

Research Article

Customer Preference for Green Building Concept with Reference to Eastern Nepal

Neetu Koirala¹, Ayush Joshi², Anup Sauden³, Navneet Chaudhary⁴, Pralad Nepali⁵, Madan Sharma⁶

^{1,2,3,4,5}Master's Scholar, Madan Bhandari Memorial Academy Nepal, Uurlabari Morang, Nepal.

⁶PhD Scholar, Lincoln University College, Petaling Jaya, Malaysia & Visiting Faculty, Madan Bhandari Memorial Academy Nepal, Uurlabari Morang, Nepal.

DOI: <https://doi.org/10.24321/2582.3280.202201>

I N F O

Corresponding Author:

Madan Sharma, Lincoln University College, Petaling Jaya, Malaysia & Visiting Faculty, Madan Bhandari Memorial Academy Nepal, Uurlabari Morang, Nepal.

E-mail Id:

madan.sharma@lincoln.edu.my

Orcid Id:

<https://orcid.org/0000-0002-8422-3265>

<https://orcid.org/0000-0003-2803-4918>

How to cite this article:

Sharma M, Koirala N, Joshi A et al. Customer Preference for Green Building Concept with Reference to Eastern Nepal. *J Adv Res Qual Control Mgmt* 2022; 7(2): 1-6.

Date of Submission: 2022-09-12

Date of Acceptance: 2022-10-18

A B S T R A C T

Green building certification systems are increasingly being used to new and existing buildings in the commercial and residential real estate sectors of today as a way of validating that a building fulfills a set of "green" criteria. These criteria may include things like energy efficiency, the use of environmentally friendly materials, site location, the quality of the internal environment. Even while the concept of green buildings is not new to the real estate sector anywhere in the globe, the Indian market is still relatively new and is in the beginning stages of the growth building process. Buildings that have been certified as environmentally green are supposed to provide a number of advantages to the property owners, managers, inhabitants of the building. Within the scope of this study, we endeavored to determine the degree to which Gwalior locals are familiar with the idea of green buildings and to investigate the extent to which clients prefer these types of structures to more conventional forms of construction. In order to accomplish this goal, primary sources were used throughout the data gathering process. A standard building and a green building were compared, a considerable difference was discovered between the two. It was shown that the vast majority of people are willing to spend more money for environmentally green buildings. There is a rather high level of awareness about the concept. It is certain to bring about a shift in the environment.

Keywords: Green Building, Co-Working Spaces, Real Estate, Environment, Health

Introduction

Changes in the economy and improvements in people's quality of life are both results of development. The expansion of the nation's physical infrastructure has reached new heights. Humankind has created everything easier and more comfortable for himself, from a little hut to a large building, in order to live and exist and continuous

focus in construction has drawn attention to reduce, reuse, recycle and rethink for maintaining green through lean construction approach (Mishra AK, Aithal PS, 2022 Sharma et al, 2022). People in Big city have a strong preference for living in high-rise buildings and are willing to pay a premium for the privilege (Mishra and Aitha, 2021). These days, shopping malls, restaurants, movie theaters are all in

fierce competition with one another, they all want to be distinctive and original in comparison to one another. As a result, enormous structures are developed on a massive scale, requiring enormous investments and taking up acres of land. One thing that nobody pays any attention to is the neighborhood and the natural nature in which they dwell. They do a great deal of direct and indirect damage to the natural nature around them. The environment of being environmentally friendly is often disregarded by many large corporations (Mishra and Rai, 2017).

A “green” building is a form of building that, in its design, construction, or operation, avoids or eliminates negative impacts and may have beneficial impacts on our climate and environment. Green buildings are also known as environmentally friendly buildings. The preservation of the environment and the conservation of natural resources are both accomplished through green buildings, which also increase the quality of life.

Housing demand, needs and low costing housing have been focused in Nepal through government, INGOs, NGOs and peoples but no much focus on Green Building yet. The term “green building” refers to a vast array of practices, methods, abilities that aim to reduce and, eventually, eliminate the negative effects that buildings have on both the surrounding environment and human health. One of the options that may be used to reduce the significant negative impacts that the existing building stock has on the environment, society, economy is green building. On the other hand, there hasn’t been any kind of comprehensive review done on all of these different studies, which is something that’s really necessary for the ongoing work. In the most recent few decades, there has been a remarkable development in the number of studies on environmentally green building. In this study, we conduct an analysis of a critical review of the existing body of knowledge about investigations linked to green building (Mishra and Rai, 2017: Mishra AK, Shah SK, 2018: Shah SK, Mishra AK. 2018: Mishra AK. 2019: Anjay Kumar Mishra, Aithal PS. Hamid Saremi 2020: Mishra AK, Thing R, 2009).

Statement of Problem

The prior research that has been done on this subject has uncovered a gap in knowledge, the goal for this study is to fill that gap. The purpose of this research paper is to demonstrate care for the natural world, promote the idea of green buildings, raise knowledge about the benefits of having a green structure, investigate the effect that having a green structure has on the surrounding environment of any building. The concept of “green building” is becoming more popular, particularly in India. This is largely accepted by the business sector since it has been shown to be excellent, efficient, successful.

Objective of This Study

To have an understanding of the concept of green building and the consumers Preference in the conventional manner.

Literature Review

Ashish Kumar 2012, studied research on the process of constructing an environmentally friendly building utilizing a green building methodology. The reduction of waste, pollution, the deterioration of the environment is the primary objective. Observation and in-person interviews are going to be used as the research methodologies. Even if the concept of green homes is relatively new in India, it will nonetheless enable us to take the first step toward protecting the natural resources of the planet and reducing the amount of money spent on energy as well as the cost of this resource.

Measuring the Awareness and Preferences of Real Estate Developers for Green Buildings Over Conventional Buildings was the topic of the study that Patel C. and Chugan P. 2013 studied. The objective is to determine whether or not turning green in the infrastructure industry may assist obtain a sustainable competitive advantage, as well as the amount of awareness and preference that real estate developers’ customers have for green building. The main sources of information consisted of a structured questionnaire that was used to gather the data, the secondary sources included the internet as well as other published sources. According to the findings of the building, conventional buildings may be outperformed by green buildings if they integrate green building certification and the adoption of materials and technology sooner in the design and Development/Construction phase.

Researchers Milad Samurai and Nariman Ghodrati, together with others, studied a study in 2013 titled “Investigation of the Barriers in Developing Green Building in Malaysia.” The goal is to analyze the degree of development of green buildings in the existing circumstances, to locate crucial key actors, to identify, then eradicate, the significant hurdles to the growth of green buildings. Collecting and analyzing data is a part of the methodology for this study. In particular, the first data were generated by the questionnaires of the recognized sample. According to the findings, government roles, particularly incentive instruments including structural incentives, subsidy and rebate programs, tax incentive scheme, low interest mortgage loan, voluntary rating system, market and technology assistance, are the significant drives for eliminating barriers to the development of green buildings.

Kambam Gireeshma 2014, studied a theoretical review of the role that green building plays in reducing carbon emissions. The objective of this article is to educate the reader with the importance of a green building for a better

future and, moreover, to include the adjustments that need to be made in an existing building in order to turn it into a Green Building. An observatory serves as the research methodology here. The fact that most environmentally green materials and equipment available in the nation may be used with little effort has made it simpler for designers to make use of local materials to a far greater degree. The Green Building movement is here to stay, which is good news for people, society, the nation as a whole. The financial advantages of green buildings include savings in force, which is just the most evident and most clearly quantifiable of the benefits.

Mohd Yasir Laeeq's research from 2017 studied on the concept and awareness of green building. The objective is to evaluate the level of adoption of green building principles in commercial buildings as well as the significant obstacles that arise from their adoption, with the end goal of establishing effective strategies for putting them into practice. The study was carried out by means of a survey, the data gathering included the use of questionnaires, interviews, observations. According to the information that have gathered and the research that have done in relation to job, it can be concluded that education and teaching that focuses on sustainability, strict enforceable urban land and planning policy, improved enforcement of bylaws by local government, improved enforcement of bylaws by local government are some of the appropriate strategies that this study concluded to be among the approach that can be adopted to promote uptake.

A study that was conducted by Amit Jhadav (2018) studied into the design of the parameters of sustainable green building. The study of the design of the parameters of the sustainable green building for the purpose of generating healthy buildings with the goal of constructing healthy buildings together with a natural environment is the objective of this project. The methodology of research functions as an observatory. This study reported that a review on sustainable building should include the use of as many environmentally friendly materials as possible for the purpose of preserving the green equilibrium and employing the principles of environmentally friendly architecture for the purpose of minimizing the rate at which pollution is increasing.

Concept of Green Building

A building is considered to be "green" if its construction or operation reduces or eliminates negative impacts on our climate and natural environment, if it also has the potential to have positive impacts in these areas. Buildings that are environmentally green not only save precious natural resources but also enhance the quality of life. There are several components that, when combined, may give a building its "green" status. Among them are:

- Economical use of resources such as energy, water, other types of money
- The use of renewable forms of energy, such as solar energy
- Allowing programs for reusing and recycling materials, as well as steps to reduce pollution and waste
- Optimal ecological air quality within the building
- The use of materials that are non-sustainable, ethical, environmentally friendly
- Taking into account the natural surroundings during the design, construction, operation of the building
- Taking into account the environment of life enjoyed by residents throughout the design, construction, operation of the building
- A design that allows for revised text to be adapted to changing circumstances
- Utilizing materials that are non-toxic and recycled or recyclable utilizing water in an efficient manner and recycling water
- Utilizing technology that is both environmentally friendly and energy efficient
- Utilization of alternative sources of energy
- Improvements to the air quality within buildings to improve occupant health and well-being

Any structure, whether it a building, an office, a school, a hospital, a community center, or any other kind of institution, has the potential to be classified as a green building so long as it has the characteristics outlined in the preceding paragraphs.

Research Methodology

The information collected in this research came from first-hand experiences and data. A questionnaire that was collected especially for the purpose of this research was used to gather the data for this study. There is no attempt made in the questionnaire to provide a measure of the respondents' level of economic literacy. The questionnaire depends on the responses of the respondents as a testament to their level of economic literacy. The questionnaire was sent to a total of 190 respondents; however, only 150 of those respondents actually filled it out. 5 number of Focused Group Discussion were conducted at Biratnagar, Damak, Dharan, Birtamode and Itahari. Convenience sampling, which is not considered to be random sampling, was used to choose the sample for the research.

Data Analysis

Focus Group Discussion were conducted about, what makes a Building Green? And following points were agreed.

- The construction of green buildings may include the use of environmentally sustainable materials (e.g., reused, recycled content, or made from renewable resources)
- Ensure that the indoor settings you create have

minimal traces of contaminants (e.g., reduced product emissions)

- In addition, the landscape should be designed to minimize water usage (e.g., by using native plants that survive without extra watering)
- A way that is considered to be ecologically responsible and resource-efficient during its whole lifespan is referred to as a green building. The traditional concerns of economy, usefulness, durability, comfort in building design are expanded upon and complemented by these aims. The construction of green buildings may include the use of environmentally sustainable materials (e.g., reused, recycled content, or made from renewable resources)
- Ensure that the indoor settings you create have minimal traces of contaminants (e.g., reduced product emissions)
- In addition, the landscape should be designed to minimize water usage (e.g., by using native plants that survive without extra watering)
- A way that is considered to be ecologically responsible and resource-efficient during its whole lifespan is referred to as a green building. The traditional concerns of economy, usefulness, durability, comfort in building design are expanded upon and complemented by these aims. The information presented here was gleaned via an analysis of the data collected through the use of questionnaires. It was discovered that out of the fifty people who filled out the survey, almost half of them were between the ages of 20 and 40, making up 68 percent of the total, that more than half of the respondents were male, making up 52 percent of the total sample size, while 48 percent of the respondents were female. It was discovered that 90% of the population had some type of formal education.

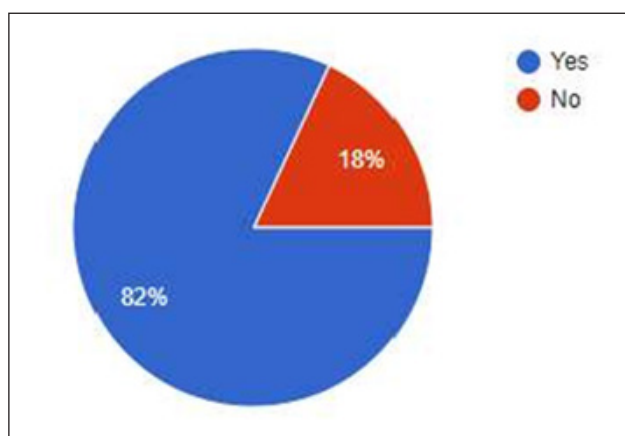


Figure 1. Analysis Regarding Permanent Resident of Eastern Nepal

Computed by the researcher

It has come to our attention that 82% of the people in Eastern Nepal are permanent residents, while just 18% are not permanent residents. It has come to our attention that fifty percent of respondents have purchased real property in Biratnagar, whereas the remaining fifty percent of respondents do not seem to have done so.

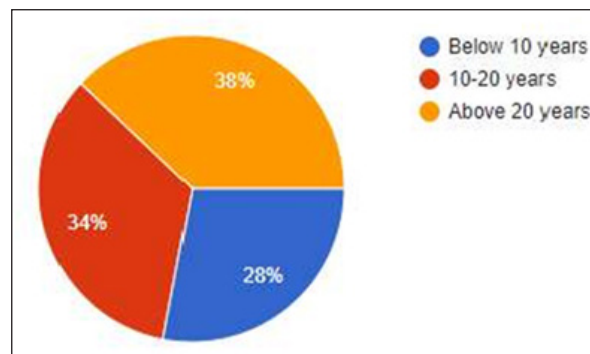


Figure 2. No of years living in Eastern Nepal

Computed by the researcher

It has come to our attention that 28 percent of respondents have just recently settled down in Eastern Nepal. 34% of respondents have been living in the Biratnagar area for between 10 and 20 years, while 38% of respondents have been residing in Eastern Nepal for more than 20 years.

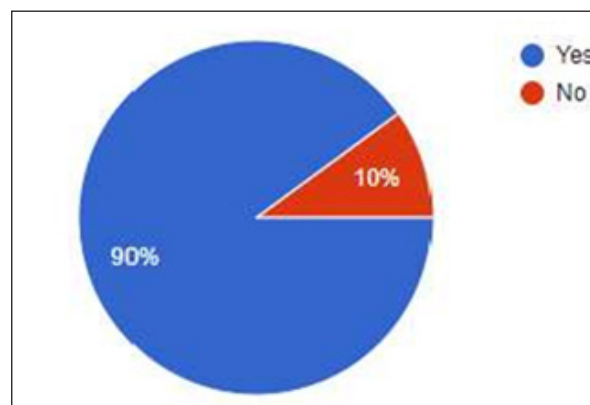


Figure 3. Health Consciousness among Eastern Nepal Residents

Computed by the researcher

It was found that the majority of the population places a high priority on their health. Roughly 90% of the respondents are concerned about their health, whereas the other 10% are not concerned about their health. Before buying a home or commercial property, the vast majority of respondents do their research on any potential health risks associated with the building. It was discovered that 62% of people are familiar with the concept of shared office spaces, while the remaining 38% are not familiar with the concept. In Eastern Nepal, we find that forty percent of the population is familiar with the concept of shared offices and workspaces.

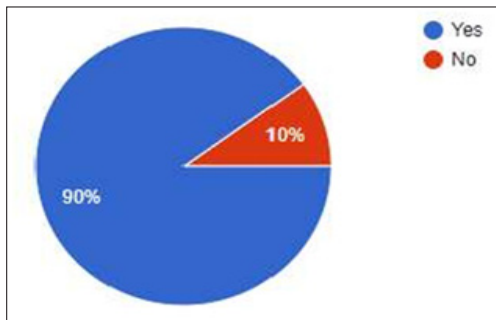


Figure 4. Difference between Green Building and Normal Building

Computed by the researcher

It was discovered that 90% of the respondents polled can tell the difference between a conventional building and a green one. Whereas 10% of those surveyed do not see any significant difference between the two. We observe that 72 percent of respondents are prepared to pay more for environmentally green building, whereas 28 percent of respondents are not willing to pay more for environmentally green building. We observe that the majority of people, or 46 respondents out of 50, believe that it will bring about a change in the environment, but the opinions of the minority, or 4 respondents out of 50, are that it will not bring about any change in the environment.

Finding

The majority of people in Eastern Nepal observe to be long-term residents, according to our observations. The vast majority of people in Eastern Nepal do in fact own real property. It has come to our attention that 28 percent of respondents have just recently settled down in Biratnagar. 34% of respondents have been living in the Eastern Nepal for between 10 and 20 years, while 38% of respondents have been living in Eastern Nepal for more than 20 years. In Eastern Nepal, the more prestigious neighborhoods get more preference than the city's more ordinary neighborhoods. The choice was settled on as a result of considerations including a favorable environment, enough comfort, convenient proximity, effective management of traffic. For obvious reasons, almost ninety percent of the respondents are health aware. The majority of respondents do, in fact, take into account health-related factors before making any property purchases. The philosophy behind shared office spaces is one that many of them are familiar with. Eastern Nepal residents have a good level of awareness about shared office spaces. There were found to be many different perspectives on eco-green building in shared office spaces. A significant number of respondents had prior building of the concept of green buildings. A standard building and a green building were compared, a considerable difference was discovered between the

two. We discovered that the majority are willing to pay more for environmentally green buildings. Regarding the awareness of the concept, the level is fairly high. It will almost certainly result in a shift in the environment.

Suggestion

In green buildings, the use of energy-saving technologies that are also friendly to the environment should be integrated into the building design and construction process from start to finish. This technology is very essential for the future and should be used everywhere. This may create an opportunity for green finance in the infrastructure development of Nepal (Mishra and Aithal, 2022)..

- People should adopt this idea for their own benefit in the years to come so that they may improve
- When it comes to environmental environment, one must protect sustainable development into consideration
- The people need to be encouraged by the government to adapt the concept, the government also needs to equip the citizens with the essential background work
- It is necessary to organize awareness programs on a big scale in order for them to be accessible to everyone.
- It is better to implement social learning management system for displaying our outcomes(Mishra et al,2022)

Conclusion

Green building is favorable to decreasing energy consumption, saving land resources and water use, may minimize the construction of soil and water pollution and air pollution, to meet the needs of the times, to increase people's quality of life. Green buildings save land resources and water use. Green buildings save land resources and water use. People's living environments are getting worse, people's living standards have increased to the point where they now have more time to focus on events that are not related to the economy. This is when people begin to take notice of environmental issues and put forward the concept of green building. Green building is a novel architectural concept that has also been the primary focus of the construction industry's new research and development efforts. It is going to be the most innovative technological concept that the building sector has seen in recent times.

Acknowledgement

The author is thankful to Madan Bhandari Memorial Academy Nepal, Urlabari for providing pertinent papers to make this conceptual paper as course work assignment of Report Writing under Construction Project Management. The author would also like to thank respondents, mentors, family and friends for their moral support and encouragements for believing and supporting him during the process.

References

1. Laeeq MY. studied Green building concept and awareness. *International Research Journal of Engineering and Technology (IRJET)* 2017; 4(7): 2395-0072.
2. Patel C, Chugan P. Measuring Awareness and Preferences of Real Estate Developers for Green Buildings Over Conventional Buildings.
3. Jhadav A. studied the design of the parameters of sustainable green building. *International Journal for Research in Applied Science & Engineering Technology (IJRASET)* 2018; 6(12): 2321-9653.
4. Kumar A. studied construction of an eco-friendly building using a green building approach. *International Journal of Scientific & Engineering Research* 2012; 3(6): 2229-5518.
5. Samurai M, Nariman Ghodrati et al. The Investigation of the Barriers in Developing Green Building in Malaysia Modern Applied Science; 2013; 7(2): 1913-1844. Kambam Gireeshma. Studied A conceptual review of green building in energy saving. *IOSR Journal of Electrical and Electronics Engineering (IOSR- JEEE)* 2014; 2: 2320-3331.
6. Sharma M, Mishra AK, Selvam J. Identifying the Possible Measures to Minimize Material Waste Using Lean Construction. *International Journal of Applied Engineering and Management Letters (IJAEML)* 2022; 6(2): 47-64. DOI: <https://doi.org/10.5281/zenodo.7016112>
7. Mishra AK, Aithal PS. Assessing the Magnitude of Waste Material Using Lean Construction. *International Journal of Case Studies in Business IT Education (IJCSBE)* 2022; 6(1): 578-589.
8. Mishra AK, Shah SK. Estimating Housing Unit for Low Income Group of People in Kathmandu, Nepal. *Nolegein Journal of Operations Research & Management* 2018; 1(2): 16-27.
9. Shah SK, Mishra AK. Review on Global Practice of Housing Demand Fulfilment for Low Income Group People. *NOLEGEIN Journal of Business Ethics, Ethos & CSR* 2018; 1(2): 5-16.
10. Mishra AK. Housing Needs Fulfilment For Low-Income Group. *LivaS: International Journal on Livable Space*, 04(2): 40-47. DOI: <http://dx.doi.org/10.25105/livas.v4i2>
11. Mishra AK, Aithal PS. Saremi H. *Financial Mobilization* 2020.
12. Status of People Housing Program; A case of Rupandehi District of Nepal. *International Journal of Case Studies in Business, IT, Education (IJCSBE)* 4(2): 193-202. DOI: <http://doi.org/10.5281/zenodo.4108162>
13. Mishra AK, Rai S. Comparative performance assessment of eco-friendly buildings and conventional buildings of Kathmandu valley. *International Journal of Current Research* 2017; 9(12): 62958-62973.
14. Mishra AK, Thing R. Structural Features for Earthquake-Resistant Load-Bearing Residential Buildings in Nepal. *J Adv Res Geo Sci Rem Sens* 2019; 6(1) 1-16.
15. Mishra AK, Aithal, P. S., (2022). An Imperative on Green Financing in the Perspective of Nepal. *International Journal of Applied Engineering and Management Letters (IJAEML)*, 6(2), 242-253. ISSN: 2581-7000. DOI: <https://doi.org/10.5281/zenodo.7221741> Crossref DOI: <https://doi.org/10.47992/IJAEML.2581.7000.0155>
16. AK Mishra, Nepal Ananda, P. Aithal August 2022. Industry 4.0 Concept for Nepal - Operating Virtual Farming Industry. PP- 31-35, Proceedings on Future Trends in ICCT and its Applications in IT, Management and Education, Editors, ISBN: 978-81-949961-8-7, DOI: <https://doi.org/10.5281/zenodo.7215189>