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## Guidelines for Antarctic Tourism: An Evaluation

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### Abstract

Since Antarctic tourism has special features because of its peculiar characteristics, tourism activities need to be controlled. By using the qualitative method, this paper argues that although there are guidelines related to Antarctic Tourism, there are an increasing number of consultative parties who question whether the Antarctic environment can be adequately protected through these guidelines. The paper reveals the reasons underlying the poor governance of the guidelines and in view of the argument that Antarctic tourism regulation is still largely piecemeal, therefore, this paper concludes with suggestions to overcome the problem in order to ensure the sustainability of Antarctic tourism.

**Keywords:** Antarctica Tourism, Tourism Operators; Environmental Effects; Tourism Guidelines

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### 1.0 Introduction

Antarctic tourism holds differing tourism activities than other parts of the world. It occurs because there are no recipient states and the location's rough climate which confines the tourism to specific areas with the limited period of the year. Furthermore, Antarctic is also luxurious tourism with mostly sea-borne nature; and such tourism is an inherently hazardous human activity (Perez-Salom, 2001). Although the wilderness nature of Antarctica increasingly draws visitors to its exceptional natural values, the event may lead to the continent's demolition. Commercial tourism began in the 1950s when fare-paying passengers travelled aboard Chilean and Argentinian naval vessels to Antarctica (Li, 2013). The last twenty years have shown a vast increase in the number of tourists, transportation and various activities. Tourism season coincides with scientific exploration and the peak breeding season for most Antarctic species. From 4,698 tourists in 1990-1999, the figure has risen to over 26,000 during the 2011-2012 (Li, 2013). Meanwhile, in 2015-16, 38,478 people visited Antarctica. However, if each is assumed to pay \$8,000 (nearly RM31,000) for an 11-night return-journey from Ushuaia to the peninsula, the industry is worth almost \$308m (about RM1.2 billion) a year (The Guardian, 26 June 2016). Given that, Antarctica appears to be one of the hottest travel destinations for 20 to 29-year-old Australians in 2018 as there is a 325% increase in bookings to Antarctica from this age group for the upcoming season and a 101 percent increase on Australian bookings to the Polar region overall. In 2016-17 4,451 Australians made up 10 percent of all travellers to Antarctica. (News.com.au, 20 August 2017).

Tourism in Antarctica has not been without incident. Regarding transport, large vessels are the highest potential risk as they might have a crash or accident, ground on uncharted rocks, break the ice lands or pollute the water. Operators preferred to use large vessels as small vessel were not economical enough. There were twenty-nine reported accidents and incidents such as damage, ship grounding, aircraft crash and oil spoil in the Antarctic area between 1967 and 2003 (Kariminia et al., 2013). Surprisingly, almost half of all accidents

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are accrued during the last 12 years. Numerous studies have revealed that integration of environmental management system can reduce the operations' ecological externalities (Yusof & Jamaludin, 2018).

Although the International Association of Antarctica Tour Operators (IAATO) has provided swift accessible precautions and assistance, the sinking of MS Explorer in 2007 demonstrated that potential risk of vessel crash remained. The most significant single oil spill event in Antarctica occurred when the spill of 600,000 litres of diesel oil during the Bahia Paraiso's grounding and sinking. The incident killed seals, krill and other marine life near the United States Palmer Station. In the process, several of the United States' scientific marine projects were also ruined. This incident highlighted that travelling in Antarctic waters is inherently hazardous. According to the United Nations Environment Programme Report, the 50% falls in the Adelie penguin's breeding population throughout a six-year span was due to the stress from continuous tourist visits. Additionally, extensive changes in the soil surface were evident even at the less frequently visited sites. This situation could potentially reduce water availability in soil, important control on Antarctic invertebrate distribution (Li, 2013).

Also, the cruise vessels have high potential to pollute the air through the engine emissions. It is due to used residual fuels, which have higher contaminants. The annual sulphur emissions by ships can be even higher than that from land. Waste oil is usually generated through leaks from the engine, hydraulic systems, and from the fuel filters while conducting maintenance work. Furthermore, toxic chemicals, dry-cleaning wastes, used batteries and paint waste from brush cleaning are possible to occur (Davies & Cahill, 2000). Animals could be exposed to contaminants and discharged residues. Although the International Convention has prohibited the use and carriage of heavy and intermediate fuel oils for the ships in the Antarctic treaty area for the Prevention of Pollution from Ship since 2009, concern on the environmental contamination remains.

The amount of garbage (dry garbage, food waste) produced by a cruise ship carrying 2700 passengers can exceed a tonne per day (Davies & Cahill, 2000). Illegal dumping of solid waste has to twenty-one felony counts for dumping oil and chemicals from its cruise ships. Thus, the possibility of both shipboard waste and land-generated waste once onshore should be taken into consideration. Furthermore, airborne travelling could lead to the possibility of an air crash, air pollution and wildlife disturbance. After a growth between the 1950s and 1970s, the number of tourists frequenting this area via flight seemed to have steadily declined during past few years. However, the potential of crash and degradation related to air based supports exists (Kariminia et. al., 2013).

The region's intrinsic value and fragility are closely intertwined. The food webs in the Antarctic area are relatively short and highly dependent on the availability of krill. Studies conducted in the 1980s on the Antarctic food web found significant interconnections between the region's inhabitants. For instance, it was found that a substantial decrease in baleen whale numbers increased krill availability, which in turn altered the size and reproductive behaviour of the crabeater seal. Minor changes in the Antarctic food chain have the potential to produce significant and lasting outcomes. Furthermore, the region is also highly susceptible to the impact of human activity as its freezing temperatures limit the ability of garbage and oil pollution to biodegrade, leaving these ill effects in the ecosystem for more lengthy periods of time that occurs in more temperate regions (Bates, 2011). In sum, unregulated Antarctic tourism would cause significant consequences to an environment which is already extremely vulnerable to the impacts associated with human activities (Li, 2013). The following discussion reveals the reasons underlying the poor governance of the guidelines, and given the argument that Antarctic tourism regulation is still mostly weak, therefore, this paper concludes with suggestions to overcome the problem to ensure the sustainability of Antarctic tourism.

## 2.0 Scope of Protection

The Protocol on Environmental Protection to the Antarctic Treaty, signed in Madrid on October 4, 1991, and entered into force in 1998, has six annexes. Nevertheless, it still has significant practical difficulties to begin managing Antarctic tourism in a way that adequately meets the 'comprehensive' level of environmental protection described in the Protocol. Further, the Protocol neither prohibits nor allows tourism in Antarctic (Abdullah et.al, 2015).

Tourism is mentioned in several provisions and annexes in the Protocol but does not classify Antarctic's tourism activities separately from other human activities. Nevertheless, Antarctic tourism has some peculiarities that require distinctive legal regime (Perez-Salom 2001). The fact that the Protocol does not incorporate a particular body of provisions, accounting for the peculiar features of Antarctic tourism, marks the existence of severe gaps in the Protocol's coverage of tourist activities. As a result, specific issues in tourism falls outside of the restricted scope of the Protocol such as issues about liability, insurance, jurisdiction, third party activities, and enforcement. Although the Environmental Protocol overviews the duty of prior environmental impact assessment, relevant provisions only offer small solutions for Antarctic tourism projects (Perez-Salom, 2001). Hence, the establishment of a specific guideline is conjectured to be able to fill the ambiguity in the Protocol and Annex.

As of now, apart from the domestic legislation governing the tour operators and Antarctic treaties, Antarctic tourism industry gives a significant degree of freedom and autonomy to the operators in term of industry self-regulation. The International Association of Antarctica Tour Operators (IAATO) is a member organisation founded in 1991 to advocate, promote and practice safe and environmentally responsible private-sector travel to the Antarctic. The membership of the organisation is voluntary. The body has established extensive procedures and guidelines to ensure appropriate, safe and environmentally sound private-sector travel to Antarctica. The regulations are mainly concerned with restriction of people ashore, staff-to-passenger ratios, site-specific and activity guidelines, wildlife watching, pre-and-post-visit activity reporting, passenger, crew and staff briefings, contingency and emergency medical evacuation plans etc. It has also developed some policies designed to ensure the safe navigation and exploration of the region, including the previously mentioned guidelines for tourism operators and visitors. These policies provide an essential contribution to the management of tourism activities, given their direct and regionally based focus.

Collaborations between the governments, the industry and environmental organisations have continued in the following years to ensure Antarctic tourism proper regulation and management. For instance, the International Association of Antarctica Tour Operators (IAATO) developed the Marine Wildlife Watching Guidelines in 2002 as guidance to vessel operators while viewing cetaceans, seals, and birds in their marine environment. These guidelines minimise the impending environmental impacts to wildlife and suggest ways to comply with Annex II (Conservation of Antarctic Fauna and Flora) of the Protocol on Environmental Protection to the Antarctic Treaty. They do not replace any domestic governmental laws but provide an additional code of conduct to assist in reducing potential disturbance to the marine ecosystem. Some countries have stricter guidelines or regulations than these which may override the IAATO's guidelines. Violation of national rules may be punishable by fines, imprisonment and, in extreme cases, seizure of the vessel. Hence, IAATO operators should be aware that compliance with the IAATO guidelines might be deficient in preventing the penalties resulting from, and violation of, the national laws and regulations.

IAATO actively helps the Treaty Parties to develop sound and practical ATCM Site Guidelines and Antarctic Specially Managed Areas (ASMA) with the sites now available through the Site Guidelines or National Antarctic Program Management. Under the standard operation procedure (SOP), vessels with over 500 passengers are refrained from making any landings in Antarctica. Tour operators are also required to coordinate with each other to avoid more than one vessels at a landing site at any one time, apart from delivering no more than 100 passengers at a landing site at any one time, with a ratio of 1:20 guide-to-passenger be maintained while ashore. (Shah, 2013).

IAATO is the only self-regulatory tourism industry association in Antarctica, where the high conscious self-regulation offers more rooms for voluntary behavioural regulation and control. It requires members to comply with all Antarctic Treaty System (ATS) obligations and has developed some policies designed to ensure the safe navigation and exploration of the region, including insurance requirements, and assessment, operating and reporting procedures. Specifically, the guidelines outline the procedures to be followed by operators prior, during and on completion of an Antarctic visit. Specific provisions require operators to undertake environmental assessment and contingency planning and to obtain permissions from local authorities. However, many of the agreements relating to the national laws of the ship's origin and, consequently, variations of requirement exist between the nationalities.

### **3.0 Challenges**

#### **3.1 Violation of IAATO'S Protocol**

There are criticisms on the self-regulation by the IAATO for being ineffective. According to Antarctic and Southern Ocean Coalition (ASOC), the concern arises from mass tourism that arrived in Antarctica. Mass commercial tourism requires the sorts of checks and controls that the industry has to accept everywhere else. The alternative is a free-for-all; just about anything can now be pondered by commercial operators. Large numbers of people land at crucial wildlife and historic sites.

ASOC also claimed that some operators frequently bring over 100 passengers, in contradiction of the IAATO's protocols. Since the protocol is not legally binding on the operators, ASOC is concerned with the lack of external force in ensuring adherence to the protocols. Besides, ASOC is also concerned with the size of cruise ships because, with larger ships, there will be more significant risks of marine pollution. It was also argued that although IAATO's self-regulatory guidelines are helpful, they fail to bridge the gaps in the policy framework. While it maintains that it is an "industry group that has resolved to set the highest possible tourism operating standards in its effort to protect Antarctica", and its by-laws complies to the Treaty and ATS instruments, members who violate the treaty or instrument can only be reprimanded or have their membership status changed, e.g. probation or expulsion, after the Membership and Executive Committees have done their reviews. It is also worth noting that membership to IAATO is not obligatory. This has created the problem of "free rider" operators who use common-pool resources and benefit from the efforts of responsible others to manage and maintain the resources but do not themselves abide by those management and maintenance rules. Difficulty to monitor tourist's activities is a real problem. A newspaper report noted that a respondent claimed that the guidelines had little bearing on the conduct of the tourists. The article reports that people clambered over colonies of chinstrap penguins in pursuit of the killer photographs. (Verbitsky, 2013).

As vigilance on tourism issues could also be improved, stronger enforcement of the IAATO guidelines is needed. Although IAATO has designed a system of self-regulation, some structure is needed in requiring all vessels (tourist or otherwise) entering Antarctic waters to abide by the guidelines. This would also expose the vessel operators' membership status in IAATO or nationals of signatory parties. The United Nations (UN), which already includes the International Maritime Organization, might be the best body for enforcement of such a law as well. One possible way to avoid more deterioration of the continent is the establishment of an organisation such as the UN as the enforcement part of the equation. The ATS could remain as a free-standing, independent, multilateral treaty. The United Nations (UN) could provide the added dimension of enforceability and credibility to reduce violations. As the UN did not have primary control of the governance of Antarctica, the ATS members would continue to scrutinize compliance. However, treatment of violators would be handled by the UN. Enforcement could be through embargoes or even confiscation of machinery and tools used for the activities considered violating the ATS. Although the United Nations Convention on the Law of the Sea (UNCLOS) is often taken as an example of an international treaty that "works," UNCLOS possesses the UN's enforcement power behind it.

#### **3.2 Variation of Requirements between Nationalities**

Membership in IAATO is voluntary, and therefore there are tour operators who function outside the regime, a problem openly acknowledged by IAATO. Specifically, the guidelines outline the procedures to be followed by operators prior, during and on completion of an Antarctic visit. Certain provisions require operators to undertake environmental assessment and contingency planning and to

obtain permissions from local authorities. However, many of the permissions related to the national laws of the ship's origin and, consequently, variations of requirement exist between the nationalities (Bates, 2011).

### **3.3 Reinforcing the role of IAATO**

In the absence of any supra-national law enforcement agency responsible for Antarctica, the IAATO plays a pivotal role in the implementation process of the rules fixed in the Tourism Guidelines. The latter was initially developed by IAATO members; abiding by these rules constitutes an important part of being an IAATO member. Additionally, the United States, Canada, New Zealand, and Australia have developed national legislation that extends into the international territory of Antarctica (i.e. the US Antarctic Science, Tourism, and Conservation Act of 1996 obliges US citizens and US-registered companies entering Antarctica to comply with its law). However, the national legislation of all other countries that are signatories to the treaty does not allow them to prosecute violations of the Antarctic Treaty committed by citizens of, or companies registered in, these countries, as these de facto take place outside the respective national territories (Molenaar, 2005).

As of now, apart from the domestic legislation governing the tour operators and Antarctic treaties, Antarctic tourism industry gives a significant degree of freedom and autonomy to the operators in term of industry self-regulation (Bates, 2011). The International Association of Antarctica Tour Operators (IAATO) is a member organisation founded in 1991 to advocate, promote and practice safe and environmentally responsible private-sector travel to the Antarctic. The membership of the organisation is voluntary. The body has established extensive procedures and guidelines to ensure appropriate, safe and environmentally sound private-sector travel to Antarctica. Regarding its interests as a self-regulating body, it must be assumed to align with the continued operation and viability of the industry and, therefore, at times when financial and environmental interests conflict, there is the risk that financial interests may be given priority. As a result, it can be argued that there needs adoption of additional measures to ensure that the regime is classified as truly precautionary and sustainable, considering the Antarctic environmental sensitivity and importance and the possible dangers of tourist activities in the region (Bates, R., 2011).

The regulations are mainly concerned with restriction of staff-to-passenger ratios, people ashore, activity guidelines and site-specific, wildlife watching, pre-and-post-visit activity reporting, passenger, crew and staff briefings, contingency and emergency medical evacuation plans etc. It has also developed some policies designed to ensure the safe navigation and exploration of the region, including the previously mentioned guidelines for tourism operators and visitors. These policies provide an essential contribution to the management of tourism activities, given their direct and regionally based focus. Since the adoption the self-regulatory model, IAATO has been successful in managing the industry and preventing substantial harm resulting from its activities. Moreover, it has proven an effective source of guidance for tourism operators and information for the ATS. However, given its status as an industry-based self-regulatory, its scope of operation regarding environmental governance could be said to possess some limitations. Therefore, to build up the IAATO's position to regulate tourism industry in Antarctica, membership to IAATO is suggested to be made mandatory for all operators conducting tourism programmes in the region. The placing of IAATO under the ATS is also recommended as this will assist the organisation to oversee tourism in Antarctica effectively. This step is also useful to guarantee IAATO's independence since the organisation will be under direct supervision of the Antarctic Treaty Consultative Meeting (ATCM).

### **3.4 Inspection by international observers, inspectors under domestic enabling legislation and environmental Non-Government Organisations (NGOs)**

#### **3.4.1 International observers**

Surveillance of Antarctic activities may be carried out by international observers, according to Article VII of the Antarctic Treaty and Article 14 of the Protocol. Accordingly, each Consultative Party could assign their 'observers' who are permitted to inspect the Antarctic with access to all areas including all stations, installations and equipment within those areas, and all ships and aircraft at points of discharging or embarking cargoes or personnel in Antarctica (Bastmeijer, 2003-2004). Also, the Protocol states that the ATCM may also assign observers to run inspections under procedures by an Antarctic Treaty Consultative Meeting. Specifically, the last ten years' value of conducting 'joint inspections' by two or more Contracting Parties was stressed on, while some of the recent inspections have been joint, undertaken by two Contracting Parties. The ATCM adopted checklists for international inspections in 1994. The huge value of these inspections is clearly described in the inspection reports from recent years, as well as the related discussions at the Committee for Environmental Protection (CEP) meetings and ATCMs.

#### **3.4.2 Inspection by inspectors under domestic implementing legislation**

Inspection of the Antarctic may be conducted by observers or inspectors under the domestic law of a Contracting Party. The New Zealand legislation considers designating general inspectors to report on compliance issues to the Minister and special inspectors to enforce the Act. The Antarctic Treaties Act, 1996 of South Africa, grants the Minister the power to designate posts in the ministry or particular ranks in the navy, as well as any other person as "an inspector, observer or other official contemplated in any treaty". This formulation advocates that the relevant provision about international observers under the Antarctic Treaty and the Protocol. All these domestic systems set down in more detail, among a few other, the procedures for assigning inspectors and their powers and obligations, and the responsibility on persons that are subjected to an enquiry to cooperate (Bastmeijer, 2003-2004).

#### **3.4.3 Inspection by environmental NGOs**

Environmental NGOs' inspection may be helpful in supervising Antarctic activities. Greenpeace International has conducted many expeditions in the Antarctic Treaty Area. However, some of the characteristics of inspections by Contracting Parties also seem to apply to the NGOs inspection as most of them concentrate on research stations. Thus, it is doubtful whether the reports may be used in enforcement procedures by a particular Contracting Party. Nevertheless, with the increase of Antarctic tourism, environmental NGOs appear to have widened their scope while keeping track of tourist mission in the Antarctic. For example, the Antarctic and Southern Ocean Coalition (ASOC) recently uttered its concern about the United Kingdom's decision to give the function of museum and souvenir shop for tourists to Port Lockroy, the first UK research station in the Antarctic Peninsula area (Bastmeijer, 2003-2004).

#### 4.0 Conclusion

For independent institutions to be thriving, the benefits of utilising the resources must be larger than the costs of such actions. By imposing restrictions on Antarctic tourism such as the accessibility of the resource, it currently outweighs the costs of self-organisation and operational limitations thus encourage the basis of a robust institution. Flaws in the self-regulatory system are mainly related to the non-excludability of other resource users such as the free-riding potential and the vague position of IAATO within the ATS. Apart from that, there is also poor organisation between the authorities and external users. Conflicts with ATCPs may be addressed at the ATCMs, but it is doubtful to work effectively since influence and decision-making power lies with the ATCPs. Nevertheless, these accounts have to be measured with some cautions, as IAATO would not desire to put conflicts and violations into the public domain.

Recent improvements at ATCMs portrayed greater recognition of IAATO's achievements and rights. The ATCPs acknowledged an array of IAATO guidelines by incorporating them as resolutions. For instance, Resolution 4 (2007) states that the national governments should discourage tour operators that use ferries carrying over 500 passengers from making any landings in Antarctica. Apart from that, it also supports a guide-to-passenger ratio of 1:20 while onshore and confines the numbers of passengers landing at a site to a maximum of 100 at one time. Along with many ATS instruments, most tourism resolutions have an exhortatory character without guaranteed applications. However, these mechanisms represent a step-in-the-right direction. It is very likely that Antarctic tourism regulation will continue to rely hugely on self-regulation in the future as much of the thrust towards environmentally sound tourism regulation comes from the self-regulatory regime. Nevertheless, the lack of regulatory support through the ATS jeopardises the self-regulatory framework and affects its sturdiness.

If more operators act outside of the self-regulatory system, the lack of ATS support may eventually reach its end. Hence, trustworthy partnerships, professional monitoring and accreditation schemes are among the suggestions to escalate ATS support and recognition of IAATO. In certain countries such as the United Kingdom, they have started granting permission to visit Antarctic stations only to IAATO members, reflecting this aspect. On the whole, Antarctic tourism regulation is still gradually growing considering that each aspect of tourism destination according to its specific position is essential as emphasised by Fauzi et al. (2017). Additionally, knowing the motives of tourists because they drive for tourist behaviour is also crucial and measures to promote conservation motives should be made (Mohit, 2014) as tourism ought to be viewed as contributing towards a holistic development as promoted by Bakar et al. (2016), because responsible tourism activities affect the quality of life (Hanafiah et al., 2016; Ginting et al., 2017).

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#### References

- Abdullah, N. C., Shah, R. M., Husin, Z. H., & Rahman, H. A. (2015). Antarctic tourism: the responsibilities and liabilities of tour operators and state parties. *Procedia-Social and Behavioral Sciences*, 202, 227-233
- Alex Marshall, Antarctica's tourism industry is designed to prevent damage, but can it last?, *The Guardian*, 26 June 2016
- Bakar, A. A., Osman, M. M., Bachok, S., & Ibrahim, M. (2016). Investigating rationales of Malaysia quality of life and wellbeing components and indicators. *Procedia-Social and Behavioral Sciences*, 222, 132-142.
- Bastmeijer, C.J. (2003-2004). Implementing The Antarctic Environmental Protocol: Supervision Of Antarctic Activities. *Tilburg Foreign Law Review*, 11, 407.
- Bates, R. (2011). Touring the Antarctic: Transforming Environmental Governance in the Southern Latitudes. *Asia Pacific Journal of Environmental Law*, 14, 43-62.
- Fauzi, N. S. M., Misni, A., Kamaruddin, S. M., & Ahmad, P. (2017). The Content Analysis Study of Geo-Heritage Conservation: Kilim Karst Geoforest Park, Langkawi. *Environment-Behaviour Proceedings Journal*, 2(5), 255-262.
- Ginting, N., Rahman, N. V., & Nasution, A. D. (2017). Increasing Tourism in Karo District, Indonesia Based on Place Identity. *Environment-Behaviour Proceedings Journal*, 2(5), 177-184.
- Hanafiah, M. H., Azman, I., Jamaluddin, M. R., & Aminuddin, N. (2016). Responsible Tourism Practices and Quality of Life: Perspective of Langkawi Island communities. In M. Y. Abbas, A. F. I. Bajunid, & S. Thani (Eds.), *Procedia-Social and Behavioral Sciences* (Vol. 222, pp. 406-413).

- Kariminia, S., Ahmad, S. S., Hashim, R., & Ismail, Z. (2013). Environmental consequences of Antarctic tourism from a global perspective. *Procedia-Social and Behavioral Sciences*, 105, 781-791.
- Li, S. (2013). Antarctic Tourism: The Urgent Need for a New Comprehensive Regulatory Regime. *New Zealand Journal of Environmental Law*, 17, 321-334.
- Mohit, M. A. (2014). Present trends and future directions of quality-of-life. *Procedia-Social and Behavioral Sciences*, 153, 655-665.
- Molenaar, E. J. (2005) Sea-Borne Tourism in Antarctica: Avenues for Further Intergovernmental Regulation. *The International Journal of Marine and Coastal Law* 20(2): 247-95.
- Perez-Salom, J-R. (2001). Sustainable Tourism: Emerging Global and Regional Regulation. *Georgetown International Environmental Law Review*, 13, 801.
- Shah, R. M. (2013). Mitigating the Impact of Human Activities in Antarctica for Better Quality of Life. *Procedia-Social and Behavioral Sciences*, 101, 284-291.
- Tourism to Antarctica is booming thanks to Millennials. (20 August 2017). Retrieved from news.com.au
- Verbitsky, J. (2013). Titanic part II: tourism, uncertainty and insecurity in Antarctica. In Brady, A-M. (ed.) *The Emerging Politics of Antarctica*. Oxon: Routledge. pp. 220-241.
- Yusof, Z. B., & Jamaludin, M. (2018). Green Operation Barriers of Malaysia Green Operators. *Asian Journal of Quality of Life*, 3(9), 77-86.