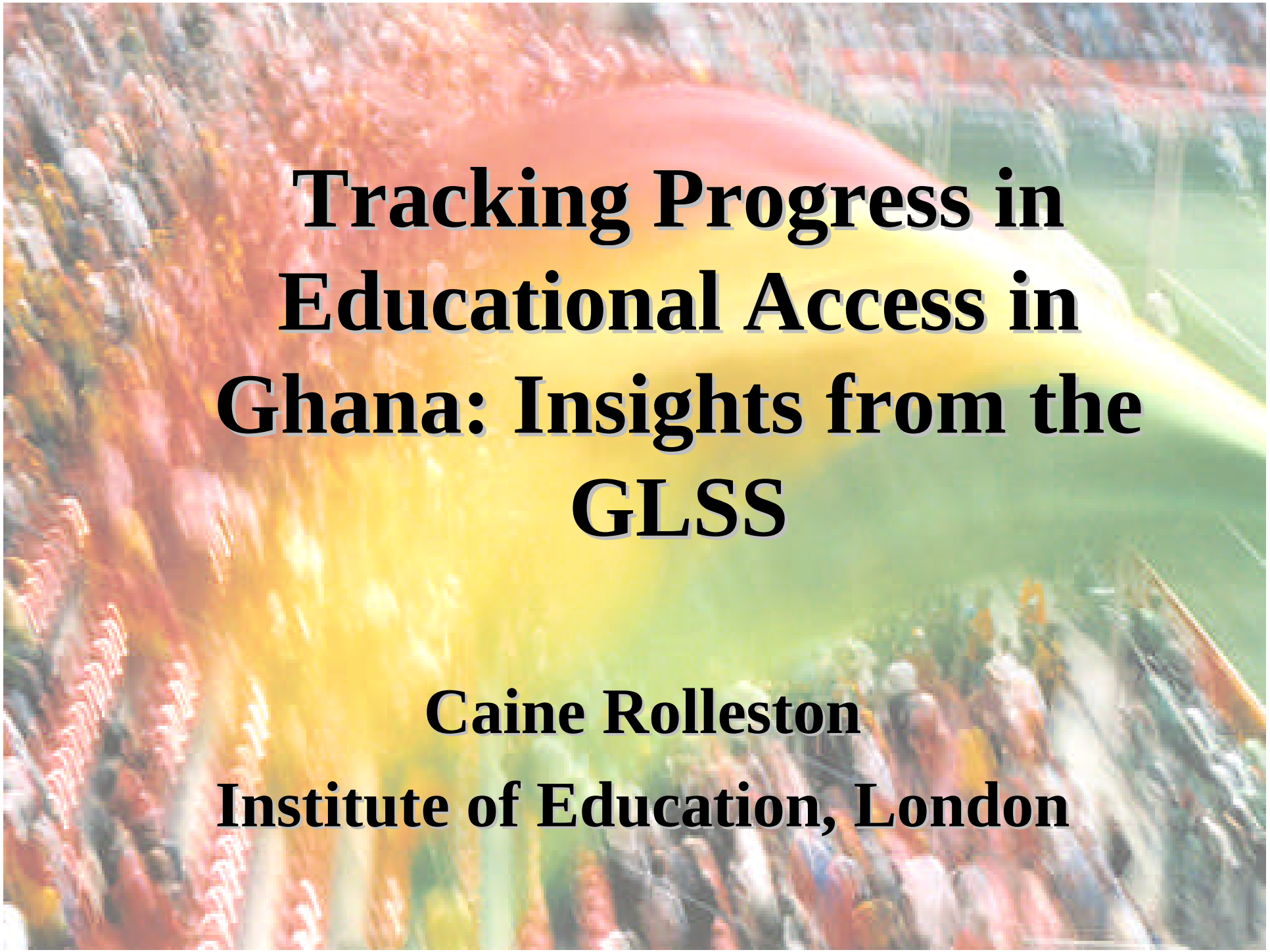


Tracking Progress in Educational Access in Ghana: Insights from the GLSS

Caine Rolleston

Institute of Education, London

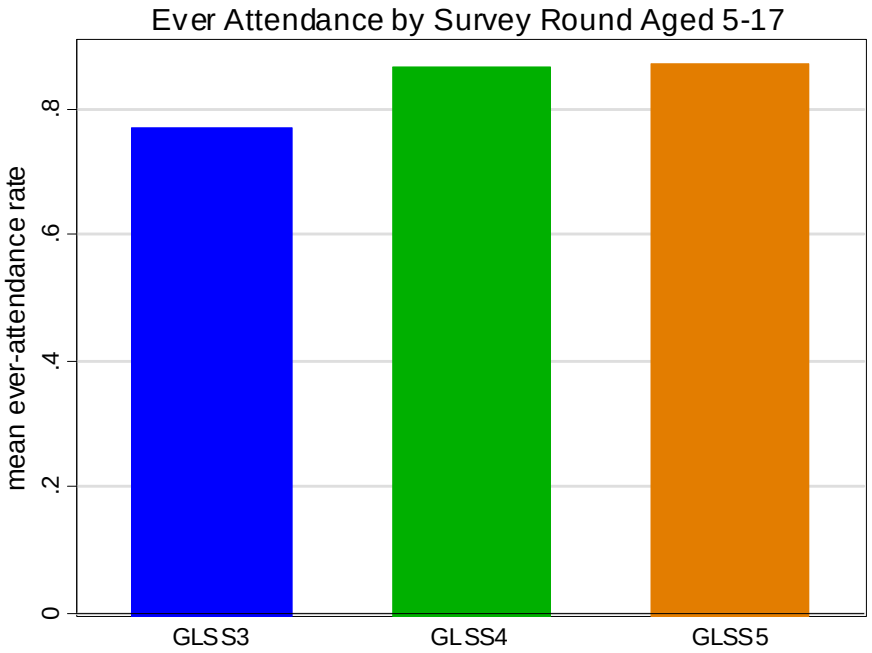
Data: The Ghana Living Standards Surveys

- **Nationally representative cross-sectional household surveys begun in 1987.**
- **Most recent round completed in 2006.**
- **Data from rounds 3 to 5 (completed in 1992, 1999 and 2006) employed because of highly comparable design and question modules.**

Key Questions:

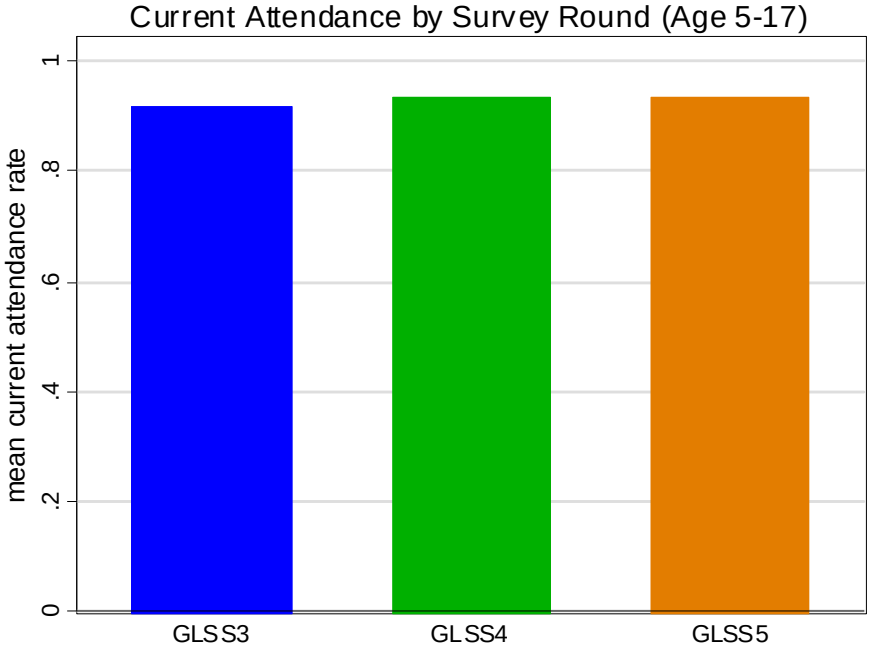
- **What were the key trends in educational access and exclusion in Ghana?**

- **Who gained access/was excluded and how might these patterns be explained?**

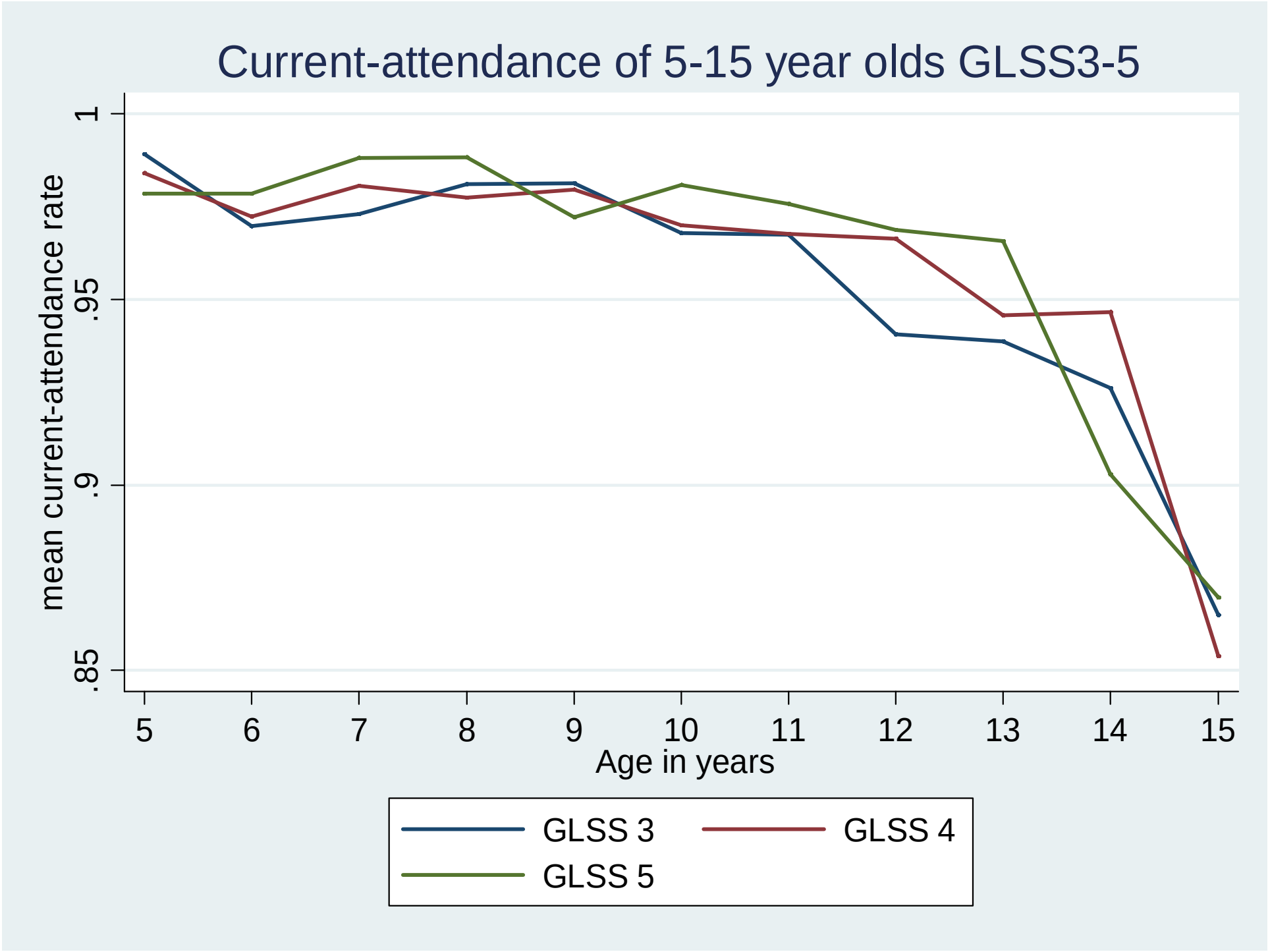


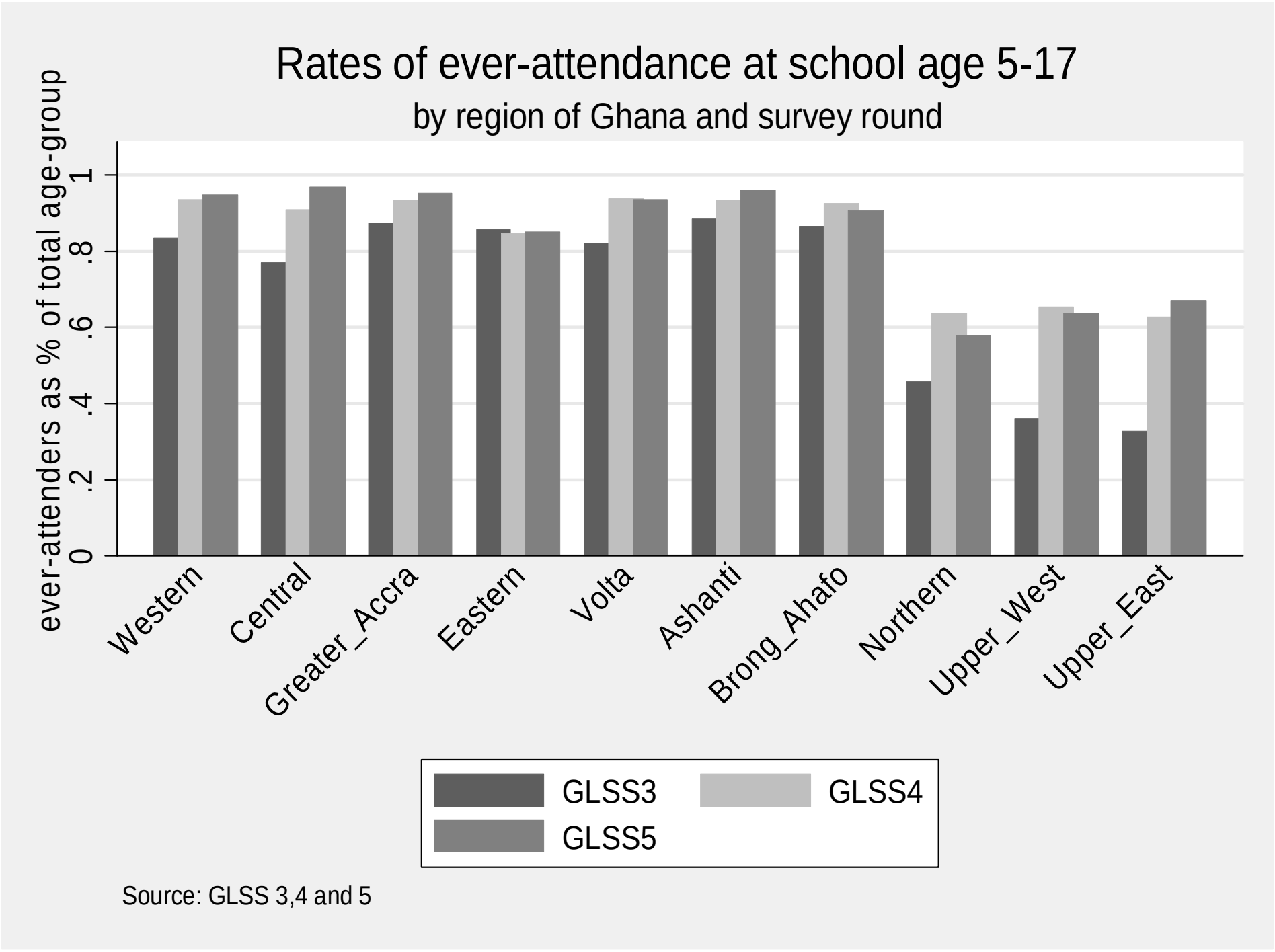
Trends in Educational Access 1991-2006

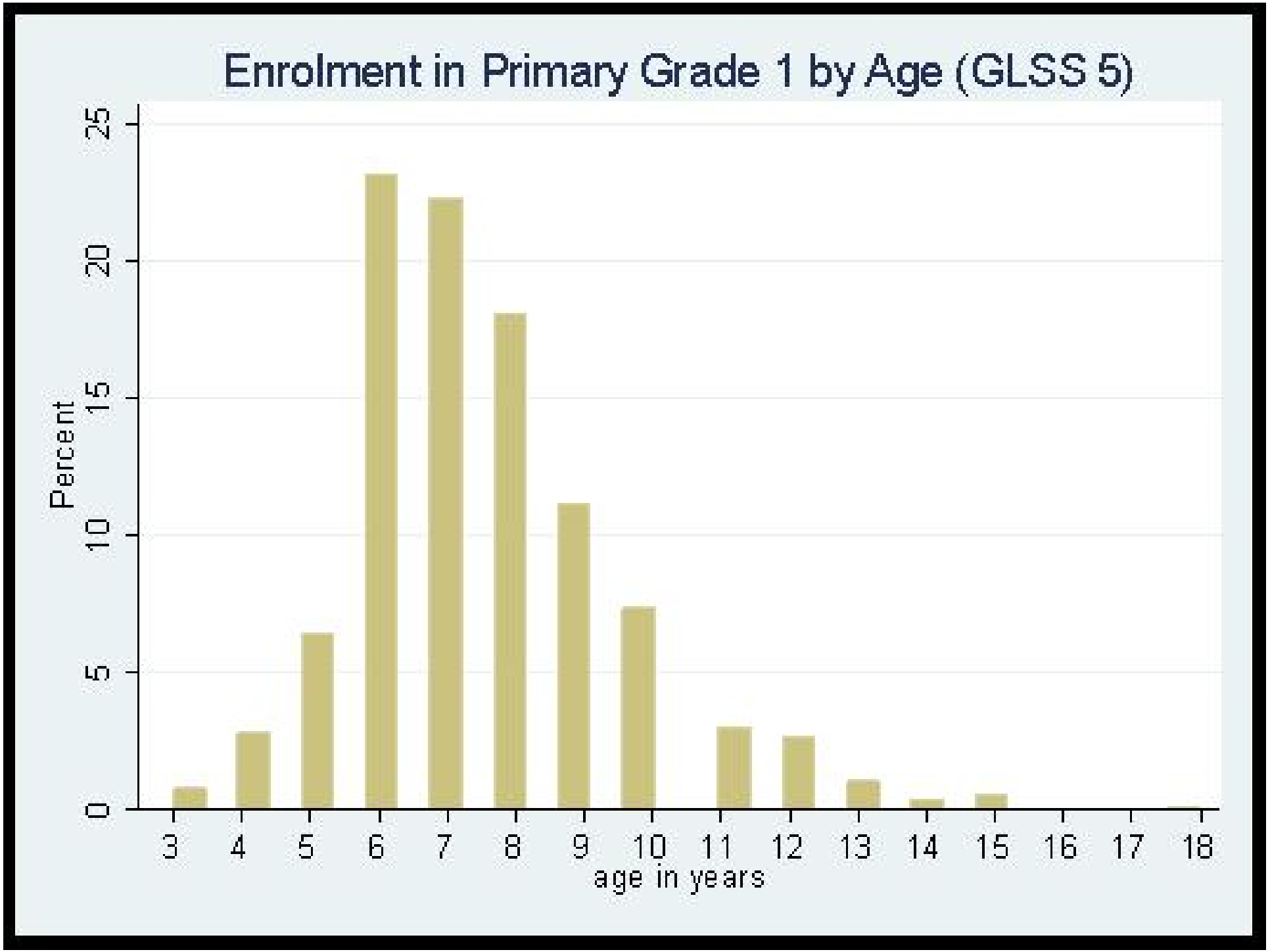
Ever-attended school

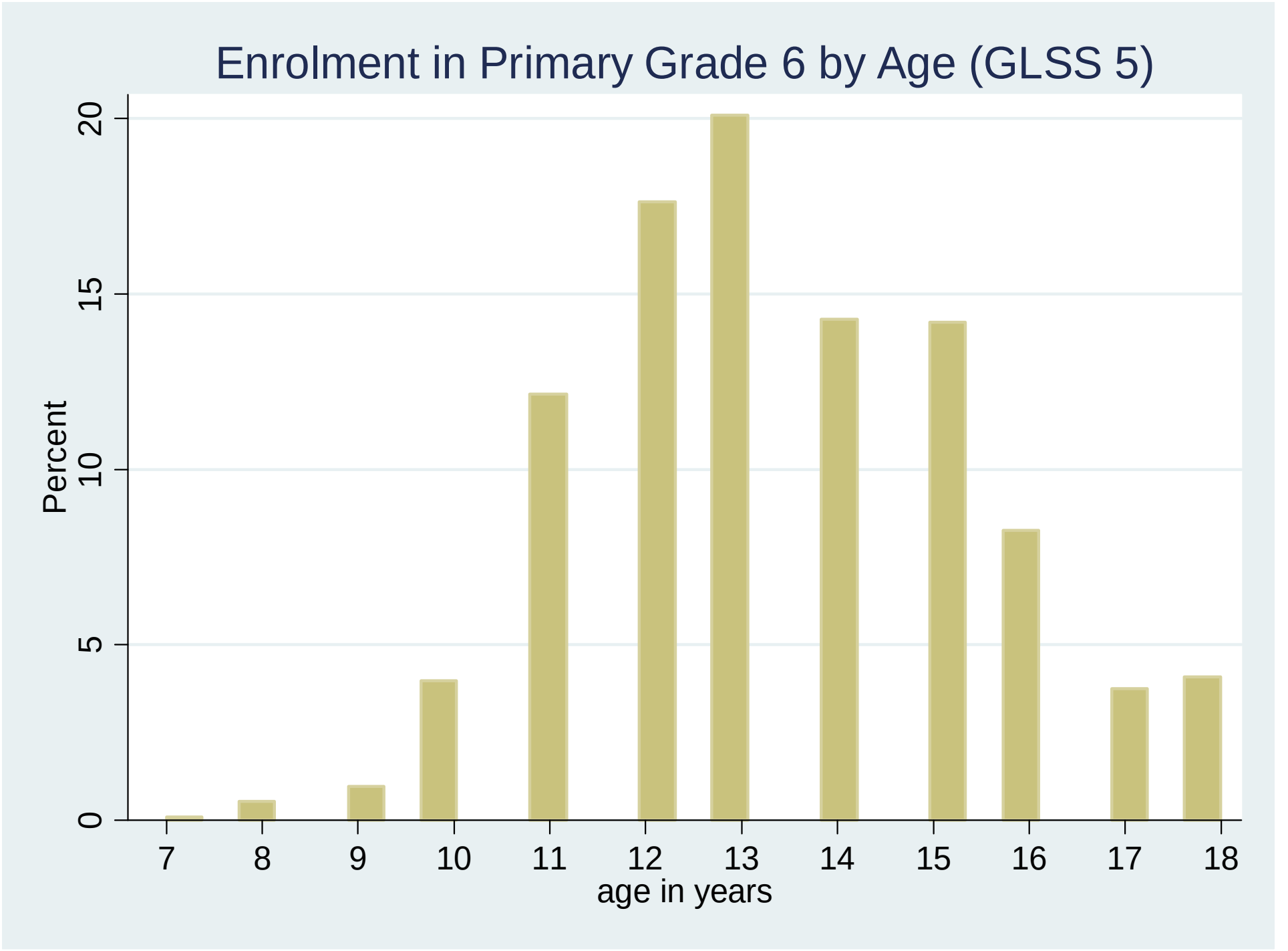


Currently attending (of those who had ever attended)


Current-attendance of 5-15 year olds GLSS3-5
mean current-attendance rate
1
.95
.9
.85
5
6
7
8
9
10
11
12
13
14
15
Age in years
GLSS 3
GLSS 4
GLSS 5


Rates of ever-attendance at school age 5-17
by region of Ghana and survey round
ever-attenders as % of total age-group
0
.2
.4
.6
.8
1
Western
Central
Greater_Accra
Eastern
Volta
Ashanti
Brong_Ahafo
Northern
Upper_West
Upper_East
GLSS3
GLSS4
GLSS5
Source: GLSS 3,4 and 5


Enrolment in Primary Grade 1 by Age (GLSS 5)
Percent
0
5
10
15
20
25
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
age in years


Enrolment in Primary Grade 6 by Age (GLSS 5)
Percent
0
5
10
15
20
7
8
9
10
11
12
13
14
15
16
17
18
age in years

Primary Completion Rates 1991-2006

Age	GLSS3	GLSS4	GLSS5
11	0.07	0.07	0.02
12	0.17	0.20	0.11
13	0.35	0.42	0.28
14	0.51	0.54	0.44
15	0.58	0.60	0.53
16	0.68	0.73	0.65
17	0.74	0.80	0.73

Appears to be little to suggest either that a greater proportion of children are completing primary school or that those who do complete are completing earlier

Lower Secondary Completion Rates 1991-2006

Age	GLSS3	GLSS4	GLSS5
14	0.08	0.05	0.04
15	0.14	0.17	0.11
16	0.30	0.32	0.22
17	0.44	0.51	0.40
18	0.46	0.53	0.48
19	0.55	0.62	0.57
20	0.49	0.58	0.53

Again, little to suggest substantial change in completion or age at completion

Investigating Access

- **Issues of supply – e.g. sufficient school places? adequate quality? Appropriate provision?**
- **Issues of demand – do households demand basic education for their children? How do the costs (direct and indirect) compare with benefits? e.g. income from child labour / benefit from unpaid work (domestic help/looking after younger children)**

Investigating Access and Exclusion: The CREATE Model

Zones of Exclusion	
1	never enrolled in school
2	dropped out of primary school
4	completed primary, no further access
5	dropped out of lower secondary school

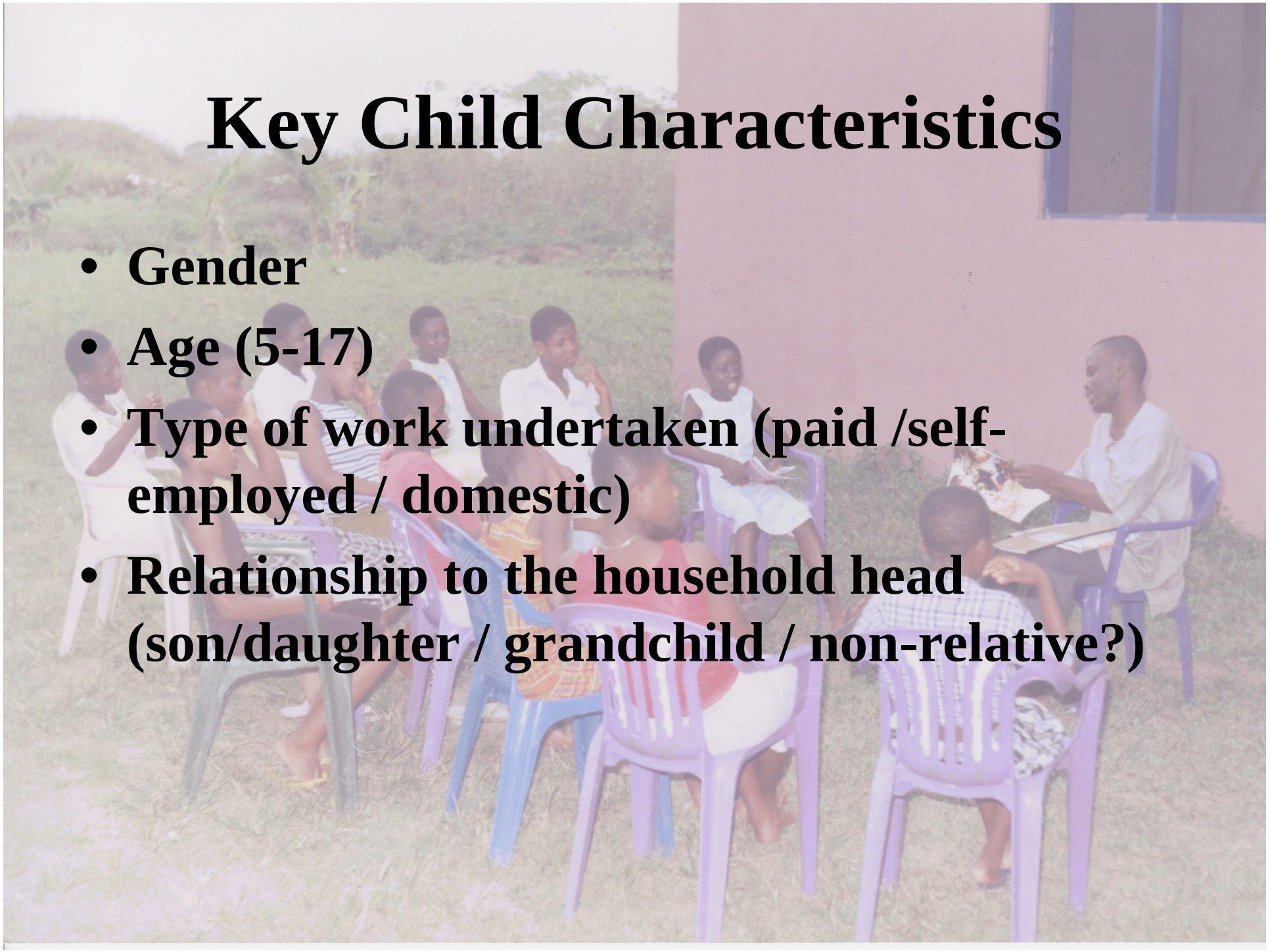
Consortium for Research on Educational Access, Transitions and Equity

Modelling Approach

- **Probit regression model to estimate the probability that a child (i) has ever attended school (ii) has not dropped out of school given certain characteristics**

- **Multinomial logistic regression to estimate the ‘odds’ that a child is ‘excluded’ into one of the zones of the CREATE model**

Key Child Characteristics



- **Gender**
- **Age (5-17)**
- **Type of work undertaken (paid /self-employed / domestic)**
- **Relationship to the household head (son/daughter / grandchild / non-relative?)**

Table 12: Children's work and school attendance GLSS 3-5

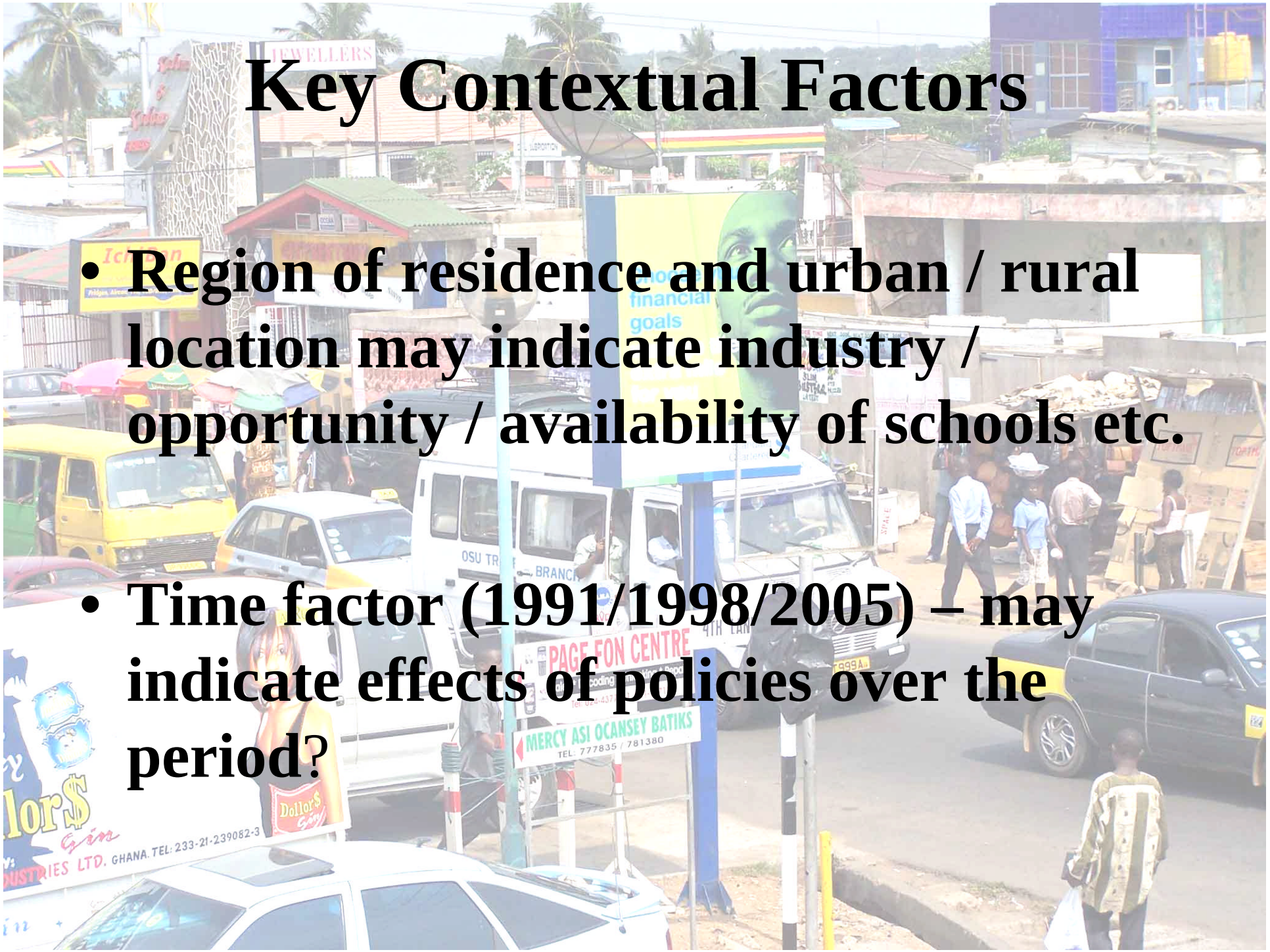
	Mean level of current-attendance by work category					
	GLSS 3		GLSS 4		GLSS 5	
	mean	se	mean	se	mean	se
None	0.92	0.01	0.92	0.00	0.92	0.00
Waged	0.36	0.09	0.26	0.10	0.06	0.04
Self-emp	0.57	0.06	0.33	0.08	0.21	0.06
Farm	0.82	0.01	0.69	0.03	0.71	0.03
unpaid	0.75	0.05	0.79	0.03	0.28	0.05

standard errors robust to data clustering

Source: Computed from GLSS 3-5

Key Household Characteristics

- **Household head's gender,age**
- **Household Head's education / occupation**
- **Level of household economic welfare**
- **Household size and number/type of dependents**
- **Household assets (land, livestock)**



Key Contextual Factors

- **Region of residence and urban / rural location may indicate industry / opportunity / availability of schools etc.**
- **Time factor (1991/1998/2005) – may indicate effects of policies over the period?**

Results: Ever Attendance

Significant Positive Effects	Significant Negative Effects
• Close relative of head • Female household head • Higher household welfare • Head's education and employment in public sector • Time (policy?)	• Female gender (effect falling) • Child labour (possibly rising) • Northern locations

Results: Not Dropping Out

Significant Positive Effects	Significant Negative Effects
• **Close relative of head** • **Female head of household** • **Higher household welfare** • ***Smaller household Size*** • ***Lower proportion of children under 7***	• **Female gender (falling)** • **Child labour (rising)** • ***Child illness***

Example Preliminary Results: Multinomial Logit (odds ratios)

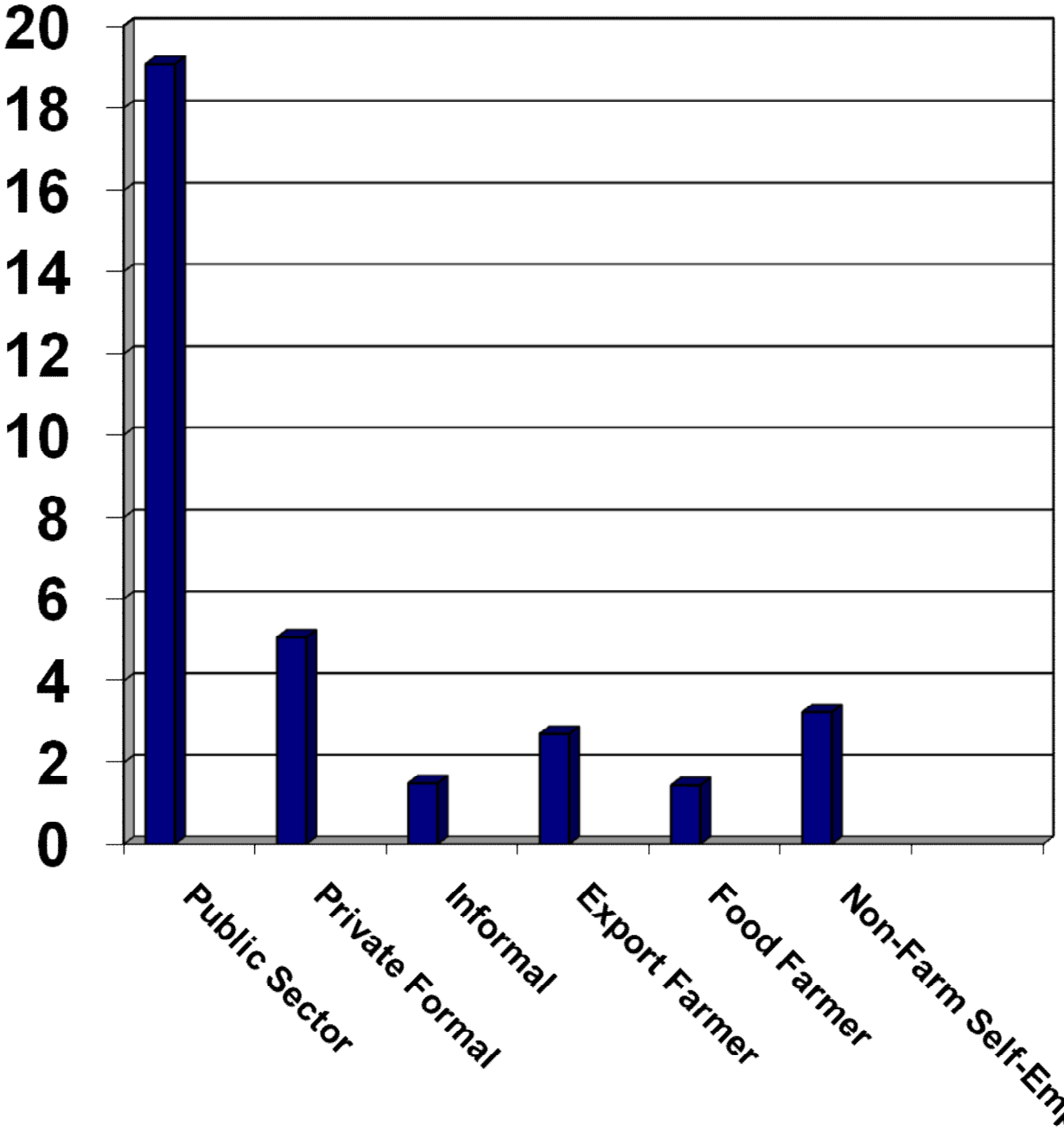
	Never Attender	*Primary drop out*	*Primary Completer Only*	*Lower Sec Drop out*	*Lower Sec Completer*
Exclusion Zone	**Zone 1**	**Zone 2**	**Zone 4**	**Zone 5**	
sex	Reference Category	1.540***	1.654***	1.549***	1.202
		(0.127)	(0.204)	(0.174)	(0.151)
Other Relative		0.515***	0.333***	0.304***	0.260***
		(0.0770)	(0.0679)	(0.0611)	(0.0568)
Other non-relative		0.467***	0.369***	0.260***	0.175***
		(0.129)	(0.119)	(0.0827)	(0.0682)
Public forml empl		4.708***	8.382***	11.80***	19.07***
		(2.545)	(5.556)	(6.723)	(12.77)
Private formal empl		2.916**	6.366***	6.307***	5.054***
		(1.312)	(3.848)	(3.351)	(3.141)
Non-farm self empl		2.427*	3.773**	3.873***	3.238**
		(1.113)	(2.269)	(1.950)	(1.880)
lnwelfare		1.863***	2.564***	3.021***	4.061***
		(0.233)	(0.404)	(0.481)	(0.715)
urban		1.148	1.521*	1.584*	2.518***
		(0.245)	(0.362)	(0.382)	(0.676)
Observations		11791	11791	11791	11791
Pseudo R-squared		0.3883			

Reference categories: male / son or daughter of head/ not working (child) / not working (adult)

Example Results: Zones of Exclusion

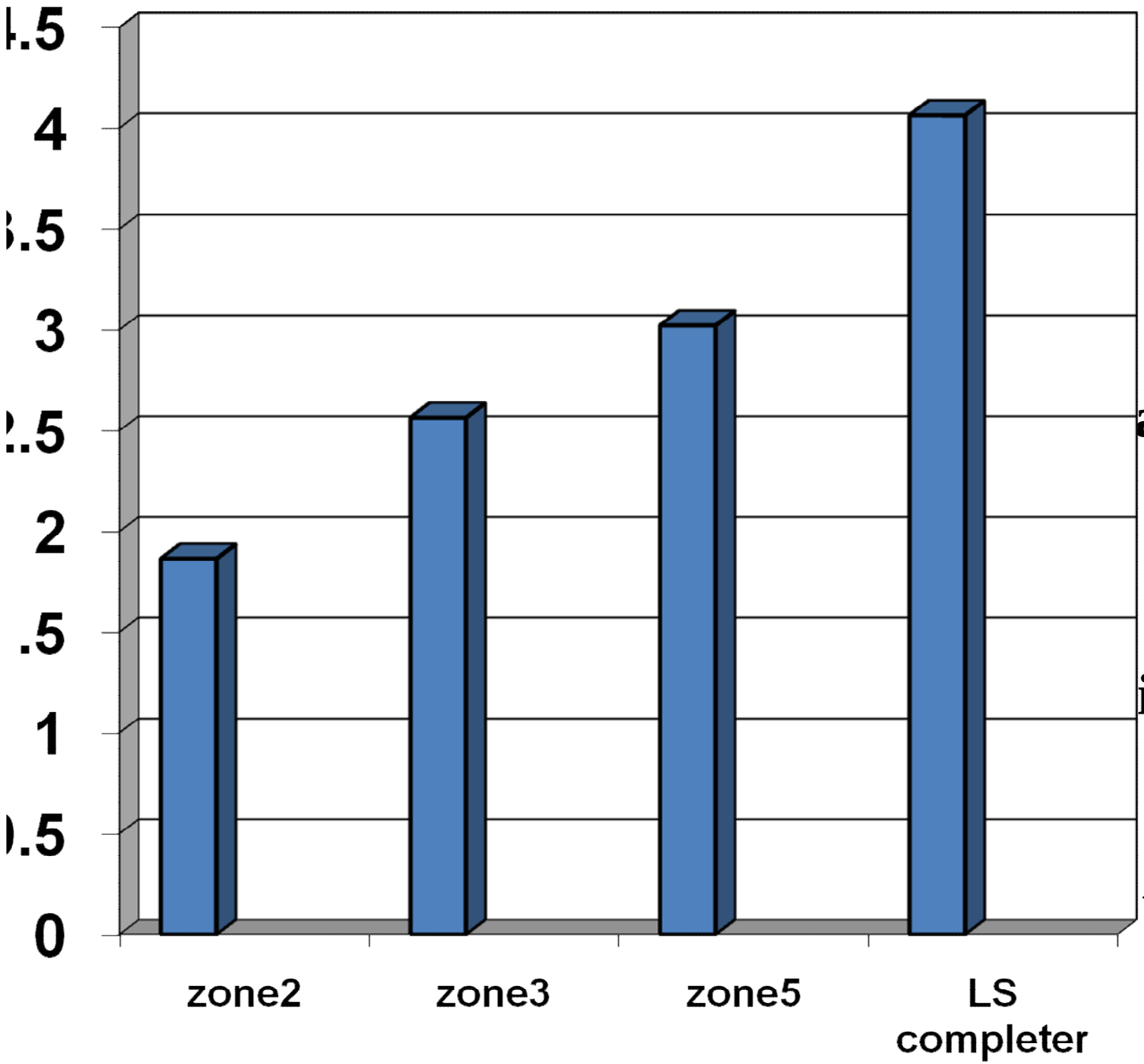
All results relative to Zone 1(never-attenders)

- **Primary drop outs, primary completers (who do not continue), lower secondary drop outs and lower secondary completers, perhaps unsurprisingly, represent increasingly privileged groups**
- **Boys more likely to be drop outs or not go on to secondary but girls equally likely to complete lower secondary school**
- **Children not the son/daughter of the head and/or who work (especially in paid work) have decreasing odds of being in the higher access groups**
- **Children of parents in formal employment and who live in higher welfare households have high and increasing odds of being in higher access groups**
- **Large and increasing regional and (positive) urban effects as access level increases**
- **Apparently no effect of household size/composition**



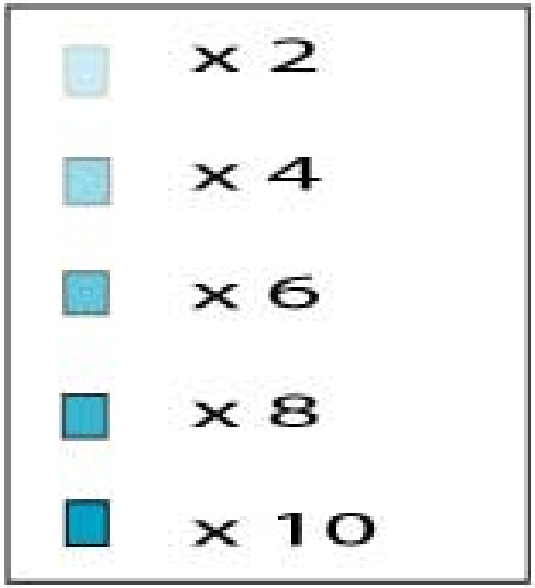
Example 1:

The odds of a child completing lower secondary school (relative to never-attending school) by household head's occupation (relative to unemployed heads)



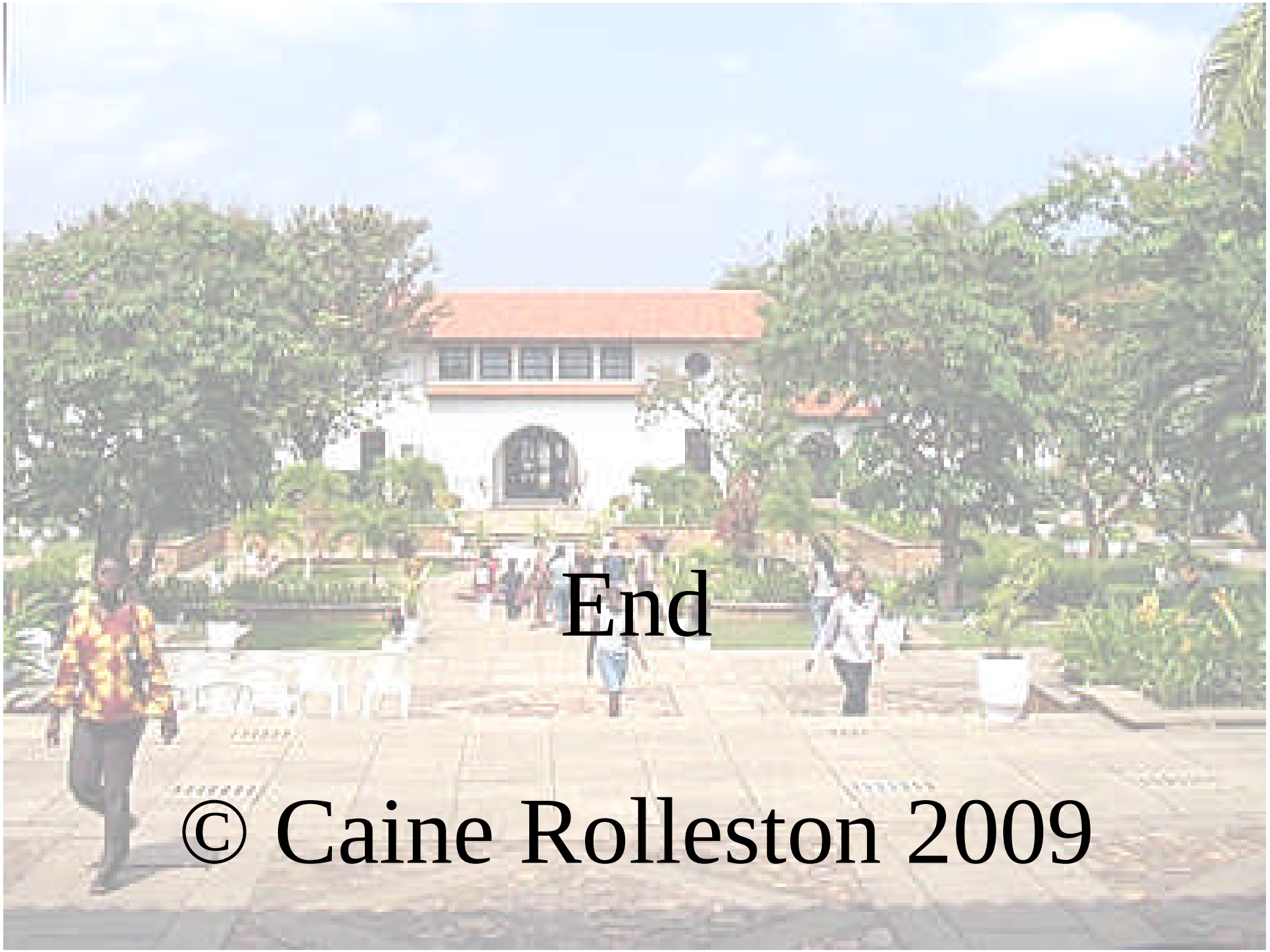
Example 2: 'Effect' of household welfare on odds of access and exclusion : odds ratios associated with an increase in per capita welfare equivalent to the mean level (of around £200)

Example 3:
Odds of completing primary school (relative to Upper West region; with child/household controls)



Possible Policy Messages

- **Large improvements in absolute numbers accessing schooling suggest supply has kept pace with population growth**
- **Progress on gender equity in access may be a policy success**
- **Supply may continue to be an issue to be addressed in Northern regions especially where progression to JHS is concerned**
- **Poverty and children's work (key demand factors) appear to be less prevalent overall but the poor remain large in number and are disadvantaged especially with regard to progress and completion. This may suggest a need to target poorer households directly.**
- **The negative effects of economic and regional disadvantage strengthen considerably at higher levels of access so more equitable access may depend on demand and supply-side interventions which address the causes of unequal access**
- **The poorest quintile of households have more than twice as many members as the richest quintile and the gap widened between 1991 and 2006. Dependency (especially the number of young children) in these households appears to affect drop-out in addition to the effect of poverty. Interventions which make schooling more accessible to these households (e.g. more flexible schooling) might be considered.**



The better off and the better educated seem to have gained most in terms of economic welfare between 1991 and 2006 but reasons for this are complex and intertwined.

For example, households in the top welfare quintile had half as many members as those in the bottom quintile and the difference widened between 2992 and 2006

Not only does this mean higher per capita consumption but is likely to make longer school careers for children more affordable, possibly contributing to widening intergenerational inequalities in educational access given that the costs of schooling in Ghana rise dramatically for higher educational levels.

Did Better Education Bring Welfare Benefits?

- Complex question but there is evidence that economic returns for the highly educated increased over the period while those for lower levels of education remained stable or declined.

- In Ghana higher levels of education are not only rewarded with higher earnings as a result of productivity gains but education plays an important role in gaining access to wage employment and particularly public-sector employment which are associated with higher incomes than other occupations.