

# **Workplace Pro-Environmental Behavior Determinants: A Systematic Literature Review and Preliminary Study**

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## **Abstract**

Green growth can be achieved through environmental sustainability which can be translated into workplace pro-environmental behavior at the individual level. Workplace Pro-environmental behavior refers to a range of actions directed toward the environment that includes all forms of voluntary or prescribed activities performed by individuals at work to protect the natural environment or enhance organisational green practices. Therefore, necessary efforts in identifying the key determinants of pro-environmental behavior among Malaysian public servants should be taken to realize Malaysia's green growth achievement since public servants are the largest workforce in Malaysia. Moreover, studies on pro-environmental behavior among the Malaysian public servant is still limited. Hence, this study aimed to explore the determinants that influence workplace pro-environmental behavior (WPEB) based on systematic literature review and preliminary study. A comprehensive systematic literature review has been conducted to identify articles that empirically examined the determinants of employee pro-environmental behavior through the trusted SCOPUS databases sources. Next, a preliminary study was done to further evaluate and rank the importance of each determinant obtained from the systematic literature review conducted earlier in this study. A total of five key figures were chosen to participate in the preliminary study based on their experience and expertise and they were requested to evaluate the importance of each determinant of WPEB based on the experience of WPEB in their workplace setting. Overall analysis results from the mean value obtained from the preliminary study showed two individual environmental concern and environmental harmonious show a high level of mean score of 4.80. Likewise, environmental transformational leadership and perceived organization support toward environment achieved the highest mean score of 4.80 collectively represented organisational determinants.

## **Keywords**

Workplace pro-environmental behavior, public servants, determinants

## **1. Introduction**

Malaysia is embarking on a clear direction to sustain the standards and reliability of sustainability, and it is expressly stated in the 11th Malaysia Plan (2016-2020) and 12th Malaysia Plan (2021-2025) that this will be achieved through green growth initiatives. Green growth refers to growth that is effective in using natural resources, clean in a way that it lessens the pollution and hazardous environmental impacts, and strong in a manner that it accounts for natural hazards and the role of environmental management and natural capital in avoiding physical disasters (Bedir & Kara 2012). A green growth direction will protect the country's natural endowments for future generations, reduce greenhouse gas (GHG) emissions and improve environmental quality for better well-being. Therefore, green growth is perceived as one of the strategic thrusts that help in enabling Malaysia to stay one step ahead in facing challenges and opportunities in the fast-changing global and political landscape. However, the achievement of sustainability initiatives does not simply rely upon adoption of policies and different initiatives organized by the government. The empowering environment for green growth must include a long-term responsibility from all stakeholders, businesses, citizens, and public servants. Among the stakeholders, public servants are the basic group in guaranteeing the successful usage of different developmental policies and projects, as they are the backbone of a country.

Realizing the importance of public sector involvement, the Malaysian Administrative Modernization and Management Planning Unit (MAMPU) has introduced an initiative that specified the public sector involvement toward green growth focusing on nurturing green culture at the workplace by introducing Public Sector Conducive Ecosystem (EKSA). One of EKSA's main objectives is to create a green and helpful biological system through the culture of green practices in the public organization workplace. However, based on the preliminary interview conducted among key person in public organization, they admitted that the level of Malaysian public servants is still low to moderate level. Furthermore, with the large number of public servants resulting in significant waste generation and high consumption of paper, electricity, water, and other materials, the unsustainable behaviors of the government building residents were found to be the major contributor to waste generation, high water, and high electricity consumption in government buildings of Malaysia (Bedir & Kara 2017).

Therefore, altering human behavior by nurturing pro-environmental behavior is a crucial field of research (Cramer et al. 2018). Pro-environmental behavior has proven to be very important in the fight against the adverse effects of several unsustainable behaviors and environmental issues that have been discussed. This debate is favored by (Safari et al. 2018) who stated that pro-environmental behavior is one of the preventive behaviors and strategies that can be implemented by informing employees about potential environmental implications and encouraging them to think about how their actions affect the environment

### **1.1 Objectives**

This study aimed to descriptively explore the determinants of workplace pro-environmental behavior among the public servants through a rigorous method of systematic literature review and preliminary study.

## **2. Literature Review**

This section reviews the relevant issues to provide in-depth understanding on workplace pro-environmental behavior (WPEB) and the organisational and individual determinants that influence WPEB.

### **2.1 Overview of WPEB**

Workplace pro-environmental behavior (WPEB) term is the extension of pro-environmental behavior (PEB). WPEB reflected the pro-environmental behavior (PEB) in the workplace which focused on the individual employee green behavior in the organization. Thus, WPEB is described as environmentally appropriate conduct related to the company that workers adopt while doing their work. While the setting (workplace) is a definitive factor, employee green behaviors differ from general pro-environmental behaviors by the degree of control exerted by organizations. While pro-environmental behaviors totally rely upon personal voluntary selection, such conduct is scrutinized by employers; in fact they may be regarded as personal career requirements by the company, a main sign being organizational ecological capability (Ones et al. 2015).

### **2.2 WPEB Determinants**

This study loosely grouped into two distinct of determinants that contribute to workplace pro-environmental behavior (WPEB) which include individual and organizational determinants as recommended by Lo et al.(2013). In the

following section, the researcher explored potential determinants of WPEB based on the systematic literature review (SLR) conducted prior to the preliminary study. To understand the current state of research on pro-environmental behavior in the workplace, a comprehensive systematic literature review has been conducted to identify articles that empirically examined the determinants of employee pro-environmental behavior through the trusted SCOPUS databases sources. SCOPUS database was chosen because it is ensuring only the highest quality data are indexed through rigorous content and re-evaluation (Baas et al. 2019). Furthermore, most of the top-tier journals and resources published in the Web of Science database are included in the SCOPUS database (Lasda Bergman 2012).

### **2.3 Individual Determinants**

Individual determinants are described as psychosocial factors relevant on the individual level (Lo et al. 2013) but not directly refer to organizational context. From the SLR conducted, fifteen individual determinants have been studied by scholars in WPEB. Individual determinants have a direct relationship with individuals and their behavior within the organization and it is found that most studies look at individual determinants (39 frequencies).

Among all the fourteen determinants, environmental concern (EC) appears to be the most selected variable (9 frequencies) as the key enablers of WPEB. Researchers defined EC as individual awareness or insight regarding the threatened natural environment due to resource depletion as well as pollution (Franzen & Meyer 2010). Attitude was ranked as second highest (4 frequencies) selected by scholars in environmental studies. An attitude is "a relatively enduring organization of beliefs, feelings, and behavioral tendencies towards socially significant objects, groups, events or symbols" (Hogg & Vaughan 2005). The third rank (3 frequencies) includes four determinants which are: (i) altruistic/environmental value (ii) personal norms; (iii) intrinsic motivation and (iv) environmental harmonious passion (EHP). Altruistic/environmental values have an indirect effect on behavior by activating norms, thereby instilling a sense of moral obligation (Schwartz 1977) to act pro -environmentally. Personal norms are defined as an individual's feelings of moral obligation toward performing a certain action or behavior (Schwartz 1973).

Intrinsic motivation entails engaging in an activity solely because it is intrinsically interesting or pleasurable (Gagné & Deci 2005). EHP appears to be a new variable that recently studied and found to have a significant impact on WPEB. Harmonious passion is a positive emotion under personal volition; it leads to motivation to indulge in an activity or relationship targeted by the passion (Vallerand 2010). Determinants ranked fourth (2 frequencies), includes: (i) awareness; (ii) environmental knowledge (iii) intention (iv) affect (v) Public Service Motivation (PSM) and (vi) Perceived behavioural Control (PBC). The fifth-ranked determinants based on the frequencies comprise (i) moral reflectiveness and (ii) demographic factors. However, all these individual determinants were further evaluated by expert panels in a preliminary study for final determinants selection of WPEB among the Malaysian public servants. Furthermore, individual determinants need to be synergized with organizational determinants in order to boost the WPEB among public servants. The following sub-section discusses the organizational determinants.

### **2.3 Organizational Determinants**

The influences on behavior that are specific to the organizational context are known as organizational determinants (Lo et al. 2013). Organizational determinants play an important role in influencing individual WPEB as organizations could foster sustainability mainly from top-down, in which managers transfer ecological awareness to workers (Lamm et al. 2013). Given the fact, that environmental issue arises from aggregated human behavior and need collective collaboration in resolving these issues, individual determinants alone cannot help to addressing environmental problem (Fritsche et al. 2018). Thus, it shows that organizations and individuals are interrelated in order to nurture the WPEB in the workplace context.

Based on the systematic literature review conducted in this study, organizational determinants received a greater share of research attention whereby thirty-nine (39) studies measure WPEB through various determinants such as organizational policies, strategies, and practices, perceived organizational support, organizational culture/climate, and organizational size. Organizational policies, strategies, and practices toward the environment appear to be the predominant factors studied by scholars in WPEB (9 frequencies). According to Ramus & Steger (2000) environmental policy is a strong and well-communicated policy of environmental protection. It is a strong predictor of employee environmental initiatives. Lasrado & Arora (2017) noted that it is important to set a strategy, policy, and measures for green activities in order to improve environmental citizenship in multinational corporations. environmental leadership style greatly influenced employee WPEB (9 frequencies) and also ranked as number one. Egri & Herman (2000) and (Ramus & Steger 2000) noted that companies and organizations are controlled by

management, therefore leadership can be considered as an important factor. The second rank shows that perceived organizational support toward the environment (POSE) has been the focus (7 frequencies) as the significant variable influencing WPEB. POSE is “the specific belief held by employees concerning how much the organization values their contributions toward sustainability” (Lamm et al. 2014).

The third rank categorized in the organizational determinants comprises (i) organizational culture and climate and (ii) co-worker influence. Organizational climate is briefly defined as individuals who assigned to interrelated bundles of experiences they have at work (Schneider et al., 2013), whereas organizational culture associates more with basic organizational principles and preconceptions, and it is often subjected to qualitative research (Lasrado & Arora 2017). Colleague norms or Co-worker influence refer to the degree of pressure a person perceived from colleagues or friends in the same workplace (Fornara et al. 2011) to perform or not to perform the behavior (Wang et al. 2018). The fourth rank in the category of organisational determinants is external motivation. According to (Ryan & Deci 2000) external motivation is not owned by the individual and depends on the continual presence of reward and punishment. Organizational size ranks fifth in organizational determinants. The organizational size was explored by only one study (Tudor et al. 2008) and this variable was found to have a significant impact on PEB.

### 3. Methodology

Systematic Literature Review (SLR) was used to map out areas of uncertainty in research to identify gaps in the research area and recommend opportunities for future research (Petticrew & Roberts 2006). To understand the current state of research on pro-environmental behavior in the workplace, a comprehensive systematic literature review has been conducted to identify articles that empirically examined the determinants of employee pro-environmental behavior through the trusted SCOPUS databases sources. Figure 1 summarized the overall steps in performing a systematic literature review that falls into four main categories which are tracking, selection, eligibility, and inclusion.

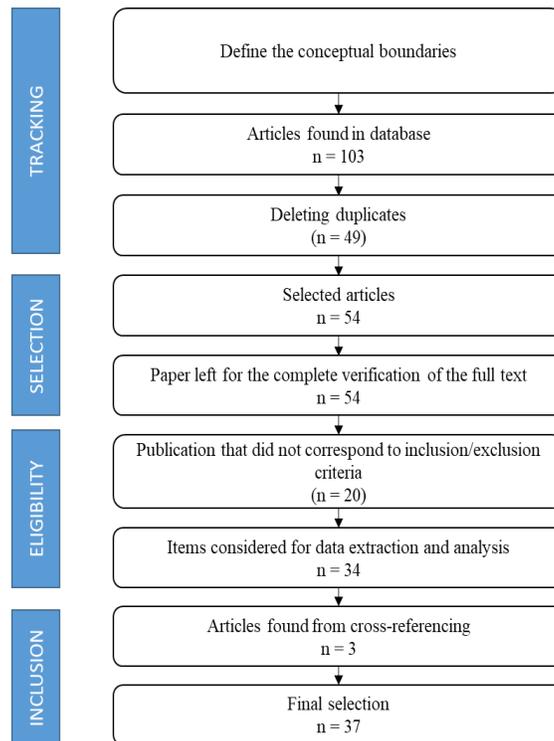


Figure 1. Systematic Literature Review Process Flow

Consequently, a preliminary study was done to further evaluate and rank the importance of each determinant obtained from the systematic literature review as discussed in the preceding section. The respondents were asked to evaluate each individual and organisational determinant based on a 5-point Likert scale ranging from 1- Not at all important to

5- Extremely important. The rank was made based on the mean values obtained. The determinants with the highest mean value will be selected as the determinant for the actual study. Respondents were requested to evaluate the importance of each determinant of WPEB based on the experience of WPEB in their workplace setting. The details of each key figure involved in this preliminary study are shown in Table 1. Furthermore, respondents were also required to evaluate the level of the WPEB practices among the public servants based on their observation. Responses of WPEB item were based on 5-point Likert scale consisting of 1 = Very Low, 2 = Low, 3 = Moderate, 4 = High, 5 = Very High.

Table 1. Key Respondents Background

Respondents	Respondents background
<b>KP 1</b>	Representative for the highest authority in setting standard and policy for developing and reforming public administration.
<b>KP 2</b>	Representative for the ministry that is responsible for urban well-being, local government & solid waste management.
<b>KP 3</b>	Representative of state council in Malaysia
<b>KP 4</b>	Representative of the public organization that has awarded good green practices
<b>KP 5</b>	Representative for one of the top performers of (green practices) amongst governmental organisations

#### 4. Results and Discussion

Table 2 shows the overall analyses results from the frequency obtained from SLR and mean value obtained from the preliminary study for individual determinants. The results obtained show environmental concern (EC) and environmental harmonious passion (EHP) obtained a higher means ranked by the respondents. EC and EHP show a high level of mean score of 4.80. Other variables such as attitude, awareness, and environmental knowledge show a moderate level mean score of 3.20. Intrinsic motivation, PSM, and moral reflectiveness display the same mean value of 2.80. Intention determinant depicted a mean score of 2.60. Variables having low level mean are environmental value which portrayed mean score of 2.20. The lowest mean value of 2.00 is for perceived behavioral control (PBC) and socio-demographic.

Table 2. Comparison of Individual Determinants Based on Systematic Literature Review and Preliminary Study Findings

Individual Determinants	Key figures rating (Preliminary Study)						SLR Frequencies
	KP 1	KP 2	KP 3	KP 4	KP 5	MEAN	
Environmental Concern(EC)	5	4	5	5	5	<b>4.80</b>	<b>9</b>
Attitude	3	4	3	3	3	3.20	4
Altruistic/Environmental value	2	3	2	2	2	2.20	3
Personal Norms	3	2	3	2	2	2.40	3
Intrinsic Motivation	4	2	3	2	3	2.80	3
Environment Harmonious Passion (EHP)	5	4	5	5	5	<b>4.80</b>	<b>3</b>
Awareness	3	3	3	4	3	3.20	2

Environmental Knowledge	3	3	2	4	4	3.20	2
Intention	3	3	2	3	2	2.60	2
Public Servants Motivation (PSM)	3	4	3	2	2	2.80	2
Affect	2	3	2	2	3	2.40	2
Perceived Behavioural Control (PBC)	2	2	2	3	1	2.00	2
Moral reflectiveness	3	3	2	3	3	2.80	1
Socio Demographic	2	2	2	2	2	2.00	1

Likewise, in the organizational determinants, as shown in Table 3, environmental transformational leadership (ETL) and perceived organization support toward environment (POSE) achieved the highest mean score of 4.80 collectively, followed by CA with the mean score of 4.00. Meanwhile, policy achieved a moderate mean score of 2.8. Organizational culture and external motivation show moderate levels with a mean score of 2.60 respectively. The lowest mean score of 1.60 was for organizational size.

Table 3. Comparison of Organizational Determinants based on Systematic Literature Review and Preliminary Study

Organisational Determinants	Key figures rating						SLR Frequencies
	KP 1	KP 2	KP 3	KP 4	KP 5	MEAN	
Policy	3	3	3	3	2	2.80	9
Environmental Transformational Leadership Style	5	4	5	5	5	4.80	9
Perceived Organization Support towards Environment	5	5	5	5	4	4.80	7
Organizational Culture	3	3	2	3	2	2.60	5
Co-worker influence	4	4	4	4	4	4.00	5
External motivation/rewards	2	3	3	3	2	2.60	3
Organizational Size	2	2	2	1	1	1.60	1

## 5. Conclusion

The key determinant influencing WPEB among Malaysian public servants were established through a combination of both systematic literature review (SLR) and preliminary interview data gathering. SLR has made exploration through literature from Malaysia and other countries to establish the key determinants of WPEB. Thus, preliminary interview with key figures was conducted to validate the findings from SLR. Overall analysis results from the frequency obtained from SLR and mean value obtained from the preliminary study showed environmental concern (EC) and

environmental harmonious passion (EHP) were found as a key individual determinant influencing WPEB. While perceived organization support toward environment (POSE), environment transformational leadership (ETL) and Coworker influence (CA) were discovered as key organizational determinants influencing WPEB. The environmental behavior of individual employees is shaped by the personality traits or individual characteristics. Personality traits or individual characteristics have long been recognized as a significant type of individual determinants that affects human behavior. Prior work had focused on the psychological mechanisms that account for the interconnections between personality traits, other individual characteristics, and behavior (Kim et al. 2014). Consequently, individual determinants which include personality traits and individual characteristics were demonstrated and confirmed significantly influence WPEB. Apart from the individual determinants, organizational contexts also stimulate employee behavior. This debate is supported by Zibarras & Coan (2015) who claimed that supportive decisions by the organization are a significant catalyst for employees to engage in green behavior at work. Recent study by Yusop & Adam (2021) claimed numerous research has been empirically verified and proven about the importance of organizational-related variables as determinants of employee PEB in the workplace setting.

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