The Impact of Energy Efficiency Conservation and Building Environmental Management Indicators on Shopping Buildings

by David Kbmt Samosir

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The Impact of Energy Efficiency Conservation and Building Environmental Management Indicators on Shopping Buildings

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Abstract

Purpose: This study aims to examine the implementation of two measurement indicator green buildings are Energy Efficiency Conservation and Building Environmental Management and evaluated its effect on the operational costs of property management on shopping buildings.

Design/Research method: This study is qualitative research used primary data obtained from questionnaires sent to the property managers. The data were then processed by using the content analysis and were validated by interviews with informants.

Finding: The results of this study indicate that the managers of malls in Indonesia prefer to get profit even though it costs more for convenience and the number of visitor or the occupancy rates of the buildings.

Limitation: The mall manager's understanding of green building principles. There are still mall managers who do not have a Greenship Professional certification

Contribution: This study contributes to practical implications for property management to change the view of although green buildings can provide cost savings, building managers and building owners still think that the initial investment in green buildings is expensive.

Keywords: Green building, cost efficiency, sustainability

1. Introduction

Population growth such as geometric progression and natural resources growing like an arithmetic progression could even decrease, this comparison makes it our collective responsibility to think about reserves for energy, clean water, and other natural resources for future generations, including our children and grandchildren.

Weather changes have an impact on high rainfall in early 2020 which causes flooding in various regions in Indonesia. Losses to the economic value due to flooding in 2020 are greater than in 2007, which reached more than IDR 10 trillion (Ginting, 2020). So that the space for shelter during a flood needs to be prepared so that people can maintain their health.

The need for electrical energy in Indonesia increases every year, so efforts are needed not only to meet the national electrical energy needs but also to make savings to achieve national energy security, the average increase in electrical energy is 6.9% per year or about 8.5 GW per year (ESDM, 2007). 2019). One of the National Medium-Term Development Plans (RPJMN) for 2020-2024 is to build the environment, increase disaster resilience, and climate change to overcome environmental decline and natural resource depletion that have the potential to hamper Indonesia's economic growth, which still relies on the commodity and resource sector. natural force.

The attention of international organizations to the environment is very large, this is realized through several activities and agreements, including the following:

1) United Nations Framework Convention on Climate Change (UNFCCC) is a United Nations Cooperation Agreement on climate change gathered in Rio de Janeiro, Brazil, in 1992 to discuss the effects of Greenhouse Gases (GHG).
2) Kyoto Protocol was held on December 12, 1997, in Kyoto, Japan. The results of the meeting set out a set of regulations as an approach to reducing greenhouse gas (GHG) emissions.
3) The General Assembly of the United Nations (United Nations) was held on September 25-27 2015. At the meeting, the SDGs or Sustainable Development Goals ideas were agreed on for the years 2015-2030.
4) One of the priorities in the SDGs 2030 agenda is to pay attention to environmentally friendly settlements, as written in goal number 11 in SDGs 2030, which is to make cities and places of residence that are safe, resilient, and sustainable, including the people in them (UN News Centre, 2015)
5) The Paris Agreement has been ratified by 194 countries in the world until March 2017, including the State of Indonesia which has signed on April 22, 2016, namely the agreement within the UNFCCC framework that underlies the reduction of carbon dioxide emissions, effective since 2020.

Not only does the international world pays attention to environmental sustainability but the Indonesian government is also very concerned about the environment. This is shown through regulations that have been issued either through the Central Government, Ministerial Regulations and Regional Regulations, which are as follows:

1) Based on Article 32 paragraph 2, Law of the Republic of Indonesia Number 1 of 2011 concerning Housing and Settlement Areas it is stated that housing development is carried out by developing environmentally friendly technology and design and developing a building material industry that prioritizes the use of domestic resources and wisdom. safe for health (Law No.1, 2011).
2) Through the Minister of Environment Regulation Number 8 of 2010, the Government assists and facilitates stakeholder initiatives in implementing mitigation and adaptation efforts to climate change through the management of environmentally friendly buildings and regulates Criteria and Certification of Environmentally Friendly Buildings (Ministry of the Environment of the Republic of Indonesia, 2010)
3) The Ministry of Public Works and Public Housing of the Republic of Indonesia also issued a Ministerial Regulation Number 02/PRT/M/2015 concerning Green Buildings. (Minister of Public Works and Public Housing of the Republic of Indonesia, 2015)
4) Financial Institutions, namely the Financial Services Authority, are also very concerned about green buildings through the Financial Services Authority Regulation (POJK Number 51/POJK.03/2017) regarding the implementation of sustainable finance for Financial Services Institutions, issuers and public companies. Regarding the social benefits of green buildings or green buildings related to improving the quality of life, health, and comfort (OJK, 2017)

5) The Ministry of National Development Planning/Bappenas, through the 2020-2024 National Mid-Term Development Plan, one of the contents of which is to pay attention to sustainable development which is a paradigm of future development that is expected by the nations of the world to realize sustainable community welfare (Ministry of National Development Planning/National Planning Agency National Development, 2019)
6) The attention of the Regional Government and the City Government to green buildings is very large through the Governor Regulation (Pergub) of the Special Capital Region of Jakarta Number 38 of 2012 concerning Green Buildings and the Mayor's Regulation (Perwal) Bandung Number 1023 of 2016 concerning Green Buildings.

Even though there are laws, government regulations, and regional and city government regulations that regulate green buildings, the progress of implementing green buildings is still slow. So that this research is very important to do to assist government programs in increasing the progress of implementing green buildings in Indonesia, so that the progress of implementing green buildings or green buildings will increase and there will be more Regions and Cities in Indonesia that issue Governor Regulations and Mayor Regulations regarding Green Buildings

It is possible for us to meet the needs of energy and other natural resources for future generations because they are limited (Halder et l., 2015). At the same time, the increase in population results in the increasing demand for electrical energy in Indonesia. The average increase in electrical energy is 6.9% per year or about 8.5 GW per year. So, Indonesia needs to make efforts to meet national electricity needs and to achieve national energy security (ESDM, 2019).

Buildings are quite a large energy users apart from transportation and. this is a problem we need to overcome (Hassan et al., 2014). Moreover, the problem is not only the fullfillment of energy needs but other natural resources such as clean water. Green Buildings have energy efficiency principles. The implementation of green buildings not only provides ecological benefits but also economic values because it can reduce building operational and maintenance costs. Green buildings contribute to both economic and non-economic aspects by increasing the corporate and brand images which result in increasing company sales, performance and property values so that the government also gains benefits from the tax payment (Raji et al., 2017).

Business Performance that can be measured from the implementation of green building is energy efficiency. Besides, the implementation of green building has an impact not only on the company's economic value but also on environmental sustainability, i.e. reducing CO_2 emissions (Ghaffarianhoseini et al., 2013).

Green Building does not only focus on cost efficiency for building operations but also climate changes (Larsen et al., 2011). During the rainy seasons, the air temperature becomes lower. Increasing the possibilities for bacteria and viruses to grow and breed. Therefore, it is necessary to keep the room clean and healthy by maximizing air circulation and natural lighting in houses, shops and offices, so that productivity and immune system can be maintained optimally (Ajayi et al., 2016).

Global warming increasingly affects both daily life and economic activities. The lifestyle and business activity do not notice the surrounding environment so far, even they tend to damage the environment. Global warming increases in the average daily temperature which is very impactful on land. Based on the Paris Agreement, the temperature increase is limited to below 2^0 C or maximum 1.5^0 C (UNEP, 2019)

According to the data from Green Building Council Indonesia, the impact of greenhouse gases is caused by buildings(48%), transportation (27%) and industry(25%) (UNEP, 2007). Human activities in urban areas are quite high causing a serious impact on the environment and the greenhouse. Therefore, the need for green buildings in urban areas is prioritized. Green buildings can reduce the greenhouse effect by 2.7% (Environmental Protection Agency, 2019).
This research is essential because:

1) There is still a small number of buildings implementing green building standards in Indonesia. When this research was conducted, approximately 26 buildings were certified as standardized Green Buildings by the Green Building Council Indonesia (GBCI). At the same time, there were approximately 2.000 green buildings in Singapore. The number of green building in Singapore

is much more than the number in Indonesia, comparation the number green building in Indonesia and Singapore is 2%, very minimal.

2) Indonesia is a country is the 6th polluted country in the world, which is measured by the level of population or clean air quality. In Singapore dust or steam remain in the atmosphere for a long time at least 2.5 PM; while in Indonesia, it is 51.7 PM (IQAir, 2019).
3) Many people still think that green buildings are more expensive than conventional building. this is, due to lack of knowledge in ideal designs, lack of experience, and lack of knowledge in materials (Collins et al., 2018).
4) Many companies and property developers do not apply the green building concept due to short-term business considerations, high investment value, the rate of return (payback period), and t lack of support and incentives from the Government (Wimala et al., 2017)

The category of green buildings is not only when the building is completely built and certified as green buildings, but the standards should be aintained sustainably.

Green buildings are built in the stages of planning, constructing, operating and maintaining (C. Otegbulu, 2011). Green Buildings also pay attention to some aspects that should be environmentally friendly and healthy. They should maintain the quality of indoor air and their occupants healthy (Shahrin et al., 2017)

The performance of malls is measured by the number of visitors and the building occupancy which affects sales benefits. In other words, they pay more attention to profits than to the efficiency of energy and other natural resources. Thus, the problems analyzed in this study include:

1) Does malls implement the indicator of Energy Efficiency Conservation?
2) Does malls implement the indicator of Building Environmental Awareness?

The purpose of this study is to:

1) Implement the indicator of Energy Efficiency Conservation in malls

Performance of mall managers is generally measured through occupancy rate a building comfort level is needed which is influenced by cleanliness and air conditioning.

2) Implement the indicator of Building Environmental Management in malls.

The occupancy rate of malls has an impact on the level of acceptance of building managers. The higher the occupancy rate of the building the greater the use of electrical energy, clean water, maintenance and cleaning costs of malls.

This research is expected to contribute to the government in the implementation of green buildings in Indonesia, to increasing the government's achievement, and informing the Mayor's Regulations (Perwal) and Governor Regulations (Pergub) about Green Buildings. The results of the study will also be implemented by other Regional and City Governments in Indonesia. Currently, there is only one Mayor Regulation of Bandung Number 1023 of 2016 and one Governor Regulation of Jakarta province Number 38 of 2012.

Besides, this research is expected to provide benefits for property managers with understanding about green buildings provide an efficiency impact in the long term even though the initial investment is quite expensive.

This research is useful for the government to prepare electrical energy needs and meet the needs for clean water and other resources efficiently by implementing the indicator of Energy Efficiency Conservation and Building Environmental Awareness.

2. Literature review and hypothesis development

1. Triple Buttom Line

Green buildings are sustainable buildings. The implementation of green buildings support business activities that will not only prioritize company profits but also care for the sustainability of the surrounding environments and the surrounding community.

The Triple Bottom Line concept is a pillar that measures the success value of a company by three criteria: people, planet/environment and profit. In traditional financial reporting, companies usually only report the profits. However, the company does not pay attention to the costs of environmental damage (Elkington, 1998).

The Tripple Bottom Line report can be considered a good step if it contains a reliable and audited social and environmental report showing the responsibility of sustainability on social, environmental and financial issues (Milne & Patten, 2002).

In this study, people are defined as visitors, tenants and the managers of malls who understand green building standards. The planet is defined as the environment around green buildings and places where green buildings are built and should be preserved to remain natural and environmentally friendly. This can be done by green buildings in locations based on the needs and permission from the government in preparing areas for plants, green open spaces, and parking areas for bikes. Meanwhile, profits earned by the company are the results of reliable management. Furthermore, the profits earned by the company should not harm the environment and the surrounding community, so that green buildings, building occupants, building managers and the environment are interrelated, mutually beneficial and can develop sustainably.

The 33rd President of the United States, Harry S Truman, was very concerned about environmental sustainability and required American citizens to make reductions in gas emissions and greenhouse gas effect as soon as possible with the goal of preserving American lives and continually increasing the economic and industrial growth (Nordhaus, 2007).

Environmental Awareness can simply be defined as an attitude of proactively caring and acting as well as siding with environmental sustainability. Environmental Awareness is a part of sustainable development, particularly conserving the environment through product development since the planning stage to the production stage. In this study, Environmental Awareness is applied from the building planning stage, the development stage until the building operates. Environmental Awareness is not only for the sustainability of property management but also for climate change mitigation and it is even a consideration of the community and of companies to have competitiveness (Chang & Chen, 2012).

The level of understanding of Environmental Awareness is closely related to the implementation sustainable development in property management, which provides benefits to stakeholders and improves the company's performance (Sim & Putuhena, 2015). Knowledge of the environment is assumed to have a significant influence on Environmental Awareness, human lifestyle, and consumer behaviour, meaning educational institutions need to contribute to the understanding and knowledge of the environment so that the community's concern and level of understanding of the environment can be improved (Zsoka et al ., 2013).

Environmentally-friendly business strategies have become increasingly popular with companies over the past few decades (Wilkinson et al., 2012). This is because Environmental Awareness is influenced by socio-psychological factors, the level of awareness and behaviour, which all change for the better (Mei et al., 2016).

The importance of educating people about the environment has become progressively more popular, to the point where it is not just educational institutions being at the centre of attention but now, workspaces and office buildings have come under the scrutiny of employees as well. A building or a healthy workplace, in addition to being a source of pride for employees, is also something that employees and stakeholders long for. Some research suggests that employees will be more satisfied with a good workplace design and are more likely to perform better (Aminrad et al ., 2013).

As more and more companies adopt an environmentally conscious mindset, the more it will be evident that caring for the environment impacts the quality of the environment. People who are at a higher economic level generally care more about the environment than people at a middle or lower economic level (Chen et al ., 2019).

Environmentally caring attitudes are increasing, and more and more companies are labelling their products or services as environmentally friendly. Based on research from Deloitte, in 2009 the Grocery Manufacturers Association observed a considerable increase in demand for environmentally friendly products or green products. The responsibility of the public for products and services that are environmentally friendly or green product and service becomes increasingly important to retailers such that their availability keeps growing (Tully & Winer, 2014).

2. Green Building

Indonesia has only recently tried to implement green buildings. Although numerous regulations have been issued those are as follow the Law of the Republic of Indonesia No. 1 of 2011

concerning Housing and Residential Areas is said that housing development is carried out by developing environmentally friendly technology and design and developing the building materials industry that prioritizes the use of domestic resources and local wisdom that is safe for health (UU No.1, 2011), the management of environmentally friendly buildings and regulating the Criteria and Certification of Environmentally Friendly Buildings (Republik Indonesia, 2010) and Governor Regulation (Pergub) of the Special Regional Province of the Capital City of Jakarta No. 38 of 2012 but the implementation progress has been limited, and legal sanctions have not been implemented. Hence, persuasive approaches to educate the public about green buildings' efficient resource use are crucial.

Indonesia has not widely implemented green buildings although such buildings offer many benefits to their occupants and property management firms. In this respect, this study seeks to test the effect of green buildings on business performance. In this respect, green buildings arguably improve the efficiency of electricity and clean water usage. Green buildings do not only have to meet certain efficiency criteria in water and electricity criteria. They also need to have qualified sewage management, use environmentally friendly local building materials, and have green building certificates that enable authorities to monitor the progress or achievement.

Thus, green buildings do reduce not only energy consumption but also waste pollutants. Green buildings' inhabitants will then enjoy a better quality of life due to lower indoor pollution.

Green building is a sustainable building with due observance to the principles of resources, including the efficient use of electricity, clean water, and materials as well as paying attention to the environment. Green building is an environmentally-friendly building with more efficient cost than conventional buildings due to better planning, construction or management and can reduce negative impacts on the climate and environment (MacNaughton et al., 2016). Besides, in providing profits for the company, green buildings pay attention to natural resources (planet) and also building occupants (people) (Fan et al., 2018).

There are several criteria of a green building:

1) Saving the use of energy, water and other resources
2) Using renewable energy such as solar energy.
3) Reducing waste and pollution as well as recycling.
4) having a room with good air circulation and environmental quality.
5) Using non-toxic and sustainable building materials.
6) Using an environmentally-friendly design, construction and management.
7) Using design, construction and management by considering the health of occupants.
8) Having an adaptable design to changing environments.

(World Green Building Council, 2015)

Green Building is measured by six indicators: Appropriate Site Development, Energy Efficiency and Conservation, Water Conservation, Material Resources and Cycle, Indoor Health and Comfort, Building Environment and Management (Green Building Council Indonesia (GBCI), 2011).In this study only two indicator of measurement green building were used are as follows:

1. Energy Efficiency and Conservation (EEC)

A building uses energy as a resource for different needs, especially from the beginning of the construction stage to the operational and maintenance stages. The highest energy consumption is allocated to air conditioning, vertical transportation (elevators or escalators), and lighting. Operating the system by using inefficient technology and methods will not only have an impact on wasting costs due to electricity use but also have a serious impact on climate change and global warming due to a large amount of CO_2 emissions in power plants that lead to the greenhouse effect (Green Building Council Indonesia (GBCI), 2011).

The criteria used in measuring Energy Efficiency and Conservation (EEC) include:

1. Electrical sub-metering
2. Calculation of overall thermal transfer value (OTTV)
3. Energy efficiency measure
4. Natural lighting
5. Ventilation
6. Climate change impact
7. On-site renewable energy

(Green Building Council Indonesia (GBCI), 2011)

2. Building Environment and Management (BEM)

Planning for an environmentally friendly building operation must be considered from the designing stage. Furthermore, resource management by a sustainability concept operational plan, clarity of information (data) and early resolution of issues, including human resource management in the implementation of the Green Building concept, would facilitate the implementation of the core goals of other categories. Synergistic coordination between the building experts involved in technical planning, construction, as well as supervision is crucial to realize Green Building (Green Building Council Indonesia (GBCI), 2011)

The criteria used in the measurement of Building Environmental Management (BEM) include:

1. Basic waste management
2. Greenship Professional (GP) as a member of the project team
3. Advanced waste management
4. Pollution of construction activity
5. Proper commissioning
6. Submission of Green Building data
7. Fit-out agreement
8. Occupant surveys

(Green Building Council Indonesia (GBCI), 2011)

3. Organisational Behaviour

Although regulations from the central government and regional governments regarding environmental concerns already exist, there has been no sanctions nor legal enforcement. So, the theory underlying this research is Organisational behaviour, in which leadership style, motivation, and communication style affect the company's performance (Robbins & Judge, 2013).

Environmental Awareness implementation goes well in an organization if it starts from top management (top-down) and not from the bottom up (bottom-up). Therefore, the commitment of top management and company owners is highly influential for the smooth implementation of Environmental Awareness.

3. Research methodology

The population in this study comprises property management companies. The criteria of building in this study are malls.

The samples were selected by using a purposive sampling method which is a sampling method based on specific criteria (Sekaran & Bougie, 2016). The criteria are the people who understand about property management and the people who are trusted by company management such as Property Managers and Supervisors.

The Property Manager is responsible for building management benefits, building occupancy rate, building operational sustainability, visitor comfort and visitor safety.

In addition, respondents should have at least a bachelor's degree and at least 5 years of working experience.

These criteria are set with the aim that the respondents understand the questions in the questionnaire so that they answer the questions consistently and reliably.

This study used primary data obtained through questionnaires and interviews with informants. The questionnaire collection target was 100 respondents. The number of malls in Jabodetabek was 564 buildings. Furthermore, the number of respondents was determined by the Slovin method, i.e.:

$$n = \frac{N}{1 + Ne^2}$$

n = sample size

N= population size

e = error margin, i.e. 10%

Therefore, the minimum sample in this study is:

$$n = \frac{564}{1 + (564 \times 0.1^2)}$$

= 85 respondents

With 111 respondents. It means that we could continue the study.

Questionnaires were collected by using google form. The analytical method used in this study was content analysis that is analyzing the interview results by scoring (Sekaran & Bougie, 2015).

4. Results and discussions

This study used primary data obtained by distributing questionnaires t to respondents from February 2019 to December 2019. The target was 100 respondents, but we obtained 111 respondents' data.

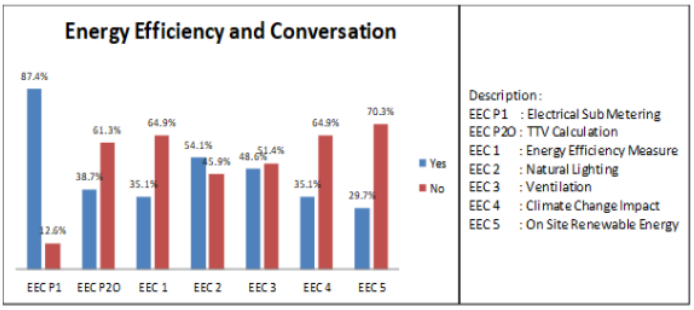
The survey was conducted on building property managements in Indonesia and the buildings as the unit of analysis. In addition to using a questionnaire, we also conducted interviews with several informants to confirm and validate the results.

In this study, we used a purposive sampling method, i.e. the sampling method based on certain criteria (Tongco, 2007). The criteria of respondents in this study were having a 5-years of working experience and holding at least a bachelor degree. The buildings which were analyzed were not only those certified as green buildings but also those that did not have certification so that the samples in this study did not seem homogenous. To achieve respondents, we sent questionnaires via email, WhatsApp, and in person.

Based on the data obtained, the following results were obtained:

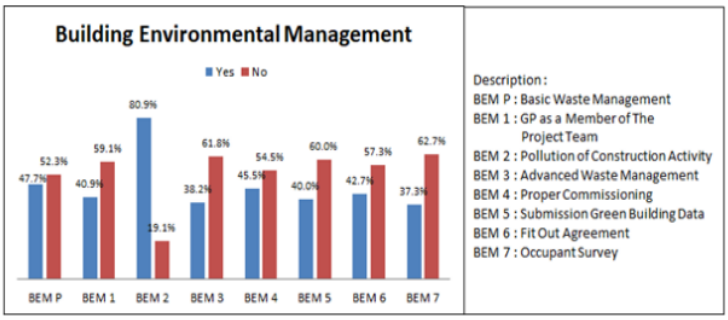
1. Most respondents disagree about the implementation of Energy Efficiency and Conservation. This can be seen in table 3 that only 2 of 7 Energy Efficiency and Conservation Indicators (28%) have a value of above 50% including Electrical Sub Metering (87.4%) and Natural Lighting (54.1%).

Table 1
Respondents' Answers Regarding Energy Efficiency and Conservation



2. Most respondents disagree about the implementation of Building Environmental Management. This can be seen in table 7 that only 1 of 7 Building Environmental Management Indicators (14%) have a value of above 50%, i.e. the Pollution of Construction Activity (80.9%).

Table 2
Respondents' Answers Regarding Building Environmental Material



Property management of shopping buildings prioritizes the level of visits and occupancy rates so that the company's margins can be achieved according to the target. Efforts are being made to maintain the comfort level of the building through the cleanliness and quality of air conditioning, This has an impact on the use of electrical energy which is quite large.

It is necessary to use energy and resources efficiently, including using energy-efficient air conditioning systems and using recycled water to clean the parking area (Wan et al., 2017). However, this is in contrast with this study indicated by the value of the Energy Efficiency and Conservation Dimension which is 47%. Property managers prioritize visitors' comfort with such as a cold building by air conditioning (AC) and Mall managers consider the comfort of visitors by maintaining room cool and keeping the building clean so that it has an impact on the higher use of electricity and clean water. On the other hand, energy efficiency efforts by replacing AC in buildings or retrofitting require large costs, so they are not attractive to property managers unless there are incentives from the Government (Azeem et al., 2017).

Likewise, renovating a mall to be a green building (reftrofit) is not easy because it requires high costs to replace energy-efficient electronic equipment including air conditioning and LED lamp. Besides, it may need a long processing time because the new equipment does not necessarily match the previous plan. The solution to this problem needs support from the local government (Bond, 2011).

Then, it is better for visitors and traders if the building is well managed and environmentaly-friendly, leading to increasing merchant acceptance (Wadu & Kwong, 2018). However, this is not in line with this study because the value of the Building Environment Management Dimension is 46.7%. This may be caused by the Property Manager responsible for the sustainability of the company's business or profits, so it is necessary to do a cost-benefit analysis of green building investment (Wimala et al., 2017)

5. Conclusion

The findings in this study indicate that property managers of malls in Indonesia prefer to get the profit or profit oriented than spend an expensive investment in the first year to get cost efficiency for a long period in the future.

From a theoretical perspective, this research supports the theory of organizational behavior, namely that companies can run more effectively and influence performance improvement by applying science or something new that is useful.

The findings of this research prove that businesses not only pay attention to the business performance (profit) but must pay attention to environmental aspects (planet) and the community around the company (people) property management is time to run sustainably to be more developed.

The findings offer several practical implications. First, property management firms need to develop green building management and green old building renovation (retrofit) standards. Second, property management firms need to require property managers, building managers, facility managers,

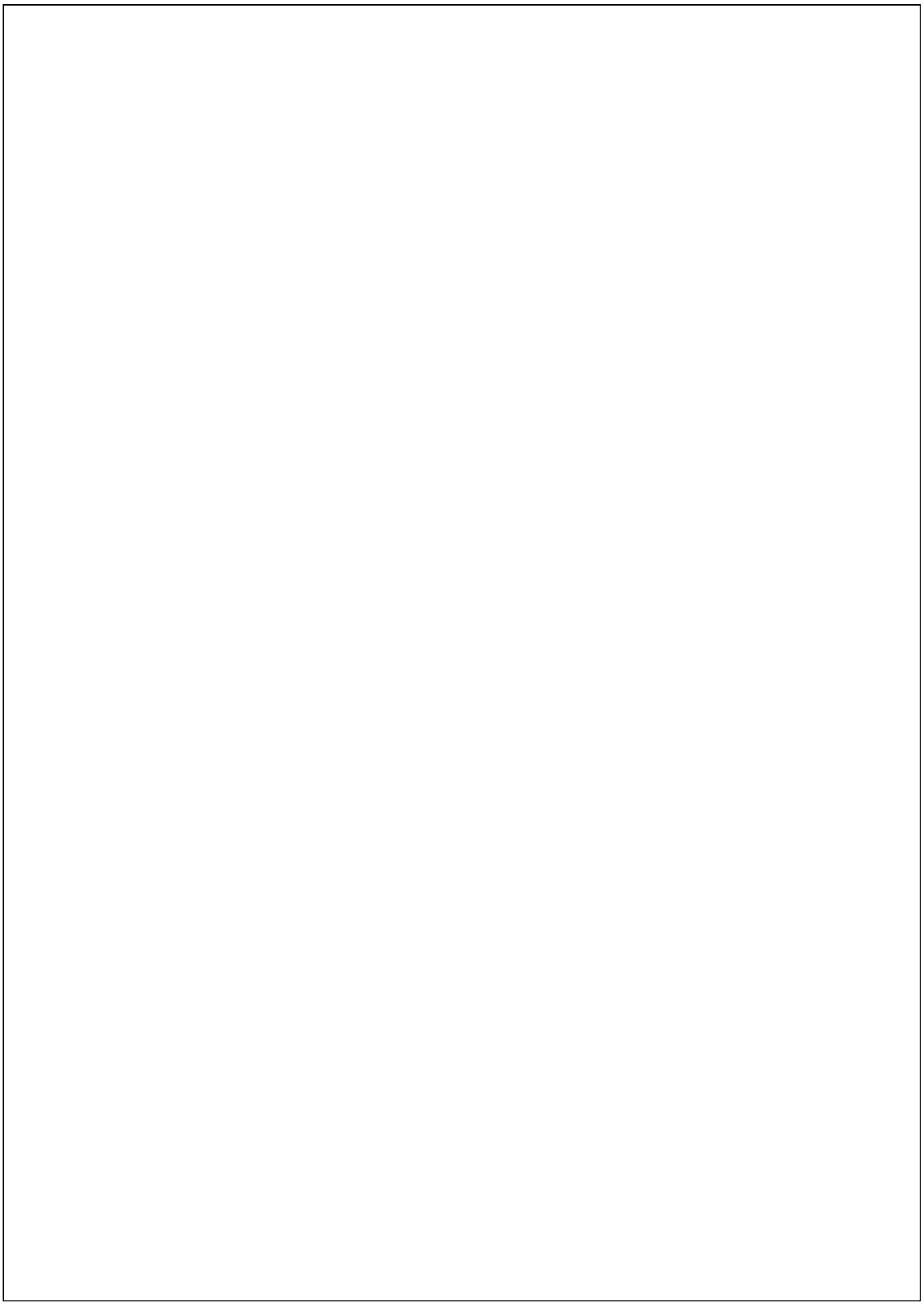
and other officials related to building maintenance activities to have greenship professional (GP) certification. Third, property management firms need to cooperate with green building consultants to organize green building training at affordable prices. Lastly, property management firms need to assess the maintenance activities of old buildings with green building standards.

Besides, our results also offer the following suggestions to regulators, such as the Green Building Council Indonesia (GBCI), the Indonesian Accountant Association (IAI), and the government. First, the continuous improvement and design process indicator need to be included in the green building certification process because of climate and technological changes and more intense business competition. Second, the government needs to support green building implementation by various incentives, including lower property taxes for buildings with green building certification, providing home mortgage loans with zero down payment for homeownership or renovation with green building certificate (in cooperation with financial institutions). Third, the government needs to reduce the costs of applying for the certificate of worthiness (SLF) permits for buildings with green building certificate. Lastly, the central government needs to require all regional governments to have green building regulations.

Limitation and study forward

The limitation in this study is the mall manager's understanding of green building principles. There are still mall managers who do not have a Greenship Professional certification . This study is subject to the following caveats. First, we have only a limited sample number relative to the population (all Indonesian property management firms). Second, our research topic is still relatively novel. Hence, we often need to explain the knowledge and information related to the topic to enable the respondents to understand the questions better. Third, not all respondents have sufficient knowledge of green building, and only a few of them have greenship professional certification.

The recommendation for future study is that the respondents are mall managers who have a Greenship Professional Certificate. Besides, it is also reccommended to use primary and secondary data (mix method). Consequently, we advise future studies to address these issues in their research design. Further studies could also include additional variables, such as healthy habits, green culture, and carbon and climate change-related variables in the analysis. Lastly, studies that utilize secondary data from various countries will arguably contribute to the literature.



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GENERAL COMMENTS

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PAGE 1

PAGE 2

PAGE 3

PAGE 4

PAGE 5

PAGE 6

PAGE 7

PAGE 8

PAGE 9

PAGE 10

PAGE 11