



VIRTUOUS AVIATION: MORAL COMMITMENT TOWARD ENVIRONMENTAL ISSUE IN INDONESIA

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ABSTRACT

The International Air Transport Association (IATA) regards CO₂ emission as the highest priority agenda to be tackled by the aviation industry. However, air traffic for both passengers and goods increases faster than the increase of its efficiency. This research aims at explaining the concept of Environmental Virtue Ethics (EVE) both in the Western and *Islāmic* perspectives, and its urgency as an alternative approach to deal with the environmental ethical dilemma in the aviation industry particularly in Indonesia. This research employs descriptive-explorative qualitative methodology. Data collection is through literature studies and interviews with two environmental scientists in Indonesia. The results suggest that by using environmental virtue ethics especially in the *Islāmic* perspective, the focus of the aviation industry is directed towards virtuous aviation which is quality of flights with moral commitment to the environment. The aviation industry has undergone severe impacts from the Covid-19 pandemic and must formulate new strategies for sustainable aviation which address EVE. The strategy should involve the virtue of simplicity (*qanā'ah, sakhā' and wara'*), independence (freedom/*hurriyyah*) and justice (*adālah*). EVE that accommodate religious values is urgently required as an alternative to secular ethics. *Islāmic* Virtue Ethics will enhance human character and transform people into virtuous persons. Religious values held by the people of Indonesia could also be the basis for developing environmental ethics based on virtue ethics.

JEL Classification: L93

Key words: CO₂ emission, Environmental virtue ethics, Aviation, *Islāmic* virtue ethics, Covid-19

1. INTRODUCTION

Among the environmental issues faced by the aviation industry is how to manage pollution produced by aircraft operations such as its noise aspect, contamination on the surface as well as in water with the deicing fluids specifically produced by the aviation industry, air quality and increase in greenhouse gas concentration (Pels 2008). Commercial airlines are responsible for around 2% of global carbon emission. The aviation industry had become one of the prominent global emission producers since the aviation sector contributed to 2.5 % of global CO₂ emissions (International Civil Aviation Organisation (ICAO), n.d.). The International Air Transport Association (IATA) placed the CO₂ emission issue as a priority in the aviation industry agenda. The goals of the CO₂ mitigation emission target that could be adopted globally are : (1) to increase the efficiency average by 1.5% per year from 2009 -2020; (2) ending net CO₂ from the aviation industry starting from 2020 (carbon-neutral growth); (3) reduce aviation industry net CO₂ emission as much as 5-% in the year 2050 with benchmark level on the year of 2005 (International Air Transport Association (IATA), n.d.).

IATA stated that the aviation industry had already established firm strategies along with global agreement to reach the listed targets. The noise pollution issue would be handled through the ICAO balanced approach. With regard to the more general environmental issue, airline companies will try to develop and disseminate best practices including environmental system and assessment towards aspects of the environment (International Air Transport Association (IATA) 2018). In 2010, the International Civil Aviation Organization (ICAO) itself had started to explore validity of the global market-based measurement scheme for international flights and decided to develop it in 2013. During the 39th session of the ICAO forum (2016), countries agreed to adopt the global market-based measurement scheme for international flights in the form of Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) to mitigate CO₂ total emission increase from international flight above the level of 2020 (International Civil aviation Organisation (ICAO) 2019).

Concerning environmental issues in aviation, the Indonesian government has expressed its commitment during the Civil Aviation Organization (ICAO) plenary meeting in Montreal, Canada on the 28th of September 2010. The Indonesian delegation for the forum explained Indonesia's commitment to aviation safety and security, and environmental conservation plan regeneration program has also been

planned by Indonesia's government where 2016 is set to be the target year to implement more efficient operating procedures. Another program is the alternative fuels (biofuels) use with emphasis on planes (Kementerian Perhubungan Republik Indonesia, 2012; Senobua, 2014).

The current challenge facing the aviation industry is in balancing increase in air transportation demand and the environmental effect caused by airline emission and other airline activities. Although regarded to have made progress, this sector still has a long way to go. According to Bosch, if the aviation sector wants to contribute to international policy for climate change, then CO₂ emissions that are specific per kilometer-passenger needs to be reduced. For the short term and with the limited option, a commercial flight is already very efficient and room for improvement in machine efficiency is already well developed. However certainly there is slow improvement in a global carrier industry since the lifespan of modern aircraft is on average 25 years or more (Bosch et al., 2017).

However, according to Cafaro (2013), air traffic for both passengers and goods had increased faster than the increase in efficiency. The aviation sector will be unable to reduce emission nor would it be able to merely maintain the rate at the current level, without any immediate and direct action that coercively asks for a reduction in air services. Certainly, the idea to reduce flight frequency is regarded to be contradictory to the business goals of aviation companies (Cafaro, 2013). This kind of ethical dilemma is impossible to be resolved by the aviation industry stakeholders without fundamental knowledge of ethics and moral responsibility toward environmental problems.

One of the most recent approaches in environmental ethics is Environmental Virtue Ethics (EVE). The virtue ethics approach could complete the teleological ethic or consequentialism. Teleological ethics in its practice have caused many problems, while virtue ethics possessed weakness in term of providing justification or end value (Bertland, 2009). Koehn argues, if the virtue ethics theory is applied in the business world, then the business world itself will seize various superiority values (Koehn, 1995). Another advantage of the virtue ethics theory is in the descriptive content of its virtue words that contain normative elements within it. Words such as generous and coward sound more meaningful than just by stating whether an action is good or bad since in the word generous and the word coward both facts and values are contained (Graham, 2014). Furthermore, the

virtue ethics act as a concept that links an individual to the environment. (Cafaro 2004; Kawall, 2003).

EVE is developed to study the norms of character that should direct the interaction between mankind and the environment. According to Zwolinski and Schimidtz (2010), academics such as Cafaro (2004) and Kawall (2003) developed this field to produce both theoretical and practical results. These scholars are trying to characterize attitude and disposition from environmental virtue that are constitutive as well as to explain the role of a correct ethical character in environmental ethics in a broader sense. In practice, scholars have focused attention on the implication and prerequisite of certain virtues such as kindness and simplicity, as well as on the implication of virtue ethics approach for practical problems such as consumerism and genetically modified plants (Zwolinski and Schimidtz, 2010). Today, when humans tend not to follow moral rules and they no longer want to be regulated by law, the virtue ethics approach could make a significant contribution to development of environmental ethics since it focuses in enriching human characters.

Some studies have explored EVE, for example the research of Robert Hull which explains the EVE approach strengths and weaknesses. His research concludes that Environmental Virtue Ethics (EVE) is a main philosophical praxis. As a praxis, EVE could articulate human developments, which is that if we are working on efforts to conserve nature, then mankind, in essence, is promoting their own lives (Hull, 2005). Another literature review was done by Frasz (2001) that developed arguments on why EVE is suitable in the general framework of environmental ethics and other similar studies (Frasz, 2001). A study of environmental ethic referring to the aviation industry as its case study written by Cafaro (2013) titled 'Reducing consumption to avert catastrophic global climate change: The case of aviation', examines ethic principles and empirical facts that support cases of reducing air traffic around the globe. In the research, Cafaro argues that a majority of passengers and air cargo is a representation of opulence and consumptive lifestyle that are not necessary and that as a responsible moral agent they should willingly reduce their consumption to reduce the effect of global climate change (Cafaro, 2013).

In the Indonesian aviation context, few researches regarding ethics have been done. An example is one titled "The Ethical Issues of Aviation Business in Indonesia", which identified issues of flight safety, environmental and professional ethics related to drug abuse

by pilots and crew, as critical issues in the aviation business ethics in Indonesia (Kania, 2018). Another research is “*Etika Profesi Penerbangan Berbasis Virtue Ethics di Indonesia* (The Aviation Professional Ethics based on Virtue Ethics Approach in Indonesia)”, which concluded that the most effective strategy in developing aviation professional ethics in Indonesia is by applying virtuous leadership. It means the leaders and managers of aviation companies must become role models and possess high commitment based on four cardinal virtues (Kania, Arubusman, and Sari, 2019). Since the development of EVE as an alternative approach to resolve an environmental ethical dilemma in the aviation industry is strongly required, hence the objectives of this study are to explain the concept of Environmental Virtue Ethics (EVE) both through the Western and the *Islāmic* perspectives, as well as its urgency as an alternative approach to deal with the environmental ethical dilemma in the aviation industry particularly in Indonesia.

2. RESEARCH METHOD

This study was conducted using a descriptive-explorative qualitative research design. This research utilizes literature reviews from books, journal articles, and official documents from the Indonesian government or international aviation organizations such as the International Air Transportation Association (IATA) and International Civil Aviation Organization (ICAO). This qualitative research is retrospective which means that it is open to changes depending on the conditions of the research field. The triangulation methods employed to validate the data collected are theory triangulation and data source triangulation by conducting interviews with environmental scientists related to environmental ethics and biofuel issue in Indonesia. The data analysis process began by organizing all the available data from various sources. After review and exploration, the next step was data reduction carried out by creating an abstraction. Abstraction is an act to produce a key summary from all the processes and statements, ensuring that all key data are maintained so that it is contained within the key summary. The following step was data coding where all of the units were categorized or combined into themes. After review and revision, the themes were presented cohesively.

3. RESULT AND DISCUSSION

Environment Virtue Ethics (EVE) does not intend to hand over the global environmental responsibility to individuals and to overlook the government role. However, without policy that involves the role of citizens as individuals and as part of communities, the aviation industry commitment to address related environmental problems would be difficult to achieve. Currently, environmental issues are not only state problems but also a global problem affecting the lives of people all over the world. EVE focuses attention on “the character states necessary for accomplishing lasting environmental improvement, it raises the salience of moral development and education to environmental ethics” (Cafaro, 2010). The promoter of EVE such as Cafaro who quotes Thoreau in Holly (2006), states that the main virtues in environmental ethics are simplicity, independence (freedom), and integrity which is bridging an individual to growth of other virtues.

According to Thoreau in Holly (2006), simplicity involves “limiting the use of external goods and focusing on the task at hand.” He saw independence as freedom from as well as freedom to, for example “freedom from working just to make money to have freedom to develop our interests”. The virtue of Integrity encompasses choosing one’s life goals and integrating all aspects of the character to achieve it (Holly, 2006). The EVE virtues promoted by Cafaro-Thoreau are also discussed by *Islāmic* scholars; however, although every concept from a different civilization outwardly looks similar, in reality, they differ in philosophical level resulting from differences in worldview. The virtue of simplicity in *Islāmic* virtue ethics is embedded in the meaning of the virtue of *qanā’ah*, *wara’* and *sakhā’* while the virtue of Independence or freedom is *hurriyyah*. The virtue of Integrity encompasses the meaning of *sidq*, *istiqōmah*, *amānah*, *kulliyyah*, *najāhah*, and so forth. Since Cafaro and Thoreau see integrity as the ultimate virtue, then it closer to the virtue of *adālah* (justice) in *Islāmic* virtue ethics.

The religion of *Islām* has been well-known for its teaching to protect nature. According to Bakar (2007), a central teaching of the *Islāmic* religion is the affirmation of the principle of the Oneness of God (Tawhid); therefore tawhid will inspire science, and science will ultimately affirm Tawhid. The ecological principle is “unicity of nature”, which is the most fundamental principle in *Islāmic* ecology and environmental science. Economic activity and the idea of sustainable development must refer to divine principles (Bakar,

2007). Even though *Islāmic* scholars have never codified specifically environmental ethics based on the virtue approach, the virtue ethics concept has been developed comprehensively by some classical *Islāmic* scholars such as Ibn Miskawayh (d. 1030 AD), Ibn Sina (d. 1037 AD), Raghīb al-Isfahani (d. 1108/1109 AD), al-Ghazali (d. 1111 AD) and currently by contemporary scholar, Syed M. Naquib Al-Attas. Ibn Rushd divided ethics into two types, exoteric ethics which is the ethics of jurisprudence, and esoteric ethics (ethics of the soul). The theory of *Islāmic* virtue ethics falls into the second type of ethics which is the ethics of the soul (Mohamed, 2006, 330-331). According to Wan Daud, if an individual can discipline his body, mind, and soul through efforts to purify the soul, it will produce a virtuous person, then the society will then change. Eventually, these conditions will generate virtuous civilizations based on justice that impact all aspects of human life, including the ecological (Wan Daud, 2020).

3.1 VIRTUE OF SIMPLICITY

Thoreau in Holly (2006), saw simplicity in material possession as a beneficial virtue for character flourishing. The virtue of simplicity is needed for one to do right by nature and fairly share limited resources with poor people around the world. Simplicity is the key to freedom that allows one to finally act with integrity. According to Cafaro (2001), simplicity will be an important virtue for the ethics of environmental virtues, for obvious reasons that life only reduces our impact on other living things; but Thoreau, along with many environmentalists also claim that life will only improve our own lives.

The virtue of simplicity in *Islāmic* Virtue Ethics is covered through the concept of *qanā'ah*, *sakhā'* and *wara'*. Al Ghazali in Sherif (1975), explained that *qanā'ah* is "a good management of means of livelihood in the right way whereas exceeding what is necessary brings about the evils of greed (*hirs*) and covetousness (*tama'*); and *sakhā'* means "giving easily and refraining from acquiring things in the wrong way" For Ibn Miskawayh (1985), *sakhā'* is giving charity with the proper amounts and given to those who are entitled to receive it; *Wara'* means fulfilling good deeds which contain the perfecting of the soul, and *qanā'ah* refers to modesty in matters of eating and drinking and ornamentation

The virtue of simplicity is required as a norm in developing aviation business ethics because the effort to save the environment

will not be optimized by merely relying on the green economy while at the same time still adopting the capitalistic consumption-production paradigm. Nature and the environment would then still be an exploited object to cater to a human consumptive attitude that knows no limit. Air traffic, both for passengers and goods, increases much faster than the increase in efficiency. The aviation industry is growing rapidly especially with the establishment of Low Cost Carriers (LCC). The International Air Transport Association (IATA) predicts that air transportation will tend to increase up to twice-fold to 8.7 billion in 2037. As for Indonesia, it is predicted to be the 4th biggest in the world by 2030, an increase from 2017 where Indonesia was listed as the 10th largest globally (International Air Transport Association, 2018). Moreover, there is air traffic resulting from air cargo as a response to massive import into Indonesia.

In 2018, domestic travel done to visits friends and relatives accounted for around 43.3%, while travel for holidaying and recreational purposes was listed second at around 42.9% out of all traveling made domestically in Indonesia (BPS-Statistics Indonesia 2019). Even though the data includes all modes of transportation it can generally be used to represent air transportation; this shows that unless people and society adopt the simplicity or modesty principle, it would indeed be difficult to prohibit people from visiting their friends or relatives, or to go on a holiday or vacation.

Purposes of traveling such as those in the example cited certainly justified and do not obstruct morality values. However by understanding the virtue of simplicity, society will choose to undergo travel that is not wasteful. There is a metaphysical aspect namely reason, that becomes a measurement for morality values when someone is doing any act which in this case is traveling. This is because the notion of traveling that used to be done for business, education, religion and social (cultural exchange, aid distribution, etc.), now with technology advancement has turned into a gratification of human desire that is solely physical and merely used to showcase an individual's existence in society or social media. Furthermore, some traveling is done to carry out crime and prohibited activities such as sex tourism and drug abuse.

Ironically, educational travel is currently tainted with economic purposes not morally justified. According to Higham, and Font (2020), academic communities in general are listed as high aviation emitters. explain that successful academic careers are largely determined by certain practices regarding an individual's mobility Education in this era tends to quantify an academic measurement of

success, for example, by referring to the number of conferences or scientific seminars an academic attended in many places around the world. The traveling purpose of a knowledge seeker at the end of the day would then have an economical reason rather than the mission to develop knowledge itself and contribute to the betterment of society.

Such type of travel, when viewed through the virtue ethics, would be immoral since wastefulness, greed and arrogance are vices that contribute significantly to environmental destruction. Those characters are deeply opposed to the cardinal virtue specifically the character of temperance that arises from the ability to balance desire, as well as the virtue of *qanā'ah*, *sakhā'* and *wara'*. Although *Islāmic* teaching encourages people to travel, the act should encompass a spiritual dimension. According to al-Ghazali, travel will be rewarded by *Allāh 'azza wa jalla* if the intention relates to the Hereafter. However, if the travel objective is only for the sake of increasing one's reputation and other external vanities, then it falls into the forbidden (Leeuwen, 2009).

The idea of reducing flight frequency for environmental protection becomes more relevant following the COVID-19 pandemic. IATA analysis dated 14th April 2020 showed that the COVID-19 crisis will cause a decrease in global flight revenue by US\$314 billion in 2020, which means a drop of 55% from the revenue in 2019. Airlines in the Asia Pacific region will face the largest revenue drop of US\$113 billion and a 50% reduction in passenger demand in 2020 compared to 2019. These estimations according to IATA are "based on a scenario of severe travel restrictions lasting for three months, with a gradual lifting of restriction in the domestic market, followed by regional and intercontinental" (International Air Transport Association (IATA) 2020b). As for Indonesia, in 2020, the percentage change in passenger demand expected to decrease 49% compared to 2019, passenger demand impact (origin-destination volume) will fall to -59,756,000, revenue impact will drop -8,225 US\$ millions, and the potential jobs impact is -2,069,000 (International Air Transport Association (IATA) 2020a).

Experiencing precipitous decrease in flight frequency and passenger demand as a result of Covid-19 outbreaks have been a strenuous challenge for global aviation. Therefore the aviation industry that underwent severe impacts must formulate new strategies for sustainable aviation which address ethics and morality as its foundation. The strategy should involve the virtue of simplicity (*qanā'ah*, *sakhā'* and *wara'*), which involve limiting the use of external material and to focus on duties. According to Holly (2006),

consumptiveness and wastefulness have become a character of human behavior that beget environmental destruction. This understanding requires education and socialization, so that people would choose a simple way of living (Holly, 2006).

3.2 VIRTUE OF INDEPENDENCE

Cafaro (2004) explains that independence and freedom are used interchangeably in Thoreau's writing. Independence which is defined as freedom from physical coercion also includes "having the time to explore his surroundings and the privilege to saunter through the local landscape without being arrested for trespassing". Thoreau in Holly (2006), describes freedom in both negative and positive terms. In negative terms, it comprises freedom from economic demands, social requirements and various sorts of fears, whereas the full flourishing and expression of individual personality are positive terms of freedom.

Freedom (*hurriyyah*) in *Islām* is the human's act or behavior of following their nature (Al-Attas, 2013). Freedom that leads to evil is not a choice because true freedom is related to actions that are following human nature (*fitrah*). Free will is defined as the act of choosing the best, therefore human beings must require knowledge of good and bad. To choose something bad does not reflect freedom because it stems from ignorance and impulse that leads to despicable qualities (Al-Attas, 2013). According to Isfahani in Mohamed (2006), freedom (*hurriyyah*) pertains to a person not enslaved by greed and worldly ambitions, and applies to small and great excellences. It is interesting how Ibn Miskawayh relates freedom with one's attitude in seeking wealth in the way blessed by God and refraining from obtaining wealth in the desecrated way. Therefore virtue of independence/ freedom in *Islām* cannot be understood as acting freely without rules and limitations; freedom in *Islām* is inextricably bound up with morality and truth.

The virtue of independence related to aviation means that every stake holder has the right to choose what is best for the industry while avoiding negative impacts on the environment. Currently, the green economics paradigm is being advocated around the globe, including in the aviation sector. The green economics paradigm, however, does possess some problems resulting in several criticisms. McAfee (1999), argues that the green economy paradigm has created a condition where the existence of an environment is determined by the economic benefits it can produce. Such paradigm according to

Brand (2012), has made plants, animals and beings other than humans to only have meaning when they possess economic profits for capital or asset owners. Nature conservation is simply measured by how much it can donate to economic growth. Such condition is because the concept of growth in the neo-liberal economy emphasized growth measurement on productions and consumption

Unfortunately, the green economy paradigm in aviation has also raised the issue of state independency/ freedom. The states with strong economy and technology advancement seized their potential independency over the less-powerful states such as Indonesia. An example is biofuel regulation to replace fossil fuel which is part of the green economic campaign. Biofuel had become an issue that harms many of the developing nations since international regulations regarding the environment are controlled by capitalist interests. Indonesia started to adopt biofuel regulation nationally in 2006 by releasing regulation on biofuel procurement and use. To support the new regulation, through the President Decree No.20/2006 the National Biofuel Development Team was formed and is responsible for supervising the biofuel program execution and creating the blueprint for biofuel development in Indonesia. Establishment of the regulations was followed by the Indonesian Parliament (DPR) through the release of Energy Regulation (UU 30/2007) to strengthen previous regulations in prioritizing renewable energy use (Rahmanulloh, 2019).

In 2013, Indonesia had become the first country that by law obligates its aviation industry to use jet biofuel mixture as part of the Green Aviation Initiative. The regulation is aimed at reducing greenhouse gases from the energy and transport sector simultaneously by as much as 26% by 2020. The regulation also stated that the aviation industry must contribute by inserting 2% fuel alternatives in the jet fuel mixture by 2016, and 3% by 2020. However, according to Jong in Bosch et al., (2017), it is unclear whether Indonesia could reach the target even though Indonesia did have experience in developing biofuel in the land transportation sector.

“The absences of full government willingness in the effort to reduce emission from the use of fossil aviation fuel, and the willingness to alternate to the use of bio aviation fuel. Other than that, the biofuel production is still unable to meet the current aviation fuel demand, and the use of biofuel itself is still in the research and development phase.” (Bosch et al., 2017).

According to Hendrawati (2017), biofuel development in Indonesia is still hindered by the difficulties in meeting the very strict technical qualification of approved aviation fuel. From 2005 to 2011, Indonesia aviation fuel consumption was always bigger than its production and hence imports met the demand. Biofuel produced from palm oil (CPO) was hoped to be one of the strategic solutions since Indonesia is the largest producer of crude palm oil in the world. Biofuel use corresponds to the Transport Ministry of Indonesia's decree (number KP 201 the year 2013) on RAN-GRK transportation sector from 2010 until 2020, especially in the air transportation field through 'Prakarsa Penerbangan Hijau Indonesia untuk Pembangunan Berkelanjutan' (Indonesia Green Flight Initiative for Sustainable Development) (Hendrawati et al., 2017).

However, in January 2018, the European Union Parliament suggested ending public subsidies for use of biofuel made from palm oil for 2021. The council and parliament of the European Union reached an agreement in June 2018 on final regulations of the European Union. Even though the regulation did not remove the regulation that supports diesel fuel from palm oil for the transportation sector for the year 2021, however, it did commit to removing its supports for high emission biofuel such as those that come from palm oil for the year 2030 (Transport and Environment, n.d.). The European Union had only started to do such boycott after forests in tropical countries had been exploited. While in fact ironically the European countries are the initiator of green economics and are the ones that had been using biofuel from palm oil for its mode of transportation massively and ever increasing amount year after year. It is those demands that had triggered large capital owners of palm oil-producing countries such as Indonesia and Malaysia to compete in palm oil exports without paying attention to the environmental impacts such as land destruction, forest fires, and the threat to biodiversity that leads to the increased greenhouse gas emission.

Therefore, due to the strong political economy nuance in the biofuel issue, the Indonesian government should immediately develop biofuel from sources other than palm oil since the diversity and richness of Indonesia's nature are abundant, so that the principle of the country's independence can be reached. If not, the national regulation regarding the environment will continue to be controlled by large capital owners or the market mechanism, which then would cause difficulty in implementing the regulations that are truly fair and truly for the environment. Moreover in practice various national rules

and regulations so far are ineffective in charging offenses regarding environment exploitation done by large conglomerates. The academics and environmental researchers that were interviewed for this research said:

“The use of palm oil biofuel is still debated, one reason is because of the land-clearing activity and the diversion of forests for palm oil plantation. Furthermore, palm oil production is suspected to produce a high CO₂ emission. However, the pros argued that various productions of palm oil can be converted into products that are safe for the environment. Besides the controversy above, the government is hoped to be able to start eyeing other types of biofuel that are less controversial, such as the use of microalgae and seaweed that could be converted to biofuel through several methods. Cultivations of microalgae and seaweeds for biofuel would not reduce the current availability of farmlands and hence would not decrease food productions. Moreover, Indonesia is a maritime country with the second-longest coastal line in the world, hence the cultivations of the above two commodities are still highly potential without causing side problems.” (Interviewee no.1)

The view above is in line with Thong's research in Reksowadojo and Duong (2014) that tried to develop biofuel for the aviation industry with a simpler and cheaper process since the developing countries are still limited in technology and economic ability yet do possess an abundance of plant-based oil. Thong had researched the aviation biofuel production process using selected feedstock that consists of long chains of amino acids in the carbon number approximately for Jet (C₁₂ dominant) to reduce the production process. If the Indonesian government is serious in developing biofuels, indeed the country's energy independence could soon be achieved without relying on other parties that exploit environmental issues as tools for economic and political interests.

3.3 VIRTUE OF INTEGRITY/JUSTICE

Integrity is a key virtue that as explained by Thoreau in Holly (2006), encompasses both the modern moralists and the ancient moralists. Integrity is often diluted by vices such as greed, misplaced

expediency and others. Thoreau saw integrity as living consciously and acting “according to principle.” The steps to fulfillment of freedom are identical to the criteria of what makes a person have integrity, both mentally and morally (Cafaro, 2004). In the context of *Islāmic* virtue ethics, the most perfect virtue which contains all of the virtues is Justice. For Isfahani in Mohamed (2006), justice is implicit in the perfect balance (*mizān*) created by God and authentic justice has to emanate from the soul, not only from the law, as the soul itself is inclined to justice. Al-Attas defines justice as “a harmonious condition or state of affairs whereby everything or being is in its right and proper place”. The way to act justly is to have prior knowledge about the nature of things and their relationship to something that has been identified in a system of relationships that already exist in the soul (Al-Attas, 1993).

Justice in the environmental virtue ethics context means to understand and acknowledge the essence of environment and its relations to human beings. Secular ethics could not answer the question of why human beings must be concerned about the environment over the boundaries of their self-interests, as well as why human beings need to protect nature. Is it simply because of the need to be called fair and wise, or is it out of fear for the future of mankind if we let nature be damaged? Although such reasons could bring a man to act ethically, yet it could not give a strong foundation once he is facing ethical dilemmas. The fact is that still many people do not care about the view of others, let alone care about the future of mankind. Such an issue failed to be addressed by the environmental ethicists with materialistic understanding because they are unable to explain the most fundamental relation between nature and human beings. Human beings must protect nature and the environment from exploitation and damage not merely because of their interests, but also stemming out of a spiritual motivation, as a form of moral responsibility to God.

The concept of nature as a responsibility (*amānah*) given by God to human beings is at the center of *Islām* that contains both a physical and metaphysical dimension. On that account, religious values become an essential feature in developing EVE. This is what has not been accommodated by the modern environmental ethics concepts. The contemporary scholars who intend to integrate or employ religious concept as an alternative approach sometimes are being underestimated as it is considered to be not scientific. This is caused by the hegemony of the philosophy of knowledge that is positivistic and adopted materialistic worldview. According to Nasr

(2007), we often forget that the majority of people on this earth indeed still live with religious values. Most Western intellectuals when thinking about environmental problems often think in a way as if everyone in the world is agnostic and following secular philosophies. Whereas from the practical point of view, the only ethic that could be accepted for the majority of people today according to world history is religious ethics. Negative preconception toward religious ethics from certain groups in the west is one of the biggest barriers in solving the environmental crisis (Nasr, 2007).

Many works in *Islāmic* literature describe one's obligations to the environment and the reality of the universe. Environmental Virtue Ethics that accommodate religious values such as *Islām*, will produce virtuous persons and eventually shape a virtuous society that does not see nature solely from the economic point of view, but regards it as a creation that has the right to thrive and live. Moreover, nature is the creation of God and human beings have been given a responsibility by God to protect it. In EVE's perspective based on *Islāmic* Virtue Ethics, the aim of the aviation industry would be virtuous aviation, where profit is not the only measurement of success without a moral commitment from the stakeholders toward environmental problems.

Concerning the environmental ethics and religious values in Indonesia, Interviewee number 2 stated that religious values had become one of the foundations and motivations in the way of life of Indonesian society. Unfortunately, religious values often emphasized by teachers and religious leaders related to environmental preservation had seldom been conveyed and delivered. Therefore, the continuous efforts and collaboration between stakeholders are urgently needed so that religious values regarding environmental conservation would not only appeal but could develop to be part of the culture of Indonesian society. The view of Interviewee number 1 is not much different when asked about religious values and environmental ethics. In his opinion, instilling an awareness of nature and the environment needs to first be started within the family then further strengthened through the formal education sector. Character building such as environmental ethics should now be instilled and taught from a young age. Religious values are still highly respected by the majority of Indonesian societies, hence the religious values approach is still effective in increasing society's awareness to safeguard and preserve the environment, and to refrain from any activities that could damage it.

The absence of virtue especially from religious values in the aviation industry would only create a global injustice, consequently resistance movement would arise and certainly bring more loss to the aviation industry. An example of this is a resistance movement that has arisen in Europe that in Swedish is called *flygskam* (flight shame). That movement has now spread beyond Europe and became a global call against the use of air transportation to reduce carbon emission. However, if we aim and place our effort to spread individual awareness through virtue or character-based education then each person would certainly be wiser and more careful in choosing which acts are to be avoided or limited to prevent negative environmental effects. Even though such actions might influence the production-consumption rate of a country or global economy, however, products and services that will be present would certainly have a better quality and be more environmentally friendly, despite the reduction in quantity.

Reports from The International Council of Clean Transportation show that the majority of air travel (62%) is done by people from the high income group, followed by the middle and then the mid-lower income group. The low income group contributes to only 1% of air travel, although the population of the high-income earners accounts for only 16% of the world's population as shown by the World Bank data. This shows that the majority of air transportation is done by high-income earners, although their actual percentage in the population is low. Therefore without the virtue of simplicity, the aviation industry will continue to show global injustice. In the end, the positive effect of the aviation industry development toward prosperity of the global population will decrease, since the negative effect would not only impact the high-income earners but rather all levels of society that might never have used air transportation throughout their lifetime. Furthermore, the report of The International Council of Clean Transportation has shown the data of the 10 top countries that contribute to the carbon emission from the aviation sector, which is dominated by rich countries such as the United States which tops of the list, followed by China, the United Kingdom, Japan and Germany (Graver, Zhang, and Rutherford, 2019).

Islāmic teaching does not oppose rich people or wealthy countries nor cultivate envy as a framework of thinking. On the contrary, in *Islām* wealth is one of the external virtues which are beneficial for acquiring the virtues of the soul. The nature of external virtue itself is neutral because it depends on how someone utilizes

them. If the external virtues are guided by reason then it will lead to good, but on the contrary, if it is not, it will bring evil. Al- Ghazali in Mohamed (2006), explained about wealth and its relation with other virtues, “the virtues fall into three categories: the virtues of the soul, the virtues of the body and the external virtues. The basest category is the external virtues and the basest of the external virtues is money. Money serves but is not served. Other virtues as the body, food and clothing, serve and are served. The body serves the soul, food and clothes serve the body, and wealth serves food and clothes. Wealth serves other virtues, but other virtues do not serve wealth. It should not become an end in itself, otherwise, it becomes a vice”.

TABLE 1
CO₂ Emissions from Air Transportation Passengers (2018)

No	Departure	CO ₂ (MMT)	% of Total CO ₂
1	USA	182	24
2	China	94.9	13
3	United Kingdom	29.8	4.0
4	Japan	23.4	3.1
5	German	22.2	3.0
6	United Arab Emirates	21.1	2.8
7	India	19.4	2.4
8	France	19.2	2.6
9	Australia	19.0	2.5
10	Spain	18.5	2.5

Source: (Graver, Zhang, and Rutherford, 2019)

Islām strongly opposes injustice such as exploitation of nature, oppression by the strong over the weak or the wealthy over the poor. The global resistance movements such as the 'flight shame' movement appear because of injustice and lack of individual integrity now widespread in society. The flight shame movement, however, has to be addressed wisely by all the aviation industry stakeholders and be taken as a suggestion to ensure that travel being done is useful and benefits mankind and the environment. In order to prevent climate change and further environmental destruction, the indicator for progress in air transportation should no longer be measured by increase in quantity but rather the quality of the flight. Justice as an environmental virtue must be one of the values of the environmental ethic development in the aviation industry. In the EVE perspective,

the aim of the world's aviation is virtuous aviation which does not merely count profit as a measure of success without moral commitment in aviation industry stakeholders to solving environmental problems.

4. CONCLUSION

Environmental Virtue Ethics (EVE) provides thinking frameworks and important assumptions for solving various environmental issues. The aviation industry that undergoes severe impacts from Covid-19 outbreaks must formulate new strategies for sustainable aviation which address EVE. The strategy should involve the virtue of simplicity (*qanā'ah, sakhā' and wara'*), independence (freedom/*hurriyyah*) and justice (*adālah*). Simplicity means limiting the use of external material and to focus on one's responsibilities. In the aviation context, any air travel should be based on noble intention, and not derive from consumptive behavior nor human greed. Meanwhile, the virtue of independence means that every aviation stake holder has the right to choose what is the best for the industry while avoiding negative environmental impacts. Unfortunately, the green economy paradigm in aviation has raised the issue of state independency. States with strong economy and technology advancement seized the potential independency over the less-powerful states such as Indonesia in the case of biofuel regulation to replace fossil fuel which is part of the green economic program.

Justice in the context of environmental virtue ethics means to understand and acknowledge the concept of nature and its relations to human beings. The concept of nature as a responsibility (*amānah*) given by God to human beings is at the center of *Islām* that has both a physical and metaphysical dimension. On that account, religious value becomes an essential feature in development of EVE. The absence of virtues, especially those stemming from religious values in the aviation industry would create a global injustice and consequently induce a resistance movement, such as the flight shame, that certainly would bring more loss to the aviation industry. Therefore, EVE that accommodate religious values is urgently required as an alternative to secular ethics. *Islāmic* Virtue Ethics will flourish human character and transform people to be virtuous persons because it has the best role model who is Prophet Muhammad (*ṣal-Allāhu 'alayhi wa sallam*). Eventually, the virtuous person will shape a virtuous society that does not see nature solely from the economic point of view but regards it as a creation having the right to thrive and

live. Nature is the creation of *Allāh ‘azza wa jalla* and human beings have been given a responsibility (*amānah*) to protect it. In EVE based on *Islāmic* Virtue Ethics, the aviation industry aim would be virtuous aviation, where profit is not the only measurement of success without moral commitment from the stakeholders to environmental stewardship.

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