
Community Forestry and Local Participation: Assessing the Socio-Economic Engagement of Community Forest User Group Members in Kageshwori Manohara Municipality, Kathmandu

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Abstract

This study examines the socio-economic engagement of Community Forest User Group (CFUG) members in Kageshwori Manohara Municipality, Kathmandu as study area. It also analyses the influence of social engagement, economic benefits, governance and institutional effectiveness, environmental awareness on participation of CFUG members. Primary data were collected through a structured questionnaire from 30 randomly selected CFUG members out of 106 committee members, and analysed using descriptive statistics, correlation analysis and regression analysis under descriptive and causal research design. The findings show limited economic benefits from forest resources, whereas social engagement, governance effectiveness, and environmental awareness are perceived positively. Significant positive relationship between socio-economic participation and explanatory variables from correlation analysis. Regression results show that social engagement, governance effectiveness and environmental awareness have significant positive impact on participation where governance effectiveness is emerging as strong predictor. Economics benefits were found to be a significant but weak predictor of participation. The study contributes to the community forestry literature by demonstrating the importance of effective governance mechanisms and social inclusion in enhancing participation beyond economic incentives. The study recommends strengthening institutional transparency, promoting inclusive participation, enhancing environmental awareness and expanding forest-based income generating opportunities to local communities.

Keywords: Social engagement, economic benefits, sustainability, community forest, community forest user groups (CFUGs).

Introduction

In Nepal, for the decentralized forest management, community forestry program is a globally recognized pioneering model, and it is successful on ecological restoration and local livelihood support (Karki et al., 2018). From its inception and first implementation in 1989 as the ‘Sano Ban Pande Gaun’ of Kavre district the first community forest handed over to user group, the program has evolved from a focus on basic forest protection to a multi-dimensional approach emphasizing socio-economic empowerment and equitable benefit-sharing among Community Forest User Groups (CFUGs). Forest are not only biological entities but also deeply linked together with rural and peri-urban economy of Nepal, generating essential resources such as fuelwood, fodder, and timber (Maharjan, 2005).

For the community forest sustainability in Nepal, socio-economic engagement remains as the foundation. Dependence on forest resources for livelihoods is the driving force for active participation of members of community forest mainly in rural area. However, this engagement is increasingly influenced by shifting economic landscapes. Recent studies are suggesting that there is transition of household income toward non-farm incomes, remittances, and service-sector jobs, from their traditional dependence on forests, as a result, their willingness to participate in forest management is changing significantly (Shahi et al., 2022). This change is particularly in Kathmandu Valley, where rapidly growing urbanization and land use change creates unique pressures on community-managed land.

Situated in north-east part of Kathmandu Valley, Kageshwori Manohara Municipality, represents a crucial combination of traditional agricultural practices and accelerating unplanned urbanization. Formed by the integration of several Village Development Committees (VDCs) including Bhadrabas, Gagalphedi, and Suntakhan, the municipality retains significant forest cover managed by local communities. However, rising land values, changing demographic structure, and a move away from subsistence farming and forest use introduces the complex challenges in peri-urban area of Kathmandu Valley. Environmental services and potential economic opportunities is being continuously provided by community forests in this region, the level of socio-economic engagement is uneven and skewed by prior endowments, social status and gender (Gautam, 2009; Maskey et al., 2003).

Empirical research focusing specifically on the socio-economic dynamics within Kageshwori Manohara’s CFUGs is limited though there is importance of these peri-urban forests. It is crucial to understand how CFUGs members engage with these institutions in a rapidly changing context for ensuring the long-term viability of

community forestry model in urban area.

Therefore, to examine the factors, their impacts and extent of their impact on socio-economic participation CFUGs members in Kageshowori Manohara Municipality and to provide recommendation based on evidences for inclusive participation, sharing of benefits equitably in order to provide evidence-based recommendations for inclusive participation, equitable benefit sharing, and sustainable community forest management is the aim of this study. Considering this scenario, the first research questions that has been developed in this study is, what is the situation of economic benefits, social engagement, governance and institutional effectiveness and environmental awareness and conservation in community forest in kageshwori Manohara municipality Kathmandu? and the second research questions is, what is the relationship and impact of economic benefits, social engagement, governance and institutional effectiveness and environmental awareness and conservation on socio economic participation in community forest in kageshwori Manohara municipality?

Considering the research questions of this study, the general objective of this study is to evaluate the situation of socio-economic engagement of the members of community forest whereas the specific objectives are

- To examine the situation of economic benefits, social engagement, governance and institutional effectiveness and environmental awareness and conservation in community forest in Kageshwori Manohara Municipality Kathmandu.
- To analyse the relationship and impact of economic benefits, social engagement, governance and institutional effectiveness and environmental awareness and conservation on socio economic participation in community forest in Kageshwori Manohara municipality.

Literature Review

Community forestry had been evolved in Nepal as conservation -oriented program into broader framework, social inclusion, local empowerment and socio-economic participation has been promoted and became widely recognized approach for sustainable forest management, livelihood improvement and participatory resource governance. Importance of participation, governance, environmental awareness, and benefit-sharing in determining the effectiveness of community forest user groups (CFUGs) have been emphasized in resent studies.

Chhetri et al. (2010) found that for rural development by enhancing local participation, strengthening social capital, and creating opportunities for livelihood improvement, have been significantly contributed by community forestry. Dhungana and Bhattarai

(2022) found that timber and fuelwood is more preferred by people than other forest products, so tree species is more meaningful to them. Among different economic classes of the respondents, there is significant difference found on the preference of fuelwood, tree fodder/grass and leaf. Kimengsi and Bhusal (2022) concluded that local autonomy, participatory decision-making, and institutional transparency are essential for improving forest governance and community welfare from the study across countries.

Gautam et al. (2023) found that transparent governance, equitable benefit distribution, and institutional accountability have significant influence on community participation and their satisfaction from the study of community forestry in Nepal. Poudyal et al. (2023) found that rapid socio-economic transformation, migration, and decreasing dependence on forest resources have reduced the collective participation in community forestry which highlights the need for adaptive approaches of community forestry management. The importance of governance quality, institutional coordination, and stakeholder participation have been highlighted by the study of Timothy Cadman et al. (2023) in achieving sustainable community forest management and biodiversity conservation. Erin Bohnett et al. (2023) found that there is positive contribution to social development, environmental sustainability, and local participation, particularly when income and other benefits generated through community forestry activities are distributed equitably.

Paudel et al. (2024) found that in mid-hill region of Nepal, the changing demographic and economic conditions have altered the traditional forest-people relationship, and it is creating challenges for sustaining active community participation in forest management. Dhungana et al. (2024), in central Nepal, examined the performance of Community Forest User Groups and found that successful community forest management is significantly influenced by institutional effectiveness, participation in decision-making, and local accountability. Giri et al. (2025) found that community forests remain a major source of fuelwood and forest products for rural households and contribute substantially to household welfare, forest restoration, and environmental sustainability. Chazdon et al. (2025) emphasized that successful forest regeneration depends on integrating conservation initiatives with livelihood opportunities and local community participation, thereby improving both ecological and socio-economic outcomes.

From the reviewed literatures it is found that socio-economic participation in community forestry is influenced by multiple dimensions, which includes economic benefits, social engagement, governance effectiveness, and environmental awareness. Although several studies have examined community forestry in Nepal and internationally, limited research has specifically focused on the socio-economic

participation of community forest members in peri-urban municipalities such as Kageshwori Manohara. Therefore, this study attempts to fill this gap by examining the determinants of socio-economic participation within the local context of community forestry in Kathmandu Valley.

Methodology

This study has applied descriptive and causal research design by using which study tries to explain the situation of social and economic participation of community forest user group members in Kageshwori Manohara Municipality. The study considers the different factors of social and economic participation of user group members of community forest in the study area, and the study has also examined the impact of these factors on socioeconomic participation of the members. Out of 106 members of the consumer committee of 13 community forest in Kageshwori Manohara Municipality, 30 members are selected randomly which comprises the 28.30 percentage of total population. Primary data is collected by using self-administered structured questionnaire. First part of the questionnaire includes demographic information of the respondents. Similarly, second part includes five-point Likert Scale rating questions to collect the information related to different dimension of social and economic participation where respondents show their agreement disagreement rating as 1- highly disagree, 2- disagree, 3-neutral, 4- agree and 5- highly agree. similarly, final part includes some open-ended questions to collect the overall satisfaction of respondents from the participation in community forest. Collected information are presented in tabular and diagrammatic form. For analysis of qualitative data collected through open ended questions in questionnaire thematic analysis has been applied. Similarly, for analysis of quantitative data descriptive statistics like frequency, cross tabulation, mean and standard deviation are used. Similarly, for the relationship between independent variable and dependent variable correlation analysis has been applied and for the analysis of impact of independent variable on dependent variable regression analysis has been used. The regression equation is expressed as:

$$SEP = a + b_1EB + b_2SE + b_3G\&IE + b_4EA\&C + e$$

Where,

SEP= socio-economic participation

EB= Economic benefits

SE= Social engagement

EA&C= Environmental awareness and conservation

e= Error term

Socio-Economic Participation

Socio-economic participation is the dependent variable of this study and refers to the extent to which community forest members are involved in forest management, decision-making, benefit-sharing, and conservation activities. The concept is basically supported by Participatory Development Theory proposed by Pretty (1995), which suggests that active participation of local people enhances the effectiveness, sustainability, and ownership of development initiatives. This theory argues that when planning, implementation, and monitoring processes is contributed actively by community forest members, both social welfare and economic outcomes improve. Therefore, socio-economic participation can be considered a key indicator of the success and sustainability of community forestry programs.

Economic Benefits

Sustainable Livelihood Theory developed by Ellis (2000) provides the base for the economic benefits dimension. This theory focuses that access to natural resources contributes to security of livelihood, generation of income, and well-being of household. Forest products such as fuelwood, timber, fodder, medicinal plants, and other non-timber forest products are the sources to provide direct and indirect economic benefits to users in the context of community forestry. The theory suggests that individuals who receive greater economic benefits from natural resources are more likely to participate actively in their management and conservation. Therefore, economic benefits are expected to positively influence socio-economic participation in community forestry. The following hypothesis has been stated and tested for this independent variable.

H_{01} : There is no significant effect of economic benefits on socio-economic participation of CFUG members in community forest in Kageshwori Manohara Municipality, Kathmandu.

Social Engagement

The social engagement dimension is derived from Social Capital Theory and Participatory Development Theory. According to Putnam (1993), social capital consists of networks, trust, cooperation, and social relationships that facilitate collective action for mutual benefit. Community forestry creates opportunities for interaction among members through meetings, group activities, and collective decision-making processes. Higher levels of trust, cooperation, and social connectedness encourage individuals to participate more actively in community affairs. Therefore, social

engagement is considered an important factor that strengthens socio-economic participation in community forest user groups. The hypothesis developed and tested for this independent variable is

H₀₂: There is no significant effect of social engagement on socioeconomic participation of CFUG members in community forest in Kageshwori Manohara Municipality, Kathmandu.

Governance and Institutional Effectiveness

Governance and institutional effectiveness are founded on the Institutional Theory and Collective Action Theory developed by Ostrom (1990). The theory argues that successful management of common-pool resources depends on clearly defined rules, transparent decision-making processes, accountability, equitable benefit-sharing, and effective monitoring mechanisms. Strong institutions promote trust among users and reduce conflicts, thereby encouraging active participation in resource management. In community forestry, effective governance structures enable members to influence decisions, access information, and participate fairly in management activities. Consequently, better governance and institutional effectiveness are expected to enhance socio-economic participation. The hypothesis developed and tested for this independent variable is stated as:

H₀₃: There is no significant effect of governance and institutional effectiveness on socioeconomic participation of CFUG members in community forest in Kageshwori Manohara Municipality, Kathmandu.

Environmental Awareness and Conservation

Environmental Behaviour Theory proposed by Schultz (2002) supports the environmental awareness and conservation dimension as determinant of socio-economic participation in community forestry. According to this theory, individuals who possess greater awareness of environmental issues and recognize the importance of conservation are more likely to engage in environmentally responsible behaviours. In community forestry, awareness regarding biodiversity conservation, sustainable resource utilization, and environmental protection motivates members to participate in forest management and conservation activities. As a result, environmental awareness and conservation are expected to positively influence the socio-economic participation of community forest members by fostering a sense of responsibility toward natural resource sustainability

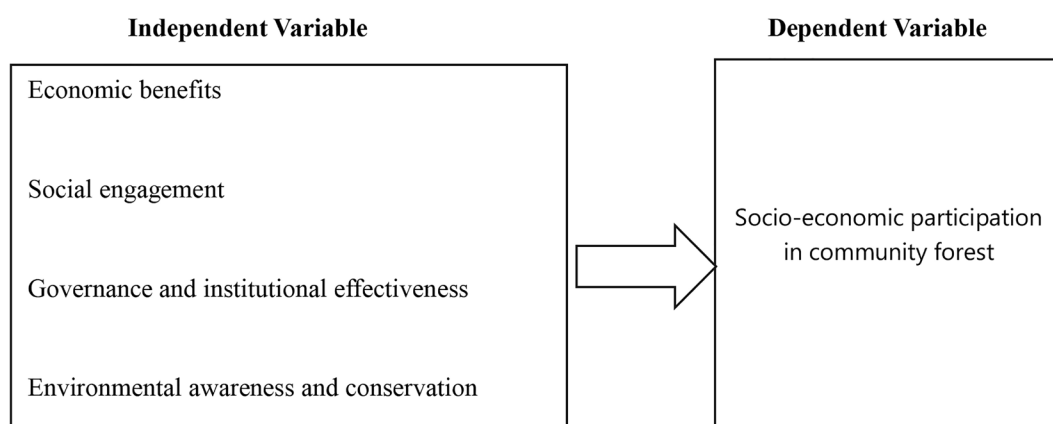
H₀₄: There is no significant effect of environment awareness and conservation on

socioeconomic participation of CFUG members in community forest in Kageshwori Manohara Municipality, Kathmandu.

A conceptual framework has been developed in this study, where different dimensions like social engagement, economic benefit, governance, environment awareness and conservation are considered as independent variable. Similarly, socioeconomic participation is taken as dependent variable representing level participation, access to benefits, contribution to forest management, improvement in livelihood and wellbeing and sense of ownership and responsibility are the dependent variable.

Figure 1

Theoretical Framework



Source: Schultz, P. W. (2002), Ellis, F. (2000), Agarwal, B. (2001), Ostrom, E. (1990), Pretty, J. N. (1995).

Study Area

The study area includes all the community forests in Kageshwori Manohara Municipality, Kathmandu and the community forest user group members selected as sample are the respondents of this study. Following community forest are in existence in the study.

Table 1

List of Community Forests in Kageshowri Manohara Municipality

S.N.	Name of community forest	Location	Area (in hector)	Chair person
1	Kalpabrikshya Community Forest	Ward No. 1, Krishnakuti, Thulahity sadak	1.7	Narayan Khadka

S.N.	Name of community forest	Location	Area (in hector)	Chair person
2	Bagdhara Community Forest	Ward No. 4, right side of Bagdhara–Khatri Pokhari Road	1.48	Not Mentioned
3	Pavitra Community Forest	Ward No. 3, right side of Bhadreshwor Mahadev Temple–Telecom Road	3.87	Suresh Pudasaini
4	Phirphire Community Forest	Ward No. 4, west of Champak Binayak Ganesh Temple	4.27	Sanjay Pokharel
5	Chalanatar Hariyali Community Forest	Ward No. 4	2.20	Devendra Sunar
6	Kalchhikot Community Forest	Ward No. 5, left side of Chabahil–Sankhu Road downhill section	1.45	Nirajan Khatri
7	Ekata Kumari Community Forest	Ward No. 5, east of Gokarna Forest via Thali Chowk road	0.63	Bimala Kafle
8	Kapurbase Community Forest	Ward No. 5, east of Gokarna Resort main gate, Chabahil–Sankhu Road	1.07	Bhagawati Ghimire
9	Jhulkepakha Community Forest	Ward No. 6, south of Electricity Authority office premises	1.75	Binod Dhakal
10	Chakhandol Community Forest	Ward No. 6, behind Ram Janaki Temple	4.75	Rajesh Kattel
11	Rajat Tatha Udyan Community Forest	Ward No. 6, north of Dhungel Village	1.39	Sudhir Dhungel
12	Thadhungeshwor Community Forest	Ward No. 6, right side of Tiwari Tol section, Chabahil–Sankhu Road	3.28	Bidur Sapkota
13	Ishwori Mahila Community Forest	Ward no. 1, Patalilalika roadside	1.49	Pabitra Khadka

Source: Annual Report, 2025, Kageshwori Manohara Municipality

Reliability Test

For the reliability of the independent variable, Cronbach's alfa test has been applied, and the result is presented as below.

Table 2*Result of Reliability Test*

Variables	No of Statements	Cronbach's Alfa Values
Economic benefits	10	0.822
Social engagement	10	0.820
Governance and institutional effectiveness	8	0.818
Environmental awareness and conservation	6	0.811

Source: Researcher's Calculation, 2026, Jamovi 2.7

Independent variables are reliable and considered as internally consistent if Cronbach's alfa values are greater than 0.8. In table one the Cronbach's alfa value of the independent variable economic benefits, social engagement, governance and institutional effectiveness and environmental awareness and conservation are greater than 0.8. So, these variables can be considered are reliable to examine their effect of socioeconomic participation of community forest members.

Results and Findings

To fulfil the first objective of this study, descriptive analysis has been done which shows demographic features of the respondents and the situation of economic benefits, social participation, governance and institutional effectiveness and environment awareness and conservation from the perspective of community forest members in Kageshwori Manohara Municipality.

Table 3*Demographic Features of Respondents*

		No of respondents	Percentage
Gender	Male	19	63.7
	Female	11	36.3
Age	25 – 50 years	24	80
	Above 50 years	6	20
Occupation	Agriculture	19	63.7
	Business	4	13
	Service	7	23.3

		No of respondents	Percentage
Land holding	Less the 1 ropani	7	23.3
	1-5 ropani	17	56.7
	Above 5 ropani	6	20
Annual Income	Less than 1 lakh	14	46.7
	1-5 lakh	3	10
	Above 5 lakhs	13	43.3
Membership period	Below 5 years	5	16.6
	5-10 years	11	36.7
	10-15 years	3	10
	Above 15 years	11	36.7
Education	High school	23	76.7
	Bachelor's and above	7	23.3

Source: Questionnaire Survey, 2026

Table 3 shows that female participation as community forest members is lower than male. Most of the respondents are from the age group of 25-50 years. Similarly, most of the respondents are found high school graduate. Some of them also have qualification of bachelor's degree and above. Higher percentage i.e. 43.3 percent of respondents have the annual income of above 5 lakhs and only 10 percent respondents have annual income below 1 lakh. Similarly, majority of respondents have land ownership of 1 to 5 ropani. Regarding the membership duration 36.7 percent of respondents are the members of community forest for 5-10 years and more than 15 years.

Result of the Descriptive Analysis of Variables

Table 4

Economic Benefits

Statements	Mean	Standard Deviation
My household depends on community forest products for daily needs.	1.23	0.50
Community forest helps reduce household expenditure.	1.33	0.63
I regularly collect fuelwood from the community forest.	1.53	0.61
I collect fodder/grass from the forest for livestock.	1.87	1.04

Statements	Mean	Standard Deviation
Community forest contributes to my household income.	1.37	0.67
I receive timber and forest products fairly when needed.	1.93	0.98
The community forest creates employment opportunities.	1.63	1.10
Community forest supports income-generating activities.	1.57	0.82
Forest-based training has improved my livelihood skills.	2.37	1.13
Community forest has improved my family's economic condition.	1.67	0.84
Average	1.65	0.83

Source: Researcher's Calculation, 2026, Jamovi 2.7

Note: 1- highly disagree, 2- disagree, 3-neutral, 4- agree and 5- highly agree

Most of the dimensions of economic benefits received by respondents of community forest have average value less than 2 and overall average is also less than 2 with average standard deviation 0.83, it shows that members of the community forest in Kageshwori Manohara Municipality highly disagree that they are receiving economic benefits from community forest.

Figure 2

Different Source of Benefits



Source: Questionnaire Survey, 2026

Figure 2 shows that most of the community forest members fuelwood and grass and fodder for their animal and few collect litter and grass for compost. Very limited members collect products with monetary like nuts, fruits, nigalo and bamboo. Some members don't collect any resource from the community forest.

Table 5*Social Engagement*

Statements	Mean	Standard Deviation
I regularly attend CFUG meetings.	4.10	1.12
I actively participate in forest management activities.	4.17	1.12
My opinions are valued in decision-making.	4.10	1.12
Community forest activities encourage cooperation among members.	3.90	1.21
Women and disadvantaged groups are fairly represented in CFUG activities.	4.00	0.95
Community forest strengthens social unity in the community.	4.07	1.14
Conflicts among users are effectively managed by the CFUG committee.	3.83	1.26
I feel a sense of ownership toward the community forest.	4.07	1.16
Information about CFUG activities is shared transparently.	4.17	1.09
I am satisfied with the leadership of the CFUG committee.	3.77	1.17
Average	4.01	1.13

Source: Researcher's Calculation, 2026, Jamovi 2.7

Note: 1- highly disagree, 2- disagree, 3-neutral, 4- agree and 5- highly agree

According to table 5, out of 10 statements 7 statements reflecting the social engagement of the members of community forest have their mean value greater than 4 and other 3 also have mean value around 4, which reflects that the community forest members highly agree that they are socially engaged because of being members of community forest.

Table 6*Governance and Institutional Effectiveness*

Statements	Mean	Standard Deviation
CFUG rules and regulations are clear and understandable.	3.73	1.01
Forest resources are distributed fairly among members.	3.73	0.79
Financial management of the CFUG is transparent.	3.87	0.86
The committee is accountable to members.	4.40	0.81
Marginalized groups are included in leadership roles.	4.00	0.95
CFUG activities follow government forestry policies.	4.13	0.82
Members are informed before major decisions are made.	4.10	0.89
External organizations provide useful support to the CFUG.	2.57	1.63
Average	3.82	0.97

Source: Researcher's Calculation, 2026, Jamovi 2.7

Note: 1- highly disagree, 2- disagree, 3-neutral, 4- agree and 5- highly agree

According to table 6, most of the statements related to governance and institutional effectiveness of community forest have mean value nearly 4 or greater which depicts that the community forest members agree that the community forests are good in governance in their effectiveness. However, they highly disagree that the external organisations provide useful support to the community forest users group with low mean value 2.57.

Table 7

Environment Awareness and Conservation

Statements	Mean	Standard Deviation
Community forestry has improved forest condition.	4.2	0.76
Forest conservation is important for future generations.	4.47	0.67
Illegal activities in the forest have decreased.	3.9	1.16
Community members are aware of conservation practices.	3.93	0.69
Plantation and conservation programs are effective.	4.27	1.01
Community forest contributes to environmental protection.	4.45	0.68
Average	4.20	0.83

Source: Researcher's Calculation, 2026, Jamovi 2.7

Note: 1- highly disagree, 2- disagree, 3-neutral, 4- agree and 5- highly agree

Table 7 depicts that the community forest members are highly aware about role of community forests for the conservation of natural environment as all the statements regarding environment awareness and conservation have mean value near or greater than 4 and aggregate average is greater than 4, i.e 4.2.

For the second objective of the study to analyse the relationship dependent variable with independent variables and their impact on dependent variable, correlation and regression analysis have been conducted and their results are presented as below

Correlation Analysis

Table 8

Result of Correlation Analysis

Variables	Socio-economic Participation
Economic benefits	0.735*
Social engagement	0.769*

Variables	Socio-economic Participation
Governance and institutional effectiveness	0.705*
Environmental awareness and conservation	0.769*

*Correlation coefficients are statistically significant at 1 percent level of significance

Source: Researcher's Calculation, 2026, Jamovi 2.7

Table 8 shows that there is high and positive correlation between dependent variable socio-economic participation and independent variable economic benefits, social engagement, governance and institutional effectiveness and environmental awareness with high value correlation coefficients 0.739, 0.769, 0.705 and 0.769 respectively.

Result of Regression Analysis

Table 9

Model Fit Measures

				Overall Model Test			
Model	R	R ²	Adjusted R ²	F	df1	df2	P
1	0.998	0.997	0.996	2000	4	25	<.001

Note. Models estimated using sample size of N=30

Source: Researcher's Calculation, 2026, Jamovi 2.7

Table 10

Model Coefficients - Socio-economic Benefits

Predictor	Estimate	SE	T	P	Stand. Estimate
Intercept	0.0329	0.05766	0.570	.574	
economic benefits	0.0325	0.01046	3.113	.005	0.0364
social engagement	0.3448	0.00764	45.120	<.001	0.5278
governance and institutional effectiveness	0.3917	0.00912	42.941	<.001	0.5595
environmental awareness and conservation	0.3615	0.01299	27.836	<.001	0.3633

Source: Researcher's Calculation, 2026, Jamovi 2.7

In table 9, the value of R square is 0.997 which means 99.7 percent variation in dependent variable socio-economic participation is explained by the predictors

or independent variables economic benefits, social engagement, governance and institutional effectiveness and environmental awareness and conservation. The value of F statistics is 2000 which is greater than tabulated value $F_{(4,25; 0.05)} = 2.76$ which means the regression model is good fit and the F value is statistically significant at 5 percent level of significance with p-value 0.001.

Table 10 shows the value of regression coefficients and their statistical significance. The beta coefficient of economic benefits is statistically significant with exact p-value 0.005 at 5 percent level of significance and the beta coefficients of social engagement, governance and institutional effectiveness and environmental awareness and conservation are statistically significant at 5 percent level of significance with all p-values less than 0.005. Considering respective beta coefficients when economic benefits improve by 1-unit socio-economic participation improves by only 0.0325 units. Similarly, when social engagement, governance and institutional effectiveness and environmental awareness and conservation improve by 1- unit they bring improvement in socio-economic participation by 0.344, 0.391 and 0.361 units respectively. However, governance and institutional effectiveness have the strongest influence on socio-economic participation as its standardised beta coefficient is highest than that of other predictors., From the regression table the regression equation can be expressed as

$$SEP = 0.0329 + 0.0325EB + 0.344SE + 0.391G\&IE + 0.361EA\&C$$

Multicollinearity Test

To test whether there is existence of collinearity between independent variable, test of Variance Inflation Factor (VIF) has been used and result is as below

Table 11

Result of Collinearity Test

	VIF	Tolerance
economic benefits	1.10	0.910
social engagement	1.10	0.910
governance and institutional effectiveness	1.36	0.734
environmental awareness and conservation	1.37	0.732

Source: Researcher's Calculation, 2026, Jamovi 2.7

Table 11 shows the result of multicollinearity test. The results indicate that all VIF values range from 1.10 to 1.37, which are well below the commonly accepted threshold of 10. Similarly, all tolerance values range from 0.732 to 0.910, exceeding

the minimum acceptable value of 0.10.

The relatively low VIF values indicate that the explanatory variables are not highly correlated with one another, while the high tolerance values confirm that each variable contributes unique information to the regression model. Therefore, the regression coefficients can be estimated reliably, and the effects of economic benefits, social engagement, governance and institutional effectiveness, and environmental awareness and conservation on socio-economic participation can be interpreted with confidence. The multicollinearity diagnostic results confirm that the regression model satisfies the assumption of absence of multicollinearity, indicating that the independent variables are suitable for inclusion in the multiple regression analysis.

Normality Test

Table 12

Result of Normality Test (Shapiro-Wilk)

Statistic	P
0.917	.062

Source: Researcher's Calculation, 2026, Jamovi 2.7

To test whether the error terms are normally distributed or not, Shapiro-Wilk test has been applied. Shapiro-Wilk test states null hypothesis as error terms is normally distributed. The value of test statistics is 0.917 with p value 0.062. It shows that the test statistics is statistically insignificant at 5 percent level of significance which means null hypothesis is accepted. It means the error term in regression model are normally distributed.

Result of Hypothesis Testing

Table 13

Result of Hypothesis Testing

Null Hypotheses	Result
H_{01} : There is no significant effect of economic benefits on socio-economic participation of members in community forest in Kageshwori Manohara Municipality, Kathmandu.	Rejected
H_{02} : There is no significant effect of social engagement on socioeconomic participation of members in community forest in Kageshwori Manohara Municipality, Kathmandu.	Rejected

H₀₃: There is no significant effect of governance and institutional effectiveness on socioeconomic participation of members in community forest in Kageshwori Manohara Municipality, Kathmandu. Rejected

H₀₄: There is no significant effect of environment awareness and conservation on socioeconomic participation of members in community forest in Kageshwori Manohara Municipality, Kathmandu. Rejected

Source: Table 10

Table 10 shows that all the null hypotheses are rejected with p-value of beta coefficients of all independent variables 0.05 and less. So, it can be concluded that the independent variables economic benefits, social engagement, governance and institutional effectiveness and environmental awareness and conservation have significant influence on socio-economic participation of community forest user groups in Kageshwori Manohara Municipality.

Analysis of Open-Ended Responses

Thematic Analysis of Open-Ended Responses on Community Forest Challenges

Responses to the first open-ended question "*What are the main challenge of your community forest?*" were analysed using thematic analysis. Similar responses are coded and grouped into broader themes. Four major themes are found: financial and institutional constraints, forest protection and management issues, environmental challenges, and land and boundary management issues.

Table 14

Theme of Responses on First Open-Ended Question

Theme	Codes/Responses	Frequencies
Financial and Institutional Constraints	Lack of financial resources; No provision of employee in the CFUG office	3
Forest Protection and Management Issues	No fencing in the community forest; Illegal tree cutting	17
Environmental Challenges	Dumping of household and industrial waste; Expansion of bushes	13
Land and Boundary Management Issues	No proper demarcation of the boundary; Land encroachment	12

Source: Questionnaire Survey, 2026

Thematic analysis of responses to the open-ended question on community forest challenges identified four major themes: financial and institutional constraints, forest protection and management issues, environmental challenges, and land and boundary management issues. Respondents commonly reported lack of financial resources, absence of staff in CFUG offices, inadequate fencing, illegal tree cutting, waste dumping, bush expansion, unclear boundary demarcation, and land encroachment as key challenges. There is need for stronger institutional support, improved protection measures, environmental management, and effective boundary governance to ensure the long-term sustainability of community forests which has been highlighted from the result of the analysis.

Thematic Analysis of Respondents' Suggestions for Improving Socio-Economic Participation

The second open-ended question was “*What are your suggestions to improve socio-economic participation in community forest?*” and responses to this question were analysed using thematic analysis. Livelihood enhancement and income generation, forest protection and infrastructure, capacity building and institutional support, and environmental management and eco-tourism development are the major four groups in which themes are grouped.

Table 15

Theme of Responses on Second Open-Ended Question

Theme	Respondents' Suggestions	Frequencies
Livelihood Enhancement and Income Generation	Plantation of income-generating species such as fruits, nuts, and medicinal herbs	16
Forest Protection and Infrastructure	Fencing on forest boundaries	17
Capacity Building and Institutional Support	Training facilities from local governments	11
Environmental Management and Eco-tourism Development	Development of eco-tourism; Control of household and industrial waste dumping	9

Source: Questionnaire Survey, 2026

From the thematic analysis of the open-ended question related to improvement in socioeconomic participation in community forest, it can be suggested that for improving socio-economic participation in community forests requires a combination

of economic, institutional, and environmental interventions. Respondents identified the lack of boundary fencing, limited plantation of high-income-generating species, waste dumping, and land encroachment as major challenges affecting community forests in Kageshwori Manohara Municipality. To address these issues, concerned authorities should formulate and implement policies that promote plantation of market-oriented forest products, establish proper boundary protection measures, strengthen training and technical support programs, encourage eco-tourism development, and enforce effective waste management practices. Such interventions would not only enhance community participation but also contribute to the long-term sustainability and socio-economic benefits of community forestry.

Discussion

The findings of this study indicate that socio-economic participation in community forestry in Kageshwori Manohara Municipality is influenced more by social, institutional, and environmental factors than by direct economic benefits. Descriptive analysis showed that respondents generally disagreed that they receive substantial economic benefits from community forests with low mean value 1.65 in 5-point Likert scale rating. The low level of engagement of CFUG members in income-generating activities may be attributed to the peri-urban nature of Kageshwori Manohara Municipality. Unlike rural communities, peri-urban households have access to diversified livelihood opportunities, including wage employment, business activities, and remittances, reducing their dependence on forest resources for income. Furthermore, community forests in peri-urban areas increasingly serve environmental and conservation functions rather than livelihood-support functions. Limited forest resources, inadequate enterprise development, restricted market access, and governance practices emphasizing conservation over commercialization may further constrain income-generating opportunities. Rapid urbanization and changing socio-economic structures can also weaken members' incentives to participate in forest-based economic activities. These findings are consistent with previous studies that highlight declining forest dependence and increasing emphasis on environmental services in peri-urban community forestry systems. The result of this study suggests that the economic potential of community forestry in Nepal remains underutilized due to limited commercial utilization and inadequate income-generating activities which is consistent with the findings of Mandal and Neupane (2018) and Pokharel (2013). On the other hand, respondents of this study highly agree that their social engagement in community forest with high mean value 4.01 in 5-point Likert scale rating, this suggests that community forestry has been effective in promoting participation,

cooperation, and a sense of ownership which is consistent with the findings of Agarwal (2001) and Chhetri et al. (2010), in which role of participatory institutions in strengthening collective action, empowerment, and social capital was emphasized. Governance and institutional effectiveness were also perceived positively by the respondents in this study which aligns with the findings of Gautam et al. (2023), particularly regarding transparency, accountability, and inclusive decision-making. However, limited support from external organizations was identified as a concern.

The mean score of environmental awareness and conservation is 4.20 in 5-point Likert scale rating which is considered as high, which indicates strong recognition of community forestry's contribution to forest conservation and sustainability, and these results are consistent with the findings of Nagendra et al. (2005) and Dhungana et al. (2025).

The result of correlation analysis is consistent with the findings of Bohnett et al. (2023) which shows significant positive relationships between socio-economic participation and all explanatory variables. Similarly, regression analysis shows socio-economic participation is significantly influenced by social engagement, governance and institutional effectiveness, and environmental awareness, with governance emerging as the strongest predictor and these findings support Ostrom's institutional theory, which highlights the importance of effective institutions in collective resource management. Economic benefits were positively associated with socio-economic participation; however, their influence was comparatively weak and it suggests that social cohesion, environmental responsibility, and effective governance are the primary drivers of participation in community forestry.

Conclusion

Socio-economic participation of community forest user groups members in Kageshwori Manohara Municipality was examined in this study and assessed the influence of economic benefits, social engagement, governance and institutional effectiveness, and environmental awareness on socio-economic participation levels. According to the findings of this study community forestry makes an impactful contribution in promoting social interaction, environmental conservation, and participatory governance within local communities. Although CFUGs members receive low level of direct economic benefits from forest resources, they show high level social engagement, positive perceptions of governance practices, and high environmental awareness. Correlation analysis shows significant positive relationships between explanatory variables like economic benefits, social engagement, governance and institutional effectiveness and environmental awareness and socio-economic participation. Similarly, results of regression analysis further showed that social engagement, governance and institutional effectiveness, and environmental awareness significantly impact on participation of

CFUGs members, while economic benefits have a comparatively weaker influence. From the findings of this study, it is concluded that socio-economic participation in community forestry is driven primarily by effective governance, active community involvement, and environmental consciousness rather than direct economic returns. As it is found low level of participation in economic benefits generating activities from forest resources mainly because of lack of high value forest product in community forest in the study area, high value of the land they owned by them since the study area lies in peri urban area of capital city of Nepal, availability of other sources of income like engagement in business activities, remittance. Therefore, it is important that strengthening institutional transparency, promoting inclusive participation, enhancing environmental education, and expanding community interaction are needed for sustainable participation in community forestry. Addition to this, enhancing income-generating opportunities through high-value forest products, eco-tourism, and forest-based enterprises can improve existing social and environmental benefits and contribute to the long-term sustainability of community forests.

Recommendation for Future Research

For expanding the scope of this study future research should include a larger sample size and community forests from different geographical regions of Nepal to enhance the generalizability of the findings of this study. Similarly, deeper insights can be made into how socio-economic participation varies in different socio-economic and environmental context through comparative studies between rural, peri-urban, and urban community forests. In addition to this, in future research additional variables can be incorporated such as leadership quality, social inclusion, gender participation, benefit-sharing mechanisms, livelihood diversification, and policy support for better understanding of the determinants of community participation. For assessing the long-term sustainability and effectiveness of community forestry programs, longitudinal studies can also be done which examines changes in participation over time.

Recommendations for Improving Socio-Economic Participation in Community Forests

According to the findings of this study, it can be recommended that Kageshwori Manohara Municipality should implement targeted measures so that socio-economic participation can be strengthened in community forests. As findings suggest that CFUGs members receive limited economic benefits, the plantation of high-value species such as walnut, avocado, medicinal and aromatic plants, and other market-oriented forest products should be promoted by the municipality. Similarly, technical

and financial support should also be provided to Community Forest User Groups (CFUGs) as a result forest-based enterprises, eco-tourism, and livelihood programs can be enhanced. It is essential to collaborate with provincial and federal agencies to offer training in entrepreneurship, value addition, marketing, and sustainable forest management practices. Regular awareness campaigns, community interactions, and capacity-building activities should be conducted to expand the participation of CFUGs members, specifically encouraging the involvement of women, youth, and marginalized groups. Furthermore, different shortcomings of community forestry in Kageshwori Manohara Municipality found in this study such as inadequate boundary fencing, illegal waste disposal, land encroachment, bush expansion, and limited financial resources should be addressed through coordinated efforts among the municipality, CFUGs, and other stakeholders. Sustainable forest management and active community participation is further supported by integrating community forestry priorities into local development plans.

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