

ROLE OF CYCLING IN DEVELOPING GREEN CAMPUSES IN COLLEGES

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Abstract

A green campus means an educational campus that includes environmental sustainability into its infrastructure, operations, and academic curriculum to minimize its ecological footprint. Green campus mainly focuses on reduction in energy consumption, waste management, water conservation, tree plantation, eco-friendly practices among students and staff. This paper discovers how promoting cycling as a primary mode of transport in Indian college campus and how it can support for development of green campus in the college. Transportation plays a major role in environmental impact. Cycling is a fuel free mode of transport. It offers a sustainable alternative that supports environmental protection, economic efficiency.

Introduction:

Now a day's environmental sustainability has become a priority for higher educational institutions worldwide. The concept of green campus is adopted by many colleges and universities. It focuses on conservation of natural resources, waste management and promoting sustainable practices among students and staff. Fast growth of urbanization has increased vehicle use which has increased air pollution, noise pollution, and traffic jamming in and around educational campuses. All these challenges highlight the need for eco-friendly transportation solutions.

Cycling is one of the low cost and eco-friendly modes of transport .It supports for green campus development. Bicycles produce zero emissions. It requires minimum infrastructure, and helps in reducing carbon footprints. To encourage cycling within college campuses helps in decreasing fuel consumption, reducing air pollution, and creating a cleaner and healthier environment. In addition to environmental benefits, cycling also promotes physical fitness, reduces stress, and enhances overall well-being among students and faculty.

This research paper focuses on the role of cycling in green campus development. It also focuses on environmental, health, economic, and social benefits of cycling. It also explores the importance of institutional support and infrastructure in promoting cycling as a ecological transportation alternative. By encouraging cycling practices, colleges can contribute for green campus which leads for sustainable development goals.

The study aims to highlight cycling as a key strategy for developing eco-friendly campuses and to create a sustainable academic environment.

Objectives of the Study

1. To study the concept of a green campus.
2. To study importance in sustainable development of college.
3. To understand the advantages cycling as an eco-friendly mode of transportation.
4. To know benefits of cycling for students and college staff
5. To evaluate the impact of cycling on environmental quality,
6. To study challenges and barriers to adopt the adoption of cycling in college campuses.

Review of Literature

The previous studies highlights that sustainable transportation mode is essential for reducing institutional carbon footprints and improving green campus. Cycling is eco-friendly transport mode which reduces greenhouse gas emissions and improves air quality. Research shows that cycle-friendly campus requires less parking space and reduces traffic congestion. Studies also indicate that cycling improves physical health, reduces stress, and promotes mental health. However, limited research exists which focusing specifically on cycling adoption in college campuses in developing regions.

Research Methodology:

1. Sources of Data

a) Primary data: Primary data will be collected directly from respondents using Questionnaires, Personal interviews and Observation method.

b) Secondary data will be collected from various sources such as books, journals, Government reports and polices and websites and published articles.

2. Sample size:

A sample of 60 respondents selected for the study. College students, teaching and non teaching staff are the respondents for the study

3. Hypothesis:

- 1) Cycling does not pay an important role in the development of a green campus at the college
- 2) Cycling plays an important role in the development of a green campus at the college.

Role of cycling in developing green campus and sustainable development of the college

Green campus means the environmentally sustainable and eco-friendly campus. In promoting sustainable development within college campuses cycling plays an important role. Many higher educational institutions aim to create eco-friendly and resource-efficient environments, cycling helps as an effective strategy to reduce pollution, promote health, and encourage sustainable behavior among students and staff.

Environmental sustainability

Motor vehicles are used as mode of transportation. It contributes to air pollution, noise pollution, and carbon emissions within the campus. But use of Cycling helps in supporting clean and green campus by reducing air pollution, lowering fuel consumption, decreasing traffic problems.

Economic Sustainability

For the students and all staff members cycling is treated as cost saving mode of transportation. There is no fuel cost for using the bicycle, thus saving the cost for students and staff. Bicycles requires low maintenance cost as compare to other vehicles. Less space is required for bicycle parking. It saves the cost of college on parking and lowering infrastructure investment.

Health Benefits:

Cycling is one of the most effective and available forms of physical activity. Regular cycling helps to improve physical, mental, and emotional fitness and improve overall quality of life. It shows that cycling helps in contributing to a healthier and more productive campus environment.

Social and educational impact:

Cycling on a college campus is not only a mode of transport but also a promoter for social development and educational enhancement. It helps to build a collaborative culture, promoting environmental awareness, and improving academic engagement. Use of cycle increase the environmental awareness and social responsibility among the citizens. As colleges act as a role model in society and promoting cycling helps to shape the future of society.

Measures to promote cycling in college: I

Infrastructural development, support from management, awareness programs, and incentives are required for the promotion of cycling in colleges. A well-planned cycling activity can help institutions move toward becoming a green and sustainable campus. For the promotion of cycling following infrastructural facilities are required

- Clear roads
- Markings and signboards on the road
- Covered and supervised bicycle stands
- Parking area near classrooms, libraries, and hostels.

- Availability of air pumps and tools.

Institutional Policies for promotion of cycling in college:

- Limited entry of motor vehicles within campus
- Introduce “No Vehicle Day” in the college
- Arrangement of cycling awareness in student induction programs.
- Posters and social media campaigns for promoting cycling
- Encourage participation of faculty as role models.
- Create campus cycling clubs
- Arranging cycle rallies

Awards and incentives for promoting cycling

- Giving awards to regular cyclists.
- Provide bicycles at discounted rates to students.
- Bicycle-sharing systems in the college

Challenges faced in Promoting Cycling

Promoting cycling as best transportation option in colleges and many benefits. Still its adoption often faces several barriers. Overcoming these challenges is essential for developing effective strategies to encourage cycling culture.

Lack of Cycling Infrastructure in the colleges:

In many colleges infrastructure required for cycling are not available. These lack of infrastructure are as follows:

- No proper cycle lanes
- Lack of secure parking facilities
- Poor road conditions
- Absence of protective cycling zones

Some environmental factors can discourage cycling like .:

- Extreme heat during summer season
- Heavy rainfall and flood situation
- Humidity causing discomfort for cycling
- Seasonal variations affecting regular use of cycles

Social challenges for promoting cycling:

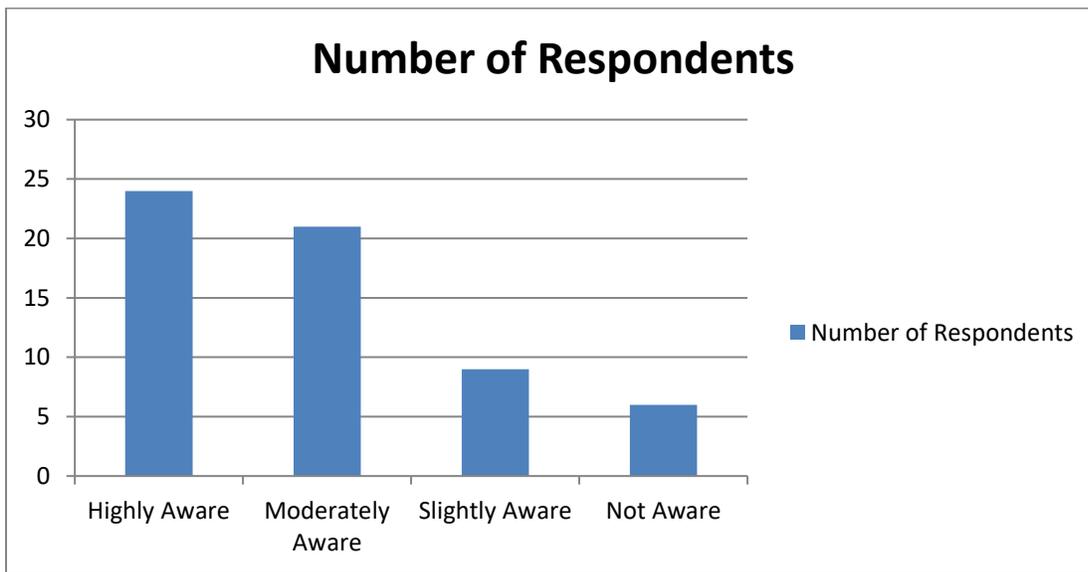
Some social factors also influence use of cycles like:

- Cycling is treated as less prestigious than motor vehicles
- Preference for convenience and comfort given to motor vehicles
- Lack of awareness about environmental benefits

Data Analysis

Table 1: Awareness Level of Green Campus

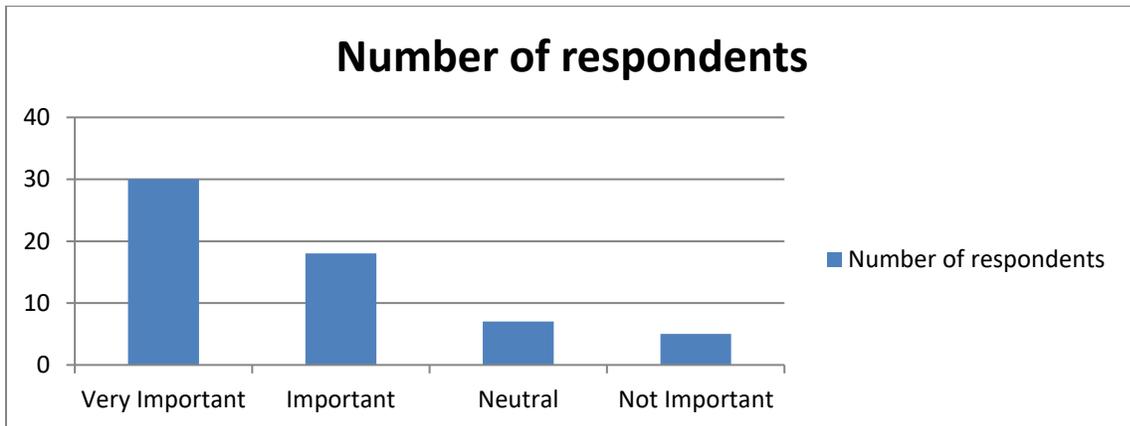
Awareness Level	Number of Respondents	Percentage
Highly Aware	24	40%
Moderately Aware	21	35%
Slightly Aware	9	15%
Not Aware	6	10%
Total	60	100%



Interpretation : It is observed that nearly 75% respondents are aware of green campus and 10% respondents are not aware about the green campus.

Table 2: Importance of Green Campus in Sustainable Development

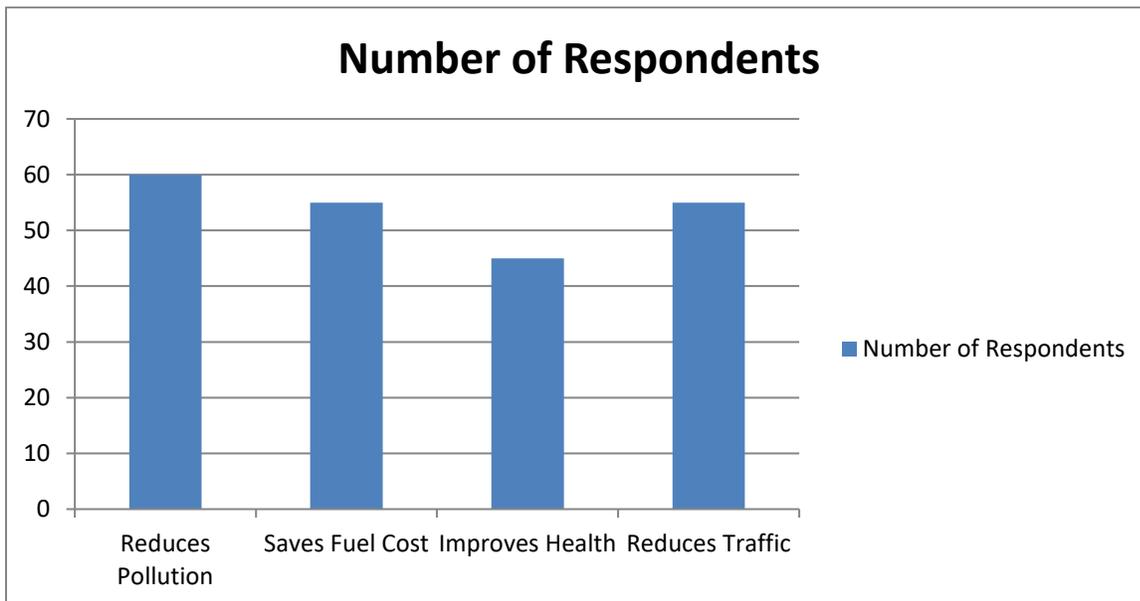
Opinion	Number of Respondents	Percentage
Very Important	30	50%
Important	18	30%
Neutral	7	12%
Not Important	5	8%
Total	60	100%



Interpretation: It is observed that 80% respondents states that cycling is important for green campus. 12% respondents are neutral and 8% respondent states that cycling is not important for green campus.

Table 3: Advantages of Cycling as a mode of Transport

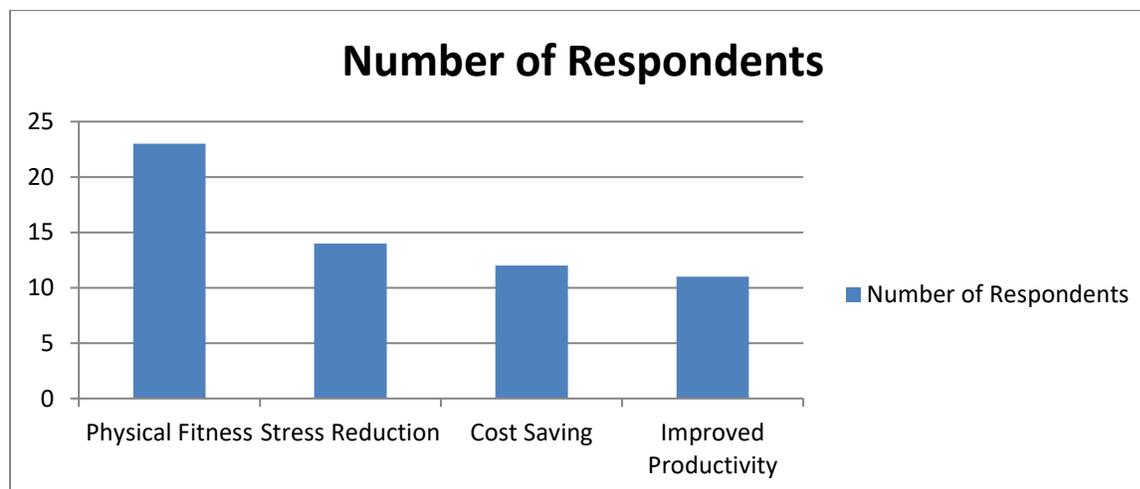
Advantages	Number of Respondents
Reduces Pollution	60
Saves Fuel Cost	55
Improves Health	45
Reduces Traffic	55



Interpretation: From the above table it is observed that nearly all respondent states that cycling reduces pollution and reduces traffic and saves fuel cost and improve health.

Table 4: Benefits of Cycling to Students and Staff

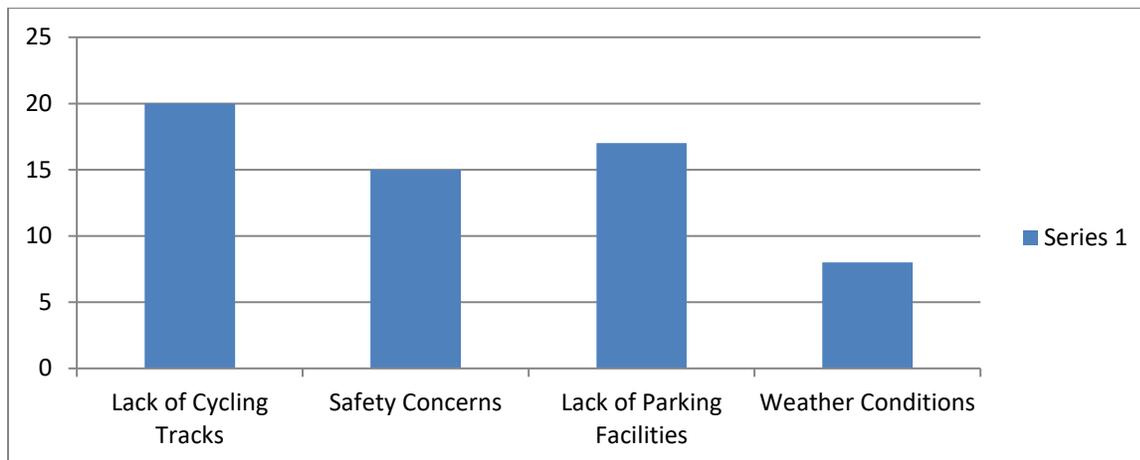
Benefit of cycling	Number of Respondents
Physical Fitness	23
Stress Reduction	14
Cost Saving	12
Improved Productivity	11
Total	60



Interpretation : It is observed that out of 60 respondents 23 respondents states that cycling is beneficial for physical fitness, 14 respondents states that cycling reduces stress, 12 respondents states that it saves the cost and 11 respondents states that it improved productivity

Table 5: Barriers to Cycling

Barrier	Respondents
Lack of Cycling Tracks	20
Safety Concerns	15
Lack of Parking Facilities	17
Weather Conditions	8
Total	60



Interpretation: from the above table we can say that lack of cycling track and parking facility is the major barrier for cycling in the college

Hypothesis Testing

H₀ (Null Hypothesis):

Cycling does not play an important role in the development of a green campus.

H₁ (Alternative Hypothesis):

Cycling plays an important role in the development of a green campus.

From the statistical data we can state that

- 80% respondents support for green campus initiatives.
- 75% believe that cycling improves environmental quality.
- Majority recognize health and environmental benefits of cycling.

Therefore we conclude that the null hypothesis is rejected and the alternative hypothesis is accepted. Therefore, cycling plays an important role in the development of a green campus in colleges.

Suggestions

1. Development of safe lanes for cycling .
2. Include cycling into urban transport policies.
3. Promotion of cycling in college campuses
4. Public awareness campaigns for cycling
5. Incentives for employees using bicycles

Conclusion

Cycling is a less expensive mode of transportation. It is also termed as eco-friendly source of transportation. It helps for environmental conservation, economic development, and social well-being.. Therefore we can conclude that cycling is not only a mode of transportation mode but it is a strategic tool for achieving sustainable goals

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