

Prospects of Joint Venture in Local Road Bridge Construction of Nepal

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ABSTRACT

Purpose: *The trend of forming a Joint Venture (JV) to enter into the bidding procedure is high in local road bridge construction (LRBC) in Nepal. As we know that the construction industry is complex, firms are facing a new type of problem in every next project. In such an unpredictable working environment working jointly with different firms is a challenge. So, this study was carried out to analyze the prospects of JV in LRBC in Nepal.*

Design/Methodology/Approach: *The study covers the bridges which are built by DoLIDAR under different projects. Various data collection tools were used for the study. Primary data were collected from a questionnaire survey, sample bridges of DoLIDAR, field observations, and focus group discussions. Secondary data were collected from reports, journals of previous studies, and trends of JV formation in international constructions. Strength Weakness Opportunity and Threat (SWOT) analysis based on a questionnaire survey was also carried out.*

Findings/Result: *It was also found that to fulfill the gap between the documentation and implementation of JV, a policy is required. As the client's intention for provision of JV is the actual requirement of the project, no to change the scope and scale of contractors so, JV must be formed and followed as per the requirement of the project. Joint ventures should make a detailed agreement among themselves clarifying the roles and responsibilities of each partner, usage of the resources, and the implementation of the project. For the proper management of JV, a management committee should be formed which shall manage the working team and resources suitably as per the requirement for the project. The presence of at least one partner from each partner in every meeting should be made mandatory by the client. A separate policy should be formulated focusing on detailed agreement clause, institutional arrangement for better functioning of JV. The database system of active contractors should be maintained by MoPIT which shall be used as a major tool while evaluating as well as awarding contracts.*

Originality/Value: *The scope of this study is to identify the practice and prospects of JV's in LRBC. It addresses the understanding of clients and contractors about the JV. The study area covers the bridges built by DoLIDAR funded by GoN, SDC, World Bank (WB), Asian Development Bank (ADB), etc. The study includes local bridges built in DRCN roads covering the Himalayan region, mountain region, and Terai region.*

The study outcome is significant for the construction stakeholder to overcome the challenges of JV for taking the benefits of JV. The study is significant for policymakers for formulating policies to reduce the problems of JV.

Paper Type: Action Research

Keywords: Joint ventures, Bridge construction, Regulations, Bidding document, Prospects of JV.

1. INTRODUCTION :

The development industry is one of the most capricious and troublesome climates to work and development projects are itself perplexing and refined in nature (Mishra, 2020) [1]. With the development business acquiring energy, JV is turning into an inexorably famous way for workers for hire to speed up their recuperation. Going into a JV with another organization can furnish a worker for hire with admittance to another market, new structure procedures or innovation, or extra financing or holding limit. In different occurrences, a JV accomplice could bring required client contacts, minority possession capability, or other helpful characteristics. In any case, as invaluable as a JV may be, it likewise presents chances. Truth be told, going into a JV regularly is contrasted with entering a marriage, the prizes can be extraordinary, yet so can the sorrows if the accomplices are not appropriate for one another (Cowell, et al., 2013) [2].

A JV is a system used to answer the particular business peculiarities, for example, admittance to new business sectors, explicit government strategy business limit, innovation move, or economies of scale. First off, workers for hire are continually presented with such dangers as work debates, work stoppages, and questionable subcontractors. They should lay out a decent agreement cost in light of good guesses to finish the undertaking. They should have the option to prepare their labor force to once in a while distant new area. An awful climate and poor financial circumstances likewise influence them. These gamble factors make development organizations more helpless to disappointment than organizations in most different businesses. One way that workers for hire can more readily contend and fill in this unique climate is by framing a joint endeavor. A joint endeavor is a plan wherein at least two project workers can consolidate their gifts and assets to more readily contend in a specific market. This union might be framed to finish a singular projector an endless number of activities over the long run. Albeit many advantages are related to framing a joint endeavor, numerous potential entanglements additionally can make this an unbeneficial game plan for the worker for hire. Now, it is time to develop a virtual joint venture [3].

2. PROBLEM STATEMENT :

The construction industry is a unique, complex, and sophisticated industry. The industry needs high expertise to overcome its challenges. Single firms are not able to meet the required resources and expertise to perform their expected outcome. The industry is demanding though it is dangerous and dirty, however, the construction managers are performing their level best to make it professional, progressive, and productive for which several entities combine to perform as a single unit under one roof as JV. This trend is high in LRBC in Nepal. As mentioned earlier, the construction industry is a complex industry to work in, even single firms are facing new kinds of problems in every next project and to work with different firms by creating JV may create even more complexities. There are different attributes in forming a JV such as experience, equipment, finance, human resource, market position, the relation between JV partners, project size, etc. So, JV results in a complex structure to be handled properly. So, a study to assess the practice and prospects of JV is felt necessary.

3. OBJECTIVES :

The general objective of the study is to assess the prospects of the joint venture in Local Road bridge construction.

4. LITERATURE REVIEW :

4.1 Assessment of Joint Venture:

Studies related to Foreign- foreign, foreign- local, and local- local JVs were found. It was found that foreign construction companies make Joint ventures with local construction companies to enter into the foreign market while local contractors enter into JV to transfer technology to the project. Some of the study and their findings are stated as below:

An Empirical review was completed to observe which basic Internal and External elements impact this sort of collaboration and to track down the administrator's insight, mentalities, and assessments regarding the presentation of their Joint Venture. The review inferred that the trust between its accomplices keeps a JV alive and the comprehension of the accomplice. The possibility of JV ought to

be to keep the association alive over the long haul. A drawn-out idea as well as inside and out market, accomplice, and contender investigation altogether impact the progress of the participation. Achievement or disappointment of a Joint not set in stone by the staff connection between the accomplices. While arranging the collaboration contract, "persistence" addresses a significant key to progress. It was made that for the progress of JV targets and obligations are characterized all along and are remembered for the JV contract [4].

Another study "Joint Venture in the Construction Industry-An Australian contextual analysis" was conveyed by Yan ki Fiona (Cheung, 2009) [5]. The review surveys the development from the conventional strategies towards the social contracting approach in Queensland, Australia. The review finished up in two significant ends. One was the Procurement strategy like Road Construction Contract (RCC) with Joint endeavor doesn't be guaranteed to have solid between hierarchical responsibilities than RCC without Joint Venture. What's more, another end was, effective key coordinated efforts require project associations to form a fit among legally binding and functional plans.

Next concentrate on "An Assessment of Risk Management in Joint Venture Projects in Malaysia" (Hamimah, 2008) [6]. The primary goal of the review was to decide the most basic gamble factors which support the fruitful utilization of JV plans in development projects in Malaysia. The consequence of the review was relied upon to give helpful rules to framing and working successful Joint Ventures in Malaysia and other comparable economies. The review showed that apparent gamble in development is the probability of the possible culmination of the undertaking for example terms of cost, time, and nature of execution. To limit the possibilities of disappointment or under-execution of a JV, risk the board procedures should be brought into the development business. To oversee them really, a complete strategy for overseeing risk during the development interaction, especially in the pre-endlessly contracting stages ought to be applied. The significant gamble factors were viewed as the agreement, accomplice determination, control value, sub-workers for hire, renegotiations, and preparing. The idea of development JVs and International JVs contrasted and another kind of acquirement might be different because of major expectation of collaboration in the members where the enormous distinction in social, political and social foundation exists. The discoveries of the research ideally support the more effective execution of Joint endeavors in other comparable economies.

One investigation of "Law of Joint endeavors in India" by Kamil Sayed [7], inferred that entrepreneur shouldn't take part in JV without satisfactory preparation and procedure. Since a definitive objective of JV is equivalent to it is for business activity, they can't stand to create a lot of gains. Experience lets us know that the two players in a JV should know the exact thing they wish to get from their association. The presence of agreement in all parts of JV is critical to have a productive consequence of their experience. There must likewise be a solid responsibility concerning every part of the undertaking and each other. One of the fundamental drivers for the disappointment of JV is that a few members don't uncover their actual business plans, or delude their accomplices about their capacity to maintain they are settled upon liabilities.

4.2 Major governing factors International Joint Venture constructions:

Success Factors:

In International Joint Ventures (IJVs), JV arrangement is extremely fundamental for the achievement factor and can keep away from an incredible arrangement of contention in the JV tasks (Hamimah, et al., 2012) [8]. Along these lines, JV arrangements ought to be drafted in clear agreements that can be effectively perceived by the accomplices as well as the functioning staff.

Innovation move is the critical target of firms for going into JV and the firm will be viewed as effective assuming the parent firm gains from its accomplice about the innovation and the board ability (Gale and Luo, 2004) [9]. Be that as it may, (Hamimah, 2008) [6] positioned the 5 most basic achievement elements of JV as an arrangement of agreement, responsibility, participation, board control, and between accomplice trust.

Failure Factors:

It was seen that as half to 70% Of Joint endeavors fizzle. Primary disappointment reasons are social contrast, poor or muddled authority, and unfortunate joining process. Different reasons incorporate

unfortunate responsibility, conflict over working arrangements, procedures, strategies, and contrasts in approach towards the board styles and frameworks (Kotelnikov, 2010) [10].

Though, Farrell expressed that 40% to 70% JV fizzle. She enrolled 7 reasons of JV disappointment, which are, quick utilization of capital, contentions over control, want of resources, social conflicts, unreasonable benefit assumptions, contending accomplices, and finally holding on to design a leave procedure (Farrell, 2013) [11].

Motivating variables:

A JV is generally utilized as a significant means to coordinate by project workers in the development industry. About the inspirations of involving joint endeavors in the development industry, there are numerous contentions. For instance, In Japan, development joint endeavors are utilized to work on their possibility of getting projects by little and medium-sized organizations. In China, development JV are utilized by unfamiliar organizations to keep away from the public authority strategy. Similarly, as in assembling industry, joint endeavors are additionally used to keep away from the strategy of the country, to extend market, to share chances, to diminish cost or access less expensive materials and assets, and to move innovation in the development industry (Zhang, 2006) [12].

Another review showed that the first motivation to go into JV is the restricted asset of the building organizations and the second explanation is the prerequisite of specialized ability spurs for JV (CIBD, 2004) [13].

Conflicting elements:

For any agreement, the struggle isn't burning whereas (Craig, 2008) [14] expressed that a modest quantity of contention might be solid and helpful for the JV since it might compel the executives to assess their choices all the more cautiously. As per him, the significant reasons of struggles are contrasted in accomplices' responsibility and doings, monetary conveyance and accomplices' temperament of controlling each other are significant three areas of contention between the JV accomplices. While, one more explanation of contention in IJV is that the parent firms regularly endeavor to keep up with independence even in IJVs (Fey and Beamish, 2000) [15].

Though, muddled accomplice jobs, inconsistent sharing of advantages and dangers, the inescapable emergency, no leave system, deficient preparation, and misconception of joining forces idea are additionally the clashing variables (Kale, et al., 2010) [16].

Partner selection factors

Trust and cultural match is the major purpose of selecting the particular partner while business purpose alignment, relation with the partner, technical strength of the partner, mutual trust between partner and the financial strength of the particular partner are the major 6 reasons for the selection of particular partners [17].

4.3 Joint Venture law in India and China:

In India, there is no regulation on the Statute book of India nor does the state characterize a joint endeavor, however under Section 8 of the Partnership Act, 1932, an individual might turn into a band together with someone else specifically experiences or endeavors. If there should arise an occurrence of such "specific organization" it has its presence just till the reason for which said association or experience or undertaking appeared. It gets broken up the second the reason for which the accomplices joined is achieved and liabilities of people participating in a specific organization with the end goal of specific experience would just endure till such endeavor finishes the reason for which it is framed. Such specific associations are limited to a solitary undertaking in which the individuals from the gathering act together both at the phase of offering and at the phase of granting. Being unincorporated affiliations, custom-based regulation didn't perceive the relationship of co-experiences, yet with the progression of time, the legal choices perceived what is known as "joint endeavor" of 'at least two people/endeavors to consolidate their property or work in the lead of specific line of exchange or an overall business for joint benefits (Kamil, 2010) [7].

The Foreign Direct Investment Governance of India allows foreign investors to invest up to 100% share in the construction industry. In some sectors, it has restricted foreign investment up to limited percentage share investment, for example, in print media up to 26% and in multi-brand retail business up to 51% (Bhattacharyya & Slaughter, 2012) [26]. Whereas in Nepal FDI is not permitted yet [18], Nepali construction projects are having FDI [19] as a constraint in a sense but it is hard to apply as an eastern approach of management wants to apply strong ethics [20] for successful implementation of JV

and its impact in small-town water supply project of Nepal [21] as multi-party project system seems difficult and resulting low performance and conflicts [22]].

China oversees the severe joint endeavor business regulations. In specific delicate development areas, completely unfamiliar claimed ventures (WFOEs) are not allowed. Unfamiliar organizations working in these areas need to pick either contributing through a joint endeavor or not contributing by any stretch of the imagination (Salem, 1981) [23].

5. METHODOLOGY :

5.1 Research Design Flow Chart:

The basic steps followed are shown in the form of the flow chart in figure 1.

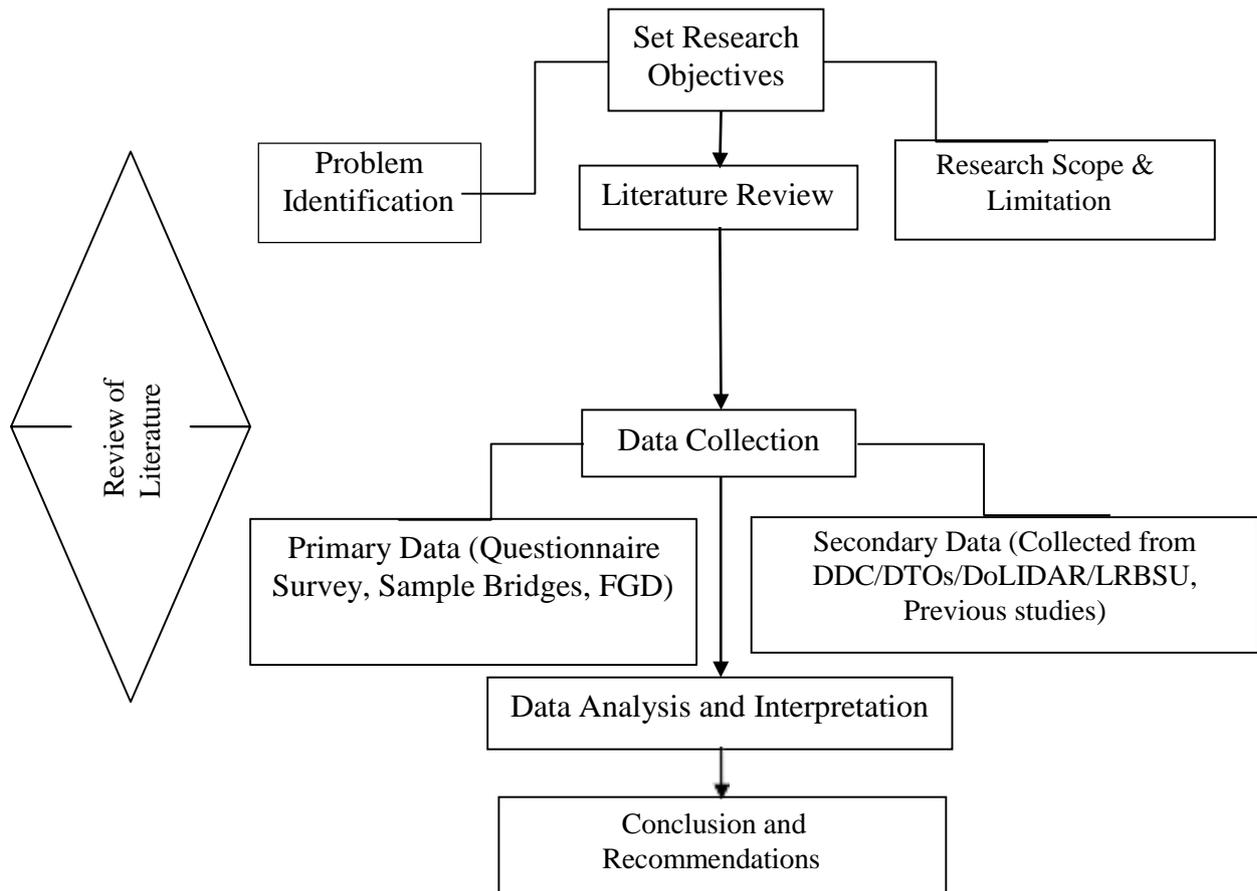


Fig. 1: Research Flowchart

5.2 Sample Design:

The sample was concentrated on the bridges constructed by DoLIDAR through LRBP, RRRSDP, RAIDP, DRILP, CAIP, and RTISWAp. As DoLIDAR has a very short history in the construction of Bridges, there are very few bridges in the completed state and most of them are in an under-construction state. There are altogether 293 DoLIDAR Bridges, out of which 130 bridges are completed and 163 bridges are under construction. Completed 130 bridges are taken as the population of the research so that experience of clients and contractors could be gained throughout the construction of the bridge.

Out of 130 completed bridges, 12 bridges were taken as sample bridges to study the real practice of JV in LRBC [24, 25]. Purposive and Quota sampling technique was used for sample design. First, the total number of bridges completed was listed. The bridges were constructed by different DDCs/DTOs, different projects were separated. Two bridges from each project were selected. The bridges were selected in such a way that covers bridges from 5 development regions of Nepal. The length of the bridge was also considered while selecting sample bridges so that it may be known how the length and cost of the bridge affect the construction of bridges when it is awarded for the JV execution.

5.3 Data Collection:

Data Collection was done by the purposive sampling method. The stakeholders of the project are clients (donors, GoN, MoFALD, DoLIDAR, DDC, and DTO) and contractors. Both primary and secondary data were collected and used in the study.

5.3.1 Primary Data Collection:

A. Sampling of Respondents

The research includes a questionnaire survey to the clients and contractors. Respondents were selected as per the sample bridges. Respondents were from both parties i.e., 18 clients and 24 contractors.

B. Questionnaire Survey

The literature review provided some information about the status of constructed/ under-construction bridges through DoLIDAR. A questionnaire survey was done. The questionnaire was prepared for clients and contractors who are involved in the construction of motor-able bridges. The questions were related especially to the involvement in the construction of motor-able bridges, ease, and difficulties that were experienced in the construction of motor-able bridges along with the JV Partnership. The questionnaire also involved the understanding of the JV of different parties. Some questions were related to how the practice of JV can be made better. After the preparation of the Questionnaire, validation of questions was done and some minor corrections were done after validation. After that, the Questionnaire was taken to the respondents to different parties. 18 clients and 24 contractors responded to the questionnaire.

Table 1: Questionnaire Response

S. N.	Distributed to	No. of Respondents
1	Client	18
2	Contractor	24
	Total	42

C. Field Visit and Observation

Only the 3 bridges among the selected were visited. The concerned Bridge engineers/ sub-engineers and contractor's personnel were visited at the site. We went through the bid documents along with the work schedule were studied. Laggings were noted. It was found that most of the cases JV's did not even start at the stipulated time. Discussions regarding the performance of JV were done.

D. Interview

The interview and discussion methods were also applied where possible. A direct interview was taken with the chief of different projects, Senior Divisional Engineers (SDE), Engineers and Sub-Engineer (SE), consultants, site in charges' and contractors. Contractors were mainly asked their main purpose of entering in JV, their experience with the JV partners, and the improvements required in the construction JVs.

E. Focus group discussion

Focus group discussion (FGD) was done with the concerned persons of the bridge in Palati Khola Bridge, Kavre, Jethi Nala Bridge, Banke, and Thado Khola Bridge, Dailekh. In FGD of Palati Khola bridge there were 7 persons one engineer from DTO, 2 consultants and 3 persons of contractor and myself while in case of Jethi Nala bridge and Thado Khola bridge there were 6 persons were involved, one from DTO, 2 consultants, 2 from contractor and myself. As the result from the questionnaire was confined to the option provided in the question but afterward, it was realized that some questions needed more options to be answered. Another reason FGD was also to check whether the answer from the questionnaire and FGD are compatible or not. The discussion was mainly related to the experience of both parties relating to JV. Emphasis was given to the contractors so that the information regarding the inner intentions of contractors for forming JV could be extracted. There were major 5 agendas for FGD, which are as follows:

- (a) Motives for JV formation
- (b) Reasons for selecting a particular partner
- (c) Areas of improvement of your business due to JV
- (d) Major areas of conflict with JV partner

(e) How the practice of JV can be made better

FGD was very active and was found very fruitful for the research. Major points were noted. The information gained from the FGD was also used in results and discussions.

5.3.1 Secondary Data Collection

Secondary data are collected from the following sources:

- Study of Construction related manuals, books, brochures, guidelines, policies and Program documents, NPC publications, DoLIDAR Bulletin, Project progress reports, Project leaflets were studied.
- Bidding documents adopted by different Implementing agencies, Acts, and Regulations were studied thoroughly.
- Interview and Discussion made with DoLIDAR Engineers and Senior Divisional Engineers.
- Interview with Contractors, Contractors Engineer, Site in charge.
- The discussion was made with the Local Road Bridge Support Unit (LRBSU).
- Study of Previous research on JV.
- JV Policies of neighboring countries i.e., India and China were studied.

5.4 Data Compilation and Analysis:

After the collection of data, it was edited for completeness, consistency, accuracy, and homogeneity.

Data Compilation and Analysis

All the data and information collected from primary and secondary sources were analyzed by comparing and contrasting the situation. The collected data are presented based on the quality and nature of the data. Quantitative data are presented in tables, figures, and percentages. Responses are shown in the chart. The chart shows the percentage response of each party.

The results obtained after analysis are presented in graphical form as bar chart and pie chart diagram. Microsoft Excel is used for the analysis and presentation of the data and preparation of the report.

Strength Weakness Opportunity and Threat (SWOT) Analysis

Once the compilation and analysis of data were done, strengths, weaknesses, opportunities, and threats are categorized and SWOT analysis will be done. It will be represented in quadrant form; each quadrant will represent individually the strength, weakness, opportunity, and threat of JV in LRBC. SWOT analysis is completely based on the questionnaire result.

6. RESULTS AND DISCUSSION :

6.1 Problems of JV in LRBC:

6.1.1 Meetings

The meeting is very important in any kind of business. The proper and periodic meeting is the major governing success factor of any business. It was also found that 4% of respondents arrange JV meetings monthly, 25% replied that meetings take place yearly, 17% replied that meetings take place after each bill payment and 54% replied that meetings take place only while entering into JV.

It seems that there is no contact between the JV partners as they do not arrange meetings after the contract is awarded, in this case, clients can play an important role by making mandatory the presence of a representative from each firm of JV in every meeting. Due to this, all the partners could at least know the situation of the project and provide input in some form. This will also bind the JV partners throughout the project duration.

6.1.2 Conflicts

In the construction projects, lots of persons are involved, lots of activities are involved, and persons involved are also different so it is obvious that the conflict arises. Even single firms are facing different conflicts and in such a working environment working together with two or more firms is another big challenge, arising conflict is obvious. It was also found that 17% of respondents have experienced conflict with the JV partners and 83% of respondents have not experienced any conflict with Joint Venture partners. This shows that there is a good understanding among the JV partners. Those who replied that they experience conflict with JV partners replied that the conflict was mostly for financial reasons as shown in fig 2.

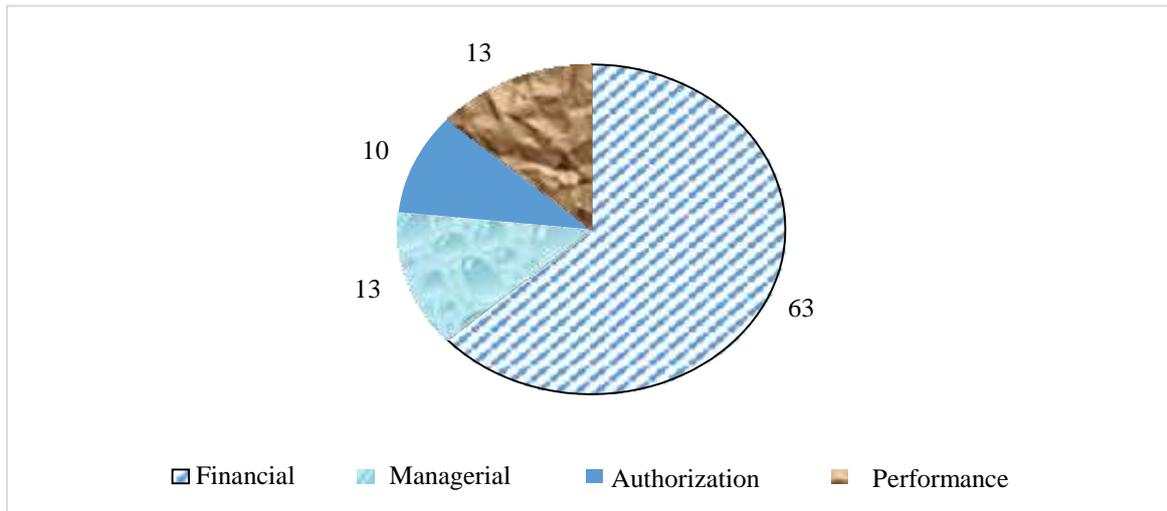


Fig. 2: Conflicts Arising from JV

Another important discussion topic of FGD was the conflict between the JV. Contractors replied that sometimes conflicts arise in the selection of sub-contractors and while hiring and using the equipment.

The difference in conflicts of LRBC and IJVs

In LRBC conflicts rarely occurs and major reasons for conflicts were related to finance, selecting of sub-contractors, and hiring and using the equipment while in IJVs conflict was found very common. The reason for the conflict was also different from that of LRBC. The main reason for the conflict was the partners' difference in the agreement and doings, financial distribution, and partners' nature of controlling each other.

6.1.3 Execution

It was found that showed that when the authorized partner fails to execute the project 30% replied that first, they develop pressure on the authorized partner to execute the project, 13% replied that they leave the project as it is, 57% replied that JV partners take over the project for execution as shown in figure 3.

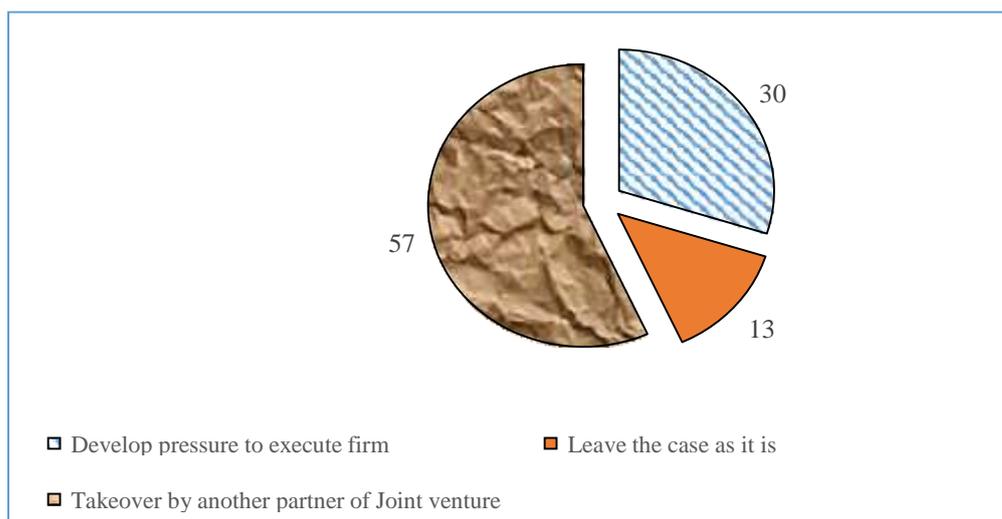


Fig. 3: JV fails to execute the project

JV partners share a good understanding among themselves as they do not face conflict among themselves. They follow some unwritten rules. They neither interfere with the authorized partner during execution nor do they share profit from the work of the authorized partner. In case the lowest partner is authorized for implementation and it fails to execute the project then, the lead partner takes over the authority so

that the project is not hampered and the harmony between client and contractor can be maintained. Every decision related to the particular project is made by the authorized partner. So, they do not form any written agreement regarding the implementation of the project.

Execution is another important part of forming a JV. The output of the project depends upon the performance of the contractor and the performance depends upon the liability. More the liability, good is the performance. It was found that 79% of clients and 20% of contractors agree that projects are always executed by partners with the least profit and loss sharing partner while 21% of clients and 80% of contractors do not agree that projects are always executed by the least profit and loss sharing partner. The response of the contractor, in this case, is different from that of the client and consultant.

To find the possibility of whether contractors fail to execute the project was asked to the contractor, 63% of clients and 30% of contractors replied that there are chances that the authorized partner having the lowest percentage share fail to execute the project. It can be seen that replies from clients and contractors contradict each other. In this case, the reply from a client is more towards JV failure and the response from the contractor is more towards non-failure as shown in figure 4.

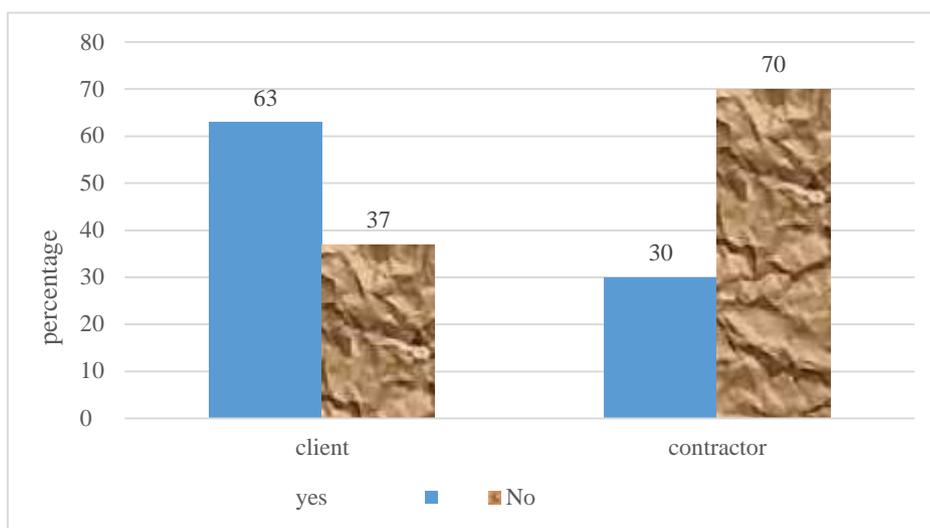


Fig. 4: Authorized Partners failed to execute the Project

It was found that 68% of clients and 73% of contractors replied that JV will lead to fast, efficiency, and quality in construction while 32% of clients, 27% of contractors replied that JV will not lead to fast, efficiency, and quality in construction.

The study also showed that due to JV wrong trend has been set in the construction fraternity. The client's main purpose for allowing JV is that they may get the required size/ capacity of the construction team but what happens is; the size what client gets is the size/capacity of a single contractor (in most cases lowest sharing partner) and as a consequence the possibility of failure for execution raises. On the contrary, both client and contractor feel that JV leads in fast and efficient construction.

6.1.4 Negative Effects:

Generally, the contract is awarded to the lowest bidder, even though according to the tender document other factors are also to be considered during the bid evaluation. As a consequence of this unhealthy practice, the smaller contractor often reduces their bids to uneconomical levels. This will have a negative impact on both the quality and duration of the project. It was found that 38% of clients and 36% of contractors replied that the negative effect of JV is low bidding, 10% of clients and 14% of contractors replied that it affects low quality work, 38% of clients and 36% of contractors replied that it will lead to the execution of time while 14% client and 14% contractors replied that it will lead to project cost variation, as shown in figure 5. A similar situation of the project has been found in Nepal everywhere [1, 19].

There are positive as well as negative practices in JV. If we see the documents, everything is fine and well prepared. Contractors fulfill the criteria required for bidding, contractors get benefitted from JV,

contractors get experience in different sectors, raise the capacity of the construction industry, and eventually the whole country. But the actual practice does not reflect the documents. The main purpose that clients set the bidding requirements is the need of the project, not to change the scale and scope of contractors.

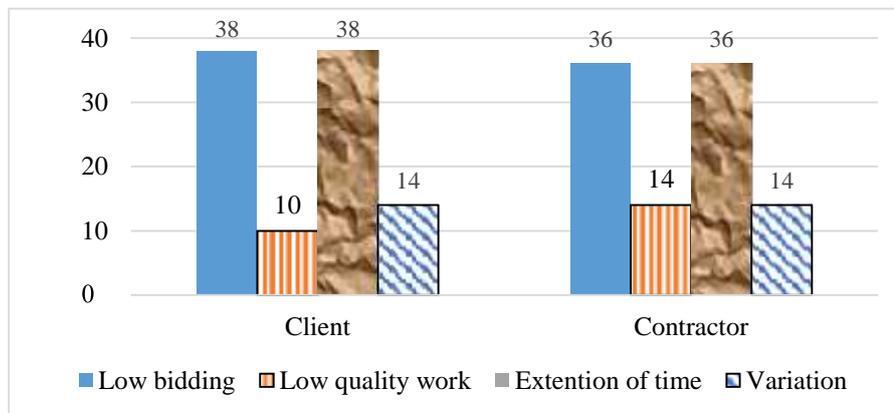


Fig. 5: Negative Effects of Joint Venture

JV has been wrongly understood by the contractors and acted upon accordingly. The contractor who has an interest in the project does not meet the bidding criteria, searches the partner until his requirement for bidding is reached. After the confirmation of the partner they assure each other that if the contract is awarded to them, the authorized partner either pays a certain percentage to the rest of the JV partners or makes the understanding that another partner will be the authorized partner in the next similar another project. It has also been understood that due to the provision of JV, the number of eligible bidders increases and ultimately leads to unhealthy competition i.e. low bidding. The study on one side showed that Joint venture leads to low bidding, as the number of eligible bidders increases but on the other side the authorized partner pays a fixed percentage to other partners of the Joint venture. As no one does the business of loss, the cost is ultimately included in the bid amount.

6.2 Acts, Regulations, and Bidding Documents:

PPA has defined JV as the act of carrying out any work jointly by two or more companies or firms with joint or several liabilities; PPR has specified general qualification criteria and specific criteria are defined in the respective bidding documents. SBD is used in most public procurements. Earlier there was no limitation in the number of contractors and there was no demarcation in the percentage share contribution by each partner. But now SBD has limited the number of partners and the financial contribution by each partner should be at least 25% for each partner and at least one partner should contribute a minimum of 40%. This demarcation will limit the number of partners in JV and make more liable JV partners. To know whether the concerned agencies liked this intervention or not, it was found that 79% of clients and 73% of contractors that the number of partners limited up to 3 is better for construction works while 21% of clients and 27% of contractors replied that it is not better for construction works as shown in fig 6. It was also found 84% of clients and 83% of contractors replied it is better than the minimum contribution of any partner limited to 25% and that at least one partner should contribute at least 40% while 16% of clients and 17% of contractors replied that it is not better to demark minimum percentage share of JV partner.

There are differences in documentation and implementation in the case of JV. No policy applies during and after the completion of the project. So, it was asked whether the legal part of JV is sufficient or any separate policy is required to harness JV. It was found that 95% of clients, 83% of contractors replied that a separate policy is required for better JV regulation while 5% of clients and 17% of contractors replied that a separate policy is not required as shown in figure 7. Make strong ethics to improve business [20]. Limiting the number of contractors and specifying the minimum condition of share is very useful in the case of LRBC. If these conditions are not applied then on one hand local contractors with lesser resources would combine with other firms and get awarded for bigger projects, and on the other hand, only one contractor will execute the project but remaining all the contractors would also be counted as

experienced contractors in the similar future projects. This condition will minimize the number of the bidder and unhealthy competition. Despite this, PPA has allowed the provision of JV in public procurement, SBD has also created some boundaries and conditions for JV but what is lacking is the implementation part. So, all the parties feel that a separate policy is required to harness the overall activities of JV.

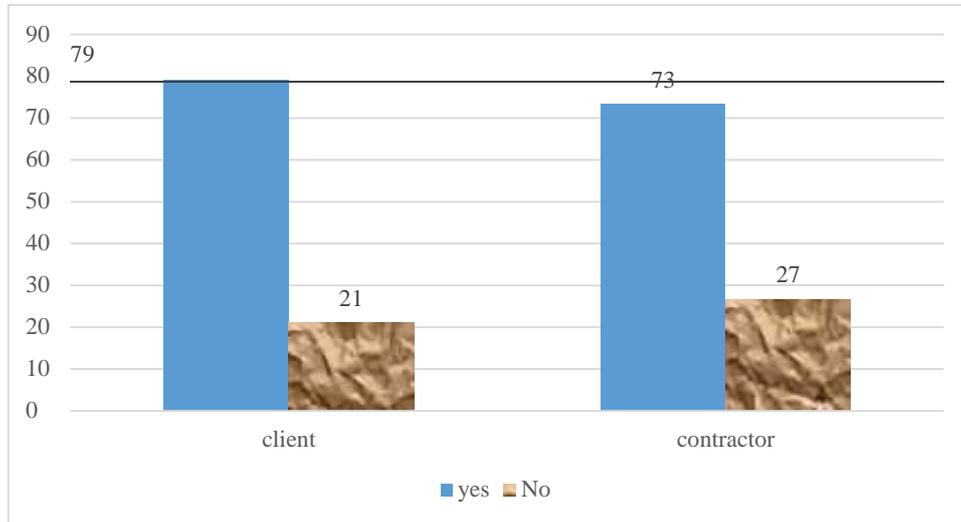


Fig. 6: JV partner's limited up to three is better

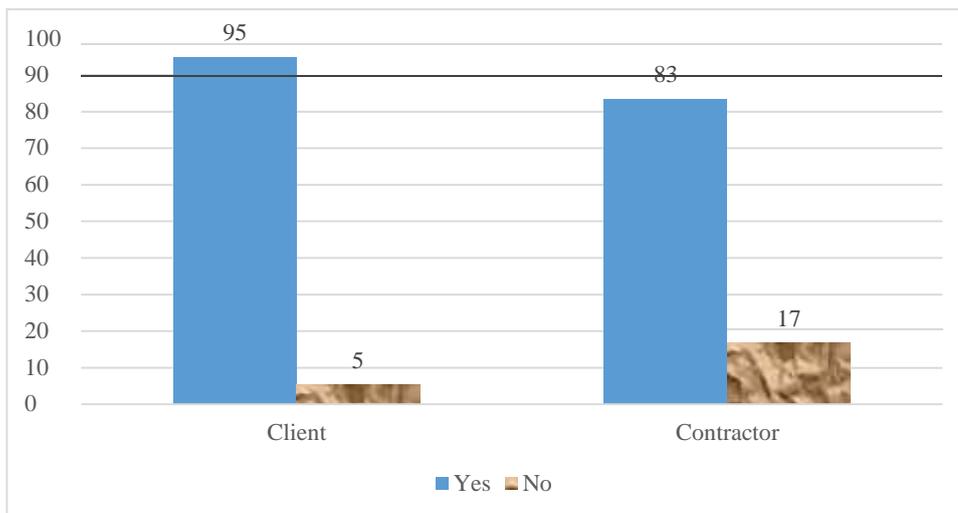


Fig. 7: Separate Policy required for JV

6.3 Prospects of JV:

6.3.1 Need of Joint Venture in LRBC

As stated earlier, bridges built by DoLIDAR are in local roads are generally smaller in length and of local importance so, national-level contractors hardly show interest to get involved in the construction of such bridges so, provision of JV, on one hand, promotes local contractors and on other hand implementing agencies get the bridges built at low cost due to local bidding. So, it was found that 84% of clients and 80% of contractors replied that JV is required for the construction of Local Road bridges while 16% of clients and 20% of contractors replied that JV is not required in LRBC figure 8.

It was also found that 63% of clients and 73% of contractors replied that JV is successful in the context of LRBC while 37% of clients and 27% of contractors replied that JV is not successful in LRBC.

To find whether a bigger package with JV is better or smaller packages with a single entity, it was found

that 89% of clients and 93% of contractors preferred bigger packages with JV over smaller packages without JV.

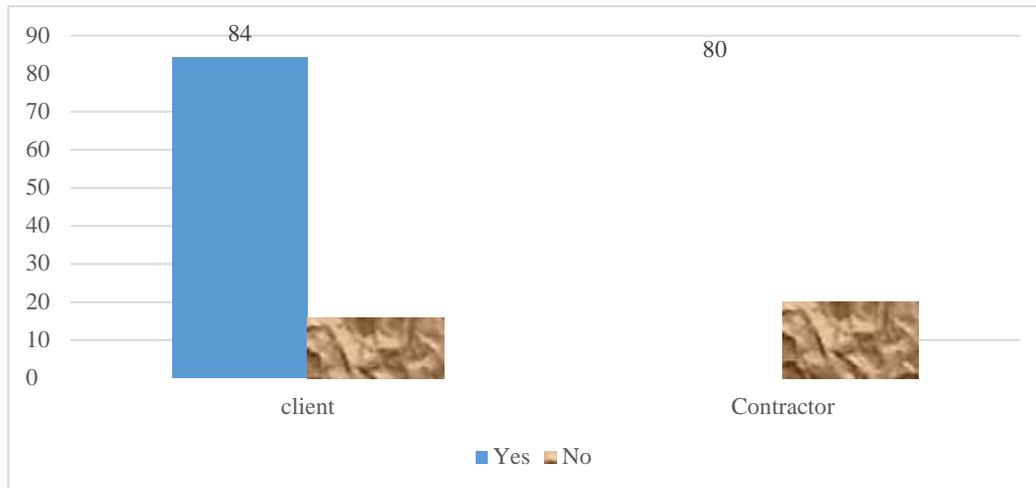


Fig. 8: JV is required in Local Road Bridge Construction

As mentioned earlier, the study covers the bridges which are built-in DRCN by DoLIDAR. National-level contractors hardly show interest in local-level procurements. In this case, the local contractor makes a JV arrangement with those contractors and enters into the bidding procedure. This will help local contractors to change the scope and scale of their business on one hand and the other hand the cost of the bridge will be less due to local contractors as the rates quoted by them will be lesser than the rates quoted by the national level contractors.

6.3.2 Practice to Make JV Better:

To find the good practice for effective management of JV, it was found that 77% of clients and 73% of clients replied that a management committee consisting of representatives from each JV partner shall function as the steering committee of JV for the project while 8% of clients and 17% of contractors replied that the selection criteria should be set such a way that the ventures showing bad performance in their earlier projects are not awarded by the contracts. 10% of clients replied that the management/execution by the single firm would be the best practice of JV while 5% client 10% contractors replied that the resources to be used shall be as assured in the bidding document which shall be verified and if substantial deviation to recommend the firm towards restriction in bidding/black listing.

To form a management committee consisting of a representative from each JV partner who shall function as the steering committee of JV for the project was also the major conclusion drawn from FGD. It would give a better solution to day-to-day conflict arising from the partners. Due to the participation of a representative from all the partners, the decision will be made in favor of the project, not in favor of any individual partner. 72% of respondents from clients and 87% of contractors reply that a database system is required for awarding contracts while 28% of clients and 22% of contractors replied that a database system is not required for awarding the contract.

Implementation of any construction project is a very lengthy process. It starts from a reading of published notice and ends after the Defect Liability Period (DLP). In-between there are so many activities like searching for an appropriate JV partner, purchase of bidding document, estimating better bid rates, depositing bid security, signing contract, and implementation of the project. So, the JV should form a management committee that consists of a representative from each JV partner. The committee will be responsible for all the management decisions. The management shall include human resource management, equipment management, finance management, and site management.

Table 2: Practice for effective JV management

Options	Client (%)	Contractor (%)
Form a management committee consisting of a representative from each JV partner who shall function as the steering committee of JV for the project.	77	73
Set the selection criteria in such a way that ventures showing bad performance in the earlier projects are not awarded by the contracts.	8	17
The management/ execution by a single firm would be the best practice of JV.	10	0
Resources to be used shall be as assured in the bidding document which shall be verified and if substantial deviation to recommend the firm towards restriction in bidding / black listing.	5	10

MoPIT is the responsible authority for the licensing and renewal of contraction firms for "A", "B" & "C" class contractors while the licensing of "D" class contractors comes under the authority of respective DDCs. MoPIT has established the database of contractors on the website:cbps.gov.np, but it gives only the information of contractors who are registered in the ministry not the information of active contractors. The responsible authority should maintain the record of active contractors, year-wise contracts handled by those contractors. This is very necessary because this database can be used also in the evaluation of bids [21 - 22].

6.4 SWOT Analysis:

Based on the reply to the questionnaire survey, SWOT analysis was done.

<p style="text-align: center;">Strength</p> <ul style="list-style-type: none"> • Improvement in technical capability. • Increment incapability to carry outworks. • When the authorized partners are unable to perform their job then lead partners to continue the execution of the project. • Match competition by combining resources. • Joint ventures do not interfere with an authorized partner during execution. • The minimum percentage of share is defined which will limit the entry of incapable contractors. 	<p style="text-align: center;">Weakness</p> <ul style="list-style-type: none"> • The joint venture is formed only to fulfill bidding requirements. • Low bidding. • Management meeting takes place only once a year. • The practice of inactive partnership. • Joint venture partners do not contribute as per the agreement. • Lack of understanding of the true sense of Joint venture.
<p style="text-align: center;">OPPORTUNITY</p> <ul style="list-style-type: none"> • Contractors seeking experience get the opportunity by entering in JV. • Bigger construction packages with JV are better. • Technology sharing • The formation of a database system will manage the whole construction industry and construction system in a better way. 	<p style="text-align: center;">THREAT</p> <ul style="list-style-type: none"> • All the profit as well as loss to be borne by the authorized partner only which may cause bankruptcy to a contractor in case of huge loss. • Projects are mostly executed by the least profit and loss-sharing partner. • There is no detailed agreement between Joint venturers regarding detail management and implementation of the project.

7. CONCLUSION :

In IJVs it was found that JV partners make an agreement in different phases of the project but in the case of LRBC, only one agreement while entering into JV is formed. Contractors did not arrange any meetings of JV after they are awarded the contract. One of the main conclusions drawn from the study is that irrespective of the number of partners in the JV, only one authorized partner conducted the whole project. Authorized partner either pays a fixed percentage to remain JV partners or assure that next partner would be authorized for next similar project. An increase in the number of eligible bidders leads to unhealthy competition i.e. low bidding. Another worse conclusion drawn is that after being awarded by the contract, the JV partners do not make a detailed agreement among themselves regarding the implementation of the project.

PPMO has demarked the number of Joint venturers. There should not be more than 3 partners in a Joint venture and the minimum percentage of share is 25% at least one venture should have at least 40% share while forming a Joint venture, which can be concluded beneficial for both contractors as well as clients. Due to this demarcation, the number of the bidder will be decreased which results in a good evaluation. It would also avoid unable and unnecessary bidders who bid only to change the scope and scale of their business and not as per the requirement of the project. It will fulfill the requirement of the client of getting the required size of the responsible project team.

For the proper functioning of JV, a management committee consisting of representatives from each JV should be formed which shall function as a steering committee of the JV. From the study, it can also be concluded that a separate policy is required for proper- functioning and stopping the mal-practice of the JV, and a database system is required.

8. RECOMMENDATION :

- Contractors should establish JV and follow it as per its true sense.
- JV partners should make a detailed agreement among themselves clarifying the roles of each partner.
- The JV should form a management committee which should function as a steering committee. The committee will be responsible for all the management decisions. The management shall include human resource management, equipment management, finance management, and site management.
- MoPIT, which is responsible for licensing of contractors, should also be made responsible for updating the database system of active contractors.
- Incorporate all the above suggestions by forming a separate policy focusing on detailed agreement clause, institutional arrangement for better execution of JV which shall apply during and after the completion of the project.

8.1 Suggestions for further study

The present research has been focused on the practice of bridge construction through Joint Venture in Local Road bridges. There are still areas that the study does not cover, which are given below:

- A similar study based on numerical ranking to identify practice and prospects of JV could be done.
- Further study could be done on practices of Joint venture in the whole construction industry of Nepal and the model contract clauses to be modified for better Joint venture practices in Nepal could be a further research subject.

9. LIMITATIONS OF STUDY :

The joint venture is a very useful practice not only for LRBC but for the construction of other infrastructure of the country but this study is limited up to the bridges built by DoLIDAR under the different projects.

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