GREEN TRANSFORMATIONAL LEADERSHIP, GREEN HUMAN RESOURCE MANAGEMENT AND GREEN INNOVATION: KEY TO ENVIRONMENTAL PERFORMANCE OF SELECTED PORT MANAGEMENT OFFICES OF PHILIPPINE PORTS AUTHORITY

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ABSTRACT

Anthropogenic factors are undoubtedly causing damages to the world's natural resources and disruption to the ecosystem services. As an offshoot of government interventions, sustainable development principle was placed at the core of every development undertaking. This heightened environmental awareness created huge impact to government organizations as pro-environmental behaviors become a prevalent norm. Apparently, Government-Owned and Controlled Corporations (GOCC) in the Philippines have also been implementing programs that are inclined towards environmental protection. This study examined pro-environmental behavior in the leadership, human resource management and innovations in selected Port Management Offices (PMOs) of Philippine Ports Authority (PPA), and its effects on the organization's environmental performance. It particularly assessed the observance of Green Transformational Leadership (GTL), Green Human Resource Management (GHRM) practices, Green Innovation (GI) and its impacts on their Environmental Performance (EP). This study used explanatory sequential mixed method which draws on the strength of both qualitative and quantitative research. It also used weighted mean, Simple Linear Regression and Multiple Regression in the analysis of data. Results of the study showed that GTL, GHRM practices and GI were observed in the PMOs. Likewise, GTL had significant relationship with EP. It was also determined that GTL had direct effect on GHRM practices, GHRM practices had direct effect on GI, and GI had direct effect on EP. Further, the study also proved that GHRM practices had mediating effect between GTL and GI, and between GTL and EP. However, GI had no mediating effect between EP and GHRM practices, and between GTL and EP.

Keywords: Public Administration, Green Transformational Leadership, Explanatory Sequential Mixed Method, Philippines

INTRODUCTION

The insatiable needs of human being, uncontrolled population growth, rapid industrialization, urban expansion, wasteful consumption behaviors, technological development, deforestation and poor farming practices are among the many causes of severe pressure being imposed against the environment which often led to the scarcity of natural resources and the prevalence of pollution. In consequence, the synergistic effects of ecological imbalance and pollution to the environment resulted to the loss of lives and is continuously threatening the existence of human being.

Seven years ago, and until now, the devastations caused by Typhoon Haiyan (also known as Yolanda), one of the strongest typhoons

that left huge destruction on the lives and properties, not only in the Philippines but in the entire Western North Pacific (Takagi and Esteban, 2015), are still vivid to the memories of many Filipinos who had experienced its wrath. Many scientists have showed empirical evidence linking this disaster to the rise of sea surface temperature brought about by climate change. The latter, which is caused by human activities, along with its natural causes, accelerated the global temperature rise at an unprecedented rate, and warming is poised to surpass anything the planet has experienced in millions of years (Harvey and E&E News, 2019).

These negative experiences and positive realizations towards how human beings treated the environment prompted government sector to formulate actions to address not only climate change but also other global environmental problems. Government agencies enacted environmental protection laws and streamlined various policies, programs and projects within their respective organization to ensure that a country-wide implementation of sustainable development is taking place.

Notably, leaders in government organizations particularly those known as "transformational leaders" play crucial role in fostering pro-environmental behavior among employees and in bringing their respective organization towards environmental sustainability. Aside from setting direction to the organization based on given mandates, government leaders who have inculcated green behavior as a personal value also provide source of inspiration among employees and help them motivate to behave the same way; hence, they play critical part in shaping green behaviors at work. Within their span of control, this pro-environmental behavior of leaders can also influence the enactment and implementation of human resource management policies and practices to ensure that organizational activities and routines are being done in an environment-friendly manner. Most often than not, leaders possessing green behavior ensure that government decisions and actions are always towards the protection of the environment.

This transformation of government organizations towards becoming "green" or environment-friendly yielded interesting opportunities for the conduct of research. However, it is not surprising to know that most research conducted on the environmental impacts of organizations focused on the practices being implemented in private firms than in government enterprises. In the same manner, there is no available research conducted in the public sector particularly in seaports that highlights environment-friendly practices.

The relative abundance of research conducted in private firms as compared to government enterprises can be attributed to the former's obligatory nature as they are bound to comply with government regulations, requirements, and standards. It can also be observed that there is no research conducted that delved on the environmental performance of government ports based on the impacts of pro-environmental behavior that cuts across its leaders, human resource management practices and innovations.

This study tested the framework developed by Singh et al. (2020) as shown in Figure 1. It provided an idea that Green HRM (GHRM) practices has a mediating role between Green Transformational Leadership (GTL) and Green Innovation (GI). They posited that GTL influences the adoption of GHRM practices to communicate pro-environmental image to enhance reputation of the firm in the eyes of all its key stakeholders.

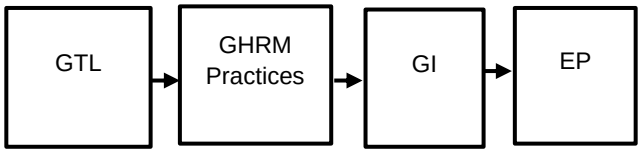

Figure 1
Framework on GTL, GHRM, GI and EP (Singh et al., 2020)

The framework also explained that GI has a mediating role between GHRM practices and Environmental Performance (EP). Several authors agree that GHRM practices increase employees' environmental awareness, green creativity, and green firm performance (Jia et al., 2018;

Peerzadah et al., 2018; Zhang et al., 2019; Arulrajah et al., 2016; Mohammad et al., 2020). GI is a strategic resource for the EP and company leverages it to attain its environmental management goals (Singh et al., 2020).

OBJECTIVES

This study aimed to assess the influence of pro-environmental behavior in the leadership, human resource management practices and innovations in selected Port Management Offices (PMOs) of Philippine Ports Authority (PPA), including its effects on their environmental performance. Specifically, it sought to achieve the following objectives:

1. To assess selected Port Management Offices in terms of green transformational leadership, green human resource management practices and green innovation.
2. To determine the environmental performance of selected Port Management Offices.
3. To determine if green transformational leadership affects the environmental performance of Port Management Offices.
4. To determine the direct effects of green transformational leadership to green HRM practices; green HRM practices to green innovation; green innovation to environmental performance.
5. To determine the mediating effects of green HRM practices and green innovation

METHODOLOGY

This study observed the use of explanatory sequential mixed method which draws on the strength of both qualitative and quantitative research. In this method, quantitative collection of data was done first followed by the collection of qualitative data to help explain or elaborate the quantitative results.

The quantitative technique in the study was used to determine numerical data relative to the PMOs' degree of observance of GTL, GHRM practices, GI and EP. On the other hand, the qualitative approach was used to determine the environmental challenges and problems encountered in the PMOs, including actual experiences to provide a general picture of the research problem. These two approaches were then combined by means of integrating the generated quantitative data and the collected qualitative results.

To generate reliable data for this study, the researchers obtained information from regular employees of PMO Batangas, PMO Panay/Guimaras, PMO SOCSARGEN, and PMO Misamis Oriental / Cagayan de Oro. These were the specific offices in PPA where environmental management practices had been intensified because of standardization certificates issued by the Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) for Port Safety, Health and Environmental Management System (PSHEMS) and TUV Rheinland for Integrated Management System (IMS).

Considering the permanent tenure of regular employees in PMOs as compared to other types of employees (e.g., outsourced, Job Order, etc.) which has higher turnover ratio, they possessed enough knowledge and experiences to provide a much dependable and reliable information for the study; hence, they were chosen as the respondents of the survey. Moreover, since PSHEMS and IMS were implemented mainly in the Baseport and PMOs, regular employees assigned in the Terminal Management Offices (TMOs) were excluded from the survey.

Overall, the study areas had a total population of 274 regular employees excluding those assigned in the TMOs. The number of sample size in each stratum was determined using Raosoft sample size calculator adopting a 5 percent margin of error with 95 percent level of confidence. A total of 235 regular employees assigned in the Baseports and PMOs served as the target respondents of this study.

In general, the developed survey instrument was an adoption of the questionnaires used in the studies of different scholars. For GTL, the questions used by Chen et al. (2014) and Nilwala et al., (2017) were combined and modified to fit the characters of the research area. These

questions were intended to determine the levels of the four transformational leadership dimensions as exhibited by the respective leader of the PMOs in terms of their individualized consideration, intellectual stimulation, inspirational motivation and idealized influence. A total of 12 questions were developed for this purpose.

On the other hand, several researchers delved into investigating GHRM practices of organizations. The variables used in the studies of Opatha and Arulrajah (2014), Arulrajah et al. (2016), Ahmad (2015), Masri (2016), and Hosain and Rahman (2016) were reviewed, and the common variables were determined. Those applicable in the study areas were adapted. The questions used in the studies of Masri (2016) and Arulrajah et al. (2016) were considered in the survey instrument with minor modifications. These include management of organizational culture, training and development, performance management and appraisal, reward and compensation, and employee empowerment and participation. A total of 15 questions were formulated for the assessment of the five Green HRM practices.

GI determinants used in the studies of Rennings (2000), Kemp and Foxon (2007), Andersen (2002), Horbach (2008), and Weng et al. (2015) were reviewed. After an analysis, it was determined that the variables used by Horbach (2008) were more applicable in the study area. The questions used in the study of Song and Yu (2017) pertaining to these determinants were adopted with minor modifications to fit the public sector nature of the study areas. The determinants referred to were categorized into regulatory push/pull, market pull, and technology push. A total of nine questions were developed for the assessment of these categories.

The studies of Chen et al. (2014) and Masri (2016) were used to serve as bases for the development of questions for PMO's EP. Likewise, PPA's identified environmental objectives on the IMS and the legal requirements of the Environmental Management Bureau (EMB) as the primary government regulatory agency on environmental matters were identified and served as EP indicators. A total of 20 questions were developed for this variable.

The measurements used in GTL adopted the four-point Likert's Scale from 1 to 4 rating, which corresponded to "less observed to strongly observed." For GHRM practices, a five-point scale from 1-5 rating was developed which corresponded to "very low to very high." For GI, a four-point scale from 1-4 rating was developed to correspond to "low to very high". Under the EP variables, a four-point scale from 1-4 rating was assigned to rate the performance of the PMO from "low to very high".

Prior to actual data gathering, the survey instrument was subjected to validation to ensure its accuracy and consistency, and to guarantee the validity and reliability of data. A dry run of the survey instrument was undertaken among regular employees of PMO Mindoro and PMO MARQUEZ (Marinduque / Quezon). These PMOs have the same type of setting with that of the intended study areas.

Table 1 presents the results of reliability test for the devised survey instrument using Cronbach Alpha.

Table 1
Reliability test of survey instrument

Variables	NI	RC	VI
Green Transformational Leadership	12	0.972	E
Green Human Resource Management Practices	15	0.963	E
Green Innovation	9	0.95	E
Environmental Performance	20	0.995	E
Overall reliability	56	0.975	E

The results showed that the overall intraclass correlation coefficient was 0.975 which indicated an excellent agreement between values from the same group.

After getting the consent of Port Managers for the conduct of an online survey, a link to the questionnaire was provided to regular employees. Monitoring of the survey responses was undertaken with constant follow-up from contact person in each stratum (PMO) to reach the desired number of respondents.

RESULTS AND DISCUSSIONS

1. Assessment of the PMOs' Green Transformational Leadership, Green Human Resource Management Practices and Green Innovation

One of the prime movers towards achieving the organization's environmental goals is its leaders. Aside from setting direction, they also provided source of inspiration and motivate employees to perform better. They play vital and critical part in shaping green behaviors at work.

Results of the survey disclosed that Port Managers generally observed the attributes of GTL. This impression was perceived from the obtained composite mean value of 3.09 which implied that Port Managers observed inspirational motivation, idealized influence, intellectual stimulation, and individualized consideration among their subordinates, albeit not to a full extent.

Among the dimensions of GTL, it was inspirational motivation where Port Managers exhibited the most with a mean value ranged from 3.16 to 3.19. PMO employees also observed that Port Managers were appreciative of efforts done when environmental standards were met, which is an indicator of intellectual stimulation trait. This received the second highest mean value of 3.17. Further, results of the study also revealed that among the traits of a GTL, it was individualized consideration that Port Managers exhibited the least. It was in mentoring and coaching of employees on environmental concern that was rated the lowest by the respondents and obtained a weighted mean of 2.89.

GHRM practices were highly observed in PMOs with an obtained composite mean value of 3.04. Among the GHRM practices, it was organizational culture that received the highest weighted mean of 3.26. It specifically referred to the observation that top management actively supported environmental practices. Respondents were also in agreement that the organizational vision and mission of the agency include environmental concern as this was rated the second highest with a weighted mean value of 3.25. Reward and compensation were the least observed GHRM practice in the Port Management Offices with a mean value ranged from 2.61 to 2.94.

GI was highly observed in the PMOs with a generated composite mean value of 3.04. Results also showed that government regulations were the most influential driving factor towards innovations as this obtained the highest weighted mean of 3.66. Technology Push was the least influential driving factor. In particular, the conduct of Research and Development (R&D) activities to further improve the port's EP and budget allocation on new technologies were the least observed activities under Technology Push with weighted mean value of 2.86 and 2.91, respectively.

2. Assessment of the PMOs Environmental Performance

The outcome of all the green efforts undertaken at the PMOs was measured in terms of their EP. Majority or 89.7 percent of the respondents perceived that the PMOs' EP was very high. The highest rated performances with a weighted mean value of 99.10 were on passing the emission and effluent standards, and the provision of Materials Recovery Facility (MRF) while the lowest rated performance was on the receipt of an award (80.71).

The PMOs' very high level of EP can be a reflection of the GTL that was observed by Port Managers. Transformational leaders could promote creative ideas within the organizations and their behaviors can act as "creativity-enhancing forces" (Chen et al., 2014). This can be translated into green innovations which was valuable in the attainment of high EP.

GHRM practices were also highly observed in the PMOs particularly in the management of organizational culture, training and development, and performance management and appraisal. These had contributed to their very high EP albeit employee empowerment and participation, and reward and compensation were the least GHRM practice observed in the PMOs.

GHRM practices are more powerful tools in making organizations and their operations green; hence, the green performance, green behaviors,

green attitude, and green competencies of human resources can be shaped and reshaped through adaptation of Green HRM practices (Peerzadah et al., 2018).

GI was also highly practiced in the PMOs which may had contributed, along with GTL and GHRM, to the very high EP of PMOs. As GI consists of technical improvements or new administrative practices, it improves the environmental performance and the competitive advantage of an organization (Weng et al., 2015)

3. Significant Effect of Green Transformational Leadership to the Environmental Performance of Port Management Offices

Table 2
Effect of green transformational leadership to the environmental performance of Port Management Offices

Model	UC		SC	T	Sig.	D	VI
	B	SE	Beta				
(C)	14.655	.549		26.687	.000		
GTL	1.304	.173	.452	7.542	.000	RH	S

C=Constant; GTL=Green Transformational Leadership; UC=Unstandardized Coefficient; SC=Standardized Coefficient; D=Decision on H_o; RH=Reject H_o; VI=Verbal Interpretation; S=Significant

As shown in Table 2, GTL was found to have positive influence on the PMOs' EP. Although GTL has no direct effect on EP, the results showed that their relationship was significant. This means that Port Managers, under some interventions, can influence PMOs' EP; hence, it is important for them to transcend the attributes of inspirational motivation, idealized influence, intellectual stimulation, and individualized consideration to cultivate pro-environmental behaviors among employees towards the attainment of environmental sustainability goal of the PMO. GTL has a positive effect on EP since transformational leadership assists, motivate followers to think problems from aspects and convey a vision (Chen et al., 2014; Nisar et al., 2017)

4. Direct Effect of Green Transformational Leadership, Green Human Resource Management Practices, Green Innovation and Environmental Performance

Leaders provide the vision and sets the direction of the organization towards a common goal. They have the capacity to provide inspiration, motivate people and influence workers to ensure that organizational goals are met. In like manner, leaders perform a key role in the formulation of supportive GHRM policies and practices to help the organization deliver its vision and strategies towards the aim of environmental sustainability.

4.1 Green Transformational Leadership to Green Human Resource Management Practices

Table 3
Effect of green transformational leadership to green human resource management practices

Model	UC		SC	T	Sig.	D	VI
	B	E	Beta				
(C)	.564	.095		5.952	.000		
GTL	.800	.030	.874	26.840	.000	RH	S

C=Constant; UC=Unstandardized Coefficient; SC=Standardized Coefficient; D=Decision on H_o; RH=Reject H_o; VI=Verbal Interpretation; S=Significant

As reflected in Table 3, results revealed that GTL had a direct effect on GHRM. This implied that the PMOs' GTL influenced the formulation of HRM policies as well as the implementation of HRM practices for the attainment of its environmental objectives. Some of the respondents said that Port Managers constantly reiterated environmental objectives and targets that had to be met by employees as these were being used as one of the yardsticks to measure organization's performance at the end of the year. Port Managers also evaluated and approved the Annual Environmental Plans and Programs which served as the blueprint of environmental management undertakings of the PMO to support not just the environmental objectives but also the statutory requirements and other environmental initiatives.

4.2 Green Human Resource Management Practices to Green Innovation

Table 4
Effect of green human resource management practices to green innovation

Model	UC		SC	T	Sig.	D	VI
	B	SE	Beta				
(C)	.121	.086		1.410	.160		
GHRMP	.960	.028	.919	34.826	.000	RH	S

C=Constant; GHRMP=Green HRM practices; UC=Unstandardized Coefficient; SC=Standardized Coefficient; D=Decision on H_o; RH=Reject H_o; VI=Verbal Interpretation; S=Significant

It can be gleaned from the result of study as reflected in Table 4 that GHRM had a direct effect on GI. It indicated that employees' environmental awareness and pro-environmental behavior, which were developed through different GHRM policies and practices influenced the PMOs' GI activities. It can also be inferred from this result that employees were driven to perform GI not just to comply government environmental regulations but were also committed to undertake an extra mile to achieve agreed-upon environmental objectives. This includes the institutionalization of the IMS, installation of solar panels in ports, waterless urinals, energy-efficient lighting system, and the shore-based power supply (in the case of PMO Misamis Oriental/Cagayan de Oro), among others.

Additionally, PMOs' customer feedback mechanism is also an effective driving factor for PMO employees to innovate. Continual improvement is also being undertaken to provide reliable and responsive services in ports such as paperless transactions using Electronic Permit Management System (e-PMS), Internet-based Port Operations and Receipting for Terminals System (*I-PORTS*), Accounting and Financial Management System (AFMS), Port Receipting System (PRS), Document Tracking System (DTS) and internal submission of reports through One-Drive System.

4.3 Green Innovation to Environmental Performance

Table 5
Effect of green innovation to environmental performance

Model	UC		SC	T	Sig.	D	VI
	B	SE	Beta				
(C)	14.421	.559		25.779	.000		
GI	1.404	.179	.466	7.821	.000	RH	S

C=Constant; GI=Green Innovation; UC=Unstandardized Coefficient; SC=Standardized Coefficient; D=Decision on H_o; RH=Reject H_o; VI=Verbal Interpretation; S=Significant

As presented in Table 5, GI had a direct effect on EP of PMOs. It can be gleaned that GI efforts of PMOs were determined to be helpful in the attainment of environmental objectives and in gaining very high level of EP as reflected in the outcome of employees' assessment. These had been substantial for both PMO Batangas and PMO Misamis Oriental/Cagayan de Oro in the receipt of Green Port Award System (GPAS) from the APEC Port Services Network (APSN) in 2017 and 2018, respectively where green innovation accomplishments were highlighted.

GI is associated with organization's environmental management agenda, and it stimulates environmental performance. Further, GI not only reduce negative environmental impacts of the business, but they also increase organization's financial and social performance through waste and cost reduction (Singh et al., 2020). GI practices have positive and significant effects on environmental performance, indicating that a firm that engages in green innovation will indeed observe better environmental performance. They found out that through implementing green innovation practices, organizations can fulfill governmental and industry requirements, decrease waste and pollution, protect the environment, and simultaneously increase their competitiveness (Weng et al., 2015).

5. Mediating effect of Green Human Resource Management Practices and Green Innovation

In reference to the framework used in this study, GHRM practices and GI were the mediating variables between GTL and EP. Their mediating effects were determined in this study using Multiple Linear Regression.

5.1 Mediating Effect of Green Human Resource Management Practices on the Relationship between Green Innovation and Green Transformational Leadership

Table 6
Mediating effect of green human resource management practices on the relationship between green innovation and green transformational leadership

Model	UC		SC	T	Sig.	D	VI
	B	SE	Beta				
(C)	.090	.085		1.069	.286		
GTL	.161	.051	.169	3.161	.002	RH	S
GHRMP	.806	.056	.772	14.479	.000	RH	S

C=Constant; GTL=Green Transformational Leadership; GHRMP=Green HRM practices; UC=Unstandardized Coefficient; SC=Standardized Coefficient; D=Decision on H_o; RH=Reject H_o; VI=Verbal Interpretation; S=Significant

It can be inferred from Table 6 that GHRM practices have mediating effect between GTL and GI. The role of GTL as exemplified by the Port Managers was significant in setting direction of the organization towards the vision of environmental sustainability. They positively influenced HRM in the creation of policies, and they also supported them in the implementation of environmental management practices with the end-view of achieving the organization's environmental objectives. PMOs' GHRM translated this vision through various HRM practices which aimed to promote environmental awareness, cultivate pro-environmental behavior among employees, and enhance their green creativity and passion to come up with GI activities.

The implementation of green training and development, including the enactment and enforcement of environmental policies have been helpful in molding green behavior among employees of PPA. Likewise, constant monitoring and the institutionalization of reporting system on environmental policies have been vital in ensuring the continuity of environmental programs within the organization.

5.2 Mediating Effect of Green Innovation on Environmental Performance and Green Human Resource Management Practices

Table 7
Mediating effect of green innovation on the relationship between environmental performance and green human resource management practices

Model	UC		SC	T	Sig.	D	VI
	B	SE	Beta				
(C)	13.716	.564		24.301	.000		
GHRMP	1.941	.459	.617	4.227	.000	RH	S
GI	-.305	.440	-.101	-.694	.488	FR	NS

C=Constant; GHRMP=Green HRM practices; GI=Green Innovation; UC=Unstandardized Coefficient; SC=Standardized Coefficient; D=Decision on H_o; RH=Reject H_o; FR=Failed to Reject H_o; VI=Verbal Interpretation; S=Significant; NS=Not Significant

As presented in Table 7, GI did not significantly mediate the relationship between GHRM practices and EP. Further, this also implied that GHRM practices can directly affect or cause a change on the PMOs' EP.

While the importance of GI to EP had been acknowledged in previous discussions as it was determined to have a direct relationship, its particular role between GHRM practices and EP was determined not significant. In the case of PMOs, GI can be considered as just an added value to achieve EP albeit its absence may not affect the organization's ultimate objective of environmental sustainability.

In this respect, the study of Singh et al. (2020) also holds true for the PMOs that the management of organizational culture, green training and development, performance management and appraisal, green rewards and compensation and employee empowerment and participation can stand out as core HRM practices of the organization to support superior environmental performance.

5.3 Mediating Effect of Green Innovation and Green Human Resource Management Practices to Green Transformational Leadership and Environmental Performance

Table 8
Mediating effect of green innovation on the relationship between environmental performance and green human resource management practices

Model	UC		SC	T	Sig.	D	VI
	B	SE	Beta				
(C)	13.716	.564		24.301	.000		
GHRMP	1.941	.459	.617	4.227	.000	RH	S
GI	-.305	.440	-.101	-.694	.488	FR	NS

C=Constant; GHRMP=Green HRM practices; GI=Green Innovation; UC=Unstandardized Coefficient; SC=Standardized Coefficient; D=Decision on H_o; RH=Reject H_o; FR=Failed to Reject H_o; VI=Verbal Interpretation; S=Significant; NS=Not Significant

As can be observed in Table 8, GI did not mediate the relationship between GTL and EP. On the other hand, the results of statistical analysis also proved that GHRM practices significantly mediated the relationship between GTL and EP. These findings signified that GHRM policies and practices as they were being influenced by GTL can cause an impact on the PMO's EP. In essence, results of the study also implied that GTL cannot influence EP directly, and instead does so by means of GHRM practices. GTL can capitalize and use GHRM as channel to enforce and transform into implementable terms their environmental vision for the organization and ultimately attain superior environmental performance. Further, the results of the study also implied that GTL could cause an effect on the PMOs' EP through GHRM practices even without GI.

CONCLUSIONS

On the basis of the findings generated from the study, the following conclusions were generated:

1. GTL dimensions are observed by the Port Managers. Inspirational motivation was exhibited the most while individualized consideration was exhibited the least. GHRM practices were highly observed in PMOs. Organizational culture and, rewards and compensation are the most and the least observed GHRM practices, respectively. GI is highly observed in PMOs with government regulations as the most influential driving factor towards innovations while Technology Push is the least influential driving factor.
2. The PMOs' environmental performance is very high particularly in meeting the required standards for emissions and effluent. The operations of MRF contributes to the PMOs' high EP.
3. GTL has significant relationship with the PMOs' EP.
4. GTL has a direct effect on GHRM practices. GHRM practices has a direct effect on GI. Likewise, GI has a direct effect on EP of the PMOs.
5. GHRM practices have mediating effect between GTL and GI. GHRM practices significantly mediated the relationship between GTL and EP. GI has no mediating effect between GHRM practices and EP, and between GTL and EP.

RECOMMENDATIONS

The results of this study proved that GTL, GHRM practices and GI are significant determinants of EP. To further enhance and promote pro-environmental behavior across the organization (PMOs), the following actions can be considered by Port Managers for implementation:

1. Enhance coaching and mentoring of employees on environmental concern as this helps to create a feeling of belongingness which will lead to the development of concern for each other.
2. Develop green reward management to motivate employees' participation in any environment-related endeavors.
3. Create sharing opportunities (e.g., workshops and fora) on environmental concern where employees' tacit knowledge can be shared, and to allow them also to

have some degree of independence and freedom in their environment-related tasks.

4. Prioritize environment-related research and development activities in port operations to spur innovations to further achieve environmental sustainability objective of the Port Management Offices.
5. Explore the same study among non-IMS implementing ports to determine and compare results. Other GHRM practices not included in this study can also be included in the assessment criteria.

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