

TOWARDS MAQASID SHARIAH IN SUSTAINING THE ENVIRONMENT THROUGH IMPACTFUL STRATEGIES

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Abstract

Maqasid Shariah requires the preservation of life on earth and with the relevance of environmental sustainability in protecting the earth and all life within it, the objectives of this paper is to investigate the strategies taken by a port in order to be environmentally sustainable and discuss it according to the principles of Maqasid Shariah. Qualitative research design was employed where data was collected through semi-structured interview with the officers in charge of environment at the company. Findings indicate that strategies implemented by the port have been successful in reducing emission and improve air quality which is an important step both to being environmentally sustainable and adhering to the Maqasid Shariah principles.

Keywords: Maqasid Syariah, Environmental Sustainability; Air pollution; Port; Sustainable Supply Chain Management

1. Introduction

For a predominantly Muslim country like Malaysia, the responsibility of preserving the earth and all life within it prevails, and environmental sustainability has great value where Islam emphasizes on environment as it is under the Maqasid Shariah's preservation and protection (Muhammad, Syihab and Ibrahim, 2020). Sadly, the world has seen a decline in overall global environmental quality and there is an important need to find strategies that could halt this decline and safeguard the environment for future generation (Whitehead, 2000).

Port, acting as the interface to manufacturing firms and consumers, has a wide range operations and activities such as loading and unloading onto ships and trucks, and these activities has considerable impact on the natural habitats and its surrounding environment (Whitehead, 2000). Hunt and Auster (1990) iterates that environmental problems costs can be devastating as it can ruin a firm's public image and costs millions of dollars. Various authors argue on the need to determine pollution sources and its levels, waste disposal and control, regular monitoring and assessment during the entire construction and operation phase of a major port (Gupta, Gupta and Patil, 2005; Whitehead, 2000; Hunt and Auster, 1990). The present study is based on one of the port in Malaysia where its operations use heavy duty equipment that are associated with high smoke emissions that contributes to air pollution. Past investigations found that it was emitting huge amount of carbon emissions to a staggering total of over 40 million kg CO₂ per year (Port's annual report, 2013). This environmental

assessment triggers a need for the port to start developing environmental sustainability strategies to reduce carbon emissions.

However, little research has been done specifically to identify the strategies by port even though they are a very important player in any supply chain. Even more scarce is the discussion of these strategies with relations to the principles of Maqasid Shariah. Literature search by the author through the Emerald database with the keyword “Maqasid Shariah” and “environmental sustainability” yielded very few article that discusses environmental sustainability and Maqasid Shariah. Majority of extant literature on Maqasid Shariah are concentrated on Islamic economy, banking and finance (Azid and Asutay, 2007; Shinkafi and Ali, 2017).

Therefore, we would like to investigate first the strategies taken by the port in its environmental sustainability efforts and how these strategies relate to Maqasid Shariah. The paper is organised as follows. An overview of environmental sustainability and Maqasid Shariah is provided. Next, the qualitative method used to gather the data for this research is discussed. Third, key findings and its related discussion are presented. Finally, research conclusions are summarised.

2. Literature review

Environmental Sustainability and Sustainable Supply Chain Management

In 1987, the Brundtland Commission defined sustainability as meeting the needs of the present while not compromising future generation's ability to meet their needs and this definition has been widely adopted across literature (Carter and Rogers, 2008). Sustainability includes a wide ranging issues of environmental impact (Erlich and Erlich, 1991), food security (Lal et al, 2002), meeting basic human needs (Savitz and Weber, 2006) and conservation of non-renewable resources (Whiteman and Cooper, 2000).

Across the field of supply chain management, although there exists many interpretations on sustainability definition, most scholars agreed that it should consider environmental and economic concerns (Carter and Rogers, 2008). Perhaps one of the most popular theory on sustainability, Elkington (1998, 2004) introduced the concept of the triple bottom line (TBL) that considers the interaction of social, environmental and economic performance in order to achieve comprehensive sustainability. TBL suggests that that there are activities that companies can participate in that would result in a positive effect to the society, the natural environment, economic benefits and competitive advantage for companies.

When sustainability was introduced in supply chain management, it brought about the theory of sustainable supply chain management (SSCM). Seuring and Miller (2008) attempted to define SSCM as the management of flows (material, information and capital) with the cooperation of firms in the supply chain integrating all the three dimensions of TBL: environment, society and economic performance. Literature has seen an exponential increase in the interest of SSCM as evidenced by the spike in related publications in the past 20 years (Brandenburg, Govindan, Sarkis and Seuring, 2014; Min and Kim, 2012; Seuring and Muller, 2008).

In a systematic literature review in the area of SSCM, Brandenburg et al., (2014) found out that literature reviews prior to 2008 incorporated green product and process development, green operations management, remanufacturing and close loop supply chain management (Gungor and Gupta, 1999; Kleindorfer et al., 2005), environmental management (Daniel, Diakoulaki and Pappis, 1997) on water resources, solid waste and air quality (RaVelle, 2000) and combinatorial

optimization problems in green logistics (Sbihi and Eglese, 2007). Literature reviews after 2008 focused on drivers to the adoption of SSCM (Gold, Seuring and Beske, 2010), the requirement of vertical coordination and supply chain-wide implementation (Carter and Rogers, 2008) with focus on single firms (Carter and Easton, 2011).

However, a sectorial snapshot is required for further investigations on SSCM's implications as structure of the specific supply chain varies (Turker and Altuntas, 2014). Past research has mainly focused on manufacturing firms (Turker and Altuntas, 2014; Hsu, Tan, Zailani and Jayaraman, 2013; Zailani, Eltayeb, Hsu and Tan, 2012; ElTayeb, Zailani and Jayaraman, 2010). Work on other players in the supply chain, especially ports, is scarce. This paper begins to bridge this gap in efforts to provide a better understanding on non-OEM's (original equipment manufacturer) environmental sustainability impacts on SSCM.

Maqasid Shariah

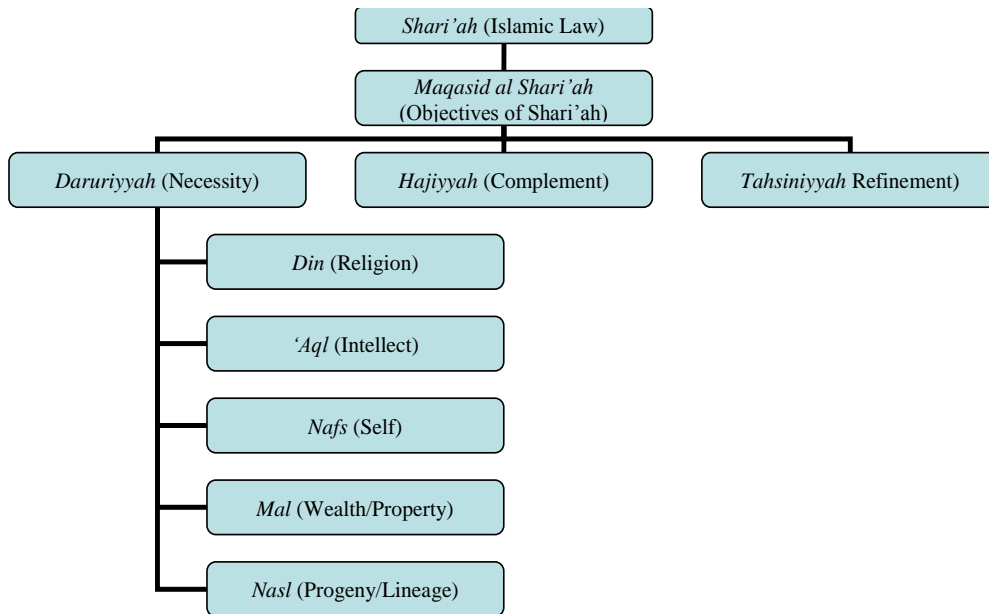
Maqasid shariah begins with Islamic law in that it began with the revelations to the Muhammad (PBUH) implicit in text of the Quran and Sunnah where Saged et al., (2017) argued that among the clearest evidence of Maqasid Shariah began with verses such as *"We sent thee not, but as a mercy for all creatures"* (Q21:107) and *"Verily this Quran doth guide to that which is most right (or stable), and giveth the Glad Tidings to the Believers who work deeds of righteousness, that they shall have a magnificent reward"* (Q17:9). Indeed, Allah (SWT) confirms this further by the many verses in the noble Quran with guidance of moral, spiritual, economic, political, social, legal and cultural facets (Oladapo and Rahman, 2016). Al Raysuni as cited in Saged et al (2017) had defined Maqasid Shariah as "the goals set by the Law to achieve the interests of the servants". In other words, the goals and objectives sought by mankind (Saged et al., 2017) that promote economic and social justice (Dusuki, 2008) and should include values, major beliefs and doctrines instead of just rulings per se (Rosly, 2008).

Ibn Ashur (2001) as cited in Oladapo and Rahman (2016) strongly argue that a prominent distinction of Islam is in providing a framework which comprehensively offer the basis for general well-being of all humans in this world and hereafter. One of such framework is what is known as Maqasid al-Shariah, first propagated by Al-Juwayni (d.478AH/1085CE) and later refined by Imam Al-Ghazali (d.505AH/1111CE) (Shinkafi and Ali, 2017). Indeed, Maqasid Shariah's framework captured and discussed the concept of well-being in Islam, important as part of human development as postulated in the definition of Maqasid Shariah by Imam Ghazali (Chapra, 2000) as cited in Dar (2004) and Meera and Larbani (2006):

"The objective of the Shariah is to promote the well-being of all mankind, which lies in safeguarding their faith, their human self, their intellect, their posterity and their wealth. Whatever ensures the safeguard of these five serves public interest and is desirable"

Some authors such as Oladapo and Rahman (2016) refer this framework as Theory of Maqasid al-Shari'ah (TMS). This theory is distinctive because it takes into account a comprehensive view of all aspects of human life and could be further categorized into three levels of human needs: *daruriyyah* (essential), *hajiyyah* (complementary) and *tahsiniyyah* (embellishment) as presented in Figure 1.

Figure 1: An Illustration of TMS



Source: Oladapo and Rahman (2016)

Daruriyyah is the most important and indispensable needs for human's survival and well-being, *hajiyyah* is additional human needs that complement *daruriyyah*, and, *tahsiniyyah* (the last level), is the refinement in the conduct of individuals (all interrelated to *maslahah* or human survival and well-being). It is important to note here that *daruriyyah* must be achieved first before humans can achieve *hajiyyah* and *tahsiniyyah* (Al-Ghazali, 1937 as cited in Oladapo and Rahman, 2016) and if ignored can cause *fasad* (conflict) to rise (Meera and Lalbani, 2006). *Daruriyyah* is further divided into five interdependent human needs: *Din* (religion), *Nafs* (self/human life), *Aql* (intellect), *Nasl* (progeny/lineage) and *Mal* (wealth/property) (Al-Ghazali, 1937). *Hajiyyah* remove hardship and facilitate life and *Tahsiniyyah* brings comfort and beauty to life (Meera and Lalbani, 2006).

Maqasid Shariah have two essential components: *Tahsil* i.e. securing of benefits and *ibqa* i.e. repelling of harm and injury (Rosly, 2008). In this sense, Maqasid Shariah plays an important role in preserving the environment so that it will benefit humankind and repels harm and injury. This is also evidenced by mentions of various plants, fruits, animals and natural phenomena in the Quran encouraging mankind to treat nature (the environment) kindly and compassionately while Sunnah wants us to considerably engage with our environment (Saged et al., 2017). Shinkafi and Ali (2017) concur by defining Maqasid Shariah as covering absolute well-being of man and his immediate environment according to Islamic law designed to safeguard and obtain human goals in this world and thereafter. There are, in fact, several initiatives that propagates further the idea of maqasid syariah as evidenced in the raising of funds in the form of *sukuk* that aims to preserve the environment (see for example, SRI *sukuk* framework by Securities Commission Malaysia, 2014, as cited in Marwan and Haneef, 2019). Additionally, Osman et al., (2019) found in their study that religious value have a significant impact towards green behavioural intention and religious traits were found to be integral in the making of successful entrepreneurs (Yusof et al., 2018).

3. Methodology

Qualitative methods via semi-structured interviews with officers in charge of environment area in the port was employed. The guide used in past studies (Charmaz, 2006; Glaser and Strauss, 1967) utilizing constant comparative technique of grounded theory to analyze the extensive interview transcript, organize the results into emergent themes, and identify the major findings were applied. The qualitative process framework (qualitative process Steps 1 to 6) used by Randall et al., (2011) were also employed where the qualitative process began by developing questions for the semi-structured interview (Step 1). Next, interviews were conducted with officers from the port's Health, Safety and Environment (HSE) and Marine Services department involving the environment executive and the marine superintendent. In Steps 3 and 4, the researcher reviewed 25 percent of the initial interviews for themes and relationships. Multiple meetings were held to cross-validate findings and gain consensus on our initial insights. We continue to code in order to develop and refine higher order categories in Step 5. As questions arose (Step 6), we reviewed previous transcripts for clarification.

4. Findings and Discussion

The research results provide an exploratory overview of environmental sustainability strategies and its related discussion on Maqasid Shariah. Two primary questions are addressed in this section:

RQ1. What are the strategies or initiatives implemented by the port reduce their environmental problems?

RQ2. How do these strategies relate to the principles of Maqasid Shariah?

Strategies Implemented and its Maqasid Shariah Relativity

As a general strategy, the port has put a very important emphasis on conserving its surrounding environment and has made it an essential part of their operations. The officer interviewed iterated that they have implemented strategies not just for air pollution but water and noise pollution with several focus on better port performance, employee relations, stronger community relationship, good reputation and branding, risk management and also relations with the investment community.

This is in line with the Maqasid Shariah's *daruriyyah* which is safeguarding religion (*Din*) and self (*Nafs*) where by preserving religion, the individual is provided with a worldview which would then, hypothetically, assist humankind to improve self and subsequently improve the spiritual consciousness of man that guide him in carrying out his daily activities. Additionally, safeguarding religion helps man to understand and protect other components of *Shariah* which is human life (*Nafs*), intellect (*Aql*), progeny (*Nasl*) and wealth (*Mal*) (Oladapo and Rahman, 2016). In fact, Islam propagates that life is an organic whole where temporal, eternal, material and spiritual behaviour are all treated as aspects of the same human behaviour and optimisation of all these aspects is omnipotent in human well-being (Dar, 2004).

Based on the port's long term strategies to reduce pollution, Table 1 presents strategies and initiatives that have been implemented by the port.

Table 1: Environmental Sustainability Strategies

Strategies	Specifics
Infrastructure and Equipment	1. Emission control technology 2. Equipment and engine replacement

Strategies	Specifics
Operational	Vessel speed reduction
Image improvement	Green building

Sources: Environment Executive, the port (2014)

Strategy 1: Infrastructure and Equipment

There were two initiatives implemented which were equipment and engine replacement of their Terminal Tractor fleet and the emission control technology of micro clean filter installation in their rubber tyre gantry (RTG) hydraulic system.

Euro 4 emission standards requirements were implemented and incorporated in their units of Terminal Tractors Fleet in order to improve air quality. These tractor is used to move container cargo in and around the port and between container yards. The tractors now emit emission parallel to the European standard and in fact, the emission reduction better if compared to average Malaysian emission standard. Registering in savings of fuel consumption rate of over 214 thousand liters were recorded in 2012 the port was able to reduce a total of over 1 million kg of CO₂ per year compared to the emission level of the previous year. With relations to Magasid Shariah, this strategy contributes toward provision of a cleaner environment which in turn protects *Nafs* (self) where human can enjoy a long and healthy life that will present a better and wider opportunity to do good deeds contributing towards *maslahah* (overall well-being) of the society (Oladapo and Rahman, 2016) possibly leading towards the betterment of *Aql* (intellect), *Nasl* (progeny/lineage) and *Mal* (wealth). Dar (2004) concurs with this idea where he iterate that environmental concerns will protect nature, preserve life and promote sustainable development, all important to human development which is a hardly new concept in Islamic literature.

The second initiatives is the installation of micro clean filter for rubber tire gantry (RTG) hydraulic system resulting in the improvement of air quality. Micro clean filter is a product that effectively minimizes the waste oil disposal up to 90% from the standard practice of waste oil disposal in the market which gives the benefit of reducing downtime losses through lesser and effective repair and maintenance resulting in the cost reduction of maintenance and repair. Implementation of micro clean filter to their 22 RTG resulted in a substantial sum of money (amount cannot be disclosed to confidentiality) in cost reductions with a combined reduction of emission from the RTGs of approximately 21 thousand kg of CO₂ per year. Not only that, the cost related to changing the hydraulic oil was reduced to over fifty percent in 2012 compared to the previous year. Subsequent to the implementation of the micro clean filter for RTG hydraulic system, the port have further installed power converter at the RTGs and this results in fuel consumption reduction by ten percent. Based on the trial run of this initiative, the port believes that it can achieve cost reductions of over half a million ringgit per month plus reduction of more than 4 thousand kg of CO₂ emission per year.

This strategy contribute significantly to protection of *Mal* (wealth) of the company in savings that could, in turn, be converted into larger profit for the company and its stakeholders. In fact, Allah has persistently stressed on posterity in Quran, for example, verses that deals with sustenance for all His creatures (Q17:31) and acquisition of lawful wealth (Q 62:10-11). We would further recommend that the port, from these savings, distribute this wealth to the needy and wayfarer (Q17:26) (Oladapo and Rahman, 2016) by contributing to Zakah as part of its tax responsibilities.

Strategy 2: Operational

Vessel speed reduction initiative for any calling vessels entering the port was employed in this operational strategy category. It aims to reduce emission from ships that are coming or going out of the port by reducing the speed of the vessels.

Vessels approaching are prohibited to navigate by themselves into the port. In the channel, the vessel are recommended to anchor while waiting for the harbor pilot at 0.5 nautical miles east of the pilot boarding ground where depth of between 15 meter – 22 meter are available or anchor at the south buoy while waiting for the berthing instruction. In relations to Maqasid Shariah, one of the most essential factors to conserve the environment in the eyes of Islam is concerning laws of land development especially in the use of natural resources and warned humans from corruption of the earth as in the verse (Q11:61):

“And remember how He made you inheritors after the ‘Ad people and gave you habitations in the land: ye build for yourselves palaces and castles in (open) plains, and carve out homes in the mountains, so bring to remembrance the benefits (ye have received) from Allah, and refrain from evil and mischief on the earth.”

We could safely say that the port’s strategy in implementing safe speed, not exceeding 12 knots, which shall be observed throughout the passage plan where speed limits will be consistent with safe navigation with regards to harbor regulations, prevailing circumstances and conditions including the capabilities and limitations of the piloted vessel is very much in line with the verse above where the port try to refrain from corrupting the earth. Furthermore, vessels navigating within 300 meters of the wharves or other mooring structure shall not exceed speed limit of 8 knots. With the implementation of vessel speed reduction initiative, the port has succeeded in reducing approximately 55% of the amount of CO₂ emissions (coming from the vessels) and improves the air quality at the port.

From the viewpoint of Maqasid Shariah, this is an act of kindness towards the environment as propagated by actions of the Prophet (PBUH) of clearing the streets from filth where he said “Removing harm from the road is charity” (Prophet (PBUH) as cited in Saged et al., 2017). In fact, the strategy by the port of reducing carbon emission promoting cleaner air is totally in line with the Prophet’s saying that *“God is good and loves goodness, clean and loves cleanliness, kind and live kindness, generous and loves generosity; thus clean your homes and follow not in the footsteps of the Jews”* Al Bazzaz Abu Bakr Ahmad (2009) as cited in Saged et al., (2017). Additionally, Dar (2004) argue that preservation of life should not only include life expectancy but other indexes such as pollution and clean water.

Strategy 3: Image Improvement

Green building was established for this category with the installation of inverted air conditioning using cleaner refrigerated gas in operator’s cabin (quay cranes) resulting in low consumption of energy, is environmentally friendly and safer to human health. The saving that the port achieved was a total cost reduction was substantial over a course of six months. In relations to Maqasid Shariah, this strategy is a clear evidence of protection of Nafs (self) as cleaner refrigerated gas protects the operator’s health, and, Mal (wealth) in the cost savings that port had achieved. In some respect, it also resides in the *Hajiyyah* and *Tahsiniyyah* component of Maqasid Shariah where this strategy is mainly referred to as “image improvement” strategy. Indeed, this is also in line with teachings of Muhammad (PBUH) who propagated caring for the environment evidenced by the advice of Abu Bakr, may Allah be pleased with him, to his generals and soldiers (Saged et al., 2017):

“Do not kill women or children or an aged, infirm person. Do not cut down fruit bearing trees. Do not destroy an inhabited place. Do not slaughter sheep or camels except for food. Do not burn date palms (Al-Bukhari; Abu Hussein Muslim, No. 1552).”

The port has also installed LED street light fitting and were able to achieve 70% energy efficiency and reduce more than 200 kg of CO₂ emissions per month. Other than that, the port has also replaced its air conditioning units using green gas enabling it to achieve 29% of energy efficiency and reducing approximately 24 thousand kg of CO₂ emission per year. This is in line with literature where Azid and Asutay (2007) contend that in the Islamic system, resource mobilization leads to productive spending with multiple impact on income growth leading to social and economic gains and sustainability of real income and economic growth. In fact, in Islamic sense, a producer (in this case, the port) must display cooperative and collective economic behavior towards redistribution and resource allocation.

The port has also conducted their own ambient air pollution study at main critical operation areas, a measure taken as compliance to the Environmental Quality Regulation (Clean Air) 1978, EQA 1974, Usechh regulation 2000 and OSHA 1994. The sample taken was analyzed in a certified laboratory and the result was compared to Recommended Malaysian Air Quality Guidelines (RMAQG) by Department of Environment (DOE). From the assessment, the result showed that all pollutants levels are not at dangerous levels and passed the minimum requirement of DOE. This has two implications: the ambient air quality in the port's vicinity is good and successful environmental sustainability strategies implementation. This effort is certainly in line with arguments in literature which calls for formation of specialized committees tasked with the study of solution to pollution on an ongoing basis (Saged et al., 2017). In fact, there is a consensus among Muslim scientists that religion plays a very dominant role in building socio-psycho-eco-religious structure of an Islamic community (Rawashdeh et al., 2017), relevant in this case with Malaysia being a Muslim country.

5. Conclusion

In its efforts to be environmentally sustainable, the port has implemented several initiatives in three areas: infrastructure and equipment, operations and corporate image incorporated in their Green Master Plan (GMP). Findings of this study indicate success as evidenced by reduction of emissions, energy and costs. These strategy is greatly in line with the principles of Maqasid Shariah in the protection of Din, Aql, Nafs, Nasl and Mal. Islam has always been concerned with the environment and calls for caring and preserving the environment because it will ensure the welfare of mankind (Saged et al., 2017).

The main limitation of this study is the number of company (port) interviewed to get data. This effectively limits the generalizability of the findings. However, an in-depth interview does provide a certain element of richness in data that a large scale survey could provide. Environmental sustainability in Malaysia is still a new field of study and combined with elements of Maqasid Shariah, it is an even newer field. This study strives to offer some knowledge that marries the concept of environmental sustainability and maqasid shariah and therefore, hopefully, fills in the void of knowledge in this field. Also, one of the best ways to investigate a new phenomenon is by conducting in-depth case study, with which this study has strived to do. For future research directions, the next research should consider more than one port in Malaysia in order to see the pattern and impact that other port have implemented to be environmentally sustainable. Future research could also look into alternative strategies that port can implement and how these strategies impact not only the environmental

sustainability performance but also the performance of the port socially and economically, thereby completing the three pillars of sustainability (TBL) proposed by Elkington (1994) and later further developed by Carter and Rogers (2008) and fulfilling Islamic Law requirements of Maqasid Shariah.

References

- Azid, T., & Asutay, M. (2007). Does ethico-moral coalition complement to economic coalition? A response in the periphery of Islamic economics. *Humanomics*, 23(3), 153-173.
- Brandenburg, M., Govindan, K., Sarkis J., and Seuring, S. "Quantitative models for sustainable supply chain management: Developments and directions," *European Journal of Operational Research*, vol. 233, pp. 299-312, October 2014
- Carter, C. R. and Easton, P. L. "Sustainable supply chain management: Evolution and future directions." *International Journal of Physical Distribution & Logistics Management*, vol 41, pp 46–62, 2011.
- Carter, C. R. and Rogers, D. S. "A framework of sustainable supply chain management: Moving toward new theory." *International Journal of Physical Distribution & Logistics Management*, vol 38, pp 360–387, 2008.
- Charmaz, K. *Constructing Grounded Theory: A Practical Guide Through Qualitative Analysis*. Thousand Oaks, CA: Sage, 2006.
- Daniel, S. E., Diakoulaki, D. C., and Pappis, C. P., "Operations research and environmental planning." *European Journal of Operational Research*, vol 102, pp 248–263, 1997.
- Dar, H. A. (2004). On making human development more humane. *International Journal of Social Economics*, 31(11/12), 1071-1088.
- Dusuki, A. W. (2008). Banking for the poor: the role of Islamic banking in microfinance initiatives. *Humanomics*, 24(1), 49-66.
- Elkington, J. "Cannibals With Forks: The Triple Bottom Line Of The 21st Century," New Society Publishers, Stoney Creek, CT, 1998.
- Elkington, J. "Enter The Triple Bottom Line", In A. Henriques, and J. Richardson, (Eds), "The Triple Bottom Line: Does It All Add Up?", Earthscan, London, pp. 1-16, 2004.
- Eltayeb, T.K., Zailani, S. and Jayaraman, K. "The examination on drivers for green purchasing adoption among EMS 14001 certified companies in Malaysia," *Journal of Manufacturing Technology Management*, vol. 21, pp. 206-225, 2010.
- Erlich, P.R. and Erlich, A.H. *The Population Explosion*, Touchstone, New York, NY(1991).
- Glasser, B. and Strauss, A.L. *The Discovery of Grounded Theory*. Chicago, IL: Aldine Transaction, 1967.
- Gold, S., Seuring, S., and Beske, P. "The constructs of sustainable supply chain management – A content analysis based on published case studies." *Progress in Industrial Ecology – An International Journal*, vol 7, pp 114–137, 2010.
- Gungor, A. and Gupta, S. M. "Issues in environmentally conscious manufacturing and product recovery: A survey." *Computers & Industrial Engineering*, vol 36, pp 811–853, 1999.
- Gupta, A.K., Gupta S.K. and Patil, R.S. "Environmental management plan for port and harbour projects," *Clean Technologies and Environmental Policy*, vol 7, pp 133-141, 2005.
- Hsu, C., Tan, K.C., Zailani S. and Jayaraman, V. "Supply chain drivers that foster the development of green initiatives in an emerging economy," *International Journal of Operations & Production Management*, vol. 33, pp. 656-688, 2013.
- Hunt, C.B. and Auster, E.R. "Proactive environmental management: Avoiding the toxic trap", *Sloan Management Review*, vol 31, pp 7-18, 1990.
- Kleindorfer, P. A., Singhal, K., and Wassenhove, van L. N. "Sustainable operations management." *Production and*

- Operations Management, vol 14, pp 482–492, 2005.
- Lal, R., Hansen, D.O., Uphoff, N., and Slack, S.A. Food Security And Environmental Quality In The Developing World, CRC Press, Boca Raton, FL, 2002.
- Marwan, S., & Haneef, M. A. (2019). Does doing good pay off? Social impact bonds and lessons for Islamic finance to serve the real economy. *Islamic Economic Studies*, 27(1), 23-37.
- Meera, A. K. M., & Larbani, M. (2006). Part I: Seigniorage of fiat money and the maqasid al-Shari'ah: the unattainableness of the maqasid. *Humanomics*, 22(1), 17-33.
- Min, H. and Kim, I. "Green supply chain research: Past, present and future," *Logistics Research*, vol. 4, pp. 39-47, 2012.
- Oladapo, I. A., & Rahman, A. A. (2016). Re-counting the determinant factors of human development: a review of the literature. *Humanomics*, 32(2), 205-226.
- preserving the environment. *Humanomics*, 33(2), 125-132.
- Osman, I., Ma'in, M., Muda, R., Husni, N. S. A., Alwi, S. F. S., & Hassan, F. (2019). Determinants of Behavioural Intention Towards Green Investments: The Perspectives of Muslims. *International Journal of Islamic Business*, 4(1), 16-38.
- Randall, W., Gibson, B., Defee C., and Williams, B. "Retail supply chain management," *The International Journal of Logistics Management*, vol. 22, pp. 390-402, 2011.
- Rawashdeh, O. H., Azid, T., & Qureshi, M. A. (2017). Philanthropy, markets, and Islamic financial institutions: a new paradigm. *Humanomics*, 33(4), 563-578.
- ReVelle, C. "Research challenges in environmental management." *European Journal of Operational Research*, vol 121, pp 218–231, 2000.
- Rosly, S. A. (2010). Shariah parameters reconsidered. *International Journal of Islamic and Middle Eastern Finance*, 3(2), 132-146.
- Saged, A. A. G., Alhaj, T. A. A., & Bi, M. Y. Z. (2017). The role of the Maqasid al-Shariah in preserving the environment. *Humanomics*, 33(2), 125-132.
- Savitz, A.W. and Weber, K. *The Triple Bottom Line*, Jossey-Bass, San Francisco, CA, 2006.
- Sbihi, and Eglese, R. W. "Combinatorial optimization and green logistics." *4OR*, vol 5, pp 99–116, 2007.
- Seuring, S. and Muller, M. "From a literature review to a conceptual framework for sustainable supply chain management." *Journal of Cleaner Production*, vol 16(15), pp1699–1710, 2008.
- Shinkafi, A. A., & Ali, N. A. (2017). Contemporary Islamic economic studies on Maqasid Shari'ah: a systematic literature review. *Humanomics*, 33(3), 315-334.
- The port, Annual Report 2013: The Empire of Trade. The port Holdings Berhad. 2013.
- Turker, D. and Altuntas, C. "Sustainable supply chain management in the fast fashion industry: An analysis of corporate reports," *European Management Journal*, vol. 32, pp. 837-849, April 2014
- Whitehead, P. "Environmental Management Framework for Ports and Related Industries" *Terra et Aqua*, vol 80, pp 22-30, 2000.
- Whiteman, G. and Cooper, W.H. "Ecological Embeddedness", *Academy Of Management Journal*, Vol. 43, pp. 1265-82, 2000.
- Yusof, S. M., Hamed, A. B., Tahir, R. M., & Othman, A. (2018). Usahawan Wanita Muslim Berjaya: Amalan Gaya Hidup Islam. *International Journal of Islamic Business*, 3(1), 1-18.
- Zailani, S., Eltayeb, T.K., Hsu, C., and Tan, K.C. "The impact of external institutional drivers and internal strategy on environmental performance," *International Journal of Operations & Production Management*, 32, 721-745, 2012.