

IMPACT OF AWARENESS AND KNOWLEDGE OF BUILDERS' INTENTION IN SOUTH TAMIL NADU

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Abstract *The study investigates green practices on the impact of builders' intention in South Tamil Nadu. Addressing the dangers presented by climate change has emerged as one of the world's greatest issues. More than 36 billion tonnes of CO₂ emissions have lately been observed, and the building industry has been highlighted as one of the main contributors to the development of climate change phenomena. The aim of the research is to expand the theory of planned behaviour (TPB) by applying green awareness and its characteristics in order to explain developers' intentions to adopt green practices in South Tamil Nadu. A survey was conducted among 298 Builders such as architect and engineers. The aim was to explore the relationship between the proposed dimensions as well as the knowledge / awareness, attitude, subjective norm, perceived behavioural control (PBC), and intention to adopt green concepts.*

Keywords *Awareness / Knowledge of Green Practices, Intention to Adopt Green Building Practices, Theory of Planned Behaviour (TPB)*

INTRODUCTION

In construction industry, as well as its related parts such as demolition and excavation, are commonly seen as harmful environmentally. Previous research has shown that traditional construction methods have a high environmental impact, such as pollution and global warming (Kibert, 2016). Furthermore, it is stated that climate change is a severe issue because global anthropogenic carbon dioxide emissions (CO₂e) are steadily increasing (Pollitt, 2016). Global CO₂ emissions increased exponentially from 1900 to 2015, from two billion tonnes to more than 36 billion tonnes (Reitz, 2020). Although CO₂e levels were mostly stable from 2014 to 2017, they increased by 2.7% (Le Quéré, 2018).

Green or sustainable housing refers to strategies that promote the efficient use of energy and resources while minimising negative environmental impacts. The concept came as a result of growing awareness of global climate change, rising carbon footprints, and resource scarcity. As a result, governments around the world have given green construction a lot of attention in their efforts to provide eco-friendly structures. Locally, the Tenth Malaysia Plan (2016–2020) and the Construction Industry Master Plan (2016–2020) have both highlighted the challenges of sustainability and green construction (Lau, 2019).

REVIEW OF LITERATURE

Awareness

Pachamama (2017) integrated to environmental awareness is the understanding of the environment's fragility in the face

of the harmful threat posed by man-made activities, as well as the significance of protecting it. Abidin (2010) stated that awareness is one of the most important factors in motivating people to engage in environmentally friendly behaviours. This is also true in the construction business; if contractors are aware of the relevance and benefits of green building, they are more likely to make an effort to guarantee that their construction operations do not threaten environmental welfare (Saleh et al., 2020). Manaktola and Jauhari (2007) showed that environmental awareness affects how people do and respond to domestic activities; those with high degrees of awareness are more ready to preserve water and energy, buy locally and eco-friendly items, and reduce waste.

Knowledge

Badrulhisham and Othman (2016), investigate on the basis of an individual's conduct or behaviour. Without knowledge, it is impossible to respond to any information or concerns which may develop. It is also regarded as one of the main motivations for the adoption of green practices. Robichaud and Anantatmula (2011) showed if professionals in leadership in energy and environmental design (LEED) have an awareness of GBP, they can manage green projects more efficiently. In general, knowledge can have a significant impact on behaviour.

Miller (2005) proposed that an individual's character or personality, as well as external influences in his or her environment, impact his or her behavioural intentions and views. Meanwhile, attitudes toward information sharing have a beneficial influence on knowledge-sharing intentions.

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Social Influence

According to the theory of planned behaviour (TPB), behavioural intention can be determined by both attitudes and PBC (Ajzen, 1991). As a result, it is possible to state that there is a link between knowledge, attitudes, subjective norms, and PBC. (Han & Kim, 2010) found that subjective norms are the primary predictor of the intention to act in particular behaviours, indicating that SI is critical in having a good intention to participate in environmental behaviours. (Bamberg & Moser, 2007) state that social norms are said to constitute the foundation of appropriate behaviour. People utilise these standards to decide not just what is morally right or wrong, but also if it is useful to act in a certain way, according to the principle of subjective norms.

Attitude

(Wu, 2016) indicated that customers in the United States had a strong preference for environmentally friendly apparel due to their high level of awareness about environmental issues. Furthermore, people's attitudes toward sustainable living are the ultimate determining element in attaining a low-carbon, green built environment.

Perceived Behavioural Control

(Francis et al., 2004) Perceived behavioural monitoring is an essential predictor of behavioural intention and behaviour. It is defined by a person's perceptions about the ability of both external and internal elements to help the performance of a behaviour. Botetzagias et al. (2015) showed that PBC was found to be the most important predictor of the intention to recycle, which is considered to be one of the most important green behaviours.

RESEARCH METHODOLOGY

The research design for this study is descriptive in nature. To gather primary data from the samples, the snowball sampling technique was used. To collect data from the respondents, close-ended and well-structured questionnaire (Likert-5-point scale) was framed. The tools used in this paper are correlation analysis and multiple regression. The respondents for the study is 298, which includes engineers and architects.

HYPOTHESES

H01 – There is no association between age and passionate about green practices into construction projects.

H02 – Knowledge / awareness, Attitude, Social influence, and PBC have no impact on the Intention to adopt Green Building practices.

OBJECTIVES

- To analyse knowledge / awareness, attitudes, social influence, and perceived behavioural control of green building on intention to implement green building practices.
- To investigate the impact of knowledge / awareness, attitudes, social influence, and perceived behavioural control on the intention to adopt green building practices.

SCOPE OF THE STUDY

The more people there are, the more pollution of water and air will be. It results in a drain on the earth. Moreover, it raises the demand for water, energy, and natural resources, overburdening the ecosystem. The advantages of green building are numerous, and they include economic, environmental, and social elements of sustainability. Green buildings consume 30-50% lesser energy and water than traditional ones. The green rating system of Leadership in Energy and Environmental Buildings (LEED) saves 30% of energy while increasing worker productivity by 25%. Only green buildings have these advantages over conventional buildings in terms of local resources and reduced strain. Low maintenance and operation cost, Energy efficiency, Enhances indoor environment quality, Water efficiency, Better health, Material efficiency, Better environment and reduces strain on local Resources. This research was discussed in South Tamil Nadu architects and engineers' intentions for green buildings.

STATEMENT OF THE PROBLEM

The building sector plays a vital role in socioeconomic growth (UNEP 2009). Traditionally, the building sector can have a harmful impact on the environment, economy, and society. Construction activities and operations produce a huge amount of dust, solid waste, noise, wastewater, and smoke. Furthermore, the building sector has been described as a resource-intensive sector that uses 40% of the globe's raw materials (sand, gravel, and stone), 25% of the globe's wood resources, and 12-16% of the globe's available water. Moreover, the construction sector consumes more than 40% of total world energy; therefore, the industry is responsible for more than 40% of total global energy-related greenhouse gas emissions (International Energy Agency (IEA). This greenhouse gas emissions are a major contributor to climate change, which has long been a major worldwide concern.

(Intergovernmental Panel on Climate Change, 2007, 2014, 2018). In the present circumstances, it is estimated that if nothing is done to enhance building energy efficiency, the construction industry's energy usage and related greenhouse gas emissions will grow by more than 50% by 2050 (IEA, 2014). This issue may be classified as a global issue.

RELIABILITY TEST

Cronbach's alpha coefficient was used to measure the reliability of the five-point rating scale used to take survey responses previous to analysing the obtained data. Cronbach's alpha measures a rating scale's reliability by assessing the average correlation or internal consistency between the variables measured by the scale (Santos, 1999).

Cronbach's alpha coefficient range from 0 to 1, with the greater the number, the more reliable the chosen rating scale. However, the traditional rule is that the scale is reliable if the Cronbach's alpha coefficient is greater than or equal to 0.70 (Nunnally, 1978).

Table 1

Factor	No. of Items	Cronbach Alpha
Knowledge / Awareness	4	.757
Attitude	4	.865
PBC	4	.870
Social Influence	5	.872
Intention	4	.891

In this study, which has 21 items, which is larger than 0.7, therefore the value is acceptable. Each construct has a Cronbach alpha value greater than 0.6. This rating indicates that the data gathered for this study are reliable.

CORRELATION

This analysis is the statistical approach for determining the relationships between the variables. It is also used to define the degree of correlation between variables. Correlation analysis was used to determine the link between variables in the model's construct. This study is used to determine the link between perceived ease of use, perceived usefulness, relative advantages, attitude, and interest in utilising all variables. The average score of many questions in each construct was determined and used for further investigation. When the coefficient of correlation (r) value ranges from 0.10 to 0.29, 0.30 to 0.49 is considered medium, and 0.5 to 1 is considered strong. To avoid multicollinearity, the correlation coefficient should be smaller than 0.8.

Table 2: Pearson Correlation

Constructs	Knowledge/ Awareness	Attitude	PBC	Social influence	Intention
Knowledge / Awareness	1				
Attitude	.855	1			
PBC	.744	.759	1		
Social Influence	.782	.851	.873	1	
Intention	.866	.867	.781	.885	1

** Correlation is significant at the 0.01 level (2-tailed), * Correlation is significant at the 0.05 level (2-tailed).

The correlation value is 0.885, social influence and intention which is the highest among all variables. As a result, this value is less than 0.80.

MULTIPLE REGRESSION

A statistical strategy for defining a collection of predictor and criteria variables. It is also used to determine how the independent variables relate to the dependent variable. It investigates the relationship between perceived usefulness, perceived ease of use, relative benefit, attitude to use, and desire to buy in this study. R², F-ratio of overall fitness, residual and hypothesis testing, and t-test particular parameters was used to assess the proposed framework. These characters were used in this study to discover the direct and positive relationship between variables.

Regression Analysis of Knowledge / Awareness, Attitude, PBC, and Social Influence Vs Intention to Adopt Green building Practices

The null hypothesis (H02) of whether Knowledge / awareness, Attitude, PBC, and Social influence have a positive influence on Intention to adopt green building has been made, and the tested findings are given in the table. The analysis indicates that the p-value was greater than 0.05 ($p > 0.05$) and the t-test value (2.831) was positive. Constructs P – value are less than 0.05 it indicates the null hypothesis was rejected. So all the constructs will have a positive effect on Intention to adopt green building which had the ability of an exposition of 78.9%. ($R^2 = .789$).

Coefficient of Knowledge / awareness, Attitude, PBC, and Social influence and Intention to adopt green building Practices:

Table 3

R ² Value = 78.9%					
Coefficient of Promotional Strategies					
Model	Unstandardized Coefficients		Standardized Coefficients	T-Value	Sig.
Constant	B	Standard Error	β	1.979	.049
	.209	.106			
Knowledge / Awareness	.254	.036	.399	7.148	.000
Attitude	.179	.042	.295	4.257	.000
PBC	.108	.033	.224	3.296	.001
Social Influence	.301	.037	.451	8.249	.000

Dependent variable: Intention to adopt green building practices.

Knowledge / awareness, Attitude, Social influence, and PBC and Intention to adopt green building Practices have a significant and positive influence on interest to buy. Furthermore, the Social influence has a strong effect (R²) on Intention to adopt green building practices then all other constructs.

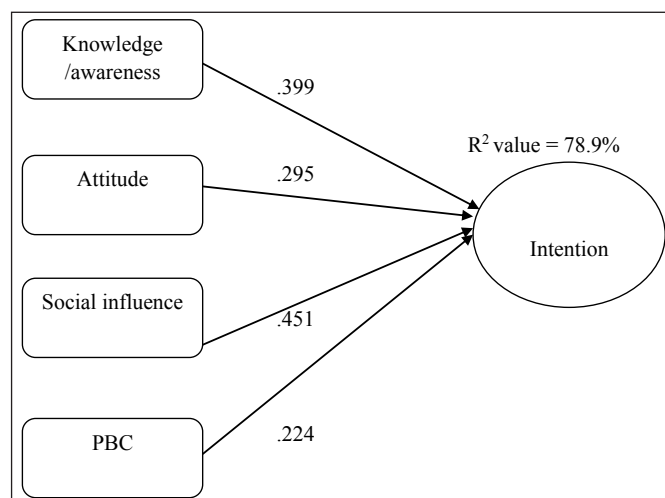


Fig. 1

CONCLUSION

The arrival of green building not only decreases environmental pollution and energy consumption, but also provides consumers with a healthy and comfortable living environment. This study was concluded for providing empirical evidence on which factors and how they influenced Intention. This study showed that Knowledge / awareness, Attitude, Social influence, and PBC positively influenced Intention to adopt green practices. Social influence, attitude, knowledge / awareness to Intention are the highest among all factors results of correlation. The findings of this research has given greater understanding when analysing with Builders' intention to adopt green practices.

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