STUDY ON THE BENEFITS OF THE IMPLEMENTATION OF GREEN BUILDING RATING IN MALAYSIA

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Abstract

A green building is a sustainable design incorporating environmentally friendly practices in its construction and management. The objective of green building development is to reduce the negative impact of buildings on the environment by mitigating carbon dioxide emissions. Several countries worldwide, including Malaysia have established rating tools under the World Green Building Council to measure sustainability for various types of development. The goal is to encourage all nations to promote green building and replace conventional methods that harm the environment. In Malaysia, two of the most commonly used assessment tools for green building are GBI and GreenRE. The Malaysian government has implemented various policies to manage the construction process of green buildings, such as the National Green Technology Policy, Green Performance Assessment System, and the establishment of Green Technology Master Plan for managing green operations. However, green building projects in Malaysia are still in the formative stage, indicating that the construction industry in Malaysia is still in its infancy with regard to sustainable development. This study aims to investigate the perceived benefits of implementing Green Building Rating Tools in Malaysia. Specific factors that enable company readiness to adopt rating tools include benefits to occupants, facility management, and environmental sustainability. The research methodology used in this study was quantitative, employing a questionnaire survey with 140 respondents. The findings indicate that Facility Management and Environmental Sustainability are significantly related to Company's Readiness to adopt Green Building Rating. It is crucial for policymakers to provide incentives to project teams (developers, consultants, and contractors) to increase awareness about green construction and its implementation.

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1.0 INTRODUCTION

The construction industry is a vital contributor to the economic growth of most developing countries, as it creates demand for goods and services from related industries. In Malaysia, the construction sector accounted for 3.9% of the Gross Domestic Product (GDP) in 2021 (Department of Statistics Malaysia, 2022). However, the environmental impact of construction activities poses a significant concern, prompting the Malaysian government to establish the National Green Technology Policy (NGTP) in 2009. The NGTP aims to promote the adoption of green buildings, aligning with the broader goals of sustainable development and economic enhancement (Shaikh *et al.,* 2017).

Green building is an important aspect of managing the sustainability approach in a nation. It can achieve the improvements in environmental performance through various techniques and strategies. According to Lee, Gumulya and Bangura (2022), through the construction of the green building, the locality can effectively manage the waste for controlling the environmental pollution. Similarly, with the construction of a green building, the residents become more responsible for the environment.

The World Green Building Council (2022) defines Green Building Rating Tools (GBRTs) as assessment tools that evaluate whether buildings meet specific green requirements. Many developing countries have published and promoted their own rating systems, such as Leadership in Energy and Environmental Design (LEED) in the United States, Green Building Certification Criteria (GBCC) in Korea, Building Research Establishment Environmental Assessment Method (BREEAM) in the United Kingdom, and Green Mark in Singapore. In Malaysia, there are several types of Green Rating Tools available for the construction industry, including Green Real Estate (GreenRE), Green Building Index (GBI), Green Mark, Green Star, Malaysian Carbon Reduction and Environmental Sustainability Tool (MyCREST) and Low Carbon City Framework (LCCF). Implementing green building assessment tools provides an opportunity for the consultants (architects and engineers) and the developers to design an environmentally friendly building that can protect biodiversity and ecosystems, reduce greenhouse gas emissions, and save energy consumption.

Despite global trends toward sustainability, the adoption of green buildings in Malaysia faces challenges, primarily driven by environmental concerns among consumers and project owners (Wong *et al.,* 2021). This study addresses this gap by distributing questionnaires to gather feedback on implementing Green Building Rating Tools in Malaysia. The collected data offer insights into the current adoption levels of green building practices in the country. A collaborative effort from stakeholders, including policymakers, developers, architects, engineers, and contractors, is crucial for overcoming challenges and promoting sustainable building practices. This study contributes to this objective by providing valuable insights into the challenges and opportunities for sustainable development in Malaysia's construction industry.

2.0 LITERATURE REVIEW

The green building supports a more comprehensive agenda for sustainable development. All parties involved in developing the green building, including those offering design, consulting, and construction services, must take responsibility and make efforts towards achieving sustainable construction practices. Both of the party require the willingness for achieving an eco-construction approach to adopt green materials, concepts, and procedures in the construction approach.

The success factor of green building implementation is developed by the project team's awareness of the developer, architect and consultant. Market demand, acceptability, engagement, implementation, education, experience, and awareness are identified as critical factors by Suzila, Asmalia, and Zulkipli (2016). Public awareness is particularly crucial as it is the initial step toward successful green building practices. Interest in green building construction leads to increased understanding of its principles, fostering sustainable construction practices.

2.1 Benefits of Occupant

Building activity has a significant impact on the formation of the social environment. Social sustainability concerns the well-being of individuals who are directly or indirectly affected by construction development, including the incorporation of green imagery, trees, and nature. The purpose of social sustainability is to ensure that the social, cultural, and spiritual needs of people are met by sustainable development in the construction industry (Illankoon, *et al.,* 2016).

The adoption of green building features, such as vegetation and biodiversity, leads to improved indoor air quality, reduced carbon emissions, and enhanced occupant satisfaction. Providing green construction financing at lower interest rates incentivises developers and contractors to invest in sustainable building practices, fostering positive public image and trust. (Li, *et al.,* 2019).

A positive working environment, facilitated by green building features, promotes high levels of well-being and productivity among occupants (Geng *et al.,* 2019). Good indoor air quality positively affects occupant productivity, and lower interest rates for green construction financing contribute to significant reductions in carbon emissions and other environmental impacts. Prioritising occupant benefits leads to increased satisfaction, productivity, and positive impacts on a company's bottom line and reputation.

2.2 Facility Management (FM)

Facility management (FM) is the process of managing and maintaining all the multiple services that enable the facility to become a productive environment for its occupants. It is a wide-reaching field that assists with different activities, including business administration and engineering construction services, as well as managing utilities and ensuring compliance with regulations and safety standards (Sanzana, *et al.,* 2022). Therefore, sustainable facility management together with the use of green technology contribute the building become more energy-efficient and sustainable. It can bring economic benefits because there are energy and water savings from the lifecycle perspective, simultaneously reducing material and natural resource consumption.

A study by Francisco (2019) shows that solar energy technologies building can save up to 30% on the energy use of the building. Properly positioned solar panels optimise energy efficiency by converting solar energy into usable electricity, while the building's orientation maximises natural light, reducing the need for electric lighting during daylight. This is reinforced by Ahmed (2020), emphasising that solar panels enhance energy efficiency by blocking sunlight, preventing excessive heat from entering the building.

Similarly, Ali, Zhang and Yue (2020) point out that green buildings with a rainwater harvesting approach have at least 17% water-saving efficiency. Collecting rainwater during rainfall occasions is a substitute for non-potable purposes such as irrigating gardens, flushing toilets and cleaning cars. The facility manager implements rainwater harvesting system can help conserve water in green buildings by managing water consumption, implementing water-saving measures such as low-flow fixtures, and monitoring water usage to identify leaks and other issues (Cupido, Steinberg and Baetz, 2016). As a result, rainwater harvesting system has a positive economic impact since it reduces the amount of tap water used, which lowers the costs associated with utilising the municipal network and sewage systems. It also benefits from a long-term saving on water bills and an improved environmental profile.

2.3 Environmental Sustainability

Environmental sustainability is a concept of preserving precious natural resources whereas eliminating negative environmental impacts. It is a sustainable approach for the construction industry that provides green public goods to eliminate the environmentally harmful resources generated from economic activities (Oteng, Mensah and Duodu, 2022).

Green building is made of eco-friendly materials with a lower negative environmental impact. Recycling and reusing industrial wastes are effective strategies across various industries for conserving natural resources. In the cement industry, as highlighted by Zhang, Ghouleh, and Shao (2021), green concrete, composed of bottom ash, municipal solid wastes as aggregates, and eco-cement as the binder, exemplifies an eco-friendly construction material. Notably durable, eco-friendly materials contribute to reduced construction waste destined for landfills.

As per Sondh, *et al.* (2022) findings, an efficient Municipal Solid Wastes (MSW) management system can promote sustainable development in accord with good practice under environmental considerations. The management of MSW is integrated by regulating the production, collection, storage, transfer, and disposal of construction wastes to reduce the waste streams. Cudjoe, Wang, and Zhu (2021) endorse environmentally favourable technologies for waste recycling, including the hydrothermal technique, pyrolysis process, and vacuum metallurgy separation, fostering the formation of an organised recycling system. Implementing a circular economy strategy in MSW management for the construction industry can alleviate environmental degradation.

3.0 METHODOLOGY

The quantitative research method is used in this study as the primary tool for establishing empirical relationships. This method emphasises objective measurements by collecting the information, data, and samples to generate a possible solution for the specific problem. Quantitative research involves mostly numerical data on a statistical analysis through the use of large-scale survey research or questionnaire method (Mohajan, 2020). This method generalises the research findings to the population from the selected sample. The reliability and validity of quantitative research are based on the measurement instruments used for the analysis. A questionnaire is distributed to the target respondents in the form of a survey as the instrument for data collection. Afterwards, the respondent data are obtained for analysis by the Statistical Package for Social Sciences (SPSS).

3.1 Conceptual Framework

The conceptual framework refers to a collection of related concepts, ideas, or theories that provide a structure and guidance for research (Imenda, 2014). It is comprised of a group of variable inferences developed from the literature and theory that represent their relationships. By using the conceptual framework, it can easily identify research questions, develop hypotheses, and interpret study results.

Figure 1 describes the relationship between the independent and dependent variables. It is crucial in determining the outcome of the study and understanding the factors that may influence the dependent variable. Independent variable is the variable that is manipulated by the experimenter and is expected to have an effect on the dependent variable. In the other way, dependent variable is being measured for the influent change to the independent variable. The study is carried out to determine the company's readiness to adopt Green Building Rating Tools among the Benefits to Occupants, Facility Management, and Environmental Sustainability.

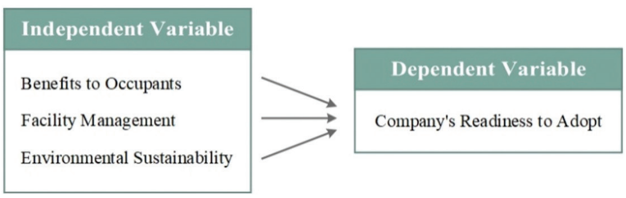

Figure 1: Conceptual framework of study

3.2 Data Collection

Data collection is a systematic process of obtaining and measuring relevant variables to address specific research questions, test hypotheses, and evaluate results (Brondolo, 2021). The target population for this research comprises developers, consultants, and contractors working in the Malaysian construction industry. It is because they are having the working experience in the relevant fields that clearly understand about the current situation in the construction industry.

3.3 Questionnaire Survey

A set of questionnaires were established based on the conceptual framework in this study to investigate the current implementation of Green Building Rating Tools in the Malaysia building industry. The survey forms consist of 4 sections (Section A, B, C, and D) were distributed to developers, architects, engineers, and contractors in Malaysia via Google Forms online. Table 1 shows the summary of the questionnaire.

Table 1: Summary of the questionnaire

Section	Item
A	Section A involves general background questions that collect demographic information of the respondents. These questions aim to obtain information about the respondent's main scope of service, their years of working experience in the building industry, and their employees' size of the company.
B	Section B is focused on assessing respondents' awareness of Green Building Rating Tools. This section aims to determine the extent of familiarity work with green building development, as well as to identify the preferred rating systems for adoption by companies.
C	Section C is related to the dependent variable of this study, which discuss the perceived benefits to occupants, facility management and environmental sustainability of Green Building. Based on these benefits, it can recognise the factors affecting implementation of Green Building Rating Tools in Malaysia.
D	Section D is dedicated to the dependent variable of this study that assesses the readiness of companies in the building industry to adopt Green Building practices. The aim of this section is to determine the factors that influence the implementation of Green Building Ratings and assess the inclination of companies to adopt the principles and practices of Green Building.

3.4 Data Analysis Using SPSS

Statistical Package for the Social Sciences (SPSS) used for analysis of the questionnaires. Descriptive analysis was used to analyse the demographics of respondents in Section A and the awareness of Green Building Rating Tools in Section B. Reliability test was conducted in Section C and D that contain Likert Scale in the questionnaire to ensure the validity and reliability of the results.

Taber (2018) mentioned that the reliability test is commonly approached with the use of Cronbach's Alpha to assess attitudes and other affective constructs. It is used to determine the internal consistency of the quantitative questions, thus strengthening the reliability. The Cronbach's Alpha can be calculated by Equation 1 as shown below.

$$\alpha = \frac{N\bar{c}}{\bar{v} + (N-1)\bar{c}} \quad (1)$$

where
α = Cronbach's Alpha
N = number of items
$\bar{c}$ = inter-item correlation
$\bar{v}$ = average variance

3.5 Hypothesis Development

During the hypothesis generation stage, it is prudent to convene a diverse group of analysts with varying backgrounds and perspectives for a collaborative brainstorming session. Group brainstorming fosters creativity and often unveils possibilities that individual members may not have considered on their own. In effect, key success factors articulate the important strategic posture for a company to adopt the Green Building Rating Tools in its development project. The proposed hypotheses in this study are as follows:

H_1 : There is a positive significant relationship between Benefits to Occupants and Company's Readiness to adopt Green Building Rating Tools.

H_2 : There is a positive significant relationship between Facility Management and Company's Readiness to adopt Green Building Rating Tools.

H_3 : There is a positive significant relationship between Environmental Sustainability and Company's Readiness to adopt Green Building Rating Tools.

4.0 RESULTS AND DISCUSSIONS

This section presents the results generated from the statistical data analysis conducted using the SPSS statistical software. The questionnaires were completed by a total of 140 respondents.

4.1 Descriptive Analysis

The descriptive analysis summarises the characteristics of the data that has been collected, such as distribution, mean and central tendency. As a results, Table 6 shows the overall respondents' demographic profile is obtained including organisation's main scope of service, role, years of experience and organisation size.

4.1.1 Awareness of Green Building

Figure 2 illustrates the respondent's awareness of green building. The findings reveal that 77.1% of the respondents are familiar with the Malaysia Green Technology Master Plan (GTMP), which is developed by the Malaysian government, while the remaining 22.9% respondents are not aware of it. As a result, the practical application of Green Building Rating Tools is extremely limited in Malaysia. A total of 78.6% respondents reported that they have no practical experience in handling Green Building projects. It is just only 21.4% respondents have participated in the Green Building project, and they have experience in adopting the Green Building Rating Tools for the project and are more familiar with it. Despite the importance of green building, it is not yet common in Malaysia due to unique challenges. Most construction industry stakeholders are not yet familiar with adopting green building assessment tools, which may limit the program's adoption.

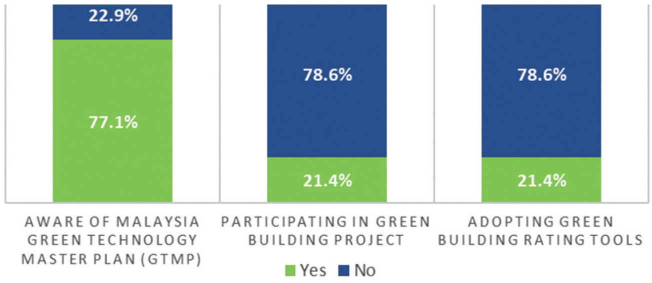

Figure 2: Awareness of green building

4.1.2 Adoption of Green Building Rating

Based on Figure 3, it is evident that the respondents use various green building rating tools in their projects. The majority of the respondents, which is 23 in number, use the Green Building Index (GBI), followed by Green Real Estate (GreenRE), with 12 respondents. As a results, it describes the existing commonly used green building assessment tools in Malaysia were GBI and GreenRE. Generally, GBI and GreenRE are rating systems that aim to promote sustainability in buildings, but they have different scopes and certification processes. GBI is a more comprehensive system that evaluates the sustainability of the entire building, including its design, construction, operation, maintenance, and management. Conversely, GreenRE focuses more on the building's operational performance, such as energy and water efficiency and waste management.

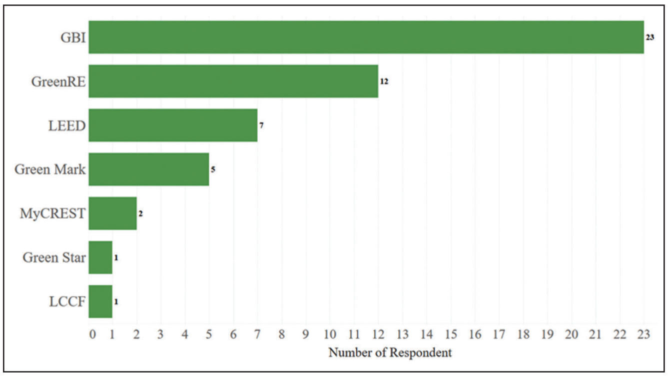

Figure 3: Types of green building rating tool used

In others, seven respondents use Leadership in Energy and Environmental Design (LEED), while five and two respondents use Green Mark and Malaysian Carbon Reduction and Environmental Sustainability Tool (MyCREST), respectively. Lastly, only one respondent each uses Green Star and the Low Carbon Cities Framework (LCCF) in their green building projects.

4.2 Measurements of the Data

The reliability test is used to measure the consistency of variables based on the value of Cronbach's Alpha (Taber, 2018). The higher the accuracy and stability, the more precise the instrument becomes. Multicollinearity test is also conducted to identify potential multicollinearity in the model. Two standard measures, namely tolerance value and Variance Inflation Factor (VIF), are used for this purpose. The tolerance value and VIF are inverse measures of each other. Besides, normality test is conducted to evaluate the normality of the variables.

4.2.1 Reliability Test

Pilot test is used to measure the consistency of the variables based on the Cronbach's Alpha value in the early stage of the study (Taber, 2018). Table 2 shows the number of first 25 respondents in the questionnaire survey. The overall Cronbach Alpha values is accepted with the range of 0.807 to 0.956 through the analysis. According to Uma and Roger (2019), the results show a good reliability among the variables with the Cronbach's Alpha value that is more than 0.8.

Table 2: Cronbach's alpha on reliability test

Variables	Cronbach's Alpha
Independent Variables (IV)	
Benefits to Occupants (IV1)	0.885
Facility Management (IV2)	0.878
Environmental Sustainability (IV3)	0.931
Dependent Variable (DV)	
Company's Readiness to Adopt	0.918

4.2.2 Multicollinearity Test

Table 3 shows the independent variable with the highest VIF value is Facility Management, which obtained a value of 3.401, followed by Benefits to Occupants with a VIF of 3.115, and Environmental Sustainability with the lowest VIF of 2.809. Since all the independent variables have VIF values in the range of 1 to 10, there is no issue of multicollinearity (Saunders, *et al.,* 2019. This means that the three independent variables do not overlap with each other. Therefore, the results of this study are reliable.

Table 3: Multicollinearity statistic

Model	Tolerance	VIF
Benefits to Occupants	0.321	3.115
Facility Management	0.294	3.401
Environmental Sustainability	0.356	2.809

4.2.3 Normality Test

Normality test is conducted to evaluate whether the data collected from the questionnaire is suitable for a normal distribution model. Mishra *et al.* (2019) recommends using the Kolmogorov-Smirnov test when the sample size exceeds 50, which is the case in this study with a questionnaire sample of 140. Hence, Kolmogorov-Smirnov Test is more significance for the normality test.

If the significance (Sig.) value is less than 0.05, it indicates a significant test and a non-normal distribution of the model (Ghasemi and Zahediasl, 2012). As a results, Table 4 shows that all of the variables, both independent and dependent, have a Sig. value of 0.000, which is less than 0.05, indicating non-normality.

Table 4: Kolmogorov–Smirnov test

Variables	N	Sig.
Benefits to Occupants	140	0.000
Facility Management	140	0.000
Environmental Sustainability	140	0.000
Company's Readiness to Adopt	140	0.000

4.3 Regression Analysis

Regression analysis is performed to examine the statistical relationship between independent and dependent variables. Multiple linear regression is used for many independent to one dependent variable analysis for further hypothesis testing.

4.3.1 Spearman's Rho Correlation Analysis

Spearman's Rho Correlation Analysis is a non-parametric method used to determine the strength and direction of association between two ranked variables. Figure 4 presents the correlation analyses, and the results indicate that each independent variable has a positive relationship with the dependent variable. This implies that as the values of the independent variables increase, there is a higher likelihood of the dependent variable also increasing. According to Dancey and Reidy (2004), Spearman's Rho coefficients between 0.4 and 0.7 indicate a strong correlation. Table 5 represents Spearman's Rho Correlation of the variables which are strong relationships with the Company's Readiness to adopt Green Building Rating Tools.

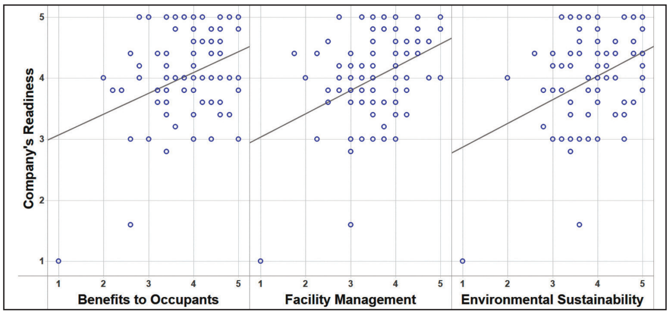

Figure 4: Correlation strength

4.3.2 Multiple Linear Regression

Since there are 3 independent variables (Benefits to Occupants, Facility Management, and Environmental Sustainability) in this study, multiple linear regression is used to determine the statistical relationship between the variables. The result of Beta (β) and p-value for multiple linear regression is shown in Table 5.

Based on Table 5 the independent variables, Facility Management (IV2) and Environmental Sustainability (IV3) have obtained 0.006 and 0.020 of p-value respectively. Hence, there is a significant relationship between these variables and the dependent variable which are less than 0.05 in significant. Moreover, Facility Management (IV2) and Environmental Sustainability (IV3) have higher β values of 0.349 and 0.267 respectively, indicating that they have a stronger impact on the DV.

In contrast, Benefits to Occupants (IV1) yields a β value of 0.038, indicating a relatively modest influence on the Company's Readiness to Adopt Green Building Rating Tools (DV), contributing to a mere 3.8% of the variation. The p-value associated with Benefits to Occupants is 0.754, exceeding the 0.05 threshold, consequently deeming it statistically nonsignificant.

4.3.3 Hypothesis Testing

Hypothesis testing was executed through the analysis of p-values, with a threshold set at 0.05. A p-value below 0.05 signifies support for the hypothesis at a 95% confidence level.

Table 5: Results on hypothesis testing

	Hypothesis	Correlation	Beta (β)	p-value	Decision
H_1	There is a positive significant relationship between Benefits to Occupants and Company's Readiness to adopt Green Building Rating Tools.	0.460**	0.038	0.754	H_1 is rejected.
H_2	There is a positive significant relationship between Facility Management and Company's Readiness to adopt Green Building Rating Tools.	0.588**	0.349	0.006	H_2 is accepted.
H_3	There is a positive significant relationship between Environmental Sustainability and Company's Readiness to adopt Green Building Rating Tools.	0.553**	0.267	0.020	H_3 is accepted.

Based on the H_1 correlation coefficient between Benefits to Occupants and Company's Readiness is 0.460**, which indicates a strong correlation. Among all three independent variables, Benefits to Occupants are the least correlated with Company's Readiness. Table 5 shows that the p-value for Benefits to Occupants is 0.754, which is higher than 0.05 ($p > 0.05$) and therefore not statistically significant. As a result, Hypothesis 1 (H_1) is rejected, indicating that there is no significant relationship between Benefits to Occupants and Company's Readiness to adopt Green Building Rating Tools.

H_2 indicates a strong correlation between Facility Management and Company's Readiness, with a correlation coefficient of 0.588**. Among all three independent variables, Facility Management has the highest correlation with Company's Readiness. Companies with a strong focus on Facility Management are more likely to be prepared to adopt rating tools. Besides, Table 5 further confirms the relationship between Facility Management and Company's Readiness, with a significant p-value of 0.006, which is lower than the significance level of 0.05 ($p < 0.05$). Thus, Hypothesis 2 (H_2) is accepted.

H_3 shows that there is a strong correlation between Environmental Sustainability and Company's Readiness to adopt Green Building Rating Tools, with a correlation coefficient of 0.553**. Among all three independent variables, Environmental Sustainability are the second-highest correlated to Company's Readiness. Companies that prioritise sustainability are more likely to be motivated to adopt Green Building Rating Tools and the adoption of these tools can help companies improve their environmental performance and achieve their sustainability goals. Table 5 further supports this relationship, with a significant p-value of 0.020, which is less than 0.05 ($p < 0.05$). Therefore, Hypothesis 3 (H_3) is accepted.

5.0 CONCLUSIONS

The study delves into the integration of sustainability practices through green building ratings in the construction processes of firms. Despite achieving a commendable awareness level of 77.1% regarding the Green Technology Master Plan (GTMP) among respondents, the data reveals a considerably low adoption rate of Green Building Rating Tools in Malaysia, standing at only 21.4%. This low adoption is attributed to a lack of knowledge about green technologies and their regulations among project teams involved in green building projects. In order to elevate the adoption rate of GBRTs in the Malaysian construction industry, the government can offer incentives such as tax breaks, subsidies, and grants to encourage adoption. This can make it more financially attractive for building owners and developers to invest in green building practices.

Table 6: Summary of respondents' background

	Percentage	Respondent (N=140)
Main Scope of Service		
Architectural Consultant	12.86%	18
Construction Contractor	7.14%	10
Developer / Project Owner	41.43%	58
Engineering Consultant	32.86%	46
Quantity Surveying Consultant	5.71%	8
Role		
Architect	14.29%	20
Engineer	34.29%	48
Management	37.14%	52
Quantity Surveyor	9.29%	13
Sales & Marketing	5.00%	7
Working Experience		
6 – 10 years	38.57%	54
11 – 15 years	7.86%	11
16 – 20 years	5.00%	7
Less than 5 years	34.29%	48
Over 20 years	14.29%	20
Organization Size		
5 – 30 employees	45.00%	63
30 – 75 employees	35.71%	50
Less than 5 employees	2.86%	4
Over 75 employees	16.43%	23

The conceptual framework contributes to understanding the complex interplay between different factors influencing a company's readiness to adopt GBRTs. The correlation analysis supports the significance of Facility Management and Environmental Sustainability in shaping this readiness, emphasizing the importance of these elements in the broader context of sustainable development in the construction industry. The study's findings emphasize a strong relationship between Facility Management and Environmental Sustainability and a company's readiness to adopt GBRTs. Companies that prioritise sustainability and implement robust Facility Management practices demonstrate an elevated readiness to adopt GBRTs, leading to an overall improvement in their environmental performance. However, the study reveals that Benefits to Occupants did not exhibit a significant relationship with a company's readiness to adopt GBRTs. This divergence suggests that decision-makers may prioritise factors other than occupant benefits when considering the adoption of GBRTs. While occupants can influence the demand for green buildings, the decision-making process is often steered by stakeholders driven by economic and social considerations.

In conclusion, the maturity level of GBRTs development emerges as a critical factor influencing green building practices. As Malaysia's construction industry is in its early stages concerning sustainability, there is a need for increased GBRTs development and implementation to promote sustainable building practices. Policymakers hold a crucial role in providing incentives to project teams and promoting GBRTs implementation. Overall, increasing the adoption rate of Green Building Rating Tools in Malaysia will require a combination of government incentives, education, industry collaboration, mandatory regulations, and financial institutions' incentives.

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