



Faculty of Technology Management and Technopreneurship

**A FRAMEWORK OF GREEN INSURANCE TO SAFEGUARD
GREEN CERTIFIED COMMERCIAL BUILDINGS IN MALAYSIA**

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Master of Science in Technology Management

2018

**A FRAMEWORK OF GREEN INSURANCE TO SAFEGUARD GREEN
CERTIFIED COMMERCIAL BUILDINGS IN MALAYSIA**

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**A thesis submitted
in fulfillment of the requirements for the degree of Master of Science
in Technology Management**

Faculty of Technology Management and Technopreneurship

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

2018

DECLARATION

I declare that this thesis entitled “A Framework of Green Insurance to Safeguard Green Certified Commercial Buildings in Malaysia” is the result of my own research except as cited in the reference. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any other degree.

Signature :

Name :

Date :

APPROVAL

I hereby declare that I have read this thesis and in my opinion this thesis is sufficient in terms of scope and quality for the award of Master of Science in Technology Management.

Signature :

Supervisor Name :

Date :

DEDICATION

To

My parents,

My colleagues,

Who without their support

The completion of this research would not have been possible

ABSTRACT

In 2009, Malaysia adopted Green Building Index (GBI) to provide green certification to buildings that fulfil the sustainable requirements. This research is focused on newly built Green Certified Commercial Buildings (GCCB) because the value of the property will appreciate, and it is easier to maintain the certification than residential property because unlike residential property, an individual owned property, GCCB is a shared property handled by a building management team. In addition, the reputation of having a green certification to embrace its market value is essential for a GCCB for business opportunity purpose. Although the number of GCCB is increasing, yet their insurance coverage remains as conventional property insurance, which does not provide the real coverage on the status of the GCCB. Therefore, this study aims to identify the factors that could potentially drive Green Insurance into Malaysia; the strategies to promote Green Insurance effectively in Malaysia and to propose a framework for implementation of Green Insurance. Qualitative research method was used in this research and the research design is exploratory, since the novelty of the research and Malaysia still does not have green insurance for the GCCB. Moreover, the qualitative data is collected from the interview sessions with green building management team and top management from insurance companies. This research provides the insights of the possible factors, suggested strategies to promote Green Insurance effectively and proposed a new framework for implementation of Green Insurance for GCCB in Malaysia. Based on the findings, the factors and strategies have been arranged according to their significant level. The top three most significant factors to drive implementation of Green Insurance are insufficient coverage of standard commercial property insurance, increase value of GCCB and reduce climate change that can reduce catastrophe lost. In addition, based on the findings, it can be concluded that the top three significant strategies to promote Green Insurance effectively are organize community and stakeholder discussions, train the participants in workshops and forming strategic alliances between government, civil society and commercial organizations. Thus, a new framework is proposed based on the significant level of the factors and strategies for implementation of Green Insurance to GCCB. This research has identified that insurance companies and GCCB have the relationship and efforts must be done on both side to raise the awareness of Green Insurance to make it become possible. This research is important because it is time for insurance companies start to consider these GCCB to provide sufficient coverage for them as a new business opportunity. In addition, GCCB also can seek this as an opportunity to have complete risk transfer to insurance companies to safeguard their property value. Currently the insurance companies still not yet ready to provide Green Insurance for GCCB because GCCB still relative new in the market. Therefore, the lack of claim history causes insurance companies still required some time to observe this potential market.

ABSTRAK

Pada tahun 2009, Malaysia mengguna Indeks Bangunan Hijau (GBI) untuk menyediakan pensijilan hijau kepada bangunan yang memenuhi keperluan lestari. Kajian ini memberi tumpuan kepada Bangunan Komersial Bersijil Hijau (GCCB) yang baru dibina kerana nilai harta itu akan menghargai dan lebih mudah untuk mengekalkan pensijilan berbanding dengan harta kediaman. Ini kerana tidak seperti harta kediaman, harta milik individu, GCCB adalah harta bersama yang dikendalikan oleh sebuah pasukan pengurusan bangunan. Selain itu, reputasi yang mempunyai pensijilan hijau untuk memeluk nilai pasarannya adalah penting untuk GCCB untuk tujuan peluang perniagaan. Walaupun jumlah GCCB semakin meningkat, namun liputan insurans mereka tetap sebagai insurans harta konvensional, yang tidak memberikan perlindungan sebenar mengenai status GCCB. Oleh itu, kajian ini bertujuan untuk mengenalpasti faktor-faktor yang berpotensi mendorong Insurans Hijau ke dalam Malaysia; strategi untuk menggalakkan Insurans Hijau secara berkesan dalam Malaysia dan untuk mencadangkan rangka kerja untuk pelaksanaan Insurans Hijau. Kaedah penyelidikan kualitatif telah digunakan dalam penyelidikan ini dan reka bentuk penyelidikan adalah penerokaan, Malaysia masih tidak mempunyai insurans hijau untuk GCCB. Selain itu, data kualitatif dikumpulkan dari sesi wawancara dengan pasukan pengurusan bangunan hijau dan pengurusan atasan dari syarikat insurans. Penyelidikan ini memberikan pandangan faktor-faktor dan strategi untuk menggalakkan Insurans Hijau dengan berkesan dan mencadangkan rangka kerja baru untuk pelaksanaan Insurans Hijau di Malaysia. Berdasarkan penemuan, faktor dan strategi telah diatur mengikut tahap kepentingan mereka. Tiga faktor utama yang paling penting untuk memacu pelaksanaan Insurans Hijau ialah liputan yang tidak mencukupi bagi insurans harta piawai komersial, peningkatan nilai GCCB dan mengurangkan perubahan iklim yang dapat mengurangkan bencana alam. Di samping itu, berdasarkan penemuan ini, dapat disimpulkan bahawa tiga strategi utama yang dapat mempromosikan Insurans Hijau secara efektif adalah menganjurkan perbincangan antara masyarakat dan pihak berkepentingan, melatih peserta dalam bengkel dan membentuk pakatan strategik antara kerajaan, masyarakat sivil dan organisasi komersil. Oleh itu, satu rangka kerja baru dicadangkan berdasarkan tahap kepentingan faktor dan strategi untuk pelaksanaan Insurans Hijau kepada GCCB. Penyelidikan ini telah mengenal pasti bahawa syarikat insurans dan GCCB mempunyai hubungan dan usaha harus dilakukan di kedua belah pihak untuk meningkatkan kesedaran tentang Insurans Hijau untuk menjadikannya mungkin. Penyelidikan ini penting kerana sudah tiba masanya bagi syarikat insurans mula mempertimbangkan GCCB untuk menyediakan liputan yang cukup untuk mereka sebagai peluang perniagaan baru. Selain itu, GCCB juga boleh mendapatkan ini sebagai peluang untuk mempunyai pemindahan risiko lengkap kepada syarikat insurans untuk melindungi nilai harta benda mereka. Pada masa ini syarikat insurans masih belum bersedia untuk menyediakan Insurans Hijau untuk GCCB kerana GCCB masih baru dalam pasaran. Kekurangan sejarah tuntutan menyebabkan syarikat insurans masih memerlukan sedikit masa untuk melihat pasaran yang potensi ini.

ACKNOWLEDGEMENTS

Along the journey of my Master Study in Universiti Teknikal Malaysia Melaka (UTeM), I have been encouraged and supported by many people. Without their encouragement, it would be impossible for me to complete my thesis smoothly. Here, I would like to take this opportunity to express my appreciation to several people who have contributed to the development and completion of this thesis.

First and foremost, I would like to express my sincere appreciation to my supervisor, Profesor Madya Dr. Chew Boon Cheong for his precious supervision, support and encouragement towards the completion of this thesis. Profesor Madya Dr. Chew guided me along the way so that I manage to complete the thesis smoothly. Moreover, his insightful comments and suggestions allow me to widen my research from various perspectives.

Furthermore, I would like to thank MyBrain UTeM for the financial support throughout this project. Besides, I would like to express my sincere acknowledgement to classmate, Heoy Shin, Hafiz, Jess and CK for accompanying and encouraging me during the process. Special thanks to all the informants for their enthusiastic involvement in my research. Their names cannot be disclosed but their information has helped me to complete this thesis.

Eventually, my warmest thanks to my beloved mother and siblings for their moral support to me in completing this thesis. My mother, Tee always encourages me whenever I faced difficulties in doing my thesis. The supports and love from my family have motivate me to be determination to make the completion of this thesis smooth and possible.

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LIST OF ABBREVIATIONS/SYMBOLS

GCCB -	Green Certified Commercial Buildings
CCB -	Conventional Commercial Buildings
GI -	Green Insurance
NRNC -	Non-Residential New Construction
GBI -	Green Building Index

LIST OF PUBLICATIONS

Ou Yang, Y. X., Chew, B. C., Loo, H. S. and Tan, L. H. 2017. Green Commercial Building Insurance in Malaysia. *AIP Conference Proceedings*, 1818 (1), p. 020071.

CHAPTER 1

INTRODUCTION

1.1 Research Background

In general, there are two types of insurance in Malaysia which are life insurance and general insurance which cover different aspects in an individual. Life insurance is a contract between policy owner (insured) and insurance companies (insurers) where the insurers will pay out a sum of money to the insured or beneficiaries if death or terminal or critical illness occurs to the insured (Rosly, 2014). On the other hand, general insurance is an insurance policy that insure an individual against losses and damages other than those covered under life insurance (insuranceinfo, 2007).

Building and Personal Property Coverage Form (BPP) is a standard form of general insurance coverage where all the basic protection for buildings and personal property in Commercial Package Policy (CPP) is in this form (Treischmann, et al., 2005). Furthermore, Rejda (2011) also mentions that building and personal property coverage is a commercial property coverage insuring most types of business property that is extensively used to cover a direct physical damage loss to commercial buildings and business personal property. Up to date, conventional property insurance such as fire or flood are still largely dominating the Malaysian property market. Although recently Green Buildings start to appear in the market, their insurance coverage remains the same as conventional commercial property insurance, which does not offer the real coverage on the status of Green Buildings.

Green Building is a comprehensive idea in construction industry that begins with the realization that the built environment can have both positive and negative impact to the natural environment and the people who inhabit buildings every day (Kriss, 2014). The intention of green buildings is to amplify the positive and mitigate the negative impacts on environment, natural resources and human health throughout the entire life cycle of a building. Hence, many developed methods such as green building rating tools are used to measure the environmental performance of buildings with the initiatives to create a sustainable environment. There are several prominent green buildings rating tools: Building Research Establishment Environmental Assessment Method (BREEAM) from the United Kingdom, Leadership in Energy and Environmental Design (LEED) from United States, High Quality Environmental standard from France, Green Mark from Singapore and Green Building Index (GBI) from Malaysia (Hameed, 2011); (Kamar and Z.A.Hamid, 2011). All of these tools have the 6 similar key criteria for a green building which are energy efficiency, water conservation, sustainable sites, materials and resources conservation, indoor environmental quality and innovation design.

Under the certification of GBI, there are generally 6 types of green certified buildings in Malaysia which are Non-Residential New Construction (NRNC), Non-Residential Existing Buildings (NREB), Residential New Construction (RNC), Industry New Construction (INC), Industry Existing Building (IEB) and Township (T). Green Building Index (2017) states that there is a total of 765 buildings applied to be certified by GBI in Malaysia. Among these 765 buildings, 396 buildings have obtained the certification. From these 396 buildings, 194 buildings are classified as Non-Residential New Construction buildings. Therefore, it shows that the construction industry in Malaysia starts to move towards sustainability construction and buildings. Thus, it is a potential opportunity for insurance market to look into this new industry.

Table 1.1 :
Certified
According to

Types of Certified Buildings	Number of Platinum Certification	Number of Gold Certification	Number of Silver Certification	Number of Certified Certification	Total
Non-Residential New Construction (NRNC)	10	50	21	113	194
Non-Residential Existing Buildings (NREB)	1	1	2	9	13
Residential New Construction (RNC)	4	33	14	116	167
Industry New Construction (INC)	0	1	2	6	9
Industry Existing Building (IEB)	0	1	0	2	3
Township (T)	1	3	4	2	10
Total	16	89	43	248	396

Number of Green
Buildings
Types of Buildings

Source from : Green Building Index (2017)

Newly built Green Certified Commercial Building which is classified as Non-Residential New Construction (NRNC) in GBI is chosen in this study based on several reasons. Firstly, the value of a building in general will appreciate over years. Hence it is more practical to provide a comprehensive insurance coverage for a building which the value will increase. Moreover, Green Certified Commercial Buildings (GCCB) is certified by GBI which is a wholly owned subsidiary of Pertubuhan Akitek Malaysia (PAM) and the Association of Consulting Engineers Malaysia (ACEM) which the index is well established in Malaysia. It can be said that Green Certified Commercial Buildings have a better standard of green compared to other green products such as vehicles. Moreover, unlike residential property, an individual owned property, Green Certified Commercial Buildings is a shared property which is managed by building management. Thus, the collective decision of a Green Certified Commercial Buildings can be obtained easily compared to residential property. Furthermore, it is clear that Green Certified Commercial Buildings has the highest number of certified buildings compared to other types of buildings. This shows that it stands a new business opportunity for general insurance industry in Malaysia.

However, this research only focuses on retail shops, hotel, shopping centres, office buildings, retail warehouse and shopping buildings. Although institutional buildings such as hospital, schools and public sectors are considered as commercial buildings or NRNC, the researcher does not focus on them because these buildings are functioned for healthcare and education purposes. Moreover, these buildings are hardly to sell to the third parties because they are not profit making buildings. Commercial Buildings such as retail shops, hotel, shopping centres, office buildings, retail warehouse and shopping buildings are profit making buildings that the owners might sell it to the third party. Furthermore, these

buildings will have higher tendency to focus on the green certification due to their reputation and increase of market value.

The number of GCCB with the subsequent certification of GBI to safeguard the recognition and protect the value of these buildings in Malaysia has started to grow because of the society's interest in environmentally friendly buildings has raised up some critical questions to the researcher such as "Do these Green Certified Commercial Buildings have their own designed insurance policies?", "Do insurance companies wish to provide comprehensive coverage to these buildings?", "How can these buildings have a well cover insurance policy?", "Will it be any new risks appear in green commercial buildings to be transferred to insurance companies?". At the same time when the researcher has these doubt, some of the large general insurance companies in oversea have started to "go green" by implementing green concept in to their insurance policies (English, 2009). These companies include Fireman's Fund Insurance from United States, The Green Insurance Company from Scotland, Zurich Insurance Group from Switzerland, Lexington Insurance Company from United States and so on. The first green building insurance policy was launched in year 2006 by Firemen's Fund Insurance (Allianz, 2008). To date, Malaysia still does not have any similar insurance policy for green buildings despite the growing numbers of the green buildings.

According to Echeverria (2012), green insurance is a type of insurance that offer additional coverage for green property owners which the propertise have been certified by green rating authorities such as LEED, BREEAM, High Quality Environmental standard and so on. Basically there are two types of green insurance policies offer for green certified buildings. Both Scholz (2012) and English (2009) mention that the first policy is green-rebuild policy which allow the conventional buildings to be reconstruct to green standards

when damage happens. Meanwhile, the second policy is offered to owners who already have certified green buildings and insured the existing green modifications against loss. Through green insurance, most of the new risks exposed in Green Certified Commercial Buildings have been transferred to insurance company. These are the progressive efforts that have been done in other countries to protect their Green Certified Commercial Buildings, yet the risks in Green Certified Commercial Buildings in Malaysia still awaiting for solutions on risk transfer and protection seeking.

Green Insurance is essential to be implemented in Malaysia to provide comprehensive coverage for Green Certified Commercial Buildings in Malaysia due to several reasons. GCCB has to be covered using a new policy because the structures and features of GCCB is difference from CCB; therefore, it required a specific insurance policy to provide comprehensive coverage on it. Furthermore, the implementation of green insurance in Malaysia also can encourage more development of green buildings which can safeguard the environment by reducing negative impact of construction towards the environment. The encouragement can be achieved because it shows the recognition of insurance companies towards GCCB and they have the effort to provide adequate coverages for the buildings.

1.2 Problem Statement

In the recent years, the number of Green Certified Commercial Buildings is increasing tremendously. This has inspired the researcher to have the research idea of investigating this topic. The researcher found that although the number of Green Certified Commercial Buildings is increasing, there is lack of special designed property insurance to protect these buildings. Moreover, there are no previous research about the implementation of special design insurance for GCCB in Malaysia. Therefore, it shows that there is a gap

between the conventional insurance coverage and GCCB in Malaysia. This is mainly because there is no research has been done currently to determine what type of insurance suitable for GCCB in Malaysia.

This means that the conventional property insurance offered now does not offer the real coverage on the status and green features of Green Certified Commercial Buildings. This situation has led to Green Certified Commercial Buildings always need to pay a higher premium due to higher sum assured compared to conventional buildings. Although, Green Certified Commercial Buildings generally equipped with energy-efficiency system which can reduce risk such as electrical fire or plumbing leaks which eventually reduce insurance losses in commercial buildings. However, this does not mean that Green Certified Commercial Buildings do not expose to new risks from the green products which are used in the buildings. Hence, it is important for insurance companies to look in these new risks to provide adequate insurance coverage for Green Certified Commercial Buildings.

Moreover, the value of a Green Certified Commercial Building will appreciate over the years. It is essential to provide Green Certified Commercial Buildings with comprehensive green insurance products to protect the value and the green features in the Green Certified Commercial Buildings. In addition, without a proper green insurance policy some of the investors or owners of Green Certified Commercial Buildings might refuse to replace or maintain their buildings as green certified rating due to the high cost of green products offer in the market. The value of Green Certified Commercial Buildings might have a leap in the market after obtaining the recognition from insurance companies. This can encourage more development of green buildings and enhance the efforts towards