

## ENVIRONMENTAL NGOS INVOLVEMENT IN DISMANTLING ILLEGAL PLASTIC RECYCLING FACTORY OPERATIONS IN MALAYSIA

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**ABSTRACT** – The environmental issue is becoming an important sustainable development goal due to its devastating impact on the economy, society, and ecosystem. The need for managing environmental issues is leading a government to work closely with stakeholders such as environmental NGOs and local municipal councils. While collaboration between government and local municipal councils has been widely covered in the literature, the relationship between environmental NGOs and the government remains a complex issue. In the past, environmental NGOs have a responsibility to advise the government and create awareness to the public. However, the trend has soon changed, where environmental NGOs are becoming more active and influential in enacting policies to uphold environmental integrity. The purpose of this study is to investigate the role played by Malaysian environmental NGOs and the current states of environmental integrity in Malaysia. This study used a qualitative case study of illegal plastic recycling factories in Malaysia to achieve research objectives. The findings show that environmental NGOs in Malaysia are a mediator between the government and the public. However, environmental NGOs are now more active in influencing the public to pressure the government to uphold environmental integrity. In addition, Malaysia's environmental integrity has increased with several policies by the government for firms, and consumers are already in place and gearing towards zero plastics. An improvement from the government side should focus on an integrated waste management system to enable circular economy adoption among firms. This study novelty lies in the introduction of environmental NGOs as a mediator to foster Malaysian environmental integrity and integrated waste management.

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### INTRODUCTION

Environmental integrity is a long-standing challenge for the community. Before the illegal plastic recycling factories issue were known, Malaysia also faced other critical environmental issues such as water pollution (Afroz et al., 2016) increasing carbon emissions (Shaharudin et al., 2019), palm oil plantation expansion (Kusin et al., 2017), land clearing and habitat fragmentation (Razali et al., 2018), reduction in biodiversity (Azhar et al., 2015), livestock and poultry production (Sakai et al., 2016) and wildlife trade (Challender, Harrop, & MacMillan, 2015). It is well-known issues that impacted Malaysia and have been the centre subject among the public. Nevertheless, this is a problem that frequently appears due to the complexity in solving the problem.

The recent environmental scandal of illegal plastic recycling factory found in Malaysia has sparked anger among the Malaysian public. The illegal importers' import recycled plastics from all over the world and process it in Malaysia. This illegal activity has made Malaysia as a dumping ground for the world's garbage as the unrecycled materials illegally dumped in a nearby forest. Besides, the process of recycling also produces chemicals that contaminate both air and water. This problem has received substantial interest from the Malaysian government as well as environmental Non-Government agencies (NGOs) (Moh, 2017). The new Malaysian government has decided to continue pursuing the previous government effort in closing down illegal plastic recycling factories and repatriation of illegal plastic wastes to their home country (Malaymail, 2020). The environmental NGOs loud the effort by the Malaysian government in its seriousness in tackling the issue and work in tandem with the government to preserve environmental integrity. The definition of environmental integrity is consistent and uncompromised ethical principles or values that result in truthfulness and accuracy of one's action (Cambridge University Press, 2020).

Although the Malaysian government has made progress in tackling the issue of illegal plastic recycling factory, the involvement of environmental NGOs is still relatively limited. For example, previous environmental NGOs' role is to create awareness and becoming a spokesperson for the government in addressing the issue of public trust on Lynas (Jamaludin & Lahiri-Dutt, 2017) and reduction of carbon emissions (Hezri, 2016; Shaharudin & Fernando, 2017). In an attempt to find the involvement of environmental NGOs, investigation in the literature found that developed countries' environmental NGOs were more active and authoritative than those in developing countries (Lück, Wozniak, & Wessler,

2016). Environmental NGOs in developing countries were advisors (Barandiaran, 2015) and acting as a mediator between the government and the public (Shea, 2016). The uneven power of environmental NGOs in developed and developing countries has disrupted the check-and-balance and monitoring capability to ensure that the environment is well protected.

Moreover, as climate change becoming a critical environmental issue, environmental NGOs need to play an even more critical role. For example, during the Paris Climate talks, representatives from developed countries were critical of developing countries for not making any progressive action to reduce carbon emissions while representatives from developing countries were blaming developed countries for its little contribution in helping other countries in reducing climate threat collectively (de Oliveira & Jabbour, 2017). There does not seem to exist any acceptable solution for this issue other than by improving each country's effort in reducing environmental threats and having more dominant stakeholders such as environmental NGOs to address environmental integrity.

This study aims to explore the integrity of environmental NGOs' actions in uncovering illegal plastic recycling factories and how these environmental NGOs able to garner support that forced the Malaysian government and the public to take proactive actions. Besides, this study also will investigate the current states of environmental integrity issues in Malaysia. This study can be considered to be a significant step forward in charting the roles and responsibilities of environmental NGOs. Besides, this will lead to the identification of environmental NGOs' impact on the performance of government and firms.

The next section starts with the literature review regarding environmental integrity, a summarisation of environmental integrity past studies, environmental NGOs, and past studies involving environmental NGOs. The remainder of this paper consists of a discussion on environmental integrity and environmental NGOs, future research, and the conclusion of this paper.

## LITERATURE REVIEW

This section examines prior work regarding environmental integrity and environmental NGOs concerning Malaysian environmental issues, especially regarding illegal plastic recycling factories.

### Malaysia Environmental Integrity

The definition of environmental integrity is truthful and accurate. However, in the supply chain and operations research discipline, it is referring to effectiveness or efficiency (Zurbrugg et al., 2012). Despite the wealth of literature available using the "environmental integrity" keyword, the definition remains vague and open to interpretation. Although some attempts have been made to address this issue, past researchers use "environmental integrity" to show that their investigation will result in the integrity of the outcome. For example, a study by Bui, Tsai, Tseng, Wu, and Chiu (2020) investigate effective municipal solid waste management to ensure environmental integrity. Similarly, a study by Ding, Lei, and Zhao (2019) shows that environmental and investment policies will have a positive impact on environmental integrity, which in returns will increase economic efficiency. Limited attention in the literature that has yet to establish the definition of environmental integrity shows that more research is needed to understand environmental integrity.

Currently, the literature regarding environmental integrity focuses on the integrity of the practice (outcome), environmental integrity as a means to achieve performance (mediator) and as a management tool to achieve performance (driver). A study by Ali and Suleiman (2020) treated integrity as an outcome. Their study focuses on the monitoring of the supply chain to ensure halal food integrity. Their study shows that integrity is regarded as an outcome of a study. On the other hand, a study by Ding et al. (2019) regarded environmental integrity as a means for achieving economic efficiency. According to them, economic efficiency can only be achieved through environmental integrity, and integrity can only be achieved through the strengthening of environmental policies. Their study shows that environmental integrity can enhance performance and provide a linkage between practice and performance. A study by Blumetto et al. (2019) used the environmental integrity index to evaluate the efficiency of agricultural production systems shows that environmental integrity also acted as a driver for the successful implementation of a system. Therefore, there is still a great deal of work to be done in the aspect of environmental integrity. At the current stage, scholars need to consistently treat environmental integrity as either a driver or an outcome or as a mediator in order to establish a more robust definition and understanding of environmental integrity. This study follows the definition and understanding of environmental integrity as an outcome of a practice. It is evident in the literature where environmental NGOs can influence the environmental integrity of firms (Santana et al., 2015) and government agencies (Hurley & Tittensor, 2020).

Malaysia is one of the developing countries pledging to reduce greenhouse gasses, especially carbon emissions as much as 45 per cent by 2030 (UNFCCC, 2015). Malaysia is also one of the largest producers and exporters of palm oil, where the government and palm plantation firms need to balance the expansion with sustainability (Olaniyi & Szulczyk, 2020). Recent interest by China in Malaysian Durian also has environmentalist concerns with land clearing for Durian plantation, which will damage the environment further (Johari, 2020). These are all environmental integrity challenges for Malaysia.

### Malaysia Environmental NGOs

Environmental NGOs are pressurised groups whose main aim is to catalyse environmental changes in governments. Research suggests that the presence of environmental NGOs improves the strictness of the environmental policies and its involvement in international environmental agreements (Bernauer, Böhmelt, & Koubi, 2013; Dalton, 2015). The environmental psychology scholars argued that the existence of environmental NGOs is due to specific people or groups

of people finds it difficult to trust the government to uphold the integrity of the environment (Tam, 2019; Hadler & Haller, 2011; Marquart-Pyatt, 2012).

Presently, the literature review shows that environmental NGOs are widely studied in its influence on environmental mitigation strategies such as environmental management (Arantes, Zou, & Che, 2020; Shaharudin & Fernando, 2015), firms' collaboration (Mousavi & Bossink, 2020; Krabbenborg, 2020), a relationship with diseases (Saadat, Rawtani, & Hussain, 2020) and governance (Khan et al., 2020; Hale, 2020). Based on the current studies available in the literature, it is evident that there exists an extensive literature on environmental NGOs for a considerable period in many fields of studies. Thus, it acknowledged the role and responsibilities of environmental NGOs as a pressurised group that influences environmental integrity.

However, there is a need to note that most of the previous studies failed to provide quantitative empirical evidence on the influence of environmental NGOs. A closer look at the review shows that past studies have abundant qualitative findings, especially in a case study method. There are two reasons for this finding. First, environmental NGOs differ in influence, as shown in a discussion between developed countries' environmental NGOs and developing countries' environmental NGOs. Second, the role in which environmental NGOs play in specific industries also is critical to the type of research scholars able to conduct. For example, in a case study by Foo (2018) on the position of environmental NGOs, particularly about public service provision for biodiversity and climate adaptation, it was found that cities involved were limited to where the environmental NGOs are available. On the other hand, there is also evidence of a strong influence of environmental NGOs globally, in which inter-country comparison study is feasible, as evident in a study of Hrabanski et al. (2013).

Furthermore, a comparison study between the different influences of environmental NGOs such as Greenpeace, Gazprom with the Russian state also can be undertaken (Villo, Halme, & Ritvala, 2020). The work in the area of environmental NGOs is on-going and varied across different fields. In this study, the role and influence of environmental NGOs on environmental integrity in Malaysia is the primary concern.

Malaysia has a robust framework for environmental integrity, where environmental NGOs are collaborating with Malaysian government agencies and firms (Kaur, 2015). There are times when environmental NGOs able to assert pressure to firms and government agencies to uphold environmental integrity (Nor et al., 2016). In addition, environmental NGOs also are not afraid to use the media to influence the environmental policy in Malaysia (Saleh & Saifudin, 2017). Regarding using media to influence policymakers, environmental NGOs also have a strong influence among universities due to the right image it brings to its partner universities (Hussin & Kunjuraman, 2017). Also, environmental NGOs are instrumental in initiating the agriculture industry in Malaysia (Suhaimi, Ibrahim, & Abd Wahab, 2016) and in helping to promote solar photovoltaic energy implementation among Malaysian public (Paramasua, Devadason, & Tehrani, 2019). Other than collaborating, influencing, creating awareness, and giving a right brand image, environmental NGOs also acted primarily as a monitoring body for environmental aspects such as forestry, marine life, and vegetation (ElTurk et al., 2018; Abdullah et al., 2015; Padfield et al., 2015).

## METHODOLOGY

This study aims to investigate the role and influence of environmental NGOs in upholding environmental integrity based on the case study on its involvement in uncovering and dismantling illegal plastic recycling factories throughout Malaysia. The nature of this study is to use available secondary data regarding environmental NGOs and environmental integrity issues in Malaysia. Based on the statistics, available business reports, white papers by government agencies, newspaper reports, and government and NGO websites, a case study was designed.

The second objective of this study is to investigate the current status of environmental integrity in Malaysia based on the case study of illegal plastic recycling factories. The second objective also is following the first objective's methodology of using secondary data in answering the research objective. Based on both research objectives, this study provides a discussion on the issue of environmental integrity and the involvement of environmental NGOs in Malaysia.

## ENVIRONMENTAL NGOS ROLE IN DISMANTLING ILLEGAL PLASTIC RECYCLING FACTORY: A CASE STUDY

It started in 2018 when Malaysia had received hundreds of thousands of tonnes of plastic waste from all over the world, most notably the United Kingdom, Australia, New Zealand, and the United States (Lim, 2019). The news reaches its climax after last year in 2019, the Malaysian government stated that it has permanently banned import waste but only accepting clean plastic that can be recycled. The response by the Ministry of Housing and Local Government, Zuraida Kamaruddin, came after receiving many complaints of pollutions from residents in Selangor. Afterwards, environmental NGOs help residents in Negeri Sembilan, Johor and Kedah to voice their concerns about the illegal activities and pollutions near a residential area. This concern has prompted the Malaysian government to launch massive coordinated enforcement operations led by Energy, Science, Technology, Environment and Climate Change Ministry (MESTECC) and joined by the local authorities, as well as agencies, including Tenaga Nasional Bhd (TNB) and the Department of Environment (DoE) to shut down illegal plastic recycling factories (Chan, 2019).

In Selangor alone, according to MESTECC minister Yeo Bee Yin, there is 60 per cent of illegal factories. After the crackdown by the Malaysian government, these illegal factories have moved to other states such as Negeri Sembilan, Johor, and Kedah. Thus, the Malaysian government welcomes help from residents to identify any potential illegal plastic recycling factory and report to them. Due to the support by the Malaysian government, several environmental NGOs have coordinated with residents to detect hotspots of illegal factories, especially near the port and undeveloped residential area.

The Malaysian government, upon receiving help from environmental NGOs and residents have received a report of further 60 new illegal factories in Selangor, Negeri Sembilan, Kedah, Perak, Johor, Penang and Kelantan (Chan, 2019; Toto, 2019).

However, in December 2019, one of the environmental NGO houses in Selangor was splashed with red paint by four men. The house owner, Pua Lay Peng, was the founder of the environmental action group called Kuala Langat Environmental Action Group, and she brought several reporters to the illegal factories and plastic waste dumping sites to raise attention to the media. The determination of this environmental NGO group in Selangor has seen a closure of 150 illegal factories since the end of last year.

The movement has received supports from the Housing and Local Government minister who made a surprise visit to some of the factories in Kuala Langat. In Kuala Langat alone, there are 24 illegal factories while 30 more were shut down by the ministry. The massive crackdown is due to visible air pollutions and becoming a wasteland. Furthermore, the ministry department has revoked the licenses for legal plastic recycling factories after it the pollutions level in Selangor has risen exponentially. This revocation of licenses by the ministry has affected 114 legal plastic recycling factories all over Malaysia. The number 114 was legal factories while there are more than 150 illegal factories all over Malaysia, and both legal and illegal factories contribute highly to the pollutions of Malaysia.

However, the Malaysian government and other stakeholders such as environmental NGOs and residents are playing an active role in combating the rising illegal factories. As such, hundreds of illegal factories were closed down, and several others were heavily fined. The hefty fines, however, are insufficient in deterring the illegal factories from moving to a more secluded area in Malaysia. Some illegal factories have no issue in paying the fines to avoid a jail term. The public and environmental NGOs have voiced their displeasure and wanted the Malaysian government to imposed substantial fines that include a jail term. The Malaysian government was at that time is still focusing on identifying and closing illegal factories while also checking legal plastic recycling factories, whether they have undertaken actions to reduce pollutions.

Nevertheless, as Malaysia enters a political crisis, the old government was replaced by the new government, with new ministers taking over the portfolio of the old ministers. The momentum in which the government and the stakeholders have achieved in dismantling illegal factories were taking a hit. On top of that, the whole world is now facing a pandemic of COVID 19. It is critical for the Malaysian government, environmental NGOs, and residents to focus on the health and safety of issues. While the government and residents were shifting the attention to COVID 19, environmental NGOs are still working on its capacity in advising the new government agencies and monitoring illegal plastic recycling factories (Malay Mail, 2020).

### Modus Operandi of Illegal Plastic Recycling Factories

The increase of illegal factories and plastic wastes in Malaysia is due to China has stopped importing plastic waste for recycling in 2018. Since the supply is abundant, the business of recycling plastics has become a lucrative business. As many developed countries, mainly European countries will not take the recycled and wastes plastics, Malaysian firms have taken that initiative. As a result, Malaysia has increased imports of plastic waste and recycling more than 40 per cent of its total in 2017. At that time, the Malaysian government did not take any action or manage the import as it as the market for recycling plastic will be worth USD 840 million (Toto, 2019).

Both legal and illegal plastics recycling factories see this as an opportunity to gain profits. The legal factories, with its legal documents from the government agencies, begun to look for grey areas to make the imported recycled and wastes plastics as lawful. Due to that, a small town in Malaysia was covered with 19 000 tonnes of plastic wastes (Bendix, 2019). On the other hand, illegal factories import recycled and wastes plastics at their undiscoverable or hidden factories. The port management failed to detect any wrongdoing as the imported recycled and wastes plastics are categorised as recycling materials and are lawful by law (Hussin, 2019). Once the recycled and wastes plastics arrived at the recycling factories, dumping of plastics will begin at nearby unexploited land. Then, it will be sort and brought to the processing facility. This process is where it produces most of the air pollutions. Once the process finished, it will be transported to the port to be exported back to other countries. The remaining or unused materials or chemicals were dumped illegally or disposed of (Smith, 2020).

The Malaysian government did not expect that the effect of favouring recycling plastic in the name of economic development will have a massive impact on the environment. The outcome of importing too many recycled and wastes plastics is increasing in air pollutions and land pollutions. The process of melting and moulding the plastics produce dangerous gasses and bad odour to the surrounding area. Also, the land used to store recycled and wastes plastics are unhealthy, dirty, and unusable for other uses. As a result, residents nearby were affected by the air and land pollutions. Since Malaysia has progressed and pledged to uphold environmental integrity, actors such as residents, environmental NGOs, and the media have a significant influence on government actions. As a result, the shift of balance from economic development is now towards environmental integrity.

## DISCUSSION

This section will discuss based on the case study provided in the previous section. There are two main objectives mainly to discuss the role and influence of the environmental NGOs and the current state of environmental integrity issues in Malaysia. The role of environmental NGOs in Malaysia has evolved since 2018 from advisory and creating awareness of environmental policies to starting a movement with the help of media and residents. However, the current role played by environmental NGOs is not strong enough to provide checks and balances on the environmental integrity of firms.

Based on the case study, which is the conceptualisation of several secondary sources regarding Malaysian environmental integrity issues and environmental NGOs, it was found that firms are not playing an active role in upholding environmental integrity. The heaviest polluters are manufacturing firms in Malaysia (Department of Statistics Malaysia, 2017). Furthermore, these illegal plastic recycling factories could be part of its supply chain networks. Yet, much of the environmental protection actions come from the government, environmental NGOs, and residents or consumers.

The future of environmental NGOs should be incorporating manufacturing firms in the equation in order to uphold environmental integrity. The case study serves as a reminder of how environmental NGOs have evolved, but the manufacturing firms are yet to work closely with external stakeholders. Taking example a case in China, after China opened its policy for the manufacturing industry, the level of air pollutions increases exponentially. As a result, environmental NGOs in China have become vocal and assert pressure on those who pollute. Environmental NGOs even had the power to live-check the emissions produce by manufacturing firms. When the emissions exceeding the level allowed, environmental NGOs and residents will report to the government and stop the inbound and outbound at that manufacturing firm (Sarkis, Zhu, & Lai, 2011; Zhu, Sarkis, & Geng, 2005).

The Malaysian government has come out with a "zero single-use plastics 2018-2030" policy to achieve environmental integrity. The Malaysian government started to devise a roadmap to achieve environmental integrity. On the consumer side, it includes campaigns such as "bring your grocery bag", "use recycle bag", and "no plastic day". On the firm side, the Malaysian government had asked manufacturers even small businesses to substitute the use of a plastic-type container to paper or recycled material container (MESTEC, 2018). Similarly, most businesses now are not offering plastic straws at all. However, there are only a few businesses such as fast-food restaurants doing that, but most of the other firms are using paper straws or not yet adopting no straw policy. For a supermarket or grocery store, they will charge a consumer if the consumer wanted a plastic bag. This policy is to encourage consumers to support zero plastic policy and reduce the use of plastic in Malaysia.

For manufacturing firms that produce plastic, a pollution levy will be charged to them. Universities and government agencies, on the other hand, will be given incentives to do research and development on eco-friendly products and alternative plastic products. This policy plans to promote environmental management knowledge integrated into the education system by the year 2022 to 2025. Then, by the year 2026 to 2030, the Malaysian government hopes that plastics will be replaced with biodegradable and compostable products, the introduction of more eco-friendly products and firms started to adopt a circular economy principle.

The second objective is to discuss the current state of environmental integrity in Malaysia. Malaysia is facing environmental issues, especially in the usage of plastics because consumers have a problem with littering and unsustainable consumption habits (MESTEC, 2018). The Malaysian government, with help from the local municipal council from all states in Malaysia, is creating awareness of thrash separation and thrash recycling. However, the problem is that most of the commonly thrown items by consumers, such as plastic containers, polystyrene containers, straws, diapers, and feminine products, were not recycled in Malaysia. This recycling problem is due to there is no recycling value for local recyclers and due to lack of technology.

Therefore, the first step for Malaysia is to integrate waste management system. It can be done in stages where each local municipal council integrates from the same state. Then, it should move to the inter-state integration system and, lastly, a nationwide waste management system. The reason for adopting a waste management system is to determine what can be recycled, how it can be recycled, and where (which station) can it be recycled. Due to the integrated waste management system, after identifying recycled wastes or products, it is easier to determine the life cycle of that product and how to prolong the life cycle of that product. However, the information required for this effort needs support from manufacturing firms adopting a circular economy principle. The Malaysian government and agencies, on the other hand, can play a crucial role in creating industries for energy, fertilisers, and animal feed industry (MESTEC, 2018). The integration for circular economy and zero plastic waste in Malaysia require intervention from every stakeholder, primarily environmental NGOs that have played this role extensively.

## CONCLUSION

Even though the literature has carefully examined the importance of environmental integrity, the position of environmental NGOs contributing to this sector needs to be expanded. This paper argues that the success of overcoming environmental integrity comes from a long and close relationship with the communities, environmental NGOs, and government agencies. Each procedure is different and requiring all participants due to the different characteristics and roles of each community. Notably, environmental NGOs have a good understanding of the expectations of the communities and is an essential intermediary between the government and the communities. The role environmental NGOs play in upholding environmental integrity can be seen in the case study of dismantling illegal plastic recycling factories in Malaysia.

The limitation of this study is that it is not easy to generalise the results by focusing on a single case. Further research must be conducted that focus on gathering empirical data to support the literature. This study makes an assumption based on the case study and secondary data research that manufacturing firms were not doing enough in upholding environmental integrity. Furthermore, more work on the future effects of increasing collaboration between government and environmental NGOs is required. The case study has shown how neighbourhood committees or residents are increasingly crucial for the development of local governance practices. Therefore, the role of society and other stakeholders should also be addressed in future research.

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