The OCEM Journal of
Management, Technology & Social Sciences

Recieved: Nov 10, 2024 | Revised: Nov 22, 2024 | Accepted: Dec 02, 2024 | Published: Jan 20, 2025

DOI: https://doi.org/10.3126/ocemjmtss.v4i1.74755 **Paper Type: Research Article**

Assessing User Committees' Effectiveness in Infrastructure Projects: A Case of Palungtar Municipality, Nepal Using Exploratory Factor Analysis

Subash Kumar Bhattarai[1]*, Pravin Devkota[2], Gangesh Kumar Joshi [3], Uttam Neupane [4]
[1]Visiting faculty, Center for post graduate studies, Nepal Engineering College, Nepal
[2]Research Scholar, Center for post graduate studies, Nepal Engineering College, Nepal
[3] Managing Director, Endeavour Engineering Services Pvt. Ltd., Kathmandu, Nepal
[4]Assistant Professor, Department of Civil Engineering, Mid-West University, Nepal
*Corresponding email: subashkbhattarai@gmail.com

Volume 4, Issue 1

ISSN Print:2705-4845

ISSN Online:2705-4845

Abstract

The purpose of this study is to assess the efficiency of User Committees (UCs) in the management of infrastructure projects in Palungtar Municipality, Nepal, which operates under a decentralized federal governance system. Exploratory factor analysis (EFA) and principal component analysis (PCA) are used in conjunction with one another to investigate the formulation, implementation, and performance outcomes of UCs. The perspectives of stakeholders were measured on a Likert scale with five points, and sixteen parameters were evaluated. These parameters were classified into three important factors: formation and composition, project planning and implementation, and project outcomes and performance.

Primary data were obtained from surveys and secondary data were obtained from published sources. A substantial amount of information regarding the administrative procedures, transparency, and efficiency of project execution was uncovered using EFA. Statistical studies, such as the Chi-Square and Fisher's Exact Test, brought to light gender-based disparities in stakeholder views that were both significant and non-significant. Which also identified regions of uniformity and divergence.Despite the fact that their functionality and project outcomes have the potential to be improved, the findings reveal that UCs are confronted with obstacles such as political interference, inefficient operations, and compliance issues. Specifically, focused interventions to address gender inequities, policy refinement for inclusive governance, and attempts to build capacity to improve UC operations are some of the recommendations that have been made. The findings of this study contribute to improved governance, the creation of environmentally responsible infrastructure, and increased project success at the local level.

Keywords: *User Committees (UCs), Infrastructure Projects, Community-Driven Development, Performance Determinants.*

How to cite this paper:
Bhattarai,S.K.,Devkota,P.,Joshi,G.K.,&Neupane,U.(2025).AssessingUser Committees' Effectiveness in Infrastructure Projects: A Case of Palungtar Municipality, Nepal Using Exploratory Factor Analysis. *The OCEM Journal of Management , Technology & Social Sciences, 4*(1),132-143.

Introduction

Infrastructure is crucial for the development of nations, serving as the foundation for social and economic growth and improving citizen well-being. It includes a wide array of services such as utilities (electricity, telecommunications, water, and sanitation), solid waste management, and public infrastructure like roads, bridges, and urban transport (The World Bank, 1994)

With Nepal's transition to a federal democratic structure, three government levels—central, provincial, and local—have emerged, each with the authority to legislate, budget, and mobilize resources. The constitution grants local governments substantial powers and responsibilities for efficient service delivery and citizen accountability (Government of Nepal, 2015)

Community infrastructure focuses on small-scale essential facilities and services at the grassroots level, crucial for the daily life and sustenance of local communities. These projects, driven by community efforts, are tailored to meet specific local needs, enhancing social and economic integration (GFDRR, Global Facility for Disaster Reduction, 2017).

In Nepal, development projects are primarily executed by contractors, although user committees also play a significant role in managing various projects like public buildings and water facilities. Initially, these committees could oversee projects up to NRs. 6 million, but this cap has been increased to NRs. 10 million, inclusive of taxes and community contributions (Government of Nepal, 2007). In Palungtar Municipality, however, user committees can only manage projects up to NRs. 1.5 million, with a required 20% community contribution as per local guidelines (Palungtar Municipality, 2023).

Statement of Problem

In Nepal, the 2015 Constitution ushered in federalism and an increased reliance on User Committees (UCs) for managing small-scale infrastructure projects in local municipalities. However, there is a lack of comprehensive research on the effectiveness and challenges of these UCs. In Palungtar Municipality, despite overseeing over 100 projects annually, issues such as inefficient UC operations, political interference, and non-compliance with safety and quality standards in construction persist. There are also notable disparities in project management when compared to Rainas Municipality. This study will evaluate the effectiveness of UCs in Palungtar, identify challenges, propose solutions, and examine the impact of rural migration on the availability of committee personnel and project outcomes, aiming to improve local governance and project success.

Research Objective

To comprehensively assess the effectiveness, formation, and performance outcomes of User Committees in managing infrastructure projects within Palungtar Municipality through the application of Factor Analysis and Principal Component Analysis. This objective aims to identify underlying patterns, evaluate stakeholder perceptions, and derive actionable insights to enhance the management and implementation of local infrastructure initiatives.

Significance of Study

This research aims to assess the effectiveness of User Committees (UCs) in managing infrastructure projects in Palungtar Municipality, addressing challenges related to economic, technical, and social factors. It will provide practical recommendations for ward-level officials and elected representatives, offering improved tools for project assessment, transparency, and accountability. The study's findings will inform policy revisions, benefiting government officials and local authorities by optimizing UC operations and enhancing project management practices. Ultimately, it will contribute to sustainable development and improved governance in Palungtar Municipality.

Scope and Limitations of Study

The study focuses on evaluating the performance and challenges of User Committees in implementing infrastructure projects (roads, buildings, canals, and water supply systems) in

Palungtar Municipality, Gorkha, Nepal. It will assess planning, implementation, and monitoring phases, analyzing project quality, resource use, and stakeholder involvement.

The research is limited to Palungtar Municipality and does not include a comparative analysis with other areas. Data from the fiscal year 2080/081 is used, focusing only on completed projects and four categories of infrastructure, which may affect broader applicability and temporal relevance.

Literature Review

A study by (Mishra, 2020) compared UC-led and contractor-led project approaches, analyzing their socio-economic impacts and conducting a SWOT analysis of the UC approach. The findings suggest that both methods are effective under specific conditions. Contractor-led approaches excel in safety and health management, while UCs better utilize local resources and technology. However, UCs struggle with large, high-quality projects, whereas contractors are more suited for complex and sizeable tasks due to their adherence to safety, risk management, and regulatory compliance. Mishra recommends a hybrid approach, combining traditional and modern technologies to leverage the strengths of both methods for optimal project execution.

The Ministry of Federal Affairs and General Administration has permitted local governments in Nepal to use user or beneficiary committees for construction projects under current laws, as per the Public Procurement Act, 2007, and Public Procurement Regulations, 2007. This directive, outlined in a circular by the Ministry of Finance and Accountability (MoFAGA), addresses the implementation uncertainties in local government budgets and programs. MoFAGA has established a task force, led by the head of the Planning and Development Cooperation Division, to evaluate and report on the efficacy of these committees, ensuring they adhere to legal standards and practices until further recommendations are issued (Himalayan News Service, 2021)

The study by (Pant, 2021) on Problems and Prospects of Construction Projects Implemented Through UCs in Mahalaxmi Municipality, managed by User Committees (UCs), evaluated resident awareness, project issues, and outcomes. Key findings include the functionality of completed projects, environmental friendliness, and resident satisfaction with project timing, cost, and quality. Significant challenges included political interference in UC formation, lack of maintenance funding, inadequate safety measures, poor stakeholder communication, lack of transparency, and issues with work distribution and project bookkeeping.

Over the past two decades, developing countries have shifted towards a bottom-up approach in planning and policymaking. A study in Nepal's Bhaktapur district revealed that 80% of construction projects-initiated UCs following local government notifications. These UCs, often established through public meetings with local beneficiaries, aim to ensure non-biased political involvement and utilize both formal and informal project management techniques (Mishra, 2020).

Local governance in Nepal involves stakeholder-driven rural development that is market-led and environmentally friendly. (Kharel, 2017) assessed Nepal's governance and rural strategies through the lens of decentralization and competence, noting the 1999 Local Self-Governance Act which decentralized authority to grassroots levels. Despite challenges like less skilled staff and lack of elected bodies, reforms have adapted 753 local entities to the 2015 constitution. The study suggests strengthening institutional capabilities to effectively implement these decentralized powers.

The 1980s decentralization empowered multi-purpose local governments, but recent trends show international donors and central governments favoring single-purpose user committees. (Manor, 2004) critiques this shift, noting that while these committees increase local input in development decisions, they may erode democratic processes by limiting their autonomy and representativeness. This approach potentially weakens local engagement and effectiveness, complicates governance, and could disproportionately affect the poor by diverting functions and funds from local governments.

A study by Baral (2020) on local road construction

in Pokhara, Nepal, found significant issues with projects managed by User Committees. The research highlighted that road designs and geometry often failed to meet standards, and the frequent use of contractors contradicted the intent of community-led participation.

A study by Bhattarai, Khadka, & Pahari (2023) on User Committees (UCs) in Junichande Rural Municipality highlights both advantages and challenges in project implementation. UCs improve procurement efficiency but face issues with quality control, supervision, and payment discrepancies. Technical oversight is often inadequate, and there's a lack of insurance for workers. Solutions include setting clear labor limits, increasing supervision, and introducing insurance. The study emphasizes the need for better alignment between municipal officials and UCs, advocating for targeted training and simplified project management tools to effectively address these challenges.

In Nepal, User Committees or Beneficiary Communities typically manage construction projects in rural and semi-urban areas, fostering community participation, ownership, and sustainability. This method reflects Nepal's dedication to participatory development and local empowerment, involving communities throughout the project lifecycle—from planning to maintenance. According to Joshi (2024), such projects are environmentally friendly and generally meet expectations in terms of quality, cost efficiency, and record-keeping

Methodology

Study Area

Palungtar Municipality, Gorkha, Nepal, established in 2014 and expanded in 2017, covers 158.62 km² with a population of 37,409 (2021). Over 50% of its budget supports infrastructure projects via user committees, contractors, and INGO/NGO partnerships, emphasizing quality, monitoring, and evaluation.

Study Population, Sample Selection, and Sample Size

The study focused on 12 completed projects in Palungtar Municipality, with 60 user committee members selected via purposive sampling. Efforts ensured no respondent overlap and included female participants. Details on municipal engineers and elected members are listed below (See Table 1).

Table 1: Respondent for Projects

S. N	Respondent Description	No. of Sample Respondents	% of sample from the Population
1	User committee Members	60	55.55 % (Considering on an average of 9 members of each UC)
2	Engineers/Sub Engineers	10	100% (all nine technical personnel of ward offices and two engineers from the municipality)
3	Elected Members	18	100% (Municipal Assembly Members)
Total		88	

Methods of Data Collection

Primary Data: A questionnaire survey was conducted with User Committee members, engineers, contractors, and elected representatives in Palungtar to gather insights on the formation, implementation, performance, and status of construction projects executed through UCs.

Secondary Data: Comprehensive reviews of national and international articles, journals, reports, and online sources were carried out to assess infrastructure projects implemented by UCs. Additional data were collected from municipal documents, including the gazette and executive

Data Analysis

To assess User Committees' effectiveness in Palungtar Municipality, 16 parameters from literature were grouped into three factors. Stakeholder perceptions on formation, implementation, and outcomes were measured using a 5-point Likert scale, from 1 (very dissatisfied) to 5 (very satisfied).

Exploratory Factor Analysis

The Exploratory Factor Analysis has been carried out for the analysis of the data. Factor analysis is a data reduction technique that summarizes many variables into smaller factors based on inter-correlations, where initial variables are observed, extracted factors are latent, and it is commonly used to develop scales or questionnaires for measuring constructs that are not directly observable in real life (Fabrigar, 1999). The steps used for the factor analysis for this study is presented here below.

- Step 1: Problem Formulation
- Step 2: EFA Requirements
- Step 3:Appropriate Factoring Technique
- Step4:Decision regarding No. of Factors
- Step 5: Factor Rotation
- Step 6: Model Fit
- Step7:Running Exploratory Factor Analysis
- Step 8: Interpretation and Reporting

To achieve these results, Principal Component Analysis (PCA) was conducted. The study followed three major steps for factor analysis: (a) assessing the suitability of the data, (b) extracting factors, and (c) rotating and interpreting the factors.

Statistical Analysis for perception of stakeholders (Gender wise)

Statistical Analysis for perception of stakeholders (Gender wise) on perception of respondents on evaluation of the formation, implementation, and performance outcomes of User Committees in managing infrastructure projects in Palungtar Municipality in Responses to research objective: Cross tabulation, Chi-Square Test, Symmetric measures and Risk Estimates.

To conduct the statistical analysis of gender differences in responses to research objective following steps has been carried out

- **Step 1: Cross tabulation in SPSS-** The crosstabulation table shows the distribution of responses to "Questionnaire" (categorized as "Negative" or "Positive") across two gender groups (Male and Female).

- **Step 2: Chi-Square test-** This test assesses whether there is a statistically significant association between gender and the response to all questions

Reliability of Research

In this study, Cronbach's alpha was calculated by using SPSS and found to be 0.781 of the study which are more than acceptable for such kind of survey.

Results and Discussion

Factor Analysis

For the factor analysis, various factors collected from the literature review tailored for the study has been coded based on the factor component and is presented (See Table 2). .

Table 2: The category of the factors and their coding for Research Objective

Factor numbers	Factors	Factor Code	Factor Component
F1	Formation of user committee as per legal Procedure	FCUC_1	Formation and Composition of User Committee
F2	Availability of personnel for formation of user committee	FCUC_2	
F3	Availability of Capable Female for user committee	FCUC_3	
F4	Functionality of users committee	FCUC_4	
F5	Work distribution within UCs	PPI_1	Project Planning and Implementation
F6	Beneficiaries contribution in the projects	PPI_2	
F7	Project Book Keeping	PPI_3	
F8	Operation and maintenance plan	PPI_4	
F9	Initial investment of Project Construction	PPI_5	
F10	Procedure of Payment	PPI_6	
F11	Time Taken for completion of project	POP_1	Project Outcomes and Performance
F12	Cost of implemented project	POP_2	
F13	Quality of the work performed	POP_3	
F14	Safety measures of procedures adopted	POP_4	
F15	Transparency maintained	POP_5	
F16	Timely monitoring & supervision of work performance	POP_6	

After coding of the factor component, Kaiser-Meyer-Olkin (KMO) has been assessed (See Table 3) to determine whether the collected data is suitable for factor analysis or not. Along with KMO, Bartlett's test of Sphericity, correlation matrix, and determinant score are computed to detect the appropriateness of the data set for functioning factor analysis (Tabachnick et al., 2013).

Table 3: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.753
Bartlett's Test of Sphericity	Approx. Chi-Square	566.857
	Df	36
	Sig.	0.000

The results illustrate that the value of KMO statistics is equal to 0.753 > 0.7, which indicates that sampling is adequate and the factor analysis is appropriate for the data. Similarly, the Bartlett value $\chi 2$ =566.857; df=36 (p=.000) in the scale consisting of 16 items is also determined (see Table 3).After finding the appropriateness for the factor analysis, a scree plot describing the latent variables with Eigen values> 1 was plotted and presented below (see Figure 1).

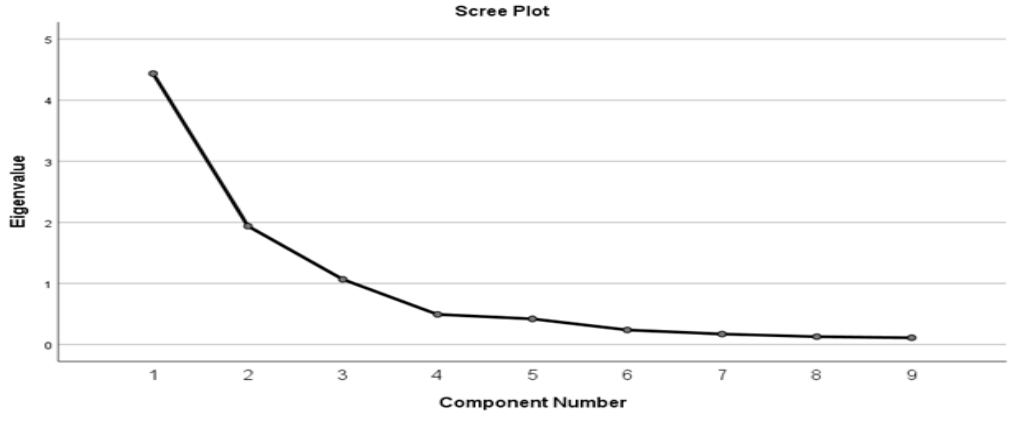

Figure 1 Scree Plot

Scree plot depicts that there are eight factors for which the eigenvalue is greater than one and accounts for most of the total variability in data. The other factors account for a very small proportion of the variability and are considered not so much important (see Figure 1) and (see Table 4) (Tabachnick et al., 2013).

Table 4 : Eigenvalues (EV) and Total Variance Explained Extraction Method: Principal Component Analysis

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.435	49.283	49.283	4.435	49.283	49.283
2	1.938	21.537	70.819	1.938	21.537	70.819
3	1.066	11.848	82.668	1.066	11.848	82.668
4	.492	5.468	88.135			
5	.419	4.660	92.795			
6	.238	2.646	95.441			
7	.171	1.904	97.345			
8	.128	1.425	98.770			
9	.111	1.230	100.000			

The results have been depicted regarding the eigenvalues and total variance explained. Before extraction, sixteen (16) linear components are identified within the data set. After extraction and rotation, there are three distinct linear components within the data set for the eigenvalue > 1. The three factors are extracted accounting for a combined 82.668% of the total variance. It is suggested that the proportion of the total variance explained by the retained factors should be greater than 50%. The result shows that 82.668% of common variance shared by 16 variables can be accounted for by three factors. This is the reflection of the KMO value, 0.753, which can be considered good and indicates that factor analysis is useful for the variables. The variance explained by the first factor is 49.283% with Eigenvalue of 4.435; the variance

explained by the second factor is 21.537% with Eigenvalue 1.938; and the variance explained by the third factor is 11.848% with Eigenvalue 1.066.

Factor Rotation and Interpretation

The PCA for the perception of perception of stakeholders on Evaluation of the formation, implementation, and performance outcomes of User Committees in managing infrastructure projects in Palungtar Municipality has been depicted in table (See Table 5).

Table 5: Principal Component Analysis

Evaluation of the formation, implementation, and performance outcomes of User Committees in managing infrastructure projects in Palungtar Municipality	Component		
	Formation and Composition of User Committee (Component 1)	Project Planning and Implementation (Component 2)	Project Outcomes and Performance (Component 3)
FCUC_4 (Functionality of users committee)		.886	
PPI_1 (Work distribution within UCs)	.868		
PPI_2 (Beneficiaries contribution in the projects)	.791		
PPI_3 (Project Book Keeping)	.823		
PPI_6 (Procedure of Payment)	.932		
POP_1 (Time Taken for completion of project)			.661
POP_2 (Cost of implemented project)			.822
POP_5 (Transparency maintained)			.882
POP_6 (Timely monitoring & and supervision of work performance)			.923

Interpretation of Components:

Functionality of User Committees: High loading (0.886) on "Functionality of User Committees" highlights their pivotal role in governance and operational effectiveness. This aligns with the findings of (Pant, 2021), where functionality, environmental friendliness, and resident satisfaction were highlighted as positive outcomes of UC-managed projects in Mahalaxmi Municipality. However, Pant also identified persistent challenges, including political interference in UC formation, which mirrors (Manor, 2004) critique of reduced democratic processes under single-purpose UCs. Similarly, (Baral, 2020) pointed out that the reliance on contractors in UC-managed projects in Pokhara undermines the participatory intent. The strong empirical support in this study confirms that while UCs enhance local input in decision-making, improvements in governance structures are necessary to balance efficiency and autonomy. This calls for robust policies that better define UC responsibilities and enhance their representativeness and operational independence.

Project Planning and Implementation: Key variables like "Work distribution" (0.868), "Beneficiaries' contribution" (0.791), "Book Keeping" (0.823), and "Payment procedures" (0.932) emphasize the importance of robust internal processes and administrative efficiency. These findings mirror the challenges identified by (Bhattarai, Khadka, & Pahari, 2023), who noted issues with quality control, supervision, and payment discrepancies in UC-managed projects in Junichande Rural Municipality.

Similarly, (Pant, 2021) reported similar administrative weaknesses, citing poor work distribution, issues with bookkeeping, and communication gaps between stakeholders as significant barriers. The overlap between these studies indicates a common need for enhanced administrative capacity, clear payment protocols, and technical oversight. By focusing on administrative transparency and efficient resource management, UCs can better fulfill their roles in project planning and execution.

Project Outcomes and Performance: Metrics such as "Transparency" (0.882), "Cost management" (0.822), and "Timely monitoring" (0.923) underline the significance of accountability and efficient execution in achieving project success. These findings are consistent with (Joshi, 2024), who highlighted cost efficiency, sustainability, and participatory engagement as positive aspects of UC-led projects. However, (Baral, 2020) and (Bhattarai, Khadka, & Pahari, 2023) emphasized persistent quality control and oversight challenges. Similarly, (Pant, 2021) identified resident satisfaction with project timing, cost, and quality as key success metrics. This study's quantitative evidence reinforces the need for proactive monitoring systems and robust financial controls to achieve transparency and cost efficiency. Addressing these factors through structured oversight frameworks and performance-based tracking mechanisms will enhance the accountability and reliability of UC-managed initiatives.

By focusing on these dimensions, stakeholders can identify areas for improvement and implement strategies to enhance the overall efficacy of such initiatives.

Statistical Analysis

The summary tables of analysis for all questionnaire under the study is provided in the table (See Table 6). The summary table of the chi-square test and Fisher's exact test has been interpreted separately. The value which has been taken for the interpretation of the significance level using chi- square test is only for those questions whose 0 cells (0.0%) have expected count less than 5 in 2x2 contingency table. Otherwise, the Fisher's exact test has been taken for the interpretation of the significance level (Fisher, 1922), (Agresti, 1992). The details have been depicted in table 10.

Table 6: Chi Square Test and Fisher's Exact Test of All questions of research objective

Objective	Chi-Square Tests Asymptotic Significance (2-sided)	Significant/Not Significant	Fisher's Exact Test	Significant/Not Significant
F1	0.840	Fail to reject null hypothesis-There is no association	1.00	
F2	0.410		0.720	Fail to reject null hypothesis-There is no association
F3	0.005	Reject null hypothesis-There is an association	1.184	
F4	0.005		0.005	Reject null hypothesis-There is an association
F5	0.000	Reject null hypothesis-There is an association	0.000	
F6	0.000	Reject null hypothesis-There is an association	0.000	
F7	0.135		0.215	Fail to reject null hypothesis-There is no association

F8	0.082		0.415	Fail to reject null hypothesis-There is no association
F9	0.472		0.633	Fail to reject null hypothesis-There is no association
F10	0.150	Fail to reject null hypothesis-There is no association	0.208	
F11	0.002		0.005	Reject null hypothesis-There is an association
F12	0.569		0.735	Fail to reject null hypothesis-There is no association.
F13	0.318	Fail to reject null hypothesis-There is no association	0.379	
F14	0.002	Reject null hypothesis-There is an association	0.003	
F15	0.719		0.753	Fail to reject null hypothesis-There is no association
F16	0.005	Reject null hypothesis-There is an association	0.006	

Here, while analyzing the values of the questionnaire F1, F3, F5, F10, F13, F14 and F16 using cross tabs, none of them showed "0 cells (0.0%) have expected count less than 5", therefore chi-square value has been taken for the interpretation. But, remaining questionnaire has been interpreted using Fisher's exact test.

Discussions of Chi-Square and Fisher's Exact Test Results:

F1, F2, F7, F8, F9, F10, F12, F13, and F15:

These questions showed no significant association ($p \geq 0.05$). This suggests that for these questions, there is no strong statistical evidence to indicate differences in responses between the groups (e.g., male respondents vs. female respondents) regarding various aspects of User Committees' management of infrastructure projects. It could imply that perceptions or experiences regarding some aspects of User Committees are similarly rated across different respondent groups, indicating uniformity in opinions or experiences.

F3, F4, F5, F6, F11, F14 and F16:

These questions indicated a significant association ($p < 0.05$). This result suggests that there are statistically significant differences in how different groups (e.g., by gender) perceive or experience certain aspects of the User Committees' management of infrastructure projects. These significant findings can point to areas where perceptions differ substantially, possibly due to varying impacts or experiences influenced by demographic factors like gender.

The significant results (rejecting the null hypothesis) could highlight areas in the management or outcomes of User Committees that are perceived differently among different groups, which might suggest areas of inequality, differing impacts, or areas needing focused improvements. The non-significant results (failing to reject the null hypothesis) suggest uniform perceptions or experiences among the groups considered in the study, which could indicate consistency in the effectiveness or issues in User Committees across different demographics.

Conclusions and Recommendations

Conclusion

The study aimed to assess the effectiveness of User Committees through stakeholder perceptions on their formation, project implementation, and performance outcomes in Palungtar Municipality. Sixteen different parameters were evaluated using a 5-point Likert scale, grouped into three factors through Exploratory Factor Analysis (EFA). This analysis summarized complex variables into manageable factors, essential for understanding project success. The interpreted factors are Formation and Composition of User Committee: Highlighted by high loadings (0.886) on functionality aspects, Project Planning and Implementation: Emphasized internal processes (loadings up to 0.932) crucial for project execution and Project Outcomes and Performance: Focused on efficiency metrics (loadings up to 0.923), indicating transparency and monitoring. This structured approach not only validated the survey instrument's reliability but also provided a clear framework for stakeholders to assess and enhance project management practices within UCs. The findings also correlate with the findings of (Sah & Bhattarai, 2021) i.e. unrealistic timelines and budgets as significant factors impacting effective contract management practices in construction

The statistical analysis of gender differences in stakeholder perceptions regarding the formation, implementation, and performance outcomes of User Committees in Palungtar Municipality reveals mixed results. Chi-Square tests and Fisher's Exact test indicate varying levels of association between gender and perceptions of User Committee efficacy.

The key findings are:

No Significant Gender Differences: Several questions (F1, F2, F7, F8, F9, F10, F12, F13, and F15) showed no significant gender-based differences, suggesting a consensus or uniformity in perceptions across male and female respondents concerning certain aspects of User Committee operations.

Significant Gender Differences: Other questions (F3, F4, F5, F6, F11, F14, and F16) revealed significant gender differences. These differences highlight areas where perceptions and possibly experiences diverge significantly between genders, potentially pointing to specific challenges or benefits that are more pronounced for one gender over the other.

The findings align with national policies and sustainable development goals, where local governments in Nepal are tasked with formulating strategic plans that promote prosperity and socio-economic development while integrating environmental considerations and sustainable water management systems (Bhattarai, et al., 2024). The prospects for Integrated Urban Development Plan (IUDP) implementation in Godawari Municipality reflect similar themes. Strategic project relevance, feasibility through proper planning, and investment alignment using a Multi-Sector Investment Plan (MSIP) emphasize efficient resource allocation and financial viability (Poudel, Lal, Bhattarai, & Paudyal, 2024). Furthermore, collaborative approaches with corporate partners, NGOs, neighboring states, and donor agencies strengthen project execution.

Recognizing and addressing challenges—such as bureaucratic hurdles, capacity limitations, and coordination with higher-level government agencies—enhances the prospects of both IUDP and UC-led projects. Inclusive stakeholder participation, professional oversight, and dedicated implementation units ensure alignment with community needs and municipal objectives (Poudel, Lal, Bhattarai, & Paudyal, 2024).

Recommendations

Targeted Interventions: Address specific areas where gender-based perceptions differ significantly to ensure equitable benefits from infrastructure projects.

- Policy Adjustments: Refine policies to accommodate the needs and perceptions of all stakeholders, focusing on areas with moderate associations and gender differences.
- Capacity Building: Enhance training for User Committee members on project management and

stakeholder engagement.

• Further Research: Investigate areas with weak associations more deeply to better understand the impacts of User Committees on infrastructure management.

• Enhanced Reporting and Transparency: Improve mechanisms for reporting and transparency to build trust among stakeholders.

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