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RESEARCH ARTICLE

Validating a Questionnaire on Green HRM, Organizational Citizenship, and Energy Transition Behaviours in Malaysia

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ABSTRACT

This study aims to develop and validate a structured questionnaire to assess Green Human Resource Management and its influence on Organizational Citizenship Behaviour (OCB) and Energy Transition Behaviours (ETB) among employees in the Malaysian electricity sector. This study is conducted in two phases. The first phase involves questionnaire construction through framework development, item generation, item screening, and pretesting. The second phase involved questionnaire validation with 95 employees from a Malaysian energy utility company, utilizing Structural Equation Modeling with Partial Least Squares (SEM-PLS). Additionally, reliability is assessed using Cronbach's Alpha and Composite Reliability (CR) to ensure internal consistency. In the development phase, 70 items were defined, consisting of demographic characteristics (10 items), General Knowledge of the Energy Transition (3 items), GHRM (24 Items), Energy Transition Behaviour (5 Items), Attitude (5 Items), Subjective Norm (4 Items), Perceived behavioural control (6 Items), and lastly OCB (13 Items). Expert evaluation and comments were already taken into consideration before performing a pilot study. All constructs demonstrated good reliability based on Cronbach's alpha (>0.6) and composite reliability (0.7) for IVs and DVs, except for Green Compensation and Benefits (3 Items) under GHRM. The final 54 items identified through this rigorous process demonstrate a valid and reliable questionnaire for GHRM on OCB and ETB among employees in Malaysia's energy utility sector. The developed questionnaire was designed to be a valuable tool for stakeholders, organizations, and policymakers involved in the Energy Transition.

Contribution/Originality: This study develops and validates a new diagnostic tool that measures how GHRM practices influence employees' citizenship and energy-transition behaviours. By applying PLS-SEM within Malaysia's energy utility context, it provides empirical evidence and practical insights to guide organizations in fostering behavioural support for sustainable energy transformation.

1. Introduction

Environmental sustainability has become a growing priority in the energy sector, particularly in Malaysia, which is committed to transitioning to renewable energy sources. Green Human Resource Management (GHRM) has become a crucial driver of sustainability, influencing employee behaviors to support organizational environmental objectives. However, existing research lacks a validated instrument for measuring how GHRM influences Organizational Citizenship Behaviour (OCB) and Energy Transition Behaviour (ETB). This study addresses this gap by developing and validating a structured questionnaire tailored to the Malaysian energy utility sector.

In Malaysia's electricity sector, GHRM plays a critical role in addressing environmental challenges while promoting sustainability, development, and operational efficiency (Amjad et al., 2021; Aboramadan, 2022; Stahl et al., 2020). In recent times, environmental sustainability has been the top priority of the work; however, Malaysia's energy utility sector faces significant pressure to adopt green practices in response to current climate change and sustainability concerns (Aldhshan et al., 2021; Shadman et al., 2021). In this process, the GHRM can help create an organizational culture that values the organization's environmental responsibilities by integrating them with eco-friendly practices (Wahyuni & Waskito, 2024). By implementing GHRM, energy utility companies in Malaysia can recruit staff who are more environmentally conscious and align them with sustainable goals, thereby increasing the value of the workforce. The Malaysian government has introduced several initiatives, including the Twelfth Malaysia Plan (RMK12), which provides a detailed roadmap and technical strategies to achieve carbon neutrality by 2025. The Malaysian government also comments on fostering high climate resilience and aligning itself with the best global environmental practices, as per the report of the ESG

One of the key behavioural constructs associated with GHRM is Organizational Citizenship Behaviour (OCB), which refers to voluntary employee actions that enhance workplace effectiveness beyond formal job requirements. OCB has been widely studied in organizational research; however, its role in fostering sustainable workplace Behaviours, particularly in the context of the energy transition, remains underexplored (Malik et al., 2021). In addition, ETB, which involves employee-driven initiatives such as energy conservation, renewable energy advocacy, and adherence to green policies, is gaining prominence as organizations shift towards sustainability-focused business models. Despite GHRM's potential to promote energy transition efforts, validated measurement tools to assess its impact on OCB and ETB remain limited. Existing research primarily focuses on general HRM practices, with limited emphasis on sustainability-oriented HR interventions. This study aims to address this gap by developing and validating a structured questionnaire tailored to the Malaysian energy utility sector, enabling organizations to assess and enhance their green HR strategies effectively. As few studies have explored the roles of GHRM in energy transition, particularly in Malaysian energy utility companies, this study seeks to fill this gap.

Despite GHRM's potential to drive energy transition efforts, validated measurement tools to assess its impact on OCB and ETB remain scarce, particularly in Malaysia's energy utility sector. This study seeks to address this gap by developing and validating a structured questionnaire tailored to the Malaysian energy utility sector, enabling organizations to assess and enhance their green HR strategies effectively.

2. Literature Review

GHRM practices (recruitment/selection, training, performance management, involvement, compensation, workplace practices) are linked to pro-environmental behaviours and organizational sustainability, but measures and context-specific validation vary widely across sectors (Pham et al., 2020; Wahyuni & Waskito, 2024; Veerasamy et al., 2024). Furthermore, effective HRM systems can enhance employees' motivation, opportunity, and ability to perform sustainably (Mahapatro, 2021) while fostering environmental awareness and ethical behaviour (Hastuti & Muafi, 2022). OCB as a Behavioural Bridge. OCB—especially helping, loyalty, and individual initiative—can convert green intentions into tangible workplace actions, but OCB related to energy transition tasks is undermeasured in utilities. TPB in Organizational Settings. Attitude, subjective norms, and perceived behavioural control (PBC) explain environmental actions at work; in hierarchical/collectivist contexts, norms and PBC often outweigh attitude. Few instruments simultaneously assess GHRM, TPB constructs, OCB, and ETB among energy utility employees in Malaysia, underscoring the need for the present validation study. In behavioural research, TPB constructs are often measured using structured questionnaires validated through prior studies (Tamminen & Poucher, 2020; Tomaszewski et al., 2020), highlighting the value of instrument reliability and consistency (Afthanorhan et al., 2020; Jain, 2021).

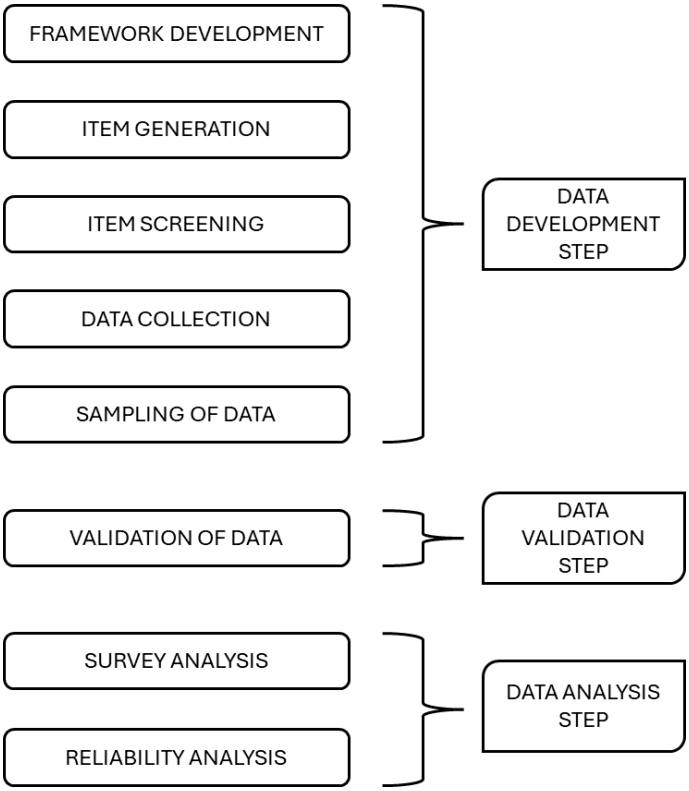
3. Method

This section focuses on the methodology that significantly helps identify an effective and appropriate research method for the research topic. An effective research method enables researchers to collect relevant data and achieve greater depth in a study. Moreover, by presenting relevant and significant data, researchers can effectively convey the importance and efficacy of their research concept. In this chapter, the researcher discusses the selected study philosophy, design, analysis approach, data collection methods, and ethical considerations that support research and enable the collection of effective and appropriate data through appropriate research methods. By identifying key facts, you can meet the objectives and answer research-related questions. This study uses a quantitative, cross-sectional pilot validation of a newly developed questionnaire; PLS-SEM was chosen for its predictive and pilot samples (Younus & Zaidan, 2022; Muzari et al., 2022).

3.1. Questionnaire Items Development

Figure 1 illustrates the overall steps in this study, beginning with framework development and item creation, followed by expert validation, pretesting, and pilot testing. It highlights how the questionnaire was carefully built and refined before data analysis using PLS-SEM to ensure reliability and practical relevance to the Malaysian energy utility sector.

Figure 1: Steps and Methods of the Study



3.1.1. Development of Framework

A theoretical framework was developed based on the AMO Theory, the Theory of Planned Behaviour (TPB), and the OCB framework. Items were generated from existing literature and adapted to the Malaysian energy utility sector from the perspective of employees. The framework presented consists of the key variables related to the Study topics, including GHRM practices, Attitude, PBC, SN, and the two Behavioural aspects of OCB and ETB.

3.1.2. Item Generation

Based on the developed framework, a questionnaire was designed, incorporating items that represent the key aspects of the questions. Each section of the questions has a specific number of generated items, based on relevant topics, and a total of 70 items were initially formulated across key constructs.

3.1.3. Item Screening

A panel of experts, including a lecturer, a technical expert, and Senior Human Resource Managers from an energy utility Company, assessed the questionnaire's level of difficulty and adequacy. A screening procedure will be developed to identify and shortlist the most relevant items and factors related to the specific topic, thereby improving the accuracy of the results. The item screening step will also remove all less prioritized factors from the main analysis. The initial selection of items was refined by assigning the median to the total score. Items that received higher scores, as indicated by multiple experts, proceeded to the next stage.

3.1.4. Pilot Study

After the panel of experts conducted a content validity assessment, a pilot questionnaire was pretested with 95 executives from an energy utility company in Malaysia in October 2024. The criteria for participant selection included holding an executive position and demonstrating a willingness to provide informed consent. Respondents were selected from a pool of executives with relevant information and experience in Malaysia's Energy Transition. Each respondent completed an online questionnaire via the link and QR code provided, which remains among the most efficient primary data methods for behavioural studies (Adeoye-Olatunde & Olenik, 2021; Taherdoost, 2021).

3.2. Validation of questionnaire items

The pilot study generated validated questionnaire items that demonstrated statistical validity and could be utilized in a comprehensive validation process using SEM-PLS (Afthanorhan et al., 2020). The entire validation phase was conducted in October 2024, and respondents were selected through a purposive sampling technique. The selection criteria included respondents being at least at the executive level in an energy company and willing to sign an informed consent form. An online Microsoft survey was administered to all respondents via a QR code or link provided by the researcher.

3.3. Study-Related Data Collection Process

The data collection process involves gathering information from various sources to address a specific research problem. The data collection process helps gather information and inform critical decisions about the study's results. It also helps to track the growth of research purposes and areas. This process helps determine patterns, correlations, and trends that can provide insight into potential issues in the study. Data collection can be primary or secondary, and the primary method involves direct interaction with respondents through observations, focus groups, interviews, and surveys (Jain, 2021). On the other hand, the secondary data collection method involves gathering previously collected data from various sources, including government data, online databases, and published sources. The data collection process can be validated to confirm its accuracy and alignment with the intended purpose, thereby providing valid results. According to the researcher, to effectively represent the research's capacity and effectiveness, the study primarily uses quantitative data display techniques to help an investigator gather precise numerical data, establish cause-and-effect relationships, and test statistical hypotheses.

3.4. Sampling of Data

The sampling process is a data analysis method used to interpret study-based data and categorize it into multiple groups. It is a foundation of the information where the space is sparsely varied. Sampling primarily involves targeting a specific segment of the audience or population to collect relevant and significant statistics and evidence, thereby justifying the research's importance and effectiveness (Lohr, 2021). Most importantly, through sampling, the researcher was able to collect meaningful real-life data, resulting in high research depth. For this research, the researcher significantly used the Primary Quantitative Survey. By targeting the audience, the researcher can achieve greater depth in the research and make it more appropriate and significant. Through survey analysis, researchers can effectively justify the importance and efficiency of their research. In

addition, through appropriate and significant data analysis methods, researchers can highlight key data elements that inform research decisions and demonstrate their importance and effectiveness.

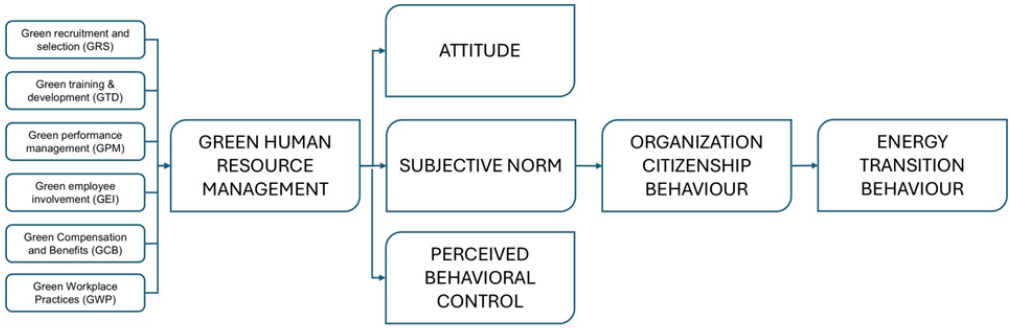
3.5. Data Analysis

The data analysis method is an effective and significant technique that supports researchers in analyzing collected data and generating in-depth conceptual insights into the topic through detailed dissection. The data analysis techniques employed in the study are highly justified and lend importance to the study topic. To ensure sample representation and analysis quality, standard sampling principles were followed (Lohr, 2021). Additionally, by applying appropriate and significant data analysis methods, the researcher highlights key data elements that can inform decisions about the research and its significance and importance. Data were analyzed using SmartPLS following established SEM guidelines (Götz et al., 2009; Pham et al., 2020). To ensure the research's appropriateness, the researcher used SEM-PLS to perform correlation, reliability testing, regression, and descriptive analysis. Through SEM-PLS, investigators can attribute quality importance to the research and support its reputation and usefulness.

3.6. Framework Development

The concept of the integrated framework has been applied in the developed study framework, illustrating the connection between the variables to be used in the study. The arrows in the framework indicate the dependencies between the variable and its associated risk factors. Based on the quantitative study that is to be conducted, each variable was divided into multiple factors. Figure 2 shows the framework developed for this study. It links Green HRM practices with the Theory of Planned Behaviour and Organizational Citizenship Behaviour to explain how employees' attitudes and actions support energy transition in the energy utility sector in Malaysia.

Figure 2: Developed Framework



3.7. Item Generation

The items generated for the questionnaire were adapted to local settings and divided into six main sections, as presented in Table 1. The items were generated according to the study's questionnaire design. The survey questions were divided into five (5) main sections. The five sections of the questionnaire are demographic profile, General knowledge of the energy transition, green human resource management, theory of planned behaviour towards the energy transition, and organizational citizenship behaviour related to the energy transition. To meet the study's needs and collect relevant

data, the number of items in each question section will be tailored to gather the required knowledge on the topic.

The demographic information section comprises eight (8) required items designed to gather information and assess participants' level of understanding. To gain an understanding of participants' general knowledge regarding the energy transition, this section includes three (3) items. The Green Human Resource management has a high number of items (24) which have Six (6) sub-items, which are Green Recruitment and Selection (GRS), Green Training & Development (GTD), Green Performance Management (GPM), Green Employee Involvement (GEI), Green Compensation and Benefits (GCB), and Green Workplace Practices (GWP). The theory of planned behaviour comprises 20 items, and the organizational citizenship theory has 13 items that will be generated. The items in each topic-related section provide a general understanding of the concept and its implementation in Malaysian organizations. This section included choices on a scale from one to five, with response options ranging from “strongly disagree” to “strongly agree” for each question. After expert review, a total of 93 questionnaire items were selected for the pilot study. At this stage, the goal was to create a questionnaire with a more streamlined set of items to make measurement easier during validation.

Table 1: Details of questionnaire sections on demography and all Items.

Section	No of items	Concept measured	Response option
Demography	8	1) Gender 2) Age group 3) Your current position 4) Higher Education 5) Years of working experience 6) Type of Professional Certification 7) State 8) Division	Closed-ended, multiple-choice
General knowledge of the Energy Transition	3	The process of producing energy and lowering greenhouse gas emissions (GHG) by switching from fossil fuels to renewable energy (RE) sources. What is the energy transition, and have you heard of it? The development of hydropower, and biofuel is prominent in Malaysia. These days, rooftop solar PV is common in residential, commercial, and government structures. Have you heard about Malaysia's progress with RE? The National Energy Transition Roadmap (NETR) outlines the pathway required to transform Malaysia's energy system by accelerating its shift to renewable energy, reducing GHG emissions, increasing the use of RE sources, phasing out coal-fired power plants, etc. Have you ever heard about the National Energy Transition Roadmap (NETR)?	Not at all familiar Slightly familiar Moderately familiar Very familiar Extremely familiar
	24	Green recruitment and selection (GRS) Green training & development (GTD)	Strongly disagree

Green Human Resource Management		Green performance management (GPM) Green employee involvement (GEI) Green Compensation and Benefits (GCB) Green Workplace Practices (GWP)	Disagree Neutral Agree Strongly agree
Theory of Planned Behaviour	15	Attitude towards Energy Transition Subjective Norm towards Energy Transition Perceived Behavioural Control towards Energy Transition	Strongly disagree Disagree Neutral Agree Strongly agree
Organizational Citizenship Behaviour	13	Organizational Citizenship Behaviour towards Energy Transition	Strongly disagree Disagree Neutral Agree Strongly agree
Behaviour	5	Energy Transition Behaviour	Strongly disagree Disagree Neutral Agree Strongly agree

3.8. Item Screening

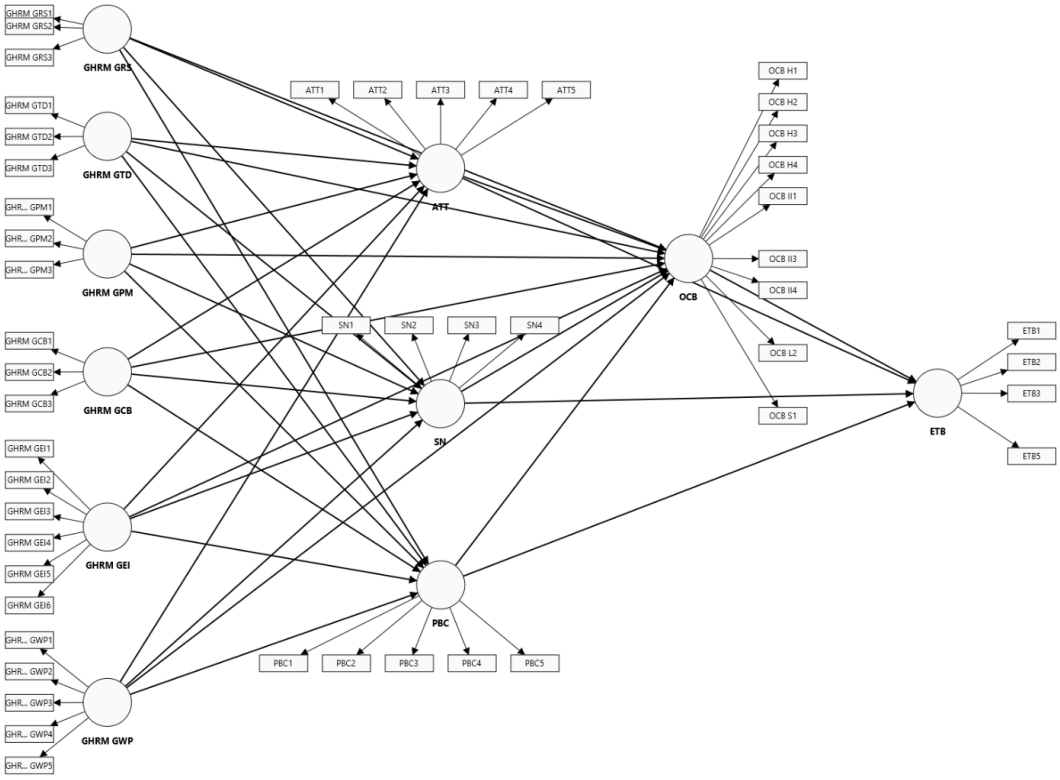
The item screening process evaluates individual items generated by questionnaires. Item screening has been employed during the item generation phase to eliminate problematic items unrelated to the topic and to ensure they are not used in the analysis. From a total of 126 items, 57 variables were selected, shortlisted, and presented in the analysis – these variables can significantly impact the study's outcome.

3.9. Confirmatory Factor Analysis Process

The study employed qualitative data analysis, collecting data via a survey. The survey participants were employees working in the energy utility sector in Malaysia. The survey participants were selected from the field to understand the impacts of GHRM in organizations better. The survey analysis was based on the 70 items and questionnaires used in the survey. The observations and results of the demographic section were used to justify the validity of the study-related questionnaire items. The survey method also provided insight into employees' behavioural factors in accepting green human resource management.

The second process involved statistical analysis, which was conducted using a reliability test. The reliability test for research is the internal consistency reliability test, which is used in the Partial Least Squares Structural Equation model (Götz et al., 2009). The test was conducted using multiple variables related to the topic, as shown in Figure 3, Partial Least Squares Structural Equation Framework. The validity of the study's variables was confirmed through item screening. The connected variables in these analyses are the impact of green human resource management on organizational behaviour and the transition behaviour of employees in the energy utility sector of Malaysia.

Figure 3: Partial Least Squares Structural Equation Framework



3.10. Ethical Consideration

Ethical considerations are crucial to this and any study. Ethical considerations can help investigators meaningfully validate the study-related statistics and evidence. Moreover, it can significantly indicate that the researchers have taken into account all types of research ethics in collecting data and gathering information (Taherdoost, 2021; Götz et al., 2009). Additionally—and most importantly—ethical considerations can add depth to the research, making it more meaningful. With ethical considerations in mind, it was easy to describe the investigator and to gather analysis of relevant data from reports, surveys, and websites. The most crucial and impactful element was the researcher's ability to assess their own work, the environment, and the human factors involved. Ethical considerations are also crucial and efficient because they can enhance the research's relevance and appropriateness for future studies (Bull et al., 2015).

4. Result

The next section presents the results of the research analysis. This chapter will also discuss the variables and aspects of the analysis process, as well as the significance of the results. The two types of analysis employed are the survey analysis and the statistical analysis. In this process, the primary data is used. The analysis process section of the chapter presents the analysis methods and tests to be used in the study. The significance of these methods in the research is presented in this chapter.

4.1. Survey Analysis for Validation

In the survey analysis method, the data collected from the survey participants are analyzed. The participants are primarily employees in the Malaysian energy utility sector. The survey aims to understand organizational citizenship behaviour and electrical

transition behaviour among employees in the energy utility sector. The survey consisted of 10 demographic questions and analytic-type questions used to gather data for the statistical test. The questions are a mix of informative and general, with multiple-choice answers. The total number of responses received and used in the research was 95.

4.2. Related Factors of the Questionnaire Categories

4.2.1. Green HRM

The green recruitment and selection sections have considered the factors that would provide an understanding of the organization's Green Recruitment & Selection procedures. The factors are the GHRM GRS1, GHRM GRS2, and GHRM GRS3. These factors can describe the organization's green employee recruitment status. Green Training and Development has three elements: GHRM GTD1, GHRM GTD2, and GHRM GTD3. Green Performance Management consists of four factors (GHRM GMP 1, 2, 3, 4) selected based on Green Performance and Management in organizations, including their environmental goals and responsibilities, as well as GHRM practices. The Green Employee Innovations item comprises a total of five factors (GHRM GEI 1, GHRM GEI 2, GHRM GEI 3, GHRM GEI 4, and GHRM GEI 5), representing the section, and the Green Competition & Benefits has three factors (GHRM GEB 1, GHRM GCB 2, and GHRM GCB 3). Those three factors represent the organization's green product innovations and recognition rewards.

4.2.2. TPB Theory-related Factors

The three general behavioural aspects of employees, as outlined in the TPB theory, will be presented by their respective factors. The three-item categories are the attitudes, subjective norms, and perceived behaviour control. The factors connected to these three behavioural aspects and item categories are ATT 1, ATT 2, ATT 3, ATT 4, and ATT 5 for the attitude item. The subjective norms and perceived behaviours have four (4) and five (5) factors (SN 1, SN 2, SN 3, SN 4, PBC 1, PBC 2, PBC 3, PBC 4, PBC 5, PBC 6).

4.2.3. Organisational Citizenship Behaviour-Related Factors

The item categories generated by the topic of organizational citizenship behaviour consist of five. These are organizational citizenship Behaviours: Helping (H), Sportsmanship (S), Loyalty (L), Individual Initiative (II), and Self-development (SD). The number of items generated for each category is 3, 1, 3, 4, and 1, respectively. Helping aspects of the OCB of employees were identified using four (4) factors (OCB H1, H2, H3, and H4). The employees' sportsmanship is represented by only one factor: OCB S1.

4.2.4. Energy Transition Behaviour

The ETB comprises five (5) factors that represent the employee's ETB, as per GHRM practices in Malaysian organizations. The item category factors include ETB 1, ETB 2, ETB 3, ETB 4, and ETB 5. Those factors were used to obtain the results of the reliability analysis, which describe the prioritizing variable and its connection to them.

4.3. Reliability Analysis

The study's statistical analysis included an internal consistency reliability test, as shown in Table 2. The variables used in the statistical analysis are the survey-resonance data.

The variables used in the reliability analysis, along with their relevant results, are presented below.

Table 2: Reliability Test Result

Construct	Items	Alpha	rho_A	CR	AVE
GHRM : Green recruitment and selection (GRS)	GHRM GRS1 GHRM GRS2 GHRM GRS3	0.7980 [0.678, 0.852]	0.788 [0.700, 0.912]	0.871 [0.814, 0.890]	0.692 [0.596, 0.770]
GHRM : Green training & development (GTD)	GHRM GTD1 GHRM GTD2 GHRM GTD3	0.794 [0.685, 0.865]	0.805 [0.714, 0.896]	0.879 [0.821, 0.917]	0.708 [0.608, 0.787]
GHRM : Green performance management (GPM)	GHRM GPM1 GHRM GPM2 GHRM GPM3 GHRM GPM4	0.868 [0.808, 0.911]	0.891 [0.850, 0.944]	0.919 [0.885, 0.944]	0.791 [0.723, 0.849]
GHRM : Green employee involvement (GEI)	GHRM GEI1 GHRM GEI2 GHRM GEI3 GHRM GEI4 GHRM GEI5 GHRM GEI6	0.866 [0.809, 0.907]	0.872 [0.821, 0.911]	0.898 [0.862, 0.928]	0.599 [0.513, 0.683]
GHRM : Green Compensation and Benefits (GCB)	GHRM GCB1 GHRM GCB2 GHRM GCB3	0.836 [0.744, 0.896]	0.878 [0.796, 0.985]	0.900 [0.845, 0.935]	0.751 [0.652, 0.827]
GHRM : Green Workplace Practices (GWP)	GHRM GWP1 GHRM GWP2 GHRM GWP3 GHRM GWP4 GHRM GWP5	0.851 [0.795, 0.891]	0.871 [0.825, 0.912]	0.893 [0.856, 0.920]	0.625 [0.545, 0.697]
Attitude	ATT1 ATT2 ATT3 ATT4 ATT5	0.866 [0.802, 0.912]	0.879 [0.829, 0.927]	0.903 [0.860, 0.934]	0.651 [0.557, 0.740]
	SN1				

Construct	Items	Alpha	rho_A	CR	AVE
Subjective Norm	SN2 SN3 SN4	0.878 [0.810, 0.920]	0.884 [0.821, 0.926]	0.917 [0.879, 0.944]	0.734 [0.639, 0.808]
Perceived Behavioural Control	PBC1 PBC2 PBC3 PBC4 PBC5 PBC6	0.837 [0.772, 0.883]	0.841 [0.783, 0.891]	0.884 [0.884, 0.914]	0.605 [0.522, 0.682]
Organizational Citizenship Behaviour	OCB H1 OCB H2 OCB H3 OCB H4 OCB S1 OCB L1 OCB L2 OCB L3 OCB II1 OCB II2 OCB II3 OCB II4 OCB SD1	0.921 [0.887, 0.944]	0.8922 [0.892, 0.946]	0.935 [0.909, 0.953]	0.615 [0.527, 0.692]
Energy Transition Behaviour	ETB1 ETB2 ETB3 ETB4 ETB5	0.802 [0.713, 0.861]	0.808 [0.829, 0.927]	0.871 [0.823, 0.906]	0.629 [0.540, 0.708]

4.3.1. GHRM

The first three variables are used to understand the connection and correlation of the first with green human resource management. The results will determine the Use of GHRM. According to the reliability analysis, the alpha value (Cronbach's alpha) for that variable is 0.798, which falls within the acceptable range of 0.8 to 0.7, indicating an acceptable level of reliability. The connected rho and CR values are also greater than the ideal value of 0.7, indicating a strong correlation with the variables and the validity of the question.

The second variable is used to determine the organization's training and development programs related to GHRM. The values of rho and alpha for those variables are 0.79 and 0.80, respectively, which exceed 0.7, indicating high reliability and correlation between the variables. The values of CR and AVE are 0.87 and 0.70, indicating that consistency in the results is good, but validity is acceptable.

The test result of the variable connecting with the green employee innovations has the alpha and rho values 0.86 and 0.87, which are greater than the ideal value of 0.7, indicating high reliability in the variable and the result, but the AVE value is 0.59, which indicates a convergent validity of the variable.

4.3.2. TPB

The set of variables used to determine the perceived behaviour control of the employees has also rho values of 0.83 and 0.84, which indicates that the result and the variable are very reliable and correlated to each other. The CR value for that variable is 0.88, which exceeds the ideal value of 0.7, indicating high consistency and stability. However, the AVE value is 0.6, implying reasonable validity in the result.

The contribution of Employees' attitudes and Subjective norms in the two behavioural aspects of the employees in GHRM is also tested in the reliability analysis. Both variables have a value of 0.86 and 0.87; the value of alpha indicates high reliability. The rho value for those sets of variables is 0.87, indicating a high correlation between the variables. Additionally, the value of CR is above the ideal value of 0.7 for both cases, indicating excellent stability and consistency in the variables and the results.

4.3.3. OCB

The set of variables indicating the organizational citizenship behaviours of the employees resulted in a value of 0.92 and 0.89 for the alpha and rho, respectively. The results show that the variables and the rest are highly reliable, indicating that employees are effectively implementing the behaviour in their daily activities. The CR value for these variables is 0.93, which is a very high value indicating high stability and consistency in the test results.

4.3.4. ETB

The effectiveness of the energy transition behaviour of the employees is indicated by a set of variables and results collected from the responses. The values of alpha and rho, which are a reality of the reliability test, are 0.82 and 0.80, respectively, which are higher than the ideal value of 0.7, indicating high reliability of the variables and a strong correlation between them. The CR value of those variables is also 0.87, indicating that the results and variables are stable and consistent.

The presented chapter presents the results of the analysis conducted with the help of primary data collected from the pilot survey. The collected results and responses are used as variables for the statistical analysis, specifically the initial consistency and reliability test. The test results indicate that most variables have yielded high alpha and rho values, suggesting excellent reliability and a positive correlation. The AVE value for the maximum variables is located in a considerable range, which indicates that the validity of the variable result is considerable. This could be due to biased responses. However, the overall result is reliable and stable, showing that most of the alternative hypotheses in the analysis are acceptable in the study.

5. Discussion

The subject under investigation is the impact of green human resource management on employees' citizenship and various energy transition behaviours in Malaysia's energy utility sectors. SEMS-PLS tools were used because they are statistical analysis tools that enable the analysis of complex data and inform data-driven decisions. These tools are used to analyze the survey data in various ways. They define multiple response sets, such as click analysis and multiple responses, and define variable sets. This tool also helps to access multiple response frequencies, explains the survey analysis process, and the

survey analysis results. This survey analysis presents various questions, and the participants' responses are analyzed. The next analysis was a reliability analysis, which assesses the consistency and accuracy of a system or measurement instrument over time. Using this reliability analysis identifies weaknesses or ranks options for various Mathematical, textual, and graphical operations. The last part of this discussion provides an overall summary.

Here, we discuss the reliability analysis, which combines the objectives. Understanding the GHRM practices affects employees' behaviours related to environmental sustainability. The fast objectives are linked to the second variable, SEO, which is used to determine the organization's training and overall development programs related to GHRM. Analysis of the values of rho and alpha reveals 0.79 and 0.80, both greater than 0.7, indicating high reliability and a strong correlation between the variables. This variable is ideal for the forest objectives because the CR and AVE values are 0.87 and 0.70, indicating acceptable consistency in the results, and the validity is also acceptable. The second objective was to evaluate the mediating roles of attitude, subjective norms, and organizational behaviour on the effectiveness of GHRM, and to examine the connection between perceived behaviour and the energy transition behaviours, variables, and reliability. A set of variables indicates the effectiveness of employees' energy transition behaviour. Analysis of these research results was based on the participants' responses. The reliability is demonstrated by the value of alpha and rho, which, as a result of the reliability testing, are 0.82 and 0.80, respectively. These values are higher than the ideal value of 0.7. This value indicates the variable's high reliability and the correlation between the variables. For the other value, the CR is approximately 0.87, indicating that the results and variables are stable and consistent. The two objectives directly related to the topic are to understand the relationship between GHRM practices and employees' energy transition behaviors.

The positive alpha value and the rho value in the reliability test results are driven by the key variable, which is connected to organizational citizenship behaviour, energy transition behaviour, and employees' behavioural aspects in the Malaysian energy utility sector. The AVE is also reported in most results for the variable, demonstrating the variable's reliability. In terms of the CR, the variable is very high, indicating the consistency and stability of the results. The findings align with prior research (Wahyuni & Waskito, 2024), reinforcing the role of HR practices in promoting sustainable behaviours. The study highlights the need to refine further certain constructs, particularly Green Compensation & Benefits, which showed lower reliability.

6. Conclusion

This final section summarizes the discussion. It focuses on connecting the objectives of energy transition behavior to those of organizational citizenship. It also explained the findings from the Malaysian energy utility sector, linking them to the objectives and their limitations. This discussion also outlines the future scope of this study. Furthermore, it highlights the theoretical connections between energy transition behaviour and organizational citizenship behaviour as understood through the analysis of the findings.

The following are the survey analysis results and the overall survey report, based on the questions. question 3 represents the demographics of all participants, and the participants are categorized into genders. This survey analysis report indicates that 63 male candidates and 32 female participants participated, with a breakdown of 66% male

and 34% female. Question 6 addressed the types of participants who took part in the survey by higher education level. The graphs show that 80 respondents hold different degrees, and just 15 are pursuing master's or MBA degrees; all are participating in the survey. The other qualification holders' numbers are zero according to the provided graph. Analysis of question 7 examines participants' years of work experience. According to the provided graphs, participants are categorized by years of work experience. The graph indicates that 42 participants in the survey had less than 1 year of experience. On the other hand, 43 individuals with more than 10 years of work experience participated in this survey. All participants were categorized into the following perspectives: generation division, grid division, distribution network division, retail division, sustainability division, procurement and supply chain division, people (HR) division, TGBS division, regulatory and stakeholder management division, ICT division, strategy and venture division, and others. The distribution network division graph shows 74 people participating in the provided survey. The test result of the variable connected with the green energy employees' innovations has alpha and rho values of 0.86 and 0.87, which is greater than the ideal value of 0.7. The effectiveness of employees' energy transition behaviour is indicated by a set of variables and results derived from the responses. The values of alpha and rho, which are derived from the reliability test, are 0.82 and 0.80, respectively. These values are higher than the ideal value of 0.7, indicating high reliability of the variables and a strong correlation between them. It indicates high reliability in the variable and the results. Its average value is 0.59, indicating convergent validity.

This discussion is based on primary quantitative analysis, which involves collecting and analyzing numerical data to test hypotheses. However, it has limitations regarding data authenticity and methodology, including causal-comparative, experimental, descriptive, and correlational research. The study examines the impact of Green Human Resource Management on Organizational Citizenship Behaviour and Energy Transition Behaviour in Malaysia's energy utility sector, using statistical methods to interpret the data. It highlights four key objectives: understanding GHRM components, OCB, ETB, and the role of Malaysia's electricity sector. The findings offer valuable insights for future research, providing a foundation for further studies while acknowledging the study's limitations. Ultimately, this pilot study serves as a stepping stone for a more comprehensive analysis in the next phase.

This paper provides details on using primary quantitative methods to conduct the research and addresses the topic "The Impact of Green Human Resource Management on Organizational Citizenship and Energy Transition Behaviours among Employees in Malaysia's Energy Utility Sector". This investigation employed a statistical technique, a mathematical formula used to extract information and analyze data from the research (Kumar et al., 2022). This research has examined four areas: Green Human Resource Management and its components, Organizational Citizenship Behaviours, Energy Transition Behaviours, and the Energy Utility sector in Malaysia. This research has assessed the extent of people's understanding of these factors. Following this discussion, the rationale for using primary quantitative analysis in this research was explained. The other part of this paper described the study's future scope, ie, what people can achieve. By the conclusion of the study, the researchers understood the details of all objectives and their limitations, and focused on the future. The researchers can now move forward with the actual survey, fuelled by the valuable insights they have gained from this pilot study.

Ethics Approval and Consent to Participate

The study followed institutional research-ethics standards; informed consent was obtained from all participants prior to survey completion.

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Conflict of Interest

The authors reported no conflicts of interest for this work and declare that there is no potential conflict of interest with respect to the research, authorship, or publication of this article.

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