Impact of Education on the Labor Force of Afghanistan

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Abstract:
An educated and skilled labor force is a high-ranking asset for a country as well as for an organization the effect of education on the work force has been examined in this research. The paper examines both male and female students in the education sector and the total labor force of Afghanistan from 2011 to 2020. For an empirical analysis, secondary data has been collected from the websites of the Ministry of Education, the World Bank, and the World Development Indicator. The Multiple Regression Model of SPSS 19 has been used for data analysis. Afghanistan's total labor force is considered a dependent variable, while both male and female students are considered independent variables. Overall, the model exhibits a strong correlation among the variables, but individually, the correlation between female education and the labor force is strongly positive, while the correlation between male education and the labor force is weakly negative. The R-value of the model is equal to 0.859, indicating a strong relationship and the R-squared value is equal to 0.738, demonstrating that a one-unit change in education causes a 73.8% change in the labor force. In conclusion, education has a strong and positive impact on the labor force.

Keywords: Education, Gender, Skilled Labor.

Introduction
In general, beyond economic growth and the economic development process, we have resources, among which the key source for the aforementioned process is human resources. Among human resources, a skilled or technical labor force is the most important factor in the process. To have a skilled labor force, common education is necessary, but specifically vocational training, experience, a task-oriented culture, and many other aspects are required.

Afghanistan is a developing country and has been suffering from civil war for the last four decades. All developing countries have a shortage of skilled and experienced labor force. Gaining from the labor force market through work is a unique instrument for the survival of human beings, which depends on the struggle, the amount of work, experience, and education. High education and human capital are guarantees of a high quality of life.

The outcomes of the labor market affect the living standards of both male and female labor forces, however, in the case of the female labor force, the differences in participation strategy, form, and extent exist. Ghana's labor force market is male-dominated because employment
is based on human capital in which the male labor force is rich (Sackey, 2005).

Structural changes resulting from technology, globalization, and shifting economic environments focus on the ability of individuals, regions, and countries to adapt to these changing situations. Education and human capital enhance an individual's ability to adapt and make efficient decisions in the ever-changing labor force market (Riddell & Song, 2011).

Nowadays, in developing countries, two phenomena have arisen. One is the female labor force participation rate, and the second is the closing of the gender gap in school enrollment. The relationship between female education and labor market opportunities is reciprocal because increasing education prompts more females to enter the labor force market, and an improvement in labor market opportunities prompts female education (Heath & Jayachandran, 2016).

Both the system's unique structure and educational options as well as the characteristics of persons who choose to work in certain fields have an impact on labor market mobility (Allmendinger, 1989). In the labor force market, one of the strong empirical regularities is that those with higher education have favorable labor market outcomes, including higher earnings, higher employment rates, and lower unemployment rates (Chiswick & Miller, 2003).

In the last decade, especially in Western countries, a remarkable demographic development is the increasing level of population education. For example, of the population of OECD countries aged 55-64 years in 1992, about 38% had attained at least upper secondary education. Among the population aged between 25-34 years, 65% had completed upper secondary education, and more than 70% of those under 30 years of age had completed higher secondary education (Groot & Van Den Brink, 2000).

Recent theoretical analyses of international growth rate differences focus on human capital. Long-run cross-country economic growth studies include some proxies for human capital (Hanushek & Kimko, 2000).

The periods of math, foreign language, and science that a student takes in a semester are positively correlated with the student's academic ability and their preference for post-secondary education (Altonji, 1992). Educational credentials have lost their value, and in many organizations nowadays, more employees have jobs that are lower than their education level, due to high unemployment, even pushing them out of the labor force (Wolbers et al., 2001).

**Problem Statement**

An educated, skilled, and experienced labor force is the backbone of a nation's economic development. Nowadays, the Afghan labor force suffers from a lack of human capital. To improve the Afghan labor force, it is necessary to identify all the factors that enhance human capital. In addition, based on the literature review, it is found that education enhances the skills of the labor force. Therefore, this research is conducted to empirically investigate the impact of education on the growth of the Afghan labor force.

**Importance**

The results of this paper will guide policymakers, especially in the fields of labor affairs, education, and vocational training. These findings, along with the investigation into the effect of education on the labor force, will shed light on all the aspects through which we can improve our labor force's human capital and participation rate. By implementing these findings, we can also reduce the unemployment rate in Afghanistan.

**Objectives**

The investigation of the impact of education on Afghanistan's labor force is the study's overarching goal. Its particular goals are as follows:

- To empirically investigate the effect of male education on the labor force of Afghanistan.
To empirically investigate the effect of female education on the labor force of Afghanistan.

Questions

• Is education having a significant impact on the labor force of Afghanistan?
• Is male education having a significant impact on the labor force of Afghanistan?
• Is female education having an impact on the labor force of Afghanistan?

Literature Review

Both males and females, in both rural and urban areas, positively influence female labor market participation and negatively affect the fertility rate. In recent times, the gender gap in educational attainment has decreased. For policymakers, it is necessary to ensure the sustainability of female education and the expected outcomes from it. Ideally, for family size and fertility preferences, enhancing female education is a better mechanism (Sackey, 2005). Education increases the re-employment rate among the unemployed, with the most significant effect observed for individuals with 12 to 16 years of schooling (Riddell & Song, 2011). In developing countries over the last three decades, two phenomena have emerged: female education and female labor force participation, both of which are interrelated (Heath & Jayachandran, 2016).

The impact that educational attainment has on career success varies depending on the educational system in which it is pursued. Education systems have two properties: standardization and stratification. A person's educational attainment has a significant influence on their occupational rank in a stratified society. Compared to individuals trained in non-standardized systems, those educated in standardized systems have fewer career changes (Allmendinger, J. 1989). Education is a value-added process that improves skills and literacy, leading to improved labor market outcomes. Greater labor market performance is correlated with higher levels of education, as indicated by rates of unemployment and labor force participation. (Chiswick & Miller, 2003). In the Netherlands, there is more credential inflation, and employees are more affected by it. Despite having higher education levels than in the 1960s, their current jobs are of lower status than those in 1991. The main reason for credential inflation is the difference in the distribution of education and the structure of employment (Wolbers et al., 2001).

Being able to adapt to dynamic labor market shocks is critical for success in the job market for each individual. Education significantly increases re-employment success for unemployed workers. Our research indicates that completing high school raises the likelihood of obtaining job again by 40 percentage points, and that continuing education for an extra year enhances this likelihood by 4.7 percentage points. (Riddell & Song, 2011). Students who are younger in school age tend to have poorer academic performance but, on average, achieve higher education attainment. A study conducted in California and Texas found that native students in early school age have academic performance weaknesses, but no significant net effect on labor market outcomes such as wages and re-employment rates was found. The effect is near zero (Dobkin & Ferreira, 2010).

Wolbers (2003) studied job mismatches and their labor-market effects among school-leavers in Europe and concluded that male school-leavers have more job mismatch problems than females and older employees also have more mismatching problems than younger ones. School leavers with temporary or part-time jobs experience more job mismatches than those with permanent/full-time contracts. Besides structural characteristics affecting the probability of job mismatch problems, during times of high unemployment, working in small organizations and the private sector is associated with more job mismatch problems. Starting school at an older age results in more school achievements, but starting school at an early age results in the loss
of one year of experience and some labor market outcomes (Fredriksson & Ockert, 2005).

The relationship between education level and occupational returns remains positive in highly coordinated economies but is much weaker in liberal economies (Andersen & Van de Werfhorst, 2010).

In a study by Newhouse & Suryadarma (2011) titled "The Value of Vocational Education: High School Type and Labor Market Outcomes in Indonesia," four findings were reported. First, estimated wages for vocational graduates, relative to general graduates, are higher for females than males. Second, there is a sizable pay penalty due to the sharp decline in the return on male students' enrollment in public vocational schools. Third, the non-random assignment of kids with higher test scores and better-educated parents to public schools explains the typically positive results for public school graduates. Lastly, males with high test scores receive a relatively tiny premium for graduating from private general schools or technical schools, suggesting that these peer effects are especially significant for pupils with above-average test scores.

The impact of school closures on parents with school-age children's employment results was noteworthy during the 2020–21 academic year. When schools were closed, both men and women saw a decrease in their work hours. (Garcia & Cowan, 2022). Child labor is a global concern that has a significant negative effect on school attainment, although no significant effect on health was found. Labor force outcomes offset the negative effects of child labor in the short run, but in the long run, beyond ten years, education attainment and gaining human capital become more beneficial than short-term labor market outcomes. Reducing child labor will require parents to be farsighted and able to engage in costly, long-horizon investments (Beegle et al., 2009).

Research Methodology and Design

- This is a descriptive research design, for empirical investigation of the effect of education on the labor force of Afghanistan.
- The population of the study are students both male and female of all sectors of the education and labor force of Afghanistan.
- Numerical data from 2011 up to 2020-time period is obtained from webpages of the Ministry of Education, World Bank, and World Development Indicator.
- In this research paper dependent variable is the labor force of Afghanistan and the independent variables are male and female students.
- For data analysis in the SPSS app, a multiple regression model is used.

\[
\text{TFL}(Y) = \beta_0 + \beta_1 \text{TMS} + \beta_2 \text{TFS} + \epsilon
\]

\[
\beta_0 = \text{Intercept}
\]

TFL=Total labor force
TMS=Total male Students
TFS=Total female Students

Figure 1. Gender Labor Force
Data Analysis and Interpretation

In general, we have three grades of correlation, weak, moderate, and strong correlation. A correlation between 0.0 to 0.3 is a weak grade, a correlation between 0.3 and 0.7 is a moderate grade and a correlation between 0.7 to 1 is a strong grade. In the above correlation table; all three variables have different relationship grades. The total labor force with female education has a strong positive correlation but male education has a moderate positive correlation. Female education with male education has a strong positive correlation.

Figure 2. Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total_labor_force</td>
<td>8629642.20</td>
<td>929419.417</td>
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<tr>
<td>male_education</td>
<td>5904259.68</td>
<td>468164.933</td>
<td>10</td>
</tr>
<tr>
<td>Female_education</td>
<td>3566007.00</td>
<td>326122.594</td>
<td>10</td>
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</table>

Figure 3. Correlations

<table>
<thead>
<tr>
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<th>Female_education</th>
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<tr>
<td>Pearson Correlation</td>
<td>1.000</td>
<td>.531</td>
<td>.841</td>
</tr>
<tr>
<td></td>
<td>.531</td>
<td>1.000</td>
<td>.764</td>
</tr>
<tr>
<td></td>
<td>.841</td>
<td>.764</td>
<td>1.000</td>
</tr>
<tr>
<td>Sig. (1-tailed)</td>
<td>.</td>
<td>.057</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>.057</td>
<td>.</td>
<td>.005</td>
</tr>
<tr>
<td></td>
<td>.001</td>
<td>.005</td>
<td>.</td>
</tr>
<tr>
<td>N</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Total_labor_force</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>male_education</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Female_education</td>
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<td>10</td>
<td>10</td>
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</table>

Figure 4. Descriptive Statistics

<table>
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<th>Statistic</th>
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<th>Range</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Statistic</th>
<th>Statistic</th>
<th>Mean</th>
<th>Std. Error</th>
<th>Std. Deviation</th>
<th>Variance</th>
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<tr>
<td>Female_education</td>
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<td>111990</td>
<td>2591000</td>
<td>3591199</td>
<td>3580307.00</td>
<td>3931990</td>
<td>103129.010</td>
<td>326122.594</td>
<td>1.064E11</td>
<td></td>
</tr>
<tr>
<td>male_education</td>
<td>10</td>
<td>156750</td>
<td>4710586</td>
<td>6260076</td>
<td>5904259.66</td>
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<tr>
<td>Total_labor_force</td>
<td>10</td>
<td>2883452</td>
<td>7095230</td>
<td>9981582</td>
<td>8629642.20</td>
<td>283308.226</td>
<td>929419.417</td>
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</tr>
<tr>
<td>Valid N (listwise)</td>
<td>10</td>
<td>111990</td>
<td>2591000</td>
<td>3591199</td>
<td>3580307.00</td>
<td>3931990</td>
<td>103129.010</td>
<td>326122.594</td>
<td>1.064E11</td>
<td></td>
</tr>
</tbody>
</table>
Table 1. Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.859a</td>
<td>.738</td>
<td>.663</td>
<td>539600.704</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Female_education, male_education
b. Dependent Variable: Total_labor_force

R=0.859 in the model summary table indicates a high positive correlation between the independent and dependent variables. With a R square of 0.738, it can be inferred that variations in male and female schooling account for 73.8% of variations in the labor force or dependent population. According to our estimate, the education sector accounts for 73.8% of changes in the labor force in Afghanistan. Education-related changes in the work market can take many different forms, such as increased managerial and leadership abilities, experience, and technical training.

In the ANOVA table; the F value is equal to 9.85 in the cause of 0.009 significance; meanwhile, the F critical value in the F table is 4.74. The F value in ANOVA is greater than the F critical value. Finally, the regression fits the data.

TfY = β₀ + β₁ MS + β₂ FS + ε

(2)

Ŷ = 1139499.622 - .532(male education) + 2.98(female education)

When all other dependent variables are held constant, the amount that a variable change with an independent variable is shown by unstandardized coefficients. in the coefficient table, the constant or β₀ of the model is equal to 1139499, which means in the Afghanistan labor force the above figure of labor does not belong to the education sector. Whether we have the education sector or not; the 1139499 number of labor will be available in the labor market of
Afghanistan. The $\beta_1$ of the model is equal to -.532, which means male education in our model harms the labor force. $\beta_2$ of the model is equal to 2.981, which means that 1% female education causes 2.981% changes in the labor force in Afghanistan.

<table>
<thead>
<tr>
<th></th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predicted Value</td>
<td>7222489.50</td>
<td>9718869.00</td>
<td>8629542.20</td>
<td>798345.525</td>
<td>10</td>
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<tr>
<td>Residual</td>
<td>-6131635.938</td>
<td>785363.313</td>
<td>.000</td>
<td>475883.900</td>
<td>10</td>
</tr>
<tr>
<td>Std. Predicted Value</td>
<td>-1.763</td>
<td>1.364</td>
<td>.000</td>
<td>1.000</td>
<td>10</td>
</tr>
<tr>
<td>Std. Residual</td>
<td>-1.136</td>
<td>1.457</td>
<td>.000</td>
<td>.002</td>
<td>10</td>
</tr>
</tbody>
</table>

Table 8. Normality Test

For checking the data normality, in the above diagram, the Normal P P plot of the Total labor force, and male and female education is shown. In the above three graphs, the data distributions are approximately normal.

### Discussion

Around the world labor force in economic processes has a major role. Worldwide, about the labor force, there are researches conducted. Especially, for investigating the impact of education on the labor force. Riddell, & Song, (2011) investigated the impact of education on the labor force and concluded that Education increases the re-employment rate of unemployment particularly most effect on 12 up to 16 years of schooling. Chiswick & Miller, (2003) High level of education is associated with greater labor market success, as measured by labor force participation and unemployment rate. Andersen & Van de Werfhorst, (2010) conclude that the relationship between education level and occupational returns in highly coordinated economies is still positive but in liberal economies, this relationship is much weaker. Wolbers et al., (2001) find that education rather than labor force market participation has more benefits like social, cultural, political, marriage, health, and others. Meanwhile, our findings as a whole indicate a strong positive correlation between education and the labor force, but in the model individually male education has a negative weak correlation with the labor force but female education with the labor force has a strong positive correlation.
Conclusion

In Afghanistan labor force lacks job opportunities, and suffers more from lacking human capital. We find that education has a strong impact on labor force improvement. In female cause, the relationship is more robust. As a whole, Afghanistan has more opportunities for employing a female labor force, especially in handicraft. Afghanistan is a labor-intensive country; for improving the internal industry, export, and accelerating economic growth and development vocational training and school education is a key. According to the investigated model, education is a high-return investment for the Afghan labor market. Investment in the education sector is more profitable than any other sector.

References


