The Urban Park for Sustainable Development through Community Participation

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Abstract
People living in the core cities have no or limited access to green spaces as a result of rapid urbanization. This leads to an unhealthy life filled with mental and physical stress. Small urban parks in densely populated areas are required to alleviate this type of stress. Small urban parks require small spaces and can meet the needs of the people who live nearby. This study attempted to discover the existing situation of urban parks in the core area, as well as the community's involvement in the use and management of urban parks. It also identifies vacant or unutilized spaces that could be converted into urban parks. Due to time constraints, the study is limited to three wards of the core city and attempted to list the potential spaces that could be converted into urban parks. Three existing parks were visited to learn about the current situation, the facilities provided, and how the community is involved in the parks. And how can the community get involved in the new parks? What facilities are needed in urban parks to ensure maximum utilization, and how can parks be made gender friendly?

Keywords
Urban Park, Small Park, Pocket Park, Community Participation, Sustainable Development

1. Introduction

To ensure the environmental sustainability and livability of towns and cities, green space must be provided; as a result, this demands adequate planning, execution plans, and financial commitment. [1]

Due to the rapid urbanization and population growth, all the green spaces that use to serve as green pocket has been converted into built-up space; there are no sufficient open spaces in cities. The public open spaces are also enclosed and converted into built-up spaces. Due to this, the urban people must go far to experience nature. This results in a lack of mental as well as physical health in the urban population. Many large cities are being driven into more uncertainty and danger as a result of increasing unplanned growth and environmental changes.

In Nepal, One of the major cities that is expanding the quickest is Kathmandu, where there is ongoing evidence of uncontrolled construction and the loss of open space. Though cities have larger parks, people must travel a long distance to get there (e.g. Tribhuvan Park, Godawari Botanical Garden, etc.), which is inconvenient in daily life.

Small urban parks are required in the core urban area to fulfill the daily needs of the people in the surroundings. Open green spaces enhance the quality of life in any city. Green open spaces provide a place to decompress and unwind with friends and family, increasing social health. In towns devoid of nature, stress is generated on both a physical and psychological level.

Parks and open spaces played significant social and environmental roles. The physical and recreational needs of urban youth are frequently unmet due to limited access to parks and open spaces. Park and recreation institutions can play an important role in transforming unused areas and abandoned spaces into mini or urban parks to meet these growing needs. These unique parks are frequently created in the wasteland, otherwise abandoned and unused places.

Copious research shows that healthy urban parks provide various ecosystem services in cities, contributing to the various dimensions of sustainability. These advantages include recreational and social opportunities. [2]

Uncontrolled urbanization is resulting in settlement patterns with dangerously low proportions of public space. Because the private sector has little incentive to provide public space, local governments play an important role. Even in new cities, planned areas have significantly lower allocations of land for public space than unplanned areas. Such areas are unable to include green spaces that can foster social cohesion and important ecological functioning, as well as land for vital infrastructures such as water, sewage, and waste collection.

Many urban parks can compensate for the emptiness, neglect, and lack of usage of many urban areas. They have the ability to kickstart urban regeneration processes by revealing new "life" and new possibilities to accommodate. This must be retrieved and brought to light in order to realize and see a distinct urban dream.

2. Research objectives

Urban Parks provide places for people to experience nature, engage in physical activity, and relax. The purpose of this research is to identify the problems and the possible opportunities to create an urban park in different urban spaces.

The objective of this research is to find the possibilities of urban parks and encourage community participation in the urban core of Kathmandu.

The research will also look into potential urban park locations. This study will investigate the current state of community involvement and the methods for improving and managing parks.

3. Research Question

What are the possibilities of the urban park and how the community participation can be encouraged?

To understand this following sub-questions are proposed:
• How to increase the number of urban parks in the urban core?
• What is the role of community participation?
• How can community participation and women's involvement be increased?
• How to make the park sustainable in long run?
• What are the challenges to the improvement of parks?

4. Methodology

The interpretative paradigm was chosen as the research paradigm for this study. Interpretivism seeks to comprehend sequential and contextual motives, meanings, and reasons, as well as other subjective experiences. Interpretivism is based on the recognition that there are fundamental differences between the nature of phenomena studied in natural science and social science. Because the study is an interpretation of various open-space principles.

To understand how these problems are addressed in those cities, a Literature Review on case studies of various national and international cities was conducted. The literature helped in comprehending answers and helping to analyze the circumstance in relation to other situations. The search terms included "Pocket Park, "small urban green space," "urban park for sustainability," "small public urban green space," "small urban parks," "vest-pocket park," and "community participation in the urban park."

A Literature Review on case studies of various national and international cities was done to understand how these problems are been addressed in those cities. The search terms included a combination of keywords and phrases such as "pocket park", "small urban green space", "urban park for sustainability", "small public urban green space", "small urban parks", and "vest-pocket park", "Community participation in the urban park".

The primary data was collected using a questionnaire designed to collect dwellers' perceptions of urban parks. The questionnaire is prepared by using the computer software Kobotoolbar. Systematic random sampling was carried out to understand the perceptions of the urban parks and their usability. 45 people were interviewed and samples have been collected such as local people using the park, people in the surrounding area of the park, and the ward personnel for the survey.

Direct field observation was carried out to know the present scenario and verify the results obtained from the maps and other secondary sources.

Surveyed data were plotted in another computer-aided software. Data handling tools such as excel and SPSS were used. The survey data were analyzed through SPSS. Results from the survey were analyzed and compared to conclude and implemented in the process.

5. Literature review

Urban parks are a type of green space in cities that may provide people with a range of health, social, economic, and cultural benefits. [1]

Small urban parks enhance people's connection to nature by supplementing larger parks in the urban fabric.[3] Urban parks have been shown to reduce stress, blood pressure, diabetes risk, and hostility, as well as enhance sleep patterns and cognitive and emotional development. Because these parks are too small, design features will be more important. Investigating different plants and fences, both aesthetically and physically, can have an impact on the linkages between user choice and park usage.

A park is a natural, semi-natural, or planted area set aside for human enjoyment and recreation, as well as animal or natural environment conservation. It may consist of grassy fields, rocks, soil, and trees, but it may also consist of structures and other artifacts such as monuments, fountains, or playground equipment. The government, the private sector, or a public-private partnership can own public places and facilities.

5.1 The Management of Urban Park

The goal of public space management is to ensure that public space can carry out all of its allowed functions while also controlling the interactions and effects of those numerous activities. It is comprised of four interrelated procedures that apply regardless of whether its activities are carried out by public sector agencies, community-based organizations, or private sector firms.[4]

5.1.1 Usage rules and conflicts between uses

The usage of public places has always been regulated, either formally through bylaws, or informally through socially sanctioned practices and attitudes.[5] The legislation specifies how public areas should be utilized, provides a framework for resolving disputes between users, establishes access requirements, and defines acceptable and unacceptable behavior.

The maintenance routines Public places, as well as the infrastructure, equipment, and amenities allotted to them, must be maintained in order to accomplish the activities that justify their existence. This involves anything from maintaining public areas useful, uncluttered, clean, and safe to eliminating anything that may try to destroy or insult the

significance involved in open spaces.

5.2 Importance of Urban park

Urban pocket parks serve as a platform for a variety of activities and are regarded as important multifunctional areas. Several studies have found that urban parks increase social contact and cohesion among residents. Green spaces can promote physical activity, lower air pollution, reduce urban heat island effects, and improve ecosystem services.

5.2.1 Benefits of urban Park

It derive a wide variety of public and private benefits from parks. These benefits can be categorized as public health benefits, economic benefits, environmental benefits, and social benefits. People who are exposed to greenery and nature are healthier than those trapped in the built environment. The small green infrastructure such as the park offers a clean environment adding aesthetic value to the surrounding.

a. Social benefit of urban park Urban parks may provide a mechanism to foster social contact among varied community groups through organized activities such as health campaigns, sports, recreation, and tree planting projects. Aside from increasing social interaction, urban parks may also be suitable locations for establishing social relationships among family members. Parks may also be used as a social gathering place, creating cohesiveness among family, friends, and neighbors. [6]

Improvement in General Mood and Attitude A study that compared meditation and athletic walking in the forest and inside discovered that contemplative walking provided more psychological advantages than athletic walking in both environments.[7] Moving in green space has been demonstrated to decrease irritation and boost brain activity, akin to meditation. Happiness, defined as the existence of a positive emotional viewpoint, was most efficiently improved by contemplative woodland walking.

Stress Reduction Nature is a natural stress reliever, and the body's positive response occurs in minutes. Views or brief contacts with local nature assist in the recuperation of the mind from mental fatigue, because natural areas provide a vacation from most school or

job obligations. The amount of time spent in nature (up to 1.5 hours) increases the therapeutic effect.[7]

Mindfulness and creativity have improved
Mindfulness workshops have been found in both mentally healthy and clinically depressed people to improve mood, cognitive function, and immune response. Nature provides cognitively healing sensory stimulation that may promote ideation. In a study of creative professionals, nature interactions improved creativity by inspiring new ways of thinking. Because a healthy mind is better at assessing and developing ideas, a natural recharge may aid in creativity.

Increasing Social Capital Residents of public housing said they felt safer if their complex had well-kept landscaping, such as trees and grass. Views of green space from residences are related with increased levels of well-being and contentment in the local community. Integrating park and infrastructure aims can provide more opportunities for nearby environmental experiences that improve excellent health and sustain wellbeing.

b. Environmental benefit of Urban park As global warming becomes an environmental issue, particularly in metropolitan areas, landscape components in urban parks play a role in temperature regulation. According to Corraliza et al., the natural environment also aids in the development of children (2011). They also stated that nature can educate youngsters to be resilient, allowing them to cope better with hardship.

Clean Air When it comes to air pollution, even a little increase in the number or size of pocket parks can have a significant impact. Air pollution can increase the risk of some cancers and harm children, the elderly, and the young.

Urban Heat Island Effect Reduction The presence of flat, dark surfaces made of asphalt and concrete in cities contributes to the urban heat island effect. This leads metropolitan areas to be significantly warmer than surrounding areas, which is a major factor to smog production. Even a minor increase in the number of trees in the region can offset this effect, which can be almost completely eliminated by expanding park space.

Positive impact on the local climate Trees help to reduce the maximum temperature in the city center, which has grown as a result of the 'urban heat island' phenomenon. Urban heat islands are caused by heat accumulation in cement, steel, and asphalt. Evaporation from urban plants lowers air temperature.

Conserve Natural Ecosystems More than just humans are driving the demand for more and better parks in our cities; each park has its own ecology and serves as a natural habitat for a variety of animals. As cities become larger, an increasing number of these species is displaced. Parks are wonderful locations to teach youngsters about the environment and provide a safe haven for those who have been displaced by urban growth.

c. Economic benefit of urban park High-quality public spaces have a substantial economic influence on metropolitan areas. As towns and cities vie for investment, the availability of good parks, squares, gardens, streets, and other public places becomes a valuable marketing asset. Corporates are drawn to areas that provide well-designed and maintained public spaces, which attract highly trained personnel and services.

Increasing business revenue A decent public realm with suitable walkability and comfort may significantly boost sales by drawing more pedestrians to the region. Pedestrian areas are certain to attract potential clients due to their convenience. As a result, coffee shops, outdoor diners, food courts, and other retail establishments see an increase in business turnover.

Tourism Many towns and communities rely on tourism to provide a significant portion of their annual earnings. Most of the time, the public parks and green areas in or around the town contribute to its attractiveness as a tourist destination. Any considerable decrease in quantity or quality will have an immediate negative impact on visitor numbers. Tourist attractions include public areas, particularly those of architectural and aesthetic value.

5.2.2 Components of the urban park

a. Softscape Plants are essential softscape elements in landscape design. Because they are living creatures,

their maintenance approach and regime varies greatly from those of hardscapes such as shelters and benches. Plants' structure, shape, size, and behavior change across time and season. These modifications must be considered throughout the design and planning stages.

i. Trees   Diverse tree species respond differently to different site circumstances. During the design stage, it is critical to ensure that plants are planted in the optimal planting places. Deciduous trees should not be planted alongside roadways since falling leaves will be a maintenance concern. This is especially true for trees with large or heavy fruits, which may fall on passing cars and pedestrians. Evergreen trees are typically hard-leaved and have a high water efficiency. Some pines and cypresses thrive in warmer climates. Windbreaks, privacy screens, and winter refuge for birds and other species can all be provided by evergreen trees. Some broadleaf evergreens have gorgeous blooms as well as tasty fruit.

ii. Shrubs   Shrubs are frequently used to improve landmarks, mark boundaries, and provide screening. The chosen shrub must be dense, low branching, and upright, similar to a hedge. Some shrubs necessitate a high level of care because they must be fertilized and watered frequently. Plant these shrubs behind shorter, denser shrubs or groundcovers to reduce the frequency of pruning.

iii. Herbs   Many herbs are simple to grow even without a garden. Growing herbs in an urban garden allows to harvest them whenever required. Many different types of religious herbs can also be grown in an urban garden. This not only adds aesthetic beauty but also aids the community's sustainability.

b. Hardscape   Hard landscaping projects cover the entire yard and are required before soft landscaping features can be used. Paved areas, driveways, retaining walls, sleeper walls, stairs, walkways, and any other landscaping made of hard materials such as wood, stone, and concrete are examples of this. Hard landscaping eliminates the need to worry about water after heavy rain or snowfall. Hardscaping enables the construction of man-made landscaping features that would be impossible to construct otherwise due to soil erosion. Hardscapes can include large features like paved roads, driveways, and fountains, as well as small pools or ponds. Most water features are

hardscapes because they require a barrier to keep water from draining into the surrounding soil.

i.Park amenities   Park site amenities are all of the little extras that make everyone's visit to the park more enjoyable and comfortable. Any man-made structure, monument, statue, vase, fountain, pole, wall, fence, bench, trash container, shade structure, playground, building, landscaping, lighting system, sprinkler system, and walking or biking trails are all examples of park amenities.

a.Benches   Visitors to the park will most likely require a place to rest after playing, exercising, or socializing with friends and family. Installing benches throughout the park provides people with a place to rest before heading out for other activities.

b.Dustbins   No one wants to visit a park that is littered with trash. People can dispose of snack wrappers and other unwanted items by dispersing waste receptacles throughout the space. They are a type of park site amenity that should not be overlooked. It will enhance the beauty of the urban park.

c.Light Fixtures   The light fixture contributes to the park's livelihood by providing users with a sense of safety. It will also increase the park's activity level in the evenings.

6. Site selection

The site for the study is selected in the core urban area of Kathmandu. Due to the time constrain the study of whole Kathmandu core is not possible so to make it more scientific ward boundary is considered and 3 wards are taken for the study. Ward 12, ward 21, and ward 23 are only taken for the study. And the population distribution in the site areas is 13262, 13727, and 8357 respectively. A questionnaire was done on a total of 45 people in 3 wards.

The three existing parks in three wards are taken to study the existing condition and the behaviour of the pubic participant in the area. The three existing parks are Dharma Bhakta park (ward no 23), Lagan club park (ward no 21) and Kholcha pakha park (ward no 12).
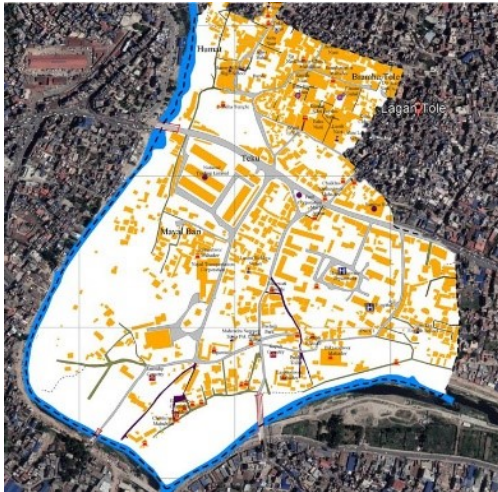
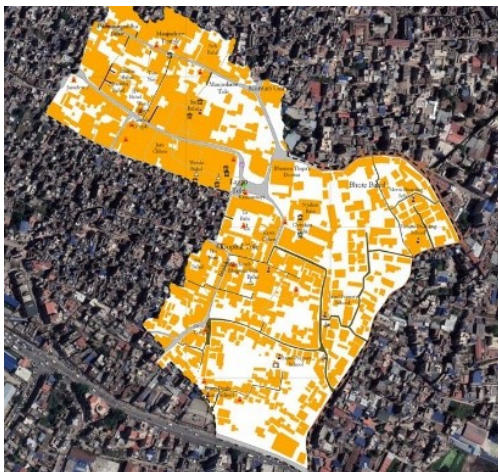**Figure 1:** Ward boundary of 12 overlaid above the google image

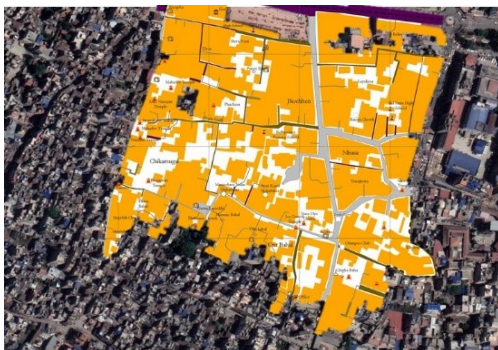**Figure 2:** Ward boundary of 21 overlaid above the google image

Figure 3: Ward boundary of 23 overlaid above the google image

7. Finding and discussion

Amongst the 46 surveyed, it was seen that around 87% on average of 3 wards of the primary users were male. It reflects the current social status of gender inclusiveness. Looking at the age distribution, we can see that majority of the primary users lie in the age group between 40 to 60.

We can say that park user prefer to visit the park during morning and evening time. So the activities oriented to this time can add a benefit to increase the number of user. It is also seen that the children are not using the parks. If we can add the activities that involve children in the park than the female as well as elderly users can also be increased.
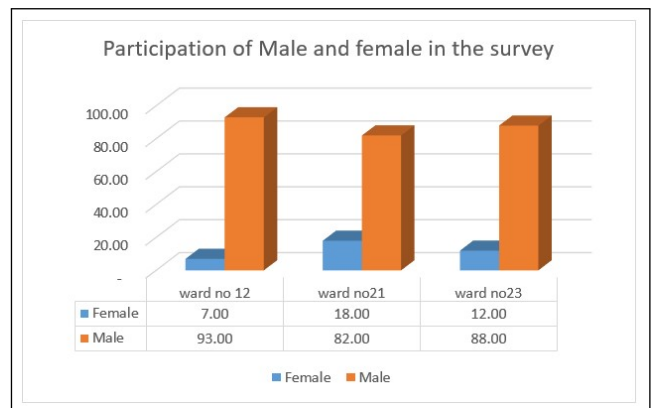
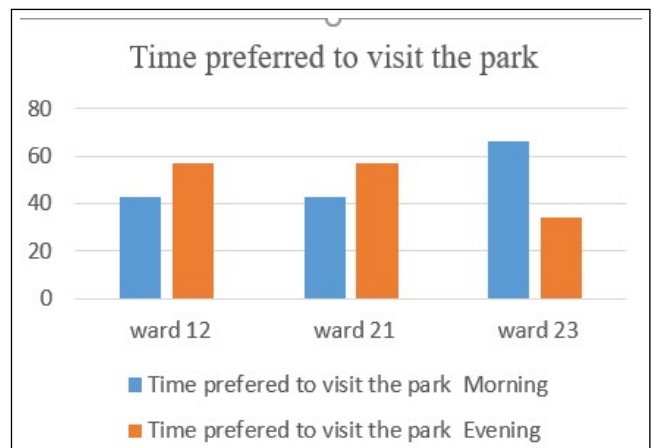**Figure 4:** Participation of Male and female in the survey

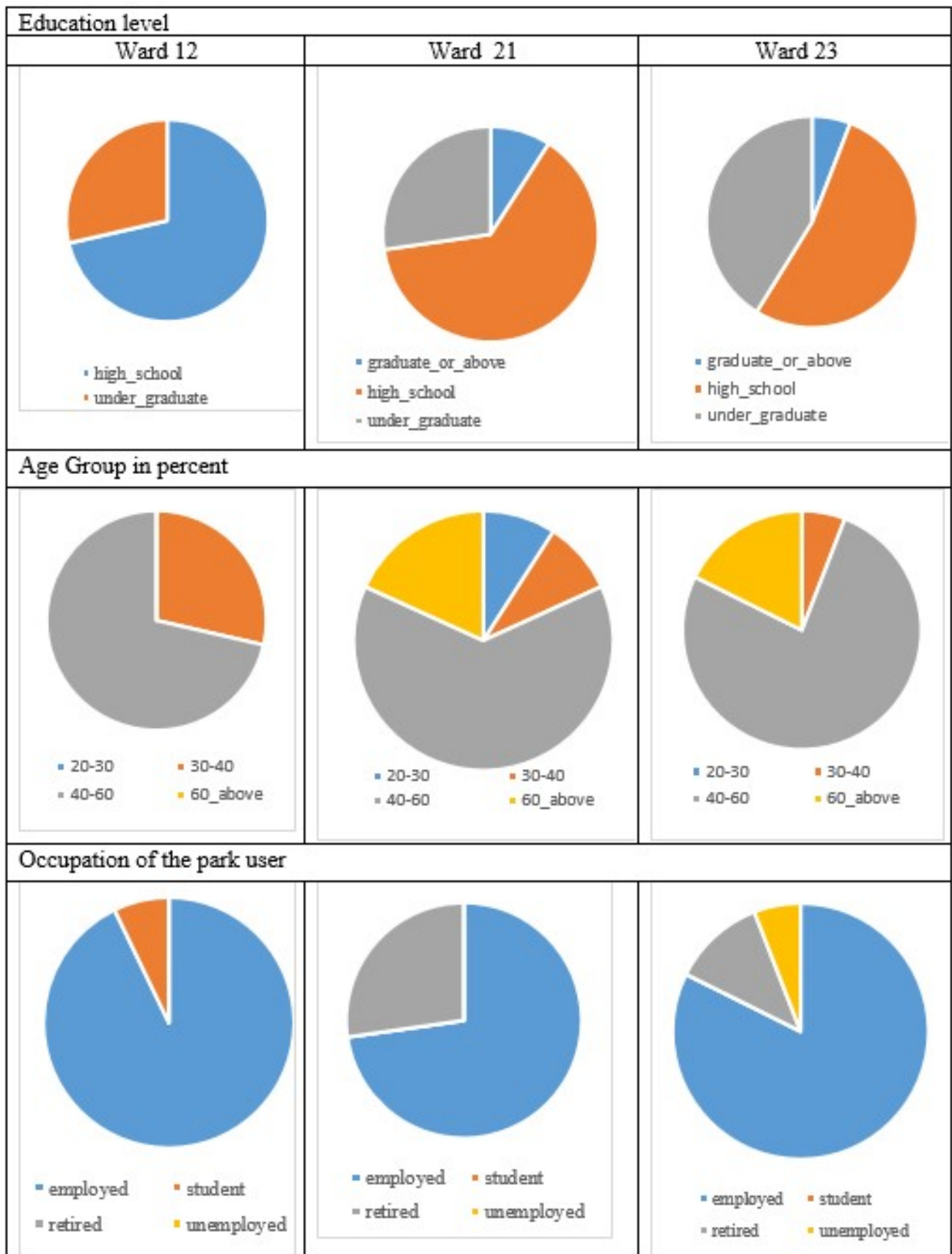**Figure 5:** Time preferred to visit the park

Figure 6: Comparative chart of education, age, and occupation in three wards
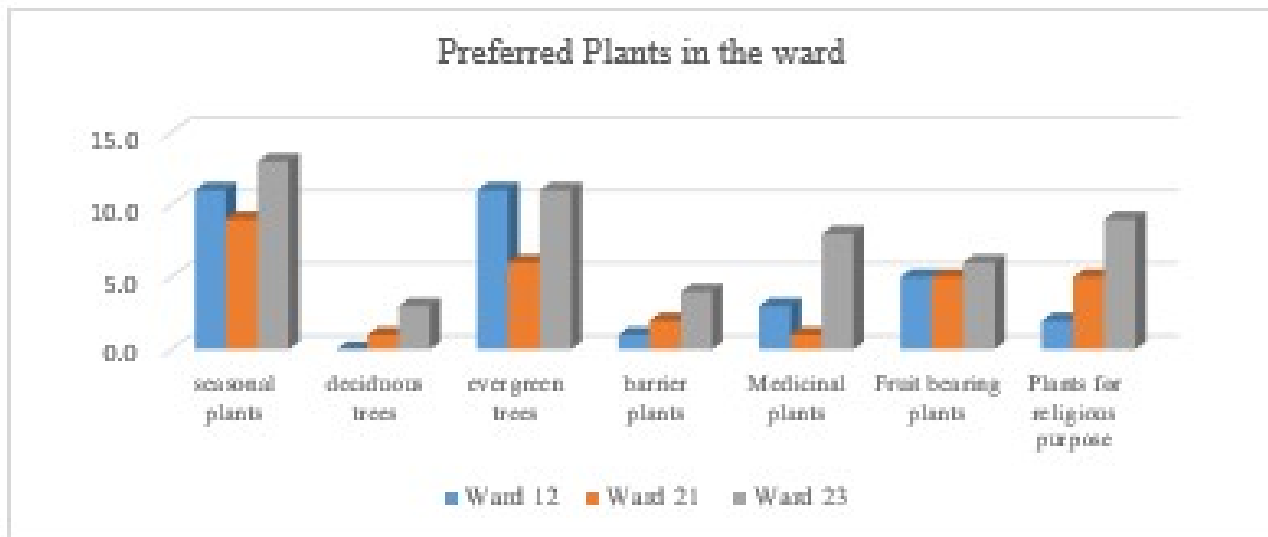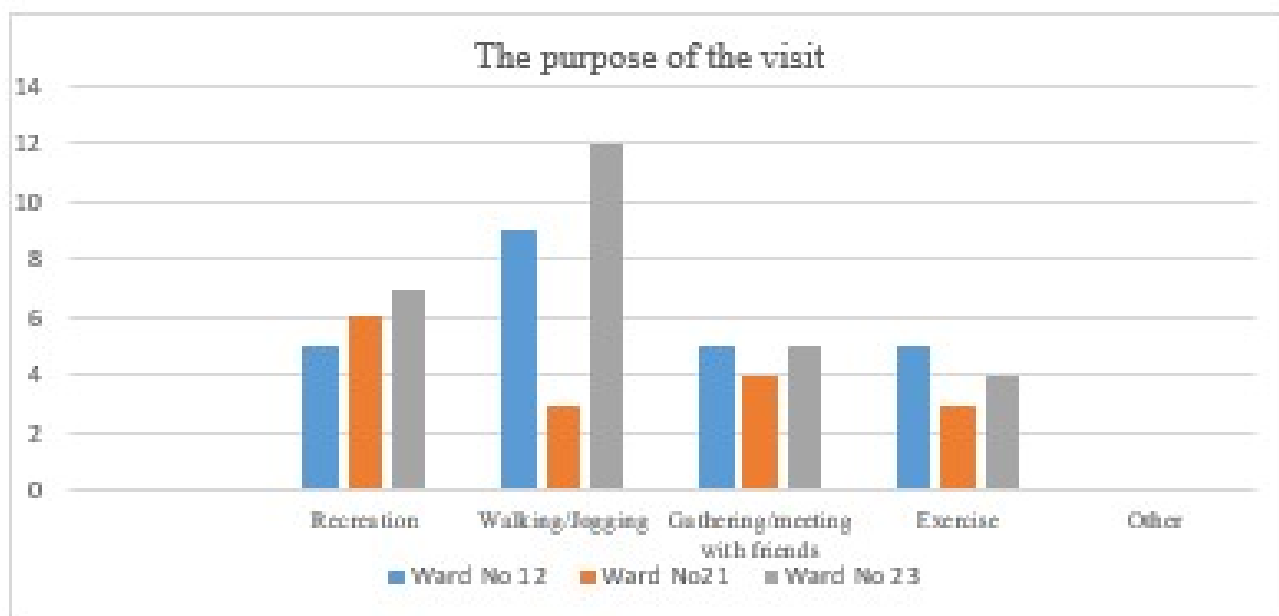
Figure 7: Preferred plants in the park

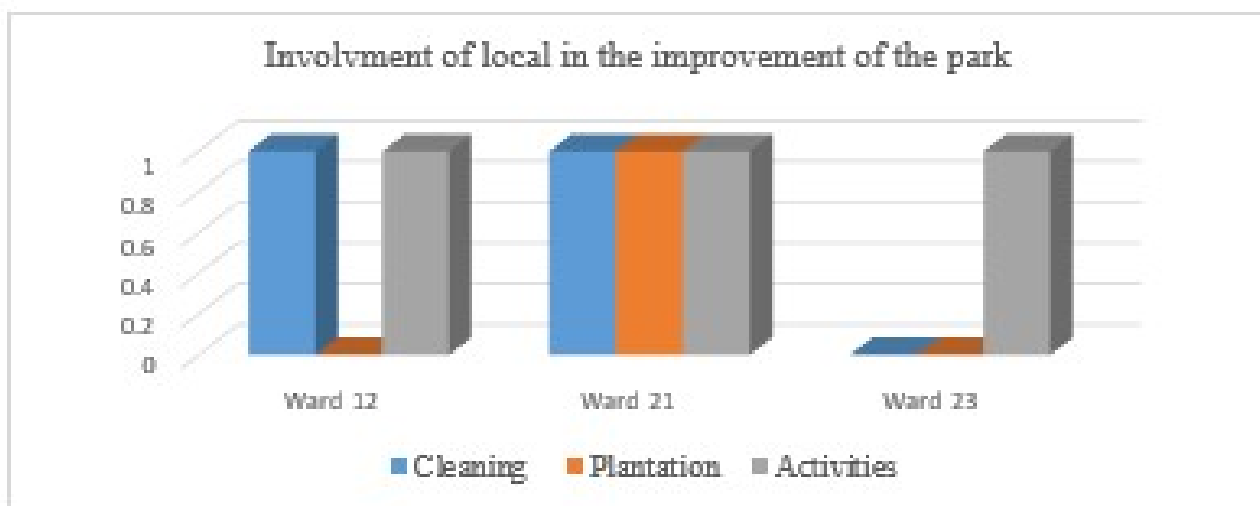**Figure 8:** Purpose of visit

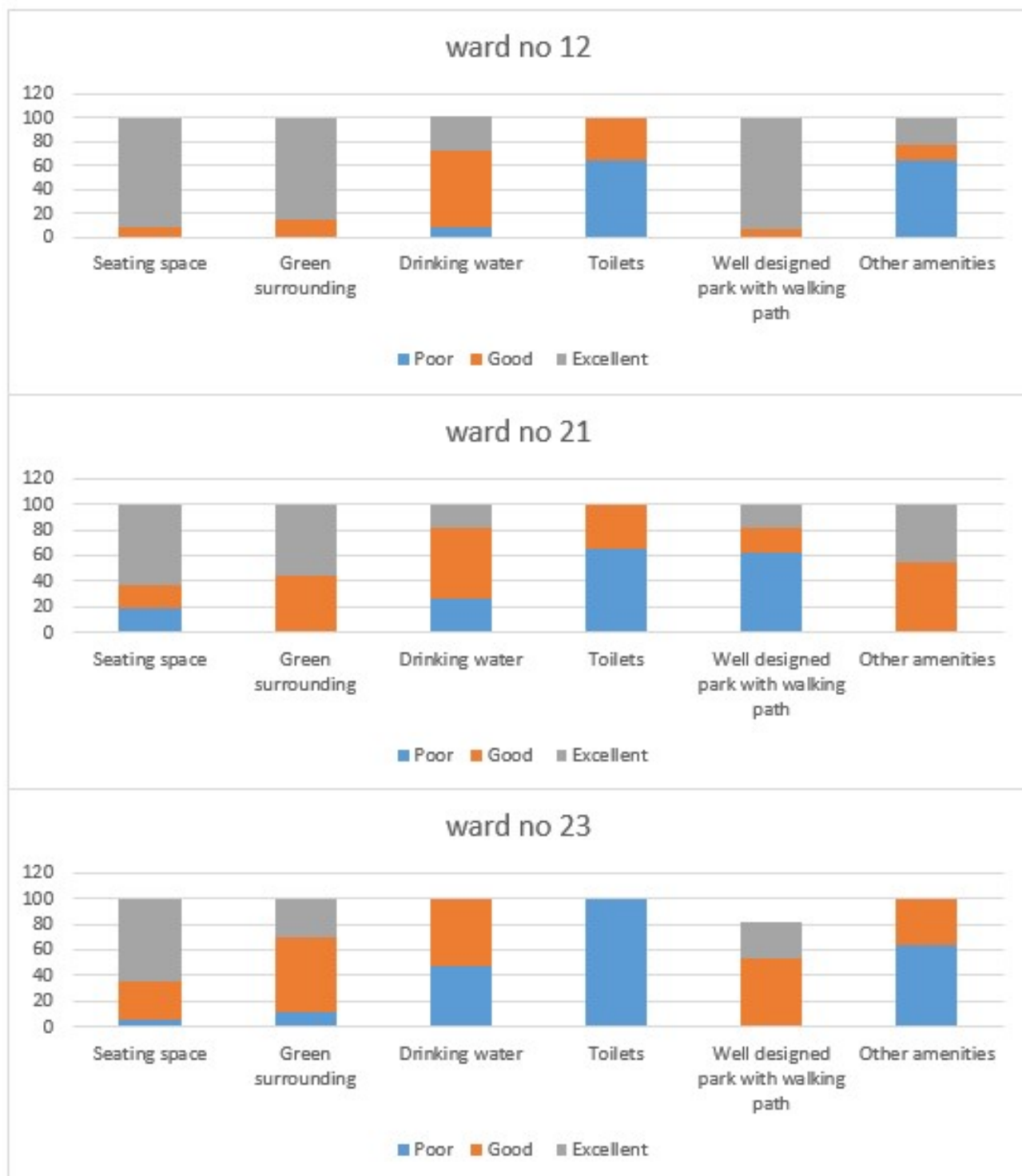**Figure 9:** Involvement of local for the improvement of parks

Figure 10: Facilities in parks

The preferred time for the park visit is either morning or the evening this is clearly seen in occupation pie charts, as people only have time either before going to work or after coming back from work. In figure 7 when asked what kind of plants are preferred most answered seasonal flower bearing and evergreen which leads to the requirement of people to be close to nature. In figure 8 it is clearly seen that people use the park mostly for recreation and walking, which might lead to the reason that there are no other facilities like playing and exercising equipment. Two parks in wards 23 and 12 do not have toilets and drinking water facilities but yet some people responded good which means, the users of the park are the local people living in the surrounding so it is ok if the facilities are not in the park but in nearby houses or shops.

Table 1: List of open space that has the potential to convert to the park

Ward No 12	
1	Musum Bahal
2	Bramha tole
3	Buddha bihar
Ward No 21	
1	Bhimsen Thapa Darbar
2	Nhyakan bahi
3	Jyabahal
4	Back yard of Ram temple Jaisidewal
5	Space in front of Jasidewal
Ward No 23	
1	Na bahi
2	Space in front of nasa dyo
3	Baniya Chowk
4	Lubi chowk

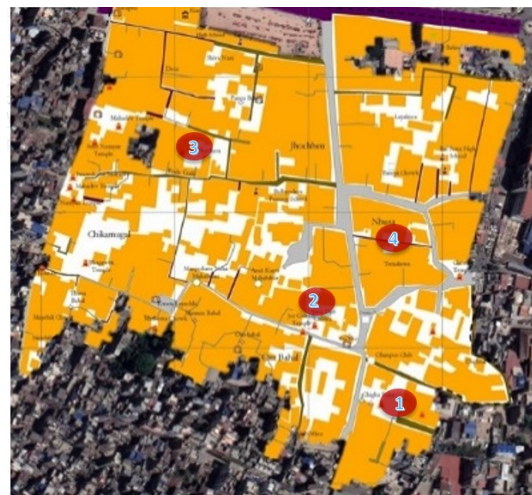**Figure 11:** List of open space in ward no 12

Figure 13: List of open space in ward no 23

Figure 12: List of open space in ward no 21

8. Conclusion

The study's findings lead to the conclusion that community participation will rise if more events for friends and family can be organized. According to the findings, both female and child participation are very low, so if we increase the activities for kids, both female and child participation might go up. The engagement of the elderly will improve as children's activities improve.

The presence of vegetation and other amenities like drinking water, restrooms, exercise equipment, and adequate lighting may encourage residents of all ages to get more involved in their communities. Local awareness programs and other additional activities

will also help in the improvement of community participation. The addition of amenities and equipment will also help in the management of the parks.

9. Recommendation

For a sense of connection to nature, there should be appropriate seasonal as well as evergreen vegetation. In order to make the park easier to use and for safety purposes, additional amenities like drinking water, restrooms, and adequate lighting should be offered.

In order to make the park accessible to all age groups and allow the community to make use of the space, exercise equipment and children's play areas should also be provided with carefully planned pathways. Proper access is highly recommended so that general people can also easily get access to the park. Entry and exit points should be clearly visible so that people of all age groups can enter and exit from any point.

Acknowledgments

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