EVALUATING EFFECTIVE COMMUNITY PARTICIPATION FOR SUCCESSFUL COMPLETION OF INFRASTRUCTURE PROJECTS

By

Shahid Hussain
(NUST201463356MSCEE15414F)

A synopsis submitted in partial fulfillment of
the requirements for the degree of

Master of Science
in
Construction Engineering and Management

DEPARTMENT OF CONSTRUCTION ENGINEERING AND MANAGEMENT
NATIONAL INSTITUTE OF TRANSPORTATION-NIT
SCHOOL OF CIVIL AND ENVIRONMENTAL ENGINEERING
NATIONAL UNIVERSITY OF SCIENCES AND TECHNOLOGY
SECTOR H-12, ISLAMABAD, PAKISTAN
(2018)

This is to certify that the

thesis titled

Evaluating Effective Community Participation for Successful Completion of Infrastructure Projects

Submitted by

Shahid Hussain

(NUST201463356MSCEE15414F)

has been accepted towards the partial fulfilment

of the requirements for the degree of

Masters of Science in Construction Engineering and Management

_____

Dr. Muhammad Jamaluddin Thaheem

Supervisor,

Department of Construction Engineering and Management,

NIT-SCEE, NUST, Islamabad.

THESIS ACCEPTANCE CERTIFICATE

Certified that final copy of MS/MPhil thesis written by Shahid Hussain (Registration No. NUST201463356MSCEE15414F) of (School of Civil and Environmental Engineering/ National Institute of Transportation/ Construction Engineering and Management has been vetted by undersigned, found complete in all respects as per NUST Statutes / Regulations, is free of plagiarism, errors, and mistakes and is accepted as partial fulfillment for award of MS/MPhil degree. It is further certified that necessary amendments as pointed out by GEC members of the scholar have also been incorporated in the said thesis.

Signature: _____

Name of Supervisor: Dr. Muhammad Jamaluddin Thaheem

Date:_____

Signature (HOD): _____

Date:_____

Signature (Dean/Principal): _____

Date:_____

This thesis is dedicated to my family, friends and respected teachers!

ACKNOWLEDGEMENTS

First and foremost, I am thankful to Allah Almighty who bestowed me the strength, faith and ability to complete this research work successfully. I would like to pay debt of gratitude to my supervisor Dr. Muhammad Jamaluddin Thaheem for his enormous guidance, valuable time and encouragement and made it possible for me to complete this study. I am also extremely grateful to the committee members, Dr. M. Sohail Anwar Malik, Dr. Hamza Farooq Gabriel (Water Resources Engineering and Management) and Lec. M. Hasnain for their worthy guidance and encouragement. I am very grateful to all fellows for their contribution and support for completion of my thesis. And in the end I would like to pay my honest gratitude to my family for their unconditional support, prayers and patience.

ABSTRACT

Infrastructure projects are backbone for developing countries. The main objective of these projects is to improve the livelihood of the community. The degree to which the beneficiary community is effectively involved in the project life cycle is of paramount importance toward achieving this objective. Involvement of beneficiary communities in all stages of project is crucial for successful completion. The main aim of this study is to identify and prioritize the critical factors for effective participation, asses the importance of community involvement in project lifecycle, and finally to determine the best and effective community participatory approach. For collection of data, extensive literature review and questionnaire survey was conducted. Total 136 responses were received and then data analysis was done. For successful and smoothly execution of project, 27 factors were extracted. The top critical factor for successful completion is 'availability of resource' and top ranked strategy for effective participation is 'community-based strategy'. The findings of the study show that involving community during the project life cycle enhances project sustainability. Finally, a case study is conducted in term of cost and duration, result shows that considerable difference in cost (low) in community based project than government executed project. On the basis of analysis, recommendation has been proposed for all stakeholders to formulate policies and strategies for effective community participation for successful completion of infrastructure projects.

Table of Contents

LIST OF FIGURES

LIST OF TABLES

LIST OF ABREVIATIONS

GDP	=	Gross Domestic Product
NGOs	=	Non-Government Organizations
USAID	=	United States Agency for International Development
PMI	=	Project Management Institute
CBD	=	Community Based Development
CDD	=	Community Driven Development
CFs	=	Critical Factors
CBO	=	Community Based Organization

Chapter 1

INTRODUCTION

1.1 GENERAL

The World Bank defined the term 'infrastructure' as "*social overhead capital*", which includes social services like hospitals, housing, schools and industries (Ross, 1995). A more comprehensive definition of infrastructure services are power, telecommunications, water supply, sanitation and sewerage, solid waste collection and disposal, roads, irrigation, railways, transport, ports, and airports (Bieh, 1991).

Infrastructure is considered as major component for socio economic development of any country's GDP. For country's economic demands the government is responsible to provide infrastructure (Khosa, 2000). Lanjouw and Ravallion (1995) state that in developing countries, infrastructure contributes directly in reduction and alleviation in poverty and improvement in socio-economic welfare. According to Haupt (1996), an inappropriate infrastructure refers to compromised living standards, undermined production capacity, and hindered overall development and growth. The World Bank Report (Ross, 1995), in developing countries the past growth of infrastructure has been spectacular in some respects. In these developing countries infrastructure investments are often misallocated.

For the provision of infrastructure services reform, The World Bank Report(Ross, 1995), states three measures, (1) to service providers to use wider application of commercial principles, (2) maximum use of competition, (3) users and stakeholder's involvement.

The involvement of user or community participation is defined by Mansuri and Rao (2004) as, it is an active process in which beneficiary community influence the design and execution of the project. Community involvement at any level of project is to incorporate the local knowledge for decision making. Participation of the beneficiary community in all stages of infrastructure projects is increasingly gaining recognition as an important tool for improving

the project effectiveness and efficiency. This paradigm was adopted by development thinkers in late1970s when the World Bank, international funding agencies and NGOs changed the traditional development approach. The main aim of community inclusion in the inbuilt process is to enhancing ownership of the project and granting the authority to the beneficiaries who will be eventually counted (Chambers, 2007; Clark, 1995; Friedmann, 1992).

Development practitioners developed and practiced a wide range of participatory models for inclusion of the targeted community at different stages of the project. (Kuhn, 2000) categorized into four groups:

- *Workshop Based Methods*
- *Community Based Methods*
- *Methods of Stakeholder Consultation*
- *Methods for Social Analysis*

People's participation concept is not a new one in the development sector(Nelson and Wright, 1995; Shah, 1998). Studies revealed that for development, it is essential that the community should participate in the activities (Dent et al., 2013; Somesh, 2002; White, 1996). Community participation will improve the efficiency, self- reliance, effectiveness, coverage and sustainability of the projects (Oakley, 1991; Somesh, 2002).

1.2THE PROBLEM STATEMENT

For local development, infrastructure projects are backbone for any developing country like Pakistan. The main objectives of these projects are to improve the livelihood of the beneficiary community. To achieve these objectives, it depends on the degree to which the beneficiary community is effectively involved in all stages of projects. Reid (2000), involvement of beneficiary communities in planning, design, implementation and evaluation of development initiatives is crucial in a devolution process. Khwaja (2004), more

community participation is linked with better project results. For better services and improvement in project outcomes there is association with more community participation (Isham and Kahkonen, 1999).

In Pakistan, due to lack of community participation in current development projects it results in the reduction of the worth of the projects. This study identifies the factors that influence effective community participation in infrastructure projects.

1.3 JUSTIFICATION OF THE STUDY

The findings of this research will contribute to understanding the factors that influence effective community participation in infrastructure projects. It will also be useful for government institutions, NGOs and donors' agencies that want to involve communities in development projects.

12.4 OBJECTIVES

The objectives of this research are as follows:

- To identify the factors related to effective community participation for successful completion of project
- To prioritize and analyze these identified factors
- To determine the best and effective community involvement approach

1.5 THESIS OVERVIEW

This thesis has been organized into following chapters:

Chapter 1: The chapter 1 is about Introduction. It includes introduction to the research work, problem statement, justification of the study, and objectives of the research.

Chapter 2: The chapter 2 is about Literature Review.

Chapter 3: The chapter 3 is about Methodology used for the research. It explains how the research has been conducted to acquire the research objectives.

Chapter 2

LITERATURE REVIEW

2.1 INTRODUCTION

According to Schiibeler (1996), the success of participation depends on convincing stakeholders that the process satisfies their needs. Participation is not a product, it is a process that involves participants. These participants decide how and what infrastructure services are required. According to Abbott (1996), 'community participation's concept started in eighteenth century. For rural development, the concept of community participation is not a new trend; the concept was discussed and written by many authors and development practitioners from 1950s (Guijt and Shah, 1998; Nelson and Wright, 1995). In developing countries approximately 3 billion people which is around 40 percent of total world population is living in rural areas (IFAD).

Schiibeler (1996) claims that the community based organization (CBO) and users of infrastructure perform vital role in provision, maintenance and operation of infrastructure system due to participatory infrastructure development. Through participatory approach they not only reduce cost but also consider the needs of people by involvement of people in the planning phase. This can help to earn revenue/benefit. Participation develops ownership and they use the facilities efficiently and enhance the reliability of operations.Chambers (1994) described the participation concept and gained new popularity. According to the author, the main aims of participation are:

- Empower the local people.
- Address the local needs and requirement.
- Tackle cost-effectiveness concerns and involve local people to help reduce the capital cost.

- Enhance project sustainability through input of local people in design and construction stages that will cause less running costs and also the community will undertake maintenance of the project after completion.

2.2 DEFINITION OF COMMUNITY PARTICIPATION

Participation has rich concept that changes with its application (Sinclair, 2004). The term participation defined by Oxford English Dictionary is "*to have a share in*" or "*to take part in*".

Arnstein (1969) stated that it is a process that enables the poor citizens to be intentionally included in the future through distribution of power to them. The World Bank defined the process as, it is a process by which the community controls and influences the project activities (Havel, 1996). According to Awotona (1995), participation is basically working in a team, it assigns tasks to people in different projects.

Oakley and Marsden (1987) defined community participation as a process in which the communities, individuals accept the responsibilities to work for the benefit of their own and for community development. Community development programs are labeled by Community Based Development (CBD), Community Driven Development (CDD) and social fund (Mansuri and Rao, 2004).

2.3 EVOLUTION OF COMMUNITY PARTICIPATION IN DEVELOPMENT

Community is defined in various ways, by different scholars. To Swanepoel and De Beer (2012), it is a geographical demarcation that consists of people having same concerns and needs like all . Stroup (1997) explains as community is a planned unit with groups that help each other to accommodate in the complex changing situation, in which they try to find out the way to satisfy their basic requirements.

Somesh (2002) notes that participation of people means different thing to a different community. Participation is defined in different ways depending on the context of

participation. According toMidgley (1986), community participation is that in which the participants take actions and initiatives by their own thinking.

According to Debeer and Swanepoel (1998),participation means that community members are allowed to take control in decision making stages. Despite many definitions, it remains a challenge for effective community participation(Chambers, 1997; Nelson and Wright, 1995). Bunch (1985) states that development agencies should focus on effective participation rather than more participation from the community.

Effective participation in a development project can be measured on the degree to which the target community members take part in all stages of project life cycle like identification, appraisal, approval, implementation, monitoring and evaluation. The participation cycle developed by Kasiaka (2004) and modified by Mwakila (2008) is shown in Figure 2.1.

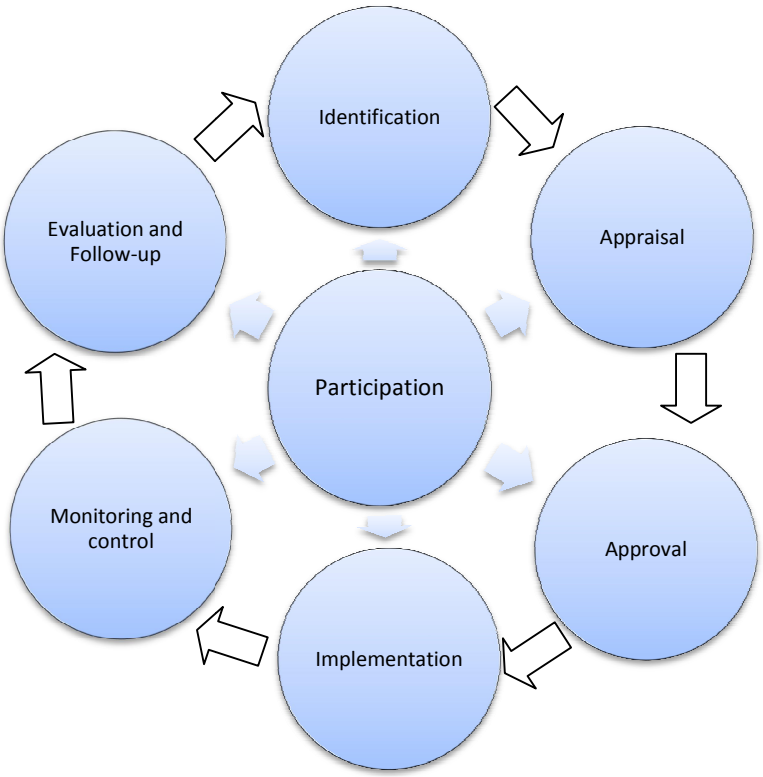

Figure 2.1: Community Participation Cycle

During the project life cycle, inclusion of community at the stage of identification of any project is an essential aspect as it ensures their main problems are pointed out and necessary

changes are made to meet their requirement. As the project affect the local people's life. So their participation is utmost important. As also the local people better know their problems so by consulting them, acceptable solutions can be reached. The involvement of community at various stages of the project will determine the level of participation. It is very important for the development agencies to understand the modes and levels of community participation in the development process or stages of project life cycle. Theron (2005) described that, in terms of public participation few levels are more important than others. These type of approaches are become more appropriate when the result of beneficiary participation is evaluated in relation to a project, and in this regard the degree of participation becomes a main element (Fokane, 2008).

2.4 REASON OF PARTICIPATION

In developing countries the problem of providing, operating and maintaining of infrastructure facilities by government is beyond their capacity (Attahi, 1992). The infrastructure delivery process impeded by institutional weaknesses is due to the following reasons:

- Government institutions are ineffective due to overlapping jurisdiction, competing interest with less impact mandates.
- Ineffective government agencies do not have framework that can encourage community participations.
- Also government agencies do not motivate efficient performance.

The World Bank Report (Ross, 1995), the participatory infrastructure not only effects the service improvement but also builds the capacity of people to interact with other authorities and can deal local affairs effectively. It also empowers them.

Schiibeler (1996) defined participation in infrastructure management as, it is a process in which people impact the flow and quality of infrastructure services available to the mass consumer's, citizens and producers of infrastructure services. Participation is not just required

in development projects, it involves community through community-based infrastructure development and links them to formal system by building participatory strategies on informal system.

Participation in right situations can benefit more than its risk and cost(Schiibeler, 1996).The level of Participation of community in selection of procurement directly influences the satisfaction level of community (Davenport and Smith, 1995).According to Franks and Harlow (1998) communities have different needs in order to achieve satisfactory outcome, it is necessary to identify their needs and match with the procurement system that will fulfill their needs.

2.5 COMMUNITY PARTICIPATION OBJECTIVES

Paul (1987) stated five objectives of community participation that contribute to project and these are:

1. Project Costs Sharing: Community can participate in projects by sharing labor and money during implementation stage.
2. Project Efficiency Enhancement: To enhance the efficiency of the project by involvement of the community in management of project during implementation.
3. Enhancement of Project Effectiveness: More and efficient involvement of community can help to achieve project objective and provide benefit to all groups.
4. Capacity Building: Through involvement of beneficiary community in trainings, learning activities and active involvement in planning and implementation of projects, their capacities are enhanced.
5. Empowering Beneficiaries: Empowering the underprivileged sector of the community by increasing their access and control over resources and involving them 0in decision making stages.

2.6 LEVELS OF PARTICIPATION

Many authors and development practitioners have distinguished different levels/types, dimensions and degrees of participation. Arnstein (1969), Ladder of participation is the earliest and the best approach to evaluate the involvement of community which is shown in figure 2.2. The author follows an approach using a ladder or typology of community participation by including eight levels of participation, which are further classified in to three levels. The highest category refers to citizen power and the lowest category refers to non-participation and middle category indicates degree of tokenism.

Figure 2.2: Ladder of Participation

These levels are categorized by Brett (2003) in terms of strong and weak participation. According to the author, weak participation implies as "informing and consulting" and strong participation as "partnership and control". The author assumes that during project designing phase it is important to consult all beneficiaries to consider their needs, objectives and goals. Wilcox (1994) stated that sometimes consultation and information sharing leads to disappointment among communities.

The implication of coherence of level of participation creates problems, when development agencies execute or operate at the same time in various and wide continuum of participatory method (Mosse, 1996). The different level are suitable at different situation and time to come

across the interest and expectation of all stakeholders because one level on the participation range is not certainly than the other level(Wilcox, 1994).

The table 2.1shows seven levels/steps of participation which is useful in analysis of degrees of participation (Brett, 2003; Pretty et al., 1995; Somesh, 2002). The first four levels taken as "*participation as means*" and the remaining last three levels are "*participation as an end*".

Table2.1: Levels of Participation

Level	Characteristics of Each Type
1. Passive Participation	In this level the community just shares with the people about the project details. It is basically one-sided declaration and announcement by project leader and management about the project.
2. Participation in Information Giving	In this level, people cannot influence the process and proceedings because they just participate in the process while the researchers conduct survey or other same approaches. The people answer the question mentioned in questionnaire of survey, after completion of survey the researcher neither share the findings with them nor check for correctness.
3. Participation by Consultation	External people consult the local people and listen their views/ ideas. The external experts identify the problems and suggest appropriate solutions and make changes according to the requirements.
4. Participation for Material	In this level people participate to get material incentive such as labor in return for cash, material and for food. It is named as participation,

Incentives	yet the people just involve themselves for material gains they do not have any stake in the process after ending of the incentives.
5. Functional Participation	In this level, groups will be formed to achieve the pre-defined project objectives and goals, which can involve promotion and development of external initiated social agency. The people are not involved in early process and stages of project cycles, they are involved when main decisions are taken or made. The agency may become independent in start, it is likely to be reliant on external facilitators and initiator.
6. Interactive Participation	People participate for joint analysis, resulting in formation of action plan and establishment of new local agencies or to reinforce and strengthen the already existing agencies. People are involved in maintaining practices or structure because they have control over local decision making.
7. Self-Mobilization	To change the system, people take initiatives by themselves without depending on external agencies. They control the resources and contact the external agencies when they need technical advices. Such initiation by people and their collective actions can challenge unfair distributions of power and wealth.

2.7 STRATEGIES OF COMMUNITY PARTICIPATION

There are wide range of participations that from the involvement of government in community development activities to community participation in government directed management activities (Schiibeler, 1996). For successful community participation it is

necessary to fairly represent community as partner in decision making process (Yeung and McGee, 1986).According to Abbott (1996), community participation theory should be incorporated as practical implementation strategy. This aspect should be taken in to consideration while working on community participations. According to Pretty et al. (1995), practical planning ensures local people's involvement in agenda setting in both resource allocation and controlling mechanism. The main reason of the participatory strategy is division of the tasks and assignment of the responsibilities.

Schiibeler (1996), identifies a simple framework for community participation that consists of four participatory approaches in infrastructure projects.

- Community-Based Support Strategies
- Area-Based Strategies
- Functional-Based Strategies
- Process-Based Strategies

2.8 EFFECTIVE PARTICIPATION

The modern theories acknowledge the value of beneficiary community's participation in the infrastructure development processes, suggesting that their involvement in different stages have the potential to achieve a goal or more sustainable outcome. (Brody et al., 2003) argued that community participation can develop trust, credibility and commitment about the implementation of projects. One of the advantages of community participation is that differences are resolved during the planning process of the project rather than during the implementation of the project (Moote et al., 1997).

2.9 CRITICAL FACTORS (CFs)

For effective community participation in infrastructure projects, pertinent literature review was carried out and 27 CFs were extracted, which is shown in table 2.2.

'Availability of resources' throughout the project life is a key factor for the success of any project. Resources should be available constantly and appropriately. Only availability of fund is not sufficient. Financial resources with combination of other inputs like human resource, materials etc will improve the likelihood of project success (Goggin, 1990; Struyk, 2007). For effective public participation 'policies and procedures' should be transparent and consistent. The project should meet the local preferences. All the process should work out transparently (Khang and Moe, 2008; Struyk, 2007). Diallo and Thuillier (2005) found during their studies that 'trust and communication' among stake holders influence the project success. Also, 'project team with right attitude' and strong project management has been identified as critical factors for success of project. (Diallo and Thuillier, 2004; Vickland and Nieuwenhuijs, 2005).

Table 2. 2 : CFs of Participation affecting project success

S. No.	Factors	Frequency	Factors Cited by
1	Availability of resources	7	(Khang and Moe, 2008), (Youker, 1999), (Struyk, 2007),(Gelders et al., 2010),(Webler and Tuler, 2002),(Rowe and Frewer, 2000),(Duy Nguyen et al., 2004)
2	Policies and procedures	6	(Rowe and Frewer, 2000), (Webler and Tuler, 2002),(Gelders et al., 2010), (Andersen and Jessen, 2000),(Edelenbos and Klijn, 2005),(Wagenaar, 2007)
3	Competent project team with right	6	(Khan, 2005), (Khang and Moe, 2008), (Struyk, 2007), (Webler and Tuler,

	attitudes		2002), (Palerm, 2000), (Vickland and Nieuwenhuijs, 2005)
4	Effective communication	5	(Diallo and Thuillier, 2005), (Agheneza, 2009), (Harmsen et al., 2003),(Gelders et al., 2010),(Vedung, 1999)
5	Community commitment for project completion	5	(Khang and Moe, 2008), (Youker, 1999), (Kanter, 1999),(Davenport et al., 2010), (Li et al., 2005).
6	Collaboration and partnership between community and project organization	5	(Reid, 2000), (Shukor et al., 2011),(Daniels and Walker, 2001), (Keen et al., 2005),(Joseph, 2006)
7	Involvement in early stage of project	5	(Brody et al., 2003), (Burby, 2003), (Leach and Pelkey, 2001), (Paul, 1987),(Bao, 2006)
8	Leadership Quality	4	(Webler and Tuler, 2002),(Palerm, 2000),(Bass and Stogdill, 1990), (Turner and Muller, 2005)
9	Skills and knowledge of community	4	(Sara and Katz, 2004), (Isham and Kahkonen, 1999),(Rondinelli, 1991), (Cooke-Davies, 2002)
10	Continuity of budget	4	(Westerveld, 2003), (Wagenaar, 2007), (Iyer and Jha, 2005),(Carey and Sutton,

			2004)
11	Effective consultation	3	(Khang and Moe, 2008), (Agheneza, 2009), (Diallo and Thuillier, 2005)
12	Improving project design by using local knowledge	3	(Irvin and Stansbury, 2004), (Beierle and Cayford, 2002), (Habron, 2003)
13	Fairness and Equality	3	(Todd, 2001),(Palerm, 2000; Webler and Tuler, 2002)
14	Empowerment/ Sense of ownership	3	(Reid, 2000), (Marks and Davis, 2012), (Nikkhah and Redzuan, 2009)
15	Coordination with Governments	2	(Sara and Katz, 2004), (Isham and Kahkonen, 1999)
16	Administration support	2	(Burby, 2003), (Brody et al., 2003)
17	Involvement in decision making	2	(Prokopy, 2005), (Olander, 2007)
18	Local capacity of community	2	(Khang and Moe, 2008),(Palerm, 2000)
19	Technique	2	(Brody et al., 2003), (Burby, 2003)
20	Access to Information	2	(Burby, 2003), (Brody et al., 2003)
21	Transparency and accountability	2	(A. Khwaja, 2001), (Dasgupta and Beard, 2007)
22	Incentive	2	(Reid, 2000), (Moningka, 2000)
23	Level of participation	1	(Schouten and Moriarty, 2003)

24	Political influence over the project	1	(Laumann and Knoke, 1987)
25	Willingness of community	1	(Palerm, 2000)
26	Social, political and economic structures of community	1	(Botes and Van Rensburg, 2000)
27	Role of Women participation	1	(Shukor et al., 2011)

2.10COMMUNITY PARTICIPATION AS COSTS VS. BENEFITS

According to Awotona and Teymur (1997), the real objective of community participation is to empower and capacity building of the local people instead of cost and managerial benefits. Cost and management efficiency are products of the project. According to the author, participation eliminates the delay causing differences in local users and makes execution of project more efficient. It is evident from different projects that community participation can gear up the project work by resolving their internal issues, labor management and it can also provoke labor in work himself assistant programs so it helps to reduce financial responsibility of proponent agencies.

Uphoff (1997), sometime conflict arises, unavailability of labor due to religious festivals etc, when the community is not included during different phases of project. USAID study witnessed that in a water supply schemes (1982) that the users covered operation and maintenance costs, that projects were still working (Uphoff, 1997).Moser (1998) stated that community participation is an important for the sustainability of projects.For senior management it is difficult to manage the financial costs and also it is a burden that an

organized community does not want to meet the junior officers of the project(Goddard and Cotter, 1987).

2.11MISUSE AND APPLICATION OF PUBLIC PARTICIPATION

According to Michener (1998), participation makes every situation better, there has been different application of participation in project cycle. Chamala (1995), community participation ensures quality work for many successful projects around the world. Estrella and Gaventa (1998) stated that it has been recognized that participation played a vital role at front end of projects like in execution and approval. According to (Coakes, 1998),there are different methods of community engagement with some advantages and disadvantages depending on situations and circumstances. It is important to have different techniques and interpretations for participatory process in different circumstances and occasions. Studies revealed that different technologies and participatory methods depend on local situations(Biggs and Smith, 1998). Three main reasons of public participation stated by Chambers (1997) are:

- Community is used as a cosmetic label for showing project good.
- To use local labors and reduce the costs of projects.
- For empowerment of local people, to analyze their own activities, to make their own decision and to take control of the project.

Biggs (1995)stated that using techniques-based method of participation provides insufficient framework development that enable for in-depth analysis of different factors of technical and social change and fail to address problems of power, control of resources and control of information.Kelly and Van Vlaenderen (1995) stated and supported that in development the use of term participation confuses to differentiate between change agents, developmental relationships and sometimes serves as to cover up for manipulation'. Cernea (1993) stated that in rural development projects there is no reality in participation. Eyben (1998) stated that

there are four main reasons of non-participation of community. These are political, economic, the nature of the product and professionalism.

Kolavalli and Kerr (2002) stated that in government projects there are no actual participation because of lack of staff's skill , expertise and incentives. Successful examples of participation are in NGOs that ensure more participation in development projects (Lawrence, 2001). According to Cleaver (1999) community participation increases efficiency. Relevancy of approach and process bring more appropriateness than outcomes. Other problems are whether the community is satisfied with traditional way of work executed by the outside agencies or whether they want to participate in development project by themselves(Hussein, 1995). Due to these points of view the author suggested that the efficiency of participatory approaches may be different in reality than as written in theories.

2.12 COMMUNITY PARTICIPATION "*as a Means*" or "*as an End*"

Development practitioners and different authors made distinction of community participation as, "*participation as a means*" and "*participation as an end*" (Cooke and Kothari, 2001; Nelson and Wright, 1995; Oakley, 1991; Somesh, 2002). Participation of community as a means is that the involvement of community is to achieve the pre-determine goals. It is a method to achieve the objective of project by efficiently and effectively through utilization of people's resources(Burkey, 1993; Nelson and Wright, 1995)

Participation as an end is a dynamic process and its objective is to build capacity of rural communities and strengthen them, so they can directly participate and involve themselves in initiation of development process (Cooke and Kothari, 2001; Oakley, 1991).Participation as end is viewed that empowerment of the communities like acquiring skills, experience and knowledge which leads to self-dependency(Burkey, 1993; Karl, 2000). The comparative analysis of these two concepts is shown in table 2.3.

Table 2. 3 : Community Participation "*as a Means*" and "*as an End*"

Participation "*as a Means*"	Participation "*as an End*"
• It attempts to achieve the pre-defined objectives of the project by participation. • To use the existing resources of community to achieve the pre-determined objectives • More concern for achieving objective of project rather than on act of participation • This view is commonly adopted in government projects to mobilize and involves the people for improving the delivery system. • Generally, community participation is a short-term process. • It is more passive form of participation process	• It tries to empower the community and strengthen the capacity of people. • To increase the involvement and role of people for development activities. • It stresses more on strengthening the capacity of people than just on achieving the goal of project, • Government agencies are in less favor of this view point however Non-Government Organizations promote more participation. • Community participation is a long process. • It is an active form of participation.

Chapter 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

In this chapter discussed about the research methodology adopted for this study to achieve the objectives set forth in chapter 1. Research methodology defines that how research is to be carried out to achieve the objectives of the research (Saunders 2011). For this study the research data is mainly collected through literature review and questionnaire survey. After data collection, a detail analysis of the data was done. In fourth phases the research was completed and as described in research design heading.

3.2 RESEARCH DESIGN

In the first phase of the research, after development of research proposal, pertinent literature was reviewed to understand and extract the factors for effective community participation in successful completion of infrastructure projects. These factors were collected from literature review and previous studies. Google scholar as a search tool was used as a primary source for literature review.

In second phase, a questionnaire was developed and floated to professionals and related peoples by online and also collected manually.

In third phase the data collected from questionnaire survey was analysed by using MS excel and SPSS-20. Factors were ranked by relative importance factors.

In the fourth phase, compared government organisations executed projects verses community based projects and finally conclusions and recommendations were described. Schematic view adopted for this research is shown in the figure 3.1.

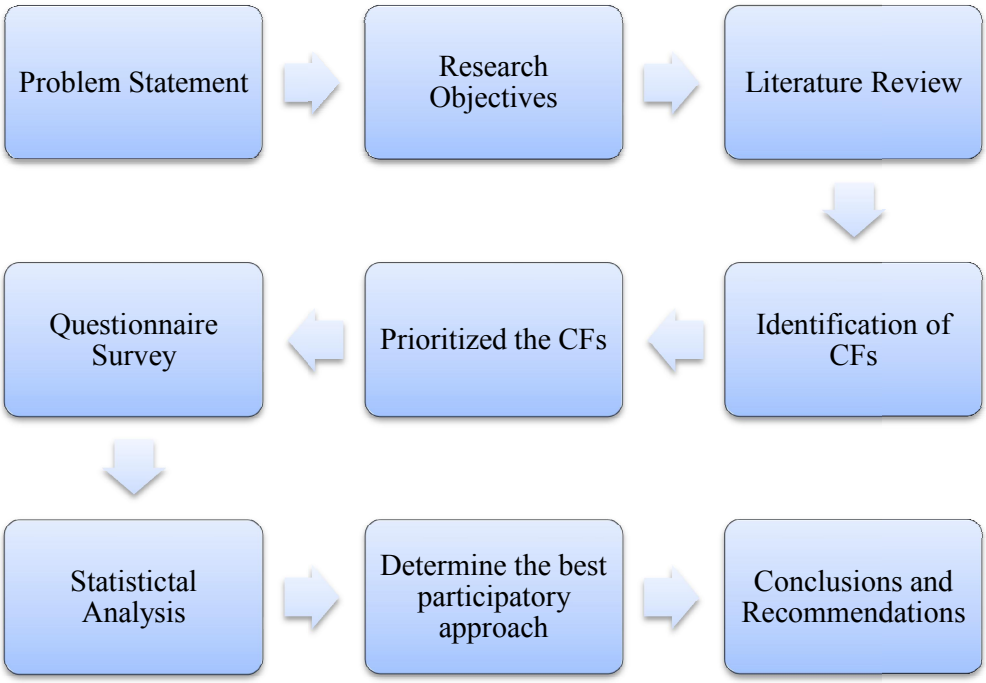

Figure 3.1: Research methodology flowchart

3.3 QUESTIONNAIRE

After extensive pertinent literature review, questionnaire was developed. Extracted and shortlisted 27 factors and noted in the questionnaire and then floated to the stakeholders/respondents. The questionnaire designed for this study consisted of four main parts. First part consists of respondent profile. In the second and third part respondents were asked to rank the parameters and factors which were on Likert scale from 01 to 05 where 01 represents very low and 05 represents very high. In the fourth part respondents were asked to mark the best strategy for effective community participation.

Questionnaire is attached in Annexure 1.

3.4 SIZE OF SAMPLE

According to Dillman (2000) the population size is 96, as registered civil engineer in Pakistan engineering council are about 40000. To calculate the sample size the formula as below in equation 3.1 is used.

$$Ns = ((Np)\ (P)\ (1\text{-}P))\ ((Np\text{-}1)\ (\ (B / C)^{2} + (P)\ (1 - P)) \qquad \text{-------- } 3.1$$

Where;

Ns: Sample size for the desired level of participation

Np: Population size i.e 40,000

P: Proportion of the population that is expected to choose one of the responses categories (yes/no); P=0.5

B: Acceptable sampling error; (±10% or ±0.10)

C: Z statistic associated with the confidence level

(1.96 corresponds to 95 % confidence level)

For different population size with three different sampling errors for 95 % confidence level is shown as in table 3.2. The samples size can also be calculated by using the above equation as suggested by (Dillman, 2000).

Completed sample sizes needed for various population sizes and characteristics at three levels of precision.

	Sample size for the 95% confidence level					
	±10% Sampling Error		±5% Sampling Error		±3% Sampling Error	
Population Size	50/50 split	80/20 split	50/50 split	80/20 split	50/50 split	80/20 split
100	49	38	80	71	92	87
200	65	47	132	111	169	155
400	78	53	196	153	291	253
600	83	56	234	175	384	320
800	86	57	260	188	458	369
1,000	88	58	278	198	517	406
2,000	92	60	322	219	696	509
4,000	94	61	351	232	843	584
6,000	95	61	361	236	906	613
8,000	95	61	367	239	942	629
10,000	95	61	370	240	965	640
20,000	96	61	377	243	1,013	661
40,000	96	61	381	244	1,040	672
100,000	96	61	383	245	1,056	679
1,000,000	96	61	384	246	1,066	683
1,000,000,000	96	61	384	246	1,067	683

Table 3.1: Sample Size

3.5 DATA ANALYSIS

For data analysis MS excel and SPSS-20 are used. Below statistical tests/techniques were used for analysis of collected data.

3.5.1 Reliability Test

Cronbach's coefficient alpha method is used to check the reliability of collected data on Likert scale. The collected data is reliable if the value of Cronbach's alpha is greater than 0.7. If the value is greater than 0.9, the collected data is highly consistent (Li, 2007). If the value of Cronbach's alpha is 0.977 the collected data is considered as highly consistent for further analysis.

3.5.2 Normality Test

To check the collected data set is normally distributed (parametric) or not (non-parametric), Skewness and Kurtosis is used. Skewness of the data is a measure of the asymmetry distribution and kurtosis is a measure of the data of 'peakedness' of a distribution. The

acceptable value of Skewness and Kurtosis is zero. It is important to perform the normality test because if the data is not normally distributed (non-parametric), further test can be applied for non parametric data. As the data is not normally distributed (non-parametric), Kruskil Wallis test is applied for further analysis.

3.5.3 Kruskal Wallis Test or one-way ANOVA

This test is applied to know that three or more independent groups have same perception or not regarding the particular variables. If the data is non-parametric in nature than Kruskal Wallis test is applied and if the data is parametric in nature than One-way ANOVA is applied. As the collected data is not normally distributed (non-parametric) Kruskal Wallis test was applied. The results of the analysed data are tested against the significance level of 0.05. Value of significance equal and greater than 0.05 is considered that all the respondents have same perception and vice versa.

3.6 Summary

This chapter discussed in detail about research methodology adopted for the study. Questionnaire development, sample size of population and statistical analysis of data were described comprehensively. The findings and results of the analysed data is described in the subsequent chapter.

Chapter 4

DATA ANALYSIS AND RESULTS

4.1 INTRODUCTION

In this chapter discussed about the data analysis of the collected data and results of the findings.

4.2 QUESTIONNAIRE

4.2.1 Respondents Organization

Questionnaire was floated and distributed among 250 respondents and received 138 responses. After checking two responses were rejected, so accepted responses from the received data at the response rate of 54 %. Response rate by client is 14 %, by consultant 18 %, by contractor 27 %, by academia 2 %, by donor agency 12 % and by community 27 %. Percentage and grouping of the respondents are shown in figure 4.1 and table 4.1.

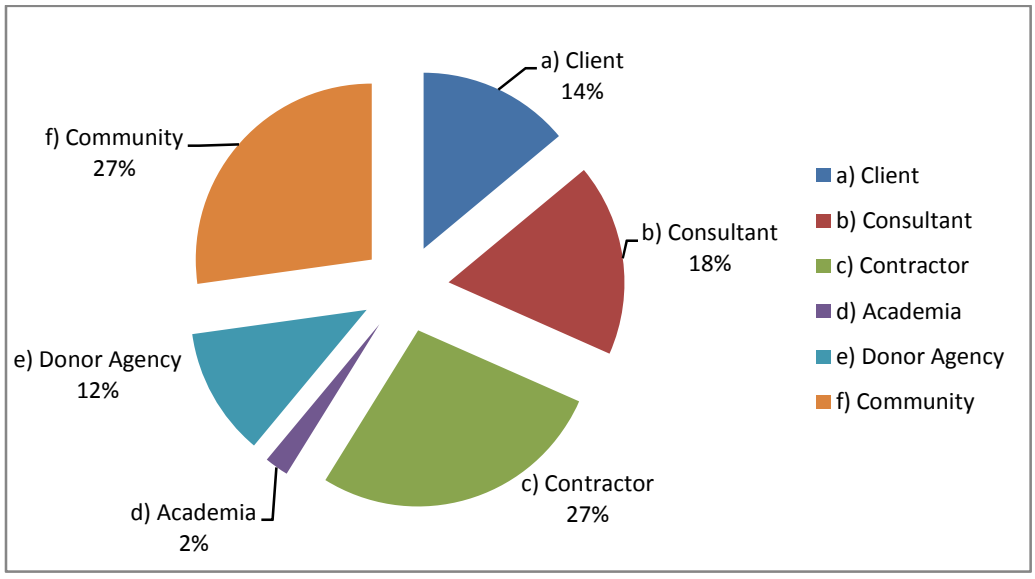

Figure 4.1: Stake holder Organization

Table 4.1: Respondents Organization

Respondents	No of Questionnaires Returned	Percentage	Cumulative Percentage
Client	19	13.97	13.97
Consultant	24	17.65	31.62
Contractor	37	27.21	58.82
Academia	3	2.21	61.03
Donor Agency	16	11.76	72.79
Other (Community)	37	27.21	100.00
Total	136	100	

4.2.2 Qualification of respondents

4 % respondents have a degree of diploma/certificate, 46% havea graduation degree, 33 % have post-graduation degree, 2 % have PhD degree and 15 % have other qualification as shown in figure 4.2.

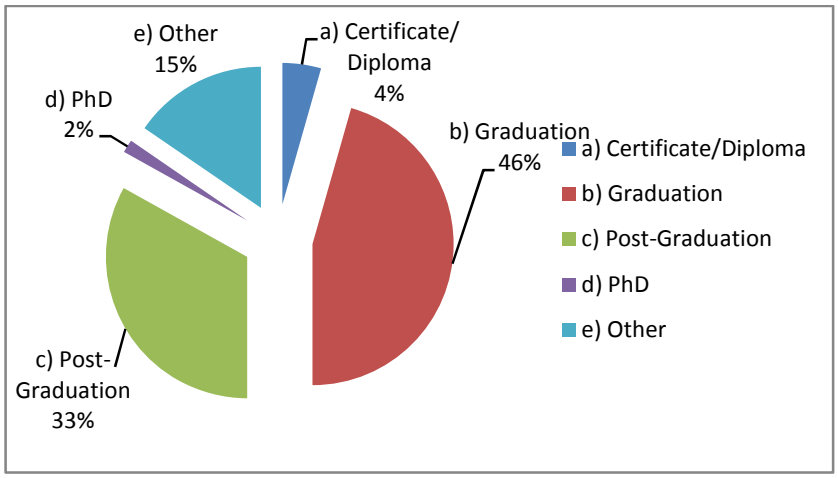

Figure 4.2: Qualification of respondents

4.2.3 Experience of respondents

Figure 4.3 shows the experience of the respondents. 33 % respondents have 0-5 and 6-10 years of experience. 11 % having 11-15 and 16-20 years of respondents and 12 % having experience of 21 and above year.

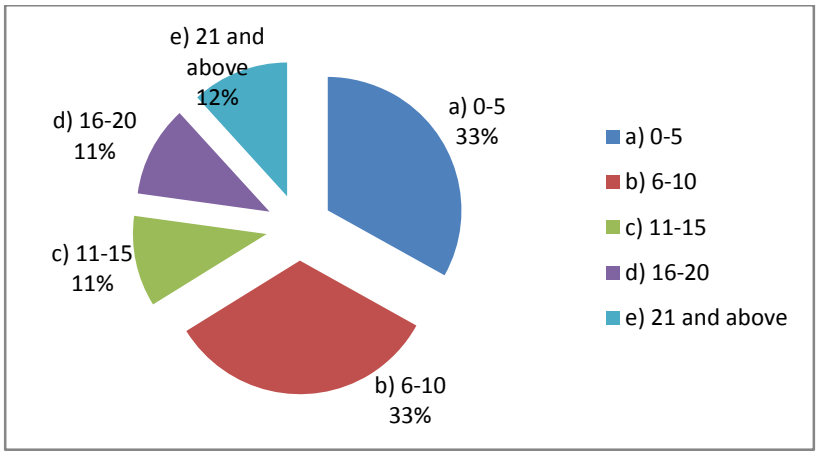

Figure 4.3: Experience of respondents

4.2.4 Nature of organisation of respondents

24 % of respondents were from government sector whereas 43 % and 4 % from private and semi-government sector respectively. 29 % respondent belongs to other sectors as shown in figure 4.4.

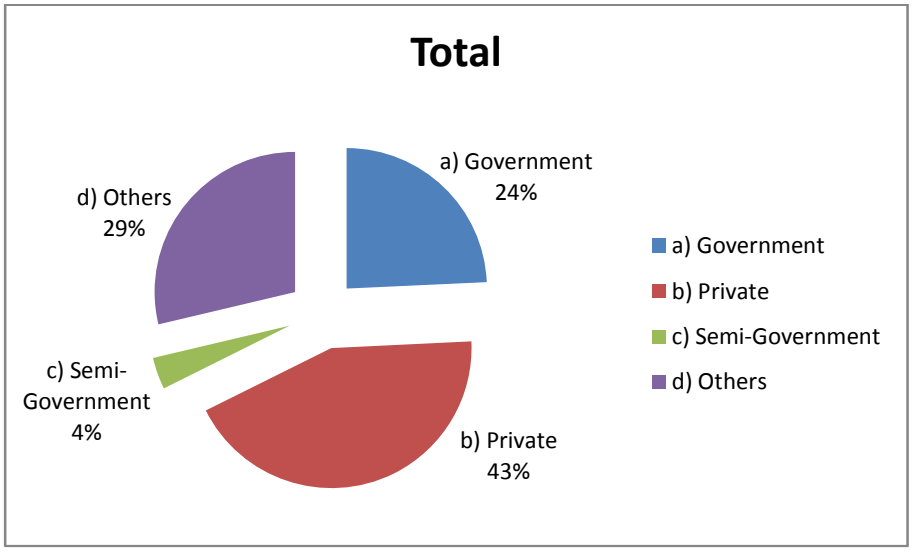

Figure 4.4: Nature of organization of respondents

4.2.5 Level of knowledge of respondents

To check the level of knowledge of the respondent about the understanding of the topic, respondents were asked to rank on Likert scale from very low to very high. 1 % and 2 %have very low and low level of knowledge of the topic respectively. 41 % of the respondents having moderate level of knowledge about the topic. 35 % respondents having high level of knowledge and 21 % having very high level of knowledge about the research topic as shown in figure 4.5.

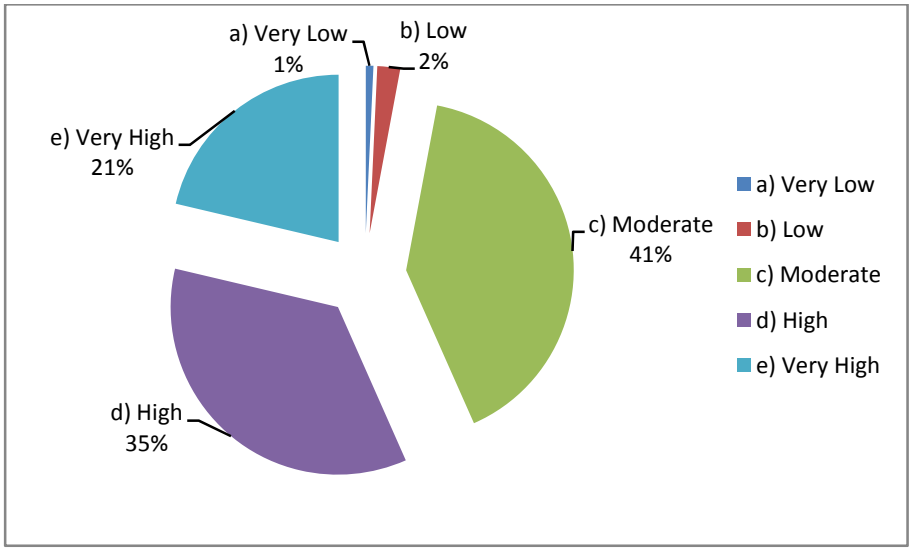

Figure 4.5: Level of knowledge of respondents

4.3 STATISTICAL ANALYSIS

Various tests were applied to statistically validate the data, details are as discussed below:

4.3.1 Reliability of the collected sample

Cronbach's alpha method is used to check the reliability of the collected data on Likert scale. The Cronbach's alpha value is 0.934, so the data is reliable as shown in table 4.2.

Table 4.2: Cronbach's Aphla value

Case Processing Summary

		N	%
Cases	Valid	134	98.5
	Excluded[a]	2	1.5
	Total	136	100.0

Reliability Statistics

Cronbach's Alpha	N of Items
.934	38

a. List wise deletion based on all variables in the procedure.

4.3.2 Normality Test

To check the normality of the collected data that is normally distributed or not (non-parametric), Skewness and Kurtosis of the data distribution is checked. As per the result Skewness and Kurtosis value is not equal to zero, so the data is not normally distributed/ non parametric as shown in table 4.3 and table 4.4, so further non-parametric tests are required for analysis of the collected data. Detail analysis of normality test is attached in Annexure-II.

Table 4.3: Skewness and Kurtosis (Normality) test

Descriptives				
S. No.	**Parameters**	**Skewness/ Kurtosis**	**Statistic**	**Std. Error**
1	How important is involvement of community for successful completion of infrastructure projects?	Skewness	-0.596	0.209
		Kurtosis	-0.608	0.416
2	To what extent is the community involved during identification of projects?	Skewness	-0.505	0.209
		Kurtosis	-0.127	0.416
3	To what extent is the community involved	Skewness	0.801	0.209

	during approval stage of projects?	Kurtosis	-0.167	0.416
4	To what extent is the community involved during planning stage of projects?	Skewness	-0.032	0.209
		Kurtosis	-0.598	0.416
5	To what extent is the community involved during implementation of projects improves quality?	Skewness	-0.952	0.209
		Kurtosis	1.044	0.416
6	To what extent is the community involved during monitoring of projects?	Skewness	-0.742	0.209
		Kurtosis	0.407	0.416
7	To what extent is the community involved during decision making process?	Skewness	-0.373	0.209
		Kurtosis	-0.204	0.416
8	Does involving community enhance project sustainability?	Skewness	-0.841	0.209
		Kurtosis	0.225	0.416
9	Does involving community resolve issues (Land compensations, internal conflicts etc.) and complete the project timely?	Skewness	-0.0349	0.209
		Kurtosis	0.668	0.416
10	Does community share project cost (money or in terms of labors) during project life cycle?	Skewness	-0.827	0.209
		Kurtosis	1.078	0.416
11	Does involving community enhance project efficiency (management during implementation stage)?	Skewness	-0.389	0.209
		Kurtosis	-0.168	0.416

Table 4.4: Skewness and Kurtosis (Normality) test for CFs

Descriptives				
S. No.	**Parameters**	**Skewness/ Kurtosis**	**Statistic**	**Std. Error**
1	Availability of resources	Skewness	-0.875	0.209
		Kurtosis	0.538	0.416
2	Policies and procedures	Skewness	-0.013	0.209
		Kurtosis	-0.58	0.416
3	Competent project team with right attitudes	Skewness	-0.107	0.209
		Kurtosis	-0.71	0.416

4	Effective communication	Skewness	-0.115	0.209
		Kurtosis	-0.502	0.209
5	Community commitment towards project completion	Skewness	-0.561	0.416
		Kurtosis	0.114	0.209
6	Collaboration and partnership between community and project organization	Skewness	-0.561	0.416
		Kurtosis	0.114	0.209
7	Involvement in early stage of project	Skewness	-0.284	0.416
		Kurtosis	-0.769	0.209
8	Leadership Quality	Skewness	-0.457	0.416
		Kurtosis	-0.602	0.209
9	Skills and knowledge of community	Skewness	-0.085	0.416
		Kurtosis	-0.497	0.209
10	Continuity of budget	Skewness	-0.811	0.416
		Kurtosis	0.444	0.209
11	Effective consultation	Skewness	0.08	0.416
		Kurtosis	-0.616	0.209
12	Improving project design by using local knowledge	Skewness	-0.317	0.416
		Kurtosis	-0.42	0.209
13	Fairness and Equality	Skewness	-0.011	0.416
		Kurtosis	-0.632	0.209
14	Empowerment/ Sense of ownership	Skewness	-0.332	0.416
		Kurtosis	-0.532	0.209
15	Coordination with Governments	Skewness	0.118	0.416
		Kurtosis	-0.387	0.209
16	Administration support by project organization or local government	Skewness	0.096	0.416
		Kurtosis	-0.4	0.209
17	Involvement in decision making	Skewness	-0.2	0.416
		Kurtosis	-0.267	0.209
18	Local capacity of community	Skewness	-0.151	0.416
		Kurtosis	-0.909	0.209
19	Access to Information	Skewness	-0.107	0.416
		Kurtosis	-0.501	0.209

20	Transparency and accountability	Skewness	-0.193	0.416
		Kurtosis	-0.02	0.209
21	Incentive	Skewness	0.162	0.416
		Kurtosis	-0.125	0.209
22	Technique	Skewness	0.332	0.416
		Kurtosis	-0.41	0.209
23	Level of participation	Skewness	-0.34	0.416
		Kurtosis	-0.82	0.209
24	Political influence over the project	Skewness	0.471	0.416
		Kurtosis	-0.035	0.209
25	Willingness of community	Skewness	-0.444	0.416
		Kurtosis	-0.321	0.209
26	Social, political and economic structures of the area	Skewness	0.543	0.416
		Kurtosis	-0.637	0.209
27	Role of participation of women	Skewness	0.782	0.416
		Kurtosis	-0.786	0.209

4.3.3 Kruskil Wallis test for all factors (non-parametric data)

Since the data is non-parametric in nature, Kurskil Wallis test was applied to check that all respondents have same view or not about the collected factors. The results of the tests are shown in table 4.5 and table 4.6. Significance value less than .05 means that the respondents have different perception about the factors.

Table 4.5: Kruskil Wallis Test results

S.No.	Parameters	Sig.	Decision
1	How important is involvement of community for successful completion of infrastructure projects?	0.000	Reject the null hypothesis
2	To what extent is the community involved during identification of projects?	0.004	Reject the null hypothesis

3	To what extent is the community involved during approval stage of projects?	0.000	Reject the null hypothesis
4	To what extent is the community involved during planning stage of projects?	0.064	Retain the null hypothesis
5	To what extent is the community involved during implementation of projects improves quality?	0.018	Reject the null hypothesis
6	To what extent is the community involved during monitoring of projects?	0.001	Reject the null hypothesis
7	To what extent is the community involved during decision making process?	0.002	Reject the null hypothesis
8	Does involving community enhance project sustainability?	0.002	Reject the null hypothesis
9	Does involving community resolve issues (Land compensations, internal conflicts etc.) and complete the project timely?	0.000	Reject the null hypothesis
10	Does community share project cost (money or in terms of labors) during project life cycle?	0.001	Reject the null hypothesis
11	Does involving community enhance project efficiency (management during implementation stage)?	0.000	Reject the null hypothesis

Table 4.6: Kruskil Wallis Test results for CFs

S. No.	Critical factors	Sig.	Decision
1	Availability of resources	0.000	Reject the null hypothesis
2	Policies and procedures	0.011	Reject the null hypothesis
3	Competent project team with right attitudes	0.000	Reject the null hypothesis
4	Effective communication	0.176	Retain the null hypothesis
5	Community commitment towards project completion	0.010	Reject the null hypothesis
6	Collaboration and partnership between community and project organization	0.002	Reject the null hypothesis
7	Involvement in early stage of project	0.000	Reject the null hypothesis

8	Leadership Quality	0.001	Reject the null hypothesis
9	Skills and knowledge of community	0.271	Retain the null hypothesis
10	Continuity of budget	0.000	Reject the null hypothesis
11	Effective consultation	0.096	Retain the null hypothesis
12	Improving project design by using local knowledge	0.001	Reject the null hypothesis
13	Fairness and Equality	0.012	Reject the null hypothesis
14	Empowerment/ Sense of ownership	0.000	Reject the null hypothesis
15	Coordination with Governments	0.070	Retain the null hypothesis
16	Administration support by project organization or local government	0.018	Reject the null hypothesis
17	Involvement in decision making	0.236	Retain the null hypothesis
18	Local capacity of community	0.000	Reject the null hypothesis
19	Access to Information	0.087	Retain the null hypothesis
20	Transparency and accountability	0.444	Retain the null hypothesis
21	Incentive	0.214	Retain the null hypothesis

22	Technique	0.465	Retain the null hypothesis
23	Level of participation	0.019	Reject the null hypothesis
24	Political influence over the project	0.950	Retain the null hypothesis
25	Willingness of community	0.048	Reject the null hypothesis
26	Social, political and economic structures of the area	0.471	Retain the null hypothesis
27	Role of participation of women	0.108	Retain the null hypothesis

4.3.4 Relative Important Index (RII)

RII is used to analysed and ranked the collected data as per (Kometa et al., 1994). Equation 4.2 is used to calculate RII for each factor noted in the questionnaire by converting the scale and assign weighting. Then it was used to determine the ranks of each factor.

$$RII = \sum W / (A \times N) \ldots\ldots\ldots\ldots (0 \leq RII \leq 1) \qquad \textbf{Eq. (4.1)}$$

Where:

W = Weight given to each factor by the respondents and ranges from 1 to 5 where '1' is 'Very Low' and '5' is 'Very High'

A = Highest weight (i.e. 5 in this case)

N = Total number of respondents (i.e. 136 in this case)

Table 4.7 and table 4.8 shows the results of RII and ranking of factors of the collected data.

Table 4.7: Relative Importance Index of factors

S. No.	Parameters	Client	Consultant	Contractor	Community	Average	Rank
		RIF	RIF	RIF	RIF		
1	How important is involvement of community for successful completion of infrastructure projects?	0.8632	0.8750	0.7405	0.6923	0.7928	3
2	To what extent is the community involved during identification of projects?	0.7895	0.7167	0.7189	0.6846	0.7274	7
3	To what extent is the community involved during approval stage of projects?	0.4421	0.3250	0.6306	0.7404	0.5345	11
4	To what extent is the community involved during planning stage of projects?	0.6316	0.5750	0.6216	0.8462	0.6686	10
5	To what extent is the community involved during implementation of projects improves quality?	0.8632	0.7167	0.7514	0.8538	0.7963	2
6	To what extent is the community involved during monitoring of projects?	0.7895	0.6833	0.6595	0.7462	0.7196	8
7	To what extent is the community involved during decision making process?	0.7368	0.6083	0.6162	0.8654	0.7067	9
8	Does involving community enhance project sustainability?	0.8632	0.8417	0.8054	0.8692	0.8449	1
9	Does involving community resolve issues (Land compensations, internal conflicts etc.) and complete the project timely?	0.7684	0.7667	0.7297	0.8365	0.7753	5

10	Does community share project cost (money or in terms of labors) during project life cycle?	0.7368	0.7250	0.8176	0.8615	0.7852	4
11	Does involving community enhance project efficiency (management during implementation stage)?	0.8211	0.7417	0.6389	0.8077	0.7523	6

Table 4.8: Relative Importance Index of factors

S. No.	CFs	Client	Consultant	Contractor	Community	Average	Rank
		RIF	RIF	RIF	RIF		
1	Availability of resources	0.8316	0.8000	0.8270	0.8462	0.8262	1
2	Policies and procedures	0.7895	0.6667	0.7081	0.8077	0.7430	18
3	Competent project team with right attitudes	0.8526	0.7750	0.7838	0.8558	0.8168	2
4	Effective communication	0.8526	0.7167	0.6378	0.8558	0.7657	14
5	Community commitment towards project completion	0.8526	0.7917	0.7081	0.7231	0.7689	12
6	Collaboration and partnership between community and project organization	0.8421	0.7583	0.7189	0.8500	0.7923	4
7	Involvement in early stage of project	0.8105	0.7833	0.6919	0.8654	0.7878	6
8	Leadership Quality	0.8000	0.7917	0.6865	0.7231	0.7503	17
9	Skills and knowledge of community	0.8105	0.7750	0.6919	0.8654	0.7857	7

10	Continuity of budget	0.7895	0.8500	0.8703	0.7077	0.8044	3
11	Effective consultation	0.7158	0.7333	0.6216	0.7308	0.7004	25
12	Improving project design by using local knowledge	0.7895	0.7583	0.6919	0.8654	0.7763	11
13	Fairness Equality	0.7895	0.6667	0.6595	0.7500	0.7164	21
14	Empowerment/ Sense of ownership	0.7789	0.7500	0.6595	0.8750	0.7659	13
15	Coordination with Governments	0.8105	0.7250	0.8716	0.7308	0.7845	9
16	Administration support by project organization or local government	0.8000	0.7083	0.7351	0.8974	0.7852	8
17	Involvement in decision making	0.7579	0.6417	0.6108	0.7923	0.7007	24
18	Local capacity of community	0.8105	0.7667	0.7027	0.8558	0.7839	10
19	Access to Information	0.7158	0.6833	0.6216	0.8654	0.7215	20
20	Transparency and accountability	0.8000	0.7333	0.7784	0.8462	0.7895	5
21	Incentive	0.6632	0.6250	0.7568	0.7846	0.7074	22
22	Technique	0.6842	0.6833	0.7905	0.6538	0.7030	23
23	Level of participation	0.8316	0.7500	0.6757	0.7923	0.7624	15
24	Political influence over the project	0.7895	0.8000	0.6811	0.7308	0.7503	16
25	Willingness of community	0.6421	0.6167	0.5892	0.8590	0.6767	26
26	Social, political and economic structures of the area	0.7368	0.7000	0.6000	0.8718	0.7272	19
27	Role of participation of women	0.4842	0.4417	0.3297	0.6154	0.4677	27

4.3.5 Frequency Analysis

As the last question was not on Likert scale, frequency analysis was done as shown in table 4.3. the respondent frequency rate for "community-based support strategy" is 115 having maximum percentage of 84.6 % and "Process-based strategy" having lowest percentage of 0.7 %.

Table 4.9: Frequency analysis

Parameters			Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	Community-Based support Strategy	115	84.6	84.6	84.6
	2	Area-Based Strategy	16	11.8	11.8	96.3
	3	Functional-Based Strategy	4	2.9	2.9	99.3
	4	Process-Based Strategy	1	.7	.7	100.0
		Total	136	100.0	100.0	

4.4 Case Study (Comparison of Projects)

To check the overall total cost of the project compared the public/government projects versus community led project. Completions of both projects have the same timeline. The details are shown in table 4.10 and figure 4.6. As in community led project the beneficiary community generally shared 5 % to 10 % of total project cost and also land compensation are not claimed and internal conflicts are resolved by themselves while in government project land compensation are paid or claimed and there is no cost share from community side and also in some cases project timeline is prolonged if community is not interested or in case of

litigations. There is considerable difference in overall project cost, community led project has low cost than government executed projects.

Table 4.10: Project comparison (road)

Comparison between Community based and Government project							
Details				Community Project		Government Project	
S. No.	Description	Length	Unit	Rate	Amount Rs. (M)	Rate	Amount Rs. (M)
1	Shingle Road (16.5 ft wide)	5.42	Per Km	2.64	14.31	2.79	15.13
2	RCC culvert 2 ft span	5	Nos	0.069	0.34	0.07	0.35
3	Side Drain	1100	Per Rft	0.00095	1.05	0.00088	0.97
	Sub Total				15.70		16.45
4	Contingencies (5%)				0.78		0.82
5	Community Share (5%)				0.78		-
6	Land Compensation				-		8.29
	Total				15.70		25.56
7	Completion Period				01 Year		01 Year

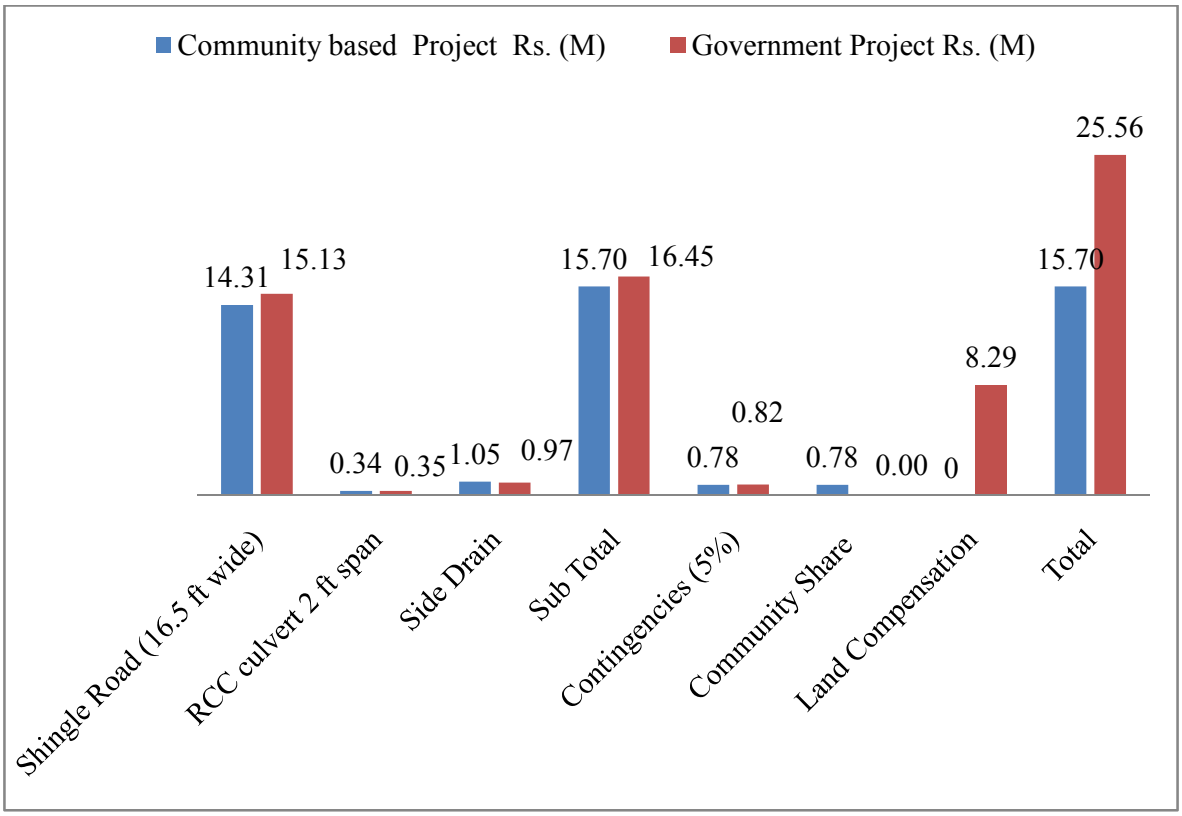

Figure 4.6 Project comparisons (Road)

Details of the construction of wooden truss bridge executed by community and government in table 4.11 and figure 4.7 are shown below. In this case the community shared 14 % of total project cost and the time period for completion of community based project is 6 months and for government is for 8 months.

Table 4.11: Project comparison graph (Bridge)

Comparison between Public and Community led project							
Details				Community Project		Government Project	
S. No.	Description	Length	Unit	Rate	Amount Rs. (M)	Rate	Amount Rs. (M)
1	Wooden Truss Bridge	45	Per Rft	0.059	2.66	0.062	2.79
2	Contingencies (5%)				.13		0.14
	Total				**2.79**		**2.93**
3	Community Share (14%)				0.39		-
	Total				2.40		5.86
4	Completion Period				06 Months		08 Months

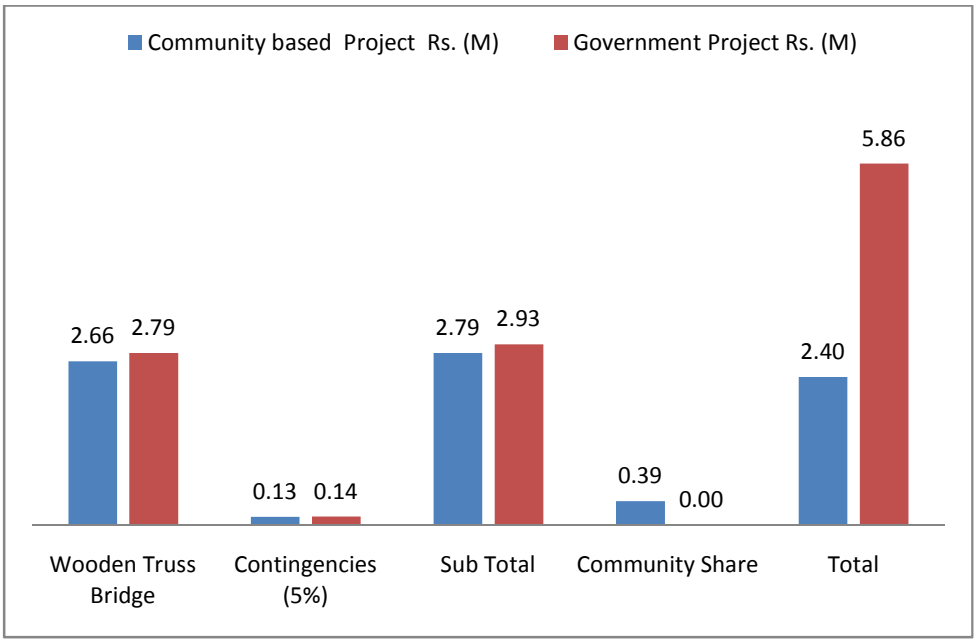

Figure 4.7: Project comparison graph (Bridge)

Chapter 5

CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter includes findings, limitation and recommendations of the study.

5.2 Conclusions of the study

After statistical analysis of the collected data, main findings are: The top ranked factor about the objective of inclusion of community in the project phases is "community involvement enhances project sustainability" with RIF 0.8449. About CFs for successful completion of community-based infrastructure project is "availability of resources" with RIF 0.8262. Top ranked strategy for effective participation is "community-based support strategy" with percentage of 84.6 %. First five ranked factors about the reason of the involvement of community in different phases of infrastructure projects are:

1) Involving beneficiary community enhance project sustainability.
2) Inclusion of beneficiary community during implementation of projects improves project quality.
3) Involvement of community is important for successful completion of infrastructure project like resource management etc during implementation.
4) Beneficiary community shared project cost (money or in terms of labours) during project life cycle
5) Beneficiary community resolve issues (land compensations, internal conflicts etc.) and complete the project timely.

Similarly, top five ranked CFs, which are essential for successful completion of community-based infrastructure projects are:

1) Availability of resources

2) Competent project team with right attitudes
3) Continuity of budget throughout the project life cycle
4) Collaboration and partnership between community and project organizations
5) Transparency and accountability

And lastly, effective community involvement strategies are noted below according to the ranking after statistical analyses are:

1) Community-based support strategy
2) Area-based strategy
3) Functional-based strategy
4) Process-based strategy

After that, compared community led project with government executed project in term of cost and duration. There is a considerable difference in total completion cost of the project, total cost of community led project is less than government executed projects. Generally project completion time is same in both cases. In government projects,procedures of approving mechanism prolongs or delay in starting of the projects and also in many cases litigation from different stakeholders causes cost and time over run. Generally community based project is on lump sumor on fixed price basis and government executed projects on unit cost (work done) basis and in some cases variations and escalation of cost occurs which causes disputes among parties and causes delays in completion of the project in government projects.

5.3 Recommendations and Limitations

Findings of this study provide a guideline to the researcher for further studies in different communities and these findings may be used by government organisations, non-government organisations, development practitioners, donor agencies, project managers, decision makers and different community institutions to formulate policies and strategies for effective

community participation in successful completion of infrastructure projects. For smoothly and successful implementation of community-based infrastructure project it is recommended that the project stakeholders should focus and stress on the following factors that are 'availability of resources', 'competent project team with right attitudes', 'continuity of budget', 'collaboration and partnership between community and project organization' and 'transparency and accountability' during the whole project life cycle. As from the analysis community involvement 'enhance sustainability of infrastructure project', so all the stakeholders of project and government agencies should involve the beneficiary community in all the phases of project and also ensure a component of capacity development of communities at local level. As from the result "Community-based support strategy" is the best strategy, as this approach support maximum inclusion of community, strengthen the capacity of people and development of local infrastructure, in this strategy government agencies participate in community directed development projects by providing certain inputs. Case study revealed that the total completion cost of community based project is less than government executed project. Summary of recommendations and limitations are as below:

- This study mainly focused on inclusion of beneficiary community in all phases of project to assess the impact on successful completion of infrastructure project.
- Only 27 factors are considered and analysed for smoothly execution of community based infrastructure project, more factors can be considered to expand the research topic.
- This research primarily focused on four strategies for effective community participation, more strategies can be considered for further study.
- This study is conducted in a specific area (rural communities) of Pakistan, result may vary for other communities or areas/locations.

REFERENCES

Abbott. (1996). Sharing the City: Community Participation in Urban Development. *Funding Community Initiatives, Earthscan*.

Agheneza. (2009). Why development projects fail in Cameroon: evidence from Ngie in the NW Province of Cameroon. *International Journal of Rural Management, 5*(1), 73-90.

Andersen, & Jessen. (2000). Project evaluation scheme: a tool for evaluating project status and predicting project results. *Project Management, 6*(1), 61-69.

Arnstein. (1969). A ladder of citizen participation. *Journal of the American Institute of planners, 35*(4), 216-224.

Attahi. (1992). Planning and management in large cities: a case study of Abidjan Cote d'Ivoire. *UNCHS (Habitat), metropolitan Planning and management in the Developing World: abidjan and Quito, UNHC, Nairobi*.

Awotona. (1995). *Integration and urbanisation of South African townships: conceptual, theoretical and methodological issues*: Univ of Newcastle, Centre for Architectural Research & Development Ove.

Awotona, & Teymur. (1997). *Tradition, Location and Community: Place-making and Development*: Avebury.

Bao. (2006). A Contrastive Study on the Difference in Community Participation in Tourism Between China and the West [J]. *Acta Geographica Sinica, 4*, 401-413.

Bass, & Stogdill. (1990). *Bass & Stogdill's handbook of leadership: Theory, research, and managerial applications*: Simon and Schuster.

Beierle, & Cayford. (2002). *Democracy in practice: Public participation in environmental decisions*: Resources for the Future.

Bieh. (1991). Rethinking Feminist Politics [MJ: Boston: South End Press.

Biggs. (1995). Participatory technology development: a critique of the new orthodoxy. *AVOCADO series, 6*(95), 1-10.

Biggs, & Smith. (1998). Beyond methodologies: coalition-building for participatory technology development. *World Development, 26*(2), 239-248.

Botes, & Van Rensburg. (2000). Community participation in development: nine plagues and twelve commandments. *Community Development Journal, 35*(1), 41-58.

Brett. (2003). Participation and accountability in development management. *The journal of development studies, 40*(2), 1-29.

Brody, Godschalk, & Burby. (2003). Mandating citizen participation in plan making: Six strategic planning choices. *Journal of the American Planning Association, 69*(3), 245-264.

Bunch. (1985). *Two ears of corn: a guide to people-centred agricultural improvement*: World Neighbours.

Burby. (2003). Making plans that matter: Citizen involvement and government action. *Journal of the American Planning Association, 69*(1), 33-49.

Burkey. (1993). *People first: A guide to self-reliant participatory rural development*: Zed Books Ltd.

Carey, & Sutton. (2004). Community development through participatory arts: Lessons learned from a community arts and regeneration project in South Liverpool. *Community Development Journal, 39*(2), 123-134.

Cernea. (1993). Culture and organization: The social sustainability of induced development. *Sustainable Development, 1*(2), 18-29.

Chamala. (1995). Overview of participative action approaches in Australian land and water management. *S. Chamala and K. Keith, Participative Approaches For Landcare, Perspectives, Policies, Programs, Australian Academic Press, Brisbane, Australia*, 5-42.

Chambers. (1994). Paradigm shifts and the practice of participatory research and development.

Chambers. (1997). *Whose reality counts?: putting the first last*: Intermediate Technology Publications Ltd (ITP).

Chambers. (2007). Who counts? The quiet revolution of participation and numbers.

Clark. (1995). The state, popular participation, and the voluntary sector. *World Development, 23*(4), 593-601.

Cleaver. (1999). Paradoxes of participation: questioning participatory approaches to development. *Journal of international development, 11*(4), 597.

Coakes. (1998). Valuing the social dimension: social assessment in the regional forest agreement process. *Australian journal of environmental management, 5*(1), 47-54.

Cooke-Davies. (2002). The "real" success factors on projects. *International Journal of Project Management, 20*(3), 185-190.

Cooke, & Kothari. (2001). *Participation: The new tyranny?* : Zed books.

Daniels, & Walker. (2001). Working through environmental conflict: The collaborative learning approach.

Dasgupta, & Beard. (2007). Community driven development, collective action and elite capture in Indonesia. *Development and change, 38*(2), 229-249.

Davenport, Bridges, Mangun, Carver, Williard, & Jones. (2010). Building local community commitment to wetlands restoration: A case study of the Cache River wetlands in southern Illinois, USA. *Environmental management, 45*(4), 711-722.

Davenport, & Smith. (1995). *Assessing the effectiveness of client participation in construction projects.* Paper presented at the RICS COBRA Construction and Building Research Conference, The Royal Institution of Chartered Surveyors, London, September 1995.

Debeer, & Swanepoel. (1998). *Community development and beyond: Issues, structures and procedures*: Van Schaik Publishers.

Dent, Dubois, & Dalal-Clayton. (2013). *Rural planning in developing countries: supporting natural resource management and sustainable livelihoods*: Routledge.

Diallo, & Thuillier. (2004). The success dimensions of international development projects: the perceptions of African project coordinators. *International Journal of Project Management, 22*(1), 19-31.

Diallo, & Thuillier. (2005). The success of international development projects, trust and communication: an African perspective. *International Journal of Project Management, 23*(3), 237-252.

Dillman. (2000). Mail and internet surveys: The total design method. *New York: Wiley*.

Duy Nguyen, Ogunlana, & Thi Xuan Lan. (2004). A study on project success factors in large construction projects in Vietnam. *Engineering, Construction and Architectural Management, 11*(6), 404-413.

Edelenbos, & Klijn. (2005). Managing stakeholder involvement in decision making: A comparative analysis of six interactive processes in the Netherlands. *Journal of public administration research and theory, 16*(3), 417-446.

Estrella, & Gaventa. (1998). Who counts reality? Participatory monitoring and evaluation: A literature review.

Eyben. (1998). *Popular participation in aid-assisted projects: why more in theory than practice?*

Fokane. (2008). *An assessment of Rosendal-Mautse participation in the IDP process of Dihlabeng Municipality.* Stellenbosch: Stellenbosch University.

Franks, & Harlow. (1998). *Building procurement systems: A client's guide*: Longman.

Friedmann. (1992). *Empowerment: the politics of alternative development*: Blackwell.

Gelders, Brans, Maesschalck, & Colsoul. (2010). Systematic evaluation of public participation projects: Analytical framework and application based on two Belgian neighborhood watch projects. *Government Information Quarterly, 27*(2), 134-140.

Goddard, & Cotter. (1987). The United States Agency for International Development Community Participation Experiences. *Readings in Community Participation*.

Goggin. (1990). *Implementation theory and practice: Toward a third generation*: Scott Foresman & Co.

Guijt, & Shah. (1998). Waking up to power, conflict and process. *The myth of community: Gender issues in participatory development, 228*, 242.

Habron. (2003). Role of adaptive management for watershed councils. *Environmental management, 31*(1), 0029-0041.

Harmsen, Woudenberg, Elsman-Domburg, & Gutteling. (2003). De inzet van maatschappelijke organisaties bij de communicatie over loodhoudend drinkwater. *Tijdschrift voor communicatiewetenschap, 31*(3), 227-244.

Haupt. (1996). *An Economic Integration Approach to Infrastructure and Construction Industry Development: The Case for the Southern African Development Community (SADC)*: De Montfort University.

Havel. (1996). The World Bank participation sourcebook. *World Bank. http://www. worldbank. org/wbi/sourcebook/sbhome*.

Hussein. (1995). Participatory ideology and practical development: agency control in a fisheries project, Kariba lake. *Power and Participatory Development. Theory and Practice. Intermediate Technology Publications*.

Irvin, & Stansbury. (2004). Citizen participation in decision making: is it worth the effort? *Public Administration Review, 64*(1), 55-65.

Isham, & Kahkonen. (1999). What Determines the Effectiveness of Community-Based Water Projects. *Social capital initiative working paper, 14*.

Iyer, & Jha. (2005). Factors affecting cost performance: evidence from Indian construction projects. *International Journal of Project Management, 23*(4), 283-295.

Joseph. (2006). Stakeholder participation for sustainable waste management. *Habitat international, 30*(4), 863-871.

Kanter. (1999). From spare change to real change. The social sector as beta site for business innovation. *Harvard business review, 77*(3), 122-132, 210.

Karl. (2000). Monitoring and evaluating stakeholder participation in agriculture and rural development projects: a literature review. *Sustainable Development (SD) Food and Agriculture Foundation of the United Nations (FAO). Available at http//www. fao. org./sd/PPdirect/PPre0074. htm*.

Kasiaka. (2004). Participatory planning and sustainability of water TASAF water project: UDSM press, Tanzania.

Keen, Brown, & Dyball. (2005). *Social learning in environmental management: towards a sustainable future*: Routledge.

Kelly, & Van Vlaenderen. (1995). Evaluating participation processes in community development. *Evaluation and Program Planning, 18*(4), 371-383.

Khan. (2005). *Evaluating the importance of community participation in infrastructure delivery in the Western Cape.* Cape Peninsula University of Technology.

Khang, & Moe. (2008). Success criteria and factors for international development projects: A life-cycle-based framework. *Project management journal, 39*(1), 72-84.

Khosa. (2000). *Infrastructure Mandates for Change, 1994-1999*: HSRC Press.

Khwaja. (2001). Can good projects succeed in bad communities? Collective action in the Himalayas.

Khwaja. (2004). Is increasing community participation always a good thing? *Journal of the european economic Association, 2*(2-3), 427-436.

Kolavalli, & Kerr. (2002). Scaling up participatory watershed development in India. *Development and change, 33*(2), 213-235.

Kometa, Olomolaiye, & Harris. (1994). Attributes of UK construction clients influencing project consultants' performance. *Construction Management and Economics, 12*(5), 433-443.

Kuhn. (2000). Participatory Rural Appraisal. Ten Years After: Did It Fulfill the Expectations? *Development and Cooperation*(1), 21-22.

Lanjouw, & Ravallion. (1995). Poverty and household size. *The economic journal*, 1415-1434.

Laumann, & Knoke. (1987). *The organizational state: Social choice in national policy domains*: Univ of Wisconsin Press.

Lawrence. (2001). Choosing public participation methods for natural resources: a context-specific guide. *Society &Natural Resources, 14*(10), 857-872.

Leach, & Pelkey. (2001). Making watershed partnerships work: a review of the empirical literature. *Journal of water resources planning and management, 127*(6), 378-385.

Li, Akintoye, Edwards, & Hardcastle. (2005). Critical success factors for PPP/PFI projects in the UK construction industry. *Construction Management and Economics, 23*(5), 459-471.

Mansuri, & Rao. (2004). Community-based and-driven development: A critical review. *The World Bank Research Observer, 19*(1), 1-39.

Marks, & Davis. (2012). Does user participation lead to sense of ownership for rural water systems? Evidence from Kenya. *World Development, 40*(8), 1569-1576.

Michener. (1998). The participatory approach: contradiction and co-option in Burkina Faso. *World Development, 26*(12), 2105-2118.

Midgley. (1986). Community participation: history, concepts and controversies. *Community participation, social development and the state*, 13-44.

Moningka. (2000). Community participation in solid waste management: factors favouring the sustainability of community participation, a literature review. *UWEP Occasional Paper, WASTE, Gouda, The Netherlands*.

Moote, McClaran, & Chickering. (1997). Theory in practice: Applying participatory democracy theory to public land planning. *Environmental management, 21*(6), 877-889.

Moser. (1998). The asset vulnerability framework: reassessing urban poverty reduction strategies. *World Development, 26*(1), 1-19.

Mosse. (1996). *People's knowledge in project planning: the limits and social conditions of participation in planning agricultural development*: Wales Univ.

Mwakila. (2008). *An Assessment of Community Participation in Water Supply and Sanitation Services: The Case of Yombo Dovya and Barabara ya Mwinyi, Water Community Projects, Temeke, Tanzania*: Erasmus University.

Nelson, & Wright. (1995). *Power and participatory development: Theory and practice*: ITDG Publishing.

Nikkhah, & Redzuan. (2009). Participation as a medium of empowerment in community development. *European Journal of Social Sciences, 11*(1), 170-176.

Oakley. (1991). The concept of participation in development. *Landscape and urban planning, 20*(1-3), 115-122.

Oakley, & Marsden. (1987). An emerging strategy. *Approaches to participation in rural development. Genove, Switzerland: International Labour Office*, 63-80.

Olander. (2007). Stakeholder impact analysis in construction project management. *Construction Management and Economics, 25*(3), 277-287.

Palerm. (2000). An empirical-theoretical analysis framework for public participation in environmental impact assessment. *Journal of environmental planning and management, 43*(5), 581-600.

Paul. (1987). *Community participation in development projects*: World Bank Washington, DC.

Pretty, Guijt, Thompson, & Scoones. (1995). Participatory learning and action: A trainer's guide.

Prokopy. (2005). The relationship between participation and project outcomes: Evidence from rural water supply projects in India. *World Development, 33*(11), 1801-1819. doi: 10.1016/j.worlddev.2005.07.002

Reid. (2000). Community participation: How people power brings sustainable benefits to communities. *US Department of Agriculture Rural Development, Office of Community Development*.

Rondinelli. (1991). Decentralizing water supply services in developing countries: factors affecting the success of community management. *Public Administration and Development, 11*(5), 415-430.

Ross. (1995). World Development Report 1994: Infrastructure for Development: JSTOR.

Rowe, & Frewer. (2000). Public participation methods: A framework for evaluation. *Science, technology, & human values, 25*(1), 3-29.

Sara, & Katz. (2004). Making rural water supply sustainable. *World Bank (WB), Water and Sanitation Program, Washington, DC*.

Schiibeler. (1996). *Participation and partnership in urban infrastructure management*. Washington, D.C.: The World Bank.

Schouten, & Moriarty. (2003). *Community water, community management*: ITDG.

Shah. (1998). *The myth of community: Gender issues in participatory development*: ITGD Publishing.

Shukor, Mohammed, Sani, & Awang. (2011). *A review on the success factors for community participation in solid waste management.* Paper presented at the Proceeding of International Conference on Management (ICM, 2011). Penang, Malaysia.

Sinclair. (2004). Participation in practice: Making it meaningful, effective and sustainable. *Children & society, 18*(2), 106-118.

Somesh. (2002). Methods for community participation: a complete guide for practitioners. *Methods for community participation: a complete guide for practitioners.*

Struyk. (2007). Factors in successful program implementation in Russia during the transition: pilot programs as a guide. *Public Administration and Development, 27*(1), 63-83.

Swanepoel, & De Beer. (2012). *Community development: Breaking the cycle of poverty*: Juta and Company Ltd.

Theron. (2005). Public participation as micro-level development strategy.

Todd. (2001). Measuring the effectiveness of environmental dispute settlement efforts. *Environmental Impact Assessment Review, 21*(1), 97-110.

Turner, & Muller. (2005). *The project manager's leadership style as a success factor on projects: A literature review*.

Uphoff. (1997). Fitting projects to people. *Sustainable Development: Social Organization, Institutional Arrangements and Rural Development, 6*, 209-238.

Vedung. (1999). Constructing effective government information campaigns for energy conservation and sustainability: Lessons from Sweden. *International Planning Studies, 4*(2), 237-251.

Vickland, & Nieuwenhuijs. (2005). Critical success factors for modernising public financial management information systems in Bosnia and Herzegovina. *Public Administration and Development, 25*(2), 95-103.

Wagenaar. (2007). Governance, complexity, and democratic participation: How citizens and public officials harness the complexities of neighborhood decline. *The American Review of Public Administration, 37*(1), 17-50.

Webler, & Tuler. (2002). Unlocking the puzzle of public participation. *Bulletin of science, technology & society, 22*(3), 179-189.

Westerveld. (2003). The Project Excellence Model®: linking success criteria and critical success factors. *International Journal of Project Management, 21*(6), 411-418.

White. (1996). Depoliticising development: the uses and abuses of participation. *Development in practice, 6*(1), 6-15.

Wilcox. (1994). Community participation and empowerment: Putting theory into practice. *RRA Notes, 21*, 78-82.

Yeung, & McGee. (1986). *Community participation in delivering urban services in Asia*: IDRC, Ottawa, ON, CA.

Youker. (1999). *Managing international development projects--lessons learned*.

ANNEXURE-I

Questionnaire Survey

EVALUATING EFFECTIVENE COMMUNITY PARTICIPATION FOR SUCCESSFUL COMPLETION OF INFRASTRUCTURE PROJECTS

Dear Respondents,

This data collection is being carried out as part of MS research. The research aims to evaluate effective community participation in successful completion of infrastructure projects. The findings of this research will contribute to understand the critical factors that influence effective community participation in infrastructure projects.

Your contribution/feedback in this regard will be highly appreciated. The data shall be used for study purposes only and will be treated confidential.

Thanking you in advance for your cooperation.

Regards,

Shahid Hussain

Graduate Student

Dept. of Construction Engineering & Management (CE&M)

National University of Sciences & Technology (NUST)

H-12, Islamabad, Pakistan

Contact: +92-334-5503692

Email: shahid_gh5@yahoo.com

Date:

Thesis Supervisor and HOD:

Dr. Muhammad Jamaluddin Thaheem
Department of Construction Engineering and Management
NIT, National University of Sciences and Technology (NUST),
Islamabad

Research Topic: **Evaluating Effective Community Participation for Successful Completion of Infrastructure Projects**

1. **Respondent Profile:**

Your Name (Optional):	
Email address (Optional):	
Name of organization/ company/ firm:	
Origin (Country) of your Organization:	

2. **Please encircle the most appropriate option:**

Highest academic qualification:	a) Certificate/Diploma c) Post-Graduation e) Others	b) Graduation d) PhD
Experience:	a) 0-5 c) 11-15 e) 21 and above	b) 6-10 d) 16-20
You belong to which stake holder organization:	a) Client c) Contractor e) Donor Agency	b) Consultant d) Academia f) Others (Please Specify)
You work for sector/ Nature of your organization:	a) Government c) Semi-Government	b) Private d) Others (Please Specify)

Level of knowledge/ understanding regarding the subject research topic?	a)Very Low c) Moderate e)Very High	b) Low d) High

3. Please encircle the most appropriate option:

Sr. No.	Questions	Very Low	Low	Moderate	High	Very High
		1	2	3	4	5
1.	How important is involvement of community for successful completion of infrastructure projects?					
2.	To what extent is the community involved during identification of projects?					
3.	To what extent is the community involved during approval stage of projects?					
4.	To what extent is the community involved during planning stage of projects?					
5.	To what extent is the community involved during implementation of projects improves quality?					
6.	To what extent is the community involved during monitoring of projects?					

7.	To what extent is the community involved during decision making process?					
8.	Does involving community enhance project sustainability?					
9.	Does involving community resolve issues (Land compensations, internal conflicts etc.) and complete the project timely?					
110.	Does community share project cost (money or in terms of labors) during project life cycle?					
11.	Does involving community enhance project efficiency (management during implementation stage)?					

4. Please rank the critical factors for community participation affecting successful completion of infrastructure projects.

Sr. No.	CFs of community participation affecting project Success	Very Low	Low	Moderate	High	Very High
		1	2	3	4	5
1	Availability of resources					
2	Policies and procedures					
3	Competent project team with right attitudes					

4	Effective communication					
5	Community commitment towards project completion					
6	Collaboration and partnership between community and project organization					
7	Involvement in early stage of project					
8	Leadership Quality					
9	Skills and knowledge of community					
10	Continuity of budget					
11	Effective consultation					
12	Improving project design by using local knowledge					
13	Fairness Equality					
14	Empowerment/ Sense of ownership					
15	Coordination with Governments					
16	Administration support by project organization or local government					
17	Involvement in decision making					
18	Local capacity of community					
19	Access to Information					
20	Transparency and accountability					

21	Incentive					
22	Technique					
23	Level of participation					
24	Political influence over the project					
25	Willingness of community					
26	Social, political and economic structures of the area					
27	Role of participation of women					

5. Please encircle that which strategy is best for effective community participation?

a) Community-Based support Strategy b) Area-Based Strategy

c) Functional-Based Strategy d) Process-Based Strategy

e) Any others (Please specify)

Thank you for your time and response.

ANNEXURE-II

Skewness and Kurtosis (Normality) test for Parameters

S. No.	Parameters			Statistic	Std. Error
1	How important is involvement of community for successful completion of infrastructure projects?	Mean		4.06	.079
		95% Confidence Interval for Mean	Lower Bound	3.90	
			Upper Bound	4.22	
		5% Trimmed Mean		4.12	
		Median		4.00	
		Variance		.839	
		Std. Deviation		.916	
		Minimum		2	
		Maximum		5	
		Range		3	
		Interquartile Range		2	
		Skewness		-.596	.209
		Kurtosis		-.608	.416
2	To what extent is the community involved during identification of projects?	Mean		3.64	.084
		95% Confidence Interval for Mean	Lower Bound	3.47	
			Upper Bound	3.81	
		5% Trimmed Mean		3.68	
		Median		4.00	
		Variance		.953	

		Std. Deviation		.976	
		Minimum		1	
		Maximum		5	
		Range		4	
		Interquartile Range		1	
		Skewness		-.505	.209
		Kurtosis		-.127	.416
3	To what extent is the community involved during approval stage of projects?	Mean		2.16	.099
		95% Confidence Interval for Mean	Lower Bound	1.97	
			Upper Bound	2.36	
		5% Trimmed Mean		2.08	
		Median		2.00	
		Variance		1.311	
		Std. Deviation		1.145	
		Minimum		1	
		Maximum		5	
		Range		4	
		Interquartile Range		2	
		Skewness		.801	.209
		Kurtosis		-.167	.416
4	To what extent is the community involved during planning stage of projects?	Mean		3.06	.087
		95% Confidence Interval for Mean	Lower Bound	2.89	
			Upper Bound	3.23	
		5% Trimmed Mean		3.07	
		Median		3.00	
		Variance		1.019	

		Std. Deviation		1.009	
		Minimum		1	
		Maximum		5	
		Range		4	
		Interquartile Range		2	
		Skewness		-.032	.209
		Kurtosis		-.598	.416
5	To what extent is the community involved during implementation of projects improves quality?	Mean		3.99	.080
		95% Confidence Interval for Mean	Lower Bound	3.83	
			Upper Bound	4.14	
		5% Trimmed Mean		4.06	
		Median		4.00	
		Variance		.857	
		Std. Deviation		.926	
		Minimum		1	
		Maximum		5	
		Range		4	
		Interquartile Range		1	
		Skewness		-.952	.209
		Kurtosis		1.044	.416
6	To what extent is the community involved during monitoring of projects?	Mean		3.61	.081
		95% Confidence Interval for Mean	Lower Bound	3.45	
			Upper Bound	3.77	
		5% Trimmed Mean		3.66	
		Median		4.00	
		Variance		.886	

		Std. Deviation		.941	
		Minimum		1	
		Maximum		5	
		Range		4	
		Interquartile Range		1	
		Skewness		-.742	.209
		Kurtosis		.407	.416
7	To what extent is the community involved during decision making process?	Mean		3.31	.080
		95% Confidence Interval for Mean	Lower Bound	3.16	
			Upper Bound	3.47	
		5% Trimmed Mean		3.33	
		Median		3.00	
		Variance		.848	
		Std. Deviation		.921	
		Minimum		1	
		Maximum		5	
		Range		4	
		Interquartile Range		1	
		Skewness		-.373	.209
		Kurtosis		-.204	.416
8	Does involving community enhance project sustainability?	Mean		4.28	.066
		95% Confidence Interval for Mean	Lower Bound	4.15	
			Upper Bound	4.41	
		5% Trimmed Mean		4.34	
		Median		4.00	
		Variance		.581	

		Std. Deviation		.762	
		Minimum		2	
		Maximum		5	
		Range		3	
		Interquartile Range		1	
		Skewness		-.841	.209
		Kurtosis		.225	.416
9	Does involving community resolve issues (Land compensations, internal conflicts etc.) and complete the project timely?	Mean		3.81	.064
		95% Confidence Interval for Mean	Lower Bound	3.68	
			Upper Bound	3.93	
		5% Trimmed Mean		3.82	
		Median		4.00	
		Variance		.549	
		Std. Deviation		.741	
		Minimum		1	
		Maximum		5	
		Range		4	
		Interquartile Range		1	
		Skewness		-.349	.209
		Kurtosis		.668	.416
10	Does community share project cost (money or in terms of labors) during project life cycle?	Mean		3.70	.074
		95% Confidence Interval for Mean	Lower Bound	3.55	
			Upper Bound	3.85	
		5% Trimmed Mean		3.75	
		Median		4.00	
		Variance		.737	

		Std. Deviation		.859	
		Minimum		1	
		Maximum		5	
		Range		4	
		Interquartile Range		1	
		Skewness		-.827	.209
		Kurtosis		1.078	.416
11	Does involving community enhance project efficiency (management during implementation stage)?	Mean		3.73	.081
		95% Confidence Interval for Mean	Lower Bound	3.57	
			Upper Bound	3.89	
		5% Trimmed Mean		3.77	
		Median		4.00	
		Variance		.875	
		Std. Deviation		.935	
		Minimum		1	
		Maximum		5	
		Range		4	
		Interquartile Range		1	
		Skewness		-.389	.209
		Kurtosis		-.168	.416

Skewness and Kurtosis (Normality) test for CFs

S. No.	CFs			Statistic	Std. Error
1	Availability of resources	Mean		4.13	.075
		95% Confidence Interval	Lower Bound	3.98	

		for Mean	Upper Bound	4.28	
		5% Trimmed Mean		4.20	
		Median		4.00	
		Variance		.758	
		Std. Deviation		.871	
		Minimum		1	
		Maximum		5	
		Range		4	
		Interquartile Range		1	
		Skewness		-.875	.209
		Kurtosis		.538	.416
2	Policies and procedures	Mean		3.38	.072
		95% Confidence Interval for Mean	Lower Bound	3.24	
			Upper Bound	3.52	
		5% Trimmed Mean		3.37	
		Median		3.00	
		Variance		.689	
		Std. Deviation		.830	
		Minimum		2	
		Maximum		5	
		Range		3	
		Interquartile Range		1	
		Skewness		-.013	.209
		Kurtosis		-.580	.416
3	Competent project team with right attitudes	Mean		3.90	.067
		95% Confidence Interval	Lower Bound	3.76	

		for Mean	Upper Bound	4.03	
		5% Trimmed Mean		3.91	
		Median		4.00	
		Variance		.606	
		Std. Deviation		.778	
		Minimum		2	
		Maximum		5	
		Range		3	
		Interquartile Range		1	
		Skewness		-.107	.209
		Kurtosis		-.710	.416
4	Effective communication	Mean		3.63	.071
		95% Confidence Interval for Mean	Lower Bound	3.49	
			Upper Bound	3.78	
		5% Trimmed Mean		3.65	
		Median		4.00	
		Variance		.685	
		Std. Deviation		.828	
		Minimum		2	
		Maximum		5	
		Range		3	
		Interquartile Range		1	
		Skewness		-.115	.209
		Kurtosis		-.502	.416
5	Community commitment towards project completion	Mean		3.90	.075
		95% Confidence Interval	Lower Bound	3.75	

		for Mean	Upper Bound	4.04	
		5% Trimmed Mean		3.95	
		Median		4.00	
		Variance		.756	
		Std. Deviation		.869	
		Minimum		1	
		Maximum		5	
		Range		4	
		Interquartile Range		2	
		Skewness		-.561	.209
		Kurtosis		.114	.416
6	Collaboration and partnership between community and project organization	Mean		3.80	.062
		95% Confidence Interval for Mean	Lower Bound	3.67	
			Upper Bound	3.92	
		5% Trimmed Mean		3.81	
		Median		4.00	
		Variance		.523	
		Std. Deviation		.723	
		Minimum		1	
		Maximum		5	
		Range		4	
		Interquartile Range		1	
		Skewness		-.401	.209
		Kurtosis		.895	.416
7	Involvement in early stage of project	Mean		3.75	.086
		95% Confidence Interval	Lower Bound	3.58	

		for Mean	Upper Bound	3.92	
		5% Trimmed Mean		3.79	
		Median		4.00	
		Variance		.984	
		Std. Deviation		.992	
		Minimum		1	
		Maximum		5	
		Range		4	
		Interquartile Range		2	
		Skewness		-.284	.209
		Kurtosis		-.769	.416
8	Leadership Quality	Mean		3.81	.081
		95% Confidence Interval for Mean	Lower Bound	3.65	
			Upper Bound	3.97	
		5% Trimmed Mean		3.85	
		Median		4.00	
		Variance		.875	
		Std. Deviation		.935	
		Minimum		2	
		Maximum		5	
		Range		3	
		Interquartile Range		1	
		Skewness		-.457	.209
		Kurtosis		-.602	.416
9	Skills and knowledge of community	Mean		3.69	.070
		95% Confidence Interval	Lower Bound	3.56	

		for Mean	Upper Bound	3.83	
		5% Trimmed Mean		3.72	
		Median		4.00	
		Variance		.650	
		Std. Deviation		.806	
		Minimum		2	
		Maximum		5	
		Range		3	
		Interquartile Range		1	
		Skewness		-.085	.209
		Kurtosis		-.497	.416
10	Continuity of budget	Mean		4.03	.080
		95% Confidence Interval for Mean	Lower Bound	3.87	
			Upper Bound	4.19	
		5% Trimmed Mean		4.11	
		Median		4.00	
		Variance		.856	
		Std. Deviation		.925	
		Minimum		1	
		Maximum		5	
		Range		4	
		Interquartile Range		2	
		Skewness		-.811	.209
		Kurtosis		.444	.416
11	Effective consultation	Mean		3.44	.075
		95% Confidence Interval	Lower Bound	3.29	

		for Mean	Upper Bound	3.59	
		5% Trimmed Mean		3.43	
		Median		3.00	
		Variance		.745	
		Std. Deviation		.863	
		Minimum		2	
		Maximum		5	
		Range		3	
		Interquartile Range		1	
		Skewness		.080	.209
		Kurtosis		-.616	.416
12	Improving project design by using local knowledge	Mean		3.78	.079
		95% Confidence Interval for Mean	Lower Bound	3.62	
			Upper Bound	3.93	
		5% Trimmed Mean		3.82	
		Median		4.00	
		Variance		.837	
		Std. Deviation		.915	
		Minimum		1	
		Maximum		5	
		Range		4	
		Interquartile Range		1	
		Skewness		-.317	.209
		Kurtosis		-.420	.416
13	Fairness and Equality	Mean		3.51	.075
		95% Confidence Interval	Lower Bound	3.37	

		for Mean	Upper Bound	3.66	
		5% Trimmed Mean		3.52	
		Median		4.00	
		Variance		.748	
		Std. Deviation		.865	
		Minimum		2	
		Maximum		5	
		Range		3	
		Interquartile Range		1	
		Skewness		-.011	.209
		Kurtosis		-.632	.416
14	Empowerment/ Sense of ownership	Mean		3.75	.082
		95% Confidence Interval for Mean	Lower Bound	3.58	
			Upper Bound	3.91	
		5% Trimmed Mean		3.78	
		Median		4.00	
		Variance		.898	
		Std. Deviation		.947	
		Minimum		1	
		Maximum		5	
		Range		4	
		Interquartile Range		1	
		Skewness		-.332	.209
		Kurtosis		-.532	.416
15	Coordination with Governments	Mean		3.66	.062
		95% Confidence Interval	Lower Bound	3.53	

		for Mean	Upper Bound	3.78	
		5% Trimmed Mean		3.65	
		Median		4.00	
		Variance		.513	
		Std. Deviation		.716	
		Minimum		2	
		Maximum		5	
		Range		3	
		Interquartile Range		1	
		Skewness		.118	.209
		Kurtosis		-.387	.416
16	Administration support by project organization or local government	Mean		3.49	.068
		95% Confidence Interval for Mean	Lower Bound	3.35	
			Upper Bound	3.62	
		5% Trimmed Mean		3.48	
		Median		3.00	
		Variance		.628	
		Std. Deviation		.792	
		Minimum		2	
		Maximum		5	
		Range		3	
		Interquartile Range		1	
		Skewness		.096	.209
		Kurtosis		-.400	.416
17	Involvement in decision making	Mean		3.53	.075
		95% Confidence Interval	Lower Bound	3.38	

		for Mean	Upper Bound	3.68	
		5% Trimmed Mean		3.54	
		Median		4.00	
		Variance		.747	
		Std. Deviation		.864	
		Minimum		1	
		Maximum		5	
		Range		4	
		Interquartile Range		1	
		Skewness		-.200	.209
		Kurtosis		-.267	.416
18	Local capacity of community	Mean		3.75	.080
		95% Confidence Interval for Mean	Lower Bound	3.59	
			Upper Bound	3.91	
		5% Trimmed Mean		3.77	
		Median		4.00	
		Variance		.867	
		Std. Deviation		.931	
		Minimum		2	
		Maximum		5	
		Range		3	
		Interquartile Range		1	
		Skewness		-.151	.209
		Kurtosis		-.909	.416
19	Access to Information	Mean		3.44	.070
		95% Confidence Interval	Lower Bound	3.30	

		for Mean	Upper Bound	3.58	
		5% Trimmed Mean		3.43	
		Median		3.00	
		Variance		.654	
		Std. Deviation		.809	
		Minimum		2	
		Maximum		5	
		Range		3	
		Interquartile Range		1	
		Skewness		-.107	.209
		Kurtosis		-.501	.416
20	Transparency and accountability	Mean		3.78	.070
		95% Confidence Interval for Mean	Lower Bound	3.65	
			Upper Bound	3.92	
		5% Trimmed Mean		3.80	
		Median		4.00	
		Variance		.652	
		Std. Deviation		.808	
		Minimum		1	
		Maximum		5	
		Range		4	
		Interquartile Range		1	
		Skewness		-.193	.209
		Kurtosis		-.020	.416
21	Incentive	Mean		3.31	.072
		95% Confidence Interval	Lower Bound	3.16	

		for Mean	Upper Bound	3.45	
		5% Trimmed Mean		3.29	
		Median		3.00	
		Variance		.695	
		Std. Deviation		.834	
		Minimum		1	
		Maximum		5	
		Range		4	
		Interquartile Range		1	
		Skewness		.162	.209
		Kurtosis		-.125	.416
22	Technique	Mean		3.22	.073
		95% Confidence Interval for Mean	Lower Bound	3.07	
			Upper Bound	3.36	
		5% Trimmed Mean		3.18	
		Median		3.00	
		Variance		.712	
		Std. Deviation		.844	
		Minimum		2	
		Maximum		5	
		Range		3	
		Interquartile Range		1	
		Skewness		.332	.209
		Kurtosis		-.410	.416
23.	Level of participation	Mean		3.81	.082
		95% Confidence Interval	Lower Bound	3.64	

		for Mean	Upper Bound	3.97	
		5% Trimmed Mean		3.84	
		Median		4.00	
		Variance		.909	
		Std. Deviation		.954	
		Minimum		2	
		Maximum		5	
		Range		3	
		Interquartile Range		2	
		Skewness		-.340	.209
		Kurtosis		-.820	.416
24	Political influence over the project	Mean		2.93	.081
		95% Confidence Interval for Mean	Lower Bound	2.77	
			Upper Bound	3.09	
		5% Trimmed Mean		2.90	
		Median		3.00	
		Variance		.875	
		Std. Deviation		.935	
		Minimum		1	
		Maximum		5	
		Range		4	
		Interquartile Range		1	
		Skewness		.471	.209
		Kurtosis		-.035	.416
25	Willingness of community	Mean		3.87	.079
		95% Confidence Interval	Lower Bound	3.71	

		for Mean	Upper Bound	4.02	
		5% Trimmed Mean		3.91	
		Median		4.00	
		Variance		.839	
		Std. Deviation		.916	
		Minimum		1	
		Maximum		5	
		Range		4	
		Interquartile Range		2	
		Skewness		-.444	.209
		Kurtosis		-.321	.416
26	Social and political and economic structures of the area	Mean		3.22	.082
		95% Confidence Interval for Mean	Lower Bound	3.06	
			Upper Bound	3.39	
		5% Trimmed Mean		3.19	
		Median		3.00	
		Variance		.897	
		Std. Deviation		.947	
		Minimum		2	
		Maximum		5	
		Range		3	
		Interquartile Range		1	
		Skewness		.453	.209
		Kurtosis		-.637	.416
27	Role of participation of women	Mean		2.18	.117
		95% Confidence Interval	Lower Bound	1.95	

		for Mean	Upper Bound	2.41	
		5% Trimmed Mean		2.09	
		Median		2.00	
		Variance		1.847	
		Std. Deviation		1.359	
		Minimum		1	
		Maximum		5	
		Range		4	
		Interquartile Range		2	
		Skewness		.782	.209
		Kurtosis		-.786	.416