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A Pilot Framework of Corporate Real Estate Sustainable Performance Measurement (CRESPM)

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Abstract

Sustainability is now realised as an emerging important area and has been discussed in recent studies. Sustainability now becomes a hot issue that has been discussed not only in Malaysia but over the world. However, there is lack discussion on sustainability related to corporate real estate sustainable performance measurement (CRESPM). Corporate Real Estate sustainable performance measurement (CRESPM) is very important to discuss because it will contribute to the direction and decision making of the organisation and corporation in order to obtain maximum added value for the business and to contribute to the overall performance of the corporation. Thus, this research aimed to explore and then summarize the best performance measurement indicator related to sustainable real estate by referring to the sustainable parents' theory. The objectives of this study includes to identify the existing CRE sustainable performance measurement indicator available from the previous research and to design a pilot model and framework for CRE sustainable performance measurement. The research uses content analysis method to analyse data gathered from literature and previous studies. The findings will be demonstrated in the form of a pilot framework model on CRESPM that will include 102 indicators of performance measurement derived from analysis. That framework soon is hope can be used as new evolution for the future exploration on CRESPM.

Keywords: Corporate Real Estate, Corporate Real Estate Performance Measurement, Performance Measurement.

Introduction

The embracing of sustainable real estate can be seen through a grow numbers of sustainable and green building development. Not only that, the divest of real estate investment to green and sustainable building and also towards REITs has proven the awareness of people over the world on the contribution of sustainable development especially towards property or real estate for not only environment but also to the successful of the businesses and investments. Similarly to

the business corporation nowadays all jump to the sustainable premise in order to sustain in the business because a sustainable premise have been proven not only donated more profit but also less spending. More CRE strategies have been found in a previous research but only few touch and take into consideration on sustainable performance measurement aspects. In addition sustainable in CREM strategies have been seen only took as a part of performance measurement. Thus, this research aimed to explore and then summarize the best performance measurement indicator related to sustainable real estate by referring to the sustainable parents theory that integrating a sustainable environmental, economic and social aspects. The findings will be demonstrated in the form of a pilot framework model on CRESM that is hope can be used as reinforcement for the future exploration on CRESM.

Problems and Issue

Recently, most of the corporation or business organisation really concern on their corporate real estate strategies just as their business strategies in order to make sure their businesses sustain, competitive and give a good return and at the same time reduce cost of expenditures. For instance, In 1993 Nourse and Roulac developed a CRE strategic framework which encompassed 8 strategies(Nourse & Roulac, 1993). Besides that, De Jonge (1996) discovered and developed with 7 components of CRE Krumm & de Vries (2003). Further few years, Lindholm & Gibler(2005)also developed a set of CRE strategies which covering 7 strategies and then updated with added a new potential real estate strategy related to environment Gibler & Lindholm (2012). In Malaysia, on year 2008, Zaiton Ali, McGreal, Adair, Webb, & Roulac (2008) by adopting Nourse and Roulac strategies discovered a new strategies concern by the Malaysian companies that is corporate social responsibilities (CSR). In short, the concern on the sustainable issues related to CRE strategies only found started on year 2012 and until now it is still yet found the CRE strategies that taking fully consideration on sustainable aspects. Similar to strategies that have been developed by Gibler & Lindholm (2012) where the sustainable only taken as a part of strategies and not as a whole. Due to that, no framework concerning sustainability element in CREM has been found.

However, Masalskyte et.al. (2014) have been found discussed on the CRE sustainable practice elements that taken into consideration when managing and maintaining a sustainable CREM practice. The elements involved are include of water management, waste management, energy management, monitoring and controlling, buildings certification, sustainability organisation, sustainable facility management, green supplier chain, communication with stakeholder, communication with employee, green office, sustainable workplace, sustainability unit, sustainability finance, environmental policy, strategy and sustainability benchmarking Nonetheless, the relationship between CREM strategies with the elements provided is identified complicated to understand.

In addition, referring to the most covered issues within current certification system by super buildings (2010) in Yuce (2012) that categories the issues into three elements of sustainable namely as environmental issues that covers the issues of energy, materials, climate change, land use and ecology, water management and waste. Next is economic issues that related to issues on management and maintenance, lifecycle cost, building adaptability, process quality and innovation. The last category is social issues that focus to comfort and health, accessibility of the

building and access to transport and safety and security. Therefore it is necessity to look the sustainable performance measurement into this three criteria or elements.

In conjunction with the difficulties, issues arose and lack of discussion on the sustainable performance measurement in order to measure CRE, this research aimed to further study on this matter. However, for the first attempt, researcher only focuses on the criteria of sustainable performance measurement in order to develop a framework model on CRE sustainable management performance measurement directly related to sustainable theory.

Methodology

The research was conducted by reviewing all the available literature from previous research to identify a sustainable performance measurement indicators applied in practice of CRE. All the reviewed data is then analysed through contents analysis to design a pilot model and framework based on the sustainable theory that balances environmental, economic, and social impacts.

Corporate Real Estate Sustainable Performance Measurement

Performance measurement indicators for sustainable real estate research have been seen started to popular among the researcher since the existing and increasing awareness of the sustainability issues and green building evolution. Research on environmental performance measurement, for example, provides insight into measurement system development processes, indicator selection criteria, the use of data in measurement systems, the development of composite indices, and the role of measurement systems (Searcy, 2012).

Furthermore, this issues was also found discussed in a several articles and one of that is the article of "Environmental Building News, April 2005" outlines the range of potential benefits that could be the subject of performance measurement studies that includes of cost savings, reduced operating costs, other economic benefits, health and productivity benefits, community benefits, environmental benefits, and social benefits.

However, the sustainable evolution on CRE area have identify just started on year 2012 when few researcher taken sustainability as part of area to relates with the CREM such as Gibler & Lindholm (2012), Masalskyte et.al. (2014), Similar as Malaysia, the awareness of sustainability issue just started to become popular on year 2009 after the establishment of green building index (GBI) and the National Green Technology Policy 2009. However, this concern related to CREM still not yet found. Therefore, there are still absent on the research of corporate real estate sustainable performance measurement in Malaysia.

In conjunction with that, researcher started to explore sustainable performance measurement to overcome the gap arose and have found that recently, sustainability performance measurement indicator is developed by referring to the theory of sustainability that integrating 3 sustainability pillars of economic, environmental and social.

These three pillars are generally added to present the element of sustainability in the organizational management. It is proven by Musil (2011), that find out corporate real estate executives should be well-prepared to demonstrate the economic and other social contributions like job creation, personal earnings, and an arrangement of other community economic benefits

that the corporation can make in order to enhance the encouragement and support from the team. He added, the worst social contribution by the organisation may lead to decreased employee performance and reduced financial results (Musil, 2011).

Agreed by Ghazali (2015) that incorporate environmental sustainability social sustainability economic sustainability to the corporate sustainable practice. The environmental sustainability criteria include of environmental management system (EMS) ISO certification, emissions and effluents, including greenhouse gases (GHG), energy consumption & saving, eco-efficiency and cleaner production, waste reductions, transportation, recycling, water and waste water treatment, green products & certifications, biodiversity and supplier assessments. Under social sustainability criteria 19 indicator have been listed such as decent labour practices, employee's development, training and education, employees' human rights, employment opportunities, occupational health and safety, volunteering and philanthropy, diversity & equal opportunities, communities, prevent child labour, human rights, labour union & bargaining power, shelters for workers & others, customer satisfaction & customer safety, product responsibility, eco labelling, ethics, drinking water on workplace and anti-corruption. Lastly for economic sustainability contains of market presence (min wages), indirect economic impact, direct economic impact, corporate governance, earnings, value creation, and shareholders, acquisitions, locals in management, internal control and R&D. even though the criteria listed is more focus on corporate sustainability in general but some of the criteria can be considered and match to the CREM objective.

Evidently, Taylor (2013) also presented criteria of performance measurement that integrated with sustainable theory of three pillars. The evident shows that, reduced operating cost, expanded markets for green product and services, improved occupant productivity and optimized life cycle economic performance as indicator under economic criteria. While, environmental criteria covers of enhanced and protected biodiversity, improved air and water quality, reduced waste stream and conservation of natural resources. Then is a social criterion that includes of advance occupants comfort and health, heightened aesthetic qualities, minimize strain on local structure and improve overall quality life.

Similarly to Christensen et al. (2012) that listed several attributes to measure the performance that can be found also divided into three pillars of sustainability. The economic criteria includes of current value of real estate asset, financial implications and other risks and opportunities related to sustainability issues, operating costs, increase post adaptation value for existing building, construction and development costs, convertibility that easily convert into other use, impact on infrastructure investment and services developed for public used and benefits, total value of financial and in-kind contributions to community and perceived value of positive (PR) / branding associated with the sustainability related activities. While the environmental criteria contains of energy efficiency, renewal energy and carbon offset, internal environment quality, total direct and indirect GHG emissions, existence of hazardous materials, water use, waste management, refrigerant management, pollution/contamination, biodiversity value and impact to real estate activities, natural resources use, material use and site improvement and management strategies. Lastly, a social criteria that covered of community benefits, transportation related noise, employee training opportunities, urban regeneration, percentage

of operations with implemented local community engagement, operations with potential or actual negative and positive impacts on local community, number of person voluntarily, aesthetic impact on community, provision of additional facilities and amenities, proximity to hostile factors, occupants and user satisfaction and comfort, health, safety and well-being, green cleaning policy, access to transportation, perceived positive impacts on PR and accessibility in the site and facility layout design.

In conjunction with the finding above, Christensen et al. (2012) also rank the criteria identify according to most important as listed that start with occupant satisfaction, facility/building management team expertise, image/branding/PR, reduction in energy usage, monitoring of energy usage, indoor lighting and visual comfort of occupants, economic impacts, indoor thermal comfort for occupants, energy efficiency, risk reduction, maintenance consideration indoor air quality, accessible to public transport, recycling of waste production, community impacts consultation and assessment, environmental management on site, alternative transportation programmes, whole life cycle value of property, building adaptability, use of alternative or renewable primary energy, water efficiency, neighbourhood community impacts, reuse of previously developed site, reduction in water consumption, reduction in material consumption, building user education programmes, use of local materials, social cost or benefit analysis and reuse of materials.

The increase in sustainability indicators to measure performance revealed that all three pillars of sustainability is very important to maintain the sustainable in business corporation and also bring a successful to the corporation. It is because all of three pillars is related and supportive each other in order to ensure and being a push factor to the successful of the business. Parallel with Green Building Index (GBI) Malaysia, that buildings awarded the GBI ratings must fulfil six (6) criteria of GBI that covers energy efficiency; indoor environmental quality, sustainable site planning and management, material and resources, water efficiency, and innovation (Mona Isa et. al 2013). Even though the criteria did not expressly demonstrated the link to the three pillars of sustainability but indirectly can be seen. In short, sustainable performance measurements have discovered that from three pillars of sustainable parents' theory.

Economic Criteria

The main concern area is the environmental criteria or also known as ecological dimension that mostly illustrated as global warming prevention through the reduction of CO₂ emissions, waste minimization of pollutants, water conservation, and minimization of waste water generation, ecosystem conservation, reuse materials or recycling, environmental management promotion, reduction of office energy use and greenhouse gas emission generated, promotion of biodiversity and indoor comfort environment quality. Almost similar to finding from Yuce (2012) that identify 8 criteria to measure performance of environment that is sit selection (site location, site characteristics, infrastructure, neighboring buildings, heat island effect, landscape inputs, risk at the site), biodiversity (site ecology, eutrophication, habitat management plan, biodiversity), land use(green field / brown field, land regeneration & development), resource depletion (total energy consumption, use of non-renewable primary energy, use of renewable primary energy, use of further energy resources, energy efficiency of building equipment, embodied energy), water use (potable water, grey water / waste water, storm water runoff, planting, water efficiency of facility & appliances, embodied water, water pollution), materials & components,

(recycled, reused materials and components, modular and standardized materials and components, certified materials and components, service life, risks from materials, local / regional material), emissions (greenhouse gas - carbon dioxide, greenhouse gas – methane, greenhouse gas - nitrous oxide, greenhouse gas - fluorinated gases, acidification, ozone depletion, pollution), waste (hazardous waste, non-hazardous waste, organic waste, inorganic waste, construction waste and radioactive waste).

On the other hand, Mona (2013) found environmental sustainability from the perspectives of the productivity and well-being of occupants, that most related to social criteria. However, she also determines environmental sustainability with the advantages and benefits of green features to the environment, such as energy efficiency, recycling and reduction of greenhouse gases. In addition, a previous research by (Collins & Junghans, 2015), shows several indicators of performance measurement related to sustainable concern demonstrated environmental sustainable with improved efficiency of water consumption, less life cycle cost it determines the environment.

Social Criteria

The next concern of sustainability performance measurement is social criteria. that is more concerned on the impacts on the organization including labor practices, human rights and society (Ghazali, 2015). Agreed by (Lawrence, 2004) in her research that discovered the lack of office space with appropriate environmental and social credentials was considered as significant problems and may create risks for the company . She added, the environmental guide includes biodiversity, real estate guideline including acquisition and disposal process, design and construction and facility management. In addition, Yuce (2012) listed 6 elements namely indoor environment quality (CO₂, formaldehyde and nitrogen oxide concentration, indoor air pollutants concentration, ventilation conditions, electromagnetic emissions, mold growth risk, construction indoor air quality, indoor air quality in car parks, thermal comfort, air temperature and relative humidity, summer / winter conditions, thermal zoning); visual comfort (day lighting, illumination, lighting zones and control: lighting for suitable, tasks in lux, natural lighting & glare); acoustic comfort (noise from building and site, background noise level, reverberation time); architectural and cultural considerations (cultural heritage integration, aesthetic aspects, design and urban development, monument, branding and external expression); externalities (local employment opportunities / use of local services, community impact consultation, responsible and ethical procurement, available services, social cost benefit analysis, considerate constructors, neighbourhood) and occupants' satisfaction (access to view, privacy, feelings and sensations, recreation, human interactions / relationships, interior qualities).

Some of the research revealed that social sustainable perspectives include sustainable criteria related to occupant satisfaction flexible working environment, health and safety education, training and education of employees, employee retention, participation in local community programs, percentage comparison of male and female employees, percentage of staff who participate in basic environmental training, employee years of continuous service, total CSR spending and absentee rate (Lamprinidi & Ringland, 2006). Then, Mona Isa et. al (2013) disclosed that social elements include improved environment for office workers and building users while

de Francesco & Levy (2008) identified social as changing the behavior to become more aware of day-to-day sustainable activities.

Economic Criteria

The last criterion is economic sustainability. According to Glatté (2012), by looking at the pure economic view economics is defined as a target concept related to performance targets (procurement, inventory, production, sales), Financial targets (liquidity, investment, financing) and success targets (turnover, earnings, profitability).

However, sustainable performance measurement have been found less discussed on the economic area because it is actually directly related to the performance contribute from environmental criteria and social criteria. This is agreed by Christensen, Baldwin, & Ellis (2012) in the research with includes the indicator of increased productivity that directly results in the revenue of the corporation. When we look at the productivity factors and revenue factors, actually came out or produced by satisfaction and comfortability of the employees towards the company facilities, work space, work environment and many others factors that covers by environment and social criteria. According to Taylor (2013), sustainable design can support human performance and workplace flexibility and increase productivity.

It is similar to reduce cost factors that suggested by Mansfield (2009). He added, cost reduction towards building life can improve performance of the real estate as well as performance of the company. Previous research by Lamprinidi & Ringland (2006) also use reduced cost to measure the economic aspect of performance. Contradict with Yuce (2012) that only determine life cycle cost factor that includes of Initial costs, costs for operation, maintenance and repair, replacement costs, risk & value management, function analysis and payback time. In short can be summarize that even though economic view is the last criteria to be concern in sustainable performance measurement, but actually the concentration on environment and social criteria is act as a donator to achieve a target concept related to the overall performance measurement that represented by economic criteria. Agreed by Taylor (2013) that have found some studies indicate that a firm's environmental and social performances are significant determinants for improving the overall performance of the firm.

Additional Criteria

A research by Yuce (2012) added a two additional new criteria that need to be also taken into consideration once measuring a corporate real estate performance which is functional and technical criteria and process criteria. This two criteria have been released by the international organisation for standardization (ISO) where the ISO goal is to considers the indicators for the sustainability performance not only focus on the environmental impact and economic, social and culture improvement but also the technical performance that includes a technical process. Functional and technical criteria consist of 4 factors includes safety (safety assessment, safety management); security (site and building, combustion sources, resistance - storm, high water, hail, earthquake); service (public & public transport accessibility, barrier-free accessibility, bicycle comfort, pedestrian comfort, car parking capacity) and the last factors is usability (demand of space, area efficiency, capacity, occupancy, maintainability and operation comfort, longevity,

intelligence and controllability, adaptability and versatility, demolition / reuse or recycling and communications and mobility). While a process criteria includes of that focus on planning & implementation. The factors involved are integral planning, integrated design, optimization and complexity of the planning approach, quality of project's preparation, establishing preconditions for an optimized use and, operation, choice of construction process, quality of the executing contractors/prequalification, quality assurance of construction execution, controlled commissioning, innovations, innovative strategies & technologies, exemplary performance and building user guide, awareness & education.

Evidently, the both additional criteria found actually have been look and considered by other researcher but the factors were categorised under a difference category that commonly park under a related category of three pillars and theory of sustainable.

Analysis of Sustainable Performance Measurement

Table 1: Frequency Analysis of Sustainable Performance Measurement Criteria

Performance Measurement Criteria	Elements	Frequency %
Environment Sustainable Criteria		
Environmental management system		2%
Emission	Greenhouse Gas	9%
	Electromagnetic	2%
	Hazardous material	2%
Energy use	Energy Saving	12%
	Energy renewal	4%
	Sources	2%
Ecosystem/ Biodiversity	Site ecology	2%
	Eco friendly equipment	2%
	Eco production and service	4%
	Natural ecosystem protected /value	5%
	Management plan	2%
	Indoor comfort environment	4%

	Supplier assessment	2%
Waste	Waste reduction	5%
	Waste management	2%
	Hazardous	2%
	Organic	2%
	Radioactive	2%
	Conservation	2%
Transportation	Noise	2%
	Access	4%
Water	Reduce	14%
	Water quality	4%
	Waste water	7%
	Conservation	2%
Social Sustainable Criteria		
Employees concern	Development/ training and education	7%
	% participate in training	1%
	Human rights	4%
	retaining	4%
	Proportion of staff	4%
	Years of continuous service	4%

Performance Measurement Criteria	Elements	Freq u-ency %
	Changing behaviour to sustainable activities	1%
	Absent rate	1%
	Volunteering and philanthropy	4%
Occupant Satisfaction	Health and safety and security	5%
	Comfort	4%
	Feelings and sensation	4%
	Health education	1%
	Access to view	1%
	Privacy	1%
	Recreation	1%
	Human interaction	1%
	interior qualities	1%
Customer Satisfaction	Comfort	1%
	Safety	3%
Office space	Design and layout	3%
	Flexible working environment	1%
Indoor environmental quality	Air temperature	3%
	Humidity	1%
	Air quality	5%
	Car park area	1%
	Ventilation	1%
	Material use	1%
Facilities and amenities	Provision	4%

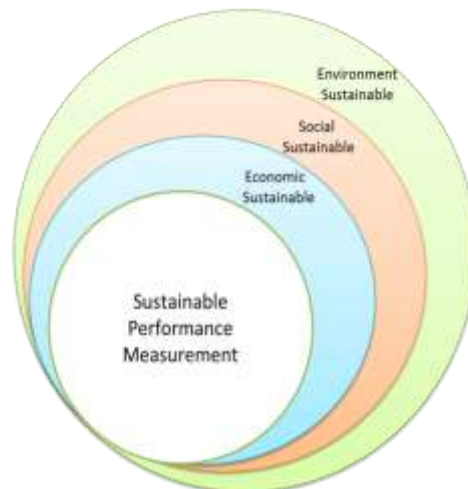
	Layout design	1%
	Time delays for maintenance	1%
Community	Engagement	1%
	Aesthetic	1%
	Impact consultation	1%
	Programmes	1%
	CSR spending	1%
Visual comfort	Day lighting	1%
	Illumination	1%
	Lighting zones and control	1%
	Natural lighting and glare	1%
Acoustic comfort	Noise from building	1%
	Noise from transport outside	4%
	Noise from internal occupant	1%
	Reverberation	1%
Architectural and culture consideration	Cultural heritage integration	1%
	Aesthetic aspects	1%
	Design and urban development	1%
	Monument	1%
	Branding and external expression	1%
Externalities	Green cleaning policy	1%
	Transportation access	1%
Economic Sustainable Criteria		
Value creation	Real estate asset	8%

	Post adoption value for existing building	3%
Acquisition	Real estate acquisition decision	3%
Internal control		3%
R&D		3%
Profitability	Earnings /revenue	15%
Performance Measurement Criteria	Elements	Freq u-ency %
Reduce cost	Operating cost	12%
	Renovation cost	3%
	Life cycle cost	3%
	Maintenance and repair	3%
	Replacement cost	3%
Productivity	Employees productivity	3%
	Increase occupants productivity	3%
	Life cycle economic performance	3%
Green implementation	Service	3%
	Product	3%
	Opportunities to sustainable issue	3%
Risk	Real Estate	3%
Financial	Implication	3%
Convertibility	Function	8%
	Space	3%
	Impact on infrastructure provide	3%
Turnover	Staff	3%

Pilot Model and Framework of CRE Sustainable Performance Measurement

From the analysis done, sustainable performance measurement can be seen as integrating three pillars of sustainable theory which includes economic, environment and social aspects. Hence, an onion model of sustainable performance measurement was developed to make a clear view of the integration between all the elements presenting sustainable relationship in determination of sustainable performance measurement.

Figure 1: Onion Model of Sustainable Performance Measurement



Source: Researcher (2016)

An onion model of sustainable performance measurement shows that the outer layer of onion represents environmental elements of sustainable criteria. The environment sustainable criteria being located at the outer layer due to its contribution as a main indicator to measure the sustainable performance measurement. Evidently revealed that, the environment criteria also identify act as a contributor to the successful implementation on social criteria that placed at second from outer layer.

Then, an economic sustainability has been placed at inner layer to present a result and affect by the relationship of environment and social criteria as per discussed in the literature. The economic sustainable criteria objective can be successfully achieved if the both environment and social sustainable criteria have been fully achieved.

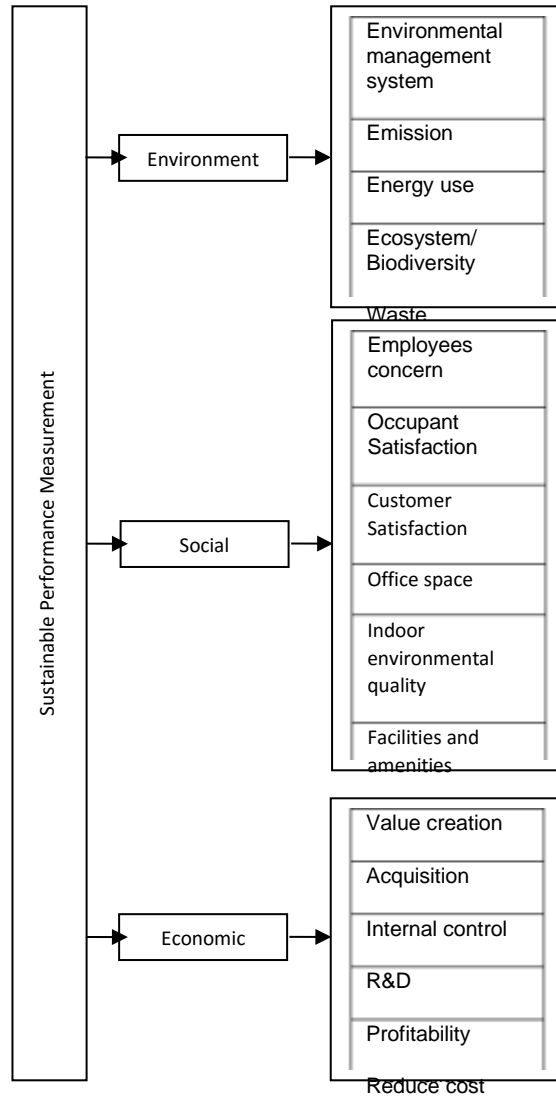
The integration of elements or factors involved to measure the performance is illustrated in Figure 2 on pilot indicator of sustainable performance measurement. The variable in the framework are distributed to three pillars of sustainability.

Conclusions

The research reveals 28 pilot indicators and 102 sub indicators or factors involved to measure a sustainable performance. All the indicators found is categorized into three important criteria of sustainable pillar of environment, social and economic. Nevertheless, there are some redundancies of variable or indicators identify. Therefore, in order to verify the best indicators

to be used, a next research will be support with the interview session result that will be done with sustainable property manager or related entity. Further best indicators selected will be discussed in the next research.

Figure 2: Pilot Indicator of Sustainable Performance Measurement



Source: Researcher (2016)

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References

- Christensen, P., Baldwin, E., & Ellis, C. (2012). *Key strategies of sustainable real estate decision-making in the United States: A Delphi study of the stakeholders*. ProQuest Dissertations and Theses. Clemson University.
- Collins, D., & Junghans, A. (2015). Sustainable Facilities Management and Green Leasing: The Company Strategic Approach. *Procedia Economics and Finance*, 21, 128–136.
- De Francesco, A. J., & Levy, D. (2008). The impact of sustainability on the investment environment. *Journal of European Real Estate Research*, 1(1), 72–87.
- Gibler, K. M., & Lindholm, A.-L. (2012). A test of corporate real estate strategies and operating decisions in support of core business strategies. *Journal of Property Research*, 29(1), 25–48. <http://doi.org/10.1080/09599916.2011.6>
- Glatte, T. (2012). *The Importance of Corporate Real Estate Management in Overall Corporate Strategies*.
- Krumm, P. J. M. M., & de Vries, J. (2003). Value creation through the management of corporate real estate. *Journal of Property Investment & Finance*, 21(1), 61–72.
- Lamprinidi, S., & Ringland, L. (2006). *A Snapshot of Sustainability Reporting in the Construction and Real Estate Sector*. GRI Research and Development Series Publication (Vol. Third Gene).
- Lawrence, S. S. (2004). Review of the UK corporate real estate market with regard to availability of environmentally and socially responsible office buildings. *Journal of Corporate Real Estate*, 6(2), 149–161.
- Lindholm, A., & Gibler, K. M. (2005). Measuring the Added Value of Corporate Real Estate Management – Beyond Cost Minimization 12, (Hinks 2004), 1–18.
- Mansfield, J. R. (2009). The valuation of sustainable freehold property: a CRE perspective. *Journal of Corporate Real Estate*, 11(2), 91–105.
- Masalskyte, R., Andelin, M., Sarasoja, A.-L., & Ventovuori, T. (2014). Modelling sustainability maturity in corporate real estate management. *Journal of Corporate Real Estate*, 16(2), 126–139.
- Ghazali, M. Z. Z. (2015). Corporate sustainability practices among Malaysian REITs and property listed companies. *World Journal of Science , Technology and Sustainable Development Article Information*, 12(2), 100–118.
- Musil, T. A. (2011). Evaluating economic impacts of corporate real estate activities. *Journal of Corporate Real Estate*, 13(3), 181–196.
- Nourse, H. O., & Roulac, S. E. (1993). Linking Real Estate Decisions to Corporate Strategy. *Journal of Real Estate Research*, 8(4), 475.
- Searcy, C. (2012). Corporate Sustainability Performance Measurement Systems: A Review and

Research Agenda. *Journal of Business Ethics*, 107(3), 239–253.

Yuce, M. (2012). Sustainability Evaluation of Green Building Certification Systems.

Ali, Z., McGreal, S., Adair, A., Webb, J. R., & Roulac, S. E. (2008). Corporate Real Estate Strategies and Financial Performance of Companies. *Journal of Property Research*, 25(3), 241–267.