

Exploring the Challenges Faced By Construction Industry in Implementation of Partnering in Pakistan



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DEDICATION

To my *Ammi*, and *Kajee*

for their endless love, support, and prayers...

Also, to *My Wife* and the *Two Angels* in my life who have made my life so beautiful and are a constant source of love, motivation, encouragement and inspiration...

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Table of Contents

Acknowledgments.....	iv
Table of Content.....	v
List of Tables.....	ix
List of Figures.....	x
Abstract.....	xi
INTRODUCTION	1
1.1 GENERAL	1
1.2 RESEARCH OBJECTIVES	2
1.3 SCOPE AND LIMITATION	2
1.4 METHODOLOGY.....	2
1.5 ORGANISATION OF THE THESIS	2
PARTNERING IN CONSTRUCTION INDUSTRY – AN OVERVIEW.....	4
2.1 GENERAL	4
2.2 DEFINING PARTNERING.....	4
2.3 PARTNERING PROCESS	6
2.4 PARTNERING AND THE CONSTRUCTION INDUSTRY.....	7
2.5 FORMS OF PARTNERING.....	8
2.5.1 Project Based Partnering.....	8
2.5.2 Strategic Partnering.....	9
2.6 ENABLING FACTORS OF PARTNERING.....	10
2.6.1 Culture.....	10
2.6.2 Commitment	11
2.6.3 Trust	12
2.6.4 Collaboration and cooperation.....	13
2.6.5 Policies.....	13
2.6.6 Procurement	13
2.6.7 Communication.....	13
2.6.8 Tools	13
2.7 BENEFITS OF PARTNERING.....	14

2.7.1	Reduced Litigation.....	14
2.7.2	Better Cost Control	14
2.7.3	Speed.....	14
2.7.4	Better Quality Product	15
2.7.5	Better Safety Performance	15
2.7.6	Work and Resources	15
2.7.7	Potential for Innovation	15
2.7.8	Closer Relationship.....	16
2.7.9	Continuous Improvement.....	16
2.7.10	Job Satisfaction	16
2.8	PITFALLS OF PARTNERING	16
2.9	DISADVANTAGES OF PARTNERING.....	17
2.9.1	Direct Costs.....	17
2.9.2	Tender Costs	17
2.9.3	Complacency.....	17
2.9.4	Commercial Blandness	18
2.9.5	Exposure to Changes in the Market	18
2.9.6	Career Prospects.....	18
2.9.7	Legal Difficulties	18
2.10	SUMMARY	18
CONSTRUCTION INDUSTRY OF PAKISTAN.....		20
3.1	GENERAL	20
3.2	CONSTRUCTION FIRMS OF PAKISTAN	20
3.2.1	Common Form of Contracts	21
3.2.2	The Way of Working	21
3.3	CHALLENGES FOR THE CONSTRUCTION INDUSTRY OF PAKISTAN	22
3.3.1	Health and Safety	22
3.3.2	Quality of work.....	24
3.3.3	Delays in Projects	25
3.3.4	Lack of Technology and Innovative Practice	26
3.3.5	Traditional Methods of Procurement	27

3.3.6	Poor Management System	28
3.4	SUMMARY	28
RESEARCH METHODOLOGY		30
4.1	GENERAL	30
4.2	RESEARCH STRATEGY	30
4.3	RESEARCH DESIGN	31
4.4	RESEARCH TECHNIQUE	32
4.4.1	Literature Review.....	33
4.4.2	Pilot Survey.....	33
4.4.3	Unstructured Interviews.....	33
4.4.4	Research Instrument Design	34
4.4.5	Data Measurement	34
4.4.6	Data Collection	34
4.4.7	Data Analysis	36
4.4.8	Conclusions and Recommendation.....	38
DATA ANALYSIS AND RESULTS		39
5.1	INTRODUCTION.....	39
5.2	PRESENTATION OF RESULTS.....	39
5.2.1	Respondents' Attributes.....	39
5.3	STATISTICAL ANALYSIS.....	42
5.3.1	Reliability of the Sample	42
5.3.2	Cronbach's Coefficient Alpha Method	42
5.3.3	Split-Half Method.....	42
5.3.4	Normality Test	43
5.4	ANALYSIS OF THE RESULTS.....	44
5.4.1	Understanding of the Partnering Concept.....	44
5.4.2	Major Challenges in Implementation of Partnering in Construction Industry of Pakistan	52
5.5	SUMMARY	56
CONCLUSIONS AND RECOMMENDATIONS		57
6.1	General	57

6.2	REVIEW OF RESEARCH OBJECTIVES.....	57
6.3	Conclusions	57
6.3.1	Succeeding are couple of conclusions drawn with respect to the data accumulated from the survey:-	57
6.3.2	Following are the conclusions drawn towards the objectives of the study:-	58
6.4	Recommendations	60
	References.....	62
	Appendix 1.....	68
	Appendix 2.....	72

List of Tables

Table 2.1: Definitions of construction partnering in existing literatures.	5
Table 3.1: Spot Analysis of the Construction Industry in Pakistan (Source: Board of Investment, Government of Pakistan).	22
Table 4.1: Comparison of various research strategies (Nawi, 2012)	30
Table 5.1: Reliability Statistics	42
Table 5.2: Reliability Statistics - Split Half Method.....	43
Table 5.3: Shapiro Wilk Test of Normality for section II.....	43
Table 5.4: Shapiro Wilk Test of Normality for section III	44
Table 5.5: Detail of the objective of questionnaire items and corresponding factors	45
Table 5.6: Percentage of frequency distribution	46
Table 5.7: Detailed result of item corresponding to Collaboration.....	47
Table 5.8: Detailed result of item corresponding to Trust.	48
Table 5.9: Detailed result of item corresponding to Procurement.	48
Table 5.10: Detailed result of item corresponding to Communication.....	49
Table 5.11: Detailed result of item corresponding to Tools.....	49
Table 5.12: Detailed result of item corresponding to Commitment.....	50
Table 5.13: Detailed result of item corresponding to policies.	51
Table 5.14: Detailed result of item corresponding to Culture.....	51
Table 5.15: Frequency and Score of the response of questionnaire in section III.	52
Table 5.16: Ranking of the challenges in implementation of partnering.	53

List of Figures

Figure 2.1: enabling factors of partnering.....	11
Figure 4.1: Research design	32
Figure 4.2: Research Methodology Flow Chart.....	32
Figure 5.1: Qualification of Respondents	40
Figure 5.2: Profession of the respondents	40
Figure 5.3: Respondents grouping	40
Figure 5.4: Position of the Respondent	41
Figure 5.5: Working Experience of Respondents	41
Figure 5.6: No of projects undertaken by respondents	42
Figure 5.7: Score of the responses in section II of the questionnaire.....	46
Figure 5.8: RII of the responses in section II of the questionnaire.	47
Figure 5.9 Score of the responses in section III of the questionnaire.	53
Figure 5.10 RII of the responses in section III of the questionnaire	53

ABSTRACT

This dissertation examines the partnering approach and its benefits through review of existing literature, and then exploring the challenges faced by the construction industry of Pakistan in implementation of partnering, so as to remove the environment of distrust, blame culture, and adversarial attitudes which are harmful for the construction industry.

To get a clear picture, the construction industry of Pakistan was thoroughly analyzed. Apart from the positive economic indicators, which are evident from the study, the construction industry was found to be very fragmented and adversarial in nature. Most of the firms have a short-term view on the business development and show little interest in enhancing long-term relationships. The contracts are generally awarded to the lowest bidders. There is a lack of accountability and an increase in subcontracting. The workforce is also not properly trained. All these problems results in projects of poor quality, cost overrun and time delays. In these circumstances, the construction industry needs to develop the culture that focuses on delivering better value projects for stakeholders. Therefore, there is a dire need of implementing the partnering concept in the construction business of Pakistan. The construction industry is also faced by numerous other challenges that is hindering its progress and keeping it behind the developed world.

A research instrument based on the model is used to survey the practices through which perceptions of the individuals were measured in the construction industry in Pakistan. The research instrument was designed based on the models presented by the researchers. The research instrument was pilot tested after discussing with the experts in the construction industry as well as Academia. To get responses, random sampling was adopted and research instrument was distributed by hand and online in Pakistan.

After thorough research, questionnaire survey analysis and interviews from professionals of construction industry, it was revealed that as partnering is generally an unfamiliar concept for Pakistan so it will face several obstructions before this idea gets finally implemented. Changing the existing organizational cultures will face tremendous opposition and convincing the top management will be a cumbersome job. Finding trust worthy partners and establishing proper communication will also require careful consideration.

The research finally concludes that the partnering concept can and will bring positive changes to the construction industry of Pakistan. It will help in the reduction of conflicts and claims with

timely completion of better quality projects with in the allocated cost and an overall improvement in health and safety conditions. The development of trust amongst the stakeholders will reduce the blame culture. The workers will have the opportunity of proper training and hence an overall development of the construction industry would take place but this can only happen after successfully crossing all the obstacles in the way of partnering.

INTRODUCTION

1.1 GENERAL

A lot of research has been done on partnering, which verifies the benefits of partnering. Practitioners, researchers and analysts are lucky enough to have access to a large collection of theories as well as practical examples about partnering.

All stakeholders affiliated with the construction project can be profited through partnering due to its ability of altering the litigious attitude among the parties. The acceptance of different partnering systems in construction has gain popularity in recent years, particularly in developed countries like Japan, USA, UK and Australia.

Other industry of developed countries have already taken steps to apply the principles of partnering to their supply chain, who have recognized its strategic importance. However, construction industry haven't accepted the concept universally up till now.

The first full practical application of partnering in the industry was by the Corps of Engineers, US Army in 80s. Competitive tendering traditional methods of together with unilateral contracts and inefficient administration were heading to cost overruns and completion complexities. Moreover litigation was turning into a significant trouble. The Corps suggested a procedure whereby, post-tender, the employer and the winning contractor would talk about the nature of the project they were executing and their common expectations. Goals would be set and relevant issues and possible disputes openly hashed out with a view to identifying and share-out risks. The outcome was a partnering accord or charter collectively ratified by all participants outlining reciprocally agreed-upon goals and principles (Howlett, 2002).

A lot of theories have been presented by prominent theorists like Sir John Egan, Sir Michael Latham and John Bennett and Sarah Jayes in favor of partnering. According to these people, partnering is the driver for project innovation and continuous improvement.

The fundamental concept of these collaborative approaches is development of relationships based upon understanding, trust and cultural changes within the people and organization involved in delivering construction projects.

Through the present study, the question:

“What are the Challenges in implementing Partnering in Construction Industry of Pakistan?” will be addressed.

1.2 RESEARCH OBJECTIVES

This point will be accomplished by means of the accompanying targets;

- **Objective 1.** To study the level of understanding about partnering concept of the stakeholders of construction industry of Pakistan.
- **Objective 2.** To find out major challenges in implementation of partnering in construction industry of Pakistan.

1.3 SCOPE AND LIMITATION

The scope is limited to construction industry of Pakistan and for the most part covers the view of key partners i.e. contractors/subcontractors, clients and consultants about current practices as well as the importance of the partnering in construction. An effort has been made to include the inputs from as many as civil engineers who are practically working on diverse construction projects and in respective organizations/firms. An endeavor is made to collect the data throughout Pakistan.

There are limitations on this thesis. First of all, the research instrument is organized and prepared for the persons at management level with adequate experience and education in project management. As at this stage only these persons can understand the terminologies and basic concepts. Secondly, the research instrument was mainly focused on internal operational aspects of organizations/firms which lead to the productivity and implementation instead of design and environmental factors.

1.4 METHODOLOGY

Present study is based on the Questionnaire survey carried out with an aim to produce numerous quantitative and qualitative observations and gain perceptiveness about the opinions and attitude of the management involved in partnering, having experience in the same field. The questionnaire was circulated with idea in mind to explore the views of organizational staff having experience in the partnering. Several other sources such as the extensive review of the existing literature, including books, journals, magazines, newspapers and other sources.

1.5 ORGANISATION OF THE THESIS

The sections in this proposition are organized and introduced so that every part can be perused successively as a necessary piece of the entire postulation; with various references connecting data from the past to the procedure sections. Every section contains components of the exploration from points and goals, writing surveys and philosophy through to information investigation and conclusions; that exemplifies a comprehension and gratefulness for the examination methods and procedures in light of obtained learning and proof of investigation.

There are six chapters in this dissertation.

- **Chapter 1: Introduction;** lays the premise of the exploration; giving the foundation, including the points and destinations of the examination, and plotting the exploration extension, system and commitment.
- **Chapter 2- Literature Review;** presents the writing discoveries through survey and discourses of writing relating to banding together in construction industry. The center of the writing audit is centered on components identified with the exploration points and targets to focus the bearing of the examination. The writing survey additionally serves to recognize the information and examination hole of issues explored; and help with the detailing of the exploration structure, methodology and choice of the research instrument.
- **Chapter 3- Construction Industry of Pakistan;** provides the important details regarding the construction industry of Pakistan. Identifies some of the major barriers that are going to be faced by the concept of partnering before and after its implementation in the construction industry.
- **Chapter 4- Methodology;** in this chapter, complete research methodology along with development of research instrument with sample selection is presented.
- **Chapter 5- Data Analysis;** gives the nitty gritty quantitative measurements and subjective investigation of the chose data instruments. The quantitative information acquired from the questionnaire survey is sorted out, coded and arranged utilizing the MS Excel, SPSS software; which encourages analysis and testing; and the presentation of the statistical results.
- **Chapter 6- Conclusions and Recommendations;** Confer the conclusions and suggestions drawn from the study with reference to the examination inquiries and targets; and additionally explaining on the research commitments. It likewise talks about the suggestions already recognized in the research with respect to literature, methodology and constraints. In that setting, it outlines and ties the substance of the postulation together, which will be useful in making ready for the smooth execution of the partnering concept in Pakistan's construction industry.

PARTNERING IN CONSTRUCTION INDUSTRY – AN OVERVIEW

2.1 GENERAL

After the success of the partnering approach in the USA, it was widely adopted in Australia, but has only gained recent recognition in the UK. Several studies point towards its positive aspects.

Partnering is a procedure of building up great working relation between project parties. This assists in avoid issue with the task that, leads to litigation (Moore *et al.*, 1992).

Some of the benefits attached to partnering are reduced costs because of short or no tendering concept, teamwork, least amount of disputes, claims and work faults due to open communication and trust amongst the stakeholders.

The partnering belief is simplest in ways that contracts should be built on the trust and promise. The working associations amongst the parties, stakeholders is created by the partnering process through a collectively developed, conventional plan of responsibility and correspondence coordinating towards a win-win circumstance for all parties (CII, 1996).

A partnering relationship call for the component of trust, dedication, opportunity and reciprocal reward (Cook and Hancher, 1990).

2.2 DEFINING PARTNERING

Partnering goes for turning around the negative impacts of ill-disposed relationship in the construction industry. There are various definitions stated in the literature for the concept of partnering.

A standout amongst the most ordinarily referred to definitions for partnering is that of the Construction Industry Institute (CII, 1991), planned subsequent to contemplating 27 case studies related to partnering in the USA.

“A long term commitment between two or more organizations for the purpose of achieving specific business objectives by maximizing the effectiveness of each participant’s resources. This requires changing traditional relationships to a shared culture without regard to organizational boundaries. The relationship is based on trust, dedication to common goals and an understanding of each other’s individual expectations and values.”

Egan’s (1998) viewed partnering as a system for enhancing the execution and intensity of association inside of the construction industry. Rethinking Construction (DETR, 1998) a

report by Sir John Egan stressed that improvements must be continuous and measurable over time.

“Partnering involves two or more organizations working together to improve performance through agreeing mutual objectives, devising a way for resolving disputes and committing themselves to continuous improvement, measuring progress and sharing the gains.”

One of the advantages of partnering is the reduction in conflicts due to predetermined dispute resolution method. According to Baker, (1990):

“Project partnering is a method of transferring contractual relationships into a cohesive cooperative project team with a single set of goals and established procedures for resolving disputes in a timely and effective manner. ”

Bennett and Jayes (1998) depicted step by step instructions to shape win-win connections inside of the partners which obliges a refined plan and a disposition to enhance the joint execution.

“Partnering is a set of strategic actions that deliver marked improvements in construction performance. It is driven by a clear understanding of mutual objectives and cooperative decision making by multiple firms all focused on using feedback to continuously improve their joint performance.”

Bennett and Jayes (1995) in their book *“Trusting the team”* defined partnering as:

“A management approach used by two or more organizations to achieve specific business objectives by maximizing the effectiveness of each participant’s resources. The approach is based on mutual objectives, an agreed method of problem resolution, and an active search for continuous measurable improvements.”

Table 2.1: Definitions of construction partnering in existing literatures.

Source	Definitions
Barlow (2000)	A bundle of business processes designed to enhance collaborations between organizations.
Bayliss et al. (2004)	A method to improve working relationships and project performance in terms of quality, cost and time.
Beach et al. (2005)	A generic term for a variety of formal and less formal arrangements that embrace a range of practices designed to promote a greater collaboration and involve differing time frames.
Bennett and Jayes (1998)	A set of strategic actions which embody the mutual objectives of a number of firms. These are achieved by cooperative decision making aimed at using feedback to continuously improve joint performance.
Cheung et al. (2003)	An approach to manage construction projects, which is regarded as an important management tool to improve quality and program, to reduce

	confrontations between parties, thus enabling an open and non-adversarial contracting environment.
Eriksson et al. (2008)	A method that aims to increase cooperation and integration between the actors by building trust and commitment whilst decreasing disputes.
Bresnen and Marshall (2000)	A broad concept that covered a wide spectrum of attitudes, behavior, values, tools, techniques and practices.
Glagola and Sheedy (2002)	The essence of good business practices. Its roots are founded in the tenets of trust, mutual respect and integrity. It achieves its goals and objectives through open communication, mutual risk taking and profit sharing.
Thomas (2005)	An integrated team-working approach to achieve better value for all partners by reducing duplication and waste of resources, based on mutual objectives, a robust approach to issue resolution and a proactive approach to measurable continuous improvement.
Kwan and Ofori (2001)	An approach that is based on the principles of trust, mutual respect and cooperation towards the achievement of a common goal.
Matthews et al. (2000)	The proactive approach to the management of business relationships, not a technique which establishes rules, regulations, documentations and procedures.
Manley et al. (2007)	An approach that suggests a culture change by which a person's word is her/his bond, where people understand how they responsibilities affect others and the success if the project, and accept those responsibilities.
Naoum (2003)	A concept which provides a framework for the establishment of mutual objectives among the building team with an attempt to reach an agreed dispute resolution procedure as well as encouraging the principle of continuous improvement.
Ngowi (2007)	A form of alliance between parties that are not in direct competition with one another.
Reading Construction Forum (1995)	An administration methodology utilized by two or more associations to accomplish particular targets by boosting the viability of every member's assets. The methodology is in view of common targets, a concurred technique for issue determination and a dynamic quest for constant quantifiable upgrades.
Sorell (2003)	A technique that incredibly lessens the exchange expenses of tendering and drawing up contracts. These are supplanted by execution estimation and change focuses for quality, convenience and expenses.
Swan and Khalfan (2007)	Partnering at its most basic level is a non-adversarial approach to procuring and engaging in construction projects.
Lu and Yan (2007)	A working relationship between stakeholders based on respect, trust, teamwork, commitment and shared goals

2.3 PARTNERING PROCESS

Cowan *et al.* (1992) divided the project partnering into two main activities which are pre-project activities and implementation. Pre-project activities involves the selection of partners and team building among project managers and stakeholders while the implementation involves joint assessment of project progress, continuous improvement, problem resolution, and persistent leadership.

Cook and Hancher (1990) described the partnering process to be undertaken in five sequential steps which includes:

- Recognizing partnering opportunities
- Strategy development
- Selecting a Partner
- Negotiating contracts
- Implementation

Moore *et al.* (1992) explains the establishment of partnering relationship through an organized, encouraged procedure, regularly comprising of composed workshops to unite the members. The following steps are included in establishing a partnering process:

- Early beginning
- A commitment from top management
- Selecting members of the partnering team
- Identifying a champion
- Selection of facilitators
- Conducting an initial workshop
- Follow-ups and perks

2.4 PARTNERING AND THE CONSTRUCTION INDUSTRY

The idea of partnering came from Japan's Auto Industry and it emerged as a favorite management approach in the USA and UK construction industries as a belief that it is a cure to the fragmented construction industry with an adversarial attitude. Partnering is getting increasingly famous in the building industry as a way of working to deliver improved construction projects.

Partnering conception has become a progressively accepted kind of business relationship inside of the CI in the course of the most recent decade (Crane *et al.*, 1997). It became popular in the construction industries of the USA, Australia and the UK because of the concept that relationships in these industries were usually missing trust, honor and honesties between clients, contractors and sub-contractors which had led to a lot of procurement problems. The prominent reports sponsored by the UK Authorities (Egan, 1998; Latham, 1994) have furnished an enhanced impulse to ameliorate the affiliations amongst all stakeholders in the process of procurement in construction. Along with it, Egan (1998) also highlighted that through partnering in the store network which is a vital approach and by means of this approach we can drive innovations in performance of construction industry.

Partnering process was introduced in the construction industry by the mid 1980's and given a boost up when the U.S. Army Corps of Engineers took over this process and started using it widely. In mid-1990's Partnering became a common practice in the construction industry particularly on projects in which extensive government financing was used and currently partnering is used mainly in the construction industry because of its principles.

Since 1994 partnering has gained substantial positive response in the UK's construction industry, following the determinations of a study of the construction industry and the recommendations given in the Latham report.

Amid late years, the enthusiasm for banding together game plans has expanded in numerous nations in the connection of construction (Bresnen & Marshall, 2000).

2.5 FORMS OF PARTNERING

The two primary form of partnering identified in the literature are:

- Project based partnering
- Strategic partnering

2.5.1 Project Based Partnering

Single project partnering is known as project partnering. The partnering relationship comes to an end after that project and for the next project another association start. USA construction industry established the project partnering in mid-80

Partnering is basically an organized style for organizations to set up commonly useful business courses of action, either for one project or in long haul vital relationships, which help their representatives to work all the more successfully. The three fundamental components of partnering are:

- Organization of concurred and understood reciprocal objectives
- Quick and cooperative method for quandary resolution
- Culture of perpetual, quantified amendment

Granting to (Bennett and Jayes, 1995), project partnering has three crucial stages.

- The determination to utilize partnering
- Holding a partnering workshop to create common targets and a concurred issue determination process
- Undertaking development work and focussing on ceaselessly enhancing execution through subsequent works

According to Cowan *et al.* (1992), project partnering has overwhelmed the CI because of the strict acquirement prerequisites forced in activities started by government.

2.5.2 Strategic Partnering

Strategic partnering is established between two or more than two organizations when they decide to utilization partnering on a long haul premise and attempt more than one construction project. It is the extension of project partnering to further projects.

Bennett and Jayes (1995) in their report “Trusting the Team” have called strategic partnering as “second generation partnering”. The main difference between strategic and second generation partnering is that it consist of strategic workshops in addition to project workshops and builds incrementally on lessons learnt from previous projects. Strategic partnering must be received in circumstances where the customer has a progression of tasks. Bennett and Jayes (1998) define it in the complying way:

“Partnering is a set of strategic actions which embody the mutual objectives of a number of firms achieved by cooperative decision making aimed at using feedback to continuously improve their joint performance.”

In Second genesis partnering all the parties which include clients, consultants and contractors are willing to cooperate in a serial of protrudes. They mutually set up a Strategical Squad that puts together “The Seven Pillars of Partnering”

Bennett and Jayes (1998) established seven pillars that need to be satisfied for a successful strategic partnering:

- **Strategy:** the development of client’s needs by the project team on the base of resubmit.
- **Membership:** Identification of all the parties that require to be taken on board in order to acquire all the necessary skills.
- **Equity:** Making sure that everyone is rewarded fairly.
- **Integration:** It can be attained by removing all the organisational barriers, and by improving teamwork through the use of pattern and establishing trust.
- **Benchmarks:** Offsetting targets and measuring performance that will lead to uninterrupted improvement in the functioning of the team from venture to extend
- **Project Processes:** Creating gauges and strategies that speak to best practices which are taking into process engineering.
- **Feedback:** To identify morals learnt from previous tasks and to utilize them as a guide for the future strategies for development.

Strategic partnering is more successful because the client is able to provide a considerable and continuing work, in form of a series of projects to his partners for a longer period.

Long term partnering commitments between parties brings with it substantial advantages to their business interests, for example sharing of office accommodation and electronic data interchange (McGeorge and Palmer, 2002).

Utilization of strategic partnering is not the same as partnering. The recent dependably focuses on the accomplishment of partnering objectives and project execution, while the previous opens the degree for the progression of the correspondence between included gatherings while considering this strategic partnering is considered as procedure pointed. Continuous improvement is considered as the main characteristic of strategic partnering (Barlow *et al.*, 1997).

Although the aims and objectives of strategic partnering are similar with those of project partnering, but the main difference is in context and timescale. The objectives of strategic partnering are protected by a partnering charter, which reflects the values, beliefs, philosophy and culture of the stakeholders, from which a mission statement can be drawn up. In this situation, such aims and objectives would, be generic rather than project specific (Mc George and Palmer 2002).

2.6 ENABLING FACTORS OF PARTNERING

There is huge measure of writing on partnering in the CI, and numerous have endeavored to recognize the discriminating components for viable and fruitful partnering. The broad writing audit led for this exploration has uncovered that there are eight enabling factors most regularly referred to by past writers

2.6.1 Culture

Culture is the undoubted requirement of partnering. There is a requirement of cultural change for the success of partnering in the CI. The culture of the participating organizations must be well-matched and the organizations must share some of the basic value, attitude and beliefs. In situations where this compatibility is not present then the participating organizations must change their culture in order to achieve the real benefits of partnering.

Bodley (1994) stated that society includes what individuals think, what they do and what they deliver. Putti and Chia (1990) considered society as an arrangement of qualities, convictions, standards, demeanors and propensities for a gathering of individuals, indicating

out that a general public's convictions and qualities have an effect in transit business is directed in that society.

Some managers might be unwilling to accept the concept of partnering for their organizations. Such managers consider partnering as a disguise giveaway of company's resources which makes them uncomfortable with this idea. For the success of both company and the partnering approach there is a need to change this rigid culture.

A broad survey of writing on collaborating in the CI has conveyed to light the eight enabling factors for cooperating ordinarily referred to by past studies, which is demonstrated in the accompanying Figure 2.1

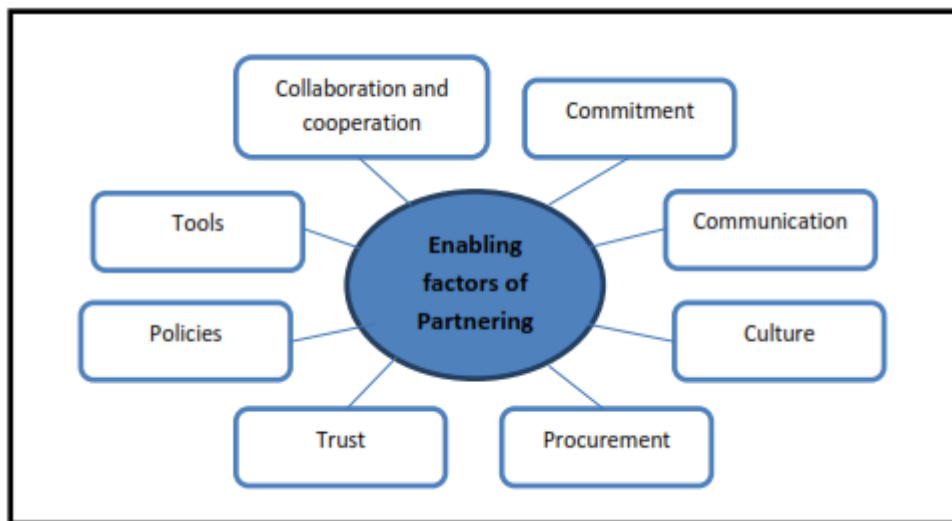


Figure 2.1: Enabling factors of partnering (Source: usir.salf ord.ac.uk)

2.6.2 Commitment

It is the obligation of the older management personnel to show total commitment towards partnering approach; which must be seeable, ongoing, strong and delicate to hierarchical change in connection to keeping partnering abilities preparing and advancement.

Commitment is the most essential component in beginning a banding together relationship. The organizations must show their commitment for a full term partnering in which apiece companion should understand the aims and objectives of his cooperator and then displaying a genuine responsibility to help his accomplice in accomplishing his objectives. This dedication results in an association that is not in a condition of consistent reassessment and in which every accomplice has an unmistakable spotlight on ceaseless change of the relationship and commitment to regular objectives. Partnering suggests that the dedication ought not to be reliant on individual identities to keep up the relationship (Cook and Hancher, 1990).

The management of all the parties involved in partnering relationship, must backing the purpose and objectives of the relationship and they ought to enter the association with a triumphant state of mind.

A commitment from top administration in every association is key. Senior faculty can sustain and strengthen the partnering process and counter spoiler's contentions (Kubal, 1994).

For creating mutual goals, interests of all the parties must be considered. There must be a dedication in fulfilling each partner's requirements for a fruitful task by creating win-win thinking. There ought to be a mutual vision for the partnering relationship, with normal goals through sharing of thoughts and desires. The gatherings must concur on an intermittent joint assessment, verifying that the arrangement is continuing as foreseen and that all gatherings are conveying their offer of the heap.

2.6.3 Trust

One of the main elements of partnering is trust. It is very difficult to achieve. The basis of trust lies on a steady and reasonable way to deal with all dealings in the venture and opportune conduct. The project cannot be successful without trust.

Partnering relationship must have the component of trust. The sharing so as to join forces organizations must perceive that data, tolerating lessened control of a piece of its operation and enduring contact with outcasts, every firm can get advantages that would surpass the company's individual limit. Trust serves to join the assets and learning of the accomplices in a style expected to dispose of ill-disposed connections (Cook and Hancher 1990).

Collaboration relies on upon shared trust. Reliability originates from words and activities being clear and predictable, in view of competency and character and substantiated by exhibited endeavors to finish.

Trust is the foundation of a fruitful partnering relationship. It is the desire by one exchanging accomplice that another accomplice will act in an anticipated and commonly adequate way (Sako, 1992). Trust was seen by Latham (1994) as the watchman to advance in enhancing acquirement and contractual relations in the UK construction industry. Trust can also be developed through mutual cooperation, negotiation and constant communication.

What can be expressed about trust is that it is by all accounts attractive in a wide range of business connections as a result of its negative relationship with exchanges costs (Williamson, 1975). Trust is thought to be an imperative piece of partnering as generally such contracts are less finish or includes constant renegotiation.

2.6.4 Collaboration and cooperation

The partnering firms ought to expect a larger number of favorable circumstances and a bigger number of chances than are accessible in conventional business connections. Partnering relationships offer focal points and opportunities particular to the proprietors and engineers.

2.6.5 Policies

Construction Industry is bounded by government arrangements. These policies may be impediment in acknowledgment of banding together by construction industry. Case in point, with the assistance of government approaches and regulation, partnering in UK construction industry picked up ubiquity. Strategies execution with great expectations will make mindfulness among the partners of the business and with this the concern will be made.

2.6.6 Procurement

Partnering strength rests in procurement arrangements, in this contractors are let in much earlier in the designing phase. Study in UK have proven that procurement methods aims to eliminate adversarial relationship among the stakeholders by encouragement of the parties to work together towards the objective completion that is shared by all. Partners struggle hard to create the best possible product or deliver best service. As a standard of the working relationship the partners should be expecting and supporting a mutually agreeable level of excellence.

2.6.7 Communication

Constant communication is a must to assess and evaluate progress towards the achievement of goals and objectives. Partners must prepare their project managers to act on feedback, especially when it is aimed toward achieving the success of the product or service. Communication is a twinned direction procedure which consists of listening and providing information, innovative ideas and suggestions are encouraged.

2.6.8 Tools

Tools are partnering effective elements as they provide reinforcement to the relation. Partnering arrangement includes a willingness to work together to solve problems. Effective teams can be achieved by making contract terms that reflect shared interests. With effective tools disputes can be resolved more efficiently without resorting to adversarial attitudes. Effective tools that are essential for better partnering could be meetings, workshops and

feedback system. Partners also recommend each other for other work. It is vital for architects, engineers, builders and other managers to be able to work altogether and sometimes they need to change their whole attitude.

2.7 BENEFITS OF PARTNERING

There are a lot of benefits from partnering. Benefits from partnering accrue to owners, architects/engineers, contractors, subcontractors and suppliers. Some of the most important benefits are discussed below:

2.7.1 Reduced Litigation

Situations like distribution of bonus, general financial difficulties, cash flow problems and economic losses can give rise to conflicts in which the participants want to recover their losses by blaming/claiming or the matter might reach to judicial proceeding.

Litigation is a primary issue in most construction activities. It doesn't help acknowledge potential sparing. In partnering course of action, the issues of question, claims or litigation are incredibly diminished through open correspondence and enhanced working relationship (Cook and Hancher, 1990).

Partnering projects have relatively low dispute and claim costs. Bayliss (2002). explained that not individual conflict had intensified to litigation in partnering protrudes. This was not the case on non-partnered contracts.

2.7.2 Better Cost Control

As there is a potential for repetition in partnering and the benefit of repetition is cost savings. With the passage of time the organizations involved understand the needs of other participants and develop common systems which results in increase of efficiency and better cost control.

There are numerous purposes behind better cost execution, which incorporates: mitigating revamp, elevating inclusion of colleagues, diminishing schedule time, enhancing trust, opening communication, bringing down change request rates, enhancing critical thinking, wiping out accuse moving, enhancing comprehension of task targets and diminishing ill-disposed relations (Albanese, 1994).

2.7.3 Speed

Project partnering to some extent and strategic partnering in particular can reduce delays and help in delivering projects within time. The key features of partnering that help in reducing time are shorter lead time, availability of existing communication and cooperation,

short or no tendering periods, shorter design periods, reduced learning curve, an environment for innovation and easy problem solving methods and a team effort to finish project (Critchlow, 1998).

2.7.4 Better Quality Product

Partnering help develop better understanding of client needs. The characteristics that help in delivering and improving the required quality with time are the projects, mostly of repetitive nature, greater responsiveness to the demands of client, proper communication and long standing relationship capable of providing benefits of joint systems, mutual understanding and an environment that encourages innovation, research and development.

Partnering gives better quality development and administration and lessens designing revamp (Moore et al. 1992). It additionally enhances venture quality by supplanting the ill-disposed association with a climate that encourages a group way to deal with accomplish an arrangement of regular objectives (Cook and Hancher, 1990).

2.7.5 Better Safety Performance

Various case studies are available for improved safety record on projects based on partnering relationship. Assuming joint liability to guarantee a protected workplace for all gatherings minimizes the danger of dangerous working conditions and maintains a strategic distance from mishaps. The wellbeing execution can be enhanced as accomplices better see one another and as the learning of construction procedure and frameworks enhances definitely (Moore *et al.*, 1992).

2.7.6 Work and Resources

Partnering provides better openings for a steady flow of work to the service provider. Due to this security of steady workload, arrangements for the provision of resources can be made with a much greater confidence.

The contractors can obtain a reasonable profit and are guaranteed of proceeded with work at foreordained overall revenues (Moore et al. 1992). The work gets to be pleasant as opposed to a weight or a unreasonable danger (Bates, 1994).

2.7.7 Potential for Innovation

Partnering relationship urges every one of the gatherings to assess propelled innovation for its pertinence (Cook and Hancher, 1990). Design and construction processes can

be improved significantly by the thorough use of innovation and open communication (Abudayyeh, 1994).

2.7.8 Closer Relationship

Through partnering service providers can develop close relationship by working for a high profile client and thus improve their reputation in the market. This gives a stable base to the contractor or designer to acquire more work.

The close relationship between the proprietor, constructor and specialist gives a superior domain to the venture (Cook and Hancher, 1990). Upgraded correspondence, the distinguishing proof of shared objectives and goals, the acknowledgment that issues emerged and the consent to address those issues results in a pleasant relationship (CII, 1991).

2.7.9 Continuous Improvement

The contractor is traditionally responsible for improvement and is also considered as a weight producer, while the customer and specialists go about as a distrustful judge (Cowan et al., 1992). Partnering gives a route to all partners to create persistent change. It is a joint exertion, with a long haul concentrate on wiping out inefficient obstructions for development (CII, 1991).

2.7.10 Job Satisfaction

Partnering results in good working environment, which is more efficient and less adversarial, so it reduces pressure on those involved, job satisfaction is also increased due to the easier and greater success of projects. The people enjoy doing their work rather considering it a burden on themselves.

All gatherings included advantage from the partnering arrangement. Partnering improves consumer loyalty as the client is closer to the development process and better educated (Nielsen, 1996). Builder's fulfillment is acquired through a decent benefit and a confirmation of proceeded with work at foreordained net revenues. (Moore et al., 1992).

2.8 PITFALLS OF PARTNERING

The critics of partnering believe that partnering is being supported by many leading clients as a means of improving customer responsiveness and ensuring continuous improvement but in reality they are exploiting the situation by grabbing a major chunk out of the profit as compared to the contractors and designers.

Authors like Green (1999) feel that partnering is far from returning genuine advantages to the foreman in light of the fact that customers still take after an expense driven

plan. Therefore they hope to lessen costs, or to pass expenses and dangers down the store network, and in this way don't truly receive a win-win state of mind.

Akintoye and Black (1999) identified five risk components for this approach: manager's unwillingness to give up control; accomplices getting to be self-satisfied; expanding reliance on an accomplice; weight to perform; and an accomplice returning to antagonistic relationship.

Similarly, Packham *et al.* (2003) suggested that partnering may not offer numerous advantages to little development undertakings and regularly has a negative impact upon the builder/subcontractor relationship.

Authors suggest further research on banding together. Green (1999) cautioned that the promulgation on the benefits of partnering, may camouflage the activity of purchasing power, control and reconnaissance by intense clients. He prompted autonomous examination into partnering.

2.9 DISADVANTAGES OF PARTNERING

A fair assessment of partnering also requires the identification of its potential disadvantages. Critchlow (1998) describes the following disadvantages of partnering.

2.9.1 Direct Costs

There are some additional costs related to establish partnering which includes training costs for all the members, costs occurring on organizing and running of joint workshops, cost of a facilitator. The additional management cost in finding partners and negotiating agreements, the costs of setting up of joint systems with partners and monitoring the progress and evaluating the performance.

2.9.2 Tender Costs

Under strategic partnering when work automatically goes to the contractor without competitive tendering, contractor has the tendency to increase his profit margins particularly in difficult market place where the contractor is confronting losses on other contracts.

2.9.3 Complacency

Under partnering arrangements, the work received from a client can be considered already won, mainly when the profit margins are less. The work can become less exciting with a lower level of commitment than the newly acquired projects. With the work of repetitive nature for long time, partnering teams can lose interest, thereby diminishing efficiency and innovation rather promoting it.

2.9.4 Commercial Blandness

Partnering has the tendency to reduce the competition in the market place. Contractors will not struggle for more work; while there will be no fresh exploration by the employer for new relationship, which are more dynamic. Teams working under partnering arrangements can lose the skill of innovation and will not struggle to work to tight schedules and high standards if required.

2.9.5 Exposure to Changes in the Market

With changes in the market place the employer might stop giving work to the contractor and suddenly the contractor or the designer may find it very difficult because of less work load. The partnering participants might not be in direct contact with the market and may find it very difficult to come back and find work for themselves in the competitive market. This situation may arise due to some genuine reason where the employer is not able to provide work as was projected.

However if one or other party becomes less committed to the partnering arrangement there may be little in practice that the other partner can do to address the problem, other than to re-negotiate on less favorable terms.

2.9.6 Career Prospects

One of the disadvantages in strategic partnering is that where there is a dedicated team for the project, sometimes it finds itself cornered away from the mainstream business and away from the opportunities. Employees may consider themselves side-lined, less important and find their jobs unchallenging. This can become a possible employee retention problem.

2.9.7 Legal Difficulties

If the contract terms fail to reflect the aim of one or more parties under the partnering contract then there might be a possibility that some of the statements used in partnering charter under good will can be used in court against the party. The issue of bonus sharing is often tricky, if the contractor finds it difficult to save cost on project to earn enough shares in bonus he might let the costs to increase.

2.10 SUMMARY

This chapter reviews the existing literature about partnering and starts with a brief introduction to the concept of partnering. It also defines various definitions of partnering given by the various researchers and practitioners. A brief description of the process involved for the implementation of partnering is also highlighted. The chapter also considers the recognition of the partnering concept in the construction industries of UK and the USA and the reasons which made this concept popular in the adversarial construction markets.

The different stages of partnering are also identified and some of the benefits brought by partnering are also indicated. The chapter then explains the key elements of partnering which are the basis for this concept and without which the concept of partnering is fruitless.

The chapter also reviews some of the arguments in favor of partnering and the benefits brought with this concept. The partnering concept is widely accepted in USA, Australia and the UK and has been endorsed by the CII, DETR and the reports by Egan and Latham.

The main advantages highlighted were:

- Reduced litigation
- Better cost control
- Speed
- Better quality product
- Better safety performance
- Work and resources
- Potential for innovation
- Closer relationship
- Continuous improvement
- Job satisfaction

The chapter ends by considering the dominant discourse against partnering approach in which prominent researchers have criticized this approach by highlighting the main disadvantages brought by the partnering.

The main disadvantages highlighted were:

- Direct costs
- Tender costs
- Complacency
- Commercial blandness
- Exposure to changes in the market
- Career prospects

CONSTRUCTION INDUSTRY OF PAKISTAN

3.1 GENERAL

The construction industry assumes a crucial part in the social and financial improvement of all nations. The criticalness and piece of the construction industry in the economy of any country has been set up by a couple of studies, including Coble and Haupt (1999).

After sixty six years of independence, the construction industry of Pakistan has shown improvement in size and performance. According to the statistics department of Pakistan, the construction industry contributes slightly more than 2% towards the GDP and employs around 6.27 million people, which is approximately 13% of the total labor force.

According to Business Monitor International's, "Pakistan Infrastructure Report 2013" gauges a normal development rate in the area of 8% more than 2006-2010.

The significance of the construction industry in Pakistan can be judged from the way that 30 to 70% of the nation's interest in its improvement project is on base and different offices. Construction related venture is evaluated to be around US \$ 8.15 billion, which is right around 51% of the aggregate speculation under the 7th National Development Plan (Ogunlana *et al.*, 2003)

The Government of Pakistan has mainly focused on infrastructure projects like roads, railways, dams and highways, but now the government has recognized building and construction sector amongst the sectors as the driver of economic growth. Around 40 other manufactures are connected with the construction and accommodations sector and so an increase in activity of this sphere lets loose a reaction in other industries.

With a boom in the business of real estate, people have started investing money and there is a trend of contractors becoming developers, because there is much more profit in real estate as compared to normal construction.

3.2 CONSTRUCTION FIRMS OF PAKISTAN

The construction industry of Pakistan comprises of open and private part customers, configuration, administration and construction masters. Numerous outside development firms from UK, USA, China, Middle East, Singapore, Australia and Italy are also operating within the country.

In comparison with other developing countries, the government is the major public sector client of Pakistan's construction industry, which has a fundamental impression on the industry, both straight and circuitously.

The construction industry of Pakistan consists of around 150,000 constructors and contractors, 10,000 engineering organizations filed with the Pakistan Engineering Council (PEC), a statutory body, formed by the government of Pakistan (PEC, Magazine July 2014).

The main functions of Pakistan Engineering Council, Incorporate enrollment of specialists, counseling architects, constructors/administrators and accreditation of designing projects keep running by colleges/organizations, guaranteeing and overseeing of proceeding with expert improvement, helping the Federal Government as research organization, building up norms for building items and administrations other than defending the enthusiasm of its individuals. The committee should support, encourage and direct meeting expectations of expert designing bodies for inventiveness and as overseers of building under the umbrella of the Council.

3.2.1 Common Form of Contracts

Some of the common forms of contracts used in Pakistan are:

- FIDIC
- Lump Sum
- Turn Key
- Item Rate
- Built Operate Transfer (BOT)
- Build Own Operate Transfer (BOOT)

3.2.2 The Way of Working

The working standards of Pakistan's construction industry are the same as being used elsewhere in the world. The consultants are appointed well before that of the contractors and they generally work directly for the client. The responsibilities of consultants include finalizing the design, calculating the total cost of construction and helping client in choosing an appropriate type of contract for the project.

Generally, the client would advertise the contract in local newspapers to invite companies for the bidding process. The client generally has his own team of engineers and consultants. They are responsible to review the bids and obtain a best price for the client and

advising him to award the contract to a specific firm to bid on the entire project. Generally the bid is awarded on the basis of lowest bid.

A practicing license must be obtained by every construction and Consultant Company in Pakistan to practice legally. This license needs annual renewal from the Pakistan Engineering Council. With this license, the firms can bid for public and private projects allowing to bid restriction allotments (Refer to Table 3.1).

Table 3.1: Spot Analysis of the Construction Industry in Pakistan (Source: Board of Investment, Government of Pakistan).		
Total number of construction companies in:		
Category C-A (2013 est.)	690 Numbers	
Project Cost Limit	No limit	
Category C-B (2013 est.)	428 Numbers	
Project Limit Cost	Up to Rs.100 million	
Category C-C (2013 est.)	2498 Numbers	
Project Cost Limit	Up to Rs.50 million	
Category C-1 (2013 est.)	3241 Numbers	
Project Cost Limit	Up to Rs.20 million	
Share in GDP (% age):		
Construction	5.2	(Pakistan Economic Survey 2012-13)
Housing	4.0	

In terms of the evaluation of contracts gained, the market is dominated by prominent contracting companies registered in Category C-A (Table 3.1). There is a lot of sub-contracting in the construction projects, which helps the completion of the project. On the other hand, the small companies are mostly interested in obtaining the maintenance and repair work of public sector which includes roads and some small-scale building projects. Their bidding is limited to small portions of large scale or internationally funded projects because of financial restraints and shortage of technical staff.

3.3 CHALLENGES FOR THE CONSTRUCTION INDUSTRY OF PAKISTAN

The construction industry has shown a tremendous development since partition but it's still way behind in implementing the international standards, which are used by the western world. The major challenges faced by the construction industry of Pakistan are as follows:

3.3.1 Health and Safety

According to (Tam *et al.* 2004) "Construction is one of the most hazardous industries due to its unique nature". The situation of health and safety by international standards in Pakistan's construction industry is very poor because of the following reasons:

3.3.1.1 Ignorance of Companies

Most of the companies in Pakistan do not have the required documented safety manuals, which define safety operations and teachings, and identify particular requirements. On the other hand, large multinational construction companies working in Pakistan, have brought their own site safety manuals from abroad.

Most of the companies ignore health and safety to reduce their costs and most of the accidents caused on sites are due to falling from height, use of heavy machinery, electrocution and hit by a falling material. Because of poor authorization of laws greater part of development mischances are not in any case answered to the work office, therefore the available data regarding health and safety is not reliable. Majority of the companies have limited financial resources which results in poor working conditions (Ali, 2006).

3.3.1.2 Working Constraints

Most of the contractors are required to finish the project before the deadline, at a concurred cost and at a certain standard of workmanship. Most foremen spotlight on the quick issues and perspective their top needs as meeting the generation plan, quantity & expense targets, and quality prerequisites. In the wake of accomplishing these goals they give a few contemplations to well-being and security (Tam *et al.*, 2001).

3.3.1.3 Lack of Training

Pakistan's construction industry is not putting much emphasis on training its workforce that is why the share of trained hard hat is very low. Most of the workers are from poor villages of Pakistan and are willing to adopt any task to make a living for their households. One of the reasons for poor safety on site is the unskilled labor.

Most of the workers on site are without proper personal protective equipment's (PPE) like gloves, hard hats, safety shoes and goggles. There is no concept of customary wellbeing gatherings, which are essential for conveying security data to all gatherings.

3.3.1.4 Causes of Accidents on Site

Most of the accidents on site are due to the use of poor/old equipment. The construction equipment is one of the weakest connections in Pakistan's construction industry. The majority of the hardware utilized by firms as a part of Pakistan is old and out of date however it is as yet being utilized in light of the fact that the organizations need trusts to supplant it.

Even if funds are available, health and safety is not a priority with firms as they are not accountable to anyone regarding these issues. There should be a professional body in place

to run regular audits and report the findings to a health and safety law-enforcing organization in Pakistan. Ideally, new Acts should be passed by the government to take into account these matters.

3.3.1.5 Laws for Health and Safety

The major law for Occupational Health and Safety in Pakistan is the *Factories Act 1934*. Regrettably, construction industry is not added to these laws. Awan (2001) highlights the main laws dealing with the occupational health and safety in Pakistan as:

- *The Mines Act 1923*
- *Workmen's Compensation Act 1923*
- *Dock Labourer Act 1934*
- *Social Security Ordinance 1965*
- *Shop and Establishment Ordinance 1969.*

3.3.2 Quality of work

A lot of evidence is available to show that engineering skills in Pakistan are well below international standards, which leads to the high cost and poor quality of work.

3.3.2.1 Causes of Poor Quality

Poor construction methods and a failure to enforce building codes are threatening Pakistan's building efforts.

3.3.2.1.1 Lack of Skills and Corruption

Most of the projects in Pakistan end up in poor quality. The trouble often starts when there are insufficient engineering design skills and the materials are poorly matched to the skills and abilities of operators. There is lack of experience in forecasting costs and delivery times, which results in under-estimates for the cost of construction and its maintenance. The client expectation of price is also an important factor in which the business owner may insist on an unrealistic price level. Corruption and political interference in awarding contracts cannot be ignored as a factor, which results in poor quality of work.

3.3.2.1.2 Insufficient Budget and Sub-Contracting

The project often needs to be completed by the supplier or contractor in a budget, which is insufficient for the project, but the contractor is unable to realize it due to lack of experience until it is too late. The contractor may also be not able to obtain skilled workforce. As the price is not enough to complete the job, the contractor will start taking short cuts by

using sub-standard materials and forcing labor to work longer hours without adequate supervision which eventually results in poor quality project.

The main contractor often sub-contracts the project to a number of small contractors who might not have the required experience and equipment to manage a big project, which will also result in a project of poor quality.

3.3.3 Delays in Projects

Construction Industry of Pakistan occupies an essential position in the economy despite the fact that it contributes not exactly alternate commercial enterprises working in the nation. A noteworthy test confronting the Pakistani construction industry is the developing rate of deferrals in undertaking conveyance. Postponement is a circumstance in which the contractors and the project proprietor are together in charge of the non-finish of the project inside of the first or concurred contract period.

Construction stays are common in civil engineering projects in Pakistan, which results in contractual claims and expanded undertaking expenses. Kumaraswamy and Chan (1998) suggested that if issue of deferrals is controlled, it would have a tendency to enhance efficiency.

Normally, when a project gets delayed, it is either augmented or quickened and in this manner, its expense increments. Therefore, delays in construction results in disappointment of every one of the gatherings included and the primary part of the venture chief is to verify that the task is finished inside the specified time, cost and quality.

3.3.3.1 Time Delays and Cost Overruns

In construction projects, a delay means a period invade either past the agreement date or past the date that the gatherings have settled upon for the conveyance of the task. In both the cases, it is generally an immoderate circumstance (O'Brien 1976).

As most of the civil engineering projects in Pakistan are government owned, a delay in the project generally results in sociable trouble and deprivation of revenue. The contractors may also suffer a high disruption costs, productivity losses and prolongation costs.

Poor site management will also delay the project and effect productivity. Great practice is along these lines urgent amid the arranging and execution of the works and in the operation of the agreement (Carnell 2000).

Time delays and cost overruns are amongst the most widely recognized occasions in the development business of Pakistan from easy to complex ventures. Rad (1979), mentioned that time and cost overruns were very usual in the construction industry globally.

Al-Hammad (1993) made the following conclusions. Delay in payments, low construction quality, blunders/delays in drawings and support of materials were positioned most astounding as builder subcontractor interface issues. The variables positioned in least class were lawful question, booking clashes among subcontractors, land issues and climate conditions.

3.3.3.2 Causes of Delays

The main causes of delay are related to customer related, builder related, expert related, material related, labor related, contract related, contract relationship related and outside variables. The real impacts of these postponements are time overrun, expense overrun, disputes, arbitration, litigation and aggregate relinquishment of the project. The contract parties will claim the extra costs and time elongation resulting from delays (Aibinu and Jagboro, 2002).

The architects and engineers blame the relationship in the middle of subcontractors and the moderate choice making procedure of the proprietor as the primary reason of delay. Other causes of delays are poor weather conditions, acts of Nature, strikes and wars.

Hensey (1993) highlighted the major causes of delays as improper arranging, absence of control, subcontractor delays, poor co-appointment amongst parties, poor supervision, dishonorable development routines, lack of specialized faculty and poor correspondence.

3.3.4 Lack of Technology and Innovative Practice

3.3.4.1 The Use of Outdated Technology

Most of the construction companies are unable to adopt laid down best exercises already contributing in other developed countries of the world which is another serious challenge for the construction industry of Pakistan. Majority of the firms are using outdated technologies due to lack of funds, which is why they cannot compete in the international markets.

It is suggested that the transfer of technology between foreign firms and the developing countries would help in bridging the gap between the two as firms from the developed countries are able to undertake more complex projects than the developing countries. (Abbott, 1985). The key technology transfer vehicles employed in the construction industry include sub-contracting, licensing, training and joint ventures, each of which is suitable under different situations.

Moreover, most of the construction projects are unique in nature and therefore investing huge amounts in new technologies and innovative practices is not feasible for the firm's survival as these technologies might not help the firms on future projects which will result in overburden for these companies. Innovative ideas are not welcomed by the management due to short sightedness of the companies and lack of decision-making powers.

3.3.4.2 Problems in Technology Transfer

Although some companies in Pakistan support the transfer of new construction technologies but it faces several problems. Among these issues at industry level, is the worldwide builders' hesitance to support potential adversaries (Goulet, 1977). The extra expenses, delays in venture and administrative intricacy that transferors may confront in the dangerous business of contracting abroad (UNCHS, 1996). The challenges which neighborhood skilled work force may confront in operating the acquired information because of the uniqueness of construction ventures

The exchange of innovation at the firm level will likewise confront some social issues. In the wake of examining the impacts of social distinction on innovation exchange, Wen Lin and Berg (2001) reasoned that social contrasts sway on innovation exchange venture through complex systems, in this manner considering the communication impacts amongst innovation attributes and social contrasts at the same time in dealing with an innovation exchange profoundly impacts the case with which it can be exchanged.

3.3.5 Traditional Methods of Procurement

Pakistan has inherited its procurement systems and administrative arrangements from the United Kingdom who had a different culture, history and construction. All the documentation, processes and exercises followed by the construction industry of Pakistan are determined by those arrangements. It also defines the parts of the members and the connections in the middle of them and consequently the systems of force and power. More push is on techniques and the accompanying of set channels of communication.

It is interesting to note that, the countries that used this system have shifted to new approaches but we are still following the old accesses. For example, after a full survey of the UK construction industry, Latham (1994) pushed the building of trust and a soul of partnering in an industry portrayed by doubt, contentions and antagonistic. Rwelamila et al (1999) contended that the inability to consider and fuse social characteristics in the obtainment

frameworks of construction venture acknowledged in Southern Africa is a noteworthy benefactor to the poor execution on projects.

Pakistan is in dire need of new procurement methods which could help in bringing an end to the years old system currently prevalent in the country and in turn will help in bringing prosperity and development for the construction industry but all this needs a tremendous effort and commitment from all sectors of the society.

3.3.6 Poor Management System

There are many obstacles like corruption, poor communication, and political interferences which obstruct managers to do their work properly resulting in poor management of projects. The managers are not properly trained and they are not given full authority which results in poor decision making.

The managers are not given proper incentives due to which they lack their interest in their jobs and eventually results in the corruption of top slot. Lack of support from decision makers makes the management reluctant in decision making.

Poor management lacks knowledge as well as understanding of the design and the construction process, which results in more expensive projects due to their lack of knowledge and expertise. In Pakistan the public sector organizations dealing with the construction sectors like Irrigation & Power Department, Construction & Works and the National Highway Authority (NHA) are all chaired by bureaucrats who seldom have engineering background which is one of the reasons for poor management and the widening gap between the management and the employees which results in poor communication.

3.4 SUMMARY

This chapter explains some of the most important challenges faced by the construction industry of Pakistan. It starts by explaining the poor health and safety in Pakistan's construction industry and the causes due to which this important factor gets ignored in our country. The chapter also highlights the lack of adequate laws regarding health and safety and gives some common examples of unsafe working environment at the construction sites in Pakistan.

The chapter then explains the reasons which results in the poor quality of projects in Pakistan. It also considers the menace of corruption which is widespread in almost all the sectors of Pakistan. It also gives the ranking of Pakistan according to Transparency International and some of the problems caused due to corruption.

This chapter then considers the use of outdated technology, which is being used by most of the companies of Pakistan and the problems in transferring the new technology used

by the firms of the developing world. The global problem of globalization and some of the prospects and worries faced by the world are then described. The impacts caused by globalization on the construction firms of the developing world are also discussed.

The chapter also identifies the fact that Pakistan still follows the outdated methods of procurement. It also points towards the shortage of skilled workforce in the country by giving some of the main reasons, which causes these shortages. The managers' inability to handle the projects effectively is also explained.

RESEARCH METHODOLOGY

4.1 GENERAL

Research methodology is a systematic way to resolve a search issue. Research has many components like exploratory research that picks new problems, constructive research which gives answers to various issues. Purpose of study and the properties of subject dictates regarding the quality activeness of the requirement of survey or considering it to be quantitative altogether.

This chapter describes the necessary steps required to carry out the research and to meet its key objectives. The chapter discusses about the research strategy, research design, the research population and sample, research instrument design and its contents and the method of analysis used for this research.

4.2 RESEARCH STRATEGY

Research plan clarifies the probability of reaching a possible answer (Saunders and Lewis, 2003). Objective of study is the prime factor of consideration. The methodology of research should enable responding to the requirement asked in the outset. Each methodology has some positivity. Table 4.1 explains the relationship between research techniques and qualities pertaining to research. Construction management has three difference ways. These are qualitative, quantitative and combination of both, reorganized as “mixed mode approach”. Statistical evaluations linked with collection of date using of deductive methods is mainly used in quantitative methods. Qualitative procedures rely more on indicative aspect and extract their conclusions from interviews (Amjad, 2004-2005). From 1983-1996, 57 percent people used quantitative methods and only 8 percent used qualitative methods whereas 13% researches used mixed methodology in Construction Engineering and Management (CEM) research papers (Loosemore *et al.*, 1996). Root *et al.* (1997) is firm on the view that final objective of the research dictates the methodology to be used.

Table 4.1: Comparison of various research strategies (Nawi, 2012)

Research Strategies	Advantages	Disadvantages	Form of research question	Requires control of behavioral events?	Focuses on contemporary events?
Experiment	Clear probability and answer; controlled connection, replicable and generable; spare time and assets; causal relationship	Obliges particular information; fake; moral issue because of variable control; quantitative does not by any stretch of the imagination clarify	How Why	Yes	Yes

Survey	Generally utilized; subjective and quantitative; order; reasonableness of extensive information; high consistency	Danger of losing discoveries; hard to get honest information; may subject to inclination; less detail and profundity; may not be relevant to marvel studies	Who What Where How How many How much	No	Yes
Case study	In-depth, capture complexities, relationship; multiple data sources and methods; flexible time and space; less artificial	Problem of generalization; focus on natural situation; unpredictable; unacceptable for some course	How Why	No	Yes
Action research	Collaborative; the researchers and context integrity; for practitioner-researchers; professional and personal development; practical	Difficult for new researcher; exclusive; work setting influence; unacceptable for some course	How	Yes	Yes
Grounded theory	Generating theory from a research; flexible structure; detailed set of rules and procedures	Excessively particular; overlook the past information, making it impossible to the investigation; many variants of the strategy	How (Focus on process)	No	Yes
Ethnography	Feasible within the constraint of time and researchers; direct observation; no specific data collection methods; rich data; deal with culture, inclusive.	Difficult for new researcher; high skill needed; descriptive to explanative; ethical issues; limited accessibility; problem of generalization	Why (To understand context and perception)	No	No
Archival research (documentary study)	Independent researcher; researcher has no influence on the quality of documents; can be reviewed repeatedly.	The documents might be produced for specific reason; lead to bias; irretrievability.	Who What Where How many How much	No	Yes/No
History	Applicable deal with 'dead' sources of evidence; can be reviewed repeatedly	The data is limited in term of in-depth descriptions (no specific reason produced)	How Why	No	No
Sources: Sarantakos (2005), Robson (2007), Yin (2009), Saunders et al (2009), Grix (2010) and Setiawan (2011)					

4.3 RESEARCH DESIGN

It relates to the method of unfolding scientific research by initiating a plan for obtaining the data & its analysis (Poilt and Hungler, 1985).

Survey is characterized as "information gathered from number of cases/activities through efficient estimation and afterward investigated to yield the outcomes" (Marsh, 1982). Trochim (1997) and Bryman (2012) cases that in connected social work, intuitive studies and questionnaires are most used techniques. Bryman (2012) argues surveys that survey data is mostly quantitative and quite useful for correlating variables. Trochim (1997) propounded that many topic & can be addressed when survey strategy is adopted in research for example: a) population, b) sampling and c) topics of questions. The survey design selected for this research is shown in the Figure 4.1 (adopted from Shuwei, 2009).

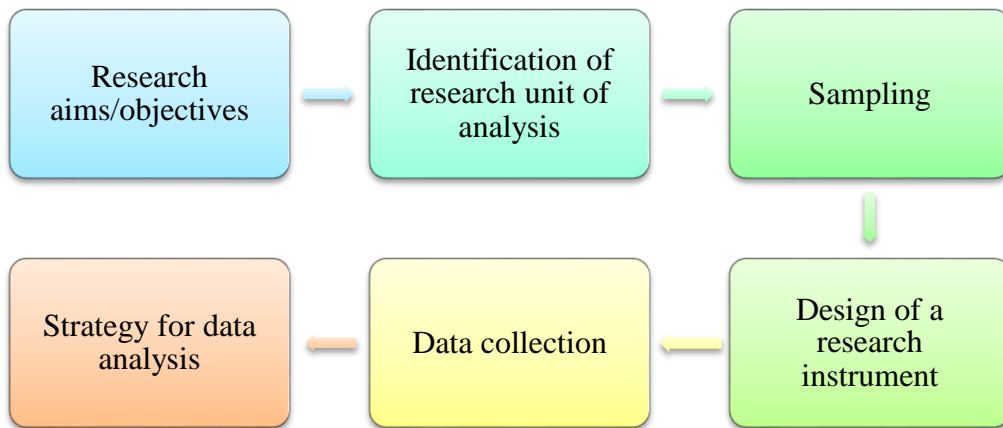


Figure 4.1: Research design

Therefore, based on the above, data was obtained by mixed approach and questionnaires were distributed for survey. The research has been carried out on the steps shown in the Figure 4.2.



Figure 4.2: Research Methodology Flow Chart

4.4 RESEARCH TECHNIQUE

Design of techniques of survey have been applied as mixed mythology has been used for primary as well as secondly data extracted from different literatures. This section elaborates the research methodology used in this research, interviews, literature review used questionnaires.

4.4.1 Literature Review

It is the written record of a complete audit of not published as well as published work from areas of particular choice of the researched from secondary data back (Sekaran, 2003). Re-initiating already addressed topics is also checked and it becomes mandatory for the researched to keep his knowledge fresh (Kulatunga, 2008). The idea of partnering in Pakistan's construction industry along with its related challenges and their factors has been disused in literature review. Depending upon the literature review and well-orchestrated interview a research mechanism has been formulated and validated through pilot study.

4.4.2 Pilot Survey

Pilot survey was carried out from 10 respondents who are quite educative and experienced in the construction industry. The point of the pilot review was to check the validness and pertinence of the survey so that it fits into the Pakistani environment and easily understandable. The respondents were selected from the contractor, consultant, clients and academia. Almost all the experts agreed on the questionnaire but the length of the questionnaire was objected by only one expert. As a result, few questions were shortened in statements only to decrease the length and final questionnaire was circulated in the Pakistan construction industry for getting the responses.

4.4.3 Unstructured Interviews

Both qualitative and quantitative mix design has been employed for collection of data phase. Interviews were thought to be important to know few issues of this field. Bryman and Bell (2007) grouped qualitative interviews in 2 groups; *unstructured* and *semi structured* interviews. Unstructured meetings warrants the interviewee to react openly, with the questioner asking a solitary question and reacting just to indicates esteemed commendable be caught up. As per Saunders et al (2009), unstructured meetings have additionally been named witness meeting because of the way that it is the interviewee's observation which controls the behavior of the meeting.

The organizations were subject of focus. Literature review was the main source of interview questions. At random selection of 6 respondents was made for interviews as it proved to be consequential in assimilating the problem and dynamics of construction industry.

Yin (2011) noted three main characteristics of interviews:

1. Participant versus research workers relation is not well checked out;

2. Adoption of a systematic behavior is missing in every interview conducted by researcher;
3. Open end questions are more important than close ended questions

In this research, interview are taken to be secondary in techniques qualitative data collection. Face to face interview were conducted to allow close up interaction between the researcher and member amid information gathering procedure.

4.4.4 Research Instrument Design

In order to fully know the partnering capabilities in Pakistan a research technique was developed to assess views of contractors, owners and consultants. Well conversant practicing construction persons were subjected to structure interviewed after having finalized the literature review. A total of seventeen (17) factors were analyzed in survey to learn the perception of construction professionals. Whereas for challenges in partnering, total of twenty two (22) factors were evaluated. The factors finalized for survey are appendix at the end of the thesis. In order to ensure that sample was stratified in a proportion less manner so that contractors, consultants and clients have justified representation.

4.4.4.1 Research instrument Content

The three (03) parts of questionnaire were concerned with factors. Initially part was arranged at authoritative and individual positioning, the second part was gone for those components which ascertain the perception of individual involved in construction projects, and similarly the third part was meant for challenges faced by the professionals in implementing the concept of partnering in industry.

4.4.5 Data Measurement

The rating of factors obtained from participants was utilized to get the ranking of the factors vis-a-vis construction industry's environment respondents rated the challenges working to Likert scale which has a range from 0 to 4, where 0 = strongly disagree, 1 = disagree, 2 = not sure, 3 = agree and 4 = strongly agree.

4.4.6 Data Collection

Stakeholders were distributed the questionnaires for obtaining wanted response for reaching the objective of research. Personally explaining the questionnaire with aimed to remove any doubt faced by respondents during its filling.

4.4.6.1 Identification of Research Unit of Analysis

The acknowledgment of unit of examination is the essence of planning the survey prepare and related with the date to be acquired (Shuwei, 2009). De Vaus (2002) has expounded the noteworthiness of unit of analysis and partners it specifically with point of research. In this research, each respondent has been taken as one case and opinion of each key stake holder i.e. consultant, contractor and operator is included in the study.

4.4.6.2 Sampling

Fellows and Liu (2009) set the capacity of exemplum as "gathering of information and do of the exploration parts gave that the example chose is a decent representation of the study populace". Trochim (1997) contended that the procedure of examining achieves the inspecting casing even without rundown. Study populace and examining edge have been elucidated by Saunders and Lewis (2003) as "populace is a full arrangement of cases from which an example is drawn and inspecting casing alludes to a complete rundown of the considerable number of cases in the populace". Test is taken out from the study populace on the premise of inspecting homestead (Shuwei, 2009). If list is not available, the researcher can develop and complete the sampling frame (De Vaus, 2002). On the basis of the sampling frame, sample is selected from the study population (Shuwei, 2009). Extensively used sampling techniques are of two types: non-probability and probability sampling. If the sample truly representing a population then it is called probability sampling. Then again, De Vaus (2002) cases that if an inspecting edge is truant or the populace study is widely scattered, then non- probability examining is suggested for better result, testing should be a genuine refraction of populace.

Sample picked for this research is a population of civil engineers serving in Pakistan in various construction firms. The anticipated population of registered civil engineers in Pakistan is 32184 according to PEC magazine 2013. It is thought that 15000 are in the registration process or altogether unregistered the population size is rounded off as 50000. It is quite a big population and the standard sample will show different construction engineers or quite proficient including contractors, client and consultants having various background and category.

Civil engineers all over the country have been selected to make it a random sample 332 individuals who were randomly picked up were given the questionnaire and they were working in various firms.

4.4.6.3 Sample Size

In order to find out the correctness of a sample, following factors were considered:

- a. Sampling error
- b. Population size
- c. Confidence level

Equation (4-1) shows a formula used to find out sample sizes (Dillman, 2000):

$$N_s = \frac{Np(p)(1 - p)}{(Np - 1)(\frac{B}{C})^2 + (p)(1 - p)} \quad \text{Equation (4.1)}$$

where;

N_s : sample size for the desired level of precision

Np : population size i.e. 50000

p : Population proportion likely to select one of the two answers (yes/no); $p = 0.65$

B : acceptable sampling error; ($\pm 10\%$ or ± 0.10)

C : Z Statistics linked with confidence could (1.96 corresponds to 95% confidence level)

There were 98 valid replies out of 232 showing an overall response rate was overall found to be 42.25% whereas 30 % is a good rate for any response (Black *et al.*, 2000). Hence it is an acceptable response.

Size of the sample was 98 for this survey but equation 4-1 is resorted to for assessing about the status of this sample size as to whether it actually response represents the population. 65 % (P) of the sample population is anticipated to deliver lower values in their answers as this is a newly inducted technique and most of the firms companies / organization or not following it. 10% is permissible sampling errors with 95% as Confidence Interval with an error of $\pm 10\%$ in the sample, the sample size obtained is 87 by using eq (4-1) sampling error was found to be + 9.70% being less then + 10% using the SPAW-18 for analysis. Hence all the samples are 87 are correct provided the range of sample error is $\pm 10\%$ so the sample having 98 respondents is acceptable for future analytical studies.

4.4.7 Data Analysis

Pertains to analysis of collected data filled in questionnaire (SPSS/PASW-18) and MS Excel are used to analyze the data. Cronbach's Coefficient Alpha method and Split-Half Method are used to calculate the internal consistency (reliability) of the questionnaire. In order to establish whether the data is non parametric or parametric Shaprio-Wilk normality test is carried out i.e. is it normally distributed or otherwise. The Relative Importance Index (RII)

method is utilized to ascertain the ranking of all factors. Moreover, main reasons are grouped together using the factor analysis.

On receipt of the filled research instrument, MS excel and PASW 18 helped analyze the compiled data. Level of significance taken is $\alpha = 0.05$. The various techniques adopted are as under:-

4.4.7.1 Reliability of the Sample

4.4.7.1.1 Cronbach's Coefficient Alpha Method

Cronbach's Coefficient Alpha method is quite practiced for internal consistency when Likert scale is adopted for questionnaire, reliability is best checked with this method.

4.4.7.1.2 Split-Half Method

Data reliability is also ascertained by dividing it into 2 parts of equal size.

4.4.7.2 Test for Normality

Normality of data is to be checked initially for onward different statistical test. It is done to know whether the data is normally or abnormally distributed. Shipro-Wilk test is most appropriate test to find the normality of data sets of around 2000 elements or less. On the other hand K-S Lilliefors test is adopted for data comprising more than 2000 values since sample is of limited size hence Shapiro -Wilk test is stated to ascertain normality.

4.4.7.3 Relative Importance Index (RII)

The Relative Importance Index (RII) has been utilized as a part of different studies to discover the noteworthiness of any trait under thought. Holt (1997) discovered RII is the most widely recognized technique utilized as a part of construction to discover the need positioning of characteristics, and it is chiefly helpful where an organized research instrument is planned to request estimations that are subjective in nature. So also Chan & Kumaraswamy (2002) utilized RII to break down and rank the information. Along these lines this strategy was embraced for the investigation of the information gathered from the present questionnaire survey.

To focus the positions of the difficulties confronted by the CI, RII was utilized to change five-point Likert scale into relative importance indices for every component. The relative importance index (RII) was assessed utilizing the accompanying expression by Sambasivan and Soon (2007) as given in the following equation:

$$\text{Relative Importance Index (RII)} = \sum w(AxN) \quad \text{Equation (4.2)}$$

Where:-

w: Weighting given to each factor by the respondents (Ranges from 0 to 4),
Where '0' is 'strongly disagree' and '4' is 'strongly agree'

A: Highest weight (i.e. 4 in this case)

N: Total number of respondents (i.e. in this case 98)

4.4.8 Conclusions and Recommendation

The discoveries of the study have been closed and proposals to defeat the challenges in implementing the concept of partnering in construction industry of Pakistan have been furnished.

DATA ANALYSIS AND RESULTS

5.1 INTRODUCTION

This part exhibits the investigation of the information gathered through the questionnaire based survey completed with a specific end goal to gather reaction from the contractors, consultants, and clients. In addition, this section will likewise concentrate on the respondent's attributes, examination of challenges in implementing the partnering in construction industry of Pakistan.

5.2 PRESENTATION OF RESULTS

The results are presented below:-

5.2.1 Respondents' Attributes

To determine the respondent's attributes, 11 questions were drafted in the research instrument. These questions were related to:

- a. Name
- b. Professional education
- c. Type of Organization
- d. Organization sector
- e. Position in company
- f. Experience in construction industry
- g. Type of construction in which involved
- h. Worth of projects
- i. No of projects undertaken
- j. No of employee in organization

5.2.1.1 Qualification of Respondents

The subtle element synopsis of the capability benchmarks of the respondents is likewise demonstrated in Figure 5.1, which shows that the vast majority of the respondents have training standard as graduation or more in this way further expanding the dependability of the outcomes.

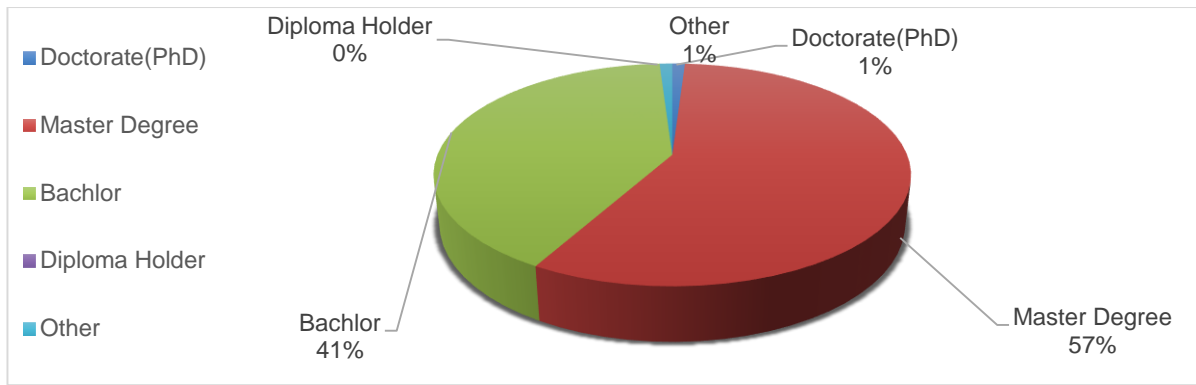


Figure 5.1: Qualification of Respondents

5.2.1.2 Type of Organization

Respondents belongs to the professions is shown in the Figure 5.2

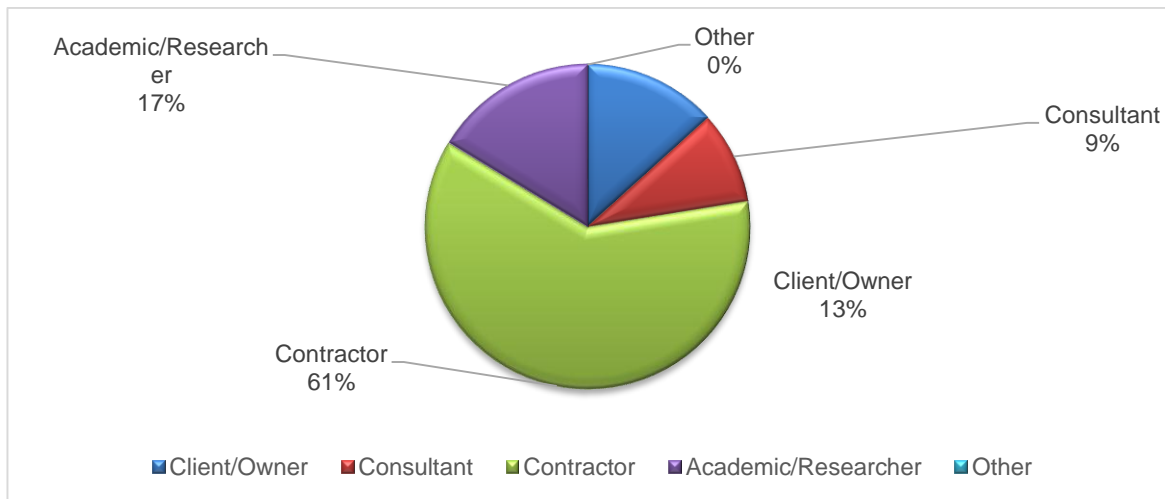


Figure 5.2: Profession of the respondents

5.2.1.3 Organization sector

Type of respondent targeted during the questionnaire survey were Clients, Consultants, contractors and Academic/Researcher. Response from the Contractors and researchers was quite encouraging. The summary of the valid responses is shown in Figure 5.3.

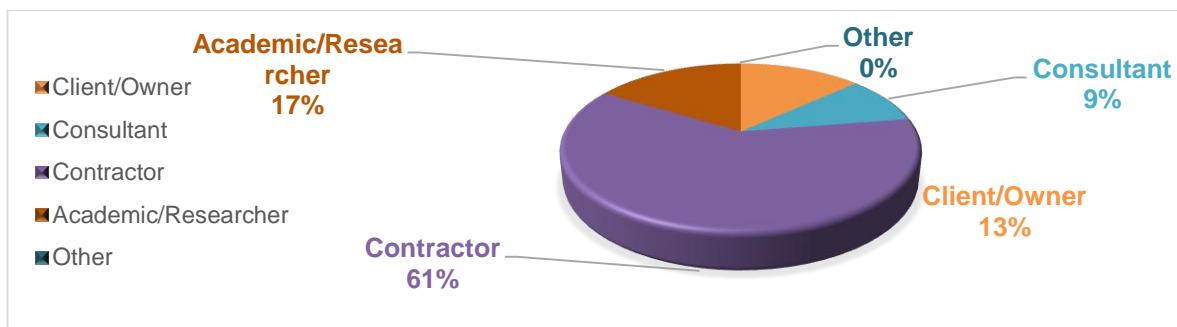


Figure 5.3: Respondents grouping

5.2.1.4 Position in Company

The summary of the respondents with respect to their positions in their company/organization is shown in the Figure 5.4.

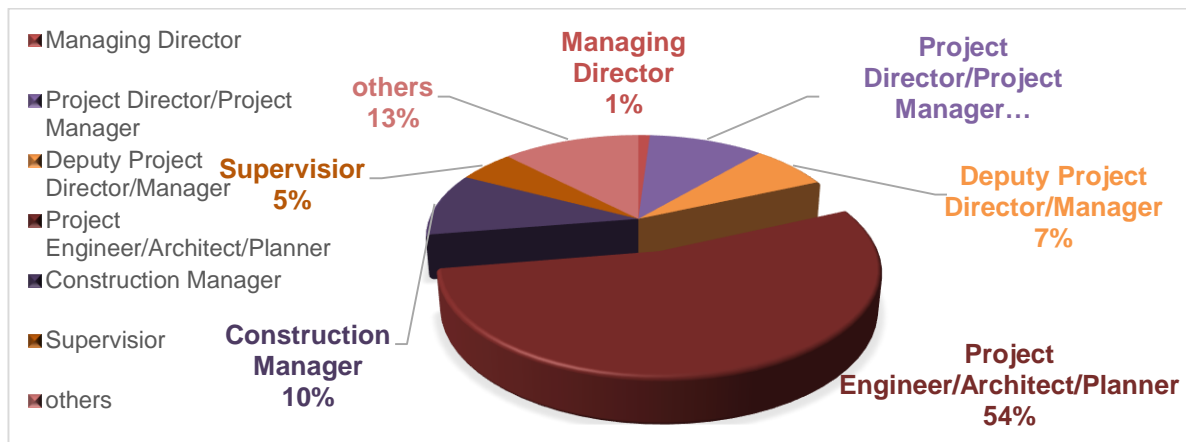


Figure 5.4: Position of the Respondents

5.2.1.5 Working Experience

Respondents were solicited to give general work experience from their construction profession. The synopsis of the classification savvy work experience is spoken to in Figure 5.5.

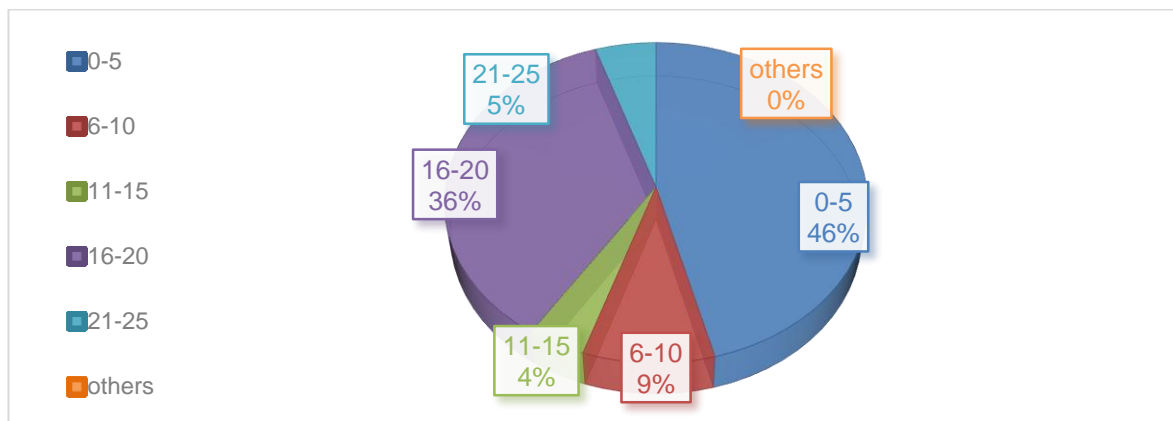


Figure 5.5: Working Experience of Respondents

5.2.1.6 Number of Projects Undertaken

Along with experience the respondents were also required to render information about the count of projects they have under taken. This was asked to know the working experience and professional proficiency of the individuals. The summary of the projects undertaken by the respondents is illustrated in the Figure 5.6.

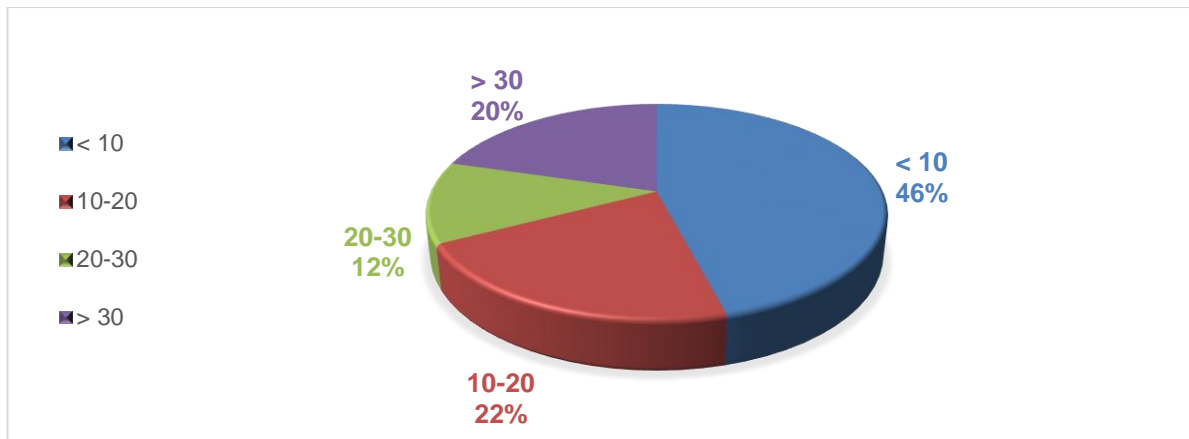


Figure 5.6: No of projects undertaken by respondents

5.3 STATISTICAL ANALYSIS

5.3.1 Reliability of the Sample

Reliability of the data was ascertained by Bland and Altman (1997) as showed in the resulting sections.

5.3.2 Cronbach's Coefficient Alpha Method

Cronbach's Coefficient Alpha procedure is the most understood measure of inside consistency (reliability). It is typically used to check the enduring nature of scale when request are asked on Likert scale. If Cronbach's Coefficient Alpha quality is higher than 0.7, this implies that the information is satisfactory for investigation (Li, 2007). The reliability test was performed on answers specifically designed for measuring the perception of the construction professionals about the partnering concept and secondly major challenges in implementing the partnering in construction industry of Pakistan. For the collected data, its value was calculated as 0.878 (Table 5.1). Its more prominent value shows that the data was uniform and reliable for advance analysis.

Case Processing Summary				Cronbach's Alpha	.878
		N	%		
Cases	Valid	98	100.0		
	Excluded ^a	0	.0		
	Total	98	100.0		
a. List wise deletion based on all variables in the procedure.					

5.3.3 Split-Half Method

The Split – Half Method was in like manner used to further extend the reliability of the data. In this method the data is part in two half and after that Cronbach's Alpha is figured

for every segment, the data is recognized as dependable for further examination if its worth is more conspicuous than 0.7.

Table 5.2: Reliability Statistics - Split Half Method			
Cronbach's Alpha	Part 1	Value	0.843
		No of Items	19 ^a
	Part 2	Value	0.856
		No of Items	20 ^b
	Total No of Items		39
a. First 19 questions, b. Last 20 questions			

5.3.4 Normality Test

To check the normality of the gathered information, 'Shapiro Wilk Normality Test' is directed on the grounds that sample size is under 2000. It is performed to know whether the information is normally distributed or not (Shapiro and Francia, 1972), i.e. is the information parametric or non-parametric in nature.

Significance values found were somewhere around 0.000 and 0.002 which are under 0.05 (Significance value ought to be bigger than 0.05 for the information to be adequately normal). In this manner, data was not normally distributed. Table 5.3 & 5.4 shows the data with respect to test of normality by Shapiro Wilk test.

Section II items		Shapiro Wilk Test		
		Statistics	Df	Sig
Q1	Collaborative working	0.558	98	0.001
Q2	Allow information exchange	0.807	98	0.001
Q3	Restrict to fixed type procurements	0.834	98	0.001
Q4	Comply with client procurement choice	0.85	98	0.000
Q5	Financial free commitments	0.755	98	0.001
Q6	Regulation for partnering	0.644	98	0.001
Q7	Support for partnering	0.363	98	0.002
Q8	Similarity in culture and work ethics	0.78	98	0.000
Q9	Familiar and trusted partners only	0.798	98	0.001
Q10	Trust-building efforts in projects	0.856	98	0.002
Q11	Engage in flexible procurements	0.535	98	0.002
Q12	Open communication channels	0.78	98	0.001
Q13	Specific team for communication	0.775	98	0.000
Q14	Partnering related workshop and meetings	0.788	98	0.000
Q15	Ease of commitment to new partners	0.721	98	0.001
Q16	Ease of culture adaptation	0.616	98	0.001
Q17	Extra efforts for synchronization	0.666	98	0.000

Section III items		Shapiro Wilk Test		
		Statistics	Df	Sig
Q1	Misunderstanding of partnering concept	0.612	98	0.002
Q2	Experience with partnering	0.708	98	0.001
Q3	Win-loose environment	0.745	98	0.001
Q4	Unfairness in sharing of risks and rewards	0.856	98	0.002
Q5	Fails to share information	0.678	98	0.001
Q6	Reluctant to change to integrating culture	0.867	98	0.001
Q7	Organizational commitment and goals	0.875	98	0.000
Q8	Levels of commitment	0.642	98	0.000
Q9	Communication among parties	0.888	98	0.001
Q10	Partnering relationship as a competitive advantage	0.757	98	0.002
Q11	Key subcontractors	0.678	98	0.001
Q12	Design consultants and other consultants	0.867	98	0.000
Q13	True relationship of trust	0.875	98	0.001
Q14	Closer relationship	0.642	98	0.000
Q15	Training on partnering	0.373	98	0.001
Q16	Partnering as a short term business	0.219	98	0.002
Q17	Commitment for partnering is too demanding	0.666	98	0.000
Q18	Aligning all organization with every partnering	0.642	98	0.001
Q19	Fair profit motive	0.373	98	0.000
Q20	Strong dependency on other parties	0.219	98	0.000
Q21	Personal goals and the project goals	0.757	98	0.000
Q22	Top management support	0.678	98	0.000

5.4 ANALYSIS OF THE RESULTS

This segment portrays the discoveries from Section II and Section III of the questionnaire survey. Segment II of the questionnaire survey was intended to research the comprehension of general idea of partnering as portrayed in partnering literary works and Section III was created to recognize the difficulties confronted by the CI of Pakistan and to figure out if they would consider it to work in Pakistan. It ought to be highlighted that these topics are parallel to the subjects in the interview study.

5.4.1 Understanding of the Partnering Concept

The point of this subject is to recognize the comprehension of partnering idea among construction experts. They were solicited an arrangement from inquiries identifying with their experience and comprehension of partnering, whether they feel that their association at present

have criteria which empowers partnering. There are 17 inquiries (Q1-Q17) under Section II of the poll. The respondents were asked regardless of whether they have been included in partnering toward the start of this segment (Q1). For inquiries 2 to 17, the respondents were given explanations which portray partnering related exercises and are told to demonstrate on a 5-point Likert scale; whether they concur or not with the announcements which are conclusion based, and in the activity based articulations, whether it is likely or unlikely their firm would respond as depicted. These variables are demonstrated in the accompanying Table 5.5, which involves the assigned inquiries and its comparing elements.

Table 5.5: Detail of the objective of questionnaire items and corresponding factors

Enabling factor of partnering	Items	theme of question	Score	RII	Mean
		Have you ever been involved in partnering?			
Collaboration	Q1	Collaborative working	289	0.737	2.95
Trust	Q2	Allow information exchange	255	0.651	2.60
	Q9	Familiar and trusted partners only	316	0.806	3.22
	Q10	Trust-building efforts in projects	310	0.791	3.16
Procurement	Q11	Engage in flexible procurements	279	0.712	2.85
	Q3	Restrict to fixed type procurements	281	0.717	2.87
	Q4	Comply with client procurement choice	253	0.645	2.58
Communication	Q12	Open communication channels	249	0.635	2.54
	Q13	Specific team for communication	280	0.714	2.86
Tools	Q14	Partnering related workshop and meetings	189	0.482	1.93
Commitments	Q5	Financial free commitments	167	0.426	1.70
	Q15	Ease of commitment to new partners	177	0.452	1.81
Policy	Q6	Regulation for partnering	188	0.480	1.92
	Q7	Support for partnering	207	0.528	2.11
Culture	Q8	Similarity in culture and work ethics	285	0.727	2.91
	Q16	Ease of culture adaptation	147	0.375	1.50
	Q17	Extra efforts for synchronization	279	0.712	2.85

Table 5.5 above displays the 17 questions (Q1-Q17) that comprises of arguments showing partnering actions which are established on the 8 partnering elements as established in partnering literatures.

5.4.1.1 Frequency Distribution of Responses

For inquiries 1 to 17, the respondents were given proclamations which depict partnering related exercises and were told to demonstrate on a 5-point Likert scale; whether they concur or not with the announcements which are assessment based, and in the activity based articulations, whether it is likely or unlikely their firm would respond as portrayed in the announcements. The frequency distribution percentage for the reactions is as indicated in the accompanying Table 5.6 and whereas score and RII are shown in Figure 5.7& 5.8

Table 5.6: Percentage of frequency distribution

Item	Theme of the Questions	Percentage %				
		Strongly Disagree / Very unlikely	Disagree / Unlikely	Not Sure	Agree/ Likely	Strongly Agree/ Very Likely
Q1	Collaborative working	7.14	9.18	2.04	44.90	36.73
Q2	Allow information exchange	5.10	16.33	12.24	45.92	21.43
Q9	Familiar and trusted partners only	3.06	4.08	6.12	40.82	45.92
Q10	Trust-building efforts in projects	7.14	4.08	6.12	30.61	52.04
Q11	Engage in flexible procurements	5.10	10.20	9.18	45.92	29.59
Q3	Restrict to fixed type procurements	4.08	11.22	11.22	40.82	32.65
Q4	Comply with client procurement choice	3.06	21.43	21.43	25.51	29.59
Q12	Open communication channels	3.06	11.22	34.69	30.61	20.41
Q13	Specific team for communication	6.12	2.04	18.37	46.94	26.53
Q14	Partnering related workshop and meetings	1.02	13.27	10.20	36.73	37.76
Q5	Financial free commitments	1.02	60.20	9.18	26.53	3.06
Q15	Ease of commitment to new partners	11.22	38.78	14.29	29.59	6.12
Q6	Regulation for partnering	14.29	15.31	5.10	22.45	41.84
Q7	Support for partnering	12.24	28.57	17.35	19.39	23.47
Q8	Similarity in culture and work ethics	4.08	7.14	11.22	48.98	28.57
Q16	Ease of culture adaptation	19.39	37.76	18.37	22.45	2.04
Q17	Extra efforts for synchronization	3.06	6.12	9.18	66.33	15.31

The table above has demonstrated the circulation of reactions as indicated by key enabling variables of partnering as uncovered by the literature survey. A general perception shows that in specific viewpoints, a portion of the key enablers agents are as of now present while some are still not developed.

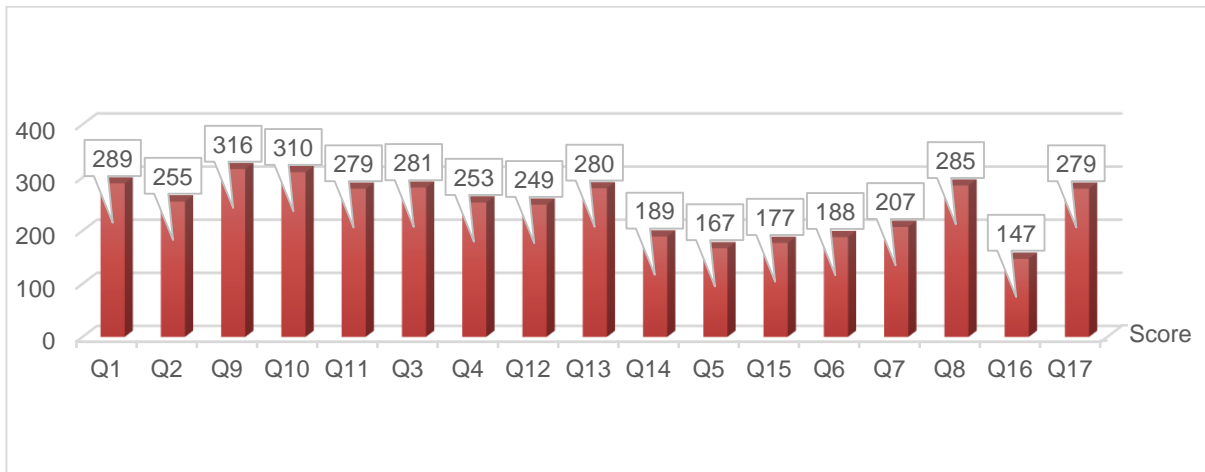


Figure 5.7: Score of the responses in section II of the questionnaire

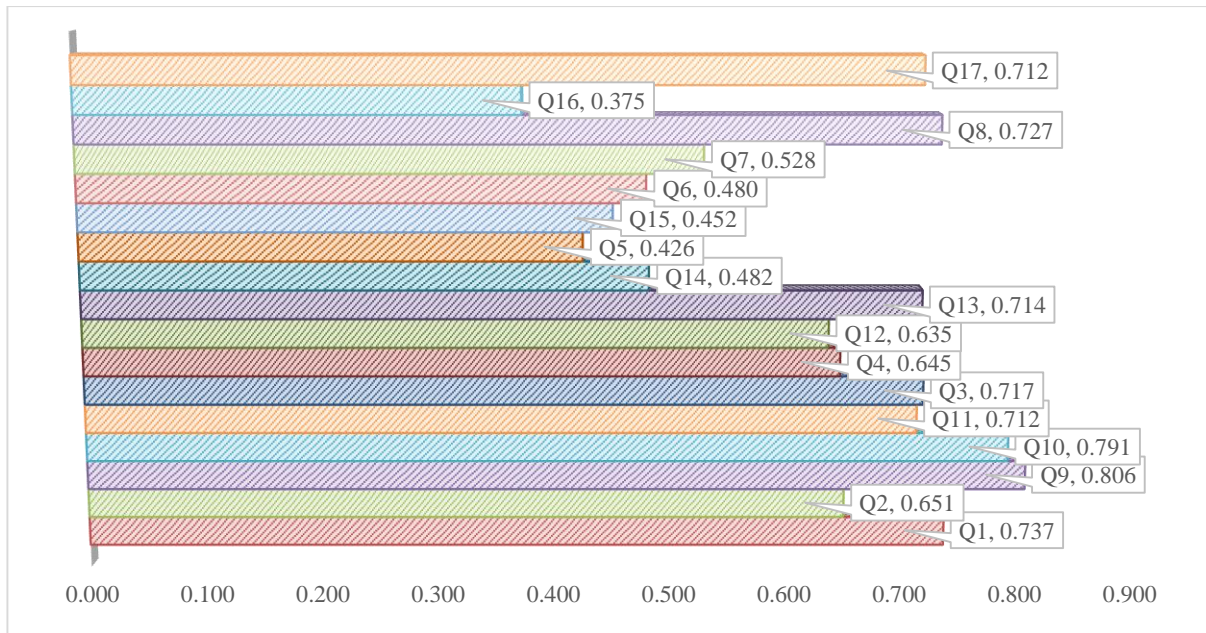


Figure 5.8: RII of the responses in section II of the questionnaire.

5.4.1.2 Discussion

The responders were required to show their agreement regarding the factors of partnering in construction industry, established on their experience in the stream organization.

1. Collaboration

In item 10, respondents either decided to agree (44.90%) or strongly agree (37.73%) with the announcement, which suggest that their association has agreeable connections all through undertakings with different organizations. The accompanying Table 5.7 beneath show the definite recurrence dissemination for things relating to the cooperation.

Table 5.7: Detailed result of item corresponding to Collaboration.

		Strongly Disagree / Very unlikely	Disagree/ Unlikely	Not Sure	Agree/ Likely	Strongly Agree/ Very Likely	Total
Q1	Frequency	7	9	2	44	36	98
	Percentage	7.14	9.18	2.04	44.90	36.73	100

From the outcomes, it is clear that collaborative working among construction have been the standard in CI.

2. Trust

Trust is essential in any partnering relationship. For the variable of trust, 3 things are incorporated in the research instrument; item 2, 9 and 10. The nitty gritty results for these 3 items are as indicated in the accompanying Table 5.8 below.

Table 5.8: Detailed result of item corresponding to Trust.

		Strongly Disagree / Very unlikely	Disagree/ Unlikely	Not Sure	Agree/ Likely	Strongly Agree/ Very Likely	Total
Q2	Frequency	5	16	12	45	20	98
	Percentage	5.10	16.33	12.24	45.92	20.41	100
Q9	Frequency	3	4	6	40	45	98
	Percentage	3.06	4.08	6.12	40.82	45.92	100
Q10	Frequency	7	4	6	30	51	98
	Percentage	7.14	4.08	6.12	30.61	52.04	100

It can be seen from the results that organizations in construction industry places high importance on trust which should enable them to work harmoniously in a partnering relationship. This also reflects that although the respondents feel they would prefer to work with a firm which they are familiar with and trust, they also understand that sometimes they have to work with a new partner, as that is the nature of business in the construction industry.

3. Procurement

The third partnering factor tested in the questionnaire survey is procurement. An important trait of partnering is flexible procurement. The detailed results for these 3 items are as shown in the following Table 5.9 below.

Table 5.9: Detailed result of item corresponding to Procurement.

		Strongly Disagree / Very unlikely	Disagree/ Unlikely	Not Sure	Agree/ Likely	Strongly Agree/ Very Likely	Total
Q11	Frequency	5	10	9	45	29	98
	Percentage	5.10	10.20	9.18	45.92	29.59	100
Q3	Frequency	4	11	11	40	32	98
	Percentage	4.08	11.22	11.22	40.82	32.65	100
Q4	Frequency	3	20	21	25	29	98
	Percentage	3.06	30.41	21.43	25.51	29.29	100

The results mirrored that in spite of the fact that construction industry is grasping the non-routine systems for procurement, there are critical number of firms who are entirely upbeat going ahead with conventional strategies for procurement. However it should be highlighted that only they are reluctant in case of client's choice of procurement and yet not ready for this change.

4. Communication

The fourth partnering calculate tried through the survey was communication. The respondents was given 2 statements identified with communication and their association's involvement in construction ventures in items 12 and 13. The itemized results for these 2 things are as demonstrated in the accompanying Table 5.10 underneath.

Table 5.10: Detailed result of item corresponding to Communication.

		Strongly Disagree / Very unlikely	Disagree/ Unlikely	Not Sure	Agree/ Likely	Strongly Agree/ Very Likely	Total
Q12	Frequency	3	11	34	30	20	98
	Percentage	3.06	11.22	34.69	30.61	20.41	100
Q13	Frequency	6	2	18	46	26	98
	Percentage	6.12	2.04	18.37	46.94	26.53	100

The results have demonstrated that regarding communication, the CI is as of now moving for partnering. The respondents have given the results which propose that where communication is concerned, the construction affiliations have no issue in committing a specific team for communication purposes, and will allow associate firms access to information which is required for the construction ventures.

5. Tools

Tools are a fundamental component of partnering as they give the vital fortification all through the partnering relationship. Regular instruments utilized for partnering procedure incorporate workshops, gatherings, partner feedback supervising system and partnering charter. Some partnering connections may add to their own particular instrument more qualified to screen their partnering activity and hobbies. Item 14 in the research instrument was intended to look for the respondents view. The detailed result for the item is as shown in the following Table 5.11.

Table 5.11: Detailed result of item corresponding to Tools.

		Strongly Disagree / Very unlikely	Disagree/ Unlikely	Not Sure	Agree/ Likely	Strongly Agree/ Very Likely	Total
Q14	Frequency	10	38	12	25	13	98
	Percentage	10.20	38.78	12.24	25.51	13.27	100

The results for items 14 for this research instrument obviously shows that for partnering to be actualized, more endeavors are required in outlining a system to guarantee that the partnering relationship can be checked and enhanced by those affiliated. It will likewise be useful for teaching the industry on instruments, for example, feedback monitoring system and partnering charter to guarantee that organizations have the essential information to continue with partnering when it is executed in full.

6. Commitment

Commitment is one of the pre-basic for successful partnering. Gounaris (2005) portrayed commitment as the yearning for soundness indicated by the capacity to place resources into a relationship. In the survey questionnaire, the respondents are given enunciations as to responsibility in working with diverse firms and their affiliation inclusion with it in thing 5 and 15. The point by point results for these 2 items are as indicated in the accompanying Table 5.12 beneath.

Table 5.12: Detailed result of item corresponding to Commitment.

		Strongly Disagree / Very unlikely	Disagree/ Unlikely	Not Sure	Agree/ Likely	Strongly Agree/ Very Likely	Total
Q5	Frequency	1	59	9	26	3	98
	Percentage	1.02	60.20	9.18	26.53	3.06	100
Q15	Frequency	11	38	14	29	6	98
	Percentage	11.22	38.78	14.29	29.59	6.12	100

This result is like the discoveries the analyst had gotten in the meeting sessions, where members feel that unless there is a monetary profit in the venture, it is impressively hard for associations to focus on each other. Taking into account the outcomes, it is basic that more exertion is required imparting mindfulness among construction associations the significance of commitment in partnering relationships.

7. Policies

The construction industry is typically limited by administrative arrangements and regulations. Administrative strategies and regulations may influence the industry's openness towards partnering. Strategies as a partnering element is tried in the survey questionnaire in items 6 and 7. The point by point results for these 2 items are as demonstrated in the accompanying Table 5.13 below.

Table 5.13: Detailed result of item corresponding to policies.

		Strongly Disagree / Very unlikely	Disagree/ Unlikely	Not Sure	Agree/ Likely	Strongly Agree/ Very Likely	Total
Q6	Frequency	24	25	5	23	21	98
	Percentage	24.49	25.51	5.10	23.47	21.43	100
Q7	Frequency	12	28	17	19	22	98
	Percentage	12.24	28.57	17.35	19.39	22.45	100

Overall the results indicated that there is lack of governmental policies and regulations to encourage the industry towards partnering. The authorities and bodies governing the construction industry should take into consideration of how the policies for construction industry should implemented, for the sake of improving the industry.

8. Culture

The nature of construction industry where different organizations come together in a project has contributed in organizations having to adjust one another's culture when working together. Culture is a vital element of construction partnering as it affects the way partners behave around each other. The detailed results for items pertaining to the Culture factor is as shown in the following Table 5.14 below.

Table 5.14: Detailed result of item corresponding to Culture.

		Strongly Disagree / Very unlikely	Disagree/ Unlikely	Not Sure	Agree/ Likely	Strongly Agree/ Very Likely	Total
Q8	Frequency	5	10	9	45	29	98
	Percentage	5.10	10.20	9.18	45.92	29.59	100
Q16	Frequency	4	11	11	40	32	98
	Percentage	4.08	11.22	11.22	40.82	32.65	100
Q17	Frequency	3	20	21	25	29	98
	Percentage	3.06	30.41	21.43	25.51	29.29	100

The results for these items clearly indicate that in terms of culture, construction industry is moving towards partnering but still need improvement as to adopt the culture of other companies is a difficult task. As authoritative society is one of a kind starting with one association then onto the next, special consideration must be given to figure a system which will help associations in construction industry when adjusting to an alternate hierarchical society in any partnering relationship.

5.4.2 Major Challenges in Implementation of Partnering in Construction Industry of Pakistan

Section III of the research instrument was formulated to distinguishing the major challenges in construction industry which hinder the implementation of partnering. All reported significant difficulties for joining forces achievement were considered to build up a rundown of things for experimental testing. The identified elements were examined and verified through up close and personal meetings with various chose industrial specialists having knowledge in project partnering, including senior administration agents and the site administration staffs of contractor, consultants, client and subcontractor associations in Pakistan. Finally 22 challenges were determined, and were included in the research instrument. The overall summary of the results is tabulated below in the Table 5.15 and graphically represented in Figure 5.9 & 5.10.

Table 5.15: Frequency and Score of the response of research instrument in section III.

Item	theme of questions	SD/ VU	D/U	NS	A/L	SA/ VL	Score	RII	Mean
		Percentage %							
Q1	Misunderstanding of partnering concept	10.2	9.4	3.1	34.7	32.7	255	0.651	2.60
Q2	Experience with partnering	2.0	1.4	14.3	35.7	26.5	258	0.658	2.63
Q3	Win-loose environment	6.1	1.2	19.4	45.9	17.3	252	0.643	2.57
Q4	Unfairness in sharing of risks and rewards	8.2	16.3	14.3	40.8	20.4	244	0.622	2.49
Q5	Fails to share information	2.0	22.4	15.3	38.8	21.4	250	0.638	2.55
Q6	Reluctant to change to integrating culture	1.0	17.3	8.2	53.1	20.4	269	0.686	2.74
Q7	Organizational commitment and goals	5.1	16.3	21.4	42.9	14.3	240	0.612	2.45
Q8	Levels of commitment	3.1	15.3	21.4	45.9	14.3	248	0.633	2.53
Q9	Communication among parties	9.2	15.3	12.2	28.6	34.7	259	0.661	2.64
Q10	Partnering relationship as a competitive advantage	8.2	12.2	16.3	35.7	27.6	257	0.656	2.62
Q11	Key subcontractors	4.1	31.6	11.2	25.5	27.6	236	0.602	2.41
Q12	Design consultants and other consultants	13.3	22.4	17.3	38.8	8.2	202	0.515	2.06
Q13	True relationship of trust	3.1	15.3	9.2	53.1	19.2	265	0.676	2.70
Q14	Closer relationship	8.2	8.2	31.6	40.8	11.2	234	0.597	2.39
Q15	Training on partnering	3.1	20.4	12.2	28.6	35.7	268	0.684	2.73
Q16	Partnering as a short term business	4.1	10.2	16.3	55.1	14.3	260	0.663	2.65
Q17	Commitment for partnering is too demanding	4.1	25.5	17.3	37.8	15.3	230	0.587	2.35
Q18	Aligning all organization with every partnering	4.1	25.5	24.5	33.7	12.2	220	0.561	2.24
Q19	Fair profit motive	4.1	17.3	19.4	51.0	8.2	237	0.605	2.42
Q20	Strong dependency on other parties	5.1	35.7	13.3	25.5	20.4	216	0.551	2.20
Q21	Personal goals and the project goals	0.0	19.4	15.3	62.2	3.1	244	0.622	2.49
Q22	Top management support	7.1	19.4	4.1	38.8	30.6	261	0.666	2.66

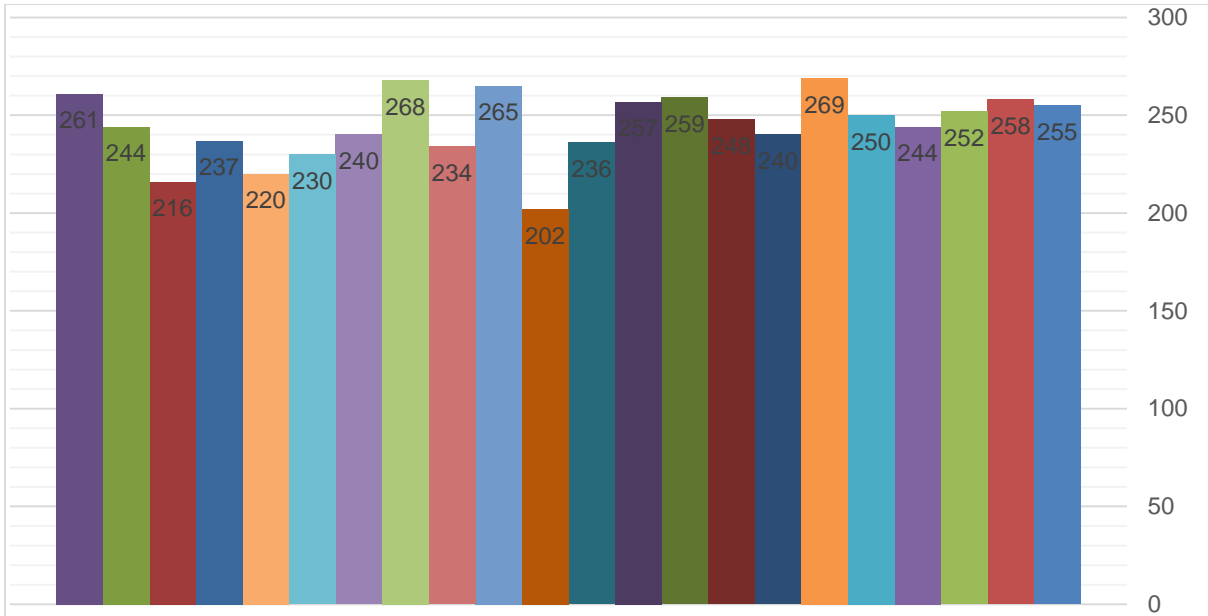


Figure 5.9: Score of the responses in section III of the research instrument.

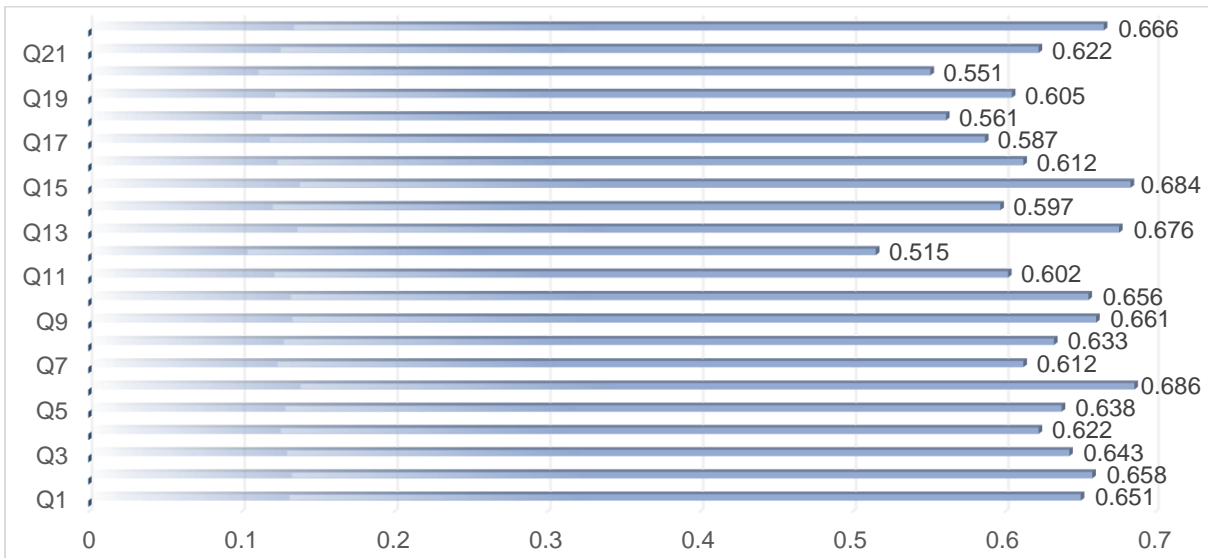


Figure 5.10: RII of the responses in section III of the research instrument.

5.4.2.1 Discussion of Top 5 Ranked Challenges

In the study, the suggested challenges were valued by professionals and construction experts. In order to try out the criticalness of the challenges, their mean scores were calculated and graded. Table 5.16 below contains the details of the challenges that were ranked high in the analysis by the respondents. Total of 5 factors were selected for final discussion according to their rank in the analysis.

Table 5.16: Ranking of the challenges in implementation of partnering.

Items	Theme questions	Score	RII	Mean	Rank
Q6	Reluctant to change to integrating culture	269	0.686	2.7749	1 st

Q15	Training on partnering	268	0.684	2.73469	2 nd
Q13	True relationship of trust	265	0.676	2.65306	3 rd
Q22	Top management support	261	0.666	2.66327	4 th
Q9	Communication among parties	259	0.661	2.64286	5 th
Q2	Experience with partnering	258	0.658	2.63265	6 th
Q10	Partnering relationship as a competitive advantage	257	0.656	2.62245	7 th
Q1	Misunderstanding of partnering concept	255	0.651	2.60204	8 th
Q3	Win-loose environment	252	0.643	2.57143	9 th
Q5	Fails to share information	250	0.638	2.55102	10 th

For every one of the members of a task, Partnering is a high-utilized exertion. It may require expanded staff and administration time in advance, yet the advantages gather in a more congruous, less reckless procedure and at finish an effective project without claims and litigation. The Partnering procedure approve the task work force of all members with the opportunity and power to acknowledge obligation, to carry out their employments by empowering decision making and critical thinking at the most minimal conceivable level of power.

- **Reluctant to change to integrating culture**

Partnering is socially restricted to the conventional usage of construction ventures. Built up culture is difficult to change (Hellard 1996; Lazar 1997). Numerous associations are hesitant to change into the integrating culture. All the time bureaucratic associations obstruct the viability of cooperating (Larson and Drexler 1997). At the point when gatherings are confronted with commercial pressure, they will trade off the partnering mentality.

Q6	Frequency	1		17	8	52	20
	Percentage %	1.02		17.35	8.16	53.06	20.41

The ‘Organizations are reluctant to change to an integrating culture’ is the top challenge with relative importance index (RII) of .686. Results clearly shows that bulk of the responders believe, until the organization are ready to accept the change in integral culture they cannot adopt the partnering in their organization.

- **Training on partnering**

The industry should be instructed on the standards of partnering, and building up a path in which partnering related problems can be handled when it is implemented in the industry.

Q15	Frequency	3		20	12	28	35
	Percentage %	3.06		20.41	12.24	28.57	35.71

The respondents have placed the “lack of proper training on partnering approach” on second place with RII of 0.684, 28% agreed and 35% strongly agreed that there is a dire need in industry to be trained properly with regards to Partnering.

- **True relationship of trust**

Trust building is an essential activity of partnering (Cheung et al., 2003); an absence of trust was appraised the second most astounding disappointment component, as connections fall flat without trust (Akintoye & Main, 2007)

Q13	Frequency	3		15	9	52	19
	Percentage %	3.1		15.3	9.2	53.1	19.4

Third factor in the list is Trust, which is the corner stone in partnering relationship and lack of trust in participants hinder the flourish of partnering.

- **Top management support**

Lack of top management backing is a hindrance to starting partnering. Regardless of the fact that top administration forcefully seeks after the partnering relationship, cooperating does not filter down to staff at the project level effortless.

Q22	Frequency	7		19	4	38	30
	Percentage %	7.14		19.39	4.08	38.78	30.61

Fourth challenge with RII of 0.666 is ‘Top management do not support the partnering concept’. Respondent with 38% agreeing and 30% strongly agreeing that for partnering to flourish in industry top management has to play their role.

- **Communication among parties**

Communication is the sharing of intending to achieve a common comprehension and to pick up a reaction, which includes collaborations between the sender and collector of messages. Open communication between accomplices is one of the establishments of fruitful partnering, alongside common risk taking and benefit sharing (Glagola and Sheedy, 2002).

Q9	Frequency	9		15	12	28	34
	Percentage %	9.18		15.31	12.24	28.57	34.69

The fifth ranked challenge is ‘Lack of open and honest communication among parties’ with RII of 0.661. This factor has direct bearing on the overall progress of the project.

5.5 SUMMARY

In this chapter the information got through questionnaire survey was investigated utilizing excel and PASW-18. At first the reliability and normality of the information was set up through Cronbach Alpha and Shapiro-Wilk test individually took after by computation of relative importance index (RII) and grouping of variables with factors examination. At long last the challenges highlighted by stakeholders were discussed in detail and ranking of identified challenges were established.

CONCLUSIONS AND RECOMMENDATIONS

6.1 GENERAL

This section covers the conclusions and suggestions that would help with conquering the difficulties confronted by the industry in implementing partnering in construction industry of Pakistan. The conclusions were drawn on the premise of the outcomes acquired through examination. At long last proposals are offered for further study on the subject.

6.2 REVIEW OF RESEARCH OBJECTIVES

The primary objective of the report were;

- To study the level of understanding about partnering concept of the stakeholders of construction industry of Pakistan.
- To find out major challenges in implementation of partnering in CI of Pakistan.

The higher up objectives of the work were accomplished by distinguishing 17 attributes related to the industry player's understanding about the overall concept of partnering, and 22 attributes for challenges in implementation of partnering in construction industry of Pakistan. The study finished up to the best conceivable results with respect to the set targets. The got results, conclusion and suggestions may be imparted to PEC for further assessment, thought and spread to the construction experts working in the CI of Pakistan.

6.3 CONCLUSIONS

6.3.1 Succeeding are couple of conclusions drawn with respect to the data accumulated from the survey:-

- The information was bolstered in PASW-18 for reliability and validity check out. The consequences of reliability and validity examination by Cronbach's Alpha and Cronbach's Alpha split half technique (PASW-18) demonstrated that information got through study was reliable and valid.
- To check the normality of data i.e. whether the information was regularly disseminated or generally, normality investigation was done in PASW-18, applying Shapiro-wilk test and the outcomes demonstrated that the information was definitely not normally distributed.

- Mean Scores for every one of the traits under study/talk were additionally ascertained through descriptive statistical examination in PASW-18 for surveying the positioning in this way.
- To evaluate the information for rating of attributes, Relative Importance Index (RII) was computed and ranks were allotted.

6.3.2 Following are the conclusions drawn towards the objectives of the study:-

a. Key Findings From Literature Review

1. According to the literature review, some enabling factors are commonly comprehensive and influenced by the vicinity of another, while some are elite and free.
 2. With the aid of enabling factors, the likelihood of picking up the advantages from fruitful partnering is higher.
 3. The literature review has described various roadblocks to partnering
 - Deficiency of trust amongst firms in the construction industry
 - Lack of usual goals amongst firms
 - Underbidding of agreement (which may bring about a few accomplices to feel that their needs are relinquished)
 - Personal matters of teams included (self-image or identity apathy, absence of working duty and inability to perform)
 4. Once partnering is fully implemented the blame culture, which is currently prevailing the construction industry, will disappear due to the improved communication systems between parties.
 5. Partnering is the smooth way of attaining the project objectives, as this approach was adopted to remove the ever existing adversarial culture of the construction industry around the globe.
 6. Partnering can only be achieved after fulfilling the requirements of partnering like culture, commitment, understanding, communication and teamwork.
 7. Changing existing culture of organizations is not an easy task. Cultural changes involve changes in values, beliefs, relationship, behaviors, perception and attitudes of people, which in itself is a big challenge.
- b. Level of Understanding of Stakeholders.** Level of understanding of stakeholders regarding concept of partnering was checked by asking them questions regarding

enabling factors of partnering concept. Important conclusions regarding level of understanding of stakeholders about enabling factors of partnering concept are discussed as under:-

1. **Collaborative** working amongst construction have been the standard in construction industry.
2. Organizations in construction industry positions eminent grandness on **trust** which ought to empower them to work agreeably in a partnering relationship
3. Construction firms are unwilling just in case of client's selection of **procurement** and yet not prepare for this alter.
4. Construction associations have no issue in committing a particular group for **communication** purposes, and will permit accomplice firms access to data which is needed for the construction projects.
5. More endeavors are required in planning a **framework** to guarantee that the partnering relationship can be observed and made strides.
6. Efforts are needed for ingraining mindfulness among construction associations the significance of **commitment** in partnering relationships.
7. There is deficiency of political **policies** and ordinances to promote the industry for partnering.
8. Construction industry is moving towards partnering but still need improvement as to adopt the **culture** of other companies is a difficult task.

c. **Challenges Faced By Construction Industry.**

Out of 22 attributes highlighted in the research instrument regarding the challenges faced by the stakeholders , the first ten attributes of challenges faced, as the result of survey data analysis are as under :-

1. Reluctant to change to integrating culture.
2. Training on partnering.
3. Top management support.
4. Partnering as a short term business.
5. Communication among parties.
6. Experience with partnering.
7. Partnering relationship as a competitive advantage.
8. Misunderstanding of partnering concept.
9. Win-loose environment.
10. Fails to share information.

- d. During the study, while cooperating with construction expert of target construction firms and organizations, it was likewise found that on numerous projects, there is no autonomous and devoted staff, rather site architect or supervisory staff has been given the extra obligations of administration.

6.4 RECOMMENDATIONS

a. Technical and Behavioral Training

- More emphasis should be laid on the behavioral development to ensure commitment for the partnering implementation
- Another important way of inducting behavioral commitment toward partnering is by defining some methods of measuring the performance.

- b. Team having the expertise in partnering in construction can be hired to impart training as well supervise the efforts on the project as well as in offices.

c. Tools

- Workshops/Seminars, advertisements, special lectures at institutional level training sessions, etc. showing the profits and gains of partnering in construction which has been implementing this philosophy be held at regular intervals.

d. Commitment

Top management should be encouraged through seminars/workshops and special motivational lectures with the support of Pakistan Engineering Council.

e. Research

The Institutions should increase the amount of research in this field. With the research, the person doing the research visits and meet officials and management staff and discusses their research.

f. Government Support

- The Ministry of Works and Planning Commission can impose partnering on few projects to check its adequacy in Pakistan.
- An institution can be given the task of providing supervisory consultancy at the initial stages.
- A pilot project must be undertaken by employing the partnering tools and techniques to see the efficacy of this philosophy in the Pakistan.

g. Recommendation for futurity exploration

The study was fundamentally completed to evaluate the present mindfulness and use level of partnering by the construction experts and difficulties in implementation of partnering as a construction strategy. In future, the analysts may perform taking after:-

- A survey may be executed to discover the possible fields for implementation of partnering in CI of Pakistan.
- Analysis may be carried through to suggest an implementation Model of partnering suited for CI of Pakistan.

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