ESTIMATION OF EDUCATED UNEMPLOYMENT IN BANGLADESH

A. Rashid Ahmed, Md. Ashraf Ali, and Kazi Saleh Ahmed*

ABSTRACT

A projection model has been formulated to estimate the annual intake of educated jobseekers in the Bangladesh labour market during 1976-80. Sectoral employments in 1974 have been estimated and the sectoral demands for the years 1976 to 1980 have been estimated by projection method. On the basis of the known occupational pattern of the educated manpower in the labour market, the sectoral demands for educated manpower have been estimated which have been used to estimate the annual demands for educated manpower during 1975-80. The excesses of annual demands during 1976-80 over the preceding years have been considered to be the additional annual demands for educated manpower during 1976-80. The differences between supply of and demand for educated jobseekers during 1976-80 have been estimated and presented as the educated unemployment in the labour market during those years.

I. INTRODUCTION

The main purpose of education in a developing country like Bangladesh is to train up and utilize properly the available human resources for the economic development of the country. The unemployed surplus educated manpower is not a resource, rather a drag on the economy of the country. The socio-economic development cannot be attained until and unless the goal of an optimum educational and manpower planning is achieved. It should be clearly understood that education and employment are the two aspects of the same problem. It should be emphasized that the problems of educational and manpower development should be solved simultaneously. Otherwise wasteful imbalance will occur. Disequilibrium in the supply of and demand for educated manpower in the labour market must invite social dissatisfaction which may destroy the whole economy of the country.

At present Bangladesh is facing a serious problem of unemployment and underemployment; the situation is going from bad to worse day by day. This dictates the responsibility for a balanced educational and manpower.

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planning for the country. To make such a plan efficiently, we should be aware of the present position and the future trend of supply, demand and unemployment of the educated manpower. In this paper, attempts have been made to estimate the supply of and demand for educated manpower and to assess the trend of educated unemployment in the Bangladesh labour market during the period 1976-80.

II. MATERIALS AND METHODS

The outflow of successful school leavers at various levels of education has been obtained from the Directorate of Public Instruction, Directorate of Technical Education, Bangladesh Bureau of Statistics, Controller of Examinations of different universities in Bangladesh and other available official records. The data on the admission into different post-secondary classes and also the enrolments at different public examinations have been obtained from the above sources. The volume of drop-outs, leakages and the extent of nonjob seekers at various levels of education as estimated by Ahmed (1976, pp 11-12) have been used in this study. The data on the demand side have been obtained from Bangladesh Population Census-1974, Population Census of Pakistan-1961, Manpower Planning in East Pakistan-1969, Manpower Survey Reports of the Labour directorate and other official records.

The whole task of estimating the educated unemployment has been divided into the following steps:

(i) Estimation and projection of supply of educated manpower.
(ii) Estimation and projection of demand for educated manpower.
(iii) Estimation of educated unemployment in the labour market.

Estimation and Projection of Educated Manpower

Annual labour force entry of the educated school leavers has been estimated for different levels of education. It has been assumed that all the post-graduate school leavers, except a small fraction of nonjobseekers, enter the labour market and seek employment. For the remaining three levels of education, viz. secondary, higher secondary and the bachelor level, separate estimation formulae have been used to estimate the net labour force entry among the successful school leavers, on the basis of the following simple linear
relationship between the net annual labour force entry among the successful school leavers and other components:

\[ Y_{ij} = S_{ij} - A_{ij} + P_{ij} + D_{ij} - L_{ij} - N_{ij} \]

where,

- \( Y_{ij} \) is the net labour force entry among the successful school leavers after completing the \( j \)th level of education in year \( i \),
- \( S_{ij} \) is the number of successful school leavers with \( j \)th level of education in the year \( i \),
- \( A_{ij} \) is the number of successful school leavers with \( j \)th level of education who get admitted to the next higher grade of education in the same year \( i \),
- \( P_{ij} \) is the number of students who after completing the \( j \)th level of education got admission into the next higher grade earlier but on failure in the final examination in the year \( i \) discontinue studies,
- \( D_{ij} \) and \( L_{ij} \) are respectively the dropout and leakage from the labour force with \( j \)th level of education during the proceeding year,
- \( N_{ij} \) is the number of nonjobseekers (The successful school leavers who neither proceed for further studies nor enter the labour market).

On the basis of the above relationship, the following estimation models have been formulated (Ahmed 1976, P. 16):

\[ Y_{H} = 0.9196 \left( S_H - A_H + D_{H} \right) + 0.7081 F_{H} \quad \ldots \ldots (1) \]

\[ Y_{L} = 0.9466 \left( S_L - A_L + D_{L} \right) + 0.7216 F_{L} \quad \ldots \ldots (2) \]

\[ Y_{B} = 0.9962 \left( S_B - A_B + F_{B} \right) + D_{B} \quad \ldots \ldots (3) \]

Models 1, 2 and 3 refer to the S.S.C., H.S.C. and bachelor levels respectively. For the bachelor and post graduate levels the extent of nonjobseekers has been assumed to be 3 per cent for general education and 2 per cent for technical and professional education respectively of the gross labour force entry (East Pakistan 1969).

The net labour force entry of educated school leavers is obtained by adding up the net labour force entry at the different levels of education for any year \( i \).

The magnitude of educated jobseekers in any year has been obtained as the sum of the net labour force entry of the educated school leavers in that year and the educated unemployment in the preceding year. The following second degree polynomial has been fitted to the annual educated jobseekers in the labour market during 1963–70 (Ahmed 1976, P. 83):

\[ Y_{i} = 57775.08 - 8642.64 i + 2920.64 i^2 \]

1. Jomhuria (1969) introduced such a model and the present paper introduces, in addition, the factor 'Leakage' from labour force.
Where, $Y_t$ is the educated jobseekers in the year $t$. This fitted polynomial has been used to estimate the annual educated Jobseekers for the period 1976–80.

Estimation and Projection of Demand for Educated Manpower

It has been assumed that the national capacity to accommodate effectively the educated personnel is approximately equal to the national demand for educated manpower at an observed year. On the basis of this assumption, the demand for educated manpower in the labour market has been estimated.

The whole employment area has been divided into nine economic sectors according to the classification of the International Labour Organization. The total manpower requirement in 1974 has been obtained from the Bangladesh population census, 1974 and that has been split into sectoral employments; the percentage distribution of sectoral employment as shown in table A-2 has been used for this purpose. The sectoral manpower requirements have been projected for the period 1975-80 assuming the sectoral rates of growth of labour estimated by Alamgir (1975) and shown in table A-1 of this paper.

From the experience of training facilities and employment opportunity in the country, the occupational pattern of the educated youth has been assumed. The following categories of employments have been considered as educated employment in the paper (East Pakistan 1969, PP 163-74):

1. Engineers and Architects,
2. Surveyors,
3. Chemists,
4. Physical Scientists,
5. Agricultural Scientists,
6. Physicians and Surgeons including Dentists,
7. Trained Nurses,
8. Pharmacists,
9. Medical Technicians,
10. Teachers of Schools, Colleges and Universities, etc.,
11. Jurists,
12. Authors and Journalists,
13. Typists and Secretaries,
14. Stenographers,
15. Clerical workers,
16. Draughtsmen,
17. Scientific and Engineering Technicians,
18. Laboratory Assistants/Attendants,
19. Librarians,
20. Economists,
21. Statisticians and Accountants,
22. Administrative and Executive Officers,
23. Directors, Proprietors and Managers,
24. Commercial Travelers and Manufacturing Agents,
25. Farm Managers,
26. Traffic Controllers and Superintendents,
27. Drivers of Motorized Vehicles,
28. Aircraft Pilots,
29. Navigators and Engineers,
30. Deck Officers and Pilots of Ships, Trained Operators, etc.

The ratio of educated employment to the total employment in different sectors as estimated by Ahmed (1970) are shown in table A-3 of this paper.

Assuming these ratios remain unchanged, the sectoral requirements of educated
manpower have been estimated for the years 1975-80, applying the ratio estimation method. Total national demand for educated manpower has been obtained by adding up the sectoral demands for each year. The excesses of demand for educated manpower over the preceding years give the corresponding annual demand for educated labour (Ahmed et al. 1978, p. 3-4.)

Estimation of Educated Unemployment in the Labour Market

The annual supply of and demand for educated manpower in the Bangladesh labour market have been estimated for the period 1976-80 as described earlier in this paper. The difference between the supply of and demand for educated manpower in any year has been defined as the educated unemployment in that year.

II. RESULTS AND DISCUSSION

The estimated annual intake of educated jobseekers in the Bangladesh labour market during the period 1976-80 are presented below:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Jobseekers (000)</td>
<td>439.0</td>
<td>509.2</td>
<td>589.3</td>
<td>667.2</td>
<td>754.9</td>
</tr>
</tbody>
</table>

Manpower requirements in the Bangladesh labour market have been estimated for different sectors for the period 1976-80 applying the sectoral growth rates of labour (Shown in table A-1) over the sectoral requirements in 1974. Demand for educated manpower in different sectors have been estimated by the method of ratio estimation as described earlier. The sectoral demands are added up together to obtain the national demand. The annual demand for additional educated manpower in the Bangladesh labour market during 1976-80 is presented in the following table:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Demand</td>
<td>3436.5</td>
<td>3535.1</td>
<td>3636.9</td>
<td>3742.0</td>
<td>3850.7</td>
<td>3962.8</td>
</tr>
<tr>
<td>Additional Demand</td>
<td>98.6</td>
<td>101.8</td>
<td>105.1</td>
<td>108.7</td>
<td>112.3</td>
<td></td>
</tr>
</tbody>
</table>

Source: Based on table A-4.

The difference between the supply of and demand for educated manpower in the labour market give the educated unemployment at an observed year. The
annual educated unemployment and also the percentage there of in Bangladesh are presented below:

<table>
<thead>
<tr>
<th>Year</th>
<th>Supply in 1000's</th>
<th>Demand in 1000's</th>
<th>Unemployment in 1000's</th>
<th>Percentage of unemployment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1976</td>
<td>439.0</td>
<td>98.6</td>
<td>340.4</td>
<td>77.5</td>
</tr>
<tr>
<td>1977</td>
<td>509.2</td>
<td>101.8</td>
<td>407.4</td>
<td>80.0</td>
</tr>
<tr>
<td>1978</td>
<td>585.3</td>
<td>105.1</td>
<td>480.2</td>
<td>82.0</td>
</tr>
<tr>
<td>1979</td>
<td>667.2</td>
<td>108.7</td>
<td>558.5</td>
<td>83.7</td>
</tr>
<tr>
<td>1980</td>
<td>754.9</td>
<td>112.1</td>
<td>642.8</td>
<td>85.2</td>
</tr>
</tbody>
</table>

It is revealed from the study that the supply of educated manpower shows a higher growth rate compared with the demand. The direct consequence of this situation is that the number of unemployed manpower is growing rapidly. It is observed that the overwhelming stream of annual outturn of educated youth are producing a huge number of educated unemployment each year.

REFERENCES


APPENDIX

**TABLE A1**  SECTORAL GROWTH RATES OF LABOUR FORCE IN BANGLADESH

<table>
<thead>
<tr>
<th>Sector</th>
<th>0</th>
<th>1</th>
<th>2&amp;3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rates</td>
<td>3-5</td>
<td>5-5</td>
<td>2-5</td>
<td>6-0</td>
<td>2-0</td>
<td>2-0</td>
<td>2-5</td>
<td></td>
</tr>
</tbody>
</table>


**TABLE A2**  SECTORAL DEMAND AS PERCENTAGE OF TOTAL DEMAND FOR MANPOWER IN BANGLADESH LABOUR MARKET

<table>
<thead>
<tr>
<th>Sector</th>
<th>0</th>
<th>1</th>
<th>2&amp;3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage</td>
<td>16-681</td>
<td>0-6668</td>
<td>35-117</td>
<td>5-392</td>
<td>2-057</td>
<td>2-182</td>
<td>6-851</td>
<td>31-771</td>
</tr>
</tbody>
</table>

Source: Ahmed 1976, Table—2, P—27

**TABLE A3**  EDUCATED PERSONS PER 100 EMPLOYEES IN BANGLADESH LABOUR MARKET.

<table>
<thead>
<tr>
<th>Sector</th>
<th>0</th>
<th>1</th>
<th>2&amp;3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage</td>
<td>11-15</td>
<td>47-11</td>
<td>8-27</td>
<td>31-94</td>
<td>15-76</td>
<td>69-64</td>
<td>32-11</td>
<td>63-63</td>
</tr>
</tbody>
</table>

Source: Ahmed 1976, Table 3, P—27.
TABLE A4  MANPOWER REQUIREMENTS BY SECTOR IN BANGLADESH LABOUR MARKET, 1975—80

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>1806476</td>
<td>1869703</td>
<td>1935142</td>
<td>2002872</td>
<td>2072973</td>
<td>2145527</td>
<td>2220620</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(208472)</td>
<td>(215768)</td>
<td>(223320)</td>
<td>(231136)</td>
<td>(239226)</td>
<td>(247599)</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>72211</td>
<td>76544</td>
<td>81136</td>
<td>86004</td>
<td>91165</td>
<td>96635</td>
<td>102433</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(36060)</td>
<td>(38223)</td>
<td>(40517)</td>
<td>(42948)</td>
<td>(45525)</td>
<td>(48256)</td>
<td></td>
</tr>
<tr>
<td>2 &amp; 3</td>
<td></td>
<td>3803010</td>
<td>4012176</td>
<td>4223284</td>
<td>4465652</td>
<td>4711263</td>
<td>4970382</td>
<td>5243753</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(331807)</td>
<td>(350056)</td>
<td>(369309)</td>
<td>(389621)</td>
<td>(411051)</td>
<td>(433658)</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>579957</td>
<td>594456</td>
<td>609317</td>
<td>624550</td>
<td>640164</td>
<td>656168</td>
<td>672572</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(198869)</td>
<td>(194616)</td>
<td>(199481)</td>
<td>(204468)</td>
<td>(209580)</td>
<td>(214819)</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>222764</td>
<td>236129</td>
<td>250298</td>
<td>265315</td>
<td>281234</td>
<td>298108</td>
<td>315995</td>
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<tr>
<td></td>
<td></td>
<td>(41464)</td>
<td>(43952)</td>
<td>(46589)</td>
<td>(49385)</td>
<td>(52348)</td>
<td>(55489)</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>236301</td>
<td>241027</td>
<td>245848</td>
<td>250765</td>
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<tr>
<td></td>
<td></td>
<td>(167851)</td>
<td>(171208)</td>
<td>(174632)</td>
<td>(178125)</td>
<td>(181688)</td>
<td>(185321)</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>741932</td>
<td>756771</td>
<td>771906</td>
<td>787345</td>
<td>803091</td>
<td>819153</td>
<td>835356</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(242999)</td>
<td>(247859)</td>
<td>(252816)</td>
<td>(257873)</td>
<td>(263080)</td>
<td>(268291)</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>3400654</td>
<td>3485670</td>
<td>3527212</td>
<td>3602132</td>
<td>3753686</td>
<td>3847528</td>
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</tr>
<tr>
<td></td>
<td></td>
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<td>(2273382)</td>
<td>(2330215)</td>
<td>(2388470)</td>
<td>(2448182)</td>
<td>(2509387)</td>
<td></td>
</tr>
</tbody>
</table>

Calculated assuming sectoral growth rates of labour force shown in table A-1 over the manpower requirements in 1974. Figures in the parentheses indicate the demand for educated manpower.