RESEARCH SERIES No. 110



PUBLIC EXPENDITURE IN THE EDUCATION SECTOR IN UGANDA: A BENEFIT INCIDENCE ANALYSIS (PHASE 2)

MADINA GULOBA

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ABSTRACT

This paper focuses on public spending in education sub-sector in Uganda. In particular, we investigate the extent to which public spending in the education sector has been pro-poor. The analysis draws largely on the Uganda National Household Survey of 2009/10. The benefit incidence analysis techniques was employed to examine the extent to which government recurrent expenditures in 2009/10 in the education sector were redistributed among the enrolled household members at primary, secondary and tertiary levels of education. Findings showed that spending on primary education is on average pro-poor and progressive in rural areas and in the northern region. On the other hand, it is pro-rich in the urban areas and in the central and western region. Spending on secondary and tertiary education primarily benefits the non-poor and there is a strong evidence of middle-class capture. Thus, we recommend higher education scholarship programs and credit market development targeting the poor.

Key words: Public expenditure, education, Uganda

1 INTRODUCTION

This paper focuses on public spending in education in Uganda. In particular, we investigate the extent to which public spending/provision in the education sector has been pro-poor. The analysis draws for a large part on the Uganda National Household Survey of 2009/10 (UNHS IV). The survey is nationally representative and is conducted after every four year span. The survey has four core modules administered to all sampled households. The socio economic module collects basic social indicators including household individual particulars, education and household consumption expenditure. Three additional modules (market, community and the informal sector) are also administered to the same households. Data from the socio economic module for specific sections is used.

Government has heavily invested in the education sector as a means of increasing literacy rates. Education receives relatively high inflows of funds from government compared to other social sectors such as health and water. Education contributes on average 3.6 percent to gross domestic product (GDP) (MoFPED, 2011). In 2009/10 alone, education to GDP was 3.9 percent. Government education policy in 1997 of free education to all primary school going eligible children was followed ten years later by the introduction of free secondary education in government aided secondary schools[1] (MoES, 2008). Almost all government secondary schools in rural areas were required to implement this policy in a move to encourage children in rural areas especially poor households to send their children who had completed primary to proceed to secondary school.

With the introduction of USE, enrolment at the secondary level rose from slightly over 900,000 students in 2005/06 to over 1.5 million students in 2009/10 (UNHS Report, 2010)-indicating a 67 percent increase between the two survey periods. In a move to boost the increase in the number of students being enrolled at secondary, investment in secondary school infrastructure by government was undertaken in some USE schools. Specifically, government started building additional classroom blocks, administration blocks, head teacher houses (for schools in hard to reach areas) and laboratories in most but not all government founded schools where the USE programmes where being implemented. Thus, one of the major contributions this paper will make is that analysis made using the UNHS IV dataset captures the new education policy in secondary education[2].

This paper employs the benefit incidence approach to examine the extent to which government recurrent expenditures in 2009/10 in the education sector were redistributed among the

1 Note that it is not a prerequisite for all government aided schools to offer Universal Secondary education (USE), only a selected number by region were mandated to do so. Many government boarding secondary schools and day schools in urban areas did not implement USE unless the parents and the board of directors requested government for their school to be a USE school.

2 This is reflected in increased enrollment in the UNHS IV data set at the secondary school level and expenditure at the secondary facility level reflected in the Medium Term Expenditure Framework by the MFPED, 209/10.

enrolled household members at primary, secondary and tertiary levels of education. The rationale behind this paper is that findings by Guloba et.al, 2010 were based on the 2005/06 household survey data set and as result; the Global Development Network (GDN) required that a follow-up be made using the 2009/10 household survey for comparability.

Much of education reforms and an overview of education system in Uganda has already been captured in Guloba et al. (2010). All subsequent analysis in this paper is based on household consumption expenditure as a proxy for welfare. Thus, the percentiles are allocated based on welfare. The expenditure was deflated using the 2009/10 consumer price index (BoU, 2011).

From the introduction, the rest of the paper is organised as follows: data and methodology are discussed in section 2. Section 3 presents the main results of the analysis. We produce a basic benefit incidence analysis of education in Uganda aimed at determining to what extent government spending in education has actually benefited the poor in 2009/10 and compare the results in Guloba et al. (2010) in which they used the 2005/06 household survey data set and government spending. We distinguish between three types of education services. Note that throughout we consider only public facilities and not private. Analysis on the benefit incidence of primary education, secondary (which includes both junior and senior) and tertiary education is provided. Tertiary education includes universities, business and vocational technical schools (BVET). We examine the distribution of public outlays across percentiles and compare the value of transfers received per percentile. Section 4 provides a conclusion and recommendations of the paper.

2 DATA AND METHODOLOGY

2.1 Data and data sources

Data from the fourth National Household Survey conducted by the Uganda Bureau of Statistics (UoBS) in 2009/10 is used. As with previous surveys, this survey particularly the socio-economic module gathers information on household headship, age, sex, area of residence, region, and level of education attained by household members. The data set also provides household consumption expenditures which are used to generate wealth percentiles for analysis. Data from the Ministry of Finance, Planning and Economic Development (MoFPED) on sectoral expenditure in education are used to calculate the per user subsidy. Specifically, 2009/10 recurrent expenditures (actual outturns) were used to resonate with the 2009/10 household survey.

2.2 Methodology

Benefit incidence tells us who is benefiting from public services, and describes the welfare impact on different groups of people or individual households of government spending (cf. Demery, 2000). It does this by combining information about the unit costs of providing those services (obtained usually from government or service-provider data) with information on the use of these services (usually obtained from the households themselves through a sample survey in our case UNHS IV). In effect, the analysis imputes/allocates to those households using a particular service the cost of providing that service. This imputation is the amount by which household income would have to increase if it had to pay for the service used.

Using government spending on education, this can be formally written as:

$$X_j \equiv \sum_{i=1}^{3} E_{ij} \frac{S_i}{E_i} \equiv \sum_{i=1}^{3} \frac{E_{ij}}{E_i} S_i \qquad (1)$$

where X_j is the amount of the education subsidy that benefits group j[1], S and E to refer respectively to the government education subsidy and the number of public school enrolments, and the subscript i denotes the level of education (three levels are specified in (1)—primary, secondary and tertiary). The benefit incidence of total education spending imputed to group j is given by the number of primary enrolments from the group (E_{ij}) times the unit cost of a primary school place, plus the number of secondary enrolments times the secondary unit cost, plus the number of tertiary enrolments times the unit cost of tertiary education. Note that S_i/E_i is the mean unit subsidy of an enrolment at education level i.

The share of total education spending imputed to group $j(X_j)$ is:

$$x_j \equiv \sum_{i=1}^{3} \frac{E_{ij}}{E_i}\left(\frac{S_i}{S}\right) \equiv \sum_{i=1}^{3} e_{ij} s_i \qquad (2)$$

It can be seen that this depends on two major determinants:

i. The e_{ij}'s which are the shares of the group in total service use (enrolments in this case). These reflect household behaviour.

i. The s_j, or the shares of public spending across the different types of service, reflecting government behaviour.

Understanding how the benefits of public spending are distributed, and doing something about it, requires, therefore, an understanding of how both governments and households behave—including how they are constrained in making choices.

Equation (2) defines only one unit subsidy for each level of service. In some applications regional and other (ethnic) variations in subsidies are also taken into account. Equation (2) would then become:

$$x_j \equiv \sum_{k=1}^{n}\sum_{i=1}^{3} \frac{E_{ijk}}{E_i}\left(\frac{S_{ik}}{S}\right) \equiv \sum_{k=1}^{n}\sum_{i=1}^{3} e_{ijk} s_{ik} \qquad (3)$$

where the k subscript denote the region specified in the unit cost estimate, there being n regions. For simplicity we drop the k subscript throughout, although in some countries this distinction is important. A variant of this approach is to bypass the need for estimating the unit subsidy, and focus only on whether a service is used or not. For each service, households are assigned an 'accessibility dummy' taking the value of unity for those which used the service, and zero for those that did not (the s_i's are set to unity). The distribution of this dummy across income groups provides a measure of the equity of service provision.

For emphasis, as before the unit of analysis is the household. The assumption made here is that the government subsidy for one unit of education service is assumed to be the same for all individuals assessing the same education facility level e.g. primary, regardless of expenditure level and geographic location within the population area.

3 RESULTS AND DISCUSSION

Analysis made is based on only school going members within a household that were attending primary, secondary and tertiary levels at the time of the survey. Specifically, data employed is for household members attending government primary, secondary and tertiary levels of education. Specific to tertiary education we combine students attending post primary/junior, post secondary/specialized training, attending degree and above. In addition, at tertiary level, household members who attended tertiary education in the previous year were considered to be attending tertiary education in the current survey as they continue to be beneficiaries of government expenditures.

Differentials by age group show that 84 percent of children aged 6-12 years are currently attending school compared to 89 percent in 2005/06 (UNHS IV Report, 2011). Results presented in Table 1 indicate that about 81 percent of the household members were attending primary school and only about 14 percent and 4 percent were attending secondary and tertiary levels of education respectively.

Table 1: Total number of school going persons by facility level, 2009/10

Facility Level	No.	% age of total
Primary	8,710,091	81.49
Secondary	1,537,647	14.39
Tertiary	440,636	4.12
Total	**10,688,374**	

Source: Author's calculations based on UNHS IV data set and MoFPED

Furthermore, between 2005/06 and 2009/10 primary school enrolment rose from 7.6 million to 8.7 million and for secondary education from 0.904 million to 1.537 million in the same period. The increase in secondary education is attributed to the introduction of free secondary education in 2007 usually referred to as Universal Secondary Education (USE). With this move, Uganda became the first country in sub-Saharan Africa to implement USE. Nonetheless, progression to secondary education is still low (MoES, 2009, 2012).

Using the 2009/10 government expenditures geared towards the education sector, we compute the per user subsidy at each facility level (Table 2). Comparing the 2005/06 per user subsidy with the 2009/10, we note marginal increments at the primary level and significant increments at the secondary level and tertiary levels of education in Uganda schillings but in USD primary and tertiary per user subsidies indicated declines. As earlier indicated, with the introduction of USE, government had to equally increase its expenditures in secondary education. New classroom and laboratory blocks had to be built to accommodate the increase in the number of students being enrolled. In addition, releases are being made per additional head of a student enrolled at school level.

Table 2 : Unit subsidy by facility level (Ush)

Facility level	2005/06	2009/10
Primary	38,278.56 (21.06)	38,563.41 (19.07)
Secondary	61,499.97 (33.84)	97,632.93 (48.28)
Tertiary	306,320.15 (168.53)	333,427.24 (164.88)

Note: In the parenthesis is the US dollar equivalent based on fiscal year foreign exchange rates (BoU)

Source: Author's calculations based on UNHS IV data set and MoFPED

Below is a disaggregation of enrolment by facility level by wealth percentiles. As in 2005/06, in 2009/10 primary school enrolment was highest in the 4th and 5th percentile and lowest in the 10th percentile. On the other hand, secondary school enrolment was highest in the 8th, 9th and 10th percentiles and lowest in the 1st percentile. As with secondary enrolment a similarly analysis can be seen at the tertiary level of education (Table 3).

Table 3: Total number of enrolled persons by facility level and percentile, 2009/10

Facility level	Percentile										Total
	1	2	3	4	5	6	7	8	9	10	
Primary	677,586	943,597	973,702	1,043,341	979,588	974,624	957,675	876,223	753,340	530,415	8,710,091
Secondary	33,351	65,128	99,194	99,413	146,485	138,721	170,036	208,904	262,055	314,360	1,537,647
Tertiary	1,406	4,680	13,826	10,823	22,225	18,701	21,633	48,268	67,944	231,130	440,636
Total	712,343	1,013,405	1,086,722	1,153,577	1,148,298	1,132,046	1,149,344	1,133,395	1,083,339	1,075,905	10,688,374

Source: Author's calculations based on UNHS IV data set and MoFPED

Using the per student subsidy, Table 4 shows the distribution of government expenditures by beneficiary category and percentile. It follows from enrolment that the higher the enrolment the more benefits accruing to a given percentile (Lanjouw et al, 2001; Seowsky, 1979 & Meerman, 1979). Table 4 provides estimates of the benefit incidence of education spending in Uganda. These results indicate that the 4th percentile benefits most from the primary schooling subsidy and the poorest percentile benefits least from tertiary spending. The opposite pattern applies to the richest percentile.

Table 4: Distribution of benefits by facility level across percentile (Ush. Billion)

Facility Level	Percentile										Total
	1	2	3	4	5	6	7	8	9	10	
Primary	26.13	36.39	37.55	40.23	37.78	37.58	36.93	33.79	29.05	20.45	335.89
Secondary	3.26	6.36	9.68	9.71	14.30	13.54	16.60	20.40	25.59	30.69	150.12
Tertiary	0.47	1.56	4.61	3.61	7.41	6.24	7.21	16.09	22.65	77.07	146.92

Source: Author's calculations based on UNHS IV data set and MoFPED

This can be seen more clearly in Table 5 which presents the percentage distribution of benefits. Note that on average about 11 percent of the benefits at primary level were distributed at the 3rd, 4th, 5th and 6th percentiles. At secondary and tertiary levels 20 percent and about 52 percent of the benefits went to the richest (10th) percentile respectively.

Table 5: Percentage distribution of benefits by facility level across percentile

Facility level	Percentile										Total
	1 (poor)	2	3	4	5	6	7	8	9	10 (Rich)	
Primary	7.779	10.833	11.179	11.979	11.247	11.190	10.995	10.060	8.649	6.090	100
Secondary	2.169	4.236	6.451	6.465	9.527	9.022	11.058	13.586	17.043	20.444	100
Tertiary	0.319	1.062	3.138	2.456	5.044	4.244	4.909	10.954	15.420	52.454	100

Source: Author's calculations based on UNHS IV data set and MoFPED

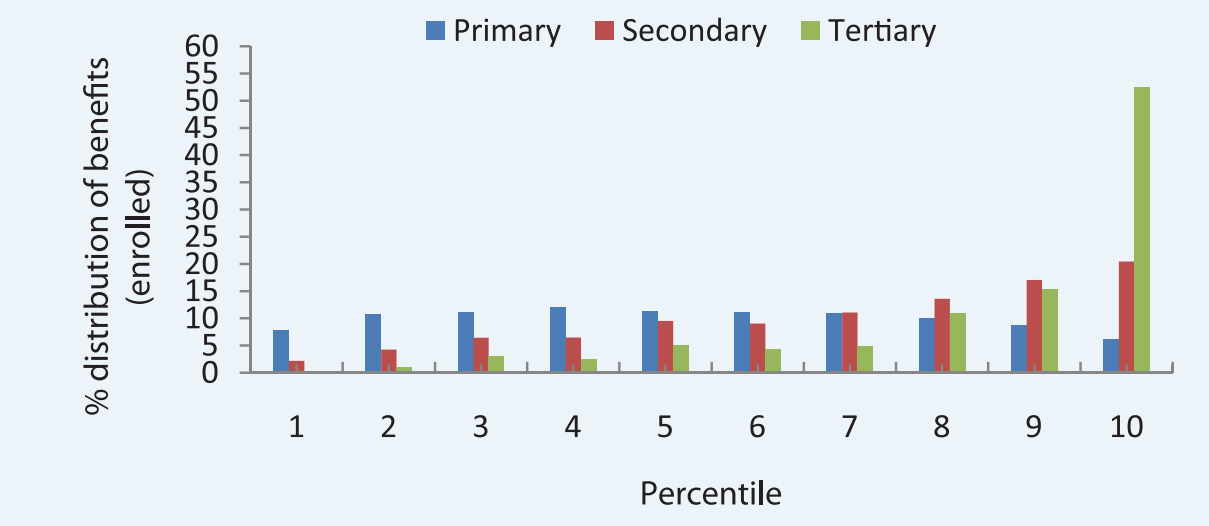
Given the percentile shares of enrolments and the allocations of public spending across the sub-sectors, the poorest percentile is shown to gain just 10.2 percent of total education spending, compared with 78 percent for the richest percentile (Table 5). The fact that lower income groups hardly use secondary –which is relatively free due to USE-and tertiary education services (which together absorb just under two fifths of the education budget), means that their share of the education budget is significantly below that of the richer groups (Castro-Leal, 1996, Castro- Leal et al., 1997 & Davoodi et al, 2003). While spending on primary education is at least well targeted to the poor, education spending as a whole is not (Guloba et al., 2010 & Lanjouw et al, 2001)

From the analysis made above, the next subsection further builds on it through analysis of results on how benefits are distributed by wealth, area of residence and region.

i) Wealth distribution of benefits

The wealth percentiles are defined using the household per capita consumption expenditure. Using the UNHS IV, we note a similar trend that was observed when we used the 2005/06. From Figure 1, government expenditure at the primary was redistributive at the primary level nonetheless the middle income earners benefits more from these expenditures. The richer household benefited less as they had the least number of pupils enrolled in government primary schools. Despite the free secondary education policy, the poorest households still benefited the least and the richer household benefited more at the secondary level of education, similar finding were got by Lanjouw et al (2001). This is attributed to the low progression of children at the poorest percentile from primary schooling to secondary and tertiary levels of education. In addition, attrition to urban areas, were some children stay with their relatives cannot be ruled out as one of the reasons for low benefits at the 1st and 2nd percentiles. Note the skewness in expenditures that the richest percentile benefits from government expenditure.

Figure 1 : Distribution of benefits among the enrolled (%)



Source: Author's calculations based on UNHS IV data set and MoFPED, 2009/10

Cumulative distribution of benefits in Table 6 emphasises the analysis above. At the primary level, more than 50 percent of the benefits went to the bottom 5 percentiles implying that government expenditures were pro-poor at this level. On the other hand, at the secondary level, up to the 70th percentile, only 48 percent of the benefits went to bottom 70 percent of the population. Interestingly enough, only 12 percent of the accumulated benefits went to the bottom 5 percentiles at the tertiary level of education. Even at the 9th percentile, we can say that 90 percent of the population benefited only 47 percent of government expenditure at the tertiary level. The remaining 53 percent benefited the richest percentile.

Table 6: Cumulative distribution of benefits for enrolled persons

Percentile	Primary	Secondary	Tertiary
1	7.779	2.169	0.319
2	18.613	6.405	1.381
3	29.792	12.856	4.519
4	41.770	19.321	6.975
5	53.017	28.847	12.019
6	64.206	37.869	16.263
7	75.201	48.927	21.173
8	85.261	62.513	32.127
9	93.910	79.556	47.546
10	100	100	100

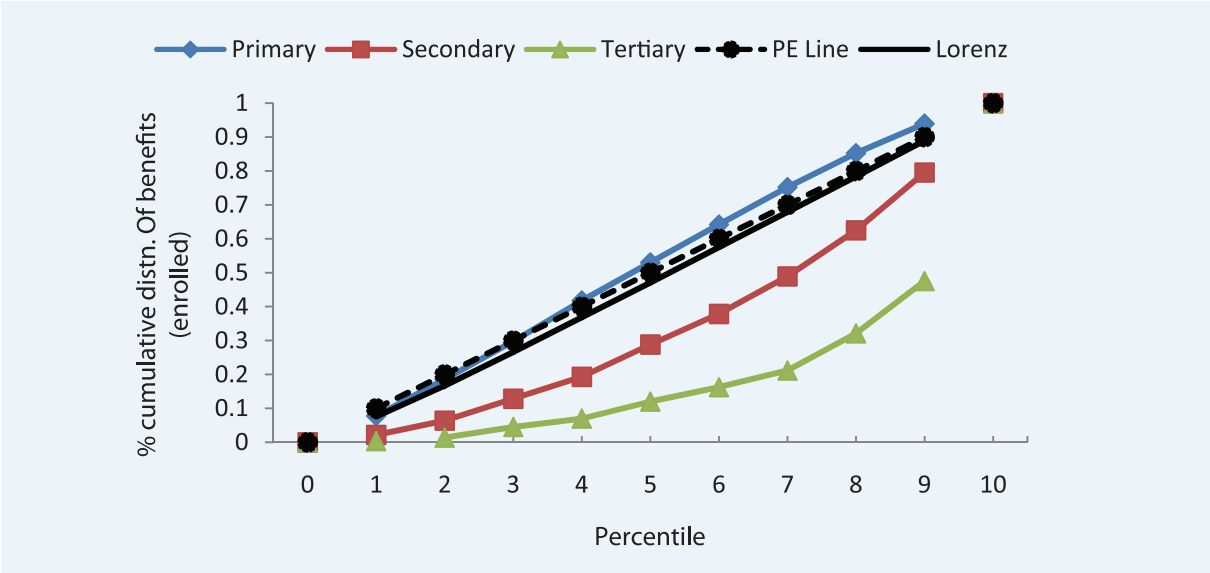
Source: Author's calculations based on UNHS IV data set and MoFPED

Graphical presentation of benefit incidence results can be helpful in showing how targeted and progressive subsidies are. Figure 2 shows the Lorenz curve for Uganda in 2009/10. This tracks the cumulative distribution of total household expenditures (or welfare) against the

cumulative population. The figure also shows the concentration curves of education subsidies. These graphs convey some important information by comparing these curves. Comparisons with the Lorenz curve reveal how progressive or regressive the subsidy is. Concentration curves lying above the Lorenz curve are progressive, in that they indicate that the subsidy is more equally distributed than income. As a proportion of total income, poorer groups gain more than the better off from government expenditure. By comparing the concentration curves with the line of perfect equality (PE line), we can judge the targeting to poorer groups. If the curve lies above the diagonal, it means that the poorest (say) percentile gains more than 10 percent of the total subsidy (and the richest quintile, less than 10 percent). Distributions below the diagonal signify weaker targeting (Lanjouw et al., 2001 & Demery, 2000).

Thus, from Figure 2, the primary subsidy was progressive, but we cannot tell whether it was well targeted as the concentration curve crosses the PE line. The secondary and tertiary subsidies were not only poorly targeted (being below the PE line), but also regressive (below the Lorenz curve). The overall education subsidy was not well targeted. Similar analysis in Guloba et al. (2010) showed that the primary subsidy was progressive. Nonetheless, both data sets still show that at the secondary and tertiary levels of education, the subsidy was regressive across all percentiles and more regressive at the tertiary level.

Figure 2: Concentration curve for user subsidy by facility level and percentile



Source: Author's calculations based on UNHS IV data set and MoFPED

ii) Area of residence

As in most residential classifications, places are either identified to be rural or urban. The UNHSIV has categorised the facility levels by location. Table 7 provides statistics on enrolment by facility level and location. At all the three facility levels, enrolment is highest in rural areas

than in the urban areas. This result resonates with the availability of education facilities within communities by area of residence as reported in the UNHS IV report. An insight into this indicates that in 2009/10 government primary schools located in rural areas rose to 49.4 percent from 27.6 percent of total primary schools and in urban areas, it rose to 41.7 percent in 2009/10 from 35.2 percent in 2005/06 (UNHS report, 2005/06 and UNHS, 20091/0). While at the secondary level, in rural areas government secondary schools increased from 3.1 percent to 5.7 percent of the total secondary schools in 2005/06 to 2009/10 respectively and reduced in urban areas from 8.8 percent to 8.5 percent over the same period (UNHS Report, 2010).

Table 7: Enrolment at the facility level by area of residence

Facility level	Rural	Urban	National
Primary	7,773,237	936,854	8,710,091
	(85.01)	(60.67)	(81.49)
Secondary	1,125,259	412,388	1,537,647
	(12.31)	(26.71)	(14.39)
Tertiary	245,779	194,857	440,636
	(2.69)	(12.62)	(4.12)
Total	9,144,275	1,544,099	10,688,374

Figures in the parenthesis are percentages of the total

Source: Author's calculations based on UNHS IV data set and MoFPED

Disaggregating the above results across wealth percentiles, results are presented in Table 8. High enrolment is observed at the 2nd, 3rd, 4th, 5th and 6th percentiles. In urban areas, at the tertiary level, findings as reflected in Table 8 indicate that the poorest percentiles-that are the 1st, 2nd and 4th percentile-have no household members enrolled at the tertiary level of education. This can be attributed to the low progression to higher levels, limited income earnings or attrition of students to households/relatives in relatively better wealth percentiles.

Table 8: Estimated school enrolment by facility level and percentile

	Rural			Urban		
Percentile	Primary	Secondary	Tertiary	Primary	Secondary	Tertiary
1	658,632	30,263	1,406	18,954	3,088	0
2	918,207	62,480	4,680	25,390	2,648	0
3	895,422	85,745	9,346	78,280	13,449	4,480
4	958,358	90,690	10,823	84,983	8,723	0
5	918,161	125,154	14,475	61,427	21,331	7,750
6	920,672	119,701	16,441	53,952	19,020	2,260
7	875,751	142,918	20,208	81,924	27,118	1,425
8	724,930	141,498	32,488	151,293	67,406	15,780
9	585,475	169,445	39,386	167,865	92,610	28,558
10	317,629	157,365	96,526	212,786	156,995	134,604
Total	**7,773,237**	**1,125,259**	**245,779**	**936,854**	**412,388**	**194,857**

Source: Author's calculations based on UNHS IV data set and MoFPED

Percentage distribution of benefits by residence is reflected in Table 9. Given that benefits are calculated based on enrolment, percentile levels with the highest number of enrolments had higher benefits accruing to them.

Table 9: Percentage distribution of benefits by facility level and residence

	Rural			Urban		
Percentile	Primary	Secondary	Tertiary	Primary	Secondary	Tertiary
1	8.473	2.689	0.572	2.023	0.749	0.000
2	11.812	5.552	1.904	2.710	0.642	0.000
3	11.519	7.620	3.803	8.356	3.261	2.299
4	12.329	8.059	4.404	9.071	2.115	0.000
5	11.812	11.122	5.889	6.557	5.173	3.977
6	11.844	10.638	6.689	5.759	4.612	1.160
7	11.266	12.701	8.222	8.745	6.576	0.731
8	9.326	12.575	13.218	16.149	16.345	8.098
9	7.532	15.058	16.025	17.918	22.457	14.656
10	4.086	13.985	39.273	22.713	38.070	69.078
Total	100	100	100	100	100	100

Source: Author's calculations based on UNHS IV data set and MoFPED

Cumulative distribution of benefits indicate that in rural areas, more than 55 percent of the benefits geared towards primary education went to the 1st, 2nd, 3rd, 4th and 5th percentiles making expenditures pro-poor at this level (Table 10). At the secondary level, less that 50 percent of the benefits went to the bottom 6 percentiles and the scenario was even worse at the tertiary level with more than 60 percent of the benefits went to the 9th and 10th percentiles. With regard to the urban area of residence, only 59 percent of the benefits went to the first 8 percentiles which are extremely low, but households in the urban areas are more likely to send their children to private schools and in addition, government primary schools in urban areas are few. Over 60 percent and about 70 percent of the benefits were enjoyed by the two richest percentiles and the 10th percentile only for the secondary and tertiary levels respectively (Table 10).

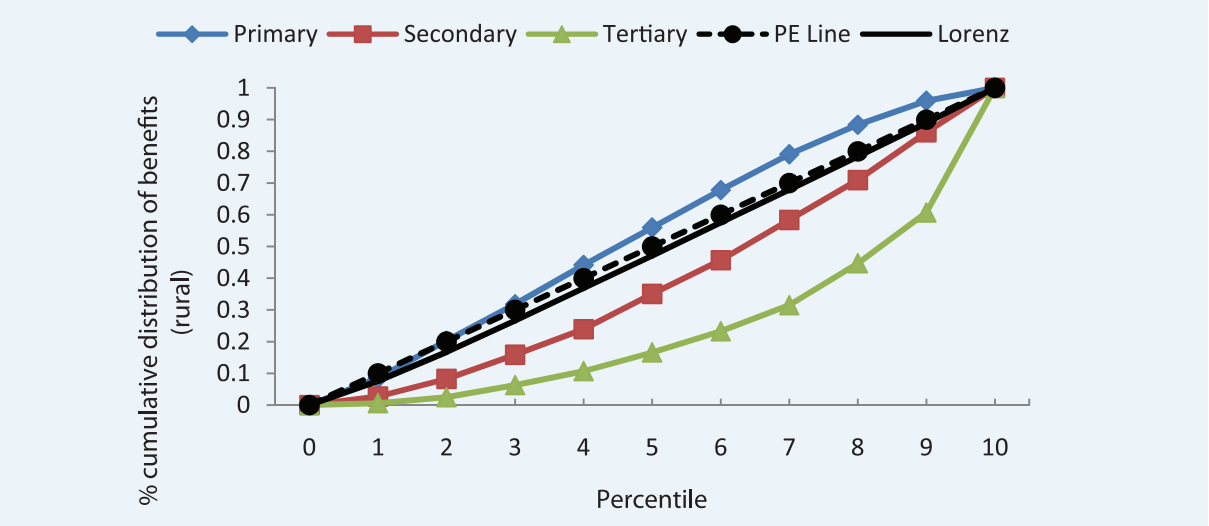
Table 10: Cumulative distribution of benefits by area of residence

	Rural			Urban		
Percentile	Primary	Secondary	Tertiary	Primary	Secondary	Tertiary
1	8.473	2.689	0.572	2.023	0.749	0.000
2	20.285	8.242	2.476	4.733	1.391	0.000
3	31.805	15.862	6.279	13.089	4.652	2.299
4	44.134	23.921	10.682	22.160	6.767	2.299
5	55.946	35.044	16.572	28.717	11.940	6.276
6	67.790	45.681	23.261	34.476	16.552	7.436
7	79.056	58.382	31.483	43.220	23.128	8.168
8	88.382	70.957	44.702	59.369	39.473	16.266
9	95.914	86.015	60.727	77.287	61.930	30.922
10	100	100	100	100	100	100

Source: Author's calculations based on UNHS IV data set and MoFPED

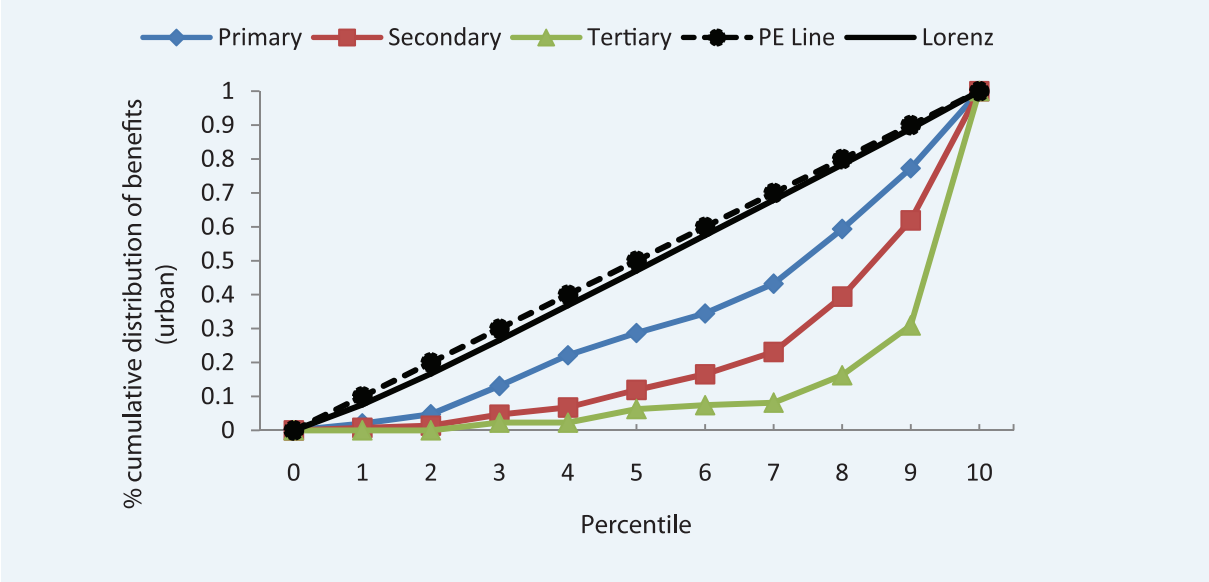
Analysis using concentration and Lorenz curves indicates that at the rural level, government subsidy at primary level reflected pro-poor spending and progressive. But subsidies were poorly targeted and regressive at the secondary –despite USE-and tertiary levels of education (Figure 3). On the other hand, education subsidies in urban areas were poor targeted and regressive at all education facility levels (Figure 4). Overall spending on education was on average pro-rich and more so in urban areas.

Figure 3: Concentration curve by facility level-Rural



Source: Author's calculations based on UNHS IV data set and MoFPED

Figure 4: Concentration curve by facility level-Urban



Source: Author's calculations based on UNHS IV data set and MoFPED

iii) Distribution of benefits by region

Here, findings indicate that at the primary level across regions, enrolment was highest in the eastern region (32%), western region (23%), Central region (23%) and the Northern region (22%). Secondary school enrolment was highest in the central region (36%), eastern region (28%), western region (22%) and lowest in the northern region (15 percent). And lastly, with regard to tertiary level, enrolment was highest in the central region and lowest in the eastern region (Table 11).

Table 11: Distribution of government facility users by region

Facility level	Central	Eastern	Northern	Western	Total
Primary	1,968,428	2,815,715	1,909,178	2,016,770	8,710,091
	(71.74)	(85.4)	(86.64)	(82.52)	(81.49)
Secondary	550,721	423,607	228,390	334,929	1,537,647
	(20.07)	(12.85)	(10.37)	(13.7)	(14.39)
Tertiary	224,686	57,805	65,882	92,263	440,636
	(8.19)	(1.75)	(2.99)	(3.78)	(4.12)
Total	2,743,835	3,297,127	2,203,450	2,443,962	10,688,374

Figures in the parenthesis are column percentages

Source: Author's calculations based on UNHS IV data set and MoFPED

Getting percentage distribution of benefits by region and facility level across percentiles (Table 12), results for the central region indicate that at the primary level, benefits were higher at the top three richest percentiles and skewed towards the richest percentile for the secondary (36%) and tertiary (75%) levels. For the eastern region, at the primary level, benefits were highest at the 6th percentile and the 4th percentile, and for the secondary level, benefits were higher at the 9th percentile followed by the 5th and 6th percentile. The 10th percentile had the highest benefits (24%) (Guloba et al., 2010).

In the northern region, benefits were highest at the 1st percentile. Generally, the poor percentiles benefited more at the primary level. Benefits at the secondary level were highest at the 9th percentile and the 3rd percentile. Whereas at the tertiary level, the 9th and 10th percentile received the highest benefits from government expenditures geared towards tertiary education. For the western region, the 7th percentile and the 10th percentile received the highest benefits at the primary.

Table 12: Percentage distribution of benefits by region

	Central			Eastern		
Percentile	Primary	Secondary	Tertiary	Primary	Secondary	Tertiary
1	2.426	0.621	0.000	5.938	2.778	0.000
2	5.120	1.923	0.000	10.348	4.336	3.536
3	6.541	2.319	1.536	12.358	8.723	10.624
4	8.488	3.383	1.454	13.342	7.828	1.484
5	9.159	5.395	2.112	12.444	13.947	8.534
6	9.901	5.045	0.464	14.272	13.858	12.175
7	12.928	11.213	0.602	10.221	9.092	14.362
8	14.916	16.215	6.931	9.996	11.620	12.182
9	14.276	16.919	11.212	8.748	19.801	12.627
10	16.245	36.967	75.689	2.334	8.017	24.475
Total	100	100	100	100	100	100
	Northern			**Western**		
Percentile	Primary	Secondary	Tertiary	Primary	Secondary	Tertiary
1	18.741	5.388	1.266	5.198	1.749	0.620
2	16.917	6.166	4.001	11.329	6.595	0.000
3	14.665	14.628	2.568	10.759	4.796	2.755
4	12.196	7.478	7.564	13.276	9.120	1.858
5	10.978	11.543	14.646	11.867	9.354	3.141
6	8.496	9.184	9.021	10.693	9.333	5.070
7	6.618	9.554	4.141	14.332	14.317	10.026
8	6.330	12.276	17.288	8.941	12.643	15.459
9	3.610	14.779	19.845	7.789	15.300	24.257
10	1.449	9.004	19.661	5.815	16.794	36.814
Total	100	100	100	100	100	100

Source: Author's calculations based on UNHS IV data set and MoFPED

From Table 13, the cumulative distribution of benefits by region indicate that for the central region at the primary level households below the 7th percentile received less than 50 percent of the benefits, at the secondary level, the 9th and 10th percentile received over 63 percent of the benefits directed towards secondary education and over 75 percent of the benefits at the tertiary level benefited the 10th percentile. A similar analysis follows throughout for the other regions as well. Results in which we disaggregate regions by area of residence are presented i the appendix (Appendix 1). These present findings which help us understand the dynamics within each region and how benefits are distributed by residence.

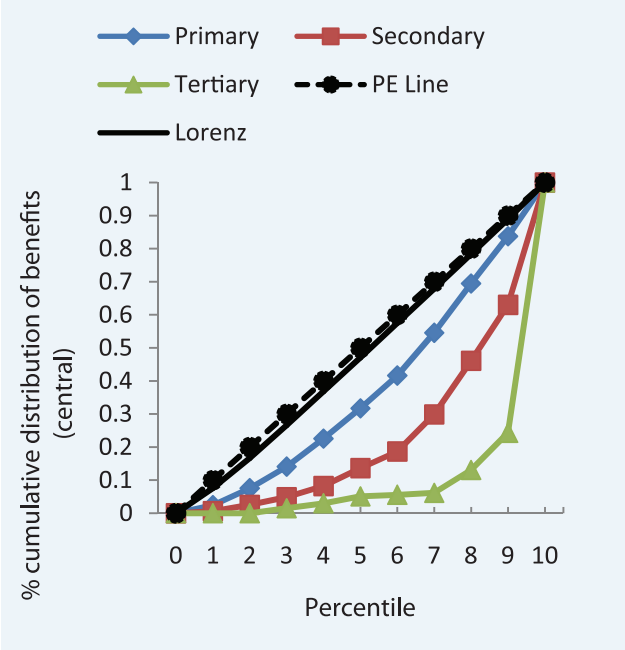
Table 13: Cumulative distribution of benefits by region

	Central			Eastern		
Percentile	Primary	Secondary	Tertiary	Primary	Secondary	Tertiary
1	2.426	0.621	0.000	5.938	2.778	0.000
2	7.546	2.543	0.000	16.286	7.114	3.536
3	14.087	4.862	1.536	28.644	15.837	14.160
4	22.575	8.245	2.990	41.986	23.665	15.644
5	31.734	13.640	5.102	54.429	37.612	24.178
6	41.635	18.686	5.566	68.701	51.470	36.353
7	54.563	29.898	6.168	78.922	60.561	50.715
8	69.479	46.113	13.099	88.918	72.181	62.898
9	83.755	63.033	24.311	97.666	91.983	75.525
10	100	100	100	100	100	100
	Northern			Western		
Percentile	Primary	Secondary	Tertiary	Primary	Secondary	Tertiary
1	18.741	5.388	1.266	5.198	1.749	0.620
2	35.657	11.554	5.267	16.527	8.344	0.620
3	50.323	26.182	7.835	27.287	13.140	3.375
4	62.519	33.660	15.399	40.563	22.260	5.233
5	73.497	45.203	30.045	52.430	31.614	8.374
6	81.994	54.387	39.065	63.123	40.947	13.444
7	88.612	63.942	43.206	77.455	55.264	23.470
8	94.941	76.217	60.495	86.397	67.906	38.929
9	98.551	90.996	80.339	94.185	83.206	63.186
10	100	100	100	100	100	100

Source: Author's calculations based on UNHS IV data set and MoFPED

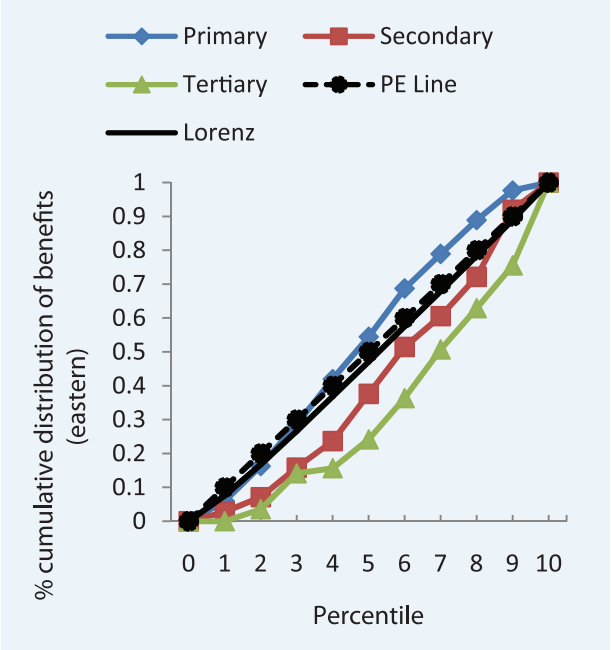
Using concentration curves, for the central region, per user subsidy was regressive at all the three education facility levels (Figure 5). On the other hand, for eastern and western regions, the subsidy was poorly targeted and regressive at both the secondary and tertiary levels but undefined at the primary level as the concentration curve is crossing the PE line. Specific to the eastern region, 2005/06 findings had indicated subsides at the primary level having been progressive but for 2009/10 as noted it is unclear on whether the subsidy was progressive or regressive. For the northern region, it is clear that user subsidies were pro-poor and progressive at the primary level and poorly targeted and regressive at the secondary and tertiary levels.

Figure 5: Concentration curve of distribution of benefits-Central



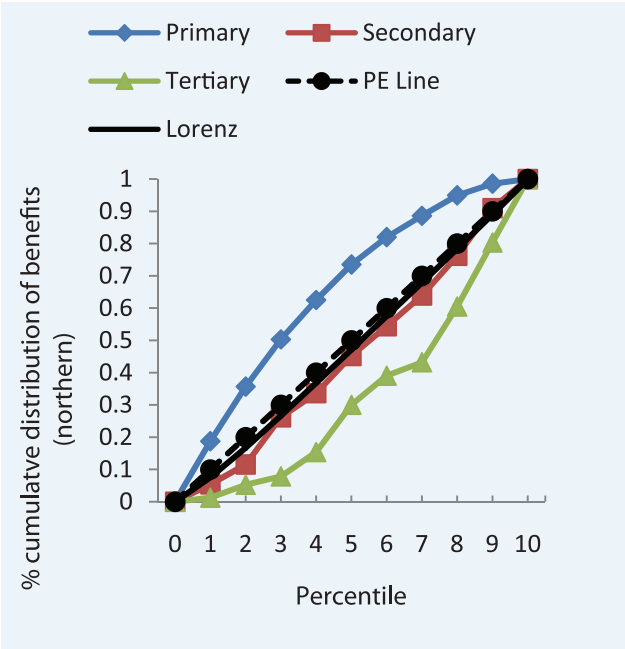
Source: Author's calculations based on UNHS III data set and MoFPED

Figure 6: Concentration curve of distribution of benefits-Eastern



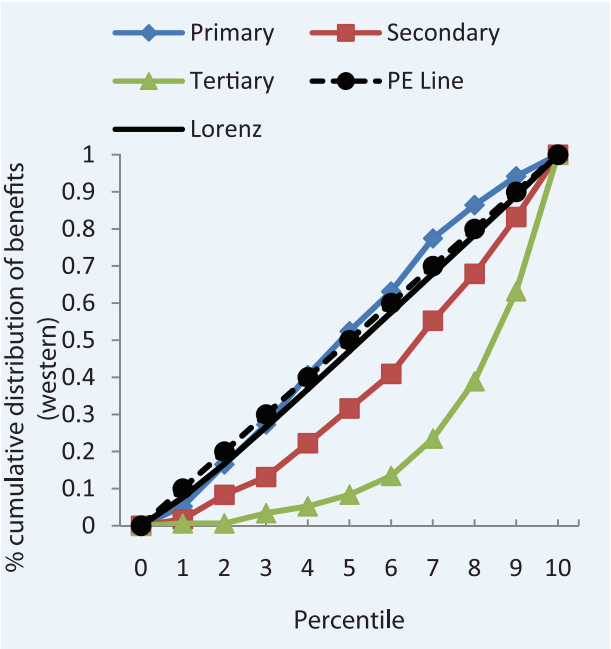
Source: Author's calculations based on UNHS IV data set and MoFPE

Figure 7: Concentration curve of distribution of benefits-Northern



Source: Author's calculations based on UNHS IV data set and MoFPED

Figure 8: Concentration curve of distribution of benefits-Western



Source: Author's calculations based on UNHS IV data set and MoFPED

4 CONCLUSION AND RECOMMENDATION

In this paper, we have focused on education in Uganda. Drawing on the UNHS IV dataset, we showed the distribution of public spending among the school going population. We have indicated that enrolments in primary levels are still higher compared to secondary and tertiary and even higher for the poor at primary level. Basically the BIA helps us to provide a link between education outcome and welfare. Throughout the analysis, we note that spending on primary education is on average pro-poor and progressive in rural areas and in the northern region. On the other hand, it is poorly targeted and regressive in urban areas and in the central and western regions. Put differently, its pro rich in the urban areas and in the central and western region. Spending on secondary and tertiary education primarily benefits the non-poor and there is a strong evidence of middle-class capture. More broadly, we find that government subsidies in education are poorly targeted to the poor and indeed favor those who are better-off. Improving targeting to the poor will involve not by simply rearranging the public education subsidies but also addressing the constraints that prevent the poor from accessing these services.

We recommend higher education scholarship program and credit market development targeting the poor. Public resources dedicated to tertiary education largely favor non-poor students. About two-third of public tertiary-level spending benefits the richest income percentile and yet it contains a small percentage of the population of 18-23 years old. Each poor student enrolled at the tertiary level needs more a substantial amount of income to spend on non-food items in order to pay for school expenses compared with no-poor students. With the introduction of UPE and USE, at the moment in Uganda, at the tertiary level, school fees are the largest household expense on education for both the poor and the non-poor. This analysis suggests that exempting poor students from the payment of school fees at the tertiary level can increase enrollments among the poor. How? To do this, as suggested by Castro-Leal (1996), a strategy to finance the additional expense of providing scholarships in tertiary education for the poor is to design cost recovery mechanisms that do not discriminate against them. An alternative for freeing public education funds and simultaneously increasing cost recovery is the development of tertiary education credit markets. This type of programs have been designed for other countries and best results are obtained when student loans are channeled through existing commercial credit institutions to ensure loan recovery, increase credibility and maintain cost-effectiveness.

REFERENCES

Castro-Leal, F. (1996). 'Poverty and Inequality in the Distribution of Public Education Spending in South Africa.' PSP Discussion Paper Series No. 102, Poverty and Social Policy Department, The World Bank. (December).

Castro-Leal, F., Dayton, J and L., Demery. (1997). 'Public Social Spending in Africa: Do the Poor Benefit?' World Bank Research Observer.

Davoodi, H. R., E. R., Tiongson, and S. S., Asawanuchit. (2003). 'How Useful Are Benefit Incidence Analyses of Public Education and Health Spending?' IMF working paper WP/03/227

Demery, L. (2000). 'Benefit incidence: a practitioner's guide.' Poverty and Social Development Group, The World Bank (unpublished mimeo).

Guloba, M, Nyende, M and J., Wokadala. (2010). 'Public Spending in the Education Sector in Uganda: A benefit Incidence Analysis'. (Phase 1). GDN working paper.

Lanjouw, P., and M., Ravallion. (1999). 'Benefit Incidence, public spending reforms, and the timing of program capture.' *World Bank Economic Review* Vol. 13 257-73 (May)

Lanjouw, P., Menno, H., Saadah Fadia, S., Haneen, S., and R., Sparrow. (2001). Poverty, Education and Health in Indonesia: Who benefits from public spending?

Meerman, J. (1979). 'Public Expenditures in Malaysia: Who Benefits and Why?' New York: Oxford University Press.

Ministry of Education and Sports (MoES). (2008). *Education Statistical Abstract, 2009*.

_____. (2012). *Education Statistical Abstract*, 2012

Ministry of Finance Planning and Economic Development (MoFPED). 2011. Medium *Term Expenditure Outlays*. Government of Uganda, Kampala, Uganda

Selowsky, M. (1979). Who Benefits from Government Expenditure? New York: Oxford University Press.

Uganda Bureau of Statistics (UBoS). (2006). 'Uganda National Household Survey 2005/06: Social-Economic Module Report'. UBOS

_____. (2010). 'Uganda National Household Survey 2009/10: Social-Economic Module Abridged Report'. UBOS, November, 2010

APPENDIX

Table 14: Enrolment at facility level by region and area of residence

Facility level	Central rural	Central urban	East rural	East urban	North rural	North urban	West rural	West urban	Total
Primary	1,437,571	530,857	2,661,159	154,556	1,746,672	162,506	1,927,835	88,935	8,710,091
	(79.88)	(56.22)	(86.50)	(70.04)	(89.07)	(67.05)	(83.56)	(64.98)	(81.49)
Secondary	285,716	265,005	365,062	58,545	172,344	56,046	302,137	32,792	1,537,647
	(15.88)	(28.07)	(11.87)	(26.53)	(8.79)	(23.13)	(13.10)	(23.96)	(14.39)
Tertiary	76,338	148,348	50,236	7,569	42,084	23,798	77,121	15,142	440,636
	(4.24)	(15.71)	(1.63)	(3.43)	(2.15)	(9.82)	(3.34)	(11.06)	(4.12)
Total	1,799,625	944,210	3,076,457	220,670	1,961,100	242,350	2,307,093	136,869	10,688,374

Figures in the parenthesis are column percentages

Source: Author's calculations based on UNHS IV data set and MoFPED

Table 15: Percentage distribution of benefits by region and area of residence

	Central rural			Central urban		
Percentile	Primary	Secondary	Tertiary	Primary	Secondary	Tertiary
1	3.242	1.197	0.000	0.217	0.000	0.000
2	6.962	3.706	0.000	0.131	0.000	0.000
3	5.969	1.734	0.000	8.090	2.950	2.326
4	9.819	5.414	4.281	4.882	1.194	0.000
5	11.322	7.584	4.154	3.301	3.035	1.061
6	12.786	8.850	1.365	2.089	0.943	0.000
7	14.713	14.443	0.000	8.097	7.730	0.912
8	12.339	14.124	6.522	21.894	18.470	7.141
9	12.794	16.482	18.422	18.290	17.390	7.501
10	10.054	26.467	65.256	33.010	48.288	81.058
Total	100	100	100	100	100	100
	Eastern rural			**Eastern urban**		
Percentile	Primary	Secondary	Tertiary	Primary	Secondary	Tertiary
1	6.217	3.224	0.000	1.128	0.000	0.000
2	10.368	4.609	4.069	9.990	2.637	0.000
3	12.524	9.622	12.224	9.494	3.116	0.000
4	13.216	8.337	1.708	15.504	4.651	0.000
5	12.578	14.855	9.820	10.142	8.284	0.000
6	14.413	13.693	14.010	11.835	14.889	0.000
7	10.001	10.446	16.526	14.005	0.647	0.000
8	10.366	11.530	11.378	3.621	12.179	17.519
9	8.106	17.532	10.321	19.805	33.950	27.930
10	2.209	6.152	19.944	4.476	19.646	54.551
Total	100	100	100	100	100	100

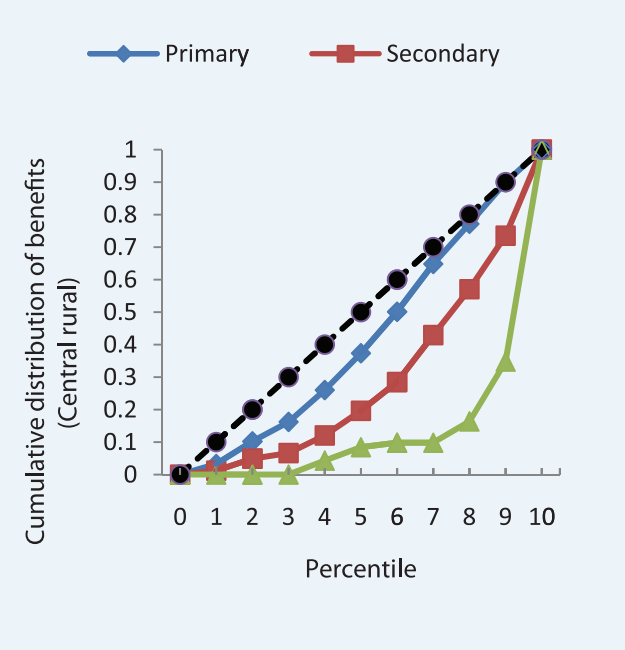
Source: Author's calculations based on UNHS IV data set and MoFPED

Cont...Table 15: Percentage distribution of benefits by region and area of residence

	Northern rural			Northern urban		
Percentile	Primary	Secondary	Tertiary	Primary	Secondary	Tertiary
1	19.596	5.349	1.982	9.552	5.510	0.000
2	18.145	7.531	6.264	3.712	1.970	0.000
3	15.062	17.175	1.575	10.400	6.794	4.324
4	12.330	8.264	11.841	10.758	5.060	0.000
5	11.071	12.390	8.253	9.987	8.941	25.952
6	8.539	12.045	8.752	8.034	0.385	9.497
7	6.243	9.033	6.311	10.645	11.157	0.303
8	5.383	9.694	17.893	16.509	20.216	16.220
9	2.531	9.974	10.707	15.203	29.553	36.003
10	1.100	8.545	26.423	5.199	10.415	7.702
Total	100	100	100	100	100	100
	Western rural			**Western urban**		
Percentile	Primary	Secondary	Tertiary	Primary	Secondary	Tertiary
1	5.410	1.939	0.742	0.604	0.000	0.000
2	11.685	7.311	0.000	3.623	0.000	0.000
3	11.061	5.317	3.296	4.229	0.000	0.000
4	12.975	10.109	2.222	19.813	0.000	0.000
5	11.792	9.235	3.758	13.492	10.454	0.000
6	10.589	7.834	6.066	12.948	23.140	0.000
7	14.993	15.871	11.994	2.972	0.000	0.000
8	9.217	14.015	18.494	0.000	0.000	0.000
9	7.346	13.622	20.269	17.379	30.758	44.565
10	4.932	14.747	33.158	24.941	35.649	55.435
Total	100	100	100	100	100	100

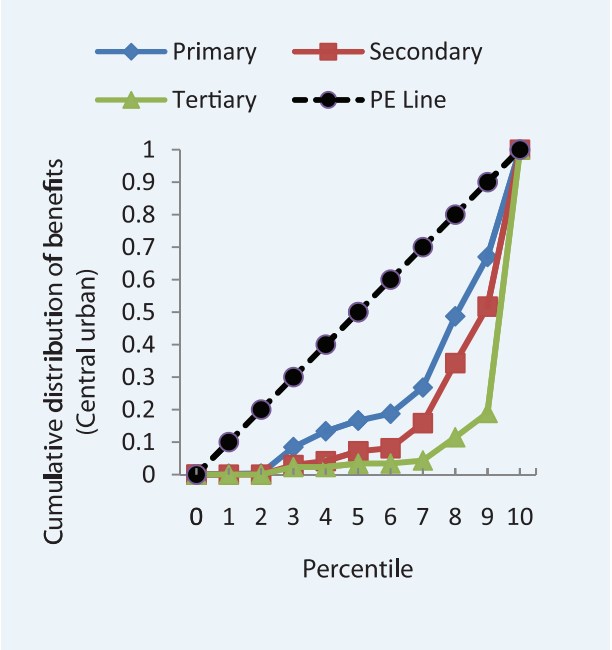
Source: Author's calculations based on UNHS IV data set and MoFPED

Figure 9: Concentration curve of benefits-Central rural



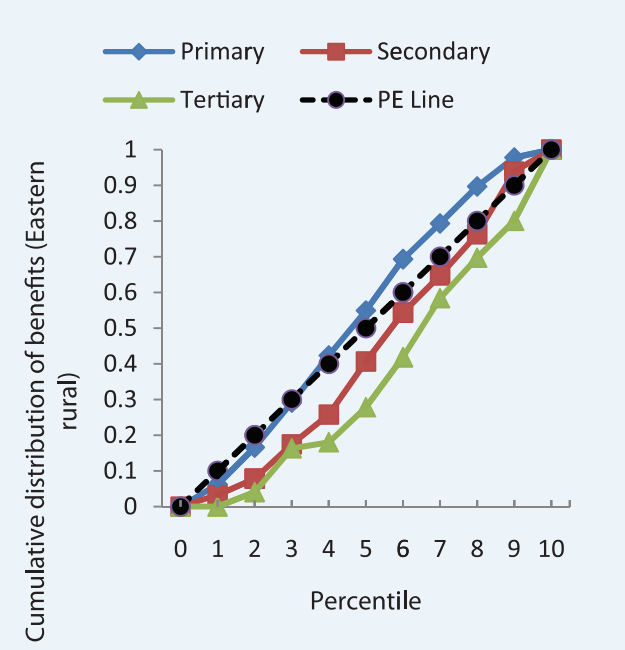
Source: Author's calculations based on UNHS IV data set and MoFPED

Figure 10: Concentration curve of benefits-Central urban



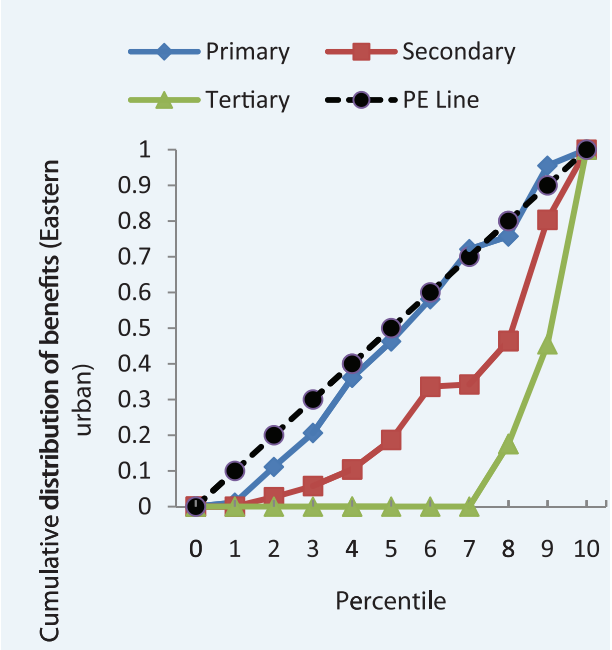
Source: Author's calculations based on UNHS IV data set and MoFPED

Figure 11: Concentration curve of benefits-Eastern rural



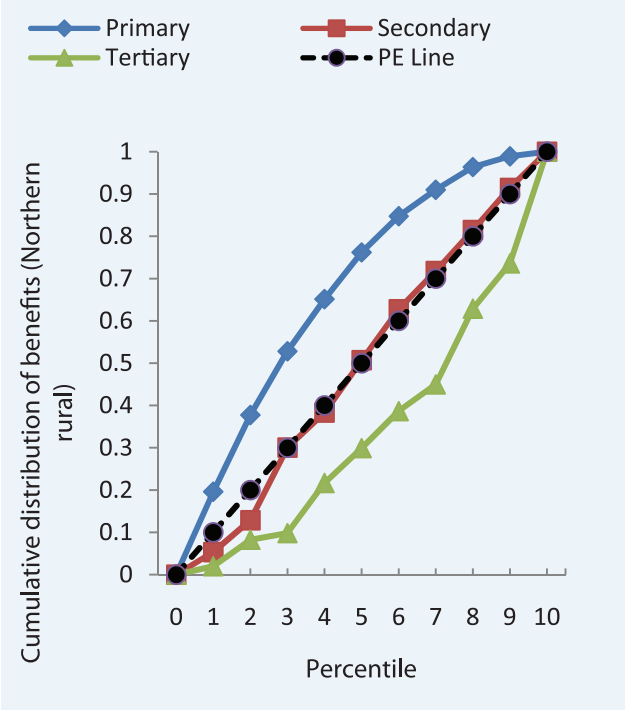
Source: Author's calculations based on UNHS IV data set and MoFPED

Figure 12: Concentration curve of benefits-Eastern urban



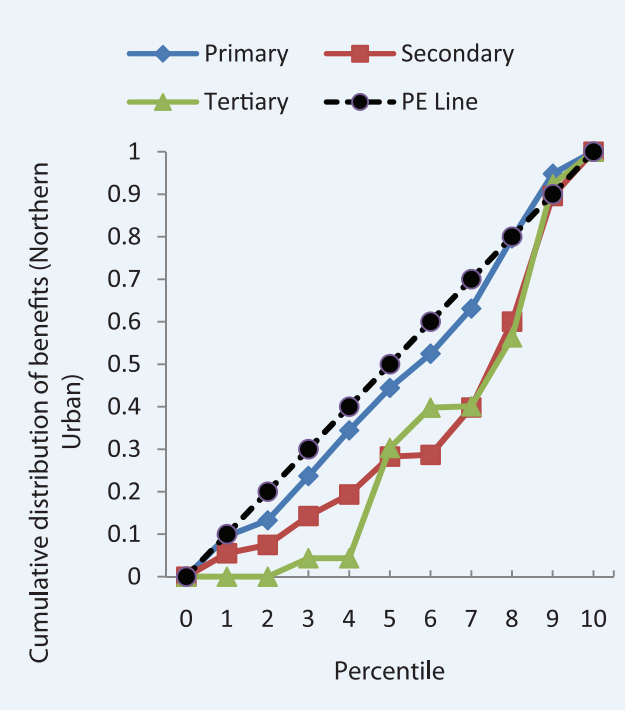
Source: Author's calculations based on UNHS IV data set and MoFPED

Figure 13: Concentration curve of benefits-Northern rural



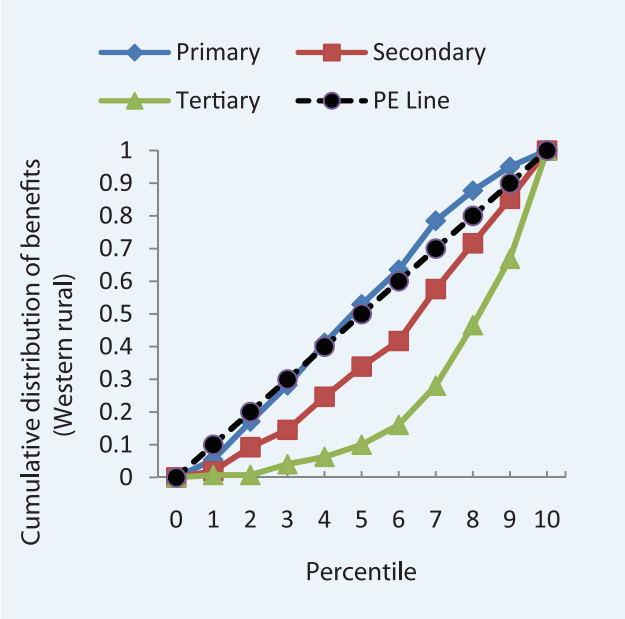
Source: Author's calculations based on UNHS IV data set and MoFPED

Figure 14: Concentration curve of benefits-Northern urban



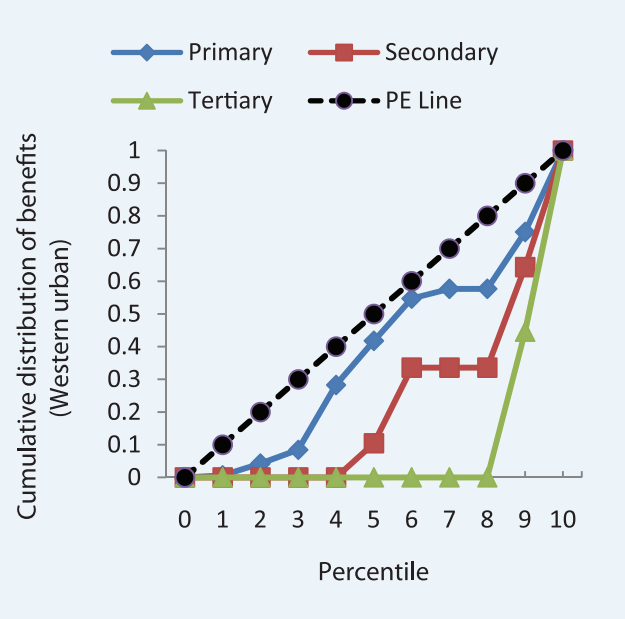
Source: Author's calculations based on UNHS IV data set and MoFPED

Figure 15: Concentration curve of benefits-Western rural



Source: Author's calculations based on UNHS IV data set and MoFPED

Figure 16: Concentration curve of benefits-Western urban



Source: Author's calculations based on UNHS IV data set and MoFPED

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