Effectiveness of the Construction Projects: A Comparison between Users Committees and Contractor Approach

A. K. Mishra [1], Rajesh Koirala [2], & P. S. Aithal [3]

[1] D.Sc. Research Scholar, Srinivas University, India, and Associate Professor, United Technical College, Affiliated to Pokhara University, Bharatpur Metropolitan, Nepal, Orcid-ID: 0000-0003-2803-4918; E-mail: anjaymishra2000@gmail.com

[2] Master's Scholar, United Technical College, Affiliated to Pokhara University, Bharatpur Metropolitan, Nepal. E-mail: arkoirala@gmail.com

[3] Professor, Institute of Management & Commerce, Srinivas University, Mangalore, India, Orcid-ID: 0000-0002-4691-8736; E-mail: psaithal@gmail.com

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A. K. Mishra [1], Rajesh Koirala [2], & P. S. Aithal [3]

[1] D.Sc. Research Scholar, Srinivas University, India, and Associate Professor, United Technical College, Affiliated to Pokhara University, Bharatpur Metropolitan, Nepal, Orcid-ID: 0000-0003-2803-4918; E-mail: anjaymishra2000@gmail.com

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[3] Professor, Institute of Management & Commerce, Srinivas University, Mangalore, India, Orcid-ID: 0000-0002-4691-8736; E-mail: psaithal@gmail.com

ABSTRACT

Purpose: *The policymakers are found to be undecided which assures the need for a refined policy on local governance in the formation of a user committee. It is expected to be beneficial for the project management team to point out the factors that directly or indirectly affect project performance. To assess the effectiveness of the construction projects implemented through Users Committees in comparison to the Contract Approach.*

Design/Methodology/Approach: *The number of Informal Consultations was conducted at each sector of the project location involving UCs and beneficiaries. Furthermore, the key Informant's Interview was taken with the Planning officials, Implementing officials, and elected representatives followed by policy maker and department representative. A comparison is also made with contractor-based work. Using Content Analysis as a data analysis technique, the raw data was presented in the form of explanation, understanding or interpretation.*

Findings/Result: *Need of empowerment & awareness to the beneficiaries too for their commitment by contributing to the construction projects and also providing orientation training to develop technical and managerial skills to UCs. A mandatory system of feasibility study of the projects for the financing of beneficiaries' contributions is essential. The work schedule or work plan should be attached to the agreement. Proper combination of both approaches would be better to be followed in a single project based on the nature, content, and complexity of rural road construction work.*

Originality/Value: *Both relevant and practical aspects for projects implemented through users in comparison to contractors have been significant for policymakers to decide the correct approach for correct work.*

Paper Type: *Research paper*

Keywords: Users Committee, Performance, Contract, Socio-economic, Environment, Health, Defective liability period

1. INTRODUCTION :

With the proclamation of the new constitution in 2015(AD) [1], a three-level administration framework was presented, with public, commonplace and neighborhood levels of administration. The new nearby levels were framed by changing the current regions and town advancement councils and appeared on 10 Walk 2017. Following the 2017 nearby races in May and June, in any case, the idea of neighborhood administration has been essentially changed, and those nearby bodies are as of now not in the presence. It was proposed 719 nearby designs which were updated to 753 for example 6 metropolitan urban areas, 11 sub-metropolitan urban areas, 276 regions and 460 rustic districts. Changes have presented 'nearby legislatures' without precedent for the country. These recently made neighborhood states have been remarkably engaged to practice chief, legal executive and administrative powers at the nearby level. All old 75 District Development Committees (DDC) are likewise supplanted by new 77 District Coordination Committees (DCC) [1].

Governments develop manuals and guidelines for the improvement of the performance to the Local Bodies (LBs). According to the provision in LSGR, 1999, Ministry of Federal Affairs and Local Development (MoFALD) develops minimum conditions and performance indicators based on the grant system [2]. The Minimum Condition and Performance Measures (MCPM) has been developed to improve local governance/bodies performance through a penalty and incentives and to strengthen the general monitoring and evaluation (M & E) system through annual assessment (Devkota, 2009) [3]. Similarly, MoFALD prepared guidelines/directives concerning to Users Committees (UCs) formation, operation) and management in LBs. The guidelines clearly explain the process of UCs formation, composition of UCs, people's contribution to the projects and the roles and responsibilities of UCs for the implementation of the construction projects.

Most of the construction projects in LBs of Nepal have been implemented through UCs. The construction projects were of different natures including river control, construction of school buildings and furniture, drinking water facility and irrigation channels, roads and culverts and so on. UCs was allowed to undertake a project costing up to NRs. 6 million. After the 5th and 12th amendments of PPR (PPR, 2007), the projects costing up to 10 million and 50 million could be implemented by UCs (GoN, 2007) [4].

The estimate and design of the construction projects were prepared by the District Technical Office /District development committee (DTO/DDC) technicians following the standard norms and specifications. The DTO/DDC technicians were responsible for the quality control of the construction works. The overall responsibility of project management from the initiation phase to the termination phase and the UCs has the post construction responsibility of the project were carried out by DDC. Though the project performance (quality, time, transparency, supervision and monitoring, etc.), implemented through UCs have raised serious issues in the annual review Programme or in public hearing. Effectiveness is the degree to which the undertaking's targets will be accomplished and meet the distinguished necessities of recipients. Effectiveness incorporates Sustainability which is the sturdiness of positive program or venture results after the end of the specialized participation diverted through that program or undertaking.

2. STATEMENT OF PROBLEM :

In present context most of the project of local level projects are been implemented by UC's. Although the governmental system has been changed, there are serious issues in the performance of project which demands review. So, this study was conducted to explore the performance of Local level projects implemented through UC's in response to contractors [2]. The policymakers are found to be undecided as the budget limit for working through beneficiaries has been raised to 50 million where they have been restricted to work on the structure and even asked to contract through competition as 12th amendment of public procurement act of Nepal. It helps to formulate refined policy on local governance in the formation of UCs implementing through users. It is expected to be beneficial for the project management team to point out the factors that directly or indirectly affect project performance. The study helps the local governments to adopt the appropriate project management practice which in turn improves the management through the UCs in local governments. It helps to devise appropriate measures to tackle those problems in future projects through the UCs.

3. OBJECTIVES :

To assess the effectiveness of the construction projects implemented through Users Committees in comparison to the Contract Approach.

4. LITERATUR REVIEW :

As per LSGR, 1999, "Upon receipt of information of the approval of annual programmes and budget, the concerned Municipality shall have to be implemented, or cause to be implemented and the projects under the district level plan may be implemented and operated through User's' group." (MoFALD, 1999) [5, 6, 7, 8, and 9]. As stated in LBFAR, "In carrying out the works through the User's' Committee, an agreement between the concerned Local Body and the User'ss' Committee shall be made clearly stating therein the cost estimate, period supposed to be completed the function, repair and maintenance of the completed work and other necessary matters." (MoFALD, 2007) [6, 10, 11, 12, 13, and 14]. In addition to the core functions, the more dynamic functions of the project managers have to be controlled.

The following process-based indicators of project management in the projects implemented through Users Committees should also be taken into account [15].

Formation of Users Committee

- Orientation Training to the UCs
- People's Contribution (Material, Kind, Cash, etc.)
- Transparency
- Performance of Monitoring and Facilitating Committee
- Work Distribution within UCs
- Communication between UCs and Municipality
- Status Meeting of UCs
- Site Visits by the concerned technicians
- Public Audit
- Work Schedule
- Safety

In a study of a kind of users' construction execution method, water users' associations (WUAs) contract, it found the following strengths and weaknesses of the methodology:

Strengths:

- Raised certainty level and a feeling of obligation to embrace attempts to upgrade neighborhood work and pay of poor people. Specialized capacity of neighbourhood individuals updated.
- The WUAs can propel and prepare individuals, and oversee local area level questions and conflicts all the more actually.
- With the shift of government job and offices to WUAs, they turned out to be more obliged and dependable than previously. WUA individuals subsequently invest extensively more energy to the administration of the framework intentionally.
- The WUAs expanded admittance to different assets, establishments as well as administrations empowering them to search for the amazing chance to raise reserves and get different administrations conveyed from various organizations.

Weaknesses:

- Inadequate legal provisions and arrangements to check and control WUAs in case of their failure to comply with the conditions or do not complete the contracts agreed. No provision of strict actions to WUAs in case of noncompliance to standards and poor work performance.
- The agreement conditions between Organization (government) and WUAs being adaptable and free contrasted with that of expert project workers might result unfortunate working and recklessness in the piece of WUAs.
- WUAs showed inclination of supporting works done by their individuals without complete proof of good quality though the expert workers for hire were progressively irritated.
- Laborers are saved money and individuals who are appointed works will generally create gain at the expense of WUA.
- Less straightforwardness and unfortunate record keeping by WUA about the work attempted.
- The assessments arranged following the public authority standards are somewhat swelled [2, 16, 17, 18, 19, 20].
- In users' committee executed project approach also known as community led construction (CLC) approach study conducted on the topic 'assessment of existing working methodologies and their standardization for community-led construction', following conclusions and recommendations are suggested:
- CLC approach as a strong alternative for local infrastructure development due to direct involvement of community time and cost, saving is achieved with increased social acceptance of the project.
- On project completion, cost saving is achieved by about 5-15% than estimated cost.
- On the project execution heavy equipment are not used however due to lesser availability of human resource, report recommends to amend existing rules and regulation to encourage capital intensive construction.

- Suggests to continue the UC' for operation and maintenance for few more years at least tenure of two years [2, 16, 17, 18, 19, 20].

5. METHODOLOGY :

5.1 Approach of Research:

The policy related to Users committee and Contractors were main source of data for the research followed by empirical analysis in ex-post facto condition using both qualitative and quantitative research approach under abdicative logical reasoning. Key Informant Interview was used for strongly documenting the experience and expertise as scientific documents not at municipality level but also at central level among policy level experts and officials.

Table 1: Secondary data collection Tools/Techniques

S. N.	Tools	Target Area	No. of Projects
1	Checklist survey	All individual project	33
2	Reports and documents	The published and unpublished documents, reports, minutes of UCs, policy guidelines and documentation available in Khairahani Municipality	-

5.2 Research Analysis:

All the collected data were analyzed quantitatively and qualitatively. Information collected through public opinion survey and key informant interview were used to assess the project performance and to review the effectiveness of the projects. SWOT Analysis (Strengths, Weaknesses, Opportunities and Threats) were used to analyze the strengths and weaknesses of the Users Committees to implement the construction projects and opportunities and threats that they face. It can be used either as a tool for general analysis. The situation was analyzed by looking for ways in which the UCs' strength can be built on to overcome identified weaknesses and opportunities can be taken to minimize threats. Using Descriptive statistics &Content Analysis as data analysis technique, the raw data were presented in the form of explanation, understanding or interpretation.

6. RESULTS AND DISCUSSION :

6.1 Comparative Project Activities under both Approaches:

6.1.1 Handover:

As per the project checklist survey regarding the official handover of the project conducted at Khairahani Municipality Chitwan, Nepal, out of 33 projects, it was found that only 3 project has attached official handover documents but remaining 30 projects there were no any official handover report to the stakeholders for the proper maintenance and operation after the completion of the work.

6.1.2 Defect Liability Period:

As per the project checklist survey regarding the defect liability Period of the project, out of 33 projects, it was found that only 3 project has provision of defect liability respective UCs in contract agreement but remaining 30 projects, there were no any official defect liability provision to the stakeholders for the proper maintenance and operation after the completion of the work.

But there were no any corrective actions taken by UCs in case of defects seen within 6 months after the completion of projects. Though there are provisions to rectify the work during the DLP by UCs in their own cost.

As per PPR (2064), Rules (97), Sub-rule (12) - Once the construction work is completed pursuant to sub-rule (11), the public entity shall transfer the ownership of the project to the users' committee or beneficiary community, also specifying the responsibility of care, repair and maintenance thereof. The UCs generally completed the works but after completion if the defects seen within 6 months no one will be responsible for the correction. The UCs should be bounded to make the corrective actions. The UCs has to make accountable for the correction during DLP by the proper orientation training or by retaining certain percentage of amount to DLP.

6.1.3 Ownership:

As per the responses provided, it was found that the ownership of the completed projects has been taken by the beneficiaries, UCs, and Municipality although there were no any official documents. As per PPR (2064), Rules (97), Sub-rule (12) - Once the construction work is completed pursuant to sub-rule (11), the public entity shall transfer the ownership of the project to the users' committee or beneficiary community, also specifying the responsibility of care, repair and maintenance thereof. As per prevailing rule after the completion of the work undertaken by the UCs, the ownership of the project shall be handed over to the UC's. The UC's should take the ownership of the completed project having responsibility of O & M and government should provide the necessary fund. Currently, no one takes ownership of the project.

6.1.4 Operation and Maintenance:

It was found that the responsibility of O & M of the completed project was UCs. It was also stated in the agreement that the UCs should be responsible for the O & M of the completed project. But in practical UCs are not bound to take their responsibility.

As per PO&M (2075), Paragraph (3), Paragraph (3), Rule (12) (C) & Paragraph (3), Rule (16) - The User's Committee will have to bear the necessary arrangement and maintenance work for sustainable management of the project. Operation activities depend mainly on the type of infrastructure or service. Not all infrastructures require specific operation activities for it to be used. Maintenance, on the other hand, is required for all types of infrastructure, irrespective of its purpose.

6.1.5 Operation & Maintenance Fund:

There was lack of proper arrangement of O & M fund in projects implemented through UCs. Operation and Maintenance fund is essential to maintain the infrastructure created for a sustained period of time. The financing of operation and maintenance activities will largely depend on the ownership of the infrastructure involved. Though LSGA and the Guidelines have made the provision of maintenance budget as mandatory for the projects but, the projects completed by the UCs have not been properly operated and maintained due to the lack of fund.

6.1.6 Functionality:

As per the response of the selected projects, regarding the functionality of the completed projects, it was found that out of 33 projects 28 projects were completed and are fully in use, 5 projects are stage wise completed and are partially functioning. During Key Informant and informal consultation, the trends were found similar all over Nepal. Functionality is one of the success measures of the project effectiveness in the post construction phase when the project is finished and delivered.

6.1.7 Environmental Impact:

As per the response of provided by the respondent regarding the environmental impact issues seen during the construction are shown in figure 1.

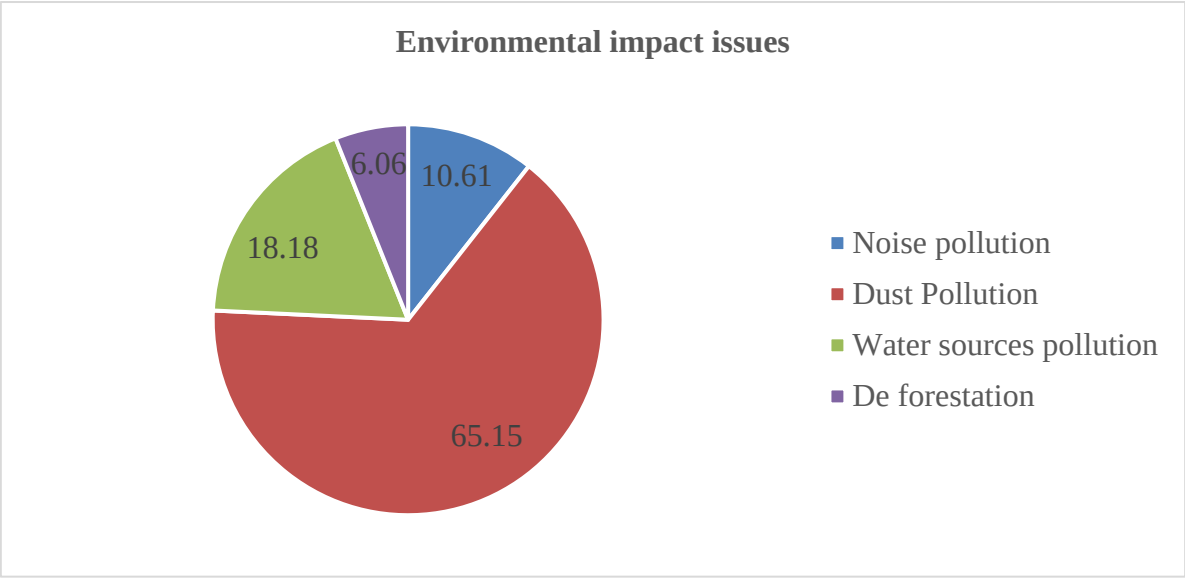

Fig. 1: Environmental impact issues in construction site

Based on the selected projects, regarding the environmental impact due to the intervention of the

projects, it was found that out of 33 projects, none of the projects have an adverse effect on the environment. The project should aim to have no direct adverse environmental impacts. The importance of environmental considerations is now widely recognized.

6.2 Socio-economic status under both Approaches:

The socio-economic status under both users committee and contractors approach have been analyzed using questionnaire survey and expressed in percentage during informal consultation.

Table 2: Comparison on construction approach based on Socio-economic status

Socio-economic status and results	Percentage choice of Users Committee Approach	Percentage choice of Contractor Approach
Ownership on work is more achieved in UC or Contract Approach	87.88	12.12
Local people get more job in UC or Contract Approach	78.79	21.21
Women's' involvement is more in UC or Contract Approach	90.91	9.09
More costlier approach is UC or Contract Approach	39.39	60.61
Rate of return is better in UC or Contract Approach	72.73	27.27
Interruption of interest group is more in UC or Contract Approach	78.79	21.21
Peoples are aware about insurance more in UC or Contract Approach	6.06	93.94
People are insured more in UC or Contract Approach	69.70	30.30
Level of transparency more maintained in UC or Contract Approach	36.36	63.64
Public audit is more secured and carried out in UC or Contract Approach	90.91	9.09
More preferred due to conflict management point of view in UC or Contract Approach	72.73	27.27
Violation of rules is more in UC or Contract Approach	63.64	36.36

On comparison of all of the above parameters regarding to socio-economic status and results in rural road construction work, it shows UC approach is more preferred than contract approach.

6.3 SWOT Analysis of UC Approach:

SWOT Examination (Qualities, Shortcomings, Open doors and Dangers) is utilized to investigate the qualities and shortcomings of the Clients Advisory groups to carry out the development activities and valuable open doors and dangers that they face. It tends to be utilized either as an instrument for general examination. The circumstance is dissected by searching for manners by which the UCs' solidarity can be based on to conquer distinguished shortcomings and open doors can be taken to limit dangers. The SWOT analysis matrix shown in Table 3 was developed based on the findings of the research.

Table 3: SWOT Analysis

Strengths	**Weaknesses**
1. Participatory- in all phases, i.e., Planning, Preparatory, Implementation and Termination phases.	1. Low technical knowledge
2. Ownership	2. Lack of management knowledge in construction
3. Most of the local materials and manpower are used	3. Do not have a skillful work team
4. Easy to tackle social issues	4. Lack of financial asset
5. Timely completion	5. Insufficient knowledge of project management.
6. No management cost	
7. Shared knowledge and gained understanding of the circumstances	5. lack of time for regular inspection
Opportunities	**Threats**
1. The Users use a chance to develop over for future projects	1. Possibility of grow up profit.
2. Empowerment-possibility of developing a functional and coordinated project team	2. Difficult to make responsible as they have team work.
3. Enhance learning capacities	3. Insufficient contribution
4. Empower and equip communities	4. Cultural based attitudes
5. Collaborative involvement of the people in the processes	5. Lacking of proper implementation
	6. Lack of investment and economic stagnation
	7. Insufficient support from all beneficiaries
	8. Difficulty in mobilizing community contribution
	9. Chance of re-contracting to sub-contractor

Experts and key informants were interviewed to know and collect information regarding the comparative study between UC and contract construction approach in construction. For this purpose, information gathered by such sources was analyzed [2, 15, 16, 17, 18, 19, and 20] as shown in Table 4 in a comparative form:

Table 4: Comparison of UC and contract approach

S. N.	**In favor of UC approach**	**In favor of the contract approach**
1	Work may be denied or agreement may be terminated with loosely bound rule and regulation.	Bounded by strong legal provision, reward and punishment is provisioned.
2	Government liability is less due to public contribution (mostly 10-20 %).	Quality achievement is sound due to regular and trained workers, staffs and own tools and equipment.

3	Normally, UCs don't get advance, so difficult to initiate work	Contractors get advance to start work.
4	UCs are not mandatorily liable to maintenance work after construction agreement terminates.	Contractors are made liable by defect liability period.
5	UCs are not given overhead cost and are not liable to pay tax to the government.	Contractors are given overhead charge (15% of estimated cost) and pay taxes to government authority.
6	Suitable for small and simple works, easier approach.	Suitable for complicated and large work but costlier approach.
7	Ownership development, capacity building, consensus building transparency in work, inclusive work, technology transfer, spoil material management, conflict management, use of local resource, commodities and technology, local job creation, familiarity with society, culture and geography are positive aspects of UC approach.	Competitive bidding, faster and quality work, risk, safety and health management, provision of insurance, security bond, and strong legal provision of this approach are positive aspects.
8	Lacking of public contribution part, less quality work, corruption promotion, political interferences, delay of work, less care about design, drawing and estimate, lack of skill, training and experience, lack of reward and punishment, increased profit making motive and practice of quasi contract are major problems in this approach.	Low bidding, unfair competition, hidden and unauthorized sub-contracting curtailing, collusion, intimidation, extension of time, low public responsibility, conflict on land, resource and spoil management, environmental degradation are major problems in this approach.

In key-informants' view, UC and contract approach have own superiority and inferiority on different aspect of common management issues, health and safety parameters and resource and technology utilization trend. During informal consultation, the trends were not much different as of policy maker and departmental experience. It was informally visited in all over Nepal using internet and telephone along physical visit and validated the same. Both approaches are suitable depending on the specific conditions and requirements. It would be better to make choice of proper approach based on nature, complexity and geography of construction. Beyond this, it is far better to make tradeoffs between these approaches. Key-informants suggested to choose the appropriate approach or combination of them considering specific condition and requirement ignoring entire dependency on a single one approach.

7. CONCLUSION :

The ownership of the projects, O & M fund and handover of the completed projects was not clearly defined. There were not any corrective actions taken by UCs in case of defects seen within 6 months after the completion of projects. It was found that most of the projects implemented through UCs are in use. There were very few projects implemented through UCs have adverse environmental impact, though the environmental impact consideration should be taken.

During the study, it was found that both the approaches are suitable depending on the specific conditions and requirements. Both of them have their own merits and demerits which do not enact in all situation of rural construction work. In the case of safety and health management issues contract approach is slightly more suitable approach whereas in the case of resource and technology utilization trend UC approach is more appropriate. But both UC and contract approach are equally considered responsible in the issues of common management.

The execution of projects through UCs was found to be effective for projects with public contribution

and in places where local material and labor are easily available. But in major projects where good quality and standard is required, UCs was not found to be effective for executing project.

Construction through contract approach needs to be continued because of following reason:

- Bounded by strong legal provision, reward and punishment is provisioned.
- Quality achievement is sound due to regular and trained workers, staffs and own tools and equipment.
- Contractors get advance to start work.
- Contractors are made liable by defect liability period.
- Contractors are liable to pay taxes to government authority.
- Suitable for complicated and large work but costlier approach.
- Competitive bidding, faster and quality work, risk, safety and health management, provision of insurance and security bond are positive aspects of this approach.
- Adoption of safety procedure, management of safety accessories, provision of health facility and awareness about insurance are highly maintained in this approach.
- In the case of safety training, spoil material management, disaster management provision, risk management and operation and maintenance issues contract approach is stronger

On the basis of analysis of all information and data collected it can be concluded that proper combination of both of the approaches would be better to be followed based on the nature, content and complexity of construction work. Similarly, as for the case of construction technology used, rather than depending just on an indigenous or modern technology, it is suggested that it is better to make a trade-off between these technologies (mixed technology) in the same project.

As the study is focused on common managerial issues, resource and technology utilization trend and safety and health status during construction of local level projects, similar type of study can be done for technical and socio-economic aspect during construction, operation and maintenance.

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