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STUDY OF THE INFLUENTIAL FACTORS IN ESTABLISHING THE ENVIRONMENTAL FRAMEWORK FOR THE GREEN BUILDING CONCEPT TO THE CONSTRUCTION PROJECTS IN SRI LANKA

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ABSTRACT

A sustainable development idea known as "green building" aims to make better use of resources such as electricity, water, materials, and land. Green buildings offer many more financial advantages than traditional structures, such as improved indoor environmental quality and water and energy savings. They also have lower operating and maintenance costs. Organizations in the Sri Lankan green construction industry should do an industrial analysis because this market is still growing and may experience challenging business circumstances. By conducting such a strategic study, they may be able to determine their own comprehensive green construction strategies. As a result, the environmental framework serves as a comprehensive and practical tool. A literature analysis and a questionnaire survey were employed in a quantitative approach to determine the barriers to adopting this concept. Common preferences and their ranking laid the groundwork for finalizing the questionnaire. PESTEL environmental framework was used to evaluate the elements that influence the acceptance of the green building idea. The findings demonstrate which environmental factors were most influential in convincing Sri Lanka's construction sector to embrace the Green Building concept. Second and third, a correlation and regression analysis were utilized to show the linkages and consequences of PESTEL perspectives discovered in Sri Lanka to adopt this notion.

KEYWORDS: *Environmental Framework, Green Building Concept, PESTEL (Political, Economic, Social, Technological, Environmental, Legal), Construction Projects*

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1. INTRODUCTION

Green Building (GB) is the technique of designing structures in which resources are utilized optimally throughout the building's construction process. It enables for climatic and natural environment conservation and promotes human quality of life. Not all states and countries have the same Green Building Concept due to climate, cultural, and social factors. Its productivity level significantly affects the development and expansion of the national economy. Green buildings are now considered to have significant strategic importance for the construction industry. The use of green building practices in the construction sector has the potential to increase health, safety, comfort, and environmental friendliness.

PESTEL is a strategic management tool for macro-environment scanning that is frequently applied to market research. Additionally, it is employed to assess the industry's profitability and influence (Serdar Ulubeyli, 2019). By reviewing it in regard to political, economic, social, technological, environmental, and legal elements, it is used to disclose good and negative issues that can affect the adoption of the green building approach. (Li Zhang, 2017). A detailed analysis of strategic factors can be used to understand how external and internal aspects have an impact on adopting the Green Building concept for a sustainable position in the industry. "Green building" focuses on conserving water, energy, and material resources during the development and maintenance processes. The use of the green building idea can cut carbon dioxide emissions by 35%, water usage by 40%, energy usage by 50%, and waste products by 70%. (B.A.W.P. Bombugala, n.d.). Therefore, PESTEL analysis can be used to determine the most important elements that affect and encourage the use of green buildings by analyzing the obstacles and implementations that are strongly associated to their adoption.

As a Quantity Surveyor, with the evolution of sustainable construction methods, the tasks and responsibilities of a quantity surveyor are expanding in modern QS practice. In light of this, modern quantity surveyors need to become more adept at managing life cycle costs, cost of maintenance, and operational costs as well as leasing, purchasing green goods and services, amalgamating information, implementing green management providing services, fusing facts, and applying in green management strategies. The contributions of QSs are also apparent in the project's later stages, including the preparation of tender documents, pre-qualification of tenders, and tender evaluations. The finest contractor for a green project should be chosen based in large part on how these typical responsibilities are carried out sustainably. Due to their proficiency in cost management and familiarity with building procedures, QSs are in a crucial position to help clients achieve their sustainability targets throughout a green project. Ma & Luu, (2013). Ashworth, (2013), represents modern-day QSs doing multiplex responsibilities such as loss replacement, audits, dispute settlement, and expert testimony, as well as advice for cost-benefit analysis, whole-life costing, advice for sustainable construction, and so on because they restrict the contemporary capabilities.

With today's rapidly rising population and housing needs, the entire globe is suffering from the dire repercussions of global warming and climate change. (Khadka1, 2019). If the entire globe continues to engage in this act of global warming and climate change, then existence on Earth will become untenable. Additionally, Green building technologies (GBTs) play an essential role in reducing emissions of carbon in the construction industry. Daylighting supply in the design and construction of buildings improves the aesthetic appeal of the structure while also reducing the need of electric lighting, which saves energy and so reduces GHG emissions. The other factor is natural ventilation designs, which give the necessary thermal comfort and indoor air quality. These decrease the requirement of electrical ventilation equipment like fans and vent systems, resulting in lower GHG emissions. The thermal performance of the building governs account for providing a sustainable facade for minimizing heat transmission in and out of the structure. This reduces the cooling burden and, as a result, the corresponding GHG emissions. Energy-efficient equipment and fixtures have considered equipping the structures with sustainable switches, fixtures, air conditioning

systems, lighting systems, elevators and escalators, and so on. Providing this kind of sustainable equipment will lower related building operating energy consumption and GHG emissions. (Abdullahi Mohammed Usman, 2022). Therefore, the GB concept is very important to be adopted to the current industry practices in Sri Lanka. Unfortunately, GB practices are rarely used in the Sri Lankan context. However, as of late, there is no comprehensive study to identify the barriers for adopting the GB concept in Sri Lankan construction practices. Accordingly, this study can be more realistic and genuine when analysed within an environmental framework.

Accordingly, this study aims to identify the significant factors according to the environmental framework which have become barriers to the adoption of the Green Building concept in Sri Lanka and the objectives were listed as 1) identify the most influenced factors of the environmental framework to adopt the Green Building concept 2) identify the relationship between the environmental framework and the application of the green building concept to the Sri Lankan construction industry. As a result of the successful study, the most essential aspects based on the PESTEL analysis can be identified, and greater attention may be devoted to those factors in order to adapt the Green Building idea in the Sri Lankan environment. Several parties will gain from it, as follows.

To the government of Sri Lanka

- Identify the legal aspects and new laws that can be enacted.
- Develop the construction industry with goodwill to the society.
- Get a better idea about the cost and quality.
- Get a better idea about the increase in comfort, health, and productivity by adopting this Green Building concept to the environment
- Protect the natural environment by reducing energy consumption, reducing destruction of natural resources, reducing water consumption, and limiting waste generated.

2. LITERATURE REVIEW

2.1 Green Buildings

Sustainable development is the creation of a building that meets the needs of future generations without compromising the potential of future generations. (Illeperuma & Abenayake, 2022). There are numerous methods and tools for incorporating sustainable development features into different industries. Global recognition of Green Building (GB) as a strategy for integrating sustainability into the construction industry. (Boons & Ludeke-Freund, 2013). A "Green Building" is a building that, in its design, construction, or operation, reduces or eliminates negative consequences, and can create positive benefits, on our climate and natural environment. Green buildings are designed, developed, and maintained with the goal of providing a secure indoor environment while minimizing life cycle costs.

2.2 PESTEL Environmental Framework

Pestle is an extensive analysis technique that can assist you in building a strategic plan for your company. Systematic strategic planning must include a macro-environmental assessment. These factors will definitely have a significant impact on the success of a company and possibly even its existence (Ginter & Duncan, 1990). In order to understand an organization's strategic approach and help in making informed commitments about organizational operations, it is important to evaluate big-picture variables using a comprehensive approach. Such an evaluation can be used to originate a long-lasting merciless advantage. A macro-environmental monitoring element in the field of deliberate management is called PESTLE. (Johnson, et al., 2017). A review of strategic perspectives is useful to understand how outside drivers and barriers affect a specific area of attention for a long-term market position. Though macro-environmental conditions are expected to change over time, a comprehensive review of perspectives can help provide an early-stage view of what could be in store for us in the future.

2.2.1 Political Perspective

It may contain broad or specialized policies concerning, for example, taxation, labour, healthcare, youth development, infrastructure, bureaucratic procedures, and tariffs. (Ulubeyli & Kazanci, 2018). The application of laws, regulations, and judgments relevant to the provision of public services is supervised by democratic governance. Insufficient governmental support and promotion may be characterised as political considerations, and the lack of government incentives was highlighted as one of the top three most essential obstacles to the growth of green building, emphasising the role of government as a fundamental component. (Assylbekov, et al., 2021).

2.2.2 Economic Perspective

The most significant barrier to green construction is the cost, as it demands a larger initial investment than regular buildings. Economic fluctuations have a significant impact on construction productivity. This factor indicates microeconomic outcomes that have a major impact on an organization or industry (Assylbekov, et al., 2021). Another significant economic obstacle impeding the proliferation of green buildings is a long payback time, and as with increased prices, the additional time necessary for a green project is a critical element influencing stakeholders' decisions. In addition, the study performed in the United States identified a lack of market demand as well as risks and uncertainties associated with the deployment of new technology as critical considerations.

2.2.3 Social Perspective

A major barrier to consider is a lack of knowledge and awareness, as some studies imply that fixing it may alleviate numerous issues at once. However, because it is closely related to government incentives and educational initiatives, it may necessitate considerable effort to create awareness among stakeholders. (Assylbekov, et al., 2021). Social sustainability in the construction sector primarily refers to living standards, workplace health and safety, and future professional development chances. In the context of buildings, social sustainability involves creating a healthy and safe environment for all stakeholders, such as construction workers, users, and operators, which should be considered during the sustainable design process.

2.2.4 Technological Perspective

The use of technical breakthroughs in renewable energy has been critical in reaching green construction goals and accreditation. One of the major issues is the absence of infrastructure linking the electricity generated on construction sites to the power grid. However, the cost, maintenance, and operation of renewable energy systems continue to be substantial barriers to the implementation of these technical advancements in green buildings.

A lack of technological improvements is also a major cause of prolonged construction timeframes. (Assylbekov, et al., 2021). Technology in the construction industry can increase productivity.

2.2.5 Environmental Perspective

Green Construction is intended to have the lowest impact on the natural environment possible by utilizing water and energy resources efficiently and bringing human health and comfort into consideration. Construction sustainability includes cost estimate decisions that enhance current and future social, economic, and environmental demands, as well as techniques for maximizing benefits in construction practices (Pan, et al., 2019). Green buildings, from an environmental standpoint, assist to promote urban biodiversity and maintain the eco-system through sustainable land use. Green buildings usually outperform conventional buildings in terms of energy efficiency, water efficiency, and carbon emission reduction. According to their findings, commercial buildings will profit the most from LEED certification in terms of CO2 reduction, followed by residential and public buildings (Jian Zuo, 2014).

2.2.6 Legal Perspective

These highlight certain rules and regulations that may have an impact on the company environment in the industry. A lawful examination of this type may consider consumer, physical condition and welfare, publicity, occupation, and antitrust legislation. It was one of the considerations that influenced owner

decisions and top management commitment. (Ulubeyli & Kazanci, 2018). Construction contracts serve an important role in reducing legal and administrative hazards that might lead to claims. As a result of these developments, some adjustments in industry contractual practises are required. The study's conclusions seek to raise the degree of awareness among construction experts regarding such potential threats. The analysis shall also aid various contract parties in crafting specific terms to prevent likely future claims by disclosing the possible legal hazards of sustainable initiatives. (Sahra Mohammadi, 2016)

3. METHODOLOGY

In this study, a mixed research approach was used, with quantitative and qualitative methods used to identify the significant factors according to the environmental framework that have become barriers to the adoption of the Green Building concept in Sri Lanka, as well as the relationship between identified factors and the adoption of the GB concept in the Sri Lankan construction industry. To evaluate the study's aim and objectives, a wide spectrum of community members associated with the Sri Lankan construction industry were targeted, including professionals and stakeholders in the Sri Lankan construction industry.

3.1 Data Collection Methods

In this research, Stratified Random Sampling was employed as the sampling method. Quantitative data were collected through a questionnaire survey which includes different viewpoints and were ranked accordingly to the Likert Scale questions. The total number of questionnaires were distributed among 55 selected by stratified random sampling and 51 responses were received with 92.72% response rate including 05 project managers, 15 quantity surveyors, 12 engineers, 10 architects, 02 contractors, 03 consultants and other 4 people who are related to the construction industry.

3.2 Conceptual Framework

The conceptual framework which was developed for the study was illustrated in Figure 1.

The adopted green building idea in Sri Lanka has been selected as the dependent variable. It is designated as the main variable due to its significance as the primary goal of the investigation. Then independent variables were determined in consideration of the environmental framework (PESTEL) throughout the project life cycle since it was easy to identify the barriers to implement the GB concept. To investigate the relationship between the variables, both null hypotheses (H_0) and alternative hypotheses (H_1) were developed as follows. Null hypotheses (H0): There is a relationship between the independent and dependent variables. Alternative hypotheses (H1) imply that there is no relationship between the independent and dependent variables.

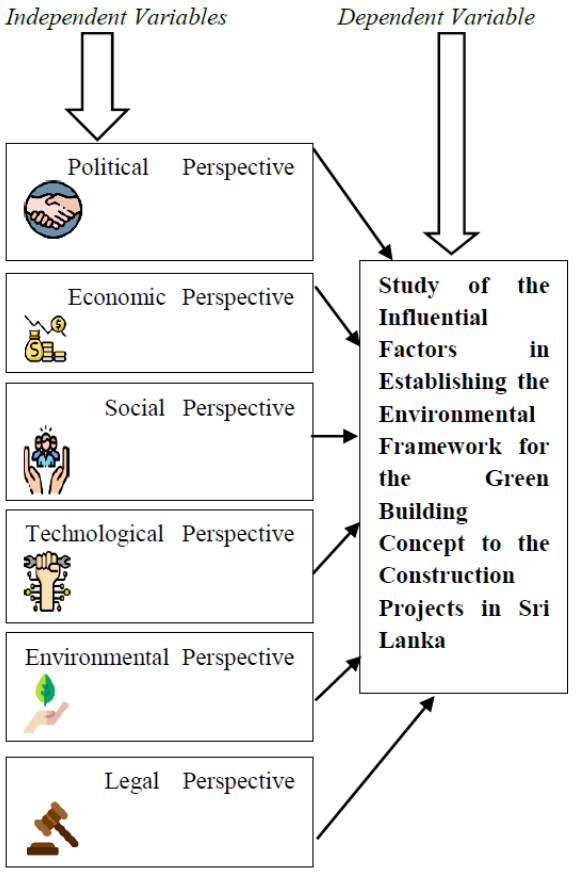

Figure 1: Conceptual Framework

3.3 Data Analysis Methods

Primary data was evaluated quantitatively. Statistical study assisted in determining the links between the PESTEL framework and the implementation of the

GB concept. This is the most effective strategy for multivariable analysis. The association is hypothesized at the start, and the statistical analysis is conducted appropriately. The analysis was carried out using SPSS analysis software, which includes a wide range of formulas and statistical methods with the help of SPSS software, regression analysis was used to determine the influence of the independent and dependent variables, and the degree of the association between the independent and dependent variables was determined by the correlation coefficient. The RII analysis approach is used to determine the most influential element in a PESTEL analysis.

3.3 Data Analysis

3.3.1 The impact of PESTEL factors on adopting the GB concept in Sri Lanka

The SPSS programme was used to do a regression analysis to determine the impact of these two factors. Regression analysis examines the relationship between the dependent and independent variables, illustrating how the dependent variable varies whenever one or more independent variables change owing to circumstances. The regression analysis formula was created as follows and the formula for the regression analysis was developed as follows.

$$Y = \{\alpha + (\beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \beta 5X5 + \beta 6X6)\} + Std.E$$

Accordingly, Y is the dependent variable while X is the independent variable here. α is the constant and β is used to define the slope between the variables.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.826	.360		2.294	.027
	PM	.105	.176	.108	.594	.003
	EM	.017	.163	.008	.043	.046
	SM	.103	.151	.109	.679	.001
	TM	.369	.123	.457	3.010	.004
	ENM	.033	.162	.034	.201	.042
	LM	.393	.139	.431	2.817	.007

a. Dependent Variable: GBM

Figure 2. Coefficient table derived from SPSS software.

Figure 2 which consists of coefficients was directly derived from the SPSS software where it depicts the values to prove the relationship between the dependent and independent variables in relation to the regression analysis formula through the unstandardized B (β) value.

$$Y = \{0.826 + [0.105 \mathbf{x} (PM)] + [0.007 \mathbf{x} (EM)] + [0.103 \mathbf{x} (SM)] + [0.369 \mathbf{x} (TM)] + [0.033 \mathbf{x} (ENM)] + [0.393 \mathbf{x} (LM)]\} + Std.E$$

PM = Political Perspective
EM = Economic Perspective
SM = Social Perspective
TM = Technological Perspective
ENM = Environmental Perspective
LM = Legal Perspective
GBM = Green Building Adoption in Sri Lanka

This demonstrates a positive link with a 10% variance of adoption of the GB concept to the current Sri Lankan construction practice, which is influenced by the political factors of the PESTEL framework, with a beta value of 0.105 and a significance value of 0.003. The application of the GB concept to Sri Lanka's existing construction practice, which is influenced by the economic factors of the PESTEL framework, is shown to have a positive relationship with a 1.7% variance, with a beta value of 0.017 and a significance value of 0.046.

Based on the results of the regression analysis, the Legal perspective has the highest impact on the dependent variable with a 39% variance in the adoption of the GB concept in the Sri Lankan construction sector. Economic Perspective was identified as the least impact variable with the 1.7% variance of adoption of the GB concept in the Sri Lankan construction sector.

3.3.2 Identification of most influenced factor according to PESTEL framework

The PESTEL analysis of Sri Lanka's construction industry is a useful tool for ranking the barriers to GB concept implementation there. Using a Likert scale ranging from strongly disagree to strongly agree, a

relative relevance index was developed for each feature. The RII was calculated using the sum of all responses divided by the number of responses and the highest number on the Likert scale.

The RII is calculated using the sum of all responses divided by the number of responses and the highest number on the Likert scale. The RII value typically consists of a value between 0 and 1. The barrier becomes more substantial the higher the RII value. Critical impediments to implementing the GB concept in Sri Lanka were created based on the proportion of the RII values. The levels for the RII% values can be used to determine the significance of each element. The following are the levels of the RII% values. (Qui, 2014).

- Medium or non-critical (RII %< 70%)
- Critical (RII% ≥70%)

Table 1: Overall Relative Important Index

Factor	Average RII	Rank
Political	0.7392	3
Economic	0.6764	6
Social	0.7137	4
Technological	0.7598	2
Environmental	0.7117	5
Legal	0.8618	1

The above table shows how these factors are affected by using the GB idea in the construction industry. Legal factor is the most influenced factor and Economic factor is the least influenced factor to adopt the GB concept in Sri Lanka.

3.3.3 Relationship Between the PESTEL Environmental Framework and the application of GB Concept to the Construction Projects in Sri Lanka

Correlation analysis was done to identify the relationship between developed independent variables (IV) & the dependent variable (DV). Pearson correlation coefficient was used to check the relationship and was analysed through SPSS software. Positive correlation represents when one variable increase & the other variable also increase. A negative correlation represents a decrease in both. The correlation coefficient will be satisfied based on significance value (P) which,

P < 0.05 – The DV has a relationship with particular IV

P > 0.05 – The DV doesn't have a relationship with a particular IV

Where: N = No of respondents (51)

Correlations

		PoliticalMean	EconomicMean	SocialMean	TechnoMean	EnviroMean	LegalMean	GreenbuildMean
PM	Pearson Correlation	1	.815**	.725**	.712**	.673**	.705**	.584**
	Sig. (2-tailed)		<.001	<.001	<.001	<.001	<.001	<.001
	N	51	51	51	51	51	51	51
EM	Pearson Correlation	.815**	1	.668**	.717**	.736**	.676**	.587**
	Sig. (2-tailed)	<.001		<.001	<.001	<.001	<.001	<.001
	N	51	51	51	51	51	51	51
SM	Pearson Correlation	.725**	.668**	1	.703**	.737**	.696**	.632**
	Sig. (2-tailed)	<.001	<.001		<.001	<.001	<.001	<.001
	N	51	51	51	51	51	51	51
TM	Pearson Correlation	.712**	.717**	.703**	1	.696**	.658**	.723**
	Sig. (2-tailed)	<.001	<.001	<.001		<.001	<.001	<.001
	N	51	51	51	51	51	51	51
ENM	Pearson Correlation	.673**	.736**	.737**	.696**	1	.736**	.615**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001		<.001	<.001
	N	51	51	51	51	51	51	51
LM	Pearson Correlation	.705**	.676**	.696**	.658**	.736**	1	.712**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001		<.001
	N	51	51	51	51	51	51	51
GBM	Pearson Correlation	.584**	.587**	.632**	.723**	.615**	.712**	1
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001	
	N	51	51	51	51	51	51	51

**. Correlation is significant at the 0.01 level (2-tailed).

Figure 3: Results of Correlation Analysis

Figure 3 illustrates that there is a correlation between the independent variables and the dependent variable. All the independent variables have a positive relationship with the dependent variable. This signifies that all the null hypotheses that were developed for the study were satisfied.

The above figure shows a 0.001 significant value between the Political factor of the environmental framework and the adoption of the GB concept. Since the significant value between those two factors less than 0.05, it is possible that there is a relationship between above mentioned two variables. Furthermore, the above table illustrates that Political factors and GB concept adoption have a 0.584 positive correlation. It is a very strong relationship. Due to that value, it is fair to say Political factors have a strong relationship with GB concept adoption. Based on that, the hypothesis which has no relationship between Political factors and GB Concept adoption can be excluded.

Accordingly, the second independent variable, Economic perspective (EM) has acquired a 0.001 significance level over the adoption of the GB

Concept as indicated in Table 4.3, and it is obviously indicated that there is a relationship between the Economic factor and the adoption of the GB Concept. Therefore, the assumption of H_{B1} of the hypothesis is accepted.

According to Figure 3, the third independent variable, Social Perspective (SM), has a significance level of 0.001 over the adoption of the GB concept, clearly indicating that there is a relationship between the two. As a result, it confirms the hypothesis, and H_{C1} of the hypothesis is accepted.

There is a relationship between the technological factor and the acceptance of the GB concept because figure 3's fourth independent variable, the Technological factor (TM), has obtained a 0.001 significance level over the adoption of the GB concept. As a result, it confirms the hypothesis, and H_{D1} of the hypothesis is accepted.

It is evident that there is a relationship between the environmental factor and the adoption of the GB concept since the Environmental factor (ENM), the fifth independent variable, has a significance level of 0.001 over the adoption of the GB concept as listed in Table 4.3. As a result, it confirms the hypothesis, and H_{E1} of the hypothesis is accepted. According to figure No. 3 interpretation, the sixth independent variable, Legal Factor (LM), has a 0.001 significant level over the adoption of the GB concept, clearly indicating that there is a relationship between these two variables. As a result, it confirms the hypothesis, and H_{F1} of the hypothesis is accepted.

4. RESULTS AND DISCUSSION

4.1 Political Perspective

According to the study, the influence of political factors is identified. In an emerging economy, a lack of subsidies may result in low market demand. This is because green construction materials may not be financially feasible at the outset, therefore money supplied by government agencies will be beneficial in bridging this gap. Subsidies in this scenario might compel a government to overcome early economic obstacles facing the industry. Tax policy is a strategy for dealing with human, organisational, and institutional shortcomings in the green building movement. Construction materials and technology may face higher taxes in a burgeoning green building industry, while existing levies on green products may be reduced. Giving these fiscal incentives to the business appears to impose a cost on the public sector by increasing the savings of green building constructors and owners. Political stability is essential for assembling macroenvironmental elements and sub-factors in an integrated way. Otherwise, it may be difficult to take advantage of the benefits that other elements might provide.

4.2 Economic Perspective

In this category, real estate values are extremely important. Based on a large sample size in the statistical analysis, prospective consumers should evaluate life cycle costs, which may result in significant financial savings from energy expenses in the long term, rather than only the initial investment cost. Exchange rates are one of the most essential costs in any economy since they influence all other prices, including those of environmentally friendly green items. Furthermore, government guarantees on fixed exchange rates may be one of the most effective ways to minimise possible exchange rate risks. In terms of interest rates, building activities are more susceptible to changes in long-term interest rates. This is due to the fact that contractors often have bank credit for continual financial flows of material, equipment, and labour supply. Inflation in a local economy could threaten the successful completion of traditional and green building projects. Income per capita is empirical data demonstrating a positive relationship between income and willingness to pay for environmental amenities. The study shows that willingness is positively associated to the adoption of energy efficient and sustainable construction practises, and that its spread is faster in higher-income urban regions.

4.3 Social Perspective

The impression of comfort or living quality was discovered to be the most important. interior environment quality, including temperature and air in winter and summer, lighting, noise, and general interior comfort, are examples of comfort considerations. Addressing a potential occupant's purchasing behaviour on green buildings requires raising awareness via education. Improving public knowledge of green buildings can result in more educated consumers who will support green building development. Both a lack of customer interest in green construction and a lack of societal market demand are important barriers to green building project management.

4.4 Technological Perspective

Green building construction does not have to involve an additional contract obligation or an associated risk that a contractor must manage. In this sense, a green construction contractor should aim to communicate more about green concerns with the customer, end-users, consultants, and subcontractors. Green construction materials have a fast-developing market today. These materials should be harvested, processed, and produced on a regional scale, utilising recycled and bio-based raw resources. There is no fixed material market required for the development of green buildings. Creating such a market is likely to be a critical first step for high-scoring green buildings. Given the level of modern technology or automation, particularly in self-sufficient buildings, high-tech systems are required in general. There are several angles to examine in terms of the amount of innovation. Green certifications, for example, need credit areas such as design innovation. The use of renewable energy technical breakthroughs is also critical for reaching green construction aims and accreditation.

4.5 Environmental Perspective

Some issues, for example, architectural/mechanical designs, renewable energy purchases, and greenhouse gas emissions may have priority in this regard. A comprehensive energy-efficient building design strategy can lower the size of mechanical systems, offsetting the higher cost of energy efficiency measures. Simple and effective practices may protect the environment and provide solid economic rewards. Furthermore, in today's green-focused economic climate, construction firms must embrace excellent environmental practices in order to preserve a competitive edge in the market. Green building materials are manufactured from recycled resources and are recyclable, and a recycled construction materials industry is critical. Despite the slow development of this sector throughout the world, it appears unavoidable to establish a local market. Although geographical location appears to be mostly tied to anticipated customer demand and land cost, it offers the particular advantage of modelling building energy usage as well.

4.6 Legal Perspective

As the most influenced factor according to the RII analysis, a green construction process is required to correspond to the environmental standards of the nation of origin; therefore, a government must first establish applicable legislation and compel green building enterprises to follow them. As a result, the long-term effects of environmental rules on the green construction industry and corporate structure will be the creation of a full-fledged recycling sector, significant expansion in the secondary goods market, and circular supply chains. Many green building certificates have been produced in various nations as a result of the adoption of a certification system. They are created to give impartial assessment criteria and to assist the processes of sustainable design. In terms of import laws, it should be emphasised that financial and technological hurdles to the import of green materials and equipment may stymie the local manufacturing industry's development.

5. CONCLUSION AND RECOMMENDATIONS

The study's major purpose was to ascertain the impact of key aspects on the environmental framework

implementation of the GB concept in the Sri Lankan construction industry. Green architecture was presented as a solution to a variety of social, economic, and environmental challenges. It is a developing concept that is resonating all over the world. The study provides the following recommendations to assure the success of the GB method based on the results of questionnaire survey responses. According to this study the results are the same when analyzed with different analysis methods. It is called Data Triangulation. Data triangulation is the utilization of many data sources in a study, encompassing time, place, and people. Findings may be confirmed, and any shortcomings in the data can be compensated for by the strengths of other data, boosting the conclusions' validity and dependability. According to that, the validity level of these data is high.

Green buildings will eventually take center stage in the culture of the construction industry to attract clients, promote peace between man and nature, and develop shared growth circumstances. People have more time to focus on subjects other than economics because their living conditions are deteriorating as a result of economic globalization and technological improvement. This research was only carried out to identify the construction barriers of a building and the operation barriers of a building is not included for this study. The study's major purpose is to ascertain the impact of key aspects on the environmental framework implementation of the GB concept in the Sri Lankan construction industry. Green architecture was presented as a solution to a variety of social, economic, and environmental challenges. It is a developing concept that is resonating all over the world. The study provided the following recommendations to assure the success of the GB method based on the results of interviews with industry professionals and questionnaire survey responses. The government could hold an annual awards ceremony and provide special gifts to encourage and promote GB construction. According to industry analysts, this refers to the incentives provided by enforcing the law. Legislators give the incentives envisioned by governmental legislation or a legal obligation inside a governmental setting. The GBCSL aims to introduce a new perspective to the sustainable future of the building sector, and it will be the following generations that adopt these many ideas via practice. The whole-school method involves linking the curriculum to the outside environment right where students are learning. Green structures serve as a tangible symbol of this connection and connect the curriculum with the outside world. All the projects must be monitored by a green expert who can monitor the progress of the site according to guidelines. Then the disputes can be reduced easily regarding the green parameters. Project can be easily completed according to the green practices with the advice from the green expert. modern Green techniques such as self-employment for village people are a viable way to increase the availability of green construction materials. Incentives, interest-free loans, tax exemptions, and other benefits can also be used to encourage the creation of green products. Cities, parks, train stations, bus stops, universities, hospitals, public libraries, and government offices should be the first.

Abbreviations

GB- Green Building
GBT- Green Building Technology
GHG- Green House Gases
QS- Quantity Surveying
RII- Relative Important Index
SPSS- Statistical Package for the Social Sciences

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