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Turning Green Vision into Green Action: How Green HR Practices and Green Training Convert Green Leadership into Employee Green Behaviour

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ABSTRACT

Organisations have come to rely more and more on the everyday behaviour of their employees to attain environmental targets; how leadership is transferred into green behaviour and what contributes to this transfer remains poorly understood. This study investigates how green leadership influences employee green behaviour, mediated by green HR practices and enabled by green training. The primary data were gathered from 600 employees of a large manufacturing organisation by using a structured questionnaire with 5 points for each item, and analysed via a two-step procedure of measurement-model assessment and structural-model testing with bootstrapping (999 resamples) in ADANCO. The measurement model showed good reliability and validity with composite reliability and Cronbach's alpha values above 0.70 for all constructs except green leadership (0.4945) and average variance extracted (AVE) values above 0.50 for all constructs except green leadership (0.4796), which indicated the heterotrait-monotrait ratio, and the Fornell-Larcker criterion confirmed the discriminant validity. The model accounted for a significant amount of variance in green HR practices (R-squared = 0.5881) and green behaviour (R-squared = 0.6925). All four hypotheses were accepted as green leadership positively influenced green behaviour (beta = 0.1715); green leadership positively influenced green HR practices (beta = 0.2360); green training had a strong influence on green HR practices (beta = 0.6281); and green HR practices had a strong influence on green behaviour (beta = 0.7287). Green HR practices became the most important proximal driver of green behaviour and the main mediator between leadership and training and green behaviour, and green training had a significant indirect effect on green behaviour (beta = 0.4577). Results suggest that green behaviour is created by a multi-level organisational process in which leadership creates direction, training creates capability, and HR practices translate it into action. The study provides empirical evidence from a large emerging-economy manufacturer and provides guidance: to induce green employee behaviour, organisations should not only rely on the vision of their leaders, but also on the development of strong green HR systems and training.....

Keywords: green leadership; green HR practices; green training; employee green behaviour; PLS-SEM; mediation; sustainability; manufacturing..

INTRODUCTION

Environmental sustainability is one of the most key challenges faced by organisations today. Environmental responsibility is now at the heart of corporate strategy, driven by regulatory pressures, investor scrutiny, and shifting customer expectations, with its impact being most pronounced in manufacturing, where energy consumption, material use, and emissions are significant and easily visible (Arshad et al., 2025) [23]. However, the research continues to show that without the employees' everyday behavior, environmental measures, techniques, and policies will not be effective (Din et al., 2025) [38]. Thus, employee green behavior, defined as the set of actions that employees can undertake to conserve resources, reduce waste and promote environmental objectives, has become the key to the loop between the organisation's intentions and the desired environmental outcomes (Ansari & Khan, 2024) [18].

Leadership is generally considered to be the most important catalyst for green behaviour as leaders establish the environmental vision, embody the desired behaviour, and engage the organization's systems to support sustainability (Abourokbah et al., 2024) [1]. In various contexts, environmentally-oriented leaders have been found to increase green creativity and pro-environmental

behaviors of employees (Dinibutun, 2024) [39]. An important question, however, is: What mechanism is at play? Does leadership influence behaviour directly or does it work primarily through the organisational systems it establishes (Bhat et al., 2024) [31]? A related question relates to the context in which leadership's influence is enhanced. Since leadership primarily involves the creation of HR systems, and the effectiveness of these systems is related to employee capability, human resource practices and training are key to understanding the production of green behaviour (Din et al., 2025) [36].

The questions are significant both theoretically and practically. Literature in the field has generally considered leadership as a direct driver of green behaviour while treating organisational systems as secondary drivers (Amoako et al., 2025) [17]. When, however, the bulk of leadership's influence is mediated through HR systems, then models that do not specify or account for the HR system will misattribute effects and misguide practice (Chowdhury et al., 2026) [33]. In practice, organisations invest in leadership development, HR systems, and training; understanding which one is most likely to influence behaviour, and how the three levers work together, is critical to investment (Ahmed et al., 2023) [6]. This study offers proof on just these issues.

The setting is a large manufacturing organisation which is well selected for the question. Manufacturing has a significant environmental impact and formal HR systems and structured training functions, which make it a good environment to see how leadership, HR practices, and training can jointly influence behaviour (Faeni et al., 2025) [48]. Furthermore, capability building through training (Albertz & Pilz, 2025) [11] becomes more relevant in the emerging economy context, in which rapid industrial growth puts greater pressure on the environment, and where the workforce is often young and just starting their learning journey about the environment. Evidence from these kinds of settings is still relatively small, and this study contributes to filling the gap (Anshima et al., 2025) [19].

This study aims to answer these questions by taking a layered perspective in which green leadership is expected to affect employee green behaviour both as a direct and an indirect relationship through green HR practices, and green training is expected to reinforce green HR practices by developing the capability that makes green systems effective (Bangwal et al., 2025) [28]. The study utilises primary data obtained from 600 employees of a large manufacturing organisation, and the measurement and structural models are estimated using the partial least squares structural equation modelling (PLS-SEM) technique. For this reason, PLS-SEM is well suited, as it allows to consider complex models with mediation, to embed reflective constructs measured by multiple indicators, and to perform robust significance testing using bootstrapping (Faeni et al., 2025) [48].

The study has three contributions: First, it presents a clarification of the mechanism between green leadership and green behaviour, highlighting that green HR practices are the dominant proximal driver and the key mediator between green leadership and green behaviour (Din et al., 2025) [38]. Second, it shows how important green training is, its impact on HR practices and consequently its indirect impact on behaviour (Alrifae, 2026) [15]. Third, it offers empirical findings from a large manufacturing organisation in an emerging-economy context where the conflict between industrial development and environmental conservation is particularly intense, and evidence is rather limited (Arshad et al., 2025) [23]. The rest of the paper discusses the theoretical underpinning and the hypotheses, explains the method, presents the measurement and structural results, discusses these results and ends with limitations and future research directions.

2. Theoretical Background and Hypotheses

This study is based on two related theories. The Ability-Motivation-Opportunity (AMO) theory suggests employees will perform a behaviour if they are able to, they are motivated to do so, and their work environment provides them with the opportunity. With regard to green behaviour, green training provides ability and green HR practices provide motivation and opportunity through recruitment, appraisal, rewards and involvement (Ahmad et al., 2025) [5]. The Theory of Planned Behaviour (TPB) builds upon this, stating that the individual's decision to act is a function of attitudes, subjective norms and perceived behavioural control, where green leadership influences all three by inspiring employees, setting an environmental norm and increasing the sense of control through supportive systems and skills (Ansari & Khan, 2024) [18]. These theories can be combined and suggest that leadership operates through organisational systems and capability – this is the logic that is tested here.

2.1 Related Literature

Employee green behaviour is a topic which has gained significant attention and research, given that organizations realize that their environmental performance is dependent on the actions of the individual employees (Etse & Adu-Aboagye, 2025) [47]. Green behaviour can be split into required and voluntary behaviour: required behaviour is part of the formal job duties, while voluntary behaviour is going beyond these duties and is a reflection of real environmental commitment (Cubukcu Cerasi et al., 2026) [34]. Leadership is identified as a key antecedent in a large body of literature, which indicates that environmentally oriented leaders can increase green behaviour by inspiring employees, role modelling green behaviour and establishing a common environmental goal (Abourokbah et al., 2024) [1]; (Do et al., 2026) [40]. Parallel streams show that green HR practices, ranging from recruitment, training, appraisal, rewards, and involvement, can foster pro-environmental behaviour by integrating environmental objectives into the systems that shape work (Bangwal et al., 2025) [28] and that green training can contribute to developing the knowledge and skills of employees to take action (Albertz & Pilz, 2025) [11].

New research builds upon these findings in a number of ways. In the healthcare industry, Green HRM has been associated with employee well-being, engagement, and green behaviour (Din et al., 2025) [36]; in aviation and food-and-beverage industries, it has been associated with

sustainable performance (Faeni et al., 2025) [49]; and in systematic syntheses, it has been associated with sustainable performance in general (Alrifae, 2026) [15]. Green and digital leadership have been correlated with sustainable supply chains (Alabdali et al., 2025) [10] and green inclusive leadership to green creativity, green passion and green absorptive capacity (Dinibutun, 2024) [39]. Joint influence of corporate social responsibility, green strategy and leadership on environmental performance has been illustrated (Bhat et al., 2024) [31] and the role of big-data analytics with green HRM has been found to positively affect green innovation and firm performance (Alshuaibi et al., 2024) [16]. However, the literature has tended to focus on these factors separately rather than as a mechanism.Nevertheless, the literature has focused more on these factors separately than as an integrated mechanism (Din et al., 2025) [38].

The combined attention of green HR practices in the leadership-behaviour relationship and the role of training as an enabling input to that mechanism is limited, particularly in large manufacturing organisations in emerging economies (Chowdhury et al., 2026) [33]; (Anshima et al., 2025) [19]. The purpose of the present study is to address this by testing a single model in which leadership and training are intervening variables that influence behaviour by the means of green HR practices and leadership directly influences behaviour. This integrated design enables the relative strength of the direct and mediated pathways to be assessed within a single estimation, and it highlights the practical question of which organisational lever is strongest to influence green behaviour (Ahmed et al., 2023) [6].

2.2 Green Leadership and Green Behaviour

Green leadership is defined as a leadership that prioritizes environmental care in decision-making and motivates employees to take responsibility (Amoako et al., 2025) [17]. Leaders can directly influence behaviour through their own green behaviour, by providing meaning to green tasks, and by fostering pro-environmental initiative (Ansari & Khan, 2024) [18]. Green leadership is expected to have a direct impact on green behaviours due to the fact that employees observe and emulate their leaders, and that leaders can make environmental goals salient (Abourokbah et al., 2024) [1]; (Do et al., 2026) [40]. Accordingly:

H1: Green Leadership has a significant positive effect on Employee Green Behaviour.

2.3 Green HR Practices and Green Behaviour

Green HR practices incorporate environmental objectives into the people-management systems of the organisation, providing employees with the motivation and opportunity to behave green (Ahmad et al., 2025) [5]. Green HR practices translate organizational intentions into action, through hiring green employees, training them, appraising green performance, rewarding green efforts, and engaging employees in green decisions (Bangwal et al., 2025) [28]; (Faeni et al., 2025) [49]. They thus have the potential to be a significant proximal influence for green behavior (Din et al., 2025) [36]. Accordingly:

H2: Green HR Practices have a significant positive effect on Employee Green Behaviour.

2.4 Green Leadership and Green HR Practices

Leaders influence the systems of the organisation, such as HR policies. Leaders who value the environment promote green recruitment, training, appraisal and rewards, which are lasting HR practices (Din et al., 2025) [38]. Hence, it is expected that leadership commitment will influence the adoption and the power of green HR practices (Ahmed et al., 2023) [6]; (Bhat et al., 2024) [31]. Accordingly:

H3: Green Leadership has a significant positive effect on Green HR Practices.

2.5 Green Training and Green HR Practices

Green training creates the capacity needed for the green HR systems to work (Albertz & Pilz, 2025) [11]. Training enriches the HR pathway by ensuring that a workforce with environmental knowledge and skills can recruit, appraise, reward, and involve effectively; in this regard, training feeds and amplify the HR system (Ahmad et al., 2025) [5]. Thus, green training is likely to significantly influence green HR practices as an enabling and capability building element of the mediating mechanism (Alrifae, 2026) [15]. Accordingly:

H4: Green Training has a significant positive effect on Green HR Practices.

The four hypotheses together explain a multi-layered process where green leadership and green training influence green HR practices, which in turn influence green behaviour, and green leadership has a direct influence on green behaviour. This suggests that green HR practices act as a mediator between leadership and training on the one hand and behaviour on the other, as discussed below in the indirect and total effects. The conceptual model is shown in figure 1.

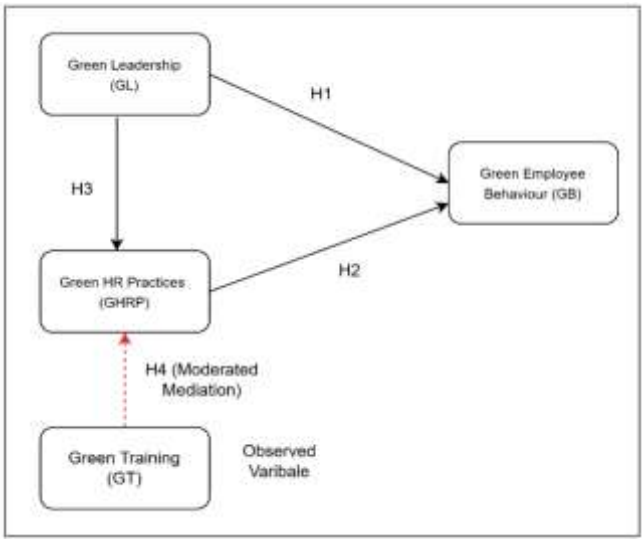

Figure 1. Conceptual model of the study.

3. Method

3.1 Research Design and Sample

This study was a quantitative and cross-sectional survey design in order to test the hypothesised relationship. Structured questionnaire was used to collect primary data

from the employees of a large manufacturing organisation. A total of 600 valid responses were achieved, which is an appropriate sample size for the application of PLS-SEM estimation and is considered to be large enough to yield stable estimates of the parameters and adequate statistical power for the complexity of the model.

The sample was mainly male and skewed towards the younger age band, mirroring the workforce profile of the setting. Age-wise, the maximum age group was 18-30 years followed by 31-40 years and then 41 and above. As per marital status, the majority were single respondents followed by married respondents and small other category. In terms of managerial level, junior management was most common, followed by middle management and least common was leadership and senior management. The areas most frequently represented were by function (operations and learning and development), human resources, quality, and various technical and support functions. This distribution reflects a fairly diverse operationally, but junior and younger, workforce, and this should be taken into account when interpreting and generalising the findings. The demographic profile is summarised in Table 1.

Table 1. Demographic Profile of Respondents (N = 600)

Variable	Category	Share
Age	18-30 / 31-40 / 41 and above	Majority in 18-30
Gender	Male / Female	Predominantly male
Marital status	Single / Married / Other	Majority single
Managerial level	Junior / Middle / Leadership / Senior	Majority junior
Function	Operations, L&D, HR, Quality, and others	Operations most represented

3.2 Measures

All constructs were measured reflectively with multi-item scales with a five-point response format. Twenty-one indicators (GL1-GL21) were used for measuring green leadership, based on green oriented behaviours of leadership. The provision and quality of environmental training was measured by two indicators (GT1-GT2) that measured green training. Four indicators of green HR practices (GHRP1-GHRP4) which measured environmentally-oriented recruitment, training, appraisal, and related practices were used. The seventeen indicators (GB1-GB17) were used to measure employee green behaviour, reflecting environmentally responsible behaviour at work. Descriptive analysis showed moderate, slightly positive perceptions across constructs, range of scores was full scale, a slight negative skew (toward positive ratings) and a platykurtic distribution.

3.3 Analytical Procedure

All constructs were measured reflectively with multi-item scales with a five-point response format. Twenty-one indicators (GL1-GL21) were used for measuring green leadership, based on green oriented behaviours of leadership. The provision and quality of environmental training was measured by two indicators (GT1-GT2) that measured green training. Four indicators of green HR practices (GHRP1-GHRP4) which measured environmentally-oriented recruitment, training, appraisal, and related practices were used. The seventeen indicators (GB1-GB17) were used to measure employee green behaviour, reflecting environmentally responsible behaviour at work. Descriptive analysis showed moderate, slightly positive perceptions across constructs, range of scores was full scale, a slight negative skew (toward positive ratings) and a platykurtic distribution.

Table 2. PLS-SEM Algorithm Settings

Setting	Value
Stop criterion	1.0E-06
Maximum iterations	200
Inner weighting scheme	Factor
Missing-value treatment	Casewise deletion
Bootstrapping	Enabled
Bootstrap samples	999
Bootstrapping seed	1500
Model-fit assessment	Enabled

Note: Settings follow standard PLS-SEM practice for reflective measurement models in ADANCO.

4. Results

4.1 Measurement Model

Construct reliability, convergent and discriminant validity of the measurement model was examined. Dijkstra-Henseler's rho, Joreskog's rho, and Cronbach's alpha were used to assess the constructs, and all constructs had values above the recommended level of 0.70. Green leadership and green behaviour exhibited very high reliability as strong and consistent indicators of the same, whereas, green HR practices exhibited good reliability and green training exhibited acceptable, non-redundant level of reliability just above the threshold. The reliability coefficients are shown in Table 3.

Table 3. Construct Reliability

Construct	rho_A	rho_c	Cronbach's alpha
Green Leadership (GL)	0.9498	0.9536	0.9489
Green Training (GT)	0.7729	0.7723	0.7720
Green HR Practices (GHRP)	0.8348	0.8339	0.8340
Green Behaviour (GB)	0.9643	0.9639	0.9640

Note: rho_A = Dijkstra-Henseler's rho; rho_c = Joreskog's rho. Threshold >= 0.70. All constructs meet the criterion.

Average variance extracted (AVE) was used to check the convergent validity with a cut-off value of 0.5. Three constructs, namely green training (0.6292), green HR practices (0.5568), and green behaviour (0.6112) satisfied the criterion, meaning that the majority of the variance in the indicators of these constructs was explained. Green leadership achieved an AVE of 0.4945, which is just below the threshold and is acceptable, given its very high reliability; this suggests that there is some scope to further develop the leadership indicators. The AVE values are presented in Table 4.

Table 4. Convergent Validity (Average Variance Extracted)

Construct	AVE
Green Leadership (GL)	0.4945
Green Training (GT)	0.6292
Green HR Practices (GHRP)	0.5568
Green Behaviour (GB)	0.6112

Note: AVE threshold >= 0.50. GL is marginally below the threshold but acceptable given high reliability.

The heterotrait-monotrait ratio of correlations (HTMT) and the Fornell-Larcker criterion were used to measure the discriminant validity. All HTMT values were below 0.90, indicating that all constructs are empirically distinct. The lowest HTMT was found between green leadership and green training (0.4755) and the highest was found between green HR practices and green behaviour (0.8175), which is not very high but in the acceptable range and theoretically expected to be close as HR practices and behaviour. The HTMT matrix is given in Table 5. The Fornell-Larcker criterion was also analyzed, where the value of AVE for green training, green HR practices, and green behaviour were all above the criterion, while green leadership's AVE was marginally below the criterion, but combined with the HTMT results, it was considered acceptable, and the constructs were deemed to be sufficiently different from each other for structural analysis.

Table 5. Discriminant Validity: HTMT Matrix

Construct	GL	GT	GHRP	GB
GL	-			
GT	0.4755	-		
GHRP	0.5390	0.7368	-	
GB	0.5676	0.6570	0.8175	-

Note: HTMT threshold <= 0.90 (acceptable). All values are below 0.90, supporting discriminant validity.

Outer loadings were investigated at the indicator level to ensure the quality of the indicators. The green leadership loadings varied from 0.6539 to 0.7373 with most of the indicators at or close to 0.70, green training loadings were 0.8087 and 0.7774, the loadings of green HR practices ranged from 0.7112 to 0.7809 and green behaviour loadings ranged from 0.7150 to 0.8412. These values show that the constructs have been reasonably well represented by the indicators. The variance inflation factor (VIF) was used to measure indicator multicollinearity; no multicollinearity was problematic as all VIF values were well below the conservative threshold of 5 (green leadership 1.97-2.52, green training 1.65, green HR practices 1.73-1.91, green behaviour 2.58-3.69). All bootstrapped indicator t-values were well above 1.96 and p-values well below 0.001, indicating that each indicator was significant to its construct. Overall, the measurement model demonstrated acceptable reliability and validity, thus serving as a solid foundation for structural analysis.

Table 5b. Indicator Outer Loadings and VIF Ranges by Construct

Construct (indicators)	Loading range	Items >= 0.70	VIF range
Green Leadership (GL1-GL21)	0.6539-0.7373	Most	1.97-2.52
Green Training (GT1-GT2)	0.7774-0.8087	All	1.65
Green HR Practices (GHRP1-GHRP4)	0.7112-0.7809	All	1.73-1.91
Green Behaviour (GB1-GB17)	0.7150-0.8412	All	2.58-3.69

Note: Loadings >= 0.70 preferred (0.60-0.70 acceptable in exploratory settings); VIF < 5 indicates no problematic multicollinearity. All bootstrapped indicator t-values exceeded 1.96 (p < 0.001).

4.2 Structural Model

Explanatory power and significance and size of the hypothesised paths for the structural model were tested. The coefficient of determination (R-squared) of the model showed a high explanatory power in both green HR practices (R-squared = 0.5881, adjusted R-squared = 0.5867) and green behaviour (R-squared = 0.6925, adjusted R-squared = 0.6915). The small difference between the R-squared and the adjusted R-squared values of both endogenous constructs suggests that there is no evidence of overfitting and the model is stable. The R-squared values are presented in Table 6.

Table 6. Explanatory Power (R-squared) of Endogenous Constructs

Construct	R-squared	Adjusted R-squared
Green HR Practices (GHRP)	0.5881	0.5867
Green Behaviour (GB)	0.6925	0.6915

Note: R-squared benchmarks: 0.25 (weak), 0.50 (moderate), 0.75 (strong).

The path coefficients demonstrated the relationships that were hypothesized. Green training has the largest direct effect on green HR practices (beta = 0.6281), showing that capability building is one important factor to determine the strength of green HR systems. The positive impact of green leadership on green HR practices (beta = 0.2360) was also found, but not as strong as training. Green HR practices had a significant impact on green behaviour (beta = 0.7287), making them the most dominant proximal predictor of the employees' green behaviour. The direct and moderate impact of green leadership on green behaviour was also found (beta = 0.1715). Path coefficients are presented in Table 7.

Table 7. Path Coefficients

Path	-> GHRP	-> GB
Green Leadership (GL)	0.2360	0.1715
Green Training (GT)	0.6281	-
Green HR Practices (GHRP)	-	0.7287

Note: Path-coefficient benchmarks: 0.10 (small), 0.30 (moderate), 0.50 (strong).

The mediation of green HR practices was explained through the decomposition of the effects. The impact of green leadership on green behaviour was found to be indirect with a value of 0.172, which explains that a considerable amount of the leadership impact on green behaviour was mediated by green HR practices (total effect = 0.3435). Green training, which was not directly related to behaviour in the model, had a strong indirect effect of 0.4577, which was mediated by green HR practices, and had a larger total effect on behaviour than leadership. The direct impact of Green HR Practices on behaviour was 0.7287. These findings suggest that green HR practices are the main link between leadership and training and behaviour, and training is particularly effective (though indirect) means of influencing behaviour. The total and indirect effects are given in Table 8.

Table 8. Total and Indirect Effects on Green Behaviour

Predictor	Total -> GHRP	Total -> GB	Indirect -> GB
Green Leadership (GL)	0.2360	0.3435	0.1720
Green Training (GT)	0.6281	0.4577	0.4577
Green HR Practices (GHRP)	-	0.7287	-

Note: GT influences GB entirely through GHRP; hence its total and indirect effects on GB coincide.

4.3 Hypothesis Testing

Bootstrapping (with 999 resamples) was used to test the hypothesised paths. There was support for all four hypotheses. There was a direct, moderate leadership effect with a significant effect on green behaviour (H1: beta = 0.1715, t = 5.2121, p < 0.001). The strongest relationship in the model was that of green HR practices with green behaviour (H2: beta = 0.7287, t = 25.567, p < 0.001). Green leadership significantly affected green HR practices (H3: beta = 0.2360, t = 6.3771, p < 0.001), and green training significantly and strongly affected green HR practices (H4: beta = 0.6281, t = 15.3232, p < 0.001). Table 9 summarises the hypothesis tests.

Table 9. Results of Hypothesis Testing (Bootstrapping, 999 Resamples)

Hyp.	Path	Coefficient	t-value	p-value	Result
H1	GL -> GB	0.1715	5.2121	< 0.001	Supported
H2	GHRP -> GB	0.7287	25.5670	< 0.001	Supported

Hyp.	Path	Coefficient	t-value	p-value	Result
H3	GL -> GHRP	0.2360	6.3771	< 0.001	Supported
H4	GT -> GHRP	0.6281	15.3232	< 0.001	Supported

Note: A path is significant when t > 1.96 and p < 0.05. All four hypotheses are supported.

5. Discussion

The aim of this study was to shed light on the link between green leadership and employee green behaviour and its reinforcement. The results paint a consistent picture of a layered organisational process. Green leadership is important, but influence on behaviours is not entirely direct; there is a significant proportion of green HR practices. Green training is important and almost exclusively because of its impact on green HR practices. And green HR practices are the major proximal determinant of behaviour and the central mediator. All these discoveries are worthy of comment.

5.1 Green HR Practices as the Central Mechanism

Green behaviour had the highest correlation with green HR practices (beta = 0.7287) and green HR practices had the indirect effects of both leadership and training. This puts the HR system in the role of the engine that drives organisational intent to employee action. The finding is in line with the AMO logic that green HR practices enable green actions through the motivational and opportunity elements of recruitment, appraisal, rewards and involvement. In practice, it means that greening of behaviour of employees is not so much a task of exhorting from the top, but of concrete systems that shape behaviour within the everyday working setting. Organisations looking to behaviour change should thus view their HR architecture as the first lever.

5.2 The Direct and Indirect Roles of Green Leadership

The direct effect of green leadership on behaviour was 0.1715 and the indirect effect through HR practices was 0.172, the total effect being 0.3435. The fact that the direct and indirect are of a similar magnitude suggests a true dual mechanism, namely leaders act as models and they create systems. The relatively modest direct effect indicates that having a leadership vision alone is not enough to generate a large behavioural impact – it is largely manifested through the HR system that it creates. This shifts the focus of leadership away from simply inspiring people, towards creating systems that can ultimately shape their behaviour, consistent with the notion that leadership and organisational systems are whole systems.

5.3 The Enabling Power of Green Training

Green training had the second largest path in the model on green HR practices (beta = 0.6281), and a strong indirect impact on behaviour (0.4577), which was greater than the total impact of leadership. This highlights training as an effective and capability enhancing input to the HR mechanism. The AMO model suggests that training provides the capability for HR systems to be effective, and if employees lack capability, HR systems do not have the full effect. Training is particularly relevant in a manufacturing environment with mostly junior staff where there is likely to be a large pay-off in terms of increases in environmental knowledge and skills. The result indicates that investing in training is not a side activity but a main determinant of the performance of the green HR systems.

5.4 Comparing the Organisational Levers

What is especially unique about this study is that it estimates the impact of leadership, training, and HR practices in one model, which makes it possible to compare the relative importance of these practices. The evidence indicates that green HR practices have the most influential lever on behaviour with by far the largest direct effect (0.7287). Green training has the greatest influence on the HR system (0.6281) and, consequently, the second greatest influence on behaviour overall (total effect 0.4577). Green leadership is important on both of these, but is the least important of the three in terms of magnitude (total effect on behaviour 0.3435). This ordering does not demean leadership, it is about the systems and capability that lead to behaviour change. The comparison provides an obvious investment rationale for organisations: invest in HR systems and train, with leadership as the glue that binds and keeps them together.

This comparison also improves the theoretical expectation. While much of the literature emphasizes the direct connection between leadership and behaviour, our findings suggest that in this large manufacturing context, it is the indirect pathway (via HR practices) that accounts for most of the influence, and capability-building through training is a key enabling input. Modelling these factors together, and not separately, is therefore not just a methodological improvement but a substantive necessity to grasp the production of green behaviour.

5.4 Theoretical Implications

The findings advocate an integrated reading of the AMO and TPB theories. As in AMO, behaviour was the result of the combined effects of capability (training) and motivation and opportunity (HR practices), with the HR system being the proximal factor. In line with TPB, leadership influenced behaviour by affecting conditions, norms, and control which inform employees' behaviours, either directly or through systems. The study contributes to theory by providing empirical evidence that in this context, the systems-and-capability pathway is more likely to impact behaviour than the direct pathway of leadership; that is, there is more to the relationship between leadership and behaviour than a direct, person-to-person path. It also illustrates the importance of modelling as an input to the HR mechanism and not as a mechanism on its own.

5.5 Practical Implications

The results provide managers an obvious priority list. Focus on strong green HR practices, including integrating

green objectives in recruitment, appraisal, reward and involvement, as these are the most direct drivers of behaviour. Second, put a lot of effort into green training, for it is a powerful way to strengthen the HR system, and in turn behaviour; training should be seen as a very important capability-building function and not something that is added on from time to time. Third, develop green leadership, knowing that one of the best ways to achieve leadership is to create and strengthen systems, not simply give a pep talk. Committed leadership with this combination (systems plus capability) is the most reliable path to environmentally responsible behaviour in a large manufacturing organisation with a young workforce that is oriented towards the operation.

6. Limitations and Future Research

There are a number of caveats to be noted. First, the cross-sectional nature of the design does not allow for strong causal conclusions to be drawn and longitudinal or experimental designs would help to make causal claims about the leadership-training-HR-behaviour sequence stronger. Secondly, the data are self-reported and come from a single large organisation, which is good for internal validity but may be less generalisable; multi-organisation and multi-source designs would increase external validity and reduce common-method concerns. Thirdly, the sample is young, junior and male which reflects the workforce in the setting, and findings should be generalised with this profile in mind. Fourth, green leadership showed an AVE that was slightly less than 0.50, which means that there is room for improvement in its indicators in future studies. Finally, the model focused on the HR pathway, future research may include other pathways, such as organisational climate, and test the moderation of the behavioural pathways to develop a more comprehensive understanding of how green behaviour is produced.

7. Conclusion

This study explored the impact of green leadership on employee green behaviour, and what facilitates the connection from green leadership to employee green behaviour, within the context of a large manufacturing organisation with 600 employees, using PLS-SEM. Each of the four hypotheses was accepted. The findings indicate that green HR practices are the most prevalent proximal drivers of green behaviour and the key mechanism by which both leadership and training impact green behaviour. Green leadership has a strong indirect effect on behaviour through the HR system which is significantly strengthened by green training, while green leadership also has a direct effect on behaviour. A large proportion of the variance in green HR practices and green behaviour was explained by the model and the measurement model showed acceptable reliability and validity. The final conclusion is that greening employee behaviour is a multi-layer organisational success story: leadership provides the guidance, training develops the capacity and HR practices make it happen. Therefore, those organisations that wish to have an environmentally responsible behaviour should invest in having good green HR systems and training, with the support of committed leadership, and not only on the vision of the leadership. The study contributes a validated model and practical advice for the implementation of sustainability through the daily actions of workers in a large manufacturer from an emerging economy.

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