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Analysis of the Impact of Investment in Education in Khyber Pakhtunkhwa During 2001-2015.

Abstract *It is a descriptive study that used a mix method of research. The data were collected from primary and secondary sources. The type of sampling technique followed in this study was first to select the clusters and then selecting the specified number of respondents from each selected cluster. First the respondents were categorized as principals and teachers of schools, colleges and Regional Institutes of Teachers Education and key informants at the provincial level. Then purposive sample was drawn from clusters of those subjects who could provide useful information about the study. In order to suggest a remedy for the solution to these problems it was recommended that both access and quality should be improved making the education affordable for all concerned. It was recommended that the issues of absorption and marketability of graduates at different levels of education should be addressed in the national policies.*

Key Words: Impact, Investment in Education, Allocation, Expenditure, Priorities.

Introduction

The public sector of education in Pakistan suffered for years due to less attention, deficiency of assets as well as policy reform, which has resulted in low quality of facility distribution. The historically low levels of education indicators have frequently stressed the need for this country to increase its levels of investment in education and prioritize its choices for investment in education. The resources of the province are limited and the allocation of funds to different schemes is a difficult task. Due to the limited resource allocation for a number of schemes has been just nominal due to which they staggered for a longer time and the benefits of these schemes were not made available to the public on time. The demographic growth is rapidly outrunning the capacities of the government to maintain even the current low level of educational facilities because of rates of economic growth and revenue allocation lag behind the rapid growth in population. These are constraints due to which education does not receive that priority, which it actually deserves. Because of the given situation, it was deemed necessary to analyze the impact of investment in education to identify areas that essentially require investment. This will also be helpful to check the wastage of resources and investment in projects and other planned initiatives with utmost care.

Statement of the Problem

The problem of the research is that the government makes allocations according to its own choices and priorities, rather than on considerations or ground realities, where resources are required for more important but more neglected areas of education. The proposed study identified those areas in education that required investment based on the perceptions of stakeholders and key informants.

Objectives of Research

1. To identify priorities of the provincial government in the allocation of funds for different sub-sectors and purposes of education in the Annual Development Programs during the period from 2001 to 2015.

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2. To explore areas in different sub-sectors of education, which require priority for funding and allocation of resources?
3 To make recommendations for better investment choices in education for development.

Questions of Research

1. What were the priorities of the provincial government in allocation of funds to different sub sectors of education in the Annual Development Plans during the period from 2001 to 2015?
2. What are the important areas and projects of education in different sub-sectors that were neglected?
3. What recommendations the study can make for better investment choices in education for development.

Literature Review

The impact is the net effect or result of the planned activities of the government for improving access and quality in education by investing sizeable funds and prioritizing the different aspects of education. The investment in education based on of loans and grants by donor agencies did not deliver well both in terms of access and quality of education. That is why the private sector flourished and public education sector remained the second choice of the parents for choosing schools for their children. The facilities for higher education in the public sector did not meet the requirement of the population. It was, therefore considered expedient to encourage the private sector to establish universities but these universities are out of reach of the poor students. The government targeted universal primary education but the target remained unachieved despite targeting it in several repeated national education policies for the reasons that population explosion was not checked; political will lacked and the illiterate parents were not socially mobilized for accepting the value of sending their female to school Iqbal (2014).

Investment can be defined as the utilization of resources in a useful way of making profit or success in any field. Investment in education improves the existing standard of any association, firm or organization. Like other social service sectors, education can play a critical role in the growth of the national economy through an educated workforce. Investment in education is very important for human capital formation. Spending in education can take place in many forms, comprising the establishing and running of schools as a business venture and or the type of education of folks to improve their service forecasts as well as income-earning capacity. The government can also invest in the growth of a specific type of human capital development (Agabi, 2012).

In general, investment in any public sector refers to development expenditure on physical infrastructure and human resource development as well as other innovative programs. The investment of the government in education is two dimensional. The investment comprises of direct and indirect investment. Direct investment is defined as gross capital formation and acquisition of fewer disposals of non–financial non-produced assets during a given period. Indirect investment is outlined as capital transfers i.e. investment grants and subsidies in cash or any kind made by governments to other institutional units (Organization of Economic Co-operation and Development, 2014)

It is recognized all over the world that investment in education should bring greater ability to compete in the world. However, when we compare America's investment in education with other countries like the Soviet Union, Sweden and Japan they spend more money per person on education than America. Right now, eight nations invest more money per person than America. It is due to the reason that their governments know that those are stronger who are smarter (Hood, 1990).

In Pakistan investment in education is considered important and cannot be brushed aside and compromised for any other considerations. All other considerations should receive secondary treatment (Aly, (2007).

Education in Pakistan was not considered a priority by different governments that came into power in Pakistan. Pakistan earmarked minimum allocation of funds (less than 3%) for the development of education. As a result, in Pakistan literacy and quality education did not improve so much as compared to other developing countries particularly India (Saeed et al, 2013).

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In Pakistan, education did not receive the needed attention with regard to financial support from the government, which spends the least resources on education. As a result, education received less financial support and remained the most poorly paid and poor in performance (Ahmad et al, 2013).

The important source of funding education is local funding. The government of Pakistan has committed itself to spend 4% on the education of the GDP. This commitment was made in 1992 and was repeated time and again to achieve this target till 2018 (Malik and Rose, 2015).

Pakistan is faced with many demands against its limited resources. Despite limited resources of developing countries, they have provided education greater sources of their resources (Hataway, 2015).

Education sector in Pakistan is suffered from low allocation of funds by government during the last several years. Pakistan did not meet the limit of 4% spending on education as laid down by UNESCO (Qureshi, 2003).

The overall public spending on education helps only in short terms gains. However, the long-term benefits of education to promote the skills of educated persons for productivity requires more investment in education (Khaliq and Ahmad, 2016).

Equity in education means that how educational financial resources are mobilized and the allocated amount distributed among different levels of education (Komba, 2012).

Pakistan education sector has not only received low priority in the allocation of resources by the government but there were other issues which are affected the standard of education and delivery of educational services. There is a need to develop implementation capacity of the manager to ensure proper use of allocation ability to implement (Civil Society Support Program CSSP, 2013).

Low provision of financial resources to education is, of course, a problem, but more embarrassing situation is that the allocated amount is not utilized correctly and, more often the allocated amount is not used for the benefit of the target population and schools (Tabassum et al, 2016).

Importance of Investment in Education

Education is an important tool for progress as it alleviates poverty and inequality and laying a foundation for the growth of economy. It also contributes to promoting fundamentals for democratic societies and dynamic economies (World Bank, 2003).

The role of education is significant for economic development of a country. Thus spending on education is an investment (Odior, 2011).

The message of Nelson Mandela, which read that through education we can change the world. It is an instrument, which can stop gender discrimination, inequality and reduce poverty, thereby creating a peaceful environment on earth. Education is the currency through which any nation can get success and development. Investment in education is not only necessary for the United States, but it is also necessary for every country (Duncan, 2013).

Methodology of the Study

It was a descriptive study that was designed in such a way that provided a mix of both quantitative and qualitative methods.

Population Sample of the Study

The population of the study consisted of all those who are benefited from the development programs in the province of Khyber Pakhtunkhwa. They included staff of Schools, Colleges and Regional Institutes of Teachers Education.

All the officers involved in the issues of the Planning and Development both in Education and P&D Departments were included in the purposively selected sample since they were considered as key informants. Similarly, heads of educational intuitions both in schools and colleges as well as teachers were included in the purposively selected sample, who could provide useful information about the investment in the education sector and related issues.

Data Collection Instruments

The opinionnaire and interviews were the two instruments of the study for data collection. The opinionnaire was developed for principals and teachers of schools, colleges and Regional Institutes of Teacher Education at the Provincial level. The structure interview protocol was constructed for the key informants of education as well as Planning & Development Department. Interviews were held with key informants purposively selected at the provincial level. The secondary data were obtained from the office documents of Education, Planning and Development Departments of KP.

Analysis of Data

The data were presented in numerical form with the help of tables and graphs. In order to draw inferences and valid results multiple regression models were applied to secondary data obtained from Planning and Development Department. The qualitative data were placed under different patterns and categories and presented in narrative form. The analysis of data was further supported by statistical measures for the purpose of validity and reliability The important purpose of using statistical measures is to provide a summary and interpretation of the data and reach to meaningful results. For this purpose, multiple regression models were used.

This method facilitates analysis of the data with the help of statistical measures in which there is dependent variable that is continuous in nature. The set of explanatory variables can be discrete, continuous or categorical. In this modeling approach, the average value of the response variable was estimated using set of independent variables. The following is the mathematical form of the model

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_k X_k$$

Where Y is the response variable, X_i are the set of explanatory variables and β_i are the coefficient of regression model, which needs to be estimated from the sample data.

Statistical Analysis of Primary Data

In this sub section the primary data obtained through Opinnionaire were analyzed through different statistical techniques. The data were obtained through Opinnionaire from the teachers and principals of schools, colleges and teacher training institutes in Khyber Pakhtunkhwa. The following table indicates the frequency distribution of the respondents selected in the study.

Table 1. Opinion of Respondents Regarding the Investment in Education

	Frequency	Percent
SDA	19	4.4
DA	35	8.0
UD	40	9.2
A	174	39.9
SA	168	39.0
Total	436	100.0

The data in table 4.5 indicated views of the respondents regarding the investment in education by Government of Khyber Pakhtunkhwa during the period from 2001 to 2015 and onwards up to 2018. The data revealed that out of 436 respondents 342 respondents agreed to the statement that government of Khyber Pakhtunkhwa invested significantly in education and its related subsectors during the recent years as compared to previous years. A sample of 54 respondents went against the opinion of significant investment in education subsector.

Secondary Data Analysis

In this sub section secondary data regarding allocation of funds in Annual Development Programs (ADPs), enrollment of students in sub sectors of education and the number of schemes allocated to subsectors of education from 2001-2015 and onwards up to 2017-2018, have been analyzed. The data

were obtained from official documents of Planning and Development Department during 2001-2015 and onwards up to2017- 2018.This analysis included frequency distribution of funds allocation, students' enrollment and number of schemes allocated to schools, colleges, Archives & Libraries. Graphical presentation and impact of ADP funds and number of schemes allocated to educational institutions and enrollment of students were studied using regression analysis.

Table 2. Model Summary Output

Regression Statistics	
Multiple R	0.9025
R Square	0.8145
Adjusted R Square	0.7881
Standard Error	3285.004
Observations	17

The analysis of the data indicated the model summery for the regression of enrollment of student's and total allocation of funds in ADP in KP in sub-sectors of education throughout 2001 to 2015 and onwards up to 2017 and the total number of schemes. The value of R square was found as 0. 8145 which indicated that 81% of the variation in students' enrollment was due because of variations in ADP funds and number of schemes for the mentioned period in Education sub-sector.

Table 3. ANOVA

	Df	SS	MS	F	Significance F
Regression	2	6.64E+12	3.32E+12	30.75411631	7.53245E-06
Residual	14	1.51E+12	1.08E+11		
Total	16	8.15E+12			

The ANOVA table indicated the overall significance of the model. The table defines the value of F as 30.754 with the p-value as 7.532 E-06 which is less than 5%, indicating that overall model is statistically significant. The estimated model is

$$StudentsEnrollment = 3142140.5 + 112.792(ADPAllocation) + 250.67(Schemes)$$

1. The above model indicated that there is a positive relationship between student enrollment and allocation of ADP funds along with number of schemes in education sector. The model indicated that if ADP funds increases by one unit, the students' enrollment will increase by 112.792 units. Similarly, if the number of schemes for education sector increases by one unit, the fund will increase by 250.67 students.

Findings

1. The answers of 436 heads of educational institutions and teachers were obtained. Of those 342 respondents strongly agreed to the statement that government of Khyber Pakhtunkhwa invested significant funds in education. A small number of 54 respondents did not agree with this assumption.
2. The result based on the interviews with seven key informants indicated that primary education, in general, and girls' education, in particular, as well as basic facilities and infrastructure received more funding during the specific period. The impact of investment in education was that literacy rate as well as enrollment in government schools increased.
3. The key informant informs that investment will be fruitful in the following areas.

a. Integration of modern technologies in education.
b. Introduction of market-oriented subjects at colleges
c. Girls' education.
d. Teacher training.
e. Quality improvement

4. The study unfolded the total number of schemes, enrollment of students, and total allocation of funds in Annual Development Programs in Khyber Pakhtunkhwa in sub-sectors of education throughout 2001 to 2015 and onwards up to 2017. The value of R square found as 0.8145 indicates that 81.45 % of the variation in student enrollment observed because of variations in ADP fund and number of schemes for the mentioned period in education sector.
5. The outcomes of the study indicated the overall significance of the model. The value of F as 30.754 with the p-value as 7.532 E-06 which is less than 5%, indicating that overall model is statistically significant. The model indicates that there is a positive relationship between student's enrollment and ADP allocation funds along with number of schemes in education sector. The model indicates that if ADP funds increase by one unit, the student's enrollment will increase by 112.792 units. Also, if the number of schemes for education sector increases by one unit, the fund will increase by 250.67 students.

Conclusions

This study was designed to find out the impact of the investment of funds in education and enrollment of students in government schools and colleges by government of Khyber Pakhtunkhwa as allocated in the Annual Development Programs of the province. There was gradual increase in allocation of funds invested in different programs of education. The impact of investment was not that significant because the government did not achieve the target of the universalization of primary education up to 2015 even up to 2018 and girls' education did not receive the needed importance to bring them at par with their opposite gender. The disparity in education between boys and girls persisted due to lack of social mobilization of illiterate parents, who are not willing to send their female children to school. Enrollment in schools increased but in colleges it was not that significant. The improvement of quality education was not given the needed importance because it is still a problem that needs considerable attention both in allocation of funds as well as chalking out significant programs for quality improvement. The programs of education are not strictly responsive to the market needs due to which chances of employment of graduates are rare. One of the priorities of the government was to integrate modern technologies in education which received acceptance from public but much work is to be done in this area. The absorption of graduates at different levels of education will be possible only if education is related to the market needs and made quality oriented. The impact of integration of modern technologies in the education system has, to some extent, improved quality and enrollment in government schools at different levels of education. The study explored that future investment of funds and the development priorities should be based on improving in service training, access and quality of education, girls' education and provision of facilities at the secondary education level in line with expansion of primary education, investment in instructional supervision and in modern technologies will be fruitful.

Recommendations

1. It is recommended that in order to bring all the children to schools it is imperative to link primary education to other sectors such as population welfare and Works Department as well as financial resources of the Government. Due to population explosion and financial constraints as well as poor capacity of the Works Department those deficiencies precluded universalization of primary education.
2. Government should provide funds for social mobilization of parents and support them financially to send their females to school.
3. For quality improvement at any level in education, there is need to improve the quality of educators, which should be given priority in the allocation of funds.
4. The issue of marketability of the graduates at any level should be addressed in the National Education Policies for solution to the problem of unemployment.
5. It is recommended that human resource management strategy should be fully implemented in the Departments of Education.

6. In order to provide access of students to higher education the establishment of universities in private sector has considerably increased but participation rate particularly for girls is negligible because the fee structure is not affordable due to which the poor families cannot send their children for higher education.;
7. In order to effectively use modern technologies both the mangers and educators should be exposed to in-service training.

It is, recommended that focus of priority in education should be on in-service training, access and quality provision of facilities at secondary level of education in line with the expansion at primary education level; instructional supervision and investment in modern technologies will be fruitful.

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