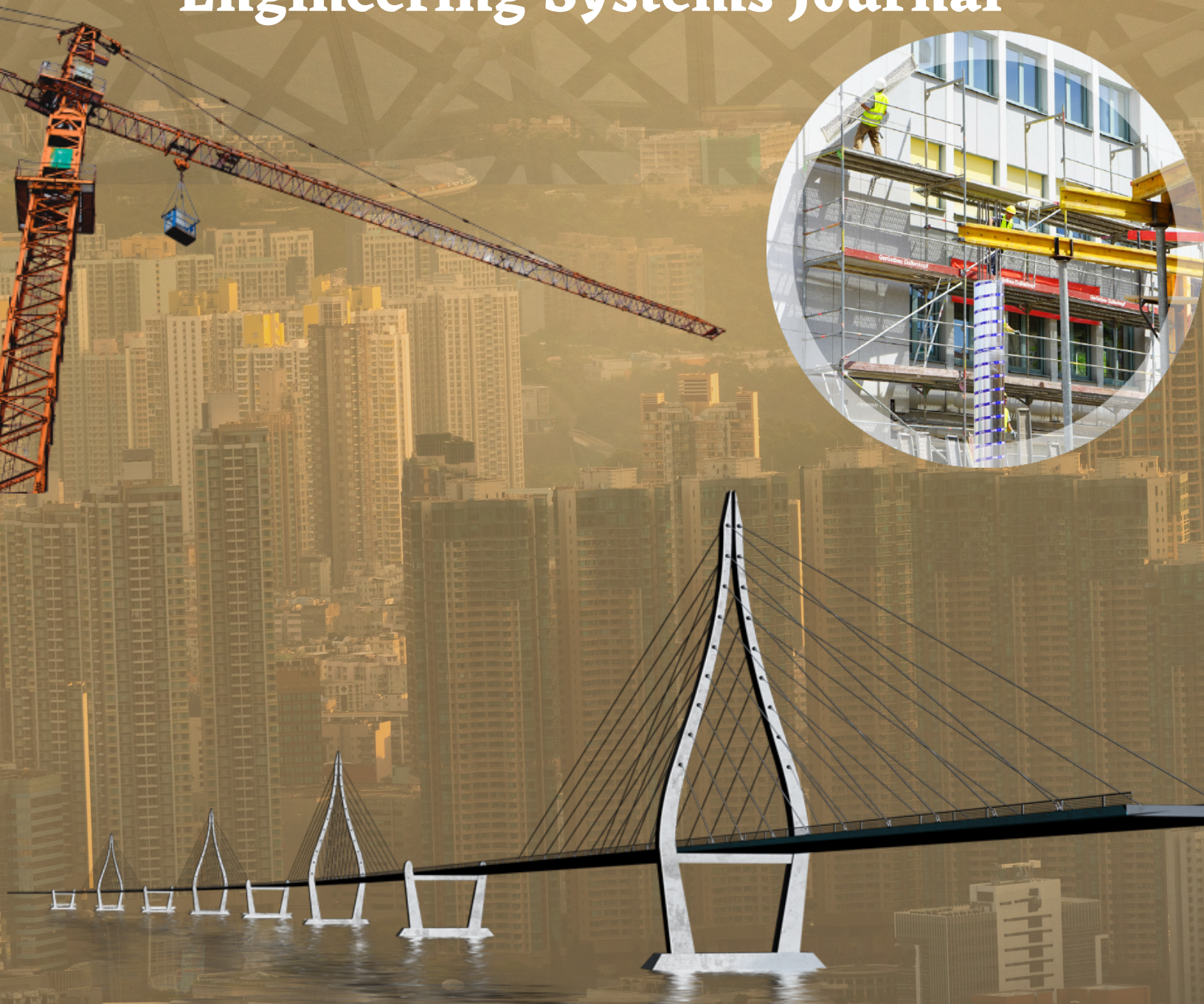


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Students' Perception of Library Services in Academia: A Case Study of Universiti Teknologi Brunei

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ABSTRACT

This paper is an outcome of a case study conducted at the Universiti Teknologi Brunei in order to measure students' perceptions of the library services offered in the university library. The main objectives were to identify the purpose of the library visit and to find out the service quality of university library, to determine whether digital libraries can replace traditional libraries and to explore if there is correlation between the frequency of the students visit to the library with the service quality provided and also the collection of materials in the library. A total of 142 students were randomly selected from the institution for the purpose of the study. Questionnaire was used as the main instrument for gathering data. The findings of the study shows that 40% of the students visit the library on weekly basis and 78 % of the students visit the library to study and 70% of the students visit the library for group discussion. In terms of the service quality, the study reveals that 79% of the students rated the service as good, very good and excellent. The study also reveals that 46% of the students rated the collection of materials in the library is average and 40% of the students rated them as good. Majority of the students (54%) reported that digital library can replace the traditional libraries. The analysis shows that there is no correlation and relationship between the visit of the students to the library and the service quality and the collections of materials in the library. The students recommended only to vary the genre of books available in the library.

1. Introduction

A university library is a backbone for any universities that is built in order to achieve the primary goal of teaching and learning, research and community services. A university library is also described as the heart of the universities learning community, providing place for students, lecturers and researchers to do their research and advance their knowledge. Every library renders services to its users. The library has to collect materials, published, non-published, print and non-print, in some depth and globally in almost all the fields of knowledge. University libraries stock thousands of information resources both books, journals and other types of materials and provide access to them [1].

According to [2], the basic functions of any university is to conserve the existing knowledge, to transmit knowledge through teaching and to create new knowledge through research. The university library is the university's principal instrument in the conservation of knowledge through its rational, systematic and

comprehensive acquisition of all type of human communications records, publish and unpublished, written or oral in recorded form that embody the ideas of knowledge of past since each new idea or invention grows out of accumulated and conserved knowledge [1].

However, with the emphasis being placed on electronic resources in this present age, the learning community are more interested in the virtual information services on the internet. Therefore, academic libraries need to access the quality of the services and how users' satisfaction can be improved. Furthermore, advocates of technology believe that the Internet removes time and geographic constraints. The development of digital technology brings both opportunities and challenges to academic library [3]. In another word this research is conducted with the intention to further improve the library services based on their major clients, the students' perception on their needs to have a more conducive study environment and knowledge storage.

The Universiti Teknologi Brunei's (UTB) library measures an area of 3850sq meters, situated at the crossing of all the central services with an 'under one roof' concept. Currently this library caters for 2300 undergraduates and postgraduates and around 145 faculty members. In order to maintain the users' needs and

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satisfactions of the library services, this research is conducted with the objective to further improve the library services.

2. Objective of the study

The objective of this research is to:

1. To find out the frequency of students' visit to UTB library.
2. To identify the purpose of the library visited by the students.
3. To study the service quality of the UTB library.
4. To find out whether digital libraries can replace the traditional libraries.
5. To find out if there is correlation between the service quality of UTB library and the students visit to the library.
6. To find out if there is correlation between the book collections and materials in UTB library and the students visit to the library.

3. Scope of the study

This study covers the perceptions of UTB students on the library services in order to find out how services can be improved for the betterment of the students.

4. Significance of the study

This study investigates the perception of the students on the Universiti Teknologi Brunei (UTB) library services. The findings of this study can be helpful and benefit students, librarians, library and the university management. For the librarians, university and library management, it can help to change policies and improve the service quality of the library which will directly benefit the students where they can have better service delivery which can encourage them to visit and benefit from the library often.

This finding also is expected to contribute to the existing literature in the field of the perception of the students on library services in UTB and serve as a basis for future research in this area.

5. Literature Review

In this section the studies related to this research is discussed. Many related studies have been conducted on library services all around the world. According to [4], the library engages the users in activities intended to make them critical thinkers, problem solvers, independent information seekers and lifelong learners. The library teaches the library users how to access, store, retrieve and use information. Users are also taught how to carry out cross-referencing to access information and cite bibliographies for proper referencing.

Furthermore, [5], conducted a study on 310 students in College of Industrial Management Fahd University of Petroleum and Minerals. The results show that the 'contact personnel' is the most influencing issue in the evaluation of service quality. However,

other aspects that significantly contributed to the findings are, classroom, building, lightening and overall cleanliness.

In another study conducted by [6] among 350 students from different universities on student satisfaction in higher education showed that librarians' expertise is the most influential factor on the students' satisfaction whereas courses conducted and learning environment are the next vital factors.

Meanwhile [7], conducted a study in the University of Rajshahi to measure the perception and satisfaction level of undergraduate and master's students of library services. The findings show that more than 42% of the students visit the library for exam preparation and the study also revealed that the service quality of the library is associated with the preference of study places and collections of the library and 74% of the respondents reported that digital library can replace traditional libraries.

Furthermore, [1] also conducted a study on students' perception of library services in Universities in Benue State. Questionnaires were distributed to 200 students randomly. The study reveals that the students in that universities have a negative perception on the library services. This was because lack of awareness by the students on how to search for information materials and ignorance on information search strategies. The study also found that students were frustrated with the outdated material and the services provided was not encouraging.

Besides that, another study conducted among 60 accounting students in Nigeria on their perceptions of the relevance of library in the 21st century found that the relevance of a library to the society cannot diminish even in the years to come, hence all the respondents indicated that the library has impacted the lives of students, researchers, businessmen and women and continue to impact future generations [8].

These are some of the similar studies done by other researchers in this area. The similarity or differences between the findings in the literature and this study will be discussed later in the paper. In the next section, the research method is discussed.

6. Methodology

This is a quantitative study and the sample of study consisted of 142 Universiti Teknologi Brunei students. The study sample consisted of 71 male students and 71 female students. The data collection was done through the use of an established survey questionnaire with five point Likert scale to capture students' responses. The questionnaire consisted of 3 demographic questions, four questions which cover the students' perception of library services in UTB and two open-ended questions on whether digital library can replace the traditional library and the students' recommendation to improve the library services in UTB. The collected data were analyzed using SPSS 20.0 software (Statistical Packages for Social Sciences) and presented in the form of frequency and percentage. These are the methods used for this study. The results and discussion are explained in the following section.

7. Results and Discussion

The main purpose of this study is to investigate the Universiti Teknologi Brunei students' perception of the library services at the university. A total of 142 student randomly picked from the Faculty of Engineering and the School of Computing and Informatics participated in the study. 50% of the respondents were male and another 50% of the respondents were female. The data analyzed are discussed as follows. Figure 1 below shows the educational status of the respondents. Among the respondents, 58 students (41%) were first year students, 26 second year students (18%), 8 third year students (6%) and 50 final year students (35%).

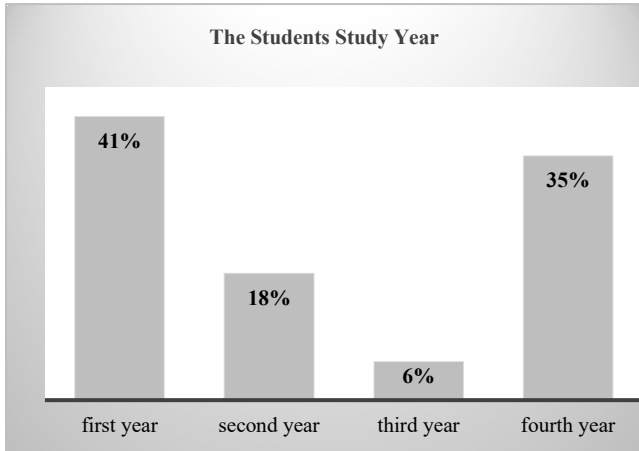


Figure 1: The students' study year

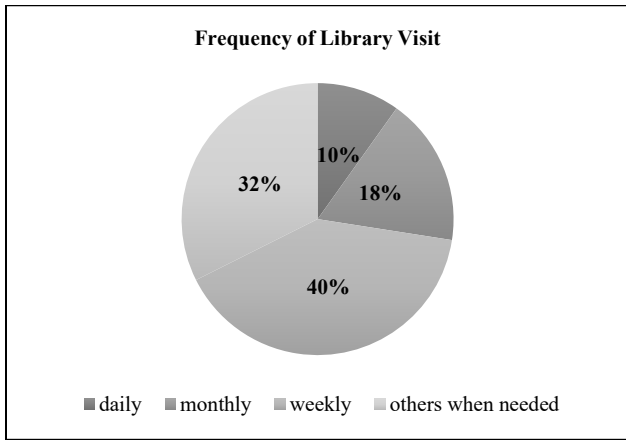


Figure 2: Frequency of Library Visit

The frequency of library visit by the users to UTB library is presented in the Figure 2 above. It denotes that 10% of the users visit the library every day, 40% of the users' visits on weekly basis, 18% of the users visit monthly basis and the remaining 32 % of the users visit the library when it is necessary to find materials in the library.

Figure 3 above shows the results of the students' purpose of their visit to the library. The result exhibits that 59% of the students visit the library for exam preparation, 19% of the students visit to

look for journal publications, 78% of the students visit to study and 70% of the students visit for group discussions.

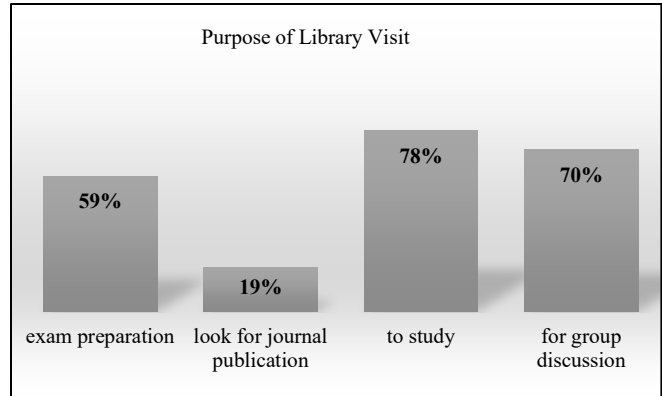


Figure 3: Purpose of Library Visit

The figure 4 above shows the service quality of the university library. Majority of the students rated the library services as good, very good and excellent (79%). A total of 20% of the students rated the library services as average and only 1% rated the service as poor.

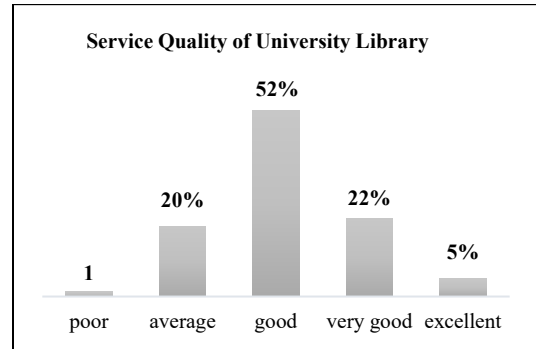


Figure 4: Service Quality of University Library

Figure 5 below shows students' comments on the collections of the library. A total of 46% of the students claimed the collection of materials are average, 40% of the students said that the collection was good and 10% of the students said it was very good. 2% of the students said it was excellent collection and the remaining 2% of the students said it was poor.

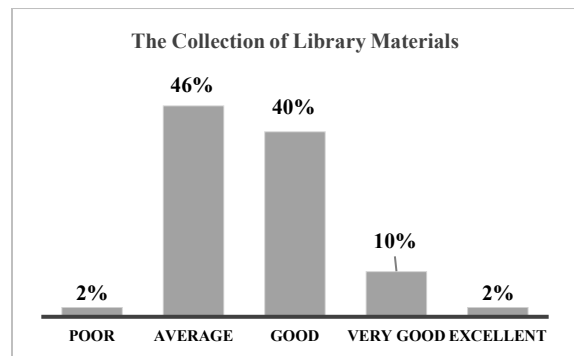


Figure 5: The Collection of Library Materials

Figure 6 below shows the percentage of students who think that digital library can replace traditional library. A majority of the students (54%) answered yes and the remaining 46% said no to this question. The majority of the students said yes because they think that it is easier and more convenient to access the internet with no time limitation and geographical boundaries. This result is similar to the study done by [7], as the results show that 74% of the students believe that digital library can replace the traditional library. However, the result of this study supports the study done in Nigeria in the year 2013 where 60% of the students said that traditional library can never be replaced as it has impacted the users [8].

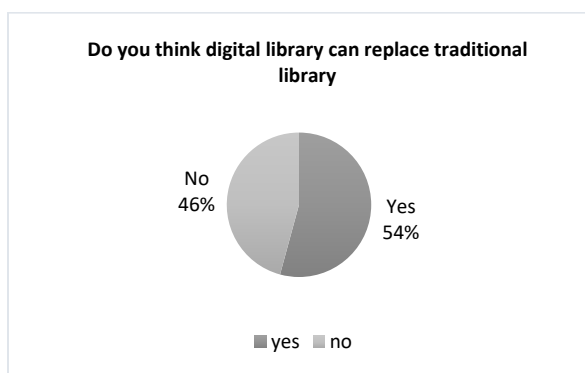


Figure 6: Do you think digital library can replace traditional library?

Furthermore, the data analysis using Pearson correlation on whether there is a correlation between the students visit to the library and the service quality of UTB library, shows that there is no correlation as the correlation shows -0.003 with the significance (2 tailed) by 0.969. There is also no relationship between the students' visit to the library and the collection of materials available in the library as the Pearson correlation shows 0.121 with significance (2 tailed) by 0.153. These are the results obtained from the study. The conclusion will be discussed in the following section.

The students also suggested to update the collection of books and to have a variety of genres including novels for their reading pleasure. Some students suggested to have more computers in the library for students use and also provide printing services. A minority of the students suggested to open the 24/7 room on Fridays and Sundays so that they can use the room to study.

8. Conclusion

The purpose of this research was to study the students' perception of library services in Universiti Teknologi Brunei. The

study shows that 79 % of the students are happy with the services in the library. The students' recommendation would be only to improve the locker system and to have more books in different genres. Since the survey is only done with 142 students, it cannot be generalized to any other subset of population. This study was also designed to present a preliminary investigation of the understanding of how educational institutional library is providing library services. The sample was not large enough to depict rigid conclusion but however gives suggestions for further studies. Some of the recommendation suggested by the students are discussed in the following section.

Acknowledgement

I would like to thank the UTB library for giving me the opportunity to conduct the research and Sures Muniandy for being the inspiration and guide for writing the paper.

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FIDIC Conditions of Subcontract as a Model for General Conditions of Subcontract in Pakistan

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ABSTRACT

Fair allocation of risks in conditions of contract is pivotal for coordination, unhindered execution, dispute resolution and maintenance of positive relationship among the parties executing the contract. Pakistani construction industry despite subcontracting a large percentage of construction projects lacks standard conditions of subcontract and they are primarily based on the will of the prime contractor that is onerous for the subcontractor. Therefore in order to develop a model for the general conditions of subcontract in Pakistan the conditions proposed by Associated General Contractors of California, FIDIC in 1994 and 2011, Construction Industry Development Board Malaysia, American Institute of Architects and by the Government of Hong Kong were compared to determine the similarities and differences among them. Afterwards a questionnaire based on the significant provisions of these subcontracts was conducted in the construction industry of Pakistan to determine the appropriate conditions for model subcontract. The results of the survey were further subjected to discussions with the legal experts. Out of 35 suggestions made for the general conditions of subcontract 23 originated from FIDIC in which 20 are recommended by its 2011's version. It can therefore be implemented in Pakistan with certain amendments and additions as proposed in light of conditions of other subcontracts and the results of the survey and discussions with legal experts.

1. Introduction

The construction industry all over the world is realizing that an effective risk management can lead to the success of the project simultaneously achieving the goals laid out by the organizations. Recent studies have established the fact that effective risk management carry bright prospects not only for the contractor in terms of profit but for the owners as well through financial control and timely completion [1-3]. However its implementation has a lot of constraints and hurdles in the field of construction industry. It is impeded while the project is in the infancy stage i.e. when the contracts are executed among the project participants. Construction contracts define the work to be executed by the contractor (or the subcontractor) including the desired quality and time for completion, the amount to be paid to the contractor (mode and timings of payment, any addition or reduction to payment), roles and responsibilities of the parties and the responsibility of unavoidable events [4].

They are the primary tool of risk allocation among the project participants [5]. The risks are bound to occur in the construction projects and the only way out is to distribute the risks among the parties that are more capable of bearing them through contracts. They serve as a basic template of defining risks and placing the responsibility of their management to the stakeholder who is in a better position to handle them. It establishes a framework that nominates that which party bears a particular risk [6]. In Pakistan however the risks are not fairly allocated in the contracts. The owner tends to place most of the risks on the contractor. A similar practice has been reported in Main Contractor (MC)-Subcontractor (SC) relationship. Choudhry, Hinze [7] reported that in Pakistan standardized conditions of contract are not used by the prime contractor like for example those suggested by FIDIC. The owner imposes their own conditions on the subcontractor that are quiet onerous. The situation is quiet alarming owing to the propotion of the total works assigned to the subcontractors in the construction industry now days. It may constitute a very high percentage of the works

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i.e. 70 % [8] or 85% [10]. A similar situation is observed in the construction industry of Pakistan where majority of the works are subcontracted by the main contractor. Actually one of the main reasons of subcontracting the works by the main contractor is the transfer of risks [11]. But here in Pakistan there is an exploitation of the subcontractor by using harsh contractual conditions that transfers majority of the risk to the subcontractor. Therefore the construction industry of Pakistan definitely needs standard conditions of Subcontract that can be proposed to Pakistan Engineering Council (PEC) which governs the Engineering projects in the country so that the subcontractors performing works in different provinces can be benefitted. The bid documents provided to the contractor by the client that as per the Pakistan Engineering Council should include the following documents

- Instructions to Bidders.
- Bidding Data.
- General Conditions of Contract, Part I (GCC).
- Special Conditions of Contract, Part II (SCC).
- Specifications
- Form of Bid and Appendices to Bid.
- Bill of Quantities
- Form of Bid Security.
- Form of Agreement.
- Form of Performance Security, Mobilization Advance Guarantee, security bond and integrity pact.
- Drawings

General conditions of contracts are those that apply to all types of contracts. They are generally based on the conditions proposed by PEC that have been formulated in light of provisions of FIDIC when it comes to the contract between the owner and the contractor. Particular/Supplementary conditions are a tool to amend the clauses of general conditions of contract as per the requirement of project. These conditions of contract should only be a mean to address the specifics of the project and the fundamentals of general conditions of contract including the risk allocation should not be disturbed [12]. But as mentioned earlier there are no standard conditions proposed by PEC to address the subcontracting. This area necessarily needs focus so that the subcontractors may not suffer due to the exacting contractual conditions imposed by the main contractor. To deal with this immense issue a comparison of general conditions of subcontract by various international organizations has been conducted to propose the appropriate conditions for the general conditions of subcontract in the Pakistani industry. PEC can particularly benefit from this paper as it provides a guideline for the formulation of General Conditions of Subcontract. As per author's knowledge no study based on such lines has been conducted in any part of the world.

2. Comparison of subcontracts

The conditions of subcontract prepared by "Associated General Contractors of California Long Form Standard Subcontract (AGC)", FIDIC Conditions of Subcontract for

Works of Civil Engineering Construction, 1994" (FIDIC 1994), "The Red Book Subcontract--Conditions of Subcontract for Construction for Building and Engineering Works, Designed by the Employer, First Edition 2011" (FIDIC 2011), "Conditions of Subcontract by Construction Industry Development Board CIDB, Malaysia" (CIDB), "American Institute of Architects A401-2007 Standard Agreement between the Contractor and Subcontractor" (AIA) and "The Government of Hong Kong special administration region subcontract for building works 2000 edition"(HKG) were compared. Being promulgated by international organizations these conditions are well balanced and not biased in favor of any particular party.

FIDIC 1994 was designed to be used in conjunction with conditions of contract for works of Civil Engineering construction, Fourth Edition 1987. The general condition consists of twenty two clauses. Despite of formulation of new edition i.e. FIDIC 2011, the one put forward in 1994 have also been considered in this study. This is primarily due to prevailing practices of the Pakistani construction industry. Like for example the request for proposals put forward by National Highway Authority, Pakistan (NHA) for the contractors still uses the Conditions of contract for works of Civil Engineering Construction Fourth Edition 1987, by FIDIC. Despite of new editions this version is still in place and used extensively in Pakistan. Therefore the old version has also been considered so that its applicability can be checked in the construction industry of Pakistan.

The new edition i.e. FIDIC 2011 consists of 20 clauses instead of 22 in the previous one. Many clauses have been amended and new provisions have been added. For example the older version did not have any provision where the contractor may proceed to claim any payment from the subcontractor or where the contractor is given the right to make a fair decision regarding their own claim when an agreement is not reached with the subcontractor. The new edition places a greater responsibility on the subcontractor by making them responsible for the works designed by them. The Subcontractor is given the right to suspend the work in case of nonpayment from the Contractor in the new edition. The older edition of 1994 gives fifty five days to resolve a dispute after which the issue is passed on to the arbitration process. The new edition refers the issue to Subcontractor's Dispute Adjudication Board (DAB). If either party serves a notice of dissatisfaction to the other party, twenty-eight days are given to reach an amicable solution after which the matter proceeds to the arbitration process.

CIDB was published in 2006. The model contract present conditions to be used in the Subcontracts [13]. They were developed owing to the increasing trend of subcontracting in the Malaysian industry in lines with Construction industry Master plan of their country. Various consultation sessions and workshops led to finalization of the first draft of the conditions of contract. It consists of seven clauses in the General conditions of the contract.

AIA contracts are extensively used in the construction industry particularly the subcontracts which are relatively inexpensive and widely accepted [14]. The edition of AIA used in the study replaced A401-1997 which expired in 2009. The new edition consists of sixteen articles. HKG was proposed in 2000 to be used in conjunction with General Conditions of Contract for Building Works” (1999 Edition). They were formulated by the development bureau of the Hong Kong special administrative region. The organization is responsible for the planning, management and implementation of public sector projects. Their official website provides an open access to all the construction contracts promulgated by them. Hence the subcontract proposed by them can be easily retrieved for use. All

together the general conditions consist of 34 provisions. AGC was proposed by “Associated general contractors of California”, founded in 1920. The organization comprises of more than 1000 contractors thereby representing a wide horizon of the industry of California. The organization is one of the largest chapters of Associated general contractors of America. The organization also provides an open access to the contracts proposed by them on their official website. AGC consists of 7 main clauses. A total of 52 significant matters have been found to be addressed in these conditions of subcontract by the international organizations. Some significant provisions have been enlisted in Table1.

Table 1: Comparison of subcontracts

Description	FIDIC 1994	FIDIC 2011	CIDB	AIA	HKG	AGC
Entering into subcontract	N/A	Within 28after receiving Letter of acceptance (LOA)	N/A	N/A	When called by contractor	N/A
Representative on site	Contractor and subcontractor	Contractor and subcontractor	Contract administrator	N/A	N/A	SC
Execution of work	Within 14 days after notification	N/A	N/A	N/A	N/A	N/A
Satisfaction of works	N/A	N/A	N/A	N/A	Satisfy both MC and architect	N/A
Extensions of time and additional costs	Events for which SC is not responsible and submits a notice in 14 days	Events for which SC is not responsible and submits a notice immediately	N/A	With the consent of the MC	In case of provision of notice of event in 21 days	N/A
Position of Main contract	N/A	N/A	N/A	N/A	Main contract will prevail	N/A
Access to SC to main contract	Give access except price part	Give access except price part	N/A	N/A	Give access except price part	N/A
Instructions to subcontractor	Only by MC	Only by MC	Contract administrator	Only by MC	Only by MC	N/A
Claims by contractor	N/A	Fair agreement by MC in case of non-agreement	N/A	N/A	N/A	N/A
Design of works by subcontractor	N/A	Responsible of the works designed by them	N/A	N/A	N/A	N/A
Health and safety	N/A	SC responsible	Both MC and SC	SC responsible	N/A	SC responsible
Performance security	Should be provided to the MC within 28 days of LOA	Should be provided to the MC within 28 days of LOA	N/A	N/A	No need to provide any security by the subcontractor	Securities should be provided by SC
Sub Sub contracting	Not without the consent of MC	Not without the consent of MC	N/A	Not without the consent of MC	The decision of architect shall prevail	N/A
Notice prior to beginning of work	N/A	Fourteen days prior to start	N/A	N/A	N/A	N/A
Notices to contractor	Notices regarding delays and other issues should be given to the contractor	Within twenty-one days after the contractor becomes aware of issues	N/A	N/A	Notice should be submitted within twenty-one days of an event	Notices should be given to the contractor within forty-eight hours of the event
Schedule of activities	SC to submit within 48 days of LOA	SC to submit within 48 days of LOA	MC submits a detailed work schedule to SC	MC submits a detailed work schedule to SC	MC submits a detailed work schedule to SC	SC should submit
Progress reports	N/A	Subcontractor should submit	N/A	Subcontractor should submit	N/A	N/A

Submission of waste management plan	N/A	N/A	N/A	SC should submit	N/A	N/A
Suspension of work by MC	N/A	Reasons should be provided to the SC	N/A	N/A	N/A	N/A
Response to SC's notice	N/A	Within 21 days	N/A	N/A	N/A	N/A
SC involvement in measurement of works	N/A	Should be involved	N/A	N/A	N/A	N/A
Contractor's right to make fair decision	N/A	Given in case of non-agreement on measurements	N/A	N/A	N/A	N/A
Variations	Can be given by MC only	Can be given by MC only		Modify action as instructed by MC	Given by architect and confirmed by MC	
Acceleration of work	N/A	Contractor can give instruction	Contractor can give instruction	N/A	N/A	N/A
Statement for payment	Within 7 days after end of each month	At least 7 days before MC's submission	N/A	N/A	N/A	N/A
Details of Interim payment certificates	N/A	Should be provided to SC	N/A	Should be provided to SC	N/A	N/A
Delay of payments	Explanation should be given	N/A	N/A	N/A	N/A	N/A
Withholding payments	N/A	N/A	N/A	N/A	N/A	Works defective, warranty not provided
Payment to subcontractor	Within 70 days	Within 70 days	Within 30 days	Within 7 days of receiving payments from the owner	Within 7 days of receiving payments from the owner	Within 7 days of receiving payments from the owner
Retention money	At least half should be paid within 35 days of handing taking over. Rest should be paid within 7 days of release of final payment	At least half should be paid within 28 days of handing taking over. Rest should be paid within 7 days of release of final payment	At least half should be paid within seven days of practical completion certificate.	N/A	N/A	N/A
Final payment	Within 84 days of submission of final payment certificate	Within fifty-six days of defects notification period.	N/A	Within 7 days of payment from the owner	N/A	N/A
Return of performance security	28 days after defects liability certificate is issued	Within 7 days after receipt of security from the employer	N/A	N/A	N/A	N/A
Termination of subcontract by due to SC's default	N/A	Notice should be given to the SC 14 days before termination	In case SC does not resolve issue within 14 days of notice by the contract administrator	If SC does not resolve the issue mentioned in the notice for correction	If SC does not resolve the issue mentioned in the notice within 7 days	If issue is not resolved within 10 days
Suspension of works by subcontractor	N/A	In case of non-payments by giving a notice twenty-one days prior to it	In case of non-payments by giving a notice twenty-one days prior to it	If the payment is not made within seven days of agreed date	N/A	N/A
Termination of contract by SC	N/A	By a notice 14 days prior to intended date	In case of non-payments by giving a notice twenty-one days prior to it	Upon nonpayment within 60 days of due date	N/A	N/A
Insurance	MC and SC should carry out	MC and SC should carry out	MC and SC should carry out	SC should carry out		SC should carry out
Dispute resolution	No amicable settlement within 55 days of notice than dispute should be passed on to arbitration process.	Subcontract dispute adjudication board will be formed. In case of dissatisfaction on its decision the matter is directed to arbitration.	Parties should go for Adjudication. If issue still remains unresolved it can be directed to arbitration.	If issues are not resolved, then parties can move ahead with arbitration.	Matters should be directed to the architect. If not resolved than it should be directed to mediation and arbitration.	Carry out negotiations which if not successful than matter can be directed to arbitration, if desired by the parties.

3. Methodology

The provisions of the conditions of subcontract mentioned in Table 1 were developed into a questionnaire with special emphasis on those clauses in which there is a difference of opinion. There were certain matters which were addressed in one subcontract and not found in others. Many conditions were found similar in all contracts. It was deemed necessary to determine that whether these clauses developed by international agencies fit into the conditions of the construction industry of Pakistan or not. The provisions in the form of multiple choice questions were first subjected to a pilot survey with contracts manager and they were asked to check that are the questions adequate to address the formulation of general conditions of subcontract in Pakistan? As per Hill [15] the sample size recommended for the pilot survey is between 10 to 30. Based upon the suggestions of experts a final questionnaire survey to determine the model provisions for the subcontract was formulated. The questionnaire consisted of two sections. The first section asked the respondents about their personal details. The respondents were asked to provide information regarding their educational background, the type of organization to which they belong and their years of experience.

In the second section multiple choice questions consisting of clauses from the subcontracts studied in the earlier part of the study and verified by the construction experts were stated. The respondents were asked to select the clause they consider to be best suited to the conditions of construction industry of Pakistan and it should be such that it remains balanced for both parties. The questions covered all the major provisions of the subcontracts studied in the process of comparison. A total of 27 questions were asked. According to Dillman [16], for a population size > 30,000, at 10% confidence interval, the required sample size for the research is 96. This provided with the target sample size for the survey. The questionnaire was sent to around 175 professionals of the construction industry. The persons targeted for the study included project managers, contract managers, project directors, owners etc. The survey was mainly sent to contractors and subcontractors. However a limited number of clients and consultants were also involved to obtain a joint perspective of all the parties of the project. In several questions, different contracts put forward a similar provision, so they are represented to be favored by equal percentage of respondents in Table 2. The provisions selected by the majority of the respondents, in the exact form they are proposed in the general conditions of subcontract prepared by the international agencies, were carried forward to the lawyers. In many cases different subcontracts advocated a similar provision. Like in case of bonds and securities both versions of FIDIC dictate that it should be provided to the main contractor within 28 days of letter of acceptance. To determine that the language of which subcontract among these two and in other cases where similar recommendations were stated by more than one subcontract, could make to the model conditions of subcontract for Pakistan,

lawyer's opinions were incorporated. The legal implications can be best analyzed by the lawyers who have no biasness towards any party and are familiar about the laws and discrepancies in the system of Pakistan. The targeted lawyers had an experience in dealing with construction contracts and litigations in the same field. Provisions from different contracts were discussed with them and their opinion was asked. Certain provisions were pretty clear and loud and common in all subcontracts e.g. the general obligations of the contractor and subcontractor. Such clauses were not made part of the survey but discussed directly with the legal experts. Similarly some provisions of purely legal nature like indemnity, termination of main and subcontract etc. were also part of the discussion with the legal experts only.

The main purpose of the involvement of law professionals was to secure a balance in the provisions of contract such that the overall subcontract does not favor any particular party. Suggestions given by the first expert were carried forward to the next one. The recommendations given by the most of the experts were considered final for the model conditions of subcontract.

4. Results

The pilot survey was responded by 11 experts. The respondents were mainly project and contract managers having an experience of at least 15 years. They found it reasonable and worth to be carried further for the detailed survey. The respondents suggested that an option with a 'blank' should be left for the respondents in which they can add something to the conditions suggested by international organizations. This suggestion was incorporated. In the detailed survey a total of 101 responses were obtained. The main target of the survey was professionals from Contractor and subcontractor organizations. The responses obtained from them constitute 83.26% of the total responses. This shows that an adequate response has been received from the targeted organizations. A total of 67 out of 101 respondents had an experience of at least 10 years. Those having 5-10 years of experience were 15 in number. This shows that 82 respondents have at least 5 years of experience which constitutes 81.18% of the total responses. The respondents with 0-5 years of experience were 19 in number. This shows that the targeted audience has sufficient experience to give answers to the questions asked in the survey. The respondents hold senior positions in their respective organizations like project managers, contract managers, construction managers, CEO and owners of various subcontracting companies.

The maximum numbers of respondents i.e. 48 had an undergraduate degree while those having a Master's degree were 41 in number. Diploma holders and those having technical degrees are also part of the survey and were 12 in number and mainly constituted the subcontracting firms. The results of the survey indicating the percentages of respondents voting for a specific provision of general condition of subcontract are shown in Table 2.

Table 2: Percentages of respondents voting for a specific provision

Description	FIDIC 1994	FIDIC 2011	CIDB	AIA	HKG	AGC	Other
Entering into subcontract		24.75			66.34		8.91
Representative on site	69.31	69.31				1.98	28.71
Contract administrator deputation			32.67				67.33
Beginning of execution	35.60						64.4
Extensions of time	55.45				25.74	11.88	
Satisfaction of works					49.47		50.53
Status of main contract					41		59
Access to main contract		99.99			99.99		0.99
Health and safety		18.81	60.50		18.81	18.81	20.69
Submission of waste management plan				4.95			95.05
Bonds and securities	65.40	65.40			27.70		6.90
Sub Sub contracting	62.83	62.83		62.83	10.89		26.73
Schedule of activities	60.40	60.40	37.62	37.62	37.62	60.40	1.98
Right to suspend works to contractor		68.30					31.70
Response to subcontractors notice		18.81					76.24
Submission of progress reports				67.32			32.68
Involvement of SC in measurements		74.30					25.70
Variations	85	85			85	85	15
Contractor's right to make fair decision		78.22					21.78
Instructions to accelerate the work		91.12	91.12				8.88
Withholding payments						64.32	35.68
Interim payments	60.10	60.10	17.10	15.90			6.90
Final payment	19.80	35.60		31.70			12.90
Explanation for delays in payment	88.11						11.89
Return of performance security	56.40	35.70					7.90
Termination of subcontract		30.70	53.50		14.81		0.99
Insurance's responsibility	67.30	67.30	67.30	12.90			19.80
Dispute resolution	11.88	24.75		14.85	13.86	34.65	

The Table 2 shows that provisions given by FIDIC 1994 have been selected in 9/28 questions. FIDIC 2011 has been opted in 12/28 issues. However in 8 of these questions similar provisions has been given by both editions of FIDIC. The provisions formulated by FIDIC (both 1994 and 2011) are selected in 15/28 questions. This amounts to an agreement of 53% with the FIDIC Clauses. The conditions promulgated by CIDB that were not found in any other subcontract have been selected in 2/28 questions while those common with FIDIC are also 2 in number. Only one provision given by HKG and AGC (suggested by their contract conditions only) was selected by the respondents. The professionals have also been very vocal in giving their own recommendations. For example in case of response to subcontractors notice, the suggestions given by FIDIC 2011 have been overturned and they believe that it should be made within 7 days. The result does indicate that in many cases the provisions found common in more than one subcontract have been selected by the professionals. There are certain questions to which no clear answer has been obtained like in case of dispute resolution procedure, timings for final payment and weather works executed by the subcontractor should satisfy the architect/engineer or not. All these factors mentioned above justify the involvement of legal experts that could not only validate the results, check if the overall risk is fairly allocated to both parties, define the general obligations of the parties as per the international subcontracts and select that language and terms of conditions for the subcontract that suits the Pakistani industry where same suggestions are put forward by more than one of these contracts.

Discussions were carried out with 15 legal experts. This leads to conceptual saturation, a point where further collection and analysis of qualitative data does not generate any new data [17]. Among the legal experts, 8 have more than 20 years of experience. One of them have an experience of 13 years, 4 have 5-10 and 2 have 0-5 years of experience. Out of these 15 legal experts 5 had been involved in drafting of construction contracts, 2 had experience in dealing with construction claims. This shows that 7/15 experts had been involved in the construction industry in the past.

All experts suggested that the provision that gives the right to give fair decision to the main contractor in case there is a disagreement on measurement of quantities as proposed by FIDIC in 2011 should not be a part of general conditions of subcontract. As per the legal experts the environment of Pakistani construction industry is not viable that such prerogative may be given to the contractor as it will be subject to a high degree of misuse. The experts said that "No one should be judge in their own cause". Such authority may be given to some neutral party such as consultant or this provision may entirely be eliminated from the contract provisions. Upon consensus of all the legal experts this provision was abrogated from the model conditions of subcontract. As per the previous survey it was suggested that subcontractor should submit schedule of activities

to the contractor. A legal expert suggested that a time frame of thirty days should be given to the subcontractor to submit the work schedule. However in later discussion with other experts it was kept fourteen days after letter of acceptance as proposed by FIDIC 2011. As per FIDIC 1994 and according to the respondents of the survey the contractor should submit a notice to the subcontractor in case the payment is delayed and it should explain the reason behind it. The legal experts suggested that a time frame for this notice should be provided. Nine experts suggested that notice should be given within seven days. This suggestion was incorporated in the framework developed for the subcontractor. Out of 15, eleven legal experts suggested that in order to ensure that subcontractor is not responsible for events in which an extension of time or an additional cost should be provided or to decide that weather the subcontracted works are defective or not, this power should be given to some neutral party preferable the architect/engineer. This suggestion was incorporated in the recommendations for the development of general conditions of subcontract. The legal experts were of the opinion that variations should only be acted upon by the subcontractor if instructions are given to them in writing by the main contractor. This is in line with the suggestions made in the prior survey with the construction professionals. However legal experts added a new dimension to it. According to them variation orders should be given in a reasonable time such that changes to work can be made. It should not be such that the works are executed or materials have been procured etc. and it is not possible to make changes to the works. A suggestion was made by an expert that in case of conflict between the main contract and subcontract, the main contract shall have precedence. According to him the subcontract is always subject to main contract. If there is any deviation between main and subcontractor the main contract is always followed. However this suggestion was refuted by other experts who believed that after terms and conditions of subcontract are finalized with the subcontractor they should be followed. They were of the opinion that it will be very unfair to the subcontractor that the main contract is given precedence when subcontractor is only responsible for the conditions of subcontract. Regarding the suspension of works by the subcontractor the legal experts were of the opinion that the time period of 21 days for notice after which the works can be suspended is too long. It was recommended that this period may be reduced to fifteen days. It was suggested that contractor can give the instructions to accelerate the work. This has been maintained by the legal experts with the addition that architect/engineer will access the pace of work first. If it is far behind schedule and there is no fault of subcontractor in these delays subcontractor may be instructed to accelerate the work and additional costs will be given to them.

Based upon the survey and recommendations by the legal experts final conditions for the subcontract were formulated. The index to which is as follows.

1. General obligations of contractor and subcontractor: CIDB
2. Entering into subcontract: HKG
3. Precedence of Main Contract: Conditions of subcontract shall prevail in general contractor-subcontractor relationship
4. Access to main contract: FIDIC 2011
5. Representative on site: FIDIC 2011
6. Beginning/Starting of works: Mutually agreed date at the time of contract
7. Errors in contract documents: FIDIC 1994
8. Health and Safety: CIDB
9. Performance security: FIDIC 2011
10. Sub sub contracting: As per FIDIC 2011 along with verification of the credentials of the sub contractor by the contractor.
11. Abiding by the instructions of Main contractor: FIDIC 2011
12. Satisfaction of works: HKG
13. Work Schedule: FIDIC 2011
14. Progress reports: FIDIC 2011
15. Acceleration of work: As per FIDIC 2011 but recommended by architect/engineer.
16. Response to subcontractors notice regarding extensions of time/additional costs: Within 7 days. If assessment requires time, provide a notice to the subcontractor.
17. Indemnification: FIDIC 2011
18. Extensions of time: FIDIC 1994
19. Liquidated damages: CIDB and the amount/percentage specified in offer to the subcontractor
20. Variations: As per FIDIC 2011, however it should be made within a reasonable time such that it may not be burdensome to the subcontractor
21. Responsibility of works before taking over: FIDIC 2011
22. Payments to the subcontractor
 - a. Statement of payment by the subcontractor: FIDIC 2011
 - b. Explanation for delays in payment: As per FIDIC 1994 within seven days of due date of payment
 - c. Timings for payment: FIDIC 2011
 - d. Involvement of subcontractor's representative in measurements: FIDIC 2011
 - e. With holding payments: AGC
 - f. Final payment: FIDIC 2011
23. Access to site by the subcontractor: FIDIC 2011
24. Suspension of works
 - a. By the contractor: FIDIC 2011
 - b. By the subcontractor: As per FIDIC 2011. In case of non-payments works can be suspended by the subcontractor by giving a notice 15 days prior to it.
25. Termination of Subcontract
 - a. Due to subcontractor's default: CIDB
 - b. Termination having no fault of the subcontractor: CIDB
26. Insurance: FIDIC 2011
27. Termination of Main contract: FIDIC 2011
28. Dispute resolution: AGC

From a total of 35 suggestions made (including the sub clauses) 20 originate from FIDIC 2011 in which amendments have been suggested in 4 of them. FIDIC 1994 is suggested in 3 clauses and one of them has a modification. CIDB has been suggested in 5 provisions with changes in one of them. Two clauses each from HKG's and AGC's made their way into the model conditions of subcontract. Some new suggestions have been made on the basis of survey and discussions with legal experts that constitute 3 recommendations. This indicates that a total of 23 suggestions originate from FIDIC (including 1994 and 2011 edition). This constitutes 65% of the total recommendations made for the subcontract. FIDIC 2011 alone contribute 57% of these suggestions. This indicates that the suggestions made by FIDIC best suits the general Contractor-Subcontractor relationship in Pakistan. In light of the recommendations made, FIDIC 2011 may be implemented by PEC in Pakistan after incorporating the suggestions made by other subcontracts and amendments made to existing conditions.

The findings of this study are in line with the recommendations made by Murtaja [18] that FIDIC clauses may be implemented by the project parties to improve project performance. Also Köksal [12] put forward FIDIC as model for construction contracts.

5. Conclusion

In order to formulate model for the General conditions of subcontract for the Pakistani construction industry, recommendations made by 6 international subcontracts were compared and subjected to a questionnaire survey. FIDIC 1994 and 2011 was selected in majority of questions by the professionals. Certain provisions of FIDIC were however overturned or amended by the legal experts in the next step like the right to make fair decision given to the contractor was excluded from the General conditions of subcontract in Pakistan. After rigorous discussions with legal experts 35 suggestions have been made for the General conditions of subcontract out of which 65% originate from FIDIC. This shows that the conditions of FIDIC are the best solution when it comes to formulation of conditions of subcontract for Pakistan. They have certain limitations that have been overcome by incorporating clauses of other subcontracts and expert opinions. Recommendations that ensure a fair risk allocation between the contractor and subcontractor have been formulated.

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