The significance of reverse logistics is that if it is implemented properly, the process leads to reduction in storage and distribution cost, reduction in the level of resource investment and improved customer satisfaction [16] .While the organizations operating in the logistics sector are pressed with the need to implement reverse logistics, the major barrier to its implementation are high cost involved in its implementation, lack of skilled personnel, lack of government level support, poor organizational culture and lack of awareness about environmental laws [17].

B. Benchmarking in logistics

(i) Meaning of benchmarking: Benchmarking is the process by means of which the performance of one company or individual is compared and estimated in respect to that of the others [18]. In defining benchmarking, [19] remarked that benchmarking is a new quality concept which launches systematic search for finding best practices that lead to superior performance. Thus, it can be said that in a business scenario that is characterized by steep competition, benchmarking is the only strategic tool by means of which organizations can make comparative analysis of the quality of their performances, products or services. The knowledge gathered in respect to performance standards thus helps the organization in strengthening its internal processes so that it can help in up gradation of processes, products or services. Eventually, the organization can position itself firmly in the fiercely competitive market [20].

(ii) Need and importance of benchmarking in logistics: The process of benchmarking has become a cardinal tool for modern organizations in terms of enhancing their market position and competitiveness. Basically, benchmarking has become the backbone of modern ay organizations due to the array of benefits it generates [21]. Listed below is some of the imperative significance of benchmarking in logistics.

(iii) Developing competitive advantage: Increment of competitiveness is often considered as an important factor for all the contemporary organizations. Meeting and beating the quality standards is most essential in the present situation in the present scenario. Thus, benchmarking appropriately meets this organizational need [22]. According to [23], logistics benchmarking proves especially significant in enhancing the competitiveness of the organization. Through the process of performance benchmarking, organizations are able to identify 'best in class' performance standards with which they can compare their own organizational performance and then strategies for achieving this standardized performance level in their product delivery

process. Eventually, this aids in enhancing their competitive advantage over the time [24].

(a) Enhancement of organizational learning: Benchmarking practice aids in the process of organizational learning [25]. In this context, [26] remark that organizational learning is the set of processes by means of which an organization develop new knowledge and competencies both at the micro and the macro level. This knowledge's can then is used for eliminating the performance loopholes, improving performance and gaining competitive advantage. The study of [27] links logistics benchmarking with organizational learning and presents that performance benchmarking improves the logistics processes of an organization. As a result, it becomes easy for the organization to understand and identify the micro and macro variables like external technology, existing logistics processes, role and significance of individual stakeholders, prevailing firm strategies, and the financial and operational performance of the firm that are affecting its performance in much comprehensive manner. This establishes that performance benchmarking in logistics leads to the process of better organizational learning.

(b) Increment in productivity and performance: Benchmarking serves as the most widely used management practice for productivity and performance management [28]. The managers in most of the contemporary organizations are too reluctant to implement any unknown and untried process that promises to enhance performance. For them, comparing their organizational performance with that of their competitors and reaching performance goals by means of performance benchmarking is the most dependable solution [29]. The reason for this is, benchmarking implements a set of holistic measures by means of which the quality of productivity and performance can be measured and corresponding shortcomings could be identified [30].

(c) Expansion of growth potentials: Benchmarking serves as a tool for tracking growth potentials of different organizations and finding out solutions by means of which obstacles to growth could be eliminated. Basically, benchmarking procedure operates as a complete management tool in an organization that is capable of enabling overall improvement in organizational efficiency, production or performance, and operations of managers [31]. Hence, performance benchmarking has evolved as a promising tool for modern organizations over the time due to its ability to help organizations overcome disbelief about their credibility and look beyond their known periphery into areas where there are immense growth potentials [32].

(d) Enhanced customer satisfaction: Customer satisfaction is very important for every organization in order to sustain in fierce market environment and attain competitive edge [33]. In the current scenario, consistently maintaining appropriate quality standards that meet customer satisfaction is essential in order to enjoy high level of customer satisfaction [34]. In such a circumstance, logistics benchmarking proves to be an effective management strategy by means of which organizations can compare their performances with that of the 'best in class' performances of the world leaders of their industry. Hence, the organizations become promptly aware of the areas where improvements need to be done in respect to the needs and expectations of their customers. This option of achieving supply chain excellence finally improves customer satisfaction [35].

(iv) Process of benchmarking in logistics: Benchmarking in logistics follows a specific process which involves a series of steps [36]. The first step in the process involves identification and selection of the specific process in logistics that need to be benchmarked. During this stage, identification of the key success factors (KSF) becomes most essential. This choice is done based on factors aspects like the function of the logistics organization that is the most expensive to perform, or functions that lead to most complexities or functions that create greatest impact on customer service [37]. This is followed by the second stage in which evaluation of the KSF becomes important [38]. KSF refers to the variables that need to be considered for effective management of knowledge resources of the organization so that it can be used later for processes like evaluation of the quality of productivity, decrement of unnecessary operational costs and implementation of proper decision making [16]. At the next stage, the key performance variables corresponding to the functions such as efficiency of the function in terms of timing, cost, productivity, quality parameters like errors, customer service, etc. And cost like transportation cost, cost of products shipped per unit, etc. That need to be benchmarked are identified and acknowledged [32]. Next, the benchmarking partner or partners are identified so that performance standards could be established and established as 'best in classes in the industry. After gathering all the benchmarking related information, performance of the concerned organization is compared with the benchmarking partner to identify performance gaps [21]. At this stage, the performance benchmarking results are compared. During this time, decision is made regarding how significant the results obtained from 'best in class' organization would benefit the case company in terms of its skill development, process improvement, enhancement of organizational learning and improvement of its competitiveness. The final stage of benchmarking process is implementation of the changes that have been identified. In this situation, choices regarding the most befitting 'best in class' standards for a case company is made strategic quality of the performance and its significance for the company, quality of customer service and cost involvement [12].

(v) Development of KPI (Key Performance Indicators): KPI or Key performance indicators are the financial and non-financial indicators that organizations use for the purpose of measuring and fortifying their extent of success in respect to previously established long lasting goals. These indicators are static and stable in nature [33]. The significance of KPI is that it is able to measure the performance of an organization in respect to variables such as cost, financial, quality, time, adaptability, reliability of product/service delivery, safety,

customer satisfaction as well as satisfaction of the employees. Therefore, the role of KPI is crucial in creating positive impact upon organizational performance [14]. Use of KPI is considered crucial for the logistics industry because boosting the quality of logistics performance is integral for enhancing competitive advantage of organizations operating in the sector. Thus, while developing KPI index for these organizations belonging to the logistics sector, the relationships between the upstream chain, organization and downstream chain. Here upstream chain refers to customers, and downstream chain indicates towards the suppliers. Then the basic supply chain processes are identified together with the identification of the organizational goals. This is followed by development of clear knowledge on the relationship between these supply chain processes and the predetermined organizational goals. Finally, KPI is implemented in core business areas like Costumer Responsibility, Inventory Planning and Management, Supply, Distribution and Transportation, and Warehousing [25]. In sum, broadly KPI implementation is conducted at two stages of a supply chain. Initially, it is implemented at the evaluation stage of the supply chain in which each of the attributes of the KPI index is studied. The next stage of implementation of the KPI index is when the performance of the organization is measured by applying all these variables of KPI [16].

III. EMPIRICAL REVIEW ON IMPACT OF BENCHMARKING IN LOGISTICS ON THE ORGANISATIONAL

Oleśków-szłapka and lubiński [27] conducted a study in 2009 with the objective of finding out how supply chain benchmarking serves in changing organizational culture. The research methodology that was chosen for the study was questionnaire based survey on 20 selected organizations. The findings derived from the research indicated that benchmarking performance should be considered as an essential part of the logistics function because it enhances business potentials of the particular organization. The findings further elaborated that in aggressively competitive business environment where organizations can only gain competitive advantage over their organizations through cost economy, benchmarking helps in identifying the areas which are causing unnecessary capital investment. Hence, this gives the logistics department immense scopes for cost reduction. In addition to this, benchmarking practice also helps in identifying the bottleneck areas in the entire supply chain which are resulting in inferior performance. Eventually, the organization can eliminate these bottlenecks by means d developing appropriate business strategies and can improve the quality of their performance.

Through research, [18] tried to estimate the relationship between performance benchmarking and organizational efficiency. The study specifically focused on the logistics variable, procurement function of the supply chain in order to understand how it affects the organization. As research methodology, open and close ended questionnaire based interview was conducted in two chosen organizations. The research findings enumerated that benchmarking has significant positive effect procurement functions of the supply chin of the organization. It precisely enhances the quality of logistics functions such as better material procurement, cross-functional team management, elevated hierarchical positioning of the procurement function in the organization, strong cooperation other supply chain functions as well as corresponding stakeholders, better training and development of the procurement personnel, better supplier integration and continuous evaluation of the procurement process. Since these measures ensure that the quality of materials that will be procured from the source of origin through this rigorous method will also be good, the quality of product at the point of consumption is also maintained. This creates a positive impact upon organizational performance and increases its competitiveness.

Ishaq and Awan [29] made a study in 2010 with the intention of interpreting the impact of performance benchmarking in logistics. The research methodology that was chosen for the study was case study of a selected organization in chosen area. The research findings established positive relationship between various organizational operations and benchmarking practice. It was understood through the study that implementation of benchmarking practice throughout the supply chain focuses specifically upon each of the supply chain operations and improves it. Eventually, the total quality of supply chain performance enhances.

Carsten *et al.,* [20] conducted research in 2012 in order to find out how benchmarking in supply chain functions affect the organization. The study specifically emphasized upon internal performance benchmarking procedure and attempted at ascertaining its effect on the organization. As methodological framework of the research, systematic review of relevant empirical studies was considered. The research findings indicate that there is a strong connection between the impacts of benchmarking practice in supply chain logistics with organizational changes. More specifically, effective implementation of benchmarking practices in logistics of the supply chain affects two internal logistics variables, namely, pricing of finished products and material sourcing. Eventually, the organization experiences boosted organizational performance and greater financial success.

The relationship between performance benchmarking of supply chain processes and organizational performance was accessed in the study of [11]. Questionnaire based survey was conducted on 60 selected organizations as the fundamental research method. The research findings established positive link between performance benchmarking and organizational performance. The study clearly showed that the strategy of performance benchmarking serves as a vital logistics procedure which is capable of helping an organization reach its projected performance goals conveniently. This brings compete change in organizational culture by instilling confidence and inspiring it to achieve further goals in future.

In 2015, carried out a study with the purpose of understanding the link between supply chain benchmarking process and organizational competitiveness. Case study analysis was chosen as the fundamental research methodology for the study. The study findings indicated that supply chain benchmarking serves as a cardinal measure by means of which an organization can ascertain where it stands in a fiercely competitive business environment. This is possible because through performance benchmarking process an organization is able to make constant evaluation of all its logistics functions continuously. As a consequent, it is able to apprehend whether its supply chain processes have upgraded or degraded. Eventually, it can take appropriate steps to remove performance bottlenecks, enhance the quality of supply chain operations and gain competitive advantage. The following theories have been considered as most relevant to benchmarking in logistics. They have been presented below.

A. Fuzzy set theory

The Fuzzy control theory was proposed by Zadeh 1965. The purpose of this theory is to rule out chances of vagueness and ambiguity in decision making processes. The major significance of this theory is that it helped in understanding how complexities arising from uncertainties can prove effective in finding solutions to scientific problems. In logistics, fuzzy control is found to be most significant in enhancing the competitive value of the supply chain. Specifically, logistics is the process of management of the flow and storage of materials and information across the entire supply chain of an organization in order to provide best customer service within shortest available time period and in the lowest rate. The fuzzy control model is conserved as most befitting in such a circumstance in terms of reaping optimum potential benefits in logistics domain. The implementation of this fuzzy control model proves further effective for the logistics sector because it is able eliminates uncertainties and risks that characterize the turbulent business environment at present [1].

B. Balanced score card

The Balanced scorecard is a strategic management model which is used for tracking and estimating performances with an organization. This business model was introduced by Robert Kaplan and David Norton (KN) in 1992 and is considered as the most influential concept so far in the management circle. The balanced scorecard is a widely used.

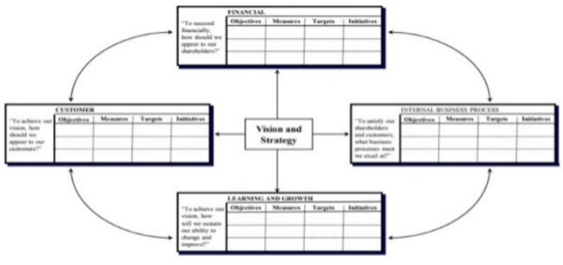

Fig. 1. Balanced Scorecard (Kaplan, 2010).

Management tool in modern organizations that are pressed with the need to control their current and short-term goals effectively. Further, this model also acts as a strategic success factor for modern organizations in their endeavor to make optimum use of their external resources and eliminate the challenges that impede their growth potentials. The balanced scorecard system proves especially significant for the logistics sector for measuring efficiency and effectiveness of organizational performances from various perspectives. This helps in translating the vision, mission and strategies of the organization into tangible goals.

C. Analytic hierarchy Process (AHP)

The Analytical Hierarchy Process or method is a strategic tool that was developed by Thomas L. Saaty in 1970. It is a structured technique that is used for the purpose of analyzing, consolidating and systematizing complex problems with the help of mathematics and psychology. The major significance of this strategic tool is that it breaks down a problem into small problems as per hierarchical level of importance, and then attempts to find precise solutions for each of the problems. This unique approach to broader problems has helped in making Analytical Hierarchy Process as one of the most effective multi-criteria decision making tools for different organizations. The Analytical Hierarchy Process is considered as most significant in the logistics sector especially when decision needs to be taken regarding the selection of suppliers and resource allocation in a supply chain. Through the process of application of this analytical model, the supply chain manager belonging to the logistics sector is able to combine various variables like transportation cost, manufacturing cost, customer satisfaction and delivery time and generate an enhanced and effective solution for the organization.

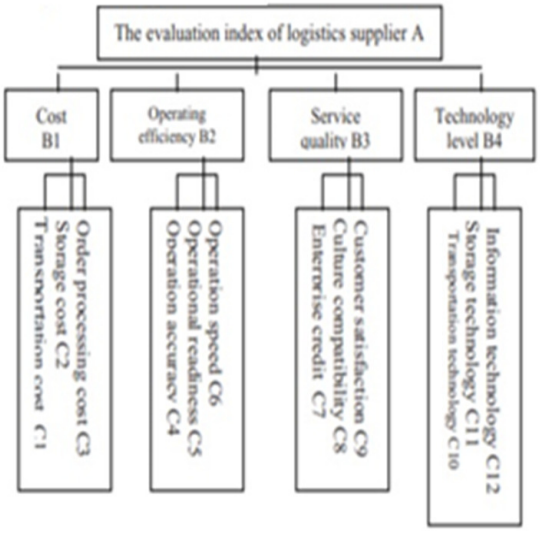

Fig. 2. Analytical hierarchy process (Peng, 2012).

D. Supply chain operations and reference model (SCOR)

The Supply chain operations and reference model of the SCOR model has acquired a prominent position in

contemporary logistics organizations due to its ability to help in supply chain strategic decision making processes. The core intention of this management model is to devise strategies by means of which the customers could be optimally satisfied. Accordingly, SCOR model helps in planning, sources products from the point of origin, develops, and delivers to the point of consumption.

The major feature of SCOR model is that besides helping logistics organization in carrying out precise and accurate supply chain strategic decisions, it also helps in identifying the shortcomings in the internal processes of the organization that might obstruct good performance. Thus, in order to analyze the supply chain processes precisely, SCOR model prescribes a six step logistics process that starts with planning, then sourcing, making, delivering, returning and enabling at the last stage.

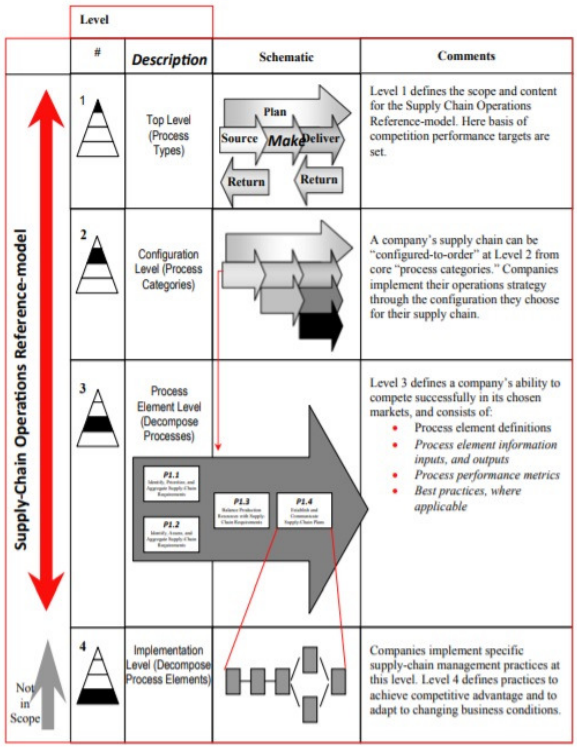

Fig. 3. SCOR model (Zhou *et al.*, 2011).

E. DEA model

The DEA model is a mathematical methodology which is primarily used for the purpose of benchmarking performances. Notably, the core feature of DEA model or Data Environment analysis model is that it analyses the efficiency of an organization by considering the same inputs and outputs. However, recently the DEA model also analyses eco-efficiency of a supply chain too by taking into account undesirable outputs. Thus, this upgraded model of DEA is known as eco-DEA or environmental DEA model.

The inputs in this DEA model are the resources that an organization consumes and the outputs are the by-products produced by the same organization using these resources. Through this DEA model, an organization is capable of identifying and setting a reference point for standard performance and making organizational projections that to be reached.

This model also helps in evaluating the current performance of the organization against the performance standard and assigning efficiency scores based on it.

While conducting this study, it has been seen that there are ample of empirical works that link performance benchmarking in logistics industry with competitiveness, performance improvement and enhanced satisfaction. However, a significant research gap that has been identified here is that there is noticeable paucity of research works that focus on the role of performance benchmarking in changing organizational structure or operations in an organization.

IV. CONCLUSION

In this article we have carried out an in-depth document analysis in order to understand the importance of benchmarking of performance in the logistics industry. In addition, the article also presented the impact of the implementation of the performance benchmarking practice, while examining the challenges that an organization may encounter when implementing this management practice. We were able during this research work to identify in a direct way the very great importance of the benchmarking approach which allows companies in the logistics sector in a strong way, to improve its performance. The article also presented a selection of scientific theories which are closely linked to the benchmarking process and deepens the current research topic.

Conflict of Interest. We declare that there is no conflict of interest.

REFERENCES

[1]. Bourekkadi, S. and E.L Imrani, O.. And Kandili, M.E.L. and Slimani, K. and Khoulji, S. and Babounia, A. Intelligent solution based on information technologies - The correct value of the business in economic organization isintangible asset. *Proceedings of the 33rd International Business Information*.

[2]. Layti, M. B. M., El Imrani, O., Medouri, A., & Rajaa, M. (2019). Logistics Information Systems and Traceability of Pharmaceutical Products in Public Hospitals in Morocco: What Solutions to Improve the Supply Chain? In *International Conference on Advanced Intelligent Systems for Sustainable Development* (pp. 429-438). Springer, Cham.

[3]. Choi, D. and Song, B. (2018). Exploring Technological Trends in Logistics: Topic Modeling-Based Patent Analysis', *Sustainability*.

[4]. Management Association Conference, IBIMA (2019) Education Excellence and Innovation Management through Vision 2020 2019, 6310-6317

[5]. Gohari, A., Matori, A. N., Yusof, K. W., Toloue, I., & Sholagberu, A. T. (2018). The effect of fuel price increase on transport cost of container transport vehicles. *International Journal of GEOMATE*, *15*(50), 174-181.

[6]. Garengo, P., Biazzo, S., Simonetti, A., & Bernardi, G. (2005) 'Benchmarking on managerial practices: A tool for SMEs', *TQM Magazine*. Emerald Group Publishing Limited, 17(5), pp. 440–455.

[7]. Meidutė-Kavaliauskienėa, I., Aranskisa, A. and Litvinenkoa, M. (2014) 'Consumer satisfaction with the quality of logistics services', *Procedia - Social and Behavioral Sciences*, 110.industry', Logistics Research. Springer Verlag, *7*(1), 1–16.

[8]. Mokaya, S., & Gitari, J. W. (2012). Effects of workplace recreation on employee performance: The case of Kenya Utalii College. *International Journal of Humanities and Social Science*, *2*(3), 176-183.

[9]. Sumathi, M. N. (2013). HR Challenges Faced by Road Transportation Service Providers In Tamilnadu. *Handbook Of Management, Technology And Social Sciences*.

[10]. Wang, R., Dan, L., Da, X., Huo, F., & Wang, F. (2019). Research on the Motivation and Path of New Logistics Development under the New Retail Era. In *IOP Conference Series: Earth and Environmental Science,* 1-6.

[11]. Vidová, H., Babčanová, D., Witkowski, K., & Saniuk, S. (2012) 'Logistics and Its Environmental Impacts', in 7th International Scientific Conference "Business and Management 2012". Vilnius Gediminas Technical University, pp. 1007–1014. doi: 10.3846/bm.2012.129.

[12]. Lewis, J. C., & Naim, M. M. (1995). Benchmarking of aftermarket supply chains. *Production planning & control*, *6*(3), 258-269.

[13]. Adebanjo, D., Abbas, A. and Mann, R. (2010). 'An investigation of the adoption and implementation of benchmarking', International Journal of Operations and Production Management. *Emerald Group Publishing Limited,* *30*(11), 1140–1169. doi: 10.1108/01443571011087369.

[14]. Daugherty, P. P., DrÖge, C. and Germain, R. R. (1994). 'Benchmarking Logistics in Manufacturing Firms', *The International Journal of Logistics Management*. MCB UP Ltd., *5*(1), 9–18.

[15]. Dalalah, D., AL-Oqla, F. and Hayajneh, M. (2010). Application of the Analytic Hierarchy Process (AHP) in MultiCriteria Analysis of the Selection of Cranes. *Jordan Journal of Mechanical and Industrial Engineering*.

[16]. Akoudad, K. and Jawab, F. (2018). Analysis of freight transport and logistic sector in Morocco. *International Journal of Scientific & Engineering Research*.

[17]. Boutros, P. C., Margolin, A. A., Stuart, J. M., Califano, A., & Stolovitzky, G. (2014). Toward better benchmarking: challenge-based methods assessment in cancer genomics. *Genome biology*, *15*(9), 1-10.

[18]. Dolan, E. D. and Moré, J. J. (2002). Benchmarking optimization software with performance profiles', *Mathematical Programming, Series B*. Springer, *91*(2), 201–213. doi: 10.1007/s101070100263.

[19]. Brandmeier, R. A. and Rupp, F. (2010). 'Benchmarking procurement functions: Causes for superior performance', *Benchmarking: An International Journal*. Emerald Group Publishing Limited, *17*(1), 5–26. doi: 10.1108/14635771011022299.

[20]. Carsten, U. B., & West, P. McGregor (2010). Carsten. *MK, Uhl-Bien, M., West, BJ, Patera, JL, & McGregor*, 543-562.

[21]. Christopher, M. and Peck, H. (2012). 'Marketing Logistics', in *Business & Economics*. Routedge.

[22]. Knipe, A. (2002). Benchmarking for Competitive Advantage-Striving for World Class Project Management Practices. In *Proceedings of the African Rhythm Project Management Conference* .

[23]. Curtis, D. (2002) 'Benchmarking: A tool for facilitating organizational learning?' *Public Administration and Development*, *22*(2), 109–122.

[24]. Georgiev, M. (2017). The Role of the Balanced Scorecard as a Tool of Strategic Management and Control. *Journal of Innovations and Sustainability*.

[25]. Ghimire, A. J. (2012). *Service Quality and Customer Satisfaction in the Restaurant Business : Case Study - Sagarmatha Nepalese Restaurant in Vantaa*, *Keski-Pohjanmaan ammattikorkeakoulu*. Keski-Pohjanmaan ammattikorkeakoulu.

[26]. Haralambides, H. and Gujar, G. (2012). On balancing supply chain efficiency and environmental impacts: An eco-DEA model applied to the dry port sector of India', *Maritime Economics and Logistics*. Palgrave, *14*(1), 122–137. doi: 10.1057/mel.2011.19.

[27]. Oleśków-szłapka, J. and lubiński, P. (2016) 'New Technology Trends and Solutions in Logistics and Their Impact on Processes. In *2016 3rd International Conference on Social Science* (ICSS 2016).

[28]. Hoon Hum, S. (2000). A Hayes-Wheelwright framework approach for strategic management of third party logistics services', *Integrated Manufacturing Systems*. MCB UP Ltd., *11*(2), 132–137.

[29]. Ishaq Bhatti, M. and Awan, H. M. (2014). The key performance indicators (KPIs) and their impact on overall organizational performance', *Quality and Quantity*. Kluwer Academic Publishers, *48*(6), 3127–3143.

[30]. Rensma, M. and Hamoumi, S. (2018). Transport and Logistics sector Morocco.

[31]. Johnston, R. (2013). Towards a better understanding of service excellence', *An International Journal*. Emerald Group Publishing Limited, *14*(2/3), 129–133.

[32]. Krishnamoorthy, B. and D'Lima, C. (2014). 'Benchmarking as a measure of competitiveness', *International Journal of Process Management and Benchmarking*. Inderscience Enterprises Ltd., *4*(3), 342–359.

[33]. Kumar, S., Luthra, S. and Haleem, A. (2015). 'Supply chain performance benchmarking using grey-MOORA approach: An empirical research. *Benchmarking: An International Journal*.

[34]. Rotaru, K., Wilkin, C. and Ceglowski, A. (2014). 'Analysis of SCOR's approach to supply chain risk

management. *International Journal of Operations and Production Management.* Emerald Group Publishing Ltd., *34*(10), 1246–1268.

[35]. Lema, N. M. and Price, A. D. (1995) Benchmarking: Performance improvement toward competitive advantage. *Journal of Management in Engineering*, *11*(1), 28–37.

[36]. Zhou, H., Benton Jr, W. C., Schilling, D. A., & Milligan, G. W. (2011). Supply chain integration and the SCOR model. *Journal of Business Logistics*, *32*(4), 332-344.

[37]. Murphy, P. and Knemeyer, A. (2018). Contemporary Logistics, 2018 Faculty Bibliography.

[38]. Qureshi, M. N., Kumar, P. and Kumar, D. (2009) 'Framework for benchmarking logistics performance using fuzzy AHP. *International Journal of Business Performance and Supply Chain Modelling*. Inderscience Enterprises Ltd., *1*(1), 82–98.

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