



# Employees' Green Value Creation in the Post Covid-19 Pandemic Through Green Management Practices

Siew-Fong Lai<sup>(✉)</sup>, Wan-Leng Lim, and Guan-Khai Kho

Faculty of Accountancy and Management, Universiti Tunku Abdul Rahman, Jalan Sungai Long,  
Bandar Sungai Long, 43000 Kajang, Selangor, Malaysia  
{laisf, limwl, khogk}@utar.edu.my

**Abstract.** Covid-19 triggered health crises, lockdowns and travel restrictions that brought about overwhelming economic and social disruptions. While lockdowns have lowered air and noise pollution, this shift in lifestyle has increased waste products resulting from single-use plastics and medical wastes which are detrimental to the environment. The Environmental Performance Index (EPI) declined from a score of 47.9 in the year 2020 to the current score of 35, which ranked Malaysia far behind neighbouring countries like Singapore and Thailand. This responsibility to rebuild a greener environment should not be restricted to regulatory authorities or corporations but should involve all individuals. The personal green value may influence the pro-environmental behaviours of employees towards successful environmental management. Organisations implement various green management practices into their operations to strengthen environmental performance. This study aims to examine the extent to which green management practices can impact employees' green values, especially during the post-Covid-19 phase in Malaysia. The research will use a questionnaire survey of 450 employees and structural equation modelling for data analysis. The findings could enlighten businesses and organisations on green management practices that could enhance employees' green values at the workplace to promote a sustainable environment and contribution toward building a better future.

**Keywords:** Green values · Green practices · Green management · Value creation · Sustainable environment

## 1 Introduction

When the Malaysian government implemented Movement Control Order (MCO) to minimize the risk of spreading the Covid-19, the Malaysia air, water quality and noise pollution improve significantly (Praveena and Aris, 2021). However, the pandemic and the lockdowns have also increased single-use plastic and medical waste. According to Peng *et al.* (2021), as of August 23, 2021, there is an average of  $8.4 \pm 1.4$  million tons of the medical-related waste dispose such as glove, mask and medical equipment have been dump from 193 countries, with  $25.9 \pm 3.8$  thousand tons of the above amount was not

been properly manage, it had been dispose to the nearby ocean, and of which, 72% of the global release is from Asia. For instance, plastic waste during an 8-week lockdown in Singapore generated additional plastic waste of 1,470 tons (Bengali, 2020) contribute by the packaged food and household deliveries. During the peak of the pandemic in India, the second largest populated country in the world, has disposed 13,000 metric tons of used medical related plastic waste per day (Mallick et al., 2021).

The environment is also negatively affected by a large amount of methane gas released from the decomposition process of food waste that cause either by insufficient skills during the handling and storage phase, production processing, distribution stage, or lack of infrastructure or poor practices among consumers or individuals (Schanes et al., 2018). Besides, the improper disposal of solid wastes can cause air, soil, and water pollution. In Malaysia, the solid waste generated is estimated to be 38,427 metric tonnes per day in 2021 and out of this waste, 82.5% is disposed to landfills (Malaysian Investment Development Authority, 2021) and these have caused clogs drains and frequent floods during rainy seasons.

The responsibility to protect the environment should not be restricted to certain regulatory authorities or corporations, it should be the responsibility of every individual. According to Zhou et al. (2018), individuals who possess green values may stimulate them to be more environmentally conscious and focus on inculcating environmental protection views in their daily work. To instil green values in individuals, companies may implement green human resource management practices and green management activities, such as green purchasing, green marketing, etc. in their business undertakings to assist the employees to work towards a sustainable environment, which in turn, may enhance the overall sustainability performance of the organisations. In other words, “green” will involve various functional areas of the organisation to achieve a competitive advantage (Zhu, Wu and Shen, 2022).

## 1.1 Research Problem

Changes in daily life during the Covid-19 pandemic have increased human consumption and waste production. In Malaysia, the Environmental Performance Index (EPI) has dropped from a score of 47.9 and a rank of 68 in the year 2020 to a score of 35 and a rank of 130 in the year 2022 (Wendling et al., 2020; Wolf et al., 2022). As compared to Singapore and Thailand, although Malaysia has both the EPI score and ranking above Thailand in the year 2020, however, Malaysia has the lowest score EPI and ranking in the year 2022 among the three countries (Table 1).

It is indisputable that government and policymakers need to react promptly to build a greener post-covid-19 economy, citizens must also change their values, norms, and beliefs as individuals’ values have a significant impact on their pro-environmental behaviours in both home lives and at the workplace which are essential to shaping the environmental sustainability.

Research has been done to identify on how organisations utilise green human resource management (GHRM) practices. The practices cover various element in green perspective from recruitment to selection of candidate, providing the employee green related training and development, they need to know about performance management and appraisal, green reward and compensation, and green empowerment (Gilal et al., 2019;

**Table 1.** Environmental Performance Index

EPI	2020		2022	
	Score	Rank	Score	Rank
Singapore	58.1	39	50.9	44
Malaysia	47.9	68	35.0	130
Thailand	45.4	78	38.1	108

Source: Environmental Performance Index 2020 and 2022 Environmental Performance Index

Chaudhary, 2020) to equip their employees with appropriate environmental behaviours to improve the organisational environmental and sustainable performance (Anwar et al., 2020; Mousa and Othman, 2020). Studies outcome indicate that association with GHRM, individual green values can be enhance by green behaviour (Islam et al., 2020; Hameed et al., 2020).

Besides GHRM, practice green management like green purchasing, green marketing, green transportation, and green manufacturing consider as an important element to guide employees to upgrade their green values and subsequently change their perception on green behavior. The majority of the studies on these green management processes focus on the factors which affect green management and sustainability performance. For instance, environmental attitudes, environment knowledge, subjective norms, perceived behavioural control, conditional value, and emotional value have been factors to consider in green purchase decisions and it has been identified that these factors have a significant influence on tourists' decisions on purchasing green products and services (Nekmahmud et al., 2022). Factors such as stakeholder demand, resources, knowledge and product uniqueness are applied to determine their effect on green marketing and found that these factors also have a significant effect on green management (Raharjo, 2018). Likewise, studies on the motivator factors as well as the challenging factors influencing the adoption of green practices have also been conducted (Ghazilla et al., 2015). Previous studies also tend to focus on various other values such as cultural values, materialistic values, consumption values, economic values, and emotional values that influence green practices (Lobo and Greenland, 2017; Sheng et al., 2019; Nguyen, Nguyen and Nguyen, 2019; Amin and Tarun, 2020; Joshi, Uniyal and Sangroya, 2021). However, there was limited research to examine the role of green management practices (other than GHRM) in enhancing the employees' green values which have a significant impact on individuals' environmental behaviour (Hazaea et al., 2022).

## 1.2 Research Objectives

The purpose of this study is to examine to what extent green management practices can build employees' green values, especially in the post-Covid-19 era in Malaysia. The objectives of this study are:

1. To examine whether green purchasing has a significant effect on employees' green values in the post-Covid-19 era in Malaysia.

2. To determine whether green manufacturing has a significant effect on employees' green values in the post-Covid-19 era in Malaysia.
3. To investigate whether green transportation has a significant effect on employees' green values in the post-Covid-19 era in Malaysia.
4. To determine whether green marketing has a significant effect on employees' green values in the post-Covid-19 era in Malaysia.

## 2 Literature Review

### 2.1 Employees Green Value

Green values are also referred to as “ecological values” or “environmental values” (H. Peng *et al.*, 2021). Environmental values focus on the welfare of the environment and biosphere which can influence employees' pro-environmental behaviours and actions towards protecting and preserving the environment (De Groot and Steg, 2010). It is important to align employees' green values and management practice in inspiring positive employee behaviours as employees who possess strong environmental values tend to engage more in green creativity in generating new ways to protect the environment (Al-Hawari, Quratulain and Melhem, 2021).

According to Zhou *et al.* (2018), employees' green values comprise employees' individual beliefs and personal norms concerning the environment. An individual's beliefs are values such as equality, freedom, security and pleasure which will form the individual green values that will impact the employees' environmental values at the workplace (El-Tony and Choo, 2021). Personal norms are seen as the feeling of having a personal obligation to fulfil one's self-expectations and thus personal norms are crucial to driving individual green behaviour (Chou, 2014).

An individual's value does influence an individual's environmental behaviour (El-Tony and Choo, 2021) and accordingly, an individual with green values tend to be more sensitive to safeguarding the environment and are likely to consume products and technologies that are beneficial to the environment. In addition, Zhou *et al.* (2018) concurred that the individual's green values could encourage workplace attitudes and therefore cultivate behaviours that promote sustainable developments.

Studies conducted by Jawaad and Zafar (2020) and Han and Huo (2020) indicated that organisational green values that are sustainable could create a competitive edge if contained elements such as green manufacturing, green purchasing, green transportation and green marketing are part of the company's green culture. All the above elements will enrich the environmental performance and increase the green values of the company as well as the green values of the employees. Hence, it is important for the company to continuously promote green culture especially in creating employees' green behaviours and green values.

### 2.2 Employees Management Practices

Green management practices refer to the managerial processes and methods of how firms organise the effects of their activities on environmental aspects, including the use

of innovation to obtain sustainability, waste reduction and environmental responsibility. Organisations would be aware and take measures to reduce the environmental impact through green production, conducting green research and green marketing, and therefore play a crucial role in pushing the organisational green agenda (Naruetharadhol et al., 2021).

According to Alzool (2019), the term green gives a sense of something that is nature-friendly and could help to preserve its healthy prospects of it. It is also known as the initiation and/or set of activities that could help prevent environmental contamination.

Effective green management practices that apply eco-friendly processes in reducing the utilisation of resources and minimising waste generation play a fundamental role in an organisation in obtaining a positive efficiency outcome and incalculable benefit to the environment (Roy and Khastagir, 2016). In addition, organisations which implement green practices can assist their employees to understand the importance of green prospects for the business and enhance their green values (Alzool, 2019).

### 2.3 Green Purchasing

Green purchasing relates to the procuring of products or services that can conserve energy and water, minimise waste and pollutants, enable reusable or recyclable, and reduce the negative environmental impacts (Dubey et al., 2013). This denotes that the organisation uses the environmental criteria in sourcing the suppliers, and collaborating with suppliers in environmental management in green purchasing.

According to Shaharudin et al. (2018), compliance with laws and regulations about the environment, obtaining support from the top management and maintaining good supplier relationships can influence organisations to adopt green purchasing practices. Bohari et al. (2020) affirmed that stakeholders' values which include the stakeholders' decisive commitment to achieving the green goals and their technical competencies about green products are the prime elements for organisations to apply green purchasing practices. In addition, Foo et al. (2019) commented that organisations require specific capabilities such as green manufacturing capabilities, green-integration capabilities, green financial capabilities and green intra-organisational capabilities to implement green purchasing practices successfully.

Implementing green purchasing practice in an organisation can improve the purchasing operating function and this effect is bigger when an organisation maintain long-term relationships with its suppliers (González-Benito et al., 2016). Furthermore, green purchasing practices enable the buyers and the suppliers to set up the standard norm and interpersonal linkage in solving problems together; enabling the companies to achieve the triple bottom line performance by reducing the release of hazardous, toxic materials to the environment; reducing the cost of energy consumption, cost of waste discharge and improving profitability; and enhancing the organisational corporate image (Foo et al., 2021).

### 2.4 Green Manufacturing

Green manufacturing refers to the practice that applies green strategies and techniques in the production process by making use of the low environmental impact inputs and

carrying out the minimal waste and contamination processes in producing the outputs (Ghazilla et al., 2015). It involves the designing of green products that do not harm nature when it is manufactured, in used, or in disposing of the products after use (Vrchota et al., 2020) to ensure reducing the waste entering the landfill and minimise the depletion of natural resources (Karuppiyah et al., 2020). Green manufacturing also involved the usage of energy technology that is efficient - for example, the use of emission control systems for greenhouse gases, and practices recycle, remanufacture and reuse policy (Raut et al., 2019).

According to Sezen and Cankaya (2013), green manufacturing enables organisations to consume less energy and resources, produce lesser waste and results in reduced environmental pollution and therefore enhances the corporate image. The reduction in waste and the saving of energy and resources in green manufacturing help organisations to decrease their production costs and increase profitability (Cankaya and Sezen, 2018). An organisations engaging in green manufacturing practices able to improve their environmental sustainable performance, which will become a norm practice to employee daily routine and spread to the society at large too. Hence, these organisations are responding positively to the stakeholders' pressure to diminish the adverse environmental aspects in their manufacturing operations (Afum, Osei-Ahenkan, *et al.*, 2020). The elimination of the toxic chemicals from green manufacturing protects the employees from being exposed to hazardous materials, and thus enhances the organisational social relationship (Cankaya and Sezen, 2018). Furthermore, green manufacturing practices can assist organisations to establish cleaner and more harmonious working conditions and achieve a balance between business and the environment (Afum, Agyabeng-Mensah, *et al.*, 2020).

## 2.5 Green Transportation

Rapid urbanisation and the shift of economic activities from agriculture to industries over the past decades had led to an explosion of demand for public and personalised vehicles (Shah et al., 2021). There were 1.4 billion cars in use worldwide in 2021 as compared to 1.09 billion cars in use in 2011 (of which 289 million are commercial vehicles) (OICA, 2021), showing an increase of 28% over ten years. According to Panday and Bansal (2014), more than 350 million conventional vehicles were mobilise in OECD and non-OECD countries in 2020 and this figure is expected to reach 400 million in the OECD countries by 2030. As a result, air quality declined, mobility problems escalated and pollution increased, which put the global environment under stress. To mitigate these unfavourable impacts, the present transportation system should explore a more sustainable transportation system, which is also known as green transportation.

Green transportation refers to a diversified transportation system that revolves around making efficient and effective use of resources, modifying the transport structure and making more environmental choices, including car-pools, public transportation, bicycles and walking (Wang, Wang and Yang, 2020). This could be taken as the "greenness" of urban transportation which involved reduction in traffic congestion, reduction in environmental pollution and promoting the shift to environmentally friendly transportation modes. Thus, sustainable transportation could be taken as the ability to meet the mobility

needs of society in a manner where the environment is least polluted and the mobility needs of the future generation are not impaired (Shah et al., 2021).

The Covid-19 pandemic had left an undeniable impact on the travel landscape worldwide, from private vehicles to public transportation in busses, trains and planes (Shah et al., 2021). If there is a silver lining to this pandemic, it is the opportunity to make use of economic and technological advances to transform conventional transportation into a green one. The move toward green transportation could enhance the green values of individuals that will in turn give rise to individuals who are more sensitive to safeguarding the environment and utilise transportation that is green to cultivate a sustainable transportation system.

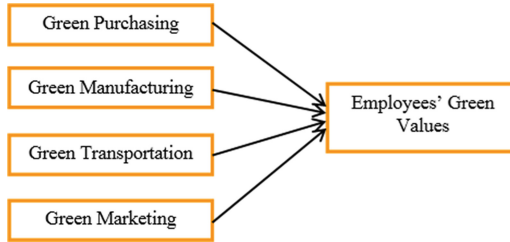
## 2.6 Green Marketing

Green marketing encompassed a broad range of activities on consumer goods, industrial goods, and services. Green marketing involves product modification, changes to the production process, packaging changes and modifications to advertising to ensure minimal adverse impact on the environment (Jain, Nagaria and Singodia, 2022). These activities are in sync with the motivation of introducing green marketing in 1970, which was intended to minimise the negative environmental impact caused by marketing activities that do not promote sustainable consumption (Latip *et al.*, 2020). It should be noted that conventional consumption led to the increasing global solid waste generation which is expected to reach 6 million tons per day by the year 2025. Consequently, this triggered the surge in handling costs for waste management and the deterioration of the environment (Latip *et al.*, 2020).

According to Emery (2011), the green consumer will be loyal to the company which practices green marketing. Some companies embedded green marketing in their companies' goals and missions to create green values. The concept was further discussed by Wahba (2012) such that once a green value is created, the company needs to have strong aspirations and holistic integration among departments to sustain it. A green product can certainly be a brand to the company on top of being able to differentiate itself from other competitors in the market.

Green marketing refers to the practice which comprises modification of products, modification of production processes, modification of packaging and advertising to develop and promote the products and services that can satisfy the customers at the same time not to detriment the environment (Mishra and Sharma, 2014). Companies using green marketing tools such as environmental advertising and eco-labelling can switch the consumers' behaviours to purchase environmentally friendly products and services (Delafrooz, Taleghani and Nouri, 2014).

Green marketing enables organisations to enhance their customers' green trust which leads to a positive attitude of customers toward green products and services (Widyas-tuti et al., 2019). Effective green marketing activities must be carefully implemented to promote companies' green products to end users, particularly to green consumers. Thereafter, individual green values will be created (Wahba, 2012).



**Fig. 1.** Research Model

## 2.7 Conceptual Framework

A proposed research framework is composed based on reviews of past empirical studies. In this study, the dependent variable is employees' green values and the variables that are expected to influence the employees' green values are green purchasing, green manufacturing, green transportation, and green marketing. A conceptual framework for this research is constructed as indicated in Fig. 1.

## 3 Research Methodology

This study employs the quantitative approach to examine the key green management practices that could impact individual/employee green values to enhance the environmental performance of organisations, especially in the post-Covid-19 environment. The key variables within green management practices that are explored in this study are green purchasing, green manufacturing, green transportation, and green marketing.

A survey questionnaire will be administered to gather 450 responses from the employees in Malaysia. This sample size is expected to exceed the minimum sample size determined via the G\*Power (Erdfelder et al., 2009). The electronic questionnaire will be employed where respondents could either scan the QR code or the link provided by the researchers. Given the current endemic setting, this selected method is cost and time efficient. To ensure a higher response rate from respondents, convenience sampling will be applied. A brief explanation will be attached to the questionnaire to explain the purpose of this academic study and that all details collected will be kept anonymous.

The primary data collected will be analysed by utilising the structural equation modelling (SEM) to investigate the relationship between these variables on green management practices on the individual/employee green values in this post-Covid-19 backdrop.

## 4 Conclusion

The Covid-19 pandemic, though not desired, has sparked economic and social disruptions worldwide. It has brought about new normal of conducting business and shifted the lifestyles of many. Public health emergencies, lockdowns and travel restrictions have seen lowered air and noise pollution but caused a decline in EPI in Malaysia due to waste



products from single-use and medical wastes. This highlighted the dire need to manage the environment appropriately for long-term sustainability. Therefore, organisations, policy and regulatory authorities as well as individuals should come together to rebuild a greener environment for sustainable living.

Organisations that adopted green management practices into their operating activities could contribute toward employees' green value creation, strengthen their competitive edge and at the same time, enhances environmental sustainability. Thus, this study aims at examining the extent of green management practices in influencing employees' green value creation in Malaysia, especially in the post-Covid-19 pandemic period. The green management practices included in this study are green purchasing, green manufacturing, green transportation, and green marketing on the part of organisations, which are believed to contribute to the employees' green value creation. This study utilises the quantitative approach with the use of survey questionnaires and the SEM to analyse the data collected.

The findings of this study could enlighten businesses and organisations to incorporate green management practices to enhance employees' green values. Promoting green management practices to enhance a sustainable environment requires strong involvement between the organisations, policy communities and individuals. It is hoped that this study inspires all parties to create changes on their own and become vested in the well-being of environment for the future generations.

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