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Causes of Delay in the Establishment of Public Sector University in Newly Merged District's of KP, Pakistan

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***Abstract*—**Delays are one of the major issues in the development venture. Because of this, projects surpass projected time and cost. Retardation in the project can be reduced only when its reasons are determined and evaluated. The main focus of this research study was to determine the delaying causes in the establishment of FATA University. The study follows a quantitative approach where a well-defined questionnaire was distributed among the experts directly managing the construction project of FATA University, i.e. the consultant, the contractor, and the client for the data collection. Relative Important Index (RII) was employed in the research methodology to determine the significance of each delaying factor. Top five delaying causes in the establishment of FATA University project were recorded as (1) client having risk attitudes, (2) Lack of coordination between client, contractor, and consultant, (3) slow decision effects, (4) consultant supervisory staff size and (5) frequent changes in design documents by the consultant. The efficient management and planning of these delaying factors will positively affect the project completion time and its overall cost.

***Keywords*—** Establishment of public sector University, Newly merged district of KP, Causes of delays, Public sector construction projects.

I. INTRODUCTION

The tribal districts and tribal sub-divisions (TSD) of the present-day of Khyber Pakhtunkhwa (KP) were the erstwhile Federally Administered Tribal Areas (FATA) of KP, Pakistan. The erstwhile FATA was consisting of seven (07) tribal districts and six (6) sub-tribal divisions. The seven tribal districts are District Malakand, District Mohmand, District Bajaur, District Khyber, District Kurram, and District North Waziristan and South Waziristan. The six (6) sub tribal divisions were located in the adjoining areas of the settled district of Peshawar, Kohat, Bannu, Tank, Dera Ismail Khan, and Lakki Marwat. The Sub-tribal divisions were also known as Frontier Region (FR). To the north and east of erstwhile FATA, Khyber Pakhtunkhwa is located, while in the south is the province of Baluchistan. In the southeast, erstwhile FATA districts join the Punjab province. To the west is the Durand Line, separating the Khyber Pakhtunkhwa (KP) province from the neighboring country of Pakistan is Afghanistan [1].

Erstwhile FATA districts, the total area is 27,220 square kilometer (m2) and according to the census 2017, the overall population is five (5) million and the population growth rate in erstwhile FATA is 3.8 percent (%) per year. Across FATA Population density under the 2017 census stands at 184 persons per square kilometers (p/m2). Newly merged districts of FATA are buffer areas between Afghanistan and Pakistan in the province of Khyber Pakhtunkhwa (KP). Moreover, the literacy rate is varying across FATA; it is 45 percent (%) for males and 7.8 percent (%) for females under the year of 2017 census of Pakistan. Overall, in erstwhile FATA the adult literacy rate is very low its 28.4 percent. This low literacy rate or low student engagement in education is a very alarming situation for the forthcoming generations of KP as well as for Pakistan [2].

Figure 1. Blue Area indicates the Erstwhile FATA Region of Pakistan

For the advancement of any nation, construction industries play a very significant role. The physical advancement of construction projects such as power stations, bridges, buildings, and roads are signs of economic upward movement of a nation

via which a society or nation achieves its aims and purposes of urban and rural development[4]. Usually, projects in public education sectors are planned for the undertaking. However, the delay may occur in the life cycle of the project. Delays of the project are a condition in which a contractor and the possessor bilaterally or individually add to the lack of complete execution of the construction project as mentioned in the original accorded period [5]. The retardation in the completion of the project can be reduced if the linked causes are unambiguously determined [6, 7]. The key focus of the current research study is to resolve the issue of retardation in the PSDP funded project of the establishment of FATA University.

The tribal districts and tribal subdivision (TSD) or the formerly federally administered tribal areas (FATA) of Pakistan are currently complete part of Khyber Pakhtunkhwa (KP) province after a twenty-fifth (25th) constitutional amendment in the constitution of Pakistan. This erstwhile FATA region is socio-economically very backward within Pakistan. The reasons are that the federal government kept the area deliberately under-developed for vested interest. Other reasons include dry or semi-dry weather conditions, mountainous regions, geographical remoteness, and lack of education. Contemporarily, the government of Pakistan has introduced numerous reforms in FATA, one of including the establishment of FATA University.

The delay in the construction of an agreed project is very undesirable especially for developing countries and areas like the backward erstwhile FATA of Pakistan. However, no meaningful research has been carried out for the concerned people to determine the associated causes of retardation in the completion of the establishment of the FATA university construction project within a specified time. The first public sector university construction project in erstwhile FATA is managed by the Higher Education Commission (HEC) by the sponsorship of the Planning Commission (PC) of Pakistan, which is fundamentally authorized for the design-bid-build construction. The government of Pakistan has allocated 4.7 billion (4700 Million) Pakistani Rupees (PKR) for this construction project, titled "Establishment of FATA University" in PSDP (HEC) 2015-16 (1 US $ = 100.52 PKR in January 2015) for the construction of first-ever public sector university in erstwhile FATA region. The government has released funds for the construction of FATA University for the first phase of Rs.1592 million rupees. The KP government also contributed to the erstwhile FATA educational development in various ways to sustain and benefit the educational need of the FATA underprivileged people [8]. The government of Pakistan usually allocates special budgets for the development of public-sector education projects in erstwhile FATA to develop the standard of life of residents of erstwhile FATA of Pakistan [17].

The proposed establishment of FATA University in Darra Adam Khel will extend an opportunity of higher education to the local peoples at the doorstep as was the vision 2025 of the government of Pakistan to give a good educational system as well as an efficient education service in the erstwhile FATA region. However, the project's delays are not an unusual phenomenon in the erstwhile FATA region; it is very common in the case of FATA districts. The general reasons for delays in project completion are the unstable economy, remoteness of the area, terrorism, militancy, and political instability. In case of FATA University project, it is significant to inquire the associated stakeholders (sponsor, contractor, and consultant) of the project to improve, strengthen the execution of the project so that it can be completed, not only within time but also within the stipulated cost and at the time maintaining the quality of structure as well. Further, it is also essential to discover the possible reasons of retardation in the construction project execution/construction phase. The fundamental focus of this research study is to determine the factors that are solely responsible for the retardation of the construction work of FATA University.

Figure 2. Proposed Main Gate of FATA University

II. JUSTIFICATION OF PROPOSED FATA UNIVERSITY

Presently, no higher learning Institute is operating in the erstwhile FATA region. This is the first public sector university in this region. Some of the graduates from the local postgraduate colleges were used to quite an education due to the unavailability of higher education facilities locally. While others used to migrate to areas outside the FATA region to avail higher education. There the students of the FATA region have to face tough competition in admission due to the presence of a lot of other talented students seeking the same admission. The proposed FATA University will assist in reducing the number of students who quit education after completing education from the post-graduate colleges. Further, through the establishment of FATA University provided the higher education facilities are at the doorstep, it will significantly reduce the competition of admission for the education of socially and economically backward erstwhile FATA region of Pakistan.

III. PROJECT BENEFITS AND ANALYSIS

A. Financial Benefits

The financial benefit cannot be quantified in the first phase of FATA University. However, FATA University's having the capability to provide admission to students is about 2000 students. Surely, the number will increase with the establishment of new departments, availability of resources, infrastructure, and success of existing programs. The quality of education is likely to improve with time.

B. Social Benefits

The establishment of FATA University will be a great source of a quality increase in education of the local peoples and at the same time and would escalate the male and female literacy rates in the erstwhile FATA region. This education ratio will directly affect the reduction of social evils and employments of the FATA peoples.

C. Enviromental impact

The establishment of the FATA University Project has no negative effect on the surrounding environment of the area. Rather, it would positively affect the environment in the sense that some areas under the university will be developed and environmentally be planting abundant trees and water availability provisions.

IV. LITERATURE REVIEW

At present education is considered a basic right of human beings and is considered key for social, economic, political development, and human freedom. Basic education was denied to the residents of erstwhile FATA which was not only gendered discrimination but was also an incorrect economic and social policy [2]. Pakistan is located in a region where almost 48% of the Illiterate population lives. The majority of these illiterates are women. Since independence, Pakistan is facing the education problem, despite a long period of 72 years of its existence; the literacy rate is still 58 percent (%) of the total population [3].

Identification of the delaying factors enables the contractors, sponsors, and consultants to minimize the effective delays in the project implementation process. This determination and evaluation of delaying factors are very essential, though it's very challenging. The need is to give priority to delaying factors for the purpose at least to decrease their impact. The retardation in the execution of construction projects is defined simply as an event, process, or acts that extend the budget and time duration agreed in the contract of the concerned contracting parties. [9-10].

Numerous research studies are available in various countries regarding construction projects and the factors solely responsible for the retardation in the completion of construction project [11-12]. Widely mentioned causes of delay in the construction works are; lack of financing or payment on the part of sponsor to the contractor, absence of contractor experience in the concerned construction field, change in the design, improper site selection, lack of proper supervision by contractor, as well as often contradictory order by owner. A significant number of research studies argue that delays in construction projects generate costs, schedules, and time escalation. Argue, it is necessary to improve the quality and efficiency of construction companies. Despite regional, administrative, and geographical differences, the researchers are struggling to suitably report the factors of project delay [6, 10]. Thus, researchers have determined distinct patterns of delaying factors in various research projects. Some studies have focused on general construction projects [10, 11, 14]. Very few research studies concentration of attention is on the government-funded projects [15, 16, 17]. Thus, public-funded university construction projects are not previously researched, hence, thus, this research study has surveyed, inquired about the reasons responsible for the retardation in the completion of the establishment of FATA University in Darra Adam Khel, Kohat. So this research study fills the gap in the literature regarding the construction phase of the FATA university project. There was a considerable requirement of such type of research study, because the project is still incomplete, and there is a need to finish the construction project as soon as possible. This is not the only project that faces delay, numerous other projects have frequently observed, experienced delay in the construction works, escalation in cost and budget in erstwhile FATA region. The frequently occurring delays stimulate the researcher to undertake a research study of the newly launched FATA university construction project to determine the delaying factors. Further, this research provides detailed information regarding all linked aspects of the construction project with the purpose to provide productive ideas for the improvement in the construction project. Surly, the research finding and proposal regarding the project extend valuable knowledge for the stakeholders to finish the project.

V. RESEARCH OBJECTIVES

The key purposes of this research study were to assess and identify the major factors which contributed to the delay of the FATA university construction project.

1. To establish a University in erstwhile FATA to provide equal opportunity to the students of FATA to acquire higher education in a conducive environment to lead enlightened and modern society.

2. To envisages establishing of FATA University, physical and academic infrastructure, are a deliberate attempt on the part of the Government to provide a very pleasant, conducive learning environment to fulfill the intended purpose of establishing and advancing the higher education opportunities for the people of FATA as well as to the whole country.

3. To make progress and survive competitively, the government of Pakistan's objective is to develop human resources by escalating investment in the higher education sector so that they can perform a productive function in the growth of education based economy in this highly competitive world.

4. Ensuring the availability of young talent in FATA peoples and skilled professionals in Pakistan is also the priority of the government.

VI. RESEARCH METHODOLOGY

The data collection method involved in three main phases, as shown in Figure-3. In the first phase, the researcher obtained the initial causes of affecting the establishment of the FATA university project. In the second phase, the researcher conducted a pilot study to gain a better understanding and completeness as well as modification of the questionnaire. In the final phase of the research, the researcher carried out a questionnaire survey to check the important degrees of the different causes and respondent perceptions.

To determine the Relatively Important Index (RII) factors affecting the FATA university construction project, a Relative Importance Index (RII) method is used in the research. The factors were divided into three main categories namely consultant related factors, contractor related factors, and client related factors. The RII index was ranked group wise as well overall for the selected factors. The five points Likert scale was employed ranges from (1=Not Important) to (5 = Extremely Important) and transformed to RII for each cause in a group as well overall follows:

$$RII = \Sigma W / A^* N$$

W = weighting given to each factor by respondents (1 to 5)

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

N = total number of respondent

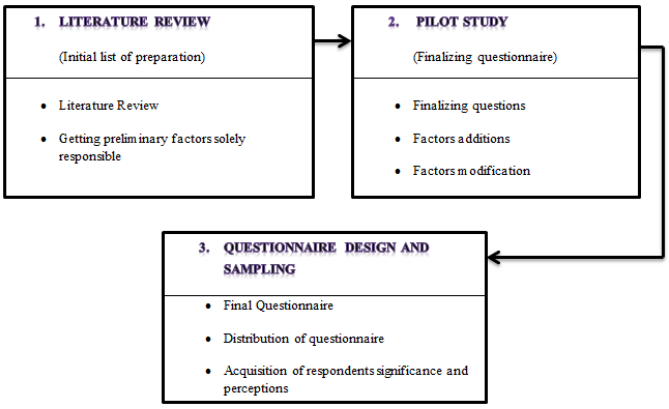

Figure 3. Data Collection Process

VII. RESULTS

TABLE I. OVERALL RANKING OF CAUSES AFFECTING TO CONSULTAN

Rank	ID	Causes	RII
1	1-2	Slow decision effects	0.900
2	1-6	Consultant Supervisory staff size	0.896
3	1-1	Frequent changes in design documents	0.887
4	1-3	Relevant past experiences in the complex projects	0.858
5	1-4	Inexperienced personnel in the consultant team	0.848
6	1-5	Lack of timely payments to the consultant	0.225

TABLE II. OVERALL RANKING OF CAUSES AFFECTING TO CONTRACTOR

Rank	ID	Causes	RII
1	2-5	Lack of high technology mechanical construction equipment's	0.880

2	2-1	Frequent changes of the sub-contractor	0.877
3	2-3	Lack of relevant experience	0.706
4	2-6	Lack of skilled labors work efficiency	0.332
5	2-8	Bid winning on the lowest price	0.283
6	2-4/2-7	Equipment's breakdown/ Lack of timely payment to the contractor	0.264
7	2-2	Lack of professional staff	0.258

TABLE III. OVERALL RANKING OF CAUSES AFFECTING TO CLIENT

Rank	ID	Causes	RII
1	3-7	Client having risk attitudes	0.941
2	3-4	Lack of coordination between client, contractor, and consultant	0.912
3	3-3	Inability to make a timely decision	0.883
4	3-2	Lack of client staff size	0.845
5	3-5	Lack of ability to cover the various construction packages by the client	0.377
6	3-1	Lack of relevant experience of the client	0.300
7	3-6	Shortages of fund	0.277

TABLE IV. OVERALL RANKING OF CAUSES

Rank	ID	Causes	RII
1	3-7	Client having risk attitudes	0.941
2	3-4	Lack of coordination between client, contractor, and consultant	0.912
3	1-2	Slow decision effects	0.900
4	1-6	Consultant supervisory staff size	0.896
5	1-1	Frequent changes in design documents	0.887
6	3-3	Inability to make a timely decision	0.883
7	2-5	Lack of high technology mechanical construction equipment's	0.880
8	2-1	Frequent changes of the sub-contractor	0.877

9	1-3	Relevant past experiences in the complex projects	0.858
10	1-4	Inexperienced personnel in the consultant team	0.848
11	3-2	Lack of client staff size	0.845
12	2-3	Lack of relevant experience	0.706
13	3-5	Lack of ability to cover the various construction packages by the client	0.377
14	2-6	Lack of skilled labors work efficiency	0.332
15	3-1	Lack of relevant experience of the client	0.300
16	2-8	Bid winning on the lowest price	0.283
17	3-6	Shortages of fund	0.277
18	2-4/2-7	Equipment's breakdown/ Lack of timely payment to the contractor	0.264
19	2-2	Lack of professional staff	0.258
20	1-5	Lack of timely payments to the consultant	0.225

CONCLUSION & RECOMMENDATIONS

The Relative Importance Index (RII) method enabled the researcher to identify the key causes of different construction project delays of FATA University of group-wise and as a whole as well. Three top causes linked to consultant were noted (1) slow decision effects, (2) consultant supervisory staff size, and (3) frequent changes in design documents. Contractor related factors the top three causes were (1) Lack of high technology mechanical construction equipment's (2) frequent change in sub-contractor and (3) Lack of relevant experience. Client related factors; the main three causes were (1) client having risk attitudes, (2) Lack of coordination between client, contractor, and consultant and (3) Lack of ability to make a timely decision. However top five overall causes are (1) client having risk attitudes, (2) coordination between client, contractor, and consultant, (3) slow decision effect, (4) consultant supervisory staff size, and (5) frequent changes in design documents by the consultant.

FATA University is the first varsity in the newly merged districts of Khyber Pakhtunkhwa.

Although FATA University is now establishing in Darra Adam khel, Kohat region, it compasses the direct benefits only to the students of Tribal subdivision Darra Adam khel, Tribal subdivision Peshawar and district Khyber. Due to the aftermath, in future FATA University should expand its campuses in the other newly merged districts of KP, like North and South Waziristan districts, district Kurrum, and Mohmand and Bajaur districts of KP.

1. It is suggested that the estimated cost and time of the forthcoming campuses should be accurate, and that can be done on the proper planning, designing, and scheduling of estimates.

2. All the changes should be done before the starting of construction works, because of the change of orders and changes in design documents on the spot, the construction works should be deferral.

3. It is suggested that during the planning and scheduling of detail designing of the upcoming campuses, the organization should be careful to hire the most relevant and having complex nature experience consultant.

4. It is suggested that during the preparation of the Master Plan, the consultant should focus on the detailed estimation and proper planning of the forthcoming campuses and if the Master Plan approved then avoid the self-made changes.

5. It is further suggested that the proper action should be taken into account to warn and forfeit the construction securities to solve and lessen the delays in the completion of large and complex educational institutions projects of Pakistan.

CONFLICT OF INTEREST

I declare that there is no conflict of interest and the previous work of the original author has been properly cited

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