International Journal of Academic Research in Accounting, Finance and Management Sciences
Vol. 9, No.1, January 2019, pp. 71–79
E-ISSN: 2225-8329, P-ISSN: 2308-0337
© 2018 HRMARS
www.hrmars.com

To cite this article: Alnoor, A., Eneizan, B., Makhamreh, H. Z., Rahoma, I. A. (2019). *The Effect of Reverse Logistics on Sustainable Manufacturing,* International Journal of Academic Research in Accounting, Finance and Management Sciences 9 (1): 71-79

www.hrmars.com
ISSN: 2225-8329

http://dx.doi.org/10.6007/IJARAFMS/v9-i1/5768 (DOI: 10.6007/IJARAFMS/v9-i1/5768)

The Effect of Reverse Logistics on Sustainable Manufacturing

Alhamzah Alnoor[1], Bilal Eneizan[2], Hebah Zaki Makhamreh[3], Ibrahim Ali Rahoma[4]

[1]Management Technical College, Southern Technical University, IRAQ,
[1]E-mail: Alhamzah.malik@stu.edu.iq (Corresponding author)
[2,3]Faculty of Economics and Business, Jadara University, Jordan
[4]Tripoli College of Science and Technology, Libya

Abstract

This paper aims to study the effect of reverse logistics on sustainable manufacturing (Environmental Performance, Environmental Performance, Social Performance). The questionnaire was designed and distributed among employees in SEM. The sample of the study consists of 217 employees and they were selected randomly. Smart pls was used to analyze the data. The findings indicated that there is a direct positive effect of reverse logistics on sustainable manufacturing. Several conclusions have been reached, along with implications and suggested future directions for research. Having a sustainable strategy gives the company flexibility in meeting the needs of future generations through innovation and relocation. Cooperation in the implementation of reverse logistics to maintain a good image and reputation in the minds of customers about the company and is a key part of the corporate social responsibility.

Keywords

Reverse Logistics, Sustainable, Environmental, Environmental, Social

Received: 04 Apr 2019
Revised: 28 Apr 2019
Accepted: 10 May 2019
Published Online: 19 May 2019

1. Introduction

Sustainability received much more attention throughout the past two decades since it has a big role in the elimination of pollution and tackling the lack of resources. It contributed to the environmental, social and economic amendment, (Turrisi et al. 2013; Eneizan et al, 2018; Eneizan et al, 2016ab). This study contributes to the literature on sustainability that improves Jordan small and medium enterprises (Alnoor, 2020). Where Jordan small and medium enterprises (SMEs) face weakness in sustainable economic development significantly, this is what Alnoor et al. (2020) depending on the Jordan Central Organization for Statistics (COS) on its website, which indicated that these institutions could not continue for the long term because they cannot cope with the continually changing environment disturbances due to the conditions of the country. Abbas et al., (2021) added that the economic factors in Jordan are unstable and suffer from constant fluctuations, leading to weakness in sustainable economic development (Abdullah et al., 2021; Jabbar et al., 2020; Al-Abrrow et al., 2019).

This issue was also emphasized by many researchers because sustainability is considered one of the growing significant issues that tackle the environment (Eneizan & Obaid, 2016). Companies are struggling to own sustainable- products and service, which means they meet human demands without harm to future generations (Krajewski et al. 2013; Alhamdi et al., 2019). Waste processing management caused some companies to raise interest in reverse logistics by recalling materials or products from the end-user to

retrieve a value or get rid of some materials. They do so to preserve the environment through collecting testing, sorting, redistributing and recycling of lasted then disposing of it. By taking such measures, a company may become more reputable and thus more jobs can be created, reveres, logistics activities can also be experienced, which aims to eliminate waste and retrieve product value or get rid it of. On the other hand, the change in customer awareness, emphasizing product technology development could create a need for the supply chain of reverse logistics services. These can be done by facilitating customers, and clients, requirements through constraining defects and the establishment of a sustainable friendly organization (Hadi et al., 2018). According to Al-Abrrow et al (2020) for a company to achieve long-term success, its business must be integrated into sustainable economic development in operational excellence, risk management, future and governmental growth. Depending on Alnoor et al (2021), sustainable economic development can be defined as the harmonisation of financial, environmental and social objectives in the delivery of organization business activities to maximise value. Added the sustainable economic development provide organisations with real business solutions in terms of operational excellence, risk management, product innovation, growth and governance to transform and radically improve business performance and create value for all stakeholders.

2. Theory and Hypotheses

2.1. Reverse Logistics

Since the 1960s, interest in reverse logistics services has increased due to the value it provides for recovered materials as a tool focused on recycling waste and recovering value from used materials. Through recycling, parts of the product are recovered. Besides, it helps to educate consumers through legislation and directives about social responsibilities related to the environment, which are factors that increase the importance of RL. Wherefore, every company that seeks to improve financial and environmental performance must pay attention to reverse logistics. For a more comprehensive performance, these models have become more comprehensive due to their interest in social, economic and environmental aspects to reach a more complete picture of performance (Nikolaou et al., 2013). Given the above, we find that adopting a reverse logistics system in the supply chain is very important as it can provide the following advantage

1-Reuse and recycling removed the growing concern about the environment.

2-Return processing is often necessary to maintain a certain level of customer satisfaction. 3-Market growth by improving services, increasing customers and thus increasing revenues.

4-The increase in the demand for the services of the parties specialized in return operations. So it is possible to achieve a competitive advantage to maintain the organization and satisfy the largest number of customers (Elmas and Erdoğmuş, 2011).

Manufacturer networks recover the value of the materials used. For the success of recycling networks, many factors such as quality, timing of returns and quantity must be available, so this is done by manufacturing companies to know what the production process needs (Agrawal et al., 2015; Hadi et al., 2019). To follow the reverse logistics system as a strategy for the organization, the following steps must be followed (Lambert et al., 2011).

Entry: is to enter the reverse logistics system and recognize the value of the used materials collection: It is the step in which the candidate products for the recycling process are collected Sorting: It is a detailed process to find out the valid and invalid elements. The concept of reverse logistics has developed recently, as previously such systems were considered an activity within the organization to deal with customers, whether they had damaged or guaranteed products. Now, however, reverse logistics has become popular as a competitive area, which includes social, environmental, economic and commercial issues. Looking at the definition more broadly, including recycling as well as reverse distribution, and looking at the effect of RL on the supply chain (Meade et al., 2007; Al-Abrrow & Alnoor, 2017).

2.2. Sustainable Development

Although the concept of sustainability ACE in the modern sense extends back more than two decades, it is still complex and not agreed upon. The first and most common definition is by the Brundtland Committee in 1987: as "a development that meets the needs of the present without compromising the ability of future generations to meet their needs." (Pope et al., 2004). The sustainable development goals are to achieve the following.

Economic can refer either to the continued success of an economy over time or more recently to how an economy operates sustainably, protecting social and environmental elements. Moreover, economic activity is closely connected with the two remaining dimensions. Depending on Gatto (2020), the economic extent is linked to the ecological importance of the economic use of resources and energy. Mensah & Casadevall (2019) economic dimension relates to social size, for instance, by creating and safeguarding workplaces. Two central concepts, which describe the nature of sustainable economic activity, are therefore efficiency and stability (Ali et al., 2020).

Social the social dimension might be defined as all obstacles to access, progress, and completion to the sustainable economic development – with the most robust emphasis on barriers to access to the sustainable account. Based on Kurowska-Susdorf et al (2019), the social dimension of sustainable is most challenging to grasp. Thus, only a little light is thrown thereupon in the discussion about a sustainable economic development future. Therefore, the social extent recently attained acceptance as an essential component of sustainable economic development.

The environment directly impacts the economic and social dimensions of development and vice versa. Furthermore, the environmental dimension deals with the fragility of ecological and biophysical systems, and their different functions, under hazardous condition, suffer damage and deterioration. Besides, most environmental assessments do not consider the variety of ecological impacts properly or are using tools that do not represent the impacts. However, the ecological dimension needs to receive further attention, as it may provide specific insights for mid-to-long-term effects, especially in climate change. To achieve the sustainable economic development of institutions, this performance must be linked to one of the strategic tools that activate this performance and achieve its goal in organizations. One of these tools is the Balanced Scorecard (Al-Abrrow et al., 2019). The next step will explain the impact of this tool on the sustainable economic development of business organizations.

Where business sustainability is achieved by integrating these goals with the operating practices of the organization. Competitors should monitor sustainability performance and submit reports of operational initiatives for inclusive sustainability performance (Labuschagne et al., 2005; Eneizan et al., 2019). The environment is the main factor in the sustainability performance of companies, represented by external factors such as economic, demographic, and climatic factors, and internal factors that have a proactive effect, represented by the materials used for the product or service, emissions, waste, and others. These factors have an impact on the sustainability performance of companies, and accepting such social and environmental influences, for example in crises, increases the level of the organization's well-being (Baumgartner & Rauter, 2017; Abdulaali, 2018).

2.3. Reverse Logistics and Sustainable Development

Companies focused a lot on achieving sustainability as they found that adopting such strategies is extremely important to achieve more advanced economic performance and found that using reverse logistics to achieve sustainability in supply chains as a strategic decision will save organizations from the many consequences related to increasing social and economic responsibility (Presley et al., 2007). In general, Remanufacturing is an important tool for sustainable development that requires planning and process efficiency. Looking at the main theme of recovering the product from the final consumer will create a closed-loop end of the supply chain. When retrieving products, recycling them, replacing damaged ones, and recovering parts, an investment return is achieved in reverse logistics services, as well as taking into consideration the participation of labour in this process (Lee et al., 2012). Therefore, the organization needs to consider returning the product within its supply chain to achieve a closed network design, to reach a sustainable strategy. It is necessary to consider the three issues of sustainability (environmental, economic

and social) in the decision-making process and the reverse logistics strategy (Bernon & Cullen, 2007) When looking at the environmental performance of the organization and its ability to reduce the use of harmful substances and reduce water and air pollution and compare it to the nature of the work of logistics services, we find that it works to reduce energy consumption and reduce waste through recycling, which leads to reaching environmental distinction and moving away from the environmental concerns of the community (Narayana et al., 2018). As for economic issues, it is considered an indicator for evaluating the performance of RL, through the value of recovered products, cost containment, reduced investment in inventory and finally, productivity and profitability improvement. Reverse logistics can be used as a regulatory strategy through which we prevent environmental degradation, which is one of the issues associated with moral responsibility and social sustainability and thus is considered one of the social concerns associated with considering such issues as A social issue and thus increasing the environmental awareness of society, and we must refer to the role of reverse logistics by providing job opportunities through the contribution of human resources in the collection, dismantling, replacement and other aspects of the recycling process (Sarkis et al., 2010; Al-Abrrow et al., 2020).

The result can be said that reverse logistics has a great role and an effective contribution to improving sustainable performance by increasing revenues, providing new recoverable and recycled products, saving costs, considering social and environmental aspects, and thus reaching customer satisfaction and loyalty. It can also create a competitive advantage using reverse and sustainable logistics by improving the company's image through positive handling of costs, distribution, inventory, and the environmental performance of the organization (Presley et al., 2007).

The barriers hindering the reverse logistics programs pose considerable challenges both for managers and policymakers in industries Because of their impact on sustainable manufacturing (Ravi and Shankar 2005). Thus, attention to reverse logistics contributes to the welfare of society through the role played by reverse logistics in the reuse of resources, which reflects positively on the sustainability of the environment (Bing et al., 2014). Therefore, reverse logistics helps create value through its large role in the dynamic recovery of value from different types and volumes of returns over time (Govindan et al., 2015). Because environment issues have become important in the import supply chain, managers prioritize improvements in green environment performance. Minimizing costs fast delivery and high quality is also considered significant and caused by reverse logistics. Reverse logistics play a big part in minimizing waste, which achieves environmental, social, and economic sustainability. It is thus a sign of sustainable manufacturing which affects the company's sustainable manufacturing (Wondimu, 2016). Pressure has been placed on manufacturers to adopt sustainability (Corrêa and Xavier, 2013) through the market and regulatory demands that are consistent with environmental regulations and standards, Sustainable industrialization and the conservation and responsible use of natural resources. This is required for the introduction of reverse logistics services (Presley et al., 2007)**.** Therefore, this study hypothesizes that:

*H1: there is a positive effect relationship between statistical and meaning significance between reverse logistics of sustainable development**.***

*H2: there is a positive effect relationship with statistical and meaning significance between reverse logistics of environmental**.***

*H3: there is a positive effect relationship with statistical and meaning significance between reverse logistics of economic**.***

H4: there is a positive effect relationship with statistical and meaning significance between reverse logistics of social.

3. Methodology of research

3.1. The Sample and Data Collection

The study was applied to SEM companies works in Jordan are SEM. The sample of the study was randomly chosen from Sample employees. The sample included 217 people out of a total number of 1200. The study used a questionnaire to collect the data. Multi-Option questions were used to get answers final questionnaire included (35) items, based on two basic variables. All components were measured according to (five) levels ranging from "1- I disagree" to “5- I strongly agree"

3.2. Measures

Reverse Logistics: Reverse logistics measurement, which is used by (Wondimu 2016) was used. It is composed of (20) items (e.g., "lack of needed equipment/machines for reverse logistics operations.").

Sustainable development: We used scale which was developed by (Akotia 2014) which consists of three dimensions and 15 items, divided into Environmental performance: 5 items (e.g., "The company has contributions to environmental sustainability and the preservation of non-pollution"), economic performance: 5 items (e.g., "Encouraging business investment"). and social performance: 5 items (e.g., "The company enhances the health and safety of employees and the community residents in governorate").

3.3. Data Analysis

Statistical techniques were used for the description and analysis of the study variables and to test the hypotheses, relying on Smartpls software has been used in management (Al-Abrrow et al, 2018a; Al-Abrrow & Alnoor, 2017). Cronbach's Alpha was also used to ensure measures' reliability, model fit to ensure the validity of the model, Pearson's correlation to establish the correlation coefficient among variables, and Path Analysis to test the one hypothesis of the model. As well the current study's design will be based on quantitative design, which concentrates on the deriving method., that is the deductive approach. The explanatory method will be adopted here. It will explain the causative relationship between variables, and it builds a pattern explaining the causative relationship between variables than testing hypotheses (Al-Abrrow & Alnoor,2017; Saunders et al. 2016; Abdulaali et al., 2019).

4. Results

4.1. Confirmatory factor analysis

The Amos program was used to test model compatibility, validate research into variables, and assess the ability of the factor model to express the actual data set, compare several models of factors, and test the validity of a composition based on previous theoretical or research knowledge. It was found that the factors were saturated with specific paragraphs according to the indicators of conformity shown.

Acceptable Matching Index

- The ratio between X2 (Chi-square) and df (degree of freedom) = X2/df (1 to 3).
- Root mean square error of approximation = (RMSEA) 0.05 to 0.08.
- Square residual (SRMR), both must be less than 0.08.
- Normed Fit Index (NFI) = Greater than 0.90.
- Comparative Fit Index (CFI) = Greater than 0.95.
- Incremental fit indices (IFI) = Greater than 0.90.

Based on the results above, (M3) is characterized by structures and discriminatory validity. Besides, it turns out that the indicators of this model (three factors) are the best. Also, the results showed that most of the relationships between the indicator and underlying variables were statistically significant variables.

Table 1. Confirmatory factor analysis

Models	X^2/df	NFI	IFI	CFI	SRMR	RMSEA
M1	4.86	.30	.47	.63	.64	.23
M3	1.36	.95	.93	.92	.07	.04

4.2. Descriptive Statistics and Correlation

Descriptive statistics are concerned with describing the response of the sample to the variables of the study according to the indicators of the arithmetic mean (mean), which shows the level of response of the sample opinions towards the variable, and the standard deviation, which indicates the extent of dispersion or deviation of responses for each variable from its arithmetic mean. The Pearson correlation coefficient was relied upon to test the correlation between the variables, the results of which are preliminary indications about the nature and strength of the relationships between the variables. The correlation coefficient value must be between (+1) and (-1). Another analysis was used to confirm the reliability of the measurement tool (Cronbach's Alpha) because test results were higher than (0.70) for the search variables, indicating the internal stability and consistency of this well-used measurement. Table 2 shows the results:

Table 2. Descriptive Statistics and correlation

	Mean	Std. Deviation	RL	EN	Ec	So	SD
RL	3.78	.864	**1**				
ENP	3.26	.903	.485**	**1**			
EP	3.90	.932	.596**	.230**	**1**		
SP	3.17	.803	.608**	.120**	.835**	**1**	
SM	3.98	.900	.735**	.936**	.602**	.624**	**1**

Note: N = 208.
RL= Revers Logistic, EN= Environment, Ec= Economic, So=Social, SD= Sustainable Development.
****. Correlation is significant at the 0.05 level (2-tailed).**

4.3. Structural model assessment and Hypothesis test

We will evaluate the structural model to test the hypotheses of the study. In addition to testing the value of R2, which refers to the study model's explanation of the relationship between the variables, or the extent of the influence of the external variable on the internal variable. The table shows the results of the hypothesis test.

Table 3. Test hypotheses

Paths	**β value**	**Standard Deviation**	**t value**	**P Values**	**R^2**	**Result**
Reverse Logistics -> Sustainable Development	0.521	0.055	9.473	0.000	0.207	supported
Reverse Logistics -> Environment	0.284	0.035	8.114	0.000	0.252	supported
Reverse Logistics -> Economic	0.315	0.034	9.265	0.000	0.305	supported
Reverse Logistics -> Social	0.199	0.038	5.237	0.000	0.161	supported

The results show us acceptance of the main hypothesis and all its sub-hypotheses as well. If there was an important positive effect of reverse logistics on sustainable manufacturing, as the effect was on the most important economic dimension of performance, followed by the environmental dimension and then the social dimension. All hypotheses were accepted at a significant level of significance $p < 0.01$. The results show that the R2 value of the sub-hypotheses (for economic in particular) was greater than the other sub-hypotheses (environmental and social) as well as the main hypothesis. This indicates the interpretation of the reverse logistics significantly for the dimensions of sustainable industrialization, especially the economic dimension in it.

4.4. Discussions

Reverse logistics and their role in sustainable manufacturing have been discussed regarding the effect on the environmental, economic, and social of the organization. Thus, the correlation has in turreted the total import series which aims at integrating the main logistics with the reverse logistics to reduce environment deterioration. Thus, hypotheses have been tested to ensure an effective relationship between

reverse logistics and sustainable manufacturing some (Wondimu 2016; Turrisi et al. 2013) of the resulting research are: First: There is a direct effect of reverse logistics on sustainable manufacturing; consequently, receding and reuse help environment sustainability through waste reduction; Second: There is the direct positive effect between reverse logistics and environmental performance. As a result, this effect reflects can pan role in the encouragement of voluntary works through which environment may be conserved when waste is recycled, and eco-friendly products are used; Finally: There is a direct positive mutual effect between reverse logistics and economic and social performance. This result emphasizes the big role played by reverse logistics of a company in terms of recycling, maintenance of products parts for developers and sponsors and people in change. This is done by creating jobs which lead to increase incomes and improve staff and society's health and safety.

Through the above, the current study has several practical implications and managerial implications are the promotion of awareness, the culture of reverse logistics among customers and staff which can be followed as a work style to achieve sustainable manufacturing and conserve the environment. It can lead to waste reduction and pollution. Thus, SEM will have to establish a department for retrieving products waste in cooperation with retailers' wholesalers' customers. Finally, the Adoption of a sustainable strategy makes it flexible for the companies to meet future generations, demands through innovation, strategic planning and making mutual effect to achieve reveres logistics. Thus, SEM may receive a good reputation from customers since it is a basic component of social responsibility.

5. Conclusions

Results have indicated that the company management views reverse logistics, which are represented by concepts such as integrate import series and closed import series, as an influential part of the manufacturing process, including sustainable manufacturing. As a result, this can affect the dynamic operations of environmental sustainability which in return affect the environment, social of economic performance. The findings indicated that there is a direct positive effect of reverse logistics on sustainable manufacturing. Several conclusions have been reached, along with implications and suggested future directions for research. Having a sustainable strategy gives the company flexibility in meeting the needs of future generations through innovation and relocation. Cooperation in the implementation of reverse logistics to maintain a good image and reputation in the minds of customers about the company and is a key part of the corporate social responsibility.

6. Limitations

It faced the current study a few limitations, and thus its findings should be interpreted carefully.

First, this study is cross-sectional, the study variables were measured at one time, so there may be a need for attention for other reasons. However, we tried to ask the sample of the study on the evaluation of variables in general and comprehensive of their experiences over a long period. Therefore, previous studies should focus on this aspect by designing longitudinal studies to achieve more accurate and qualitative results. Second, regarding the society and sample of the study, it was limited to the SEM sector (SEM) and therefore the inclusion of other sectors may contribute to reach more clear results. Finally, Because of the R-Square values of the direct impact of reverse logistics in sustainable industrialization, other factors may influence sustainable industrialization, which is one of the determinants of this study. For example, previous studies could address the closed-loop supply chain of Sustainable design near the current study model.

References

1. Abbas, S., Hadi, A. A., Abdullah, H. O., Alnoor, A., Khattak, Z. Z., & Khaw, K. W. (2021). Encountering Covid-19 and perceived stress and the role of a health climate among medical workers. Current Psychology, 1-14.

2. Abdulaali, A. R. (2018). The impact of intellectual capital on business organization. Academy of Accounting and Financial Studies Journal, 22(6), 1-16.

3. Abdulaali, A. R., Alnoor, A., & Eneizan, B. (2019). A multi-level study of influence financial knowledge management small and medium enterprises. Polish Journal of Management Studies, 19(1):21-31

4. Abdullah, H., Ismail, I., Alnoor, A., & Yaqoub, E. (2021). Effect of perceived support on employee's voice behaviour through the work engagement: a moderator role of locus of control. International Journal of Process Management and Benchmarking, 11(1), 60-79.

5. Akotia, J. K. (2014). A framework for social and economic sustainability benefits evaluation of sustainable regeneration projects in the UK. dissertation Submitted to the University of Salford In Partial Fulfillment of the Requirements for the Degree of Doctoral of Philosophy.

6. Al-Abrrow, H., and Alnoor, A. (2017). The Impact of Locus of Control and Relationship Quality in Counterproductive Work Behavior Through Trust in the Leader and Psychological Empowerment: An Empirical Study on Workers in Public Hospitals in Basra. Jordan Journal of Business Administration, 13 (2) .201-231.

7. Al-Abrrow, H., Ali, J., & Alnoor, A. (2019). Multilevel Influence of Routine Redesigning, Legitimacy and Functional Affordance on Sustainability Accounting: Mediating Role of Organizational Sense-making. Global Business Review, 0972150919869726.

8. AL-Abrrow, H., Al-Maatoq, M., Alharbi, R. K., Alnoor, A., Abdullah, H. O., Abbas, S., & Khattak, Z. Z. (2020). Understanding employees' responses to the COVID-19 pandemic: The attractiveness of healthcare jobs. Global Business and Organizational Excellence.40(2):19-33

9. Al-Abrrow, H., Alnoor, A., & Abbas, S. (2018a). The Effect of Organizational Resilience and CEO's Narcissism on Project Success: Organizational Risk as Mediating Variable. Organization Management Journal,16(1) 1-13.

10.Al-Abrrow, H., Alnoor, A., & Abbas, S. (2019). The effect of organizational resilience and CEO's narcissism on project success: Organizational risk as mediating variable. Organization Management Journal, 16(1), 1-13.

11.Al-Abrrow, H., Alnoor, A., & Abdullah, H. (2018b). Socio-Technical Approach, Decision-Making Environment, and Sustainable Performance: Role of ERP Systems.Interdisciplinary Journal of Information, Knowledge, and Management. (13). 397-415 .

12.Alhamdi, M., Alnoor, A., Eneizan, B., Abdulla, M., & Abdulaali, A. R. (2019). Determinants of the production system time (jit) on reduce waste: Case study in a salsal water company. International Journal of Academic Research in Business and Social Sciences, 9(7), 17-32.

13.Alhamdi, M., Noor, R. M. A. S., Abdulla, M., Alnoor, A., & Eneizan, B. (2019). How does financial analysis influence the firm's failure of Iraqi private sector?. The Journal of Social Sciences Research, 5(9), 1321-1328.

14.Alnoor, A. (2020). Human capital dimensions and firm performance, mediating role of knowledge management. International Journal of Business Excellence, 20(2), 149-168.

15.Alnoor, A. M., Al-Abrrow, H., Abdullah, H., & Abbas, S. (2020). The impact of self-efficacy on employees' ability to accept new technology in an Iraqi university. Global Business and Organizational Excellence, 39(2), 41-50.

16.Baumgartner, R. J., Rauter, R. (2017) Strategic perspectives of corporate sustainability management to develop a sustainable organization, Journal of Cleaner Production 140(1) 81-92.

17.Bing, X., Bloemhof-Ruwaard, J. M., & van der Vorst, J. G. (2014). Sustainable reverse logistics network design for household plastic waste. Flexible Services and Manufacturing Journal, 26(1-2), 119-142.

18.Eneizan, B. M., & Obaid, T. F. (2016). Prior research on green marketing and green marketing strategy: critical analysis. Singaporean Journal of Business, Economics and Management Studies, 51(5), 1-19.

19.Eneizan, B. M., & Wahab, K. A. (2016). Determining the Factors Influencing Use of Mobile Marketing by Industrial Firms: An Empirical Investigation of Jordanian Industrial Firms. Indian Journal of Computer Science, 1(1), 25-36.

20.Eneizan, B. M., Abd Wahab, K., & Obaid, T. F. (2016b). Effects of green marketing strategies on sales volume of green cars. Singaporean Journal of Business, Economics and Management Studies, 5(3):41-54

21.Eneizan, B. M., abdelqader Alsakarneh, A. A., AL-kharabsheh, K. A., Hadi, A. A., & Alnoor, A. (2019). An Investigation into the Relationship between Emotional Labor and Customer Satisfaction. Journal of Management and Business Administration. Central Europe, 27(4), 23-47.

22.Eneizan, B. M., Abd-Wahab, K., & Obaid, T. F. (2016a). Effects of green marketing strategy on the financial and non-financial performance of firms: A conceptual paper. Oman Chapter of Arabian Journal of Business and Management Review, 5(12):14-27

23.Eneizan, B., Abd. Wahab, K., Bustaman, U. S. (2015), Sustainability, green marketing and green economy: Literature review. International Journal of Applied Research, 1(12), 954-958.

24.Eneizan, B., Abdulrahman, S. A., & Alabboodi, A. S. (2018). The influence of environmental marketing mix on the non-financial performance of solar energy firms: The mediating role of corporate image. IJAR, 4(7), 190-196**.**

25.Eneizan, B., Mohammed, A. G., Alnoor, A., Alabboodi, A. S., & Enaizan, O. (2019). Customer acceptance of mobile marketing in Jordan: An extended UTAUT2 model with trust and risk factors. International Journal of Engineering Business Management, 11(11):1-10.

26.Govindan, K., Soleimani, H., & Kannan, D. (2015). Reverse logistics and closed-loop supply chain: A comprehensive review to explore the future. European Journal of Operational Research, 240(3), 603-626.

27.Elmas, G., and Erdoğmuş, F. (2011) the importance of reverse logistics . International journal of business and management studies .3(1), 1309-8047

28.Hadi, A. A., Alnoor, A., & Abdullah, H. O. (2018). Socio-technical approach, decision-making environment, and sustainable performance: Role of ERP systems. Interdisciplinary Journal of Information, Knowledge, and Management, 13, 397-415.

29.Hadi, A. A., Alnoor, A., Ismail, E., Eneizan, B., & Makhamreh, H. Z. (2019). Psychological contract and organizational misbehavior: Exploring the moderating and mediating effects of organizational health and psychological contract breach in Iraqi oil tanks company. Cogent Business & Management, 6(1), 1683123.

30.Jabbar, A. K., Almayyahi, A. R. A., ali, I. M., & Alnoor, A. (2020). Mitigating Uncertainty in the Boardroom: Analysis to Financial Reporting for Financial Risk COVID-19. The Journal of Asian Finance, Economics, and Business, 7(12), 233-243.

31.Krajewski, L. J., Ritzman, L. P., & Malhotra, M. K. (2013). Operations management: processes and supply chains (Vol. 1). New York, NY: Pearson.

32.Ravi, V., & Shankar, R. (2005). Analysis of interactions among the barriers of reverse logistics. Technological Forecasting and Social Change, 72(8), 1011-1029.

33.Saunders, M. N., Lewis, P., & Thornhill, A. (2016). Research methods for business students. 7th ed., Pearson Education Limited.

34.Turrisi, M., Bruccoleri, M., & Cannella, S. (2013). Impact of reverse logistics on supply chain performance. International Journal of Physical Distribution & Logistics Management, 43(7), 564-585.

35.Wondimu, S. (2016). Measuring Performance of Reverse Logistics System In Pet Bottles Recovery In Eabsco (Doctoral dissertation, Addis Ababa University).