Geography, Gender and Money Profits in Sudanese General Private Education: The Example of Khartoum State

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Abstract The objective of this paper was to investigate general private education in Sudan with the main focus on the geography, gender and money profits in Khartoum state based on fieldwork and data published by Administration of Non Governmental Education of Khartoum state in 2011. Results depict that private education contribute by 41.7% in the total number of schools in the state. In number of schools in basic education, private schools hold 35.7% while in secondary education it holds 58.1%. There are statistical significant difference into distribution of private secondary schools by locality and there is less dispersion into secondary schools compared to basic schools. There is no compliance into school numbering by locality in private basic and secondary education. the calculated value of chi-square for private secondary schools is less than the private basic schools indicating to less dispersion into secondary schools compared to basic schools. Rank Spearman's correlation value of – 0.4 and Kendal's of – 0.5 depict to distribution of number of private basic schools as not to be necessarily correlated with number of private secondary schools. From the total number of basic private students males constitute 53.7% and females 46.3% which gives 7.4% excess males. In gender concerns, there is 7.4% excess males. There is significant statistical difference between numbers of males and females in private basic education while there is no statistical significant difference between both sex in private secondary education. There appears to be close correspondence between number of schools and number of students in basic private education contrary to private secondary education. Private education employs 14.33% of teachers involved in basic education and 13.92% of teachers involved in secondary education. Male teachers dominate private secondary education and almost equal to female teachers in basic private education. The total net income of private education is estimated as 39.4% of the total annual income. The author suggests some strategies to recruit government free education to decelerate private schooling to exclude poor Sudanese to save payment on private education to meet the increasing basic life demands in situation of increasing inflation.

Keywords: private education, government education, geography, gender, urban poor, investment

Introduction

Societies are aware that scientific progress, socioeconomic and political achievements are products of educational systems. Therefore, demand for education is increasing worldwide where for example it is projected that higher education will expand from 97 million students in 2000 to 262 million students in 2025 (Apollogrp.2011). In sub Saharan Africa, a large number of children remain out of school and for those who do enroll, less than half complete the primary education (Johnson,2008). There are problems with access to education, quality of learning opportunities and learning outcomes which are unevenly spread geographically, by economic status and by gender. However, efforts to expand secondary and tertiary education is a challenge for all countries in sub-Saharan region (Alain, et al.2010). Enrollments in primary schools grew more than six-fold between 1960 and 2000, and secondary education expanded even more rapidly. Between 1960 and 1989 the number of children in primary schools increased from 12 million to almost 61 million in Africa south of the Sahara and secondary enrolment jumped from almost 800,000 to 12 million (Encyclopedia of African History.2009). This trend continued where from 2000 through to 2008, the number of children enrolled in primary school in sub-Saharan Africa grew from 87 million in to 129 million which represents an increase by 48% (UNESCO, 2011). Overall, enrollment in secondary education is rising in sub-Saharan Africa from 20.6 million in 1999 to 32.6 million in 2006. However, despite this significant trend, the average secondary in sub-Saharan Africa was 25% in 2006. This implies that nearly 78 million of the region’s secondary school-age children were not enrolled in secondary school (UNESCO, 2009).

Concerning gender in education, statistics show that for the school year ending in 2005, the median
transition rate from primary to secondary was 62% which was noticeably lower for girls (57%) than for boys (66%) (UNESCO, 2009). Girls’ limited access to school is of particular concern in sub-Saharan Africa where in 2006, they accounted for 54% of primary school-age children not in school in the region and 72% of them have never been enrolled compared with 55% for boys (OECD, 2011). In addition, the countries of sub-Saharan Africa combined spend 5.0 percent of their GDP on education, the second highest value after north America and western Europe, where 5.3 percent of the regional GDP is spent on the education sector (UNESCO, 2011).

In sub-Saharan Africa, including Sudan, education system reflect differences in geography, cultural heritage, colonial history, and economic development progress (State University, 2011). Generally, there are two main types of general education in sub-Saharan Africa, governmental and non-governmental or private education. Private school is defined as that school which is not administered by local, state or national governments and are funded in whole or in part by charging their students tuition, rather than relying on government funding (Wikipedia, 2001). However, factors driving the growth in private education in sub-Saharan Africa include demography, unmet and imbalanced demand and supply of education and decline in public funding (Apollogrp, 2011). On the contrary, Americans choose private education for their children because of quality academics, a safe and orderly environment, moral and ethical values, caring teachers, supportive communities (CAPE, 2010).

The modern education system in Sudan was inherited from the British who governed Sudan from 1898 to 1956. When Gordon College opened in 1902 as the next step for the first intermediate and secondary schools (State University, 2011). The general educational system spanned 12 schooling years distributed as 4 junior or primary school, 4 intermediate school and 4 secondary school. At independence in 1956, education accounted for only 15.5 percent of the Sudanese budget to support 1,778 primary schools, 108 intermediate schools and 49 government secondary schools with 22.9 percent adult literacy rate (U.S.Library, 2011).

In 1969, Nimeiri government considered the education system as inadequate for the needs of social and economic development and largely reorganized the education system by the late 1970s. The basic system consisted of a six-year curriculum in primary schools and three-year curriculum in junior secondary schools and then qualified students could go on to one of three kinds of schools, the three-year upper secondary, which prepared students for higher education; commercial and agricultural technical schools; and teacher-training secondary schools designed to prepare primary-school teachers. In the early 1980s, the number of junior or general secondary schools was a little more than one-fifth the number of primary schools, a proportion roughly consistent with that of general secondary to primary-school population. There were only 190 upper-secondary schools in the public system in 1980, but it was at this level that private schools of varying quality proliferated, particularly in the three cities of the Khartoum capital area (U.S.Library, 2011). Elite schools could recruit students who had selected them as a first choice, but the others took students whose examination results at the end of junior secondary school did not gain them entry to the government's upper secondary schools. Schools tended to be clustered in the vicinity of Khartoum and to a lesser extent in other urban areas, although the population was predominantly rural. This concentration was found at all levels but was most marked for those in situations beyond the four-year primary schools. By 1990, education system is further reorganized into 8 basic and 3 secondary schooling years. Private schooling has grown rapidly in Sudan following the new economic policies of lifting complete government subsidy to service sectors including education.

The main objective of this paper is to examine geographic distribution, gender and money profits of general private education by taking Khartoum state as an example in order to outline future prospects in lights of rising population and modernization trends. The paper recommends some suggestions some to enhance government education.
Data and Methodology

Khartoum state is located between 15°47’ N 32°43’ E and consists of the three major town in Sudan, Khartoum, Omdurman and Khartoum north. They are call altogether Greater Khartoum. Khartoum lies between the Blue Nile in the north & the White Nile in the west. Khartoum north started on the fringe of the right bank of the Blue Nile on a small strip (Gleichert 1905) and extended northwards and north-eastwards. Omdurman surrounded by the desert in the west & south, Sabalouqa mountains from the north, and the River Nile from the east, developed as a narrow strip along the River Nile centred on the Imam Mahadi Tomb (Abu Saliem 1970) and extended northwards, southwards, westwards and north-westwards. Such developments are related to population natural increase and rural-urban migration. Administratively, Khartoum state is divided into seven localities. Khartoum includes Khartoum and Jebel Awlia localities. Omdurman includes Omdurman, Umm Bedda and Karary localities while Khartoum north includes Bahri and East Nile localities (Fig.1). Localities are further subdivided into administrative units. Within these localities, government and private schools are distributed according to population density and demand for education.

Fig.1. Khartoum state location and localities
Data on number of private schooling, students and teachers are collected from Administration of Private Schools, Ministry of Education, Khartoum state. The available data did not classify schools by gender. School academic tuitions, expenditure on teachers and supporting services as well as maintenance were collected through fieldwork during 2-9 June 2011 into the each locality of Khartoum state. Each locality is divided into three parts, northern, central and southern. Number of private schools were counted in each section. Putting into consideration differences into type of residential areas which consequently vary into peoples’ income, selection of schools is done randomly. Field visits were executed while for remote private schools difficult to access, telephone is used.

The collected data was treated statistically. Percents, ranges and means measures are used where appropriate. Spearman's rank correlation is used where the formula $r = 1 - 6 \sum d^2 / N(N^2 - 1)$ is applied. For Kendall's coefficient, the formula used $X/2 N(N-1)$ is used after following the procedure of ranking and summations. The T-test is used for comparison on mean number of males and females in private basic education. The formula: $T = \frac{x - y}{\sqrt{\frac{x^2}{N_x} - \frac{x^2}{N_x} - 1 + \frac{y^2}{N_y} - 1}}$ is used under two-tailed 0.05 significance level. If the calculated t-value is bigger than the critical value, the null hypothesis will be rejected under the specified significance level. The chi-square test formula: $x^2 = \frac{(A-B)^2}{B}$ is applied for measuring dispersion or concentration of some variables investigated.

Share of teachers from total income by private schools is estimated by multiplying total number of teachers by 700 Sudanese Guinea (estimated monthly income per teacher) by 9 months (actual payment since private schools do not pay to teachers during school vacation). Government annual tax cut 2.5%. Expenditure for renting the building is estimated for 75% of private schools while the remaining 25% own their schools buildings. It is estimated as 5% from the total income. Expenditure on supporting services including water, electricity is estimated to cut 5% from total income and similarly annual maintenance cost of buildings, furniture and others relevant needs. Total net annual income by private education is calculated in USD based on 2.5 Sudanese Guinea exchange rate equivalent to USD.

Results

1- Geographic Distribution of Private Schools

The total number of basic and secondary schools in Khartoum state is 3516. There are 1651 government basic school (46.9%); 915 private basic school (26%); 398 government secondary school (11.3%) and 552 private secondary school (15.8%). This gives 2566 basic school (72.9%) and 950 secondary school (27.1%) in whole the state. Private education sector share is 1467 school representing 41.8% of the total number of schools in the state while government education sector share is 58.2%. This depicts that, difference between number of governmental and private schools is 16.6% confirming substantially contribution by private sector into schooling in Khartoum state. Private sector contribute into number of basic schools by 35.7% while government sector contribute by 64.3%. In secondary education, private sector contribute by 58.1% into number of secondary schools and government education sector by 41.9%. By that way, number of private secondary schools exceed governmental ones by 16.2%.

Government and private basic and secondary schools are distributed geographically by localities of the state (Fig.2). In Khartoum locality, out of 375 basic school, there are 195 private ones (52%) and in secondary schooling private sector share by 30.2% (51 out of 169). In Jebel Awlia locality, basic private schooling participate by 28.4% (108 out of 380) and private secondary schooling contribute by 67.2% (86 out of 128).

In Omdurman locality basic private schools contribute by 45% (135 out of 300) and private secondary schools by 50.7% (70 out of 138). Basic private schools contribute by 35% (121 out of 346) in Karary locality and private secondary schools by 56.6% (60 out of 106). In Umm Bedda locality, basic private schools contribute by 27.5% (94 out of 342) and private secondary schools by 73.6% (81 out of 110). Basic private
schools contribute by 40.3% (146 out of 362) in Bahri locality and by 53.2% in secondary schools (83 out of 156). In east Nile locality, basic private schools contribute by 25.2% (116 out of 460) and in private secondary schools by 37.8% (54 out of 143).

Ranking localities by percent of basic private schooling puts Khartoum locality first then Omdurman, Bahri, Karary, Jebel Awlia, Umm Bedda and East Nile localities respectively. In private secondary schooling Umm Bedda locality ranks first and then Jebel Awlia, Karary, Bahri, Omdurman, East Nile and Khartoum localities respectively. There is no compliance into school numbering by locality in private basic and secondary education. Rank correlation by Spearman's and Kendal's gave – 0.4 for the first and – 0.5 for the second (table 1). Distribution of number of private basic schools is not necessarily correlated with distribution of number of private secondary schools. That is to say, if there is excess number of private basic schools in one locality that does not necessarily mean there should be similar excess number in private secondary schools.

The chi-square test is used to test degree of concentration or dispersion of private basic schools by the state's localities. The calculated value of chi-square is 50.15 and with 6 degrees of freedom under 0.01 significance level gives a critical value of 16.81 which is less than the calculated value. This means that there are statistical significant difference into distribution of private basic schools by localities of the state. There is more concentration of private basic schools in some localities than others. This is clearly shown by Khartoum locality which holds 195 private basic school while Umm Bedda holds 94 by excess of 101 school which is more than double. For private secondary schools, the calculated chi-square value is 33.61 and the critical value with 6 degree of freedom under 0.01 significance level is 16.81 which is less than the calculated value. This means that there are statistical significant difference into distribution of private secondary schools by locality. There is more concentration of private secondary schools in some localities than others. This is clearly shown by Khartoum locality which holds 118 private secondary school while East Nile holds 54 by excess of 64 school which is more than double. However, it is noticed that the calculated value of chi-square for private secondary schools is less than the private basic schools. This might indicate to less dispersion into secondary schools compared to basic schools.
Table 1. Rank correlation by Spearman’s and Kendal’s for private basic and secondary schools by locality in Khartoum state

<table>
<thead>
<tr>
<th>locality</th>
<th>Ranking by number of private basic schools</th>
<th>Ranking by number of private secondary schools</th>
<th>Difference</th>
<th>Difference²</th>
<th>Score due to ranking</th>
<th>∑Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Khartoum</td>
<td>1</td>
<td>7</td>
<td>6</td>
<td>-6</td>
<td>-6</td>
<td></td>
</tr>
<tr>
<td>Omdurman</td>
<td>2</td>
<td>5</td>
<td>3</td>
<td>-4 (+1)</td>
<td>-3</td>
<td></td>
</tr>
<tr>
<td>Bahri</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>-3 (+1)</td>
<td>-2</td>
<td></td>
</tr>
<tr>
<td>Karary</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>-2 (+1)</td>
<td>-1</td>
<td></td>
</tr>
<tr>
<td>Jebel Awlia</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>-1 (+1)</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Umm Bedda</td>
<td>6</td>
<td>1</td>
<td>5</td>
<td>+1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>East Nile</td>
<td>7</td>
<td>6</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>total</td>
<td>82</td>
<td></td>
<td>-11</td>
<td></td>
<td>82</td>
<td></td>
</tr>
</tbody>
</table>

Spearman’s rank correlation: \( r = 1 - \frac{6\sum D^2}{n(n^2-1)} = 1 - \frac{492}{336} = 1 - 1.4 = -0.4 \)
Kendal’s coefficient: \( \frac{11}{21} = -0.5 \)

2- Geographic Distribution of Private Schools’ Students

General government and private education in Khartoum state enroll 1,002,556 students. They are distributed as 880,774 basic education students (79.9%) and 201,782 secondary education students (20.1%). Private schools students account for 12.7% in basic schooling and 26% in secondary schooling. Taking the total number of students in private basic education by place (locality) distribution, Khartoum ranks first followed by Bahri; Omdurman; Jebel Awlia; Umm Bedda; East Nile and Karary respectively (Fig.3).

Concerning distribution of total number of students in private secondary schools, Bahri ranks first and followed by Khartoum; East Nile; Omdurman; Karary and then Jebel Awlia while no data is available for Umm Bedda (Fig.3). Ranking localities by number of basic private schools and by number of private basic students puts Khartoum locality first in both. Omdurman locality retreated from rank 2 to rank 3; Bahri advanced from rank 3 to rank 2; Karary retreated from rank 4 to rank 7 while Jebel Awlia advanced from rank 5 to rank 4 and similarly Umm Bedda from rank 6 to rank 5 and East Nile from rank 7 to rank 6. There is progress or retreat.
by only one rank which means that there might be close association between number of private basic schools and theirs' student (Fig.3).

Ranking localities by number of students in private secondary schools, Bahri comes first and then Khartoum; East Nile; Omdurman; Karary and Jebel Awlia while Umm Bedda locality has no relevant data. Although Khartoum ranks 7 into number of private secondary schools it progressed to the second rank into ranking private secondary schools by number of students. Omdurman stepped forward from rank 5 to rank 4; Bahri remarkably from rank 4 to the first rank; Karary lost two ranks by retreating from rank 3 to rank 5; Jebel Awlia sharply retreated from rank 2 to rank 6 and East Nile from rank 7 to rank 3 (Fig.3). This situation differs than that concerned with number of basic schools and their corresponding number of students. There appears to be no association between distribution of private secondary schools and distribution of their students by locality.

3- Gender in General Private Education

From the total number of basic private students which amounts to 140,179 there are 75,224 male (53.7%) and 64,955 female (46.3%) students which gives an excess by 7.4% for males. Distribution of basic private schools male students (Fig.3 and table 2) ranks Khartoum locality first then Bahri; Omdurman; East Nile; Umm Bedda; Jebel Awlia and Karary. On the other side, distribution of basic private female students, ranks Khartoum locality also first then Bahri; Jebel Awlia; Omdurman; Umm Bedda; Karary and East Nile localities. In private male secondary schools students, Bahri comes first then Khartoum; Omdurman; East Nile; Karary and Jebel Awlia. In distribution of private secondary female students, Khartoum locality comes first then East Nile, Omdurman, Karary, Bahri and Jebel Awlia localities.

The range value male students in private basic schools by locality is (7.3%) while for female it is (10.6%). This indicates to more dispersion among females by 3.3%. Using the same measure for private secondary education students, the range value for males is (46.5%) and for females it is (24.9%). This similarly depicts wide geographic dispersion among private secondary male students and big range difference by 21.6% between both sexes (table 2). There is much geographic concentration of private secondary male students in Bahri locality.

Table (2): Distribution of students of private education by percent, locality and by sex

<table>
<thead>
<tr>
<th>locality</th>
<th>male basic</th>
<th>female basic</th>
<th>total basic</th>
<th>male secondary</th>
<th>female secondary</th>
<th>total secondary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Khartoum</td>
<td>13853</td>
<td>13083</td>
<td>16936</td>
<td>6368</td>
<td>6452</td>
<td>12820</td>
</tr>
<tr>
<td></td>
<td>(18.4%)</td>
<td>(20.1%)</td>
<td>(12.1%)</td>
<td>(18.3%)</td>
<td>(29.0%)</td>
<td>(22.5%)</td>
</tr>
<tr>
<td>Jebel Awlia</td>
<td>8907</td>
<td>10135</td>
<td>19042</td>
<td>600</td>
<td>905</td>
<td>1505</td>
</tr>
<tr>
<td></td>
<td>(11.8%)</td>
<td>(15.6%)</td>
<td>(13.6%)</td>
<td>(1.7%)</td>
<td>(4.1%)</td>
<td>(2.6%)</td>
</tr>
<tr>
<td>Omdurman</td>
<td>12035</td>
<td>9895</td>
<td>21930</td>
<td>4788</td>
<td>4011</td>
<td>8799</td>
</tr>
<tr>
<td></td>
<td>(15.9%)</td>
<td>(15.2%)</td>
<td>(15.6%)</td>
<td>(13.8%)</td>
<td>(18.1%)</td>
<td>(15.5%)</td>
</tr>
<tr>
<td>Karary</td>
<td>8397</td>
<td>6966</td>
<td>15363</td>
<td>2149</td>
<td>2996</td>
<td>5145</td>
</tr>
<tr>
<td></td>
<td>(11.1%)</td>
<td>(10.7%)</td>
<td>(10.9%)</td>
<td>(6.2%)</td>
<td>(13.5%)</td>
<td>(9.1%)</td>
</tr>
<tr>
<td>Umm Bedda</td>
<td>9224</td>
<td>7735</td>
<td>16959</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>(12.2%)</td>
<td>(11.9%)</td>
<td>(12.0%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bahri</td>
<td>13446</td>
<td>10939</td>
<td>24385</td>
<td>16707</td>
<td>2858</td>
<td>19565</td>
</tr>
<tr>
<td></td>
<td>(17.9%)</td>
<td>(16.8%)</td>
<td>(17.4%)</td>
<td>(48.2%)</td>
<td>(12.9%)</td>
<td>(34.5%)</td>
</tr>
<tr>
<td>East Nile</td>
<td>9362</td>
<td>6202</td>
<td>15564</td>
<td>4037</td>
<td>4961</td>
<td>8998</td>
</tr>
<tr>
<td></td>
<td>(12.4%)</td>
<td>(9.5%)</td>
<td>(11.1%)</td>
<td>(11.6%)</td>
<td>(22.3%)</td>
<td>(15.8%)</td>
</tr>
<tr>
<td>Total</td>
<td>75224</td>
<td>64955</td>
<td>140179</td>
<td>34,649</td>
<td>22,183</td>
<td>56,832</td>
</tr>
<tr>
<td></td>
<td>(100.0%)</td>
<td>(100.0%)</td>
<td>(100.0%)</td>
<td>(100.0%)</td>
<td>(100.0%)</td>
<td>(100.0%)</td>
</tr>
</tbody>
</table>
Testing the difference between number of male and females in private basic and secondary education by locality is run in table (3). The t-test value depicts significant statistical difference between numbers of males and females in private basic education while there is no statistical significant difference between both sex in private secondary education (Table 3).

Figure (4) depicts distribution of students of private basic schools by sex by class by locality. In all localities, the majority of students are concentrated in first year. In all localities, except Khartoum locality, males exceed females. Males exceed females in 1st and 2nd school year in all localities, except Jebel Awlia locality. In 3rd year the same situation is found but Karay locality is similar to Jebel Awlia. In 4th year Jebel Awlia keeps on the same position. In 5th year schooling, Jebel Awlia is similar to others while in Kararay females exceed males. In 6th year Jebel Awlia comes again as females exceeding males. In 7th year, only Umm Bedda has excess females over males. In 8th year, only Jebel Awlia has excess females over males. There is always one locality found to have excess females over males and is characterized by being one of the dense populated parts in Khartoum state.

Table (3): T-test for comparison of means of male and females in private basic and private secondary education

<table>
<thead>
<tr>
<th>Locality</th>
<th>male basic (x)</th>
<th>female basic (y)</th>
<th>(x^2)</th>
<th>(y^2)</th>
<th>male secondary (x)</th>
<th>female secondary (y)</th>
<th>(x^2)</th>
<th>(y^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Khartoum</td>
<td>13853</td>
<td>13083</td>
<td>191,905,60</td>
<td>1,164,88</td>
<td>6368</td>
<td>6452</td>
<td>40,551,424</td>
<td>41,628,30</td>
</tr>
<tr>
<td>Jebel Awlia</td>
<td>8907</td>
<td>10135</td>
<td>79,334,649</td>
<td>102,718,22</td>
<td>6000</td>
<td>905</td>
<td>360,000</td>
<td>819,025</td>
</tr>
<tr>
<td>Omdurman</td>
<td>12035</td>
<td>9895</td>
<td>144,841,22</td>
<td>97,911,025</td>
<td>4788</td>
<td>4011</td>
<td>22,924,944</td>
<td>16,088,12</td>
</tr>
<tr>
<td>Kararay</td>
<td>8397</td>
<td>6966</td>
<td>70,509,609</td>
<td>48,525,156</td>
<td>2149</td>
<td>2996</td>
<td>4,618,201</td>
<td>8,976,016</td>
</tr>
<tr>
<td>Umm Bedda</td>
<td>9224</td>
<td>7735</td>
<td>85,082,176</td>
<td>600,625</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Bahri</td>
<td>13446</td>
<td>10939</td>
<td>180,794,91</td>
<td>119,661,72</td>
<td>16707</td>
<td>2858</td>
<td>279,123,84</td>
<td>8,168,164</td>
</tr>
<tr>
<td>East Nile</td>
<td>9362</td>
<td>6202</td>
<td>87,647,044</td>
<td>38,464,804</td>
<td>4037</td>
<td>4961</td>
<td>16,297,369</td>
<td>24,611,52</td>
</tr>
<tr>
<td>total</td>
<td>75224</td>
<td>64955</td>
<td>840,115,22</td>
<td>579,046,44</td>
<td>34,649</td>
<td>22,183</td>
<td>363,875,78</td>
<td>100,291,15</td>
</tr>
</tbody>
</table>

T = 10,746 – 9,276 / sq (840,115,227/7) – 115,476,516 / 7 - 1 + (579,046,445/-7) 86,044,176 / 7 - 1 = 1470 / sq 180,227,473 = 2.85
DF = 12 , critical value = two tailed (0.05) = 2.18

T = 5,774 – 3,697 / sq (363,875,787/6) – 33,339,076/6 - 1 + (100,291,151/6) 13,667,908 / 6 - 1 = 0.61
DF = 10 critical value = two tailed (0.05) = 2.23

![Graph showing distribution of students by locality](image-url)
Fig. 4: Distribution of private basic students by sex by locality

5- Money Profits, Expenditure and Net Income

General basic and secondary education employ 44,611 teacher in Khartoum state. Basic education alone employs 30,644 (68.7%) teacher and secondary education 13,967 (31.3%) teacher. Private basic and secondary education employ 14,730 teacher which equals 33% of total employed teachers in general education in Khartoum state. They are distributed as 8516 (57.8 %) teacher in basic private schools and 6214 (42.2%) teacher in private secondary education. Female teachers represent 51% in basic private education and 18.3% in private secondary education. Male teachers represent 49% in private basic and 81.7% in private secondary schools. There is very minor difference between male and female teachers in basic private education while male teachers remarkably exceed females in private secondary education. Bahri locality rank first into employing female teachers in basic and secondary private education while Khartoum locality rank first into employing male teachers in both basic and secondary private education.

Few of private schools own the school's building, except old established well known private schools which are usually multistoried. Teachers are paid only during school year and according to the periods they teach while some other private schools pay monthly salary to a teacher. The private schools provide relevant services such as water, electricity and supporting labor doing cleaning and security duties. The estimated mean of school tuition paid by a student to a private school, including basic and secondary schools, is 1000 Sudanese Guinea which equals 400 USD. The old established well known private schools charge students up to 3000 Sudanese Guinea which is triple those newly established private ones. Such highly charged tuitions private schools are mostly found in first class residential areas and serve economically well off people and politicians. The low charging tuitions schools are mostly found on peripheral residential areas, old squatter areas and old downtown residential areas (Fig. 1) where the urban poor concentrate. So, the estimated mean tuitions value holds very big standard deviation value due to area and income differences within Khartoum state. Calculation of total annual income, expenditures and net annual income are illustrated by figure (5). Total annual income by private education sector equals 197,011,000 Sudanese Guinea which equals 78,804,400 USD. Expenditure into teaching cuts 47% of total income. Government annual tax cut 2.5%. . Expenditure on renting buildings cut 5% and similarly maintenance and supporting services. The net total income equals 39.4% of the total annual income which amounts to 87,954,053 Sudanese Guinea or 35,181,621 USD. Net annual income per a private schools is estimated as 59,599,046 Sudanese Guinea. But, since there are differences between schools into number of students, expenditure into teaching, renting buildings, students' tuitions there will be expected income differences. Additional income sources by private education, that were not included here, include selling breakfast and snacks to students, students transportation and registration fees.
Fig. 5. Total income, expenditures and net income of private education in Khartoum state in 2011

Discussion

Private sector substantially contribute into general education in Khartoum state. Although it was restricted to intermediate and secondary levels in the past and enrolls students who fail to compete into enrolment to government schools, it became acceptable among people to send their children to private education. Low quality of government school teaching environment such as classroom overcrowding is one of the main reasons. This is confirmed by the fact that although private schools represent 41.7% of the total number of schools in the state, they enroll 12.7% of the total number of students in basic education and 26% in secondary schooling. This also means that one in two nation's schools in Khartoum state is a private school compared with one private school in four of the nation's schools in USA (Council for American Private Education.2010). This situation also contrasts the Singapore's experience where the private sector plays the complementary role of running continuing/ supplementary education classes in commercial/business studies, computers, languages, fine arts and tuition (Ministry of Education, Singapore.2011).

The government policy of privatization and lift of complete subsidy to education sector are essential into spread of private schools. National Economic Salvation Program of the 1990th was basically built on open market economy and has lifted complete subsidy for education. However, decline into public expenditure for education started since World War II when the demand for education had exceeded Sudan's education resources. (U.S.Library.2011). From 1975 expenditure on education declined by percent from 49.52 to 41.78 in 1981m then to 27.76 in 1985 to 8.51 in 1990 and then increased slightly to 12.15 in 1996 (UNESCO, 2010). Consequently, governmental education was no longer equipped to meet increasing population and aspiration for better education. The market economy as based on taxes found a promising income source into private schooling. The appearance of economically well-off Sudanese who spent part of their life outside Sudan were enthusiastic for better schooling environs supported by excellent academic records into Sudanese Secondary Certificate, private education found good ground among Sudanese.

Population factor is also important into expansion, demand and supply of private education in Khartoum state where population growth rate was 4.92% in 1956, increasing to 7.76% in 1973 and to 8.75% in 1983, reaching 13.7% in 1993 (MFEP 1955–93). Mean population density (number of persons per square kilometer) was 55.6 in 1973, 85.5 in 1983, and 169 in 1993. Khartoum state received 39% of internal migration in 1983 and 45% in 1993 (MFEP 1955–93). Greater Khartoum's degree of urban primacy has changed: whereas in 1955 Khartoum had 4.7 times the population of Sudan's second-largest urban centre, by 1993 this had increased to 8.9 times (Davies 2001). This rapid urban population growth in Greater Khartoum is similar to other third world countries. Over the next three decades, Asia's urban population will rise from 1.36 billion to 2.64 billion, Africa's urban population will double from 294 million to 742 million, while Latin America and the Caribbean will face a slower rise from about 400 millions to 600 million (UNFPA, 2008).

Spatial expansion of private education have incorporated urban poor who generally occupy unplanned residential areas and squatter settlements where Greater Khartoum received between 50-70% of the total displaced population in Sudan in 1990, who occupied 50 locations in 1991 with a total number of 1570000 displaced persons (Banaga 2001). Gradually these concentrations began to be transferred into the old urban mass and old squatter settlements. However, their number reached to more than 2,500,000 persons in 2001 (Banaga 2001). Axes of squatter developments were westward, a south - westward & northward axes from the fringes of Omdurman central to the margins of Kordofan state & Nahr el Nil state (Alredaisy & Davies 2003) where Umm Bedda locality incorporate the majority of the squatter settlements . Another axis grew southward & south eastward from the fringes of Khartoum central to the border of the White Nile state & the Gezira state, dominating Jebel Awlia locality. A similar one directed northward from Khartoum north central to the margins of Nahr el Nil state and north eastwards to the direction of central Butana plain of eastern Sudan dominating East Nile locality. Occupants poor of these areas have to pay to educate their children as
opinions and policies on the development of private education in Sub-Saharan Africa are changing (Kitaev, 1999) and poor African children benefit from private schools than government ones for a fraction of the cost and the poor parents know that private schools are the way forward (Sunday Times June 2006). This is in situations that 77.5% of the households surveyed in north Sudan were on or below the poverty line (MOL/ ILO, 1997) and further the United Nations Development Program (2005) reported that 75% of north Sudan population as poor and the majority (80%) is concentrating in rural areas where 30% of them suffered from extreme poverty.

Female students and teachers are prominent in private education in Khartoum state. Area differences by localities hold demographic indicators such as sex – age structure among population. Dominance of female education is the result of historical efforts to educate Sudanese females. Females have stepping from religious school "Khalwa" which did not prepare girls for the secular learning mainstream, from which they were virtually excluded to the world of competing with males. Due to the efforts of Sheikh Babikr Badri, the government had provided five elementary schools for girls by 1920 and by 1940 the first intermediate school for girls was opened and by 1955, ten intermediate schools for girls were in existence. In 1956 the first Secondary School for Girls, with about 265 students, was the only girls' secondary school operated by the government. By 1960, 245 elementary schools for girls had been established, but only 25 junior secondary or general schools and 2 upper-secondary schools. During the 1960s and 1970s, girls' education made considerable gains under the education reforms that provided 1,086 primary schools, 268 intermediate schools for girls by 1970, when girls' education claimed approximately one-third of the total school resources available. By the early 1990s the numbers had increased and the ratio had remained approximately the same. Modernization of Sudanese society have positively changed social attitudes towards girl's education which was viewed in the past as source of corrupting the morals of their daughters and no more preference was given to sons, who by education could advance themselves in society to the pride and profit of the family. Now, girls have excellently achieved academic success in Sudanese Secondary Certificate and constitute the majority of students in higher education institutions in Sudan. This situation contrasts many African countries where gender disparities against girls are highest in Benin, Ivory Coast, Ethiopia, Guinea, Mali, and Togo, with fewer than 60 girls per 100 boys entering secondary education(Sutherland-Addy2008). For example, girls' access to school remains a big issue in Nigeria, where 69% of girls not in school are unlikely to enroll, compared with 31% for boys. Similar if somewhat smaller gender differences are found in Burundi and Guinea (OECD.2011). Educated women earn more, have smaller, healthier families, and are more likely to educate their girls (ESSA.2011).

Although private education in Khartoum state have contributed into enrolment of considerable number of students, employed many teachers who were mainly University graduate in situation of very few available job opportunities, in addition to providing job opportunities for the supporting cadres of labors, it also gave businessmen and some teachers the chance to invade education sector by investment into public education.

Although, they have invested huge capital, their money revenue was higher enough to enable them move through social classes own houses or reside first class residential areas, owning fancy cars and spending school vacations in Europe and Turkey.

Conclusions and Recommendations

The general findings of this study are as follows:-
1- private education substantially contributes into general education in Khartoum state.
2- private education have geographic and gender differences.
3- urban poor have been incorporated to pay to educate their children.
4- government privatization policy, modernization and accelerating population growth have increased demand for private education.
5- female education ranks almost equal to male's.
net annual income by private education exceeds one third of total income giving opportunity to new businessmen to step rapidly the social ladder. The majority of Khartoum state population are poor. Private education is a financial burden on majority of the families. Poor people pay to educate their children on the expense of life basic needs. Therefore, efforts should be exerted to enhance government education. Government policy of economy privatization should exclude education sector. Private education should be offered as a complementary, not as an alternative to government education. Working towards education quality in government schools will encourage many families to send their children there. Government schools can ask for some financial support from these families. Strategy of expansion of government education to meet with population increase will actually reduce private education mainstream. Government can also support non-profit private education through provision of teachers, school books and necessary amenities. However, measures of intervention to charge reasonable students tuition will save part to families and obstruct the formation of a new social class of private schools landlords who tend to reside first class residential areas and spend school vacation abroad.

The experience of private education in Khartoum state is applicable in Sudanese and African urban settings. Most of African countries have their own experiences into private education. Working towards exchanging such experiences will definitely help improvement of this sector. However, African ruling authorities should understand that private education is not an alternative to government education when the majority of African are poor seeking to secure minimum basic life needs.

References

OECD.2011.Primary Education in Sub-Saharan Africa