

# Green-Related Attitudinal and Behavioural Dynamics of Green Results: Green HRM As a Primary Explinator

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## Abstract

It is a fact that Green Human Resource Management (GHRM) plays a significant role in a sustainable organization which takes a serious and genuine attempt to reduce its negative impacts and to enhance its positive impacts on the environment and society. It is asserted that Green Orientation of Human Resource Management (GOHRM) is contributory to influence on employees' attitudes, and behaviours so as to create and improve green innovations and green outputs. Having adopted the hypothetico-deductive approach, this study attempted systematically to fill eight research gaps by utilizing primary data from the Sri Lankan context. Eight hypotheses were formulated from the research model that has its originality in explaining some dynamics of Perceived Green Results (PGRs) having GOHRM as the primary independent variable, Personal Character (PC) as the moderator, Green Attitude (GA) as the mediator, and the four types of green behaviour, i.e., Green Personal Behaviour (GPB), Green Organizational Citizenship Behaviour (GOCB), Green Interpersonal Citizenship Behaviour (GICB), and Green Official Behaviour (GOB) as the direct predictors. The analysis of the data collected from 202 top and

middle managers working for Sri Lankan listed manufacturing firms resulted in accepting all the eight hypotheses substantiating the research model. We posit that this study provides material theoretical and methodological contributions to the existing literature on GHRM in addition to the managerial implications discussed with fresh insights in order to enhance green results which are indispensable for the natural environment sustainability through establishing and enhancing GOHRM in the organization.

**Key Words:** Green Attitude, Green Behaviour, Green Human Resource Management, Green Results, Sri Lankan Context

### Introduction

Globalization, industrialization, and urbanization are increasingly experiencing in the world where we live. According to Aykan (2017) environmental problems have been a serious concern with the acceleration of globalization in the present societies. Growth and development became the foremost agenda of organizations including companies in the current scenarios of globalization (Alshaabani et al, 2021). According to Dhawan (2019) a serious threat to the nature comes from the swift increase in industrialization and that resulted air and water pollutions which have become critical threats to the environmental sustainability, and consequently our precious natural environment is in danger. Not only in developing nations but also in the developed nations continuous urbanization and industrialization occur in order to increase productivity and then to achieve their development goals. It has generally been observed that general people never stop consumerism to meet their unlimited and numerous needs and wants and relevant organizations too never stop their productivity improvements so as to gain increasing profits and profitability. “It seems that some people in the world are too greedy and never get saturated resulting in development that is concerned with the unlimited, various needs of people at the expense of the ability of future generations to meet their own needs, at least their essential needs” (Opatha and Arulrajah, 2014, p. 103). Business organizations are responsible for the present environmental issues such as degradation, climate change, resources depletion, reduced biodiversity and ecosystem integrity, contaminated water due to profuse sunk wastes of production into the land, air pollution, noise pollution, and global warming (Shrivastawa, 1994; Rugman and Verbeke, 1978; Alshuwaikhat and Abubakar, 2008; Renwick et al, 2008; Haden et al, 2009; Opatha and Arulrajah, 2014; Neruja and Arulrajah, 2021; Reza and Azmi, 2022).

As a responsible organization, it is mandatory for it to be genuinely and seriously concerned with dealing with the natural environmental issues. It needs to be a sustainable organization that has a clearly established goal, i.e., to become an environmentally and socially responsible organization (Jamrog and Vickers, 2007). A sustainable organization takes a serious and genuine attempt to reduce its negative impacts and to enhance its positive impacts on the environment and society (Opatha, 2019). “Every organization needs to be green and it is

compelled to create and improve green organizational performance which is defined as the extent to which a particular organization has performed on greening during a particular period of time; and employee green performance of job definitely contributes to green organizational performance because of the fact that the summation of green performance of job done by all employees in the organization is the green organizational performance” (Opatha, 2019, p. 64). In this context, Green Results (GRs) are indispensable. They refer to the extent to which the employee has produced green outcomes which are of two types, i.e., green innovations and green outputs (Opatha and Arulrajah, 2014). To influence employees’ competencies, attitudes, and behaviours so as to create and improve green innovations and green outputs, GHRM is contributory, and in fact, becomes essential.

### **Identified Research Gaps**

The researchers of this article carried out an extensive literature review of GHRM-related research studies and 70 research studies on GHRM done by various scholars from 2004 to 2022 (Refer to Appendix) were examined to know the aspects studied for the purpose of finding out what has not been studied. As GHRM is relatively a newly emerged sub-branch of HRM no studies done before 2004 were found to the notice of the researchers. Because GHRM is a recently developed sub field of HRM as a matter of fact there are specific research gaps in the theoretical, methodological, and empirical knowledge and understanding. Within GHRM there are many theoretical as well as empirical gaps that need to be filled (Jackson et al, 2011; Opatha and Arulrajah, 2014). According to Shahriari and Hassanpoor (2019) the main gaps in the literature of GHRM are the lack of comprehensive studies and research about GHRM in undeveloped countries and Asia and also a cross-cultural model. Mainly comprehensive studies and research about GHRM in underdeveloped countries and Asia are lacking. The researchers of this paper (Hewapathirana et al, 2020, p. 72) could identify eight gaps: (1) Gap 1: There are no theoretical arguments and empirical evidence on the moderating effect of personal character on the relationship between GHRM and GA of the employee; (2) Gap 2: There is no specific empirical evidence in the past research on the relationships which exist between GA and GPB, GOCB, GICB, and GOB; (3) Gap 3: Mediating effects of GA on the relationships between GHRM and the four specific types of green behaviour, i.e. GPB, GOCB, GICB, and GOB have neither previously been theoretically argued nor been empirically tested in Sri Lankan context and perhaps in the international context; (4) Gap 4: The past empirical studies do not focus on finding the influence of GPB on PGRs which include green innovations and green outputs; (5) Gap 5: There is no theoretical argument as well as empirical evidence in the existent literature with regard to the relationship between GOCB and PGRs; (6) Gap 6: Both theoretical argument and empirical evidence do not exist in the past research done locally and perhaps internationally too with regard to the relationship between GICB and PGRs; (7) Gap 7: GOB has not been considered as an independent variable that influences significantly on PGRs in the organization in the previous studies; and (8) Gap 8: No local and perhaps international studies are available arguing and testing empirically with regard to the combined effect of GPB, GOCB, GICB, and GOB on PGRs.

## Objectives

Mainly the study expects to deal with the problem statement: *Is GOHRM a primary independent determinant in explaining green-related attitudinal and behavioural dynamics of green results in an organization?* The use of the hypothetico-deductive approach was adopted to fill the gaps and the specific research objectives are to investigate (1) whether there exists a moderating effect of PC on the relationship between GOHRM and GA of the employee; (2) whether there are relationships which exist between GA and GPB, GOCB, GICB, and GOB; (3) whether GA has mediating effects on the relationships between GOHRM and the four specific types of green behaviour, i.e. GPB, GOCB, GICB, and GOB; (4) whether there is an influence of GPB on PGRs which include green innovations and green outputs; (5) whether GOCB and PGRs are related; (6) whether GICB is related to PGRs; (7) whether GOB plays as an independent variable influencing significantly on PGRs in the organization; and (8) whether there is a combined effect of GPB, GOCB, GICB, and GOB on PGRs.

## Research Model and Hypotheses

A logical attempt was made to develop a theoretical framework that contains a network of relationships among the eight variables considered for the research study by using general theories, arguments, previous empirical findings, and our logical beliefs.

GOHRM refers to the extent to which HRM functions are directed to create, maintain, and improve greening within employees in the organization. The working definition is the degree to which greening matters are incorporated into HRM functions for the purpose of making employees green. Greening in the context of HRM has “at least four meanings such as preservation of the natural environment, conservation of the natural environment, avoidance or minimization of environmental pollution, and generation of gardens and looking-like natural places” (Opatha, 2013; Opatha and Arulrajah, 2014; Opatha, 2019). Green Attitude refers to “the persistent tendency that shows how an employee thinks, feels and tends to behave with regard to greening” (Opatha, 2019, 56). It may be negative, positive, or indifferent. Personal Character refers to the extent to which the employee possesses virtues (good habits or moral qualities) and vices (bad habits or immoral qualities) (adapting from Opatha and Teong, 2014).

When HRM becomes greener oriented there will be a high degree of green attitude within the relevant employees. They have a belief in greening, they have a positive feeling of greening, and they have a positive propensity to behave towards greening. The Greener Orientation of HRM, the more positive the GA of employees will be. Hence a positive relationship exists between the Green Orientation of HRM and the GA of employees. However, this positive relationship tends to hold true only for employees who have a high degree of good Personal Character. The Green Orientation-Green Attitude relationship which is positive does not hold true for employees who have a low level of good Personal Character. PC includes virtues and vices possessed by the employee. The employee who has a high level of good Personal Character is honest, patient, grateful, humble, respectful, benevolent, tolerant, self-disciplinary, caring, and loyal while having no deception, desire for others' things, less greed,

and no selfishness. Such an employee (with a high level of good Personal Character) respects, cares, and protects the natural environment. However, if the employee does not have a good Personal Character, he or she does not respect, care, and protect the natural environment. Such an employee is selfish and therefore has a tendency to consider his or her own needs, wishes and comforts while ignoring or not giving a real concern to greening. Thus, PC plays a moderating role in the relationship between GOHRM and GA. This reasoning and logical belief of the researchers lead to the first hypothesis as follows:

*H1: Personal Character has a significant moderating effect on the relationship between Green Orientation of HRM and Green Attitude of employees.*

Green behaviour refers to “the extent to which a particular employee takes actions in respect of greening and it has four types, i.e., green personal behaviour, green organizational citizenship behaviour, green interpersonal citizenship behaviour, and green official behaviour” (Opatha, 2013; Opatha and Arulrajah, 2013). Working definitions (also called nominal definitions) of the four types of behaviour are given in Table 1.

**Table 1. Working Definitions of the Four Types of Green Behaviour**

Variable	Definition
GPB	The degree to which positive actions of greening are taken by the employee at his or her personal life.
GOCB	The degree of the employee’s voluntary engagement in positive actions of greening to assist the organization to achieve the goal of greening
GICB	The degree of the employee’s voluntary engagement in positive actions to assist his or her co-employees to do their green work
GOB	The degree of the employee’s involvement in greening-related official duties entrusted by his or her superior

According to the general theory, i.e., Traditional Cognitive Theory of Attitudes and Cognitive Dissonance (TCTACD) developed by McShane et al, (2008), attitude does affect behaviour. Adopting the general theory, green attitude is a process in which a particular employee logically designs his feeling toward greening actions (which is attitude object) based on analysis of his belief. His belief will predict his feeling, that leads to a prediction of his intention to behave, which predicts his behaviour. Considering the attitude as a process is in line with a general theory called the ABC Model which is a general theory developed by Rosenberg et al (1960) (as in Nelson and Quick, 1997). A, B, and C stand for affective, behavioural, and cognitive respectively and first C occurs, then A, and later B. In the TCTACD it is assumed that there are no factors which create cognitive dissonance. This is “a state of tension that is produced when an individual experiences conflict between attitude and behaviour” (Nelson and Quick, 1997, p. 103). At the absence of cognitive dissonance, when employee attitude about greening becomes more positive, their green behaviours become higher. The employee who has a high level of positive GA does believing in greening, feeling positively about the need of greening, and intending to be a serious contributor to greening. Consequently, such an employee takes positive green actions at her personal life, engages in actions which

support the organization as a whole to accomplish its greening, further engages in positive actions to assist others to do their greening, and finally does actions to perform officially assigned green works. Hence it is possible to argue that positive GA leads to positively contribute to GPB, GOCB, GICB, and GOB. Thus, the second hypothesis is formulated as follows:

*H2: Green Attitude is significantly and positively related to the four types of green behaviour, i.e., Green Personal Behaviour, Green Organizational Citizenship Behaviour, Green Interpersonal Citizenship Behaviour, and Green Official Behaviour.*

A general theory called MARS Model of Individual behaviour by McShane et al (2008) can be utilized to develop the third hypothesis which is about the mediating effect of GA on the relationship between GOHRM and the four types of green behaviour. In this general theory M, A, R, and S stand for Motivation, Ability, Role perceptions, and Situational factors respectively. The prediction is that these four factors cause behaviour and results. In this research context, the situational factors are specific GHRM functions, i.e., green selection, green training etc. Motivation is the GA of the employee. It is possible to orient the employee so as to perceive GPB, GOCB, GICB, and GOB as critical roles to be played by him. Consequently, green behaviour tends to occur. In the attempt of developing the third hypothesis, another useful classic theory called the General System Theory by Bertalanffy (1950) is applied. It explains how managers combine inputs and then transform these inputs into outputs. GOHRM and GA are the inputs which generate green behaviour that processes to produce green results. The theory discusses inputs, processes, and outputs (Wright and Snell, 1991). GOHRM and GA as the inputs, green behaviour as the process, and PGRs as the output are considered. According to empirical studies which examined GHRM' impact on not exactly the four types of behaviour under this study, but green-related behaviour, general green behaviour, green engagement, or green commitment (Dumont et al, 2017; Saeed et al, 2018; Pham et al, 2019; Mohammad et al, 2020; Alshaabani et al, 2021) GHRM impacts positively and significantly green behaviour. Hence it is postulated that the four types of green behaviour are impacted by GOHRM positively and significantly. A high level of GOHRM in the organization contributes significantly to make employees' GA positive, and then this GA leads to increase green behaviours. GOHRM affects green behaviours through GA. The argument is that GA possess a temporal quality surfacing between the GOHRM and green behaviours. GA works as a function of GOHRM and explains how GOHRM affects green behaviours. At time 1 the occurrence of GOHRM happens, and at time 2 GA happens. At time 3 green behaviours happen. Thus, our third hypothesis is:

*H3: The relationship between Green Orientation of HRM and four types of Green Behaviour, i.e., Green Personal Behaviour, Green Organizational Citizenship Behaviour, Green Interpersonal Citizenship Behaviour, and Green Official Behaviour, are significantly mediated by Green Attitude.*

Green results refer to outcomes which are environment-friendly; the degree of green outcomes produced by the employee; and two dimensions are green innovations which mean products promoting environmental sustainability and they come as results of greening-

related new ideas and green outputs which mean a kind of results concerned with creating and enhancing greening, and they include number of working hours with natural light, number of minimizing electricity bulbs, number of reduced units of electricity usage, etc. (Opatha and Arulrajah, 2014; Opatha, 2019). Green results are considered under this study as perceived green results (as perceived by the managerial respondents, not based on objective figures). There are no previous direct empirical studies about the relationships between green personal behaviour and other types of behaviour (as nominally defined under this research) and perceived green results. However, again the classic theory called the General System Theory is taken into consideration for formulating logically the next four hypotheses of the study. According to the theory, inputs lead to behaviours which lead to results. This theorization gets confirmed by the acceptance of the validity of the fourth hypothesis. It is theorized that direct relationships of the four types of green behaviour, i.e., GPB, GOCB, GICB, and GOB exist with PGRs. The General System Theory positions the four types of green behaviour as processing which gives outputs as perceived green results. Thus, four hypotheses, i.e., fourth, fifth, sixth, and seventh are formulated and they are given below.

*H4: Green Personal Behaviour significantly and positively influences on Perceived Green Results.*

*H5: Green Organizational Citizenship Behaviour significantly and positively affects Perceived Green Results.*

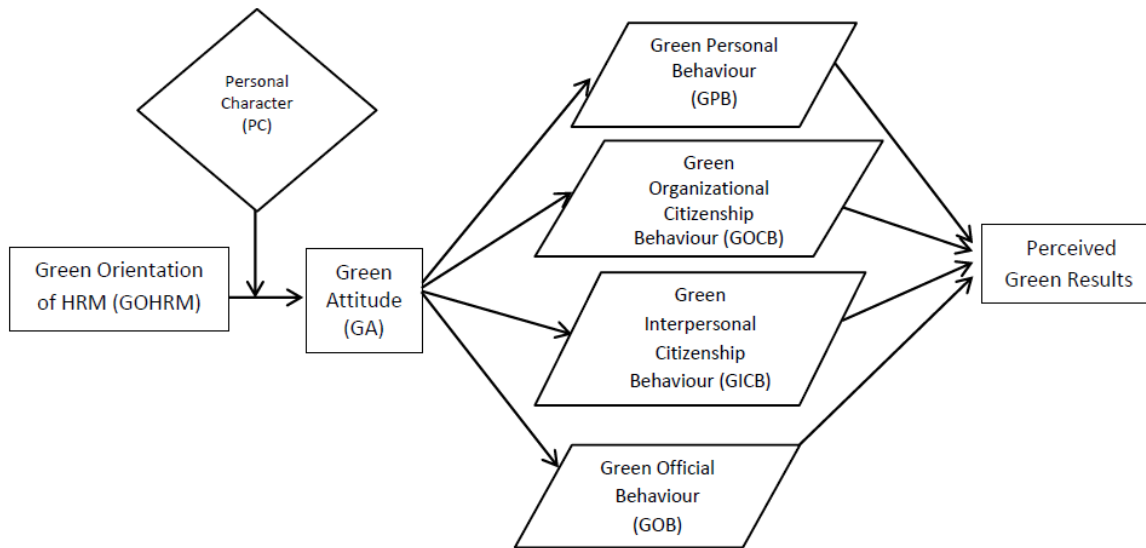
*H6: Green Interpersonal Citizenship Behaviour significantly and positively affects Perceived Green Results.*

*H7: Green Official Behaviour significantly and positively contributes to Perceived Green Results.*

The combined influence of the above four types of green behaviour on the PGRs is the joint effect the four behaviour variables make on the dependent variable, i.e., PGRs. GPB, GOCB, GICB, and GOB are considered as determinants of PGRs. Hence it is argued that these four variables will impact significantly and aggregately on the PGRs. Based on this argument the eighth hypothesis is as follows:

*H8: Green Personal Behaviour, Green Organizational Citizenship Behaviour, Green Interpersonal Citizenship Behavior, and Green Official Behaviour jointly explain a significant percentage of the variability of Perceived Green Results.*

The schematic diagram of the research model is shown in Figure 1.

**Figure 1. The Schematic Diagram of the Research Model**

## Research Methods

### Study Design Elements and Respondents

To accomplish the main and specific objectives of the study, a quantitative survey type study was carried out. According to the six research design components (Sekaran and Bougie, 2010), this study's purpose was analytical and predictive because it involved hypothesis testing to elucidate various relationships and effects among the variables in the theoretical framework; the type of investigation was a correlational study, not a causal study because the variables were neither manipulated nor controlled; researchers' interference with the study was minimal as it was survey type and non-experimental; the study setting was noncontrived because the study was conducted in a non-artificial setting where events proceeded normally; the unit of analysis was individuals: managerial employees because data were collected from respondents, not as dyads, groups or organizations; and the time horizon was cross-sectional because data were gathered just once in order to deal with the problem statement.

The population included all the managers and executives in the large companies engaged in the Sri Lanka apparel industry. The apparel industry is a strategic industry in Sri Lanka playing a key role in advancing the country's economy. Out of the country's workforce, about 15% are in this industry and also it accounts for about half of the country's total exports (Central Bank of Sri Lanka, 2021). There are 15 companies of large size each employing more than 300 employees and from each company, 25 managers and executives were randomly selected. They were the type of employees who had relatively a good awareness and understanding about greening and GOHRM. It was expected to collect completed questionnaires from 375 managers and executives. Actually, the number of respondents was 206 being the response rate as about 55%.



## Instruments

Eight variables in the theoretical framework of this study were measured by using ordinarily developed instruments which were created according to an adequate conceptualization and a sound operationalization. Guidelines recommended by Davis and Cosenza (1985) and Babbie (1986) for conceptualization and the procedure recommended by Sekaran (1992) and Sekaran and Bougie (2010) for operationalization were applied. Each variable's measure level was interval and the responses to the question items were evoked on a five points Likert type multi-item scale of "strongly agree, agree, indifferent, disagree, and strongly disagree" or "very high, high, moderate, low, and very low" (use of summated scales). Weightages of 5, 4, 3, 2, and 1 were given to the responses for positive question statements and the reversed order for negative question statements. Refer to Appendix 1 that presents the results of conceptualization and operationalization for only three variables (due to the space limitation). An important set of information about the measurement instruments is given in Table 2.

**Table 2. Some Information about the Measurement Instruments used for the Study**

Construct	Dimensions	Elements	Number of Questions Items	Sources
GOHRM	1. Acquire	1) Green job designing 2) Green job analyzing 3) Green HR planning 4) Green recruiting 5) Green selecting 6) Green inducting	28	Arulrajah, Opatha, and Nawaratne (2015)
	2. Develop	1) Green training 2) Green performance evaluation		
	3. Retain	1) Management of green rewards 2) Management of green discipline 3) Management of green health & safety 4) Management of green labour relations		
Green Attitude	1. Cognitive component	1) Believe in greening 2) Possibility of leading the life very happily	06	Opatha (2013)
	2. Affective component	1) Positive feeling of the need of greening 2) Happiness about thinking and talking about greening		
	3. Behavioural component	1) Intention of becoming a serious greening contributor 2) Hope to live with greening		
Personal Character	1. Virtues	1) Honesty 2) Patience 3) Gratitude 4) Respect 5) Self-discipline 6) Caring	10	Opatha (2010); Opatha and Teong (2014)
	2. Vices	1) Greed 2) Selfishness 3) Anger 4) Hostility		
Green Personal Behaviour	1. Preserving and conserving	1) Reducing at personal life 2) Avoiding waste at personal life 3) Recycling at personal life	08	Ones and Dilcherf (2012);

		4) Questioning harmful practices at personal life		Opatha (2019)
	2. Non-polluting and making	1) Minimizing pollution at personal life 2) Non-dumping any harmful stuff 3) Communicating harmful stuffs to relevant authorities in the living area 4) Planting trees and building parks at personal life		
Green Organizational Citizenship Behaviour	1. Preservationist	1) Respecting & admiring the nature 2) Preventing 3) Observing 4) Non-contributing to anti-environmentalism	20	Ones and Dilcherf (2012); Opatha and Arulrajah (2014); Opatha (2019)
	2. Conservationist	1) Reducing 2) Reusing 3) Repurposing 4) Recycling		
	3. Non-polluter	1) Minimizing hazardous waste 2) Stoppage of improper disposing 3) Stoppage of dumping harmful stuffs 4) Reporting harmful stuffs		
	4. Green maker	1) Building parks 2) Planting trees and grass 3) Maintaining a green environment 4) Enhancing ecological concepts		
Green Interpersonal Citizenship Behaviour	1. Teaching others	1) Habit of teaching others 2) Being an excellent example	08	Opatha (2013); Opatha and Arulrajah (2014); Opatha (2019)
	2. Motivating others	1) Stimulating others to become green 2) Performing green works not done by others		
	3. Assisting others	1) Discussing the importance of greening 2) Helping others to do their greening		
	4. Punishing others	1) Criticizing the non-performance of green works by others 2) Appreciating others' green works done		
Green Work Behaviour	1. Reducing official waste	1) Official engagement in minimizing waste 2) Saving extra materials for other works	06	Opatha (2013); Opatha and Arulrajah (2014); Opatha (2019)
	2. Removal of work waste	1) Removing all waste materials only into the segregated trash cans 2) Habit of stimulating others to remove the waste on their own as an official task		

	3. Non-pollution at work	<ol style="list-style-type: none"> <li>1) Official contribution to non-pollution projects, activities, or events</li> <li>2) Concern of reducing input wastage in order to achieve environmental performance targets</li> </ol>		
Perceived Green Results	1. Green innovations	<ol style="list-style-type: none"> <li>1) New mechanisms for the process improvements to reduce, re-use, and recycle waste efficiently</li> <li>2) Manufacture of eco-friendly clothing while considering the total life span of the product as well as its impact on the carbon footprint</li> <li>3) New initiatives such as planting indigenous trees, foliage, using rainwater or recycled grey-water to reduce ecological damage to the environment</li> <li>4) New cleaner production practices</li> </ol>	10	Opatha (2013); Opatha and Arulrajah (2014); Opatha (2019)
	2. Green outputs	<ol style="list-style-type: none"> <li>1) Dropping significantly the amount of electricity demand</li> <li>2) Contributing amount of renewable energy to the national grid through solar photovoltaic (PV) after implementing the green initiatives</li> <li>3) Enhanced competitive advantage owing to greening</li> <li>4) Optimization of water usage (reducing and recycling)</li> <li>5) Minimization of carbon footprint</li> </ol>		

### Reliability and Validity of the Instruments

The instruments' external reliability was tested by using 10 managers from 2 firms within a two-week interval between the first and second administrations. The instruments' test-retest coefficients were more than .80. This suggests that the instruments possess an adequate stability. In the case of testing the instruments' internal reliability, the Cronbach's alpha test was applied. The first run of the internal reliability test with the SPSS produced alpha values for all the instruments more than .70. Refer to Table 3 for the results. Thus, each instrument possesses internal reliability sufficiently (Nunnally, 1978; Walsh, 1995).

**Table 3. Internal Reliability Test for the Instruments**

Variable Measured	Cronbach's Alpha
GOHRM	.98
GA	.93
PC	.85
GPB	.83
GOCB	.88
GICB	.76
GWB	.89
PGRs	.92

Proper conceptualization and operationalization ensure the content validity possessed by the instrument (Sekaran and Bougie, 2010). We believe that content validity is critical in HRM research in addition to statistical validity as it is a logical approach to validation. Content validity is really an evaluation of the adequacy of instrument construction (Schmitt and Klimoski, 1991). A separate question item was formulated with regard to each element of each dimension for ensuring the instrument's content validity. The dimensions and elements were delineated carefully once working definitions were developed based on the literature. An indirect way of ensuring content validity is high internal consistency reliability (Walsh, 1995). All the instruments for the study had a high internal consistency reliability (alpha values > .70). The process of construct validation recommended by Schmitt and Klimoski (1991) was followed for searching the instruments' construct validity. The formulated hypotheses which linked the relationship between perceived green results and the independent variables were supported by the correlation analysis suggesting that the instruments possessed adequate construct validity. As per Exploratory Factor Analysis, the values of Kaiser-Meyer-Olkin (KMO) for all the eight constructs were above the cut-off point, i.e., 0.5. The values for GOHRM, GA, PC, GPB, GOCB, GICB, GWB, and PGRs were .954, .901, .834, .875, .898, .911, .877, and .920. Thus, the degree of information among the question items measuring each construct overlaps greatly or there is a strong partial correlation. Bartlett's Test for the eight constructs was also significant. Thus, the null hypothesis - the correlation matrix is an identity matrix- was rejected with regard to each construct measured. It means that variables (question items measuring the construct) are related suggesting a good construct validity. Refer to Table 4.

**Table 4. KMO and Bartlett's Test for the Constructs**

Test	GOHRM	GA	PC	GPB	GOCB	GICB	GWB	PGR
KMO measures of sampling adequacy	.954	.901	.834	.875	.898	.911	.877	.920
Bartlett's test of sphericity								
Approximate Chi-Square	8059.603	965.537	790.383	807.065	2940.282	1129.975	753.578	1603.809
df	378	15	36	28	190	28	15	45
Significance	.000	.000	.000	.000	.000	.000	.000	.000

### Data Analysis Methods

Product-Moment Correlation method, Simple Regression, Multiple Regression, and the Sobel Test were applied where appropriate for the purpose of testing the hypotheses. The SPSS 25 software was used. The first hypothesis which involves a moderating effect was tested by using hierarchical multiple regression analysis and procedures (recommended by Baron and Kenny, 1986; Frazier et al, 2004). Hypotheses concerned with the mediating effects were tested by using multiple regression analysis and procedures (recommended by Baron and Kenny, 1986; Frazier et al, 2004).

### Testing the Hypotheses

**Testing H1:** PC is the moderating variable, GOHRM is the independent variable or the predictor, and GA is the dependent variable or the outcome variable in the context of testing H1. The three steps to be performed to establish the role of the moderator between the predictor variable and the outcome variable (Frazier et al, 2004) are: “(1) to demonstrate that the predictor variable has an impact on the outcome variable; (2) to show the impact of the moderator variable on the outcome variable; and (3) to show the interaction or product of the predictor and the moderator variable on the outcome variable)”. To run the regression with the interaction term, creating the interaction term by COMPUTE PCGOHRM= PC\*GOHRM via *Transform/Compute* procedure of SPSS was done. The interaction term was created by multiplying GA by GOHRM. The results of the interaction test are given in Table 5.

**Table 5. The Interaction Test Results**

Interaction Term	B Value	T Value	Sig
PC and GOHRM Interaction	2.578	3.558	.000

As shown in the above Table, B value is 2.578 which is significant at 1% level of significance. The probability of finding a beta statistic with a value as high as the one observed is less than 1% (1 in a hundred). It means that the effect of GOHRM on GA is not constant but depends also on PC. Thus, the hypothesis is accepted whilst rejecting the null hypothesis. The presence of statistical evidence claims that PC has a contingent effect on the relationship between GOHRM and GA. It is possible to conclude that when the intensity of GOHRM is increased, employees' GA becomes more positive provided that they have a good PC. If they do not possess a high (good) level of personal character, the effort to increase the intensity of GOHRM does not lead to an increase in the positivity of GA of employees.

**Testing H2:** For the purpose of testing the validity of the hypothesis, a Correlation Analysis of Product Moment Correlation Coefficients was performed. The nature of the hypothesis was directional, hence one-tailed test was used. The desired significant level is 0.05. Table 6 presents the correlation tests results considering GA as the independent variable, and GPB, GOCB, GICB, and GOB as the dependent variables.

**Table 6. The Correlation Test Results**

Two Variables	Pearson Correlation	Sig. (1-tailed)	N
GA and GPB	.475	.000	206
GA and GOCB	.466	.000	206
GA and GICB	.373	.000	206
GA and GOB	.582	.000	206

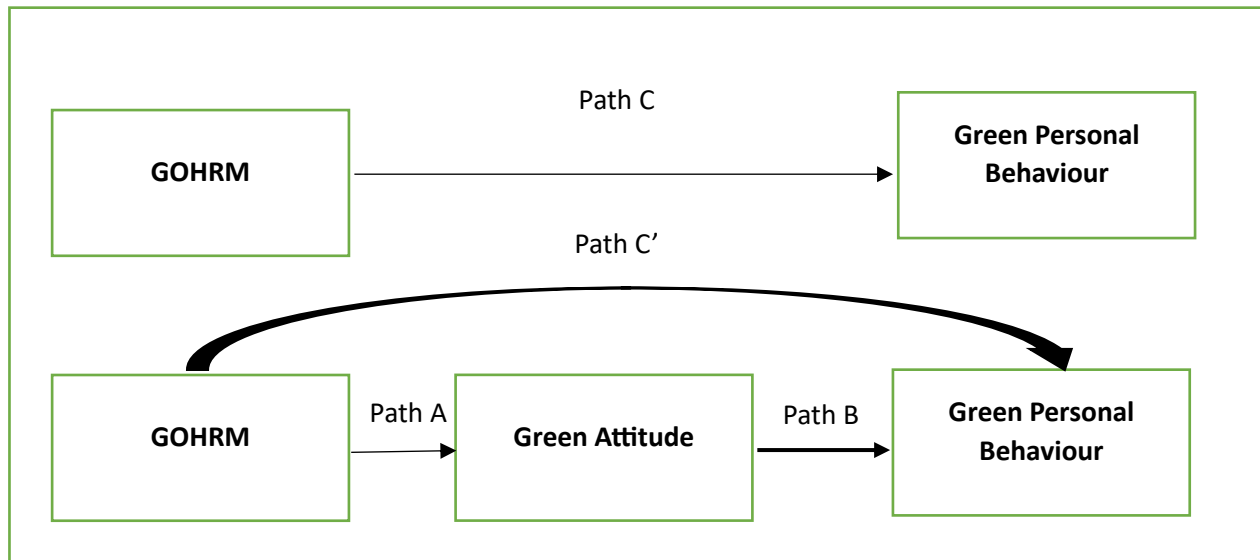
As per Table 6, the observed Pearson correlation coefficient for GA and GPB is 0.475 which is positive, meaning that a positive relationship exists between the two variables. Furthermore, correlation is significant at the .01 level (one-tailed). Thus, statistical evidence was found to

affirm that GA and GPB are significantly and positively related. In other words, statistical evidence exists to reject the null hypothesis. Similarly, the found Pearson correlation coefficients for GA and GOCB, GA and GICB, and GA and GOB are .466, .373, and .582 respectively. At the .01 level the correlation coefficients are significant. Thus, presence of sufficient statistical evidence supports the acceptance of the second hypothesis.

**Testing H3:** This hypothesis is about the mediating or intervening effects of GA on the linkage between GOHRM and four types of green behaviour. The null hypothesis is: “the relationship between GOHRM and four types of Green Behaviour, i.e., GPB, GOCB, GICB, and GOB, are not significantly mediated by GA”.

The four steps of the method for testing mediation in behavioural sciences recommended by Frazier et al (2004) were carried out and refer to Figure 2 for the steps shown graphically in respect of GOHRM, GA, and GPB.

**Figure 2. Direct and Indirect Effects of GOHRM on GPB and Mediating Effect of GA**



First, an attempt was made to test whether there was a mediating effect of GA on the relationship between GOHRM and GPB. Here the predictor is GOHRM while the outcome is GPB. The mediator is GA. Multiple regression was used as Frazier et al (2004) recommend it as the statistical test that is appropriate for testing hypotheses involving the mediating effect. To researchers, this procedure is more understandable, logical, and systematic. The results of the mediating test are given in Table 7.

**Table 7. Test Results of the Mediator Effect of GA on GOHRM-GPB Linkage**

Testing steps in the mediator model	B	Significance
Testing Step 1 (Path C) Outcome: GPB Predictor: GOHRM	0.275	.000
Testing Step 2 (Path A) Mediator: GA Predictor: GOHRM	0.148	.000
Testing Step 3 and 4 (Paths B and C) Outcome: GPB Mediator: GA Predictor: GOHRM	0.642 0.206	.000 .000

As given in Table 7, the unstandardized field regression coefficient (B) is 0.275 which is the associated value with the effect of GOHRM (predictor) on GPB (outcome). This value was significant ( $p < .01$ ). Thus, the Path c became significant and hence the requirement for mediator in Step 1 was fulfilled. The regressing GA on GOHRM was done to establish that the predictor and predictor are significantly related (the Step 2). The unstandardized regression coefficient ( $B = 0.148$ ) associated with this relationship also became significant. Thus, the Path A was significant meeting the second requirement for mediator (Step 2). In order to meet the requirements for mediator in Steps 3 and 4, GPB (outcome) was regressed simultaneously on both GOHRM (predictor) and GA (mediator). By controlling for GOHRM a significant positive relationship ( $B = 0.642, p < .01$ ) exists between GA and GPB. As a result, the requirement for mediator in Step 3 was fulfilled. It shows that Path B became significant. Furthermore, the third equation provided an estimate of Path C', the relationship between GOHRM and GPB while controlling for GA. The fourth requirement is that "Showing that the strength of the relation between the predictor and the outcome is significantly reduced when the mediator is added to the model (compare Path C with Path C' in Figure 2)". The act of adding the mediator to the model reduced significantly the B coefficient that shows the strength of the relation between the predictor and the outcome. The B ( $0.275, p < .01$ ) got reduced to B ( $0.206, p < .01$ ). As pointed out by Frazier et al (2004), a complete mediation exists when Path C' is zero and otherwise a partial mediation. In this case, Path C' was not zero, but  $0.206 (p < .01)$  meaning that the mediating effect of green attitude is partial. Furthermore, it means that there should be other variables which can be considered as mediators which explain the relationship between GOHRM and GPB.

The procedure was applied to find GA's mediating effects on the relationships between the predictor (GOHRM) and the outcomes, i.e., GOCB, GICB, and GOB. The results are shown in Table 8.

**Table 8. Test Results of Mediator Effect of GA**

Testing steps in the mediator model	B (GA on GOHRM-GOCB Linkage)	B (GA on GOHRM-GICB Linkage)	B (GA on GOHRM-GOB Linkage)	Significance
Testing Step 1 (Path C)	0.326	0.424	0.359	.000
Testing Step 2 (Path A)	0.148	0.148	0.148	.000
Testing Step 3 and 4 (Paths B and C)	0.740 0.248	0.662 0.374	0.832 0.270	.000 .000

As per the above Table, it was evident that all the four requirements for mediator in the four steps with regard to each mediator have been met. Hence, it is possible to accept the formulated alternative hypothesis 3 and to reject the null hypothesis. Thus, statistical evidence exists to affirm that the relationship between GOHRM and four types of Green Behaviour, i.e., GPB, GOCB, GICB, and GOB, are significantly mediated by GA. In other words, GA does play a significant role as a mediator among the relationships between the predictor (GOHRM), and the four outcomes (GPB, GOCB, GICB, and GOB).

A further attempt was made by using the Sobel Test to formally assess the significance of the mediating impacts of GA on the relationship between GOHRM, and the four types of green behaviour. The Sobel's Test was utilized to test the statistical significance of the mediation (Sobel, 1982). The values of regression coefficients were applied to the Sobel calculator, z-scores were calculated. Table 9 presents the results of the Sobel Test. The relevant Sobel test statistics are higher than 1.96. The mediation is taken as statistically significant at 5% level of significance if Z-score is above 1.96 (Mallinckrodt et al, 2006).

**Table 9. The Sobel Test Results**

	GPB	GOCB	GICB	GOB
Sobel test statistics	4.47	4.42	3.96	4.83
Probability (One-tailed)	0.000	0.000	0.000	0.000
Probability (Two-tailed)	0.000	0.000	0.000	0.000

Testing H4: The relevant null hypothesis is that green personal behaviour does not significantly and positively influence on perceived green results. This hypothesis is directional and 0.05 is the desired level of significance. The applied appropriate test was One-tailed. The relevant statistical techniques were the Pearson Product Moment Correlation and Simple Regression. The results of the correlation test and simple regression test are given in the following Table.



**Table 10. The Test Results: Direct Influence of GPB on PGRs**

Pearson correlation coefficient	.624
Significant (One-tailed)	.000
N	206
Unstandardized Beta (sig. at 0.01)	.624
R Square (F=131.676, Sig at .000)	.392

As per Table 10, the observed Pearson Correlation Coefficient (.624) is positive and also significant at the 99% confident level. This shows that sufficient statistical evidence exists to claim that GPB and PGRs are positively and significantly related. After running a simple regression, it was found that the unstandardized Beta value was .646. This value was significant at the 0.01 level. Furthermore, it indicates that if GPB gets increased by one unit, PGRs will get increased by 0.646 units. As the R Square value shows, the percentage influence of GPB in the variability of PGRs is 39%. By considering the above-mentioned results, it is possible to observe that GPB significantly and positively influences on PGRs. Thus, it is noted that the relevant null hypothesis is rejected while accepting the fourth hypothesis.

Testing H<sub>5</sub>, H<sub>6</sub>, and H<sub>7</sub>: The relevant null hypotheses state that there are no significant and positive effects of the predictors on PGRs. As these hypotheses are directional ones, the one-tailed test was used. The desired level of significance is 95% confident level. The Pearson Product Moment Correlation and Simple Regression were relevant data analysis techniques. The correlation and simple regression tests' results are shown in Table 11.

**Table 11. The Test Results: Direct Effects of GOCB, GICB, and GOB on PGRs**

	GOCB on PGRs	GICB on PGRs	GOB on PGRs
Pearson correlation coefficient	.582	.596	.688
Significant (One-tailed)	.000	.000	.000
N	206	206	206
Unstandardized Beta (sig. at 0.01)	.511	.468	.653
R Square (F=104.562, Sig at .000)	.339	.355	.446

According to Table 11 the found Pearson Correlation Coefficients are .582 between GOCB and PGRs, .596 between GICB and PGRs, and .688 between GOB and PGRs. They are positive and the positive signs show that the relationships between the three predictors and the outcome are positive. The correlation coefficient between each predictor and the outcome was significant at the 0.01 level (one-tailed). It means that the found positive relationship for each predictor and the outcome is significant statistically. Therefore, the claim that each predictor is significantly and positively related to PGRs is supported by sufficient statistical evidence. According to the simple regression analysis, it was found that unstandardized Beta values were .511 for GOCB on PGRS, .468 for GICB on PGRs, and .653 for GOB on PGRs, and these values were significant at 0.01 level. Furthermore, it shows that if GOCB increases by one unit, PGRs will rise by 0.511 units. It is possible to predict that if GICB goes up by one unit, PGRs will go up by 0.511 units. Furthermore, it predicts that if GOB gets increased by one unit, PGRs will

get increased by 0.653 units. Consideration of the above-mentioned results substantiates to accept the fifth, sixth, and seventh hypotheses and to reject the relevant null hypotheses.

**Testing H8:** The eighth hypothesis is “Green Personal Behaviour, Green Organizational Citizenship Behaviour, Green Interpersonal Citizenship Behavior, and Green Official Behaviour jointly explain a significant percentage of the variability of Perceived Green Results”. This hypothesis shows the combined effect of the four types of green behaviour on PGRs. In other words, the hypothesis is concerned with the aggregate effect or impact of the variables in respect of green behaviour on PGRs. Multiple Regression was used as the statistical technique used to test the hypothesis was Multiple Regression and the test results are given in Table 12.

**Table 12. The Aggregate Effect of the Four Types of Green Behaviour on PGRs**

R	R Square	Adjusted R Square	Std. Error of the Estimate	F Value	Sig.F
.719	.517	.507	.29083	53.699	.000

The results manifest that the multiple regression coefficient of the four types of green behaviour, i.e., GPB, GOCB, GICB, and GOB and the PGRs was .719 and the R square was .517. It suggests that the group of four green behaviour types could explain significantly 51 percent of the variance in the PGRs, as shown by the large F value of 53.699 ( $p < 0.01$ ). Thus, it substantiates the alternative hypothesis eight (H8). Therefore, statistical evidence is sufficient to reject the null hypothesis that GPB, GOCB, GICB, and GOB will not have significant and joint explanatory power in the variability of the PGRs. Hence, the 8<sup>th</sup> hypothesis too is accepted.

An attempt was made to examine the collinearity statistics. Tolerance values for all the four variables, i.e., GPB, GOCB, GICB, and GOB were .347, .440, .350, and .435 respectively. According to Norusis (1997), if the Tolerance values are 0.1 or less than 0.1, the variables (independent) are not significantly multicollinear. Variance Inflation Factor (VIF) values are also below 4. It indicates that the four green behaviour-related variables work as independent variables and they are not multicollinear. In other words, the four variables have been conceptualized and operationalized properly so as to work as four separate variables.

## Discussion

An empirical study by using evidence from Sri Lanka was carried out to suffuse eight gaps in GHRM. As a matter of fact, there is an unavailability of previous studies which are directly related to this study, and therefore, to making a comprehensive traditional type of discussion to confirm the research findings is not possible. However, the researchers believe that the research model stands sound theoretically because of the reason that it was developed through the use of the arguments found in conceptual materials, evidences found in empirical materials, logical beliefs of the researchers, and some general theories.

Empirical evidence was found to support the first hypothesis. This finding confirms the theorization that increased intensity of GOHRM leads positively to GA of employees provided

that those employees possess a good personal character. When employees are good in terms of (or possess high degrees of) honesty, patience, tolerance, benevolence, care, respect, self-discipline, and gratitude they become believing in, feeling positively about, and having a serious intention to behave positively toward greening and GHRM. GOHRM is the set of HRM functions performed with the aim of generating, improving, and sustaining “greening” within each employee in the organization. Increasing the intensity of this set does not make employees’ GA positive when employees are immoral or uncivil. The positive direct relationship between GOHRM and GA does not hold true to employees who are not morally advanced. The direct relationship between GOHRM and GA depends on personal character. The degree of relationship gets low when personal character is at low level. This reasoning is confirmed by the finding which is considered as an original finding in the local as well as the international literature of GHRM.

The second hypothesis was about “the positive relationship that exists between green attitude and four types of green behaviour”. It was found that GA is significantly and positively related to GPB, GOCB, GICB, and GOB. The acceptance of the second hypothesis supports, with Sri Lankan empirical evidence, the general theory, i.e., TCTACD. Furthermore, the finding is in line with the second general theory called the ABC Model utilized to formulate the second hypothesis. Generally, this finding is consistent with the finding of a study done by Bissing-Olson et al (2013). Their study’s finding was that employees’ pro-environmental attitude is a factor of employee green behaviour. The finding about GA’s impact on the green work behaviour under a Sri Lankan study done by Jayani Opatha and Kottawatta (2020) supports the found linkage between GA and four types of green behaviour.

The third hypothesis is about the mediating effects of green attitude on GOHRM-four types of green behaviour linkage. It was found that the relationship between GOHRM and four types of Green Behaviour, i.e., GPB, GOCB, GICB, and GOB, are significantly mediated by GA. This finding confirmed the theorization that GA has a temporal value occurring at time<sup>2</sup> between GOHRM which occurs at time<sup>1</sup> and the four types of green behaviour each of which occurs at time<sup>3</sup>. This is an original finding as there are no previous studies empirically done (to the best of the researchers’ knowledge) to find the mediating effect of employees’ GA on the relationship between GOHRM and each of the four types of green behaviour. Another finding with regard to testing the third hypothesis was that the mediation of GA is partial, not full meaning that there are other mediators other than the mediator tested for this study. Green knowledge, green skills, awareness of environmental protection law, etc may be other mediators. In developing the theoretical framework of this study, the mediating effect of GA on the relationship between GOHRM and the four types of green behaviour was theorized by adapting from a general theory called MARS Model of Individual behaviour (McShane et al, 2008). Through the study’s data analysis the third hypothesis was substantiated. This substantiation confirms the MARS Model.

The fourth hypothesis was about the direct effect of GPB on PGRs. It was substantiated providing empirical evidence for that GPB significantly and positively influences on PGRs. As there are no previous direct empirical studies about the relationship between GPB and PGRs.

A useful classic theory called the General System Theory (Bertalanffy, 1950) was utilized in order to support the development of the research model of this study. As the theory, input leads to behaviour which leads to result. This theorization gets confirmed by the acceptance of the validity of the fourth hypothesis.

The fifth, sixth, and seventh hypotheses are in respect of direct relationships of three types of green behaviour, i.e., GOCB, GICB, and GOB with PGRs. Three types of behaviour that is green lead to results which are green. Bertalanffy's General System Theory was used to make positioning the three types of green behaviour stand as processing which gives outputs which are PGSs. The acceptance of the validity of these three hypotheses through Sri Lankan evidence is in line with the General System Theory. These three findings are indeed original ones as there are no previous direct empirical studies done locally and perhaps globally.

The final hypothesis of this study was about the combined or aggregate impact of the four types of green behaviour on the PGRs. After testing the hypothesis, it was found to be accepted. 51 percent of the variance in the PGR is significantly explained by the group of four green-related behaviours. When the Regression Beta values and T values are considered, the type of green behaviour that had the highest impact strength out of the four types was GOB. The values for the variable were .364 and 5.012 (Sig. 000) respectively. This indicates that GOB is more important compared with the other three types of green behaviour as a determinant of the PGRs. An original study done in Chinese context by Paille et al (2014) found that organizational citizenship behaviour for the environment has a significant positive effect on environmental performance. They used the term *organizational citizenship behaviour* for the environment for their study even though we considered two specific variables, i.e., GOCB and GICB which can be performed by employees in the organizational context. Furthermore, our conceptualization and operationalization of the two variables were of the different and original form. However, their study's finding was utilized to support our discussion. According to a study of 304 managers in the manufacturing firms done by Boiral et al (2015), organizational citizenship behaviors for the environment (individual, voluntary and informal initiatives) were examined as an essential ingredient of corporate greening. The study found a significant positive impact of organizational citizenship behaviours for the environment on environmental performance. An indirect study done by Ojo and Fauzi (2020) revealed that engagement in green IT practices was related to environmental IT performance significantly. Although their study did not use the term *green behaviour* or *any of the specific types of green behaviour* being studied under this study their variable, i.e., engagement in green IT can be considered as a particular green behaviour. In their study, an empirical support was offered for the role to be played by IT professionals to improve environmental performance by engaging in sustainable IT practices. Another recent study done by Alshaabani et al (2021) in Hungary found empirical evidence about the impact of GHRM practices on green work engagement. In their study, green work engagement was operationalized by using five items. It is possible to argue that green work engagement is employee engagement in greening and it can be considered as an attitude as well as a behaviour (adapting from Iddagoda and Opatha, 2020).

## Implications

Ideally every organization irrespective of ownership, size, and location is required to do practicing GHRM in order to achieve its green goals or environmental sustainability goals. To ensure experiencing a sustainable future is indispensable to generate a balance among the planet, people, and profits. Every firm is in need of generating, sustaining, and enhancing its ability to excel in its natural environmental performance (for the planet) and societal and ethical performance (for the people). In this regard every organization is in serious need of enhancing greening and GHRM.

The finding from testing the first hypothesis implies that increasing the intensity of GOHRM becomes fruitless when organizational employees do not possess a good PC. It is possible to predict that increased GHRM increases employees' GA. But this prediction does not become realized if employees' PC is inappropriate (bad, low, or blemished). Thus, it is essential for the organization to make sure that it has employees who are appropriate in terms of the PC. In this regard, every manager needs to be an exemplar, do training employees on PC, reward employees who are people of ethics and morality, penalize those who are unethical and immoral, and encourage to develop a religious culture, particularly at employees' personal life. The implication of the finding about positive relationships existing between GA and four types of green behaviour is that any firm that wants its employees to involve in green behaviours should first generate a positive GA within its employees. It is suggested further that any manager who wants to change a negative attitude of an employee about greening should generate a belief within the person about greening by giving valid information of facts, reasons, and successful stories, make him or her interested in greening, and develop a plan for the person to engage in the expected behaviours toward greening.

When considering the finding that GA is a significant mediator on the relationship between GOHRM and the four types of green behaviour, GOHRM becomes a predictor of employee GA. Any manager should understand the criticality of GOHRM in predicting employee GA and then the four types of employee green behaviour. It is essential for the manager to understand clearly and specifically how to make the traditional HRM functions green. These functions need to be incorporated with green matters so as to make employees green in terms of attitude and behaviours as well. Consequently, it is possible to expect green results. It is a must that employees think, decide, act and react in the way that is green. It is implied that increasing the degree of GOHRM will result in creating, maintaining, and enhancing GA and then the four types of green behaviour. It should be understood on the part of any manager that without transforming normal employees into green ones through a high degree of GOHRM, it is impossible to realize that "employees of the organization give a maximum individual contribution on each of the four greening roles, i.e., preservationist, conservationist, non-polluter, and maker" (Opatha, 2013, p. 26).

Thus, a high value is attributed to GHRM as a driver of GA. It drives GA rather than that GA drives GHRM. It is likely to argue that a manager (particularly in HRM) who had a positive GA before joining the organization gives an example to other managers and employees about greening and further initiates GHRM. In this argument, GA is a predictor or driver of GHRM.

But the concern and emphasis of this study are that GHRM enables the organization to influence its employees so that their attitude about greening becomes positive (ideally very positive), then they engage in the four types of green behaviour (ideally in very high extent), and consequently green results get created and increased.

It was found out that the type of green behaviour that had the highest impact strength out of the four types was GOB. This finding implies that GOB is more important compared with the other three types of green behaviour as a determinant of the PGRs. Being official on the part of the employee is more impactful than being voluntary. Furthermore, it implies that an organization is in a better position to manipulate GOHRM by increasing its intensity so that GOB gets increased, and consequently PGRs get increased. In order to enhance green results which are indispensable for the natural environment sustainability, it is indispensable to establish and enhance GOHRM in the organization. GHRM is a salient investment for firms to stay sustainably competitive and is instrumental in enhancing organizational environmental performance for natural environmental sustainability (Vasudevan, Mathushan, Nirojan, Opatha, and Kengatharan, 2024).

### **Original Contribution to the Existent Literature**

The above-mentioned implications are taken into consideration as managerial implications derived from this study. Furthermore, there are theoretical implications deriving from this study. The findings of the study are original additions to GHRM knowledge having filled eight specific gaps. The research model empirically tested under this study is an original model of GHRM. The model has its originality in explaining some dynamics of green results having GOHRM as the primary independent variable, PC as the moderator, GA as the mediator, and the four types of green behaviour as the direct predictors. Originally developed, validated and reliable instruments for the constructs (not presented owing to words limitation) are considered as research methodological contributions.

### **Research Limitations, Delimitations, and Directions for Further Research**

In terms of time horizon, this study was a cross-sectional study suggesting a longitudinal study that includes collecting data at different points of time. This study was a survey and therefore our suggestion is to conduct a field experiment to find a definite cause-effect relationship between GOHRM and GA and causations among the variables studied. If a field experiment is conducted, it is possible to examine actual green innovations and green outcomes under the variable of green results rather than the perceived results. In filling the self-administered questionnaires there may be errors such as incomplete understanding of certain question statements and social desirability bias. Delimitations are actions or decisions taken by the researchers in order to limit or fix the scope and boundaries of the study (adapting from Suresh, 2015 and Iddagoda and Opatha, 2020). One delimitation of this study is the decision made to consider only GA and the four types of green behaviour which affect the PGRs. There may be other factors such as employees' green competencies, top management support, environmental management practice, government environment-related law, and research and development facility affecting the PGRs. A suggestion for future research is to conduct

empirical studies by including such factors. Another suggestion is to repeat the model in different countries in order to find global evidence to confirm and support the theorizations in the network of the variables. A delimitation of the study is not testing the mediating effects of the four types of green behaviour on the linkage between GA and PGRs. This delimitation suggests a future study to formulate hypotheses relevant to the mediating effects of the four types of behaviour.

### Conclusion

In the study eight gaps were dealt with and a total of 08 hypotheses were formulated and tested to find statistically significant empirical evidence in the proposed network of eight variables being GOHRM as the primary independent variable and the PGRs as the primary dependent variable. The data were collected from 202 top and middle managers working for Sri Lankan listed manufacturing firms. The testing of the hypotheses resulted in accepting all the eight hypotheses substantiating the research model. The findings validate an original model that has the power in explaining some dynamics of green results having GOHRM as the primary independent variable, PC as the moderator, GA as the mediator, and the four types of green behaviour as the direct predictors. The attempt made in this study by testing the eight hypotheses systematically and scientifically is a material contribution to the local and global literature that exists in respect of GHRM. The study implications are of importance particularly for Sri Lanka which is a developing country having a great potential for its economic and social development (Opatha, 2021).

### Appendix

**Table A1. Studies on Green HRM**

Author	Year	Description
Purba	2004	This is a research paper studying the relevance of the “greening of production” in the South-East Asian context. The study investigates the various initiatives taken by the companies in the region and finally identifies the factors that are critical in the process of greening production in this region.
Manaktola & Jauhari	2007	This study attempts to search the factors which affect the attitude and behaviour of the consumer for green practices in the Indian lodging industry and it also researches the consumers’ intentions to pay for green practices.
Renwick et al	2008	These three researchers in the study take a new and integrated view of the literature in respect of GHRM. The study does classify the literature on the basis of entry-to-exit processes in HRM (from recruitment to exit). Further, it reveals that HR processes play in translating the Green HR policy into practice. The paper has a contribution of drawing together the extant literature in this area, mapping the terrain in this field, and proposes a new process model and research agenda in GHRM.
Lee	2009	The relevant study was done in enterprises which are small and medium-sized and it contributed by exploring and investigating the process of green management adopted by those organizations.
Jabbour et al	2010	These researchers have done a comprehensive study in order to analyze the contribution of HRM throughout the evolutionary stages of environmental management in Brazilian companies. The research paper has a contribution in terms of a theoretical framework of environmental management and its evolution and the ‘greening’ of the HRM functional and competitive dimensions.
Smith and Perks	2010	This study has an in-depth literature review and empirical evidence on managerial perception with regard to green implementation under the business functions.
Jackson et al	2011	These researchers have done a study on Green HRM. It contributes to the existing

		body of literature by expanding the field of HRM in the context of environmental management. It discusses the HRM's role in the pursuit of environmentally sustainable business and concludes by describing opportunities for future research at the intersection of environmental management and strategic HRM.
Jabbour	2011	This research paper is on a study done in 94 Brazilian companies that have ISO 14001 certification. It analyses the degree of the greening of HRM practices, organizational culture, learning, and teamwork.
Suhaimi	2011	This paper is based on a study that attempts to explore the relevant constructs of green HRM. In addition, the study proposes a model of strategic green HRM deriving from the literature about HRM phases of environmental management.
Renwick et al	2012	This research is based on a study that presents the extant literature of GHRM and attempts to map the terrain of the field. Also, it identifies some gaps in the existing literature and suggests some agendas for future research studies.
Dutta	2012	This researcher has done a study with a focus on GHRM as a strategic initiative by the corporate for the purpose of promoting sustainable business practices.
Eryuruk	2012	This paper is an attempt to make an analysis of how green the textile and clothing industry is with respect to the product lifecycle, from raw material through the design, production and logistics up to disposal for the purpose of pointing out important points and parameters for greening the industry. This is a conceptual study.
Opatha	2013	The researcher has done a conceptual paper that gives some original concepts and theoretical formulations with regard to GHRM after understanding the meaning of green or greening.
Bissing-Olson et al	2013	This study was dedicated to understanding the factors of employee green behavior having investigated the relationship between employees' pro-environmental attitude, daily task-related pro-environmental behavior (the level to which employees complete their work tasks in environmentally-friendly ways), daily proactive pro-environmental behavior (the level at which employees show personal initiative when acting in environmentally-friendly ways at work) and employees daily affect.
Opatha and Arulrajah	2014	The researchers through this research paper produced an expanded version of a previous original theoretical work done by one author. This conceptual work describes what greening means, explains the reasons for greening and its importance, presents four green human resource requirements, shows a possible way of making HRM functions green, and finally presents the findings of some research done in the field of GHRM.
Obaid and Alias	2015	This is a study researching the effect of HRM factors such as recruitment, training and development, and learning under the concept of greening on the performance of the firm.
Aggarwal and Sharma	2015	This paper attempts to comprehend the idea of Green and Green HRM, its significance, focal points, and limitations for the respective organization that desires to make due in this modern period with a perspective on sustainability and further, it is trusted that this paper presents some utility for evolving interests within potential students, academicians, and research scholars to understand green HRM theoretically.
Bangwal and Tiwari	2015	This paper aims to study the GHRM, different practices of Green HRM, and clarifies the function of the green human resource process towards green and afterward the paper recommends some social ramifications of practices of Green human resources to bring organization towards green.
Nejati and Ahmad	2015	This is a paper investigating the effectiveness of green human resource management in the influential perception of job seekers in respect of the glory of an organization and its attractiveness, having the purpose of obtaining applications from job seekers. By using a sample of 162 applicants in Malaysia, the particular research framework was tested through a model of partial least squares structural equation (PLS SEM).
Mehta and Chugan	2015	The researchers attempt to define the concept of GHRM, methodology being practiced by organizations headed to green HRM, its points of interest, particular practices, and policies through this paper. Further, it explains present trends in respect of green HRM practices in organizations according to the findings of a couple



		of studies, some survey reports, and available information on the websites of the companies. That additionally draws out the part of HRM work towards making a 'green' culture in organizations.
Guerci and Carollo	2015	The researchers attempt from this paper to take the unexplored opportunity to apply paradox theory to green HRM and search the HRM-related paradoxes supposed by organizations to develop a sustainable environment. Data collection has been carried out within six companies in Italy by using a methodology of case study, semi-structured interviews, and analysis of the documents.
Arulrajah et al	2015	The researchers have done a systematic review of the existent literature. The review attempts to explore, identify, and describe green human resource management practices of organizations. The main output of the paper is a specific expanded list of GHRM practices under major HRM functions.
Jabbar and Abid	2015	This paper is a study of GHRM practices while having a detailed analysis of the same in respect of environmental performance in green organizations and findings will guide managers to improve the performance of the organization along with achieving set goals.
Ahmad	2015	This study mainly focuses on the different Green Human Resource practices followed by organizations and on describing the meaning of GHRM in simplified terms. Further, this study adds literature to the existing academic world by giving future direction in respect of some functions of GHRM. The paper finally proposed some possibly productive HR initiatives to the organization which concerns Green.
Renwick et al	2015	This paper is in the contemporary writing on GHRM to logically outline the seven articles that uncover the inserted idea of GHRM practices of the work environment.
Yusoff et al	2015	The researchers wrote this paper in an under-researched area in the field by contributing theoretical and practical thoughts about the nature of GHRM in Malaysian multinational organizations.
Dangmei	2015	This is a paper focused to observe the nature and implications in respect of initiatives of Green HRM and practices of Green HRM which direct sustainability of environment return advantage to the living ancestral individuals. An endeavor is made to advance the significance of Green HRM and attempt to connect its suggestions on saving the habitations of the ancestral populated zones.
Arulrajah and Opatha	2016	The researchers produced a research paper which is of theoretical nature and it presented a simplified underpinning for GHRM. The paper systematically attempts to give analytical and theoretical frameworks for GHRM. Finally, a strong link between both GHRM literature and theories of organizations was established.
Arulrajah et al	2016	The research paper is a systematic comprehensive conceptual paper that originally presents a concept called "employee green performance of job". This conceptual work defines the new concept, describes its dimensions, and finally identifies elements with regard to each dimension. The identified three key dimensions and eleven elements of the concept of employee green performance of job will have utility for the purpose of developing a device to measure the construct.
Pallavi and Bhanu	2016	This paper conversed on the GHRM concept, sustainability in the corporate environment, and the way of executing functions of HR within a Green culture.
Pawar	2016	This article aims at realizing the recommendations in respect of the requirement and immensity of GHRM in sustainable business.
Wayne and Nuttaneeya	2016	This study found a relationship between firm performance and positive acceptance of green management practices. This study was carried out especially in the firm context which is small and has analyzed the effect of HRM practices. The paper contributes to an empirical assessment of the moderating effect of HRM on the relationship between firm financial performance and proactive environmental management by analyzing data collected from 158 small Australian machinery firms as a sample.
Das and Singh	2016	This paper focuses on examining the relationship between organizational sustainability and GHRM through a study at the international and national levels. Furthermore, it outlines by what method green HRM and HR experts get access to developing a body of knowledge to guide them on their sustainability journey of the organization.
Gholami et al	2016	This paper has a conversation concerning practices of GHRM, which arise with the

		Ability-Motivation-Opportunity (AMO) perspective to drive sustainability.
Yong and Yusliza	2016	The motivation behind this paper is to analyze the impact of strategic human resource proficiencies of HR experts on the acceptance of practices of green human resource management.
Yusliza et al	2017	The main purpose of this study is to reason out basically how electronic human resource management, green empowerment of employees, and the role of human resource business partners may impact practices of GHRM by utilizing the resource-based view (RBV) theory.
Azmi et al	2017	The study mainly focuses on Employee Knowledge, Employee Skill, and Employee Attitude toward the execution of GHRM. When the employee skill is stressed, GHRM is foreseen to be very much implemented.
Toprak and Anis	2017	This paper is a review paper that is about the environmental effects of textiles. It initiated a discussion on the opportunities for change in textile processes in accordance with the laws, and therefore the paper has a contribution to cleaner production and sustainability in the textile industry.
Bangwal et al	2017	This article focuses on analyzing in what way green human management contributes to the performance of nature through the work-life of a worker. According to a detailed review of literature on GHRM and the performance of the environment, a conceptual model was established to find direct and indirect effects of GHRM on the performance of the environment by using 356 leadership employees' survey data, collected from the certified companies of energy and environmental design (LEED).
Ragas et al	2017	These researchers have done a study on employee job performance in a few industries and searched the moderating role of the green lifestyle on the relationship between GHRM and the performance of the employees and a potential overflow of GHRM to employee lifestyle.
Dumont et al	2017	This study is about empirically testing the impact of GHRM on employee green behaviour at the workplace.
Kumar and Praharaj	2017	The researchers have done a study by focusing mainly on several practices of GHRM & some limited initiatives. And too, the paper proposed a few productive HR initiatives for green organizations.
Pavitra	2017	The research area of this study is the challenges and position of practices of GHRM in India. Also, it proposes a conceptual framework in order to fill the gaps which have been identified to make a sustainable organization.
Javed and Cheema	2017	This paper identifies the progress of agriculture through different ways of practices of GHRM which help the progress of the same now and future. And it has been found from this paper that in Pakistan, GHRM has been very little understood.
Coskun	2017	The particular study mainly focuses on green attitudes and measuring the same.
Banerjee and Dutta	2017	The researchers studied a concisely understanding of green human resource management, practices relating to GHRM, other possible initiatives for structuring GHRM further, and finally rewards of green human resource management.
Aykan	2017	This article focuses on the scholarly work of GHRM and practices that are appraised while highlighting important matters and recommendations for future researchers who wish to research this subject.
Ren et al	2017	This article looking for a clear understanding of research openings and advanced development of theoretical and empirical nature gauges the developing GHRM academic field by having a narrative review. And this paper review highlights a vital need to develop a measurement of GHRM and conceptualization while improving a combined model of the consequences, antecedents, and contingencies concerning GHRM.
Siyambalapitiya et al	2018	This paper endeavors to distinguish practices of GHRM by reviewing the literature of GHRM from 1996 to 2017 while conducting face to face discussions with HR experts to decide their perspectives on such concepts. Further, a novel model was proposed to research the relationship between tasks of GHRM and measurements of environmental management which help to improve the performance of the environment.
Saeed et al	2018	The researchers have done this study by concerning the impact of practices of GHRM (green selection and recruitment, green appraisal and performance management, green reward and compensation, green training and development, and green

		empowerment) on employee pro-environmental behavior while testing the mediating and moderating effects of pro-environmental psychological capital and environmental knowledge on GHRM practices and pro-environmental behaviour relationship.
Chaudhary	2018	This study has its focus on examining the effect of GHRM on job pursuit intention of prospective employees. Further it studied organizational prestige as mediator and environmental orientation and gender as moderators.
Yusuph	2018	This paper was about important approaches of sustaining the environment, having make-aware-initiatives to the HR managers and employees in respect of the importance of GHRM and the green movement.
Halawi and Zaraket	2018	This research paper is about GHRM and the work behaviour of the employees in two Lebanese organizations, a university, and a bank.
Bombiak and Marciniuk-Kluska	2018	This paper was done to identify pro-environmental HR practices embraced by young Polish enterprises and to prioritize them in accordance with their effect on company sustainable development.
Zaid et al	2018	This study was done to investigate the impact of GHRM practices as a bundle on environmental, economic, social, and operational performance within the manufacturing sector of Palestine by employing a quantitative research methodology. The study found that GHRM bundle practices have a positive influence on the four dimensions of organizational performance.
Shah	2019	This study was carried out quantitatively to develop a valid measurement scale for green human resource management. The author claimed that the developed instrument contains a considerable number of functions in integrating environmental management with HRM.
Shahriari et al	2019	The researchers carried out a systematic review of studies done during the previous ten years in respect of GHRM in the west and east.
Shahriari et al	2019	The researchers presented a systematic review of literature on green human resource management over the past ten years and they believed that it was the best way to share useful research data for researchers and managers and develop the literature in this field. It was found that the selection and recruitment, training, and development functions with 87.5% and 75% had the highest attention, and discipline management and socialization with 6.25% and 3.12%, had the least attention.
Dhawan	2019	This paper attempted to study how Green HR practices have been recognized by the Indian Companies and their advantages. Moreover, it attempted to research the future of GHRM in India.
Arqawi et al	2019	The researchers carried out their study by researching the views and acceptance of practices of GHRM in the Palestinian manufacturing organizations. It was found that the Palestinian organizations have practiced GHRM practices to some extent.
Pham et al	2019	This study was a survey that adopts the Ability-Motivation-Opportunity and the Social exchange theories in the green context by investigating a new conceptual framework, which explores the indirect and interactive effects of green training, reward, and organizational culture on employee environmental commitment.
Zubair and Khan	2019	This study is a conceptual one that proposes the adoption of sustainable and ecofriendly practices by Human Resource Management departments in organizations in the shape of Green HRM.
Opatha and Hewapathirana	2019	This research paper is a theoretical one and it explores the existing rich definitions of GHRM from the literature which is available to the researchers. Further, the paper presents a comprehensive definition of GHRM and its characteristics.
Yu et al	2020	By adopting AMO theory this study found that GHRM is significantly and positively related to environmental cooperation with customers and suppliers, and that the relationships are significantly moderated by internal green supply chain management. The study advises HRM practitioners to develop GHRM practices which provide training (ability), incentive (motivation), and conducive environment (opportunity) to help implement environmental collaboration. Furthermore, it advises supply chain management practitioners to improve internal green supply chain management in order to strengthen the effects of GHRM.
Mohammad et al	2020	This paper focuses on researching the mediating effect of green passion to the relationship of GHRM and organizational citizenship behaviour for the environment.

Jayani Opatha and Kottawatta	2020	This study is an empirical one done in a Sri Lankan tiles manufacturing company. It investigates the impact of green attitude on the green work behaviour of employees. The found impact is positive and significant.
Geetha and Sammanasu	2020	This research paper is a conceptual one which has objectives of providing a basic understanding and objectives of Green HRM and reviewing literature related to Green HRM and its strategies.
Alshaabani et al	2021	This study found empirical evidence about the impact of green HRM practices on green work engagement of employees by using 238 respondents from three big energy companies which operate in Hungary.
Reza and Azmi	2022	This study is a case study that was undertaken to explore the role of HRM in SMEs towards environmental sustainability. It was found mainly that all workers are not aware of the health benefits of environmentally sustainable practices in the firm and this unawareness poses a threat to sustainable HRM implementation.
Masud et al	2022	This empirical study is about an investigation of how corporate social responsibility (CSR) affects GHRM and the organizational environment performance (OEP), along with its moderating effect. The study was based on data collected from the Malaysian manufacturing industry. It was found that GHRM and CSR positively and significantly affect the OEP. Furthermore, it was found that CSR mediates the existing relationship between GHRM and the OEP.

Source: Refined and expanded from Hewapathirana et al (2020)

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