

TAPI Project as a Role Model for Other National Development Projects of Afghanistan

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Abstract: This research study specifically intends to assess TAPI Gas Pipeline Project as a role model for other National Development Projects (NDP) of Afghanistan. The study has been done in seven provinces including capital (Herat, Kandahar, Helmand, Farah, Capital Kabul, Paktia and Khost) of Afghanistan. The main aims of the study are to analyze whether the TAPI is going to be a role-model for other national development projects of Afghanistan or not? Around seventy people participated in the study from seven different provinces of Afghanistan. Questionnaire method has been used for data collection. Likert scale has been employed for scoring procedure. The data analyzed using both percentile and SPSS software. Furthermore, the tables and figures are used to present the data in simple, accurate and clear manner. The study concluded that TAPI project influences other NDPs in many ways and contributes significantly for the development and progress of similar projects which has direct impact on maintaining security, economy, political stability, social and residential support, foreign direct investment (FDI), trade, commerce, international and regional relations of this nation.

Index terms: TAPI, ROLE MODEL and NATIONAL DEVELOPMENT PROJECTS, REGIONAL INTERDEPENDENCY AND COOPERATION and MULTILATERAL RELATIONS.

I. INTRODUCTION

Turkmenistan, Afghanistan, Pakistan and India (TAPI) Gas Pipeline Project is one of the long-term gas-pipeline development project for Afghanistan including three neighboring countries such as Turkmenistan, Pakistan and India. TAPI which is also called as peace project, is one of the most important gas pipeline projects by connecting Turkmenistan with Southern Asian countries in order to engage them by mutual cooperation. The TAPI gas pipeline from Caspian Sea, by having an 1814 km of its route line from Galkynysh gas-field[2], Turkmenistan runs through Afghanistan's Herat, Kandahar, Farah and Helmand provinces to Quetta, Baluchistan and Multan through Pakistan to Fazilka district in Punjab, India. TAPI gas pipeline project, which estimated constructing cost is \$10 billion US dollars is expected to supply 33BCMs annually.

Afghanistan will receive 5-5.1 BCMs or 16% and Pakistan and India will individually receive 13.8-16 BCMs or 42% of the total amount annually. From total 1814 km lengthy route, 772 km will go inside Afghanistan and 828 km will be passed through Pakistan. The pipeline will have 56-inch diameter by having 100 standard atmospheres (10000 kPa)[3] pressure power. This multimillion dollar

pipeline project results to benefit each country for almost 30 years in order to meet their energy needs and to manage sustainable development. TAPI pipeline project is expected to change the whole war and conflict scenario to development and political stability in Afghanistan by cooperation of the neighboring countries. In the beginning it conceived from 1990s during the Taliban regime. Afghanistan Islamic Emirate[5] (Taliban Regime) at that time had signed a transit agreement with one of the U.S. firm Unocal and Argentinian Bidas as well but later in 1998 attacks of Al-Qaeda on U.S. embassies in Kenya and Tanzania, the agreement of the gas pipeline construction and transit has been delayed to its spoliation. After the destruction of Taliban Regime, the four countries again came together in 2002 and 2008 for signing the initiative agreements on gas transiting pipeline. India joined TAPI in 2003. From 2002, the Asian Development Bank has been having the responsibility as TAPI's Secretariat in legal, institutional and technical terms.

One other step towards the progress of the pipeline in 2014, the State gas companies of these four countries decided to create a TAPI Pipeline Company in order to manage financing and undertake all the pipeline constructing operations by itself. Later in 2015 the steering committee of the pipeline gave approval to state-owned Turkmengaz as the consortium leader of TAPI Pipeline Company. Meanwhile, the pipeline project work started in Turkmen side in 2015 and an initiative ceremony held in 2017 for the beginning of work in Afghanistan and Pakistan[6]. The TAPI pipeline construction work in Afghanistan inaugurated on Feb 24, 2018 in Herat province during the historical ceremony for natural gas pipelining. Afghan President Mohammad Ashraf Ghani, President of Turkmenistan Gurbanguly Berdimukhammedov, Pakistani Prime Minister Shahid Kahqan Abbasi and Indian Minister of State for External Affairs Shri. M. J. Akbar attended this great and amiable ceremony which gave an extra potential to the progress of TAPI gas pipeline construction and implementation.

II. STATEMENT OF THE PROBLEM

Considering the importance and impacts of TAPI on the whole region, it is believed as a role-model for other NDPs inside Afghanistan. It can bring a big change in economic and political conditions to establish a secure environment in this trouble torn region by its implementation which will identify new plans and schemes based on the nation building, establishment of the new energy plants and providing public services by Afghan government. An extreme effort should be taken by present Afghan government to implement all those economic and developmental projects which has deteriorated since last four decades[7]. The establishment of integrative

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TAPI pipeline development project can stabilize country's economy and security in order to initiate and operate other National Development Projects in the country.

The big problem for implementation of NDPs is the lack of security, residents' and financial support and regional cooperation by neighboring countries. The problem is whether the TAPI can effectively motivate Afghan government and civil people in order to embark on implementation of NDPs or not?

III. SCOPE AND SIGNIFICANCE OF THE STUDY

The TAPI Gas Pipeline Project is one of the most essential and integrative project for maintaining regional cooperation, bringing security and political stability among all regional countries. Specifically, the project will facilitate India and Pakistan to overcome with their energy deficits. Afghanistan will generate millions of dollars as transit fee and the Turkmenistan will reach to find a permanent gas exporting market in energy-starved South Asian part. In Afghanistan, TAPI is believed to bring security, to uphold economic growth and to enhance people's life styles and conditions. This study is more significant to give a spirit and mentality to Afghan government towards the implementation of other NDPs and to motivate people to support and participate in all such development projects in the country. It will encourage the government to establish and restart those projects which have been facing with insecurity and continuous conflicts in various parts of the country. Such NDPs can be mentioned as highway roads, water dams, bridges and so many other projects are still under security concerns and fluctuations by the active fighting groups near to these provinces.

IV. OBJECTIVES OF THE STUDY

The objective of the research study is to answer the research question whether the TAPI is a role model for National Development Projects of Afghanistan or not? It also aims at analyzing the security and economic impact of this project on other national development projects of Afghanistan, the residential support for it, comparing the differences in outcome of this gas pipeline as a role model on the basis of route-line and qualification.

V. RESEARCH METHODOLOGY

A. RESEARCH DESIGN

This is a qualitative-descriptive field study and research design which is going to show the ground reality. The other aspect of research design is that it is much specified to the people involved in TAPI and those of route line people.

B. STUDY OF POPULATION

The research population consists of those people who know little bit about TAPI and its impact on other NDPs of Afghan government. The researcher has conducted this study upon 111 people from 7 provinces as the population of the research both on route line (Herat, Kandahar, Helmand, Farah)[3] provinces and off line

(Kabul, Paktia and Khost) provinces with the TAPI Gas Pipeline project. This population belongs to different categories of educational backgrounds, age and place of residence.

C. SAMPLE SIZE AND SAMPLING PROCEDURE

In this study, all the 70 respondents were the sum of 10 people from each of the seven provinces which were based on random sampling process. So these respondents chosen randomly, per province by representing the whole population of its province which can give us a clear result about the research findings and possible generalization of such properties and characteristics of the population.

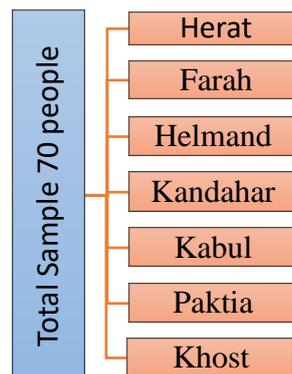


Figure 1 shows sampling design of overall sample

D. SOURCES OF DATA (PRIMARY AND SECONDARY)

According to the principles of research, the study of the research is based on its source of data which provides researcher a plenty of information and observations about the problem by which researcher could strongly find out about its final results. For this study the data has been collected based on primary sources in form of responses to the questionnaire but to an extent; secondary data also have been used in data collection and research process.

E. PROCEDURE FOR DATA COLLECTION METHOD

The research data has been distributed and collected as primary data in form of online and paper based distribution of the questionnaire among the respondents in mentioned seven provinces. The questionnaire itself contained 32 questions or statements which had to be marked based on Likert scale, where the respondents were free to choose one of them based upon their knowledge and understandings. Finally, all the relevant data has been collected by both online and off-line form for further analysis[4].

Following chart shows the Likert Scale options with its numbers:

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

F. STATISTICAL TECHNIQUES:

The researcher used SPSS software which could give the real and accurate result of research. It involved editing, coding and tabulation which were used as a key factors in the whole process. After editing all data had gone through a systematic classification and tabulation process which assembled the data into a concise and logical order. The qualitatively collected words used to explain the findings and quantitative analysis which contribute the numbers, percentages and data analysis based on research objectives.

G. ANALYSIS AND INTERPRETATION

As the data had been already collected according to the method and procedure, the researcher used different techniques and tools because the data itself cannot provide a result without a systematic classification, tabulation, analysis and interpretation. The data analysis was carried out by both descriptive as well as inferential statistics. To analyze the data percentage and 2-way-ANOVA analysis was used. The collected data has been studied from different angles in order to explore the facts and the analysis has been carried out under the following headings:

a. Security and economic impacts of TAPI on other NDPs.

4.2.1. Security and economic impact of TAPI on other NDPs of Afghanistan on the basis of Route line.

4.2.2. Security and economic impact of TAPI on other NDPs of Afghanistan on the basis of education level.

b. Residential support for TAPI and other NDPs.

c. Difference in outcome of TAPI as a role model for other NDPs of Afghanistan on the basis of route-line and qualification.

d. Security and economic impacts of TAPI on other NDPs.

This study revealed that TAPI has potentiality to open the way for implementation of all other NDPs in Afghanistan, because of its great influence and effect on various situations and functions of the government. For detailed information the following figure 4.2, shows its impacts clearly in percentages on the basis of different demographical dimensions of the respondents[8].

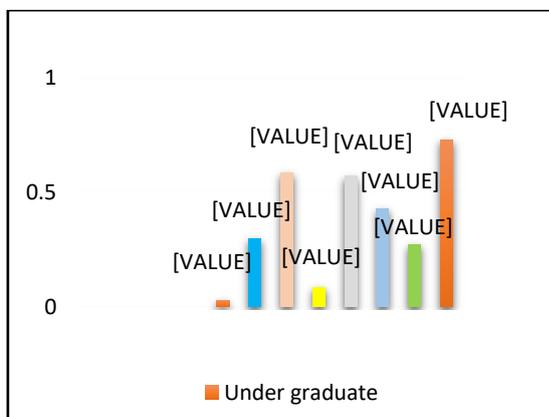


Figure No. 2 Shows the Security and economic Impact of TAPI on other NDPs of Afghanistan

A. Security and economic impact of TAPI on other NDPs of Afghanistan on the basis of Route line.

This analysis of figure 4.2 describes the views and responses from various urban, rural and educated people. 57% of route line and 43% of the people outside the route line have positive responses of TAPI's security and economic impacts on other NDPs in different part of the country.

B. Security and economic impact of TAPI on other NDPs of Afghanistan on the basis of education level.

The figure 4.2 analysis reveals that 9% of the doctoral, 59% post graduate, 30% of graduate and 3% of under graduate levels of educated people have positively supported the study and stated that if its successful, there will be more chances of such kind of huge foreign investment in other NDPs.

C. Residential support for TAPI and other NDPs.

Residential Support for TAPI has different historical, social and national perspective in Afghanistan. The people or the citizens also expressed their strong support for TAPI project as well for other NDPs as seen in figure 4.3.

Figure 3. Shows both Residential support for TAPI and other NDPs

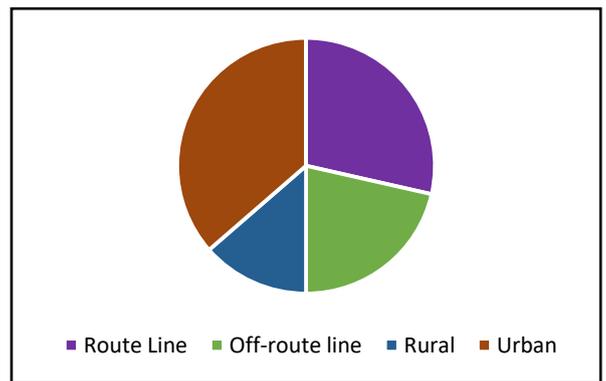


Figure 3. Shows the TAPI and other NDPs in general highly supported by people of Afghanistan. The analysis shows a significance number of residential support for both TAPI and other NDPs as well. Apart from this 57% of route line people and 43% of outside the route line of these project areas revealed their positive response about the research. Furthermore, 73% of the urban and 27% of rural people have participated relevant to this study. Both urban and rural accepted residential support for TAPI Gas Pipeline Project and other NDPs of Afghanistan.

D. Difference in outcome of TAPI as a role model for other NDPs of Afghanistan on the basis of route-line and qualification.

The Summary of 2x2 analysis of variance (ANOVA) on the scores of TAPI as a role model for other NDPs of Afghanistan with respect to route line and qualification.

To study the main effect of TAPI along with their interaction effect analysis of variance (2x2 factorial design involving 2 types people;



on route line and off-route line and four types of qualified people was applied on mean scores of TAPI as a role model for other NDPs of Afghanistan. Descriptive statistical results for TAPI project based on a sample of 70 respondents from seven provinces of Afghanistan present in table 4.4.1

Table 1 shows the descriptive statistics of the sample on the basis of rout-line and education level

Education Level	Route line	Mean	Std. Deviation	N
Doctoral	No	136.500	30.4056	2
	Yes	133.500	17.2143	4
	Total	134.500	19.1076	6
Graduate	No	130.500	7.2319	6
	Yes	136.067	13.2636	15
	Total	134.476	11.9525	21
Post Graduate	No	132.773	10.5059	22
	Yes	133.263	13.5927	19
	Total	133.000	11.8807	41
Under graduate	Yes	144.000	2.8284	2
	Total	144.000	2.8284	2
Total	No	132.567	11.0818	30
	Yes	134.875	13.3305	40
	Total	133.886	12.3846	70

Table 2: Summary of 2-way ANOVA (2x2) for interaction between route line and qualification with respect to compare the differences in outcome of TAPI as a role model for other NDPs of Afghanistan.

Source	Sum of Squares	df	Mean Square	F	Sig.
Education Level	206.277	3	68.759	.425	.736
Route line	8.642	1	8.642	.053	.818
Education Level * Route line	108.186	2	54.093	.334	.717
Error	10189.481	63	161.738		
Total	1265360.000	70			
Corrected Total	10583.086	69			

Main Effect Qualification (Education level): - Table 4.4.2: revealed that calculated F-ratio for the main effect of rout-line on differences of outcome of TAPI as role model for other NDPs, came out to be $F(3,63) = .425, p = .736$, which found insignificant at 0.05 level of significance. The results revealed that respondents of respect to their different route line i.e. on route line and off-route line do not significantly different in the outcome of research on TAPI as role model. Therefore, the data does not provide sufficient evidence to reject the null hypothesis. No. (1), *“There is no significant difference in outcome to compare the difference in outcome of TAPI Gas Pipeline as a role model on the basis of qualification”*.

According to primary data, the qualified participants of 9% with doctoral above from 40 years, 59%

of post graduated by having 35-40 years of age and 30% of graduated; highly accepted that TAPI Project is really as a role model for NDPs. The descriptive analysis of Table (4.4.1) shows mean value of 134.50 of respondents having doctoral, while the mean value of graduates is 134.47 which is almost same with the mean value of post graduated i.e. 133.00. Therefore, the analysis revealed no significance differences about the study on the basis of qualification.

Main Effect Route-line: - The analysis of Table 4.4.2: revealed that F-ratio for the difference between in outcome to compare the route-line is $F(1, 63) = .053, p = .818$, which is found insignificance at the 0.05 level of significance. The results indicate that respondents of different route-line do not differ in outcome of the research. Therefore, the data do not provide sufficient evidence to reject the null hypothesis. No. (2), *“There is no significant difference in outcome of TAPI Gas Pipeline as a role model on the basis of its route-line”*.

The analysis shows that both people on the route line and off-route line of the TAPI project highly agreed. 58% respondents on the route line and 42% of them on off-route line areas of the project reported highly positive response. The descriptive analysis by Table (4.4.1) revealed that the mean value of route line respondents is 134.87 while the mean value of off-route line is 132.56; which shows that the respondents belong to route line were well aware about its effects and benefits to people.

Interaction Effect (Qualification x Route Line): - Theanalysis of Table 4.4.2: revealed that the F-ratio for the interaction between Qualification and Rout-Line on TAPI’s outcome is found to be $F(2,63) = .334, p = .717$, which is not found significant at the 0.05 level of significance. The results indicate the main effects i.e. Qualification (*under graduate, graduate, post graduate and doctoral*) and Route Line (on route line and off-route line) of respondents that there is no significance difference in outcome of the research study. Therefore, the data does not provide sufficient evidences to reject the null hypothesis. No. (3), *“There is no significant interaction effect of route-line and qualification on the outcome of TAPI Gas Pipeline Project as a role model for other NDPs of Afghanistan”*.

The results revealed that perception of qualification and route line on the scores of TAPI as a role model is the result of interaction of qualification and route line which does not differ from one another significantly. According to the analysis of interaction between route line and qualification by Table (4.4.2) reported as the significance value is 0.717, which shows that there is no significant difference in outcome of the study on the basis of route line and qualification. Therefore, both the respondents having different qualification on route line and off-route line highly agreed about the study. 53%, of the overall respondents strongly agreed and 46% agreed on TAPI as a role model for other NDPs.

Table (4.4.1) shows that 57% of route line people and 43% of outside the route line of this project areas revealed positive response about TAPI and all other NDPs which benefits the people of Afghanistan. Furthermore, 73% of the urban and 27% of rural people have participated relevant to this study.



Both urban and rural accept residential support for TAPI Gas Pipeline Project and other NDPs of Afghanistan.

VI. DISCUSSION

Criteria used to prove TAPI as a role model for other NDPs of Afghanistan

The analysis shows that both people on the route line and off-route line of the TAPI highly agreed. 58% people on the route line and 42% of them on off-route line areas of the project reported positive response on TAPI as role model for other NDPs of Afghanistan. 53%, of the overall sample strongly agreed and 46% agreed on TAPI as a role model for other NDPs.

According to primary data, the qualified participants of 9% with doctoral above from 40 years, 59% of post graduated by having 35-40 years of age and 30% of graduated; highly accepted that TAPI Project is really as a role model for other NDPs of Afghanistan. The findings of this study found relevant study of Huda and Ali (2017) about the influences of TAPI on various aspects in Afghanistan. They stated that TAPI would be one of the most expected integrative project to minimize harm and contribute local and regional development and this will provide Kabul more benefits by the collaboration between Pakistan and India on state-building and development.

Research findings show that TAPI influences other development projects of the country on the basis of security and economy which is also highly supported by the participants and 99% of the overall sample reported agreed that would ensure security and economic stability of Afghanistan. Based on the analysis of the study, researcher found that different categories of qualified people responded positively to the statement i.e. *"TAPI connects Southern parts with Central Asian parts to fulfill their needs and to engage them in a long term trading cycle"*. The analysis of response for this statement is that 99% of the respondents highly agreed on the study. It revealed about foreign investment which also positively responded. The statement refers as *"TAPI encourages other countries to invest and sign such kind of mutual agreement with Afghanistan"* indicates the importance of such investment, trade and socio-economic relations between Southern and Central Asian countries mostly benefit Afghanistan. The relevant study of Powell (2017) revealed that Afghanistan will boost its economy by generating transit fee which will also bring opportunity to Afghan government to establish factories, incorporate industries and power plants in various big cities including the route line areas.

VII. CONCLUSION

As the study was conducted to know whether TAPI Gas Pipeline Project is going to be as a role model for other NDPs of Afghanistan or not? Yes, and off course, based on the research analysis and findings, TAPI project has direct economic and security impacts on other development projects in the country. Social support for TAPI and other National Development Projects, is the other area which can be improved by this project around the country. The analysis revealed that 99% of the respondents agreed about TAPI as a role model for other NDPs of Afghanistan. This project has its influencing power on other National Development Projects of Afghanistan in terms of economy, security, social support for projects and foreign investment in such development projects in the country.

Based on the study findings to the questionnaire statement "TAPI influences other national development projects of Afghanistan" 99% of the respondents highly agreed on its influence on other NDPs in terms of security, economy, residential support, foreign investment, limiting the gap between government and citizens and engaging Afghanistan in multilateral relations with regional countries. It is expected that TAPI will play a very significant role in removing or limiting security disturbances in order to propose and implement other NDPs in Afghanistan. Residential support for TAPI project among the Afghan citizens, is the other key aspect of the research study and the study analysis revealed that TAPI has 99% of its social and residential support around the country.

VIII. SUGGESTIONS

TAPI project influences other NDPs of Afghanistan, so the government should give more priority to finish it up to that scheduled time. The residential support is the key element for implementation of TAPI project, therefore, government should work on residents and people of Afghanistan to support for other NDPs as well. According to TAPI action plan, it is going to be implemented up to 2019-2020, but the field work faces with many social and political barriers therefore, government of Afghanistan should take serious steps towards the solutions. The consortium and leading construction agency (TurkmenGaz Enterprise) works on construction of TAPI project in accordance to its action plan but it does not provide information about its working progress regularly with Afghans. Therefore, it should provide an opened source of information for the people of Afghanistan in order to be updated on its work progress. There should be mutual cooperation and high coordination between TurkmenGaz Enterprise and MoMP of Afghanistan. All Stakeholders should consider about conducting regular meetings for its timely and successful implementation.

IX. LIST OF ABBREVIATIONS

TAPI	-	Turkmenistan-Afghanistan-Pakistan and India Gas Pipeline
NDPs	-	National Development Projects
BCMs	-	Billion Cubic Meters
GSPA	-	Gas Sales and Purchase Agreement
AGE	-	Afghan Gas Enterprise
GAIL	-	Gas Authority of India Limited
ISGS	-	Inter State Gas System
SCO	-	Shanghai Cooperation Member
ICB	-	International Commercial Bank
ADB	-	Asian Development Bank
IDB	-	Islamic Development Bank
SPCC	-	Special Purpose Consortium
Company		
ILF	-	A Legal Entity Consulting Engineers, Project Management and etc.
CBRI	-	China Belt and Road Initiative
IP	-	Iran-Pakistan Gas Pipeline
IPI	-	Iran-Pakistan and India Gas Pipeline
MBI	-	Myanmar-



Bangladesh and India Gas Pipeline
 TII - Turkmenistan-Iran and India Gas Pipeline
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