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THE CROSSFIRE OF CORPORATE REAL ESTATE SUSTAINABLE MANAGEMENT WITH CORPORATE SUSTAINABLE OBJECTIVES IN MALAYSIA

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Abstract

The emergence of corporations dabbling in sustainable development has caused a shift from the conventional way of managing office building to a more systematic approach involving high technology. Various discussions espouse the positive impact of sustainable office buildings on business. However, previous studies only discussed the elements involved, but most of these discussions did not specify which element that significantly contributed to business objectives. Thus, this research attempts to discover the relationship between corporate real estate sustainable management (CRESM) and corporate sustainability (CS) objectives to determine the most significant element of CRESM influencing overall CS objectives. A questionnaire survey was carried out involving 117 combinations of corporate real estate managers who are directly involved in managing sustainable offices in Malaysia. Data was then analyzed using IBM SPSS Smart PLS. Results indicate six elements of CRESM significantly affect CS objectives that hope to assist corporate real estate managers to well manage their sustainable office buildings as well as contributing to achieve their business objectives.

Keywords: Sustainable office building management, corporate real estate sustainable management, corporate sustainable objective, relationship, structural equation modeling

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INTRODUCTION

The growing number of sustainable buildings, especially office buildings, in Malaysia since 2009 presents itself as a new strategic planning approach which is employed worldwide (Rasoolimanesh et al., 2011). The tabulation of sustainable office building developments in Malaysia commonly owned by the corporate companies as they realize that sustainable office building developments contribute positively to their business image. Hence, good and effective management is crucial to achieve sustainable development in the cities (Samzadeh et al., 2016). The sustainable office building management of the corporations is called corporate real estate sustainable management (CRESM).

Previous research reveals a resounding lack of discussion on CRESM and its practices particularly on the elements involved that are directly related to the triple bottom line theory (Fauzi et al., 2018). Similarly, there is a noticeable void in literature on their relationships as well as their contributions towards overall corporate sustainability's (CS) objectives. Numerous elements were identified as conferred on sustainable practices of corporate real estate management but they were mostly found outside Malaysia; that was found in Masalskyte et al. (2014) and Lützkendorf and Lorenz (2014). Unfortunately, the data recorded was highly heterogeneous (Fauzi et al., 2016), requiring careful scrutiny on specific areas to make it more discernible and relevant. Different types of property and business industries involved offer different opinions and provide different views and findings. These are because they have redundant or opposing opinions. Appel–Meulenbroek and Haynes (2014) mention that the companies adopt many different corporate strategies as a result of various models and approaches being developed by the companies and hence, too difficult to practice.

Thus, this research aims to investigate the relationship between CRESM and corporate sustainability (CS) objectives and to identify the significant element that will influence the success of the whole corporation's business performance. The research focuses on sustainable office buildings that are certified with GBI to ensure the relevance of the practice to be shared by the same sector in future. The sustainable office buildings were selected as the nature of business from the building might have various discrepancies, especially on their building management.

LITERATURE REVIEW

Many definitions for sustainable building exist, but none are entirely satisfactory (Sayce et al., 2007). Sustainable buildings are often equated to 'green buildings', and vice versa (Sayce et al., 2007). Muniandy (2019) found that sustainable building features a number of terminologies such as "green building" adopted by

the US, “sustainable building” adopted by the UK and Australia, “sustainable architecture”, and “sustainable construction”. These buildings are often termed interchangeably as green buildings, high performance buildings, sustainable buildings, and sustainable construction (Shaikh et al., 2019). Nevertheless, for this research the term sustainable building was adopted. Where it is also a part of a sustainable development, it is a process to encourage people to preserve and protect Earth's life support system (Tjenggoro & Prasetyo, 2018).

CRE is initially known as land and buildings owned by corporations, not primarily in the real estate business. However, the CRE in Malaysia is defined as corporate assets owned or leased by non-real estate companies including developers' properties in which the properties are used for investment purposes and not as stock for trade. CRE also involves properties owned by government agencies, especially by profit-oriented agencies. (Fauzi et al., 2020). CRESM used in this research is defined by the UNEP FI as the integrated management of all economic, environmental, and social aspects of an organization's property activities and associated investment decision-making (Lowe & Ponce, 2014). Sometimes the management of sustainable building is also referred to as sustainable corporate real estate management (Ziemba, Ramian, & Kania, 2015), CRESM (Fauzi et al., 2021; Sinke, 2015), or CRE sustainability management (Lützkendorf & Lorenz, 2014).

Whereas, CS objectives represent the organization's willingness to be involved in environmental programs to engage with both internal and external sustainable factors (Janda et al., 2016). Isaksson (2019) defined corporate sustainability as how the organization describes how economic, environmental, and social issues relate to its long-term strategy, risks, opportunities, and goals. The CS objectives are based on the TBL that was developed by Brundtland, 1987 which encompassed the three sustainable criteria of environment, economic, and social criteria (Jenkins, 2009). The TBL was adopted to cover more comprehensive sustainability coverage for the CS objectives as well as the CRESM elements.

RESEARCH METHODOLOGY

The questionnaire survey was distributed to 117 of corporate real estate managers, property managers, facility managers, operation managers, building managers, and financial managers that are directly involved in managing sustainable office buildings that are certified with green building index (GBI) in Malaysia. 100 returns were finalized. The research adopts purposive sampling to fulfill the minimum required numbers projected by Raosoft (90 samples) and G*Power (98 samples). The instrument covers three parts namely the backgrounds of the respondents, CS objectives, and CRESM elements. A five-point likert scale was

adopted: strongly disagree (1), disagree (2), neither agree nor disagree (3), agree (4) and strongly agree (5) (Fauzi et al., 2012).

The questionnaire developed has gone through the pre-test with six experts from the real estate field, statistics and language to ensure the validity and reliability of the instrument's contents. This was due to the small sample available for the research, similar to Hunt et al. (1982), who stated that pre-testing the use of a questionnaire in a small pilot study. Pre-testing was also conducted by Lo et al., (2016) to check whether the questions were clearly understood by the respondents and to determine if any further modification of the items and format was necessary.

The descriptive analysis of frequency analysis was conducted to analyze the backgrounds of the respondents while SEM-PLS analyzed the relationship between CRESM and CS objectives. PLS-SEM is a common analysis approach used to show the relationships that exist among variables of interest (Hair et al., 2017) as also agreed by Ramayah et al. (2018) that mentioned, it is suitable for research that aims to explain the relationship between dependence and independence variables.

RESULTS AND DISCUSSIONS

The result in Table 1 indicates 53% of the respondents are from the property management department while 38% are from the facility management department and another 9% are from other departments. These other departments include the building management department, operation and technical department, maintenance department, operations department, property investment department, building control system department, and energy department. In fact, many departments are involved in managing the sustainable office buildings with the most common being the property management department and facilities management department.

Table 1: Working Departments

Department	Percent
Property Management Department	53.0
Facility Management Department	38.0
Others	9.0
Total	100.0

Based on Table 2, 51% of them have less than five years' experience managing sustainable buildings, while 49% of them have more than five years' experience. The short years of experience are because the sustainable office buildings in Malaysia are still at the early stage of development, thus less numbers were

available in the market. A T-test was carried out in order to determine the statistically significant differences between these two categories. The T-test result shows that the difference in number of years' experience varies considerably, but no clear pattern is discerned. Overall, the differences between <5 years and >5 years towards corporate goals and CRESM elements are relatively small and explain the non- significant differences.

Table 2: Years of experience managing sustainable buildings

Year	Percent
< 5 years	51.0
>5 years	49.0
Total	100.0

Table 3 indicates the results from SEM-PLS analysis. Two types of validity are examined, which are the convergent validity and discriminant validity (Gholami et al., 2013). Eleven out of nineteen results recorded fulfilled requirements. The other eight results were rejected due to numerous reasons that do not fulfill the requirement of the model fit. This shows eleven relationships were accepted. The accepted results are denoted with YES marks. In contrast, the rejected results are denoted with NO marks.

Table 3: Summary results of SEM-PLS

	STAND-BETA	T-VALUE >1.645	P-VALUE <0.05	BCILL	BCIUL	F2	VIF <5	ADJ R2 =>0.10	Q2 >0	RESULT
ENM -> ENV	0.380	3.750	0.000	0.210	0.540	0.100	2.890	0.49	0.25	YES
INN -> ENV	0.280	1.652	0.050	0.030	0.530	0.180	2.620			YES
IGM -> ENV	0.090	0.420	0.340	-0.330	0.360	0.000	4.210			NO
WAS-> ENV	-0.030	0.180	0.430	-0.260	0.330	0.000	3.780			NO
WTM -> ENV	0.140	1.350	0.090	-0.030	0.300	0.020	2.330			NO
WPM -> ENV	-0.020	0.130	0.450	-0.260	0.260	0.000	2.060			NO
HSM -> SOC	0.430	2.560	0.010	0.080	0.650	0.120	3.520	0.55	0.32	YES
INN -> SOC	0.320	2.660	0.000	0.100	0.480	0.100	2.400			YES
IGM -> SOC	0.230	1.490	0.070	-0.030	0.440	0.030	4.660			NO
WPM -> SOC	0.270	2.090	0.020	0.080	0.480	0.070	2.390			YES
WSM -> SOC	-0.470	3.640	0.000	-0.740	-0.300	0.120	4.300			YES
HSM -> ECOMAX	0.310	2.120	0.020	0.080	0.530	0.060	3.120	0.51	0.23	YES
INN -> ECOMAX	0.150	1.650	0.050	0.000	0.320	0.020	2.330			YES
OGM-> ECOMAX	-0.120	1.430	0.080	-0.310	-0.020	0.020	2.060			NO
WPM-> ECOMAX	0.430	3.240	0.000	0.200	0.630	0.190	2.060			YES
ENM -> ECOMIN	-0.350	1.790	0.040	-0.580	-0.040	0.070	2.490	0.24	0.12	YES
INN -> ECOMIN	0.160	1.090	0.140	-0.080	0.390	0.020	2.210			NO
IGM -> ECOMIN	0.660	4.130	0.000	0.360	0.880	0.180	3.240			YES
WTM -> ECOMIN	-0.170	1.040	0.150	-0.450	0.090	0.020	2.240			NO

Notes {

Enm-Energy Management; INN-Innovation Management; IGM-Internal Green Management; WAS-Waste Management; WTM-Water Management; WPM-Workplace Management; WSM-Workspace Management; HSM-Human Satisfaction Management; OGM- Organization Management; ENV-Environment Objective; SOC-Social Objective; ECOMAX-Economic Value Maximization; ECOMIN-Economic Cost Minimization

Energy Management -> Environment

Corporate environment sustainability objectives showed a positive relationship with the element of energy management. This is in accordance with Kamaruzzamana et al., 2019; Shurrab et al., 2019; Støre-Valen and Buser, 2019, who found that a reduction of energy use contributed to environmental sustainability. Ajayi et al. (2019), Chang and Devine (2019), and Ilhan and Banu Yobas (2019) also found that energy efficiency implementation reduces the impact on the environment, as well as producing local and global environmental benefits (Omer, 2014).

Innovation -> Environment

Corporate environment sustainability has had a positive relationship with innovation. This corresponds with Kamaruzzamana et al. (2020) and Attiya, Shebl, and Nasser (2020) who mentioned innovation is able to provide environmental benefits, especially towards any new approaches and designs adopted to improve sustainability. The concept of innovation in sustainability has grown rapidly, in line with the evolution of current demand and practices across the world. Research into this has increased since 2008 (Maier et al., 2019).

Human Satisfaction Management -> Social

Human satisfaction management in this research shows a positive relationship with social sustainability objectives of the corporation. This is similar to Abel (2013), who mentioned that human satisfaction may cause positive worker performance. Human satisfaction can also result in reducing absenteeism, complaints, and staff turnover (Abel, 2013). Human satisfaction can create opportunities for organizational improvements that can capitalize on human abilities and encourage employees to become more committed and loyal to the organization (Abel, 2013).

Innovation -> Social

In the real estate sector, growing innovation indicates improvement for better social life because innovation has been counter contributing to positive social benefits (Ma et al., 2017). Different innovation practices lead to different kinds of benefit (Ma et al., 2017). Innovation is able to increase employee's wellbeing, engagement, and satisfaction. (Gibler and Lindholm, 2012: UK Green Building Council, 2018)

Workplace Management -> Social

Workplace management showed a positive relationship with social sustainability objectives. The results are consistent with the findings from research that stated sustainable buildings provide a positive impact on occupants (Agarwal, 2016). Similarly, Newsham et al. (2018) identified a positive relationship between physical office environment and occupants' comfort and satisfaction.

Workspace Management -> Social

Workspace management was found to have a negative link to the social sustainability objective, meaning that the better the workspace management, the less social sustainability objective could be achieved. Afshari et al. (2016) and Lee et al. (2018) found that workspace management in sustainable building is less preferable for employees and causes dissatisfaction among them due to the design of the workspace in sustainable building which could differ greatly from conventional styles. The design needs to fulfil the requirements of green certification, while at the same time reducing costs and the impact on the environment.

Human Satisfaction Management -> Economic Max Value

Human satisfaction management recorded a positive relationship with the economic sustainability objective in relation to maximizing value. HSM contributes to the success of the corporation's sustainable objectives where they aim for value maximization (Zhang, 2015). Goldberger (2010) stated that employee satisfaction, training and education are correlated to productivity, which directly affects business performance. Abel (2013) also found that employee satisfaction is an essential element of the overall success and efficient operation of a business and encourages an organization to achieve high productivity.

Innovation -> Economic Max Value

Innovation management showed a positive association with the economic sustainability objective of value maximization. Amr (2017) mentioned advanced technology can be managed and improved to make way for a new era of economic growth. similar to The UK Green Building Council (2018) that found new innovation practices for production and delivery and new technology can increase productivity.

Workplace Management -> Economic Max Value

Workplace management has a positive relationship with the economic sustainability objectives of the corporation. This finding corresponds with an

earlier study by Perrett (2011), who found that strategic locations for sustainable building are in greater demand compared to other locations. In addition, demand for buildings is influenced more by the location than green features (Dixon et al., 2008; Fiandrino et al., 2018; Wedding, 2008), especially locations in close proximity to convenient transportation facilities (Shen et al., 2014). Locations close to public transportation facilities are in high demand by companies and prospective tenants, including local and international.

Energy Management -> Economic Min Cost

Energy management was found to be negatively related to cost minimization, meaning that costs are incurred for greater energy efficiency and savings that supported by Ohueri et al. (2018) that mentioned energy consumed by green office buildings in Malaysia is higher than the predicted energy. Further, energy management fails to reduce costs due the lack of an integrated and long-term vision, lack of planning for required maintenance, and lack of quality control (Desmarais et al., 2010).

Internal Green Management -> Economic Cost Minimization

Internal green management recorded a positive link with economic sustainability objectives of cost minimization. Internal green management is usually associated with indoor environmental quality, which is used to achieve good indoor air quality performance, acoustics, visual comfort, and thermal comfort (Kassim et al., 2013). This is consistent with the results found in the United States Environmental Protection Agency (2000).

CONCLUSIONS

This research discovered only six out of nine CRESM elements were related to corporate sustainability goals: energy management, workspace management, innovation management, internal green management, workplace management and human satisfaction management. Corporations that aim to achieve environmental sustainability are required to pay more attention to energy management and innovation management. To realize the social sustainability objective, more focus should be given to workspace management, innovation management, workplace management, and human satisfaction management. Further, corporations need to seriously consider energy management and internal green management to reduce expenses and achieve economic cost minimization. CRESM elements of innovation management, workplace management, and human satisfaction management are required to strategically develop economic value maximization.

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The Crossfire of Corporate Real Estate Sustainable Management with Corporate Sustainable Objectives in Malaysia

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