Patterns in educational outcomes for boys and girls in South Africa and the surrounding region

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Plan

- Patterns in access and learning in Africa
- Boys and girls performance in NSC
- Principal/teacher gender and learner gender (very preliminary)

The relevance of gender analysis

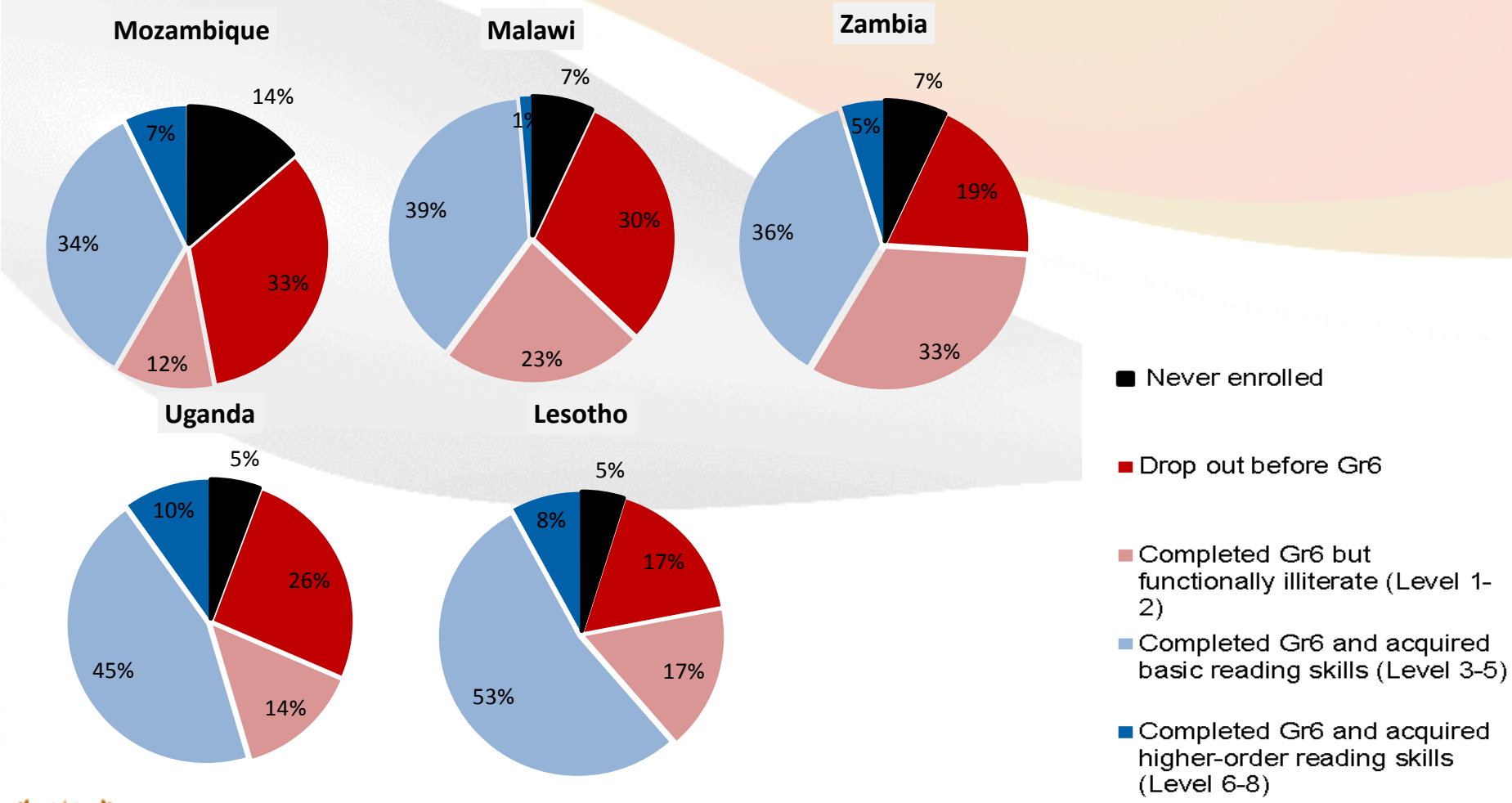
- Education is regarded as a human right
- For both individuals and countries, education is a means to numerous social and economic opportunities
- Other gender-specific impacts of education
  - Later marriage
  - Mother education on infant health
- Extensive campaigns to promote gender equity
  - EFA
  - SADC established a Protocol on Gender and Development in 2008
- There are no systemic differences in innate ability
  - So gender differences are result of societal/environmental factors
- Different types of gender gaps (e.g. access to schools; learning differences)

Combining access and quality

- We draw heavily on the method from other work (Spaull & Taylor, forthcoming, with research assistance from Kathryn McDermott)
- Problem 1: measuring access alone
- Problem 2: measuring learning achievement only
- We combine Household Survey Data (DHS) and SACMEQ data on learning for 11 countries
- Most meaningful and recent set of educational outcomes for these countries
- Analysis by sub-group, including gender

Access-Quality country profiles

Figure 1: Proportion of 19-23 year olds in each country who never enrol, drop out before grade 6, complete grade 6 but remain illiterate, complete grade 6 and acquire basic literacy skills and those who complete grade 6 and acquire higher-order reading skills.



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Access-Quality country profiles

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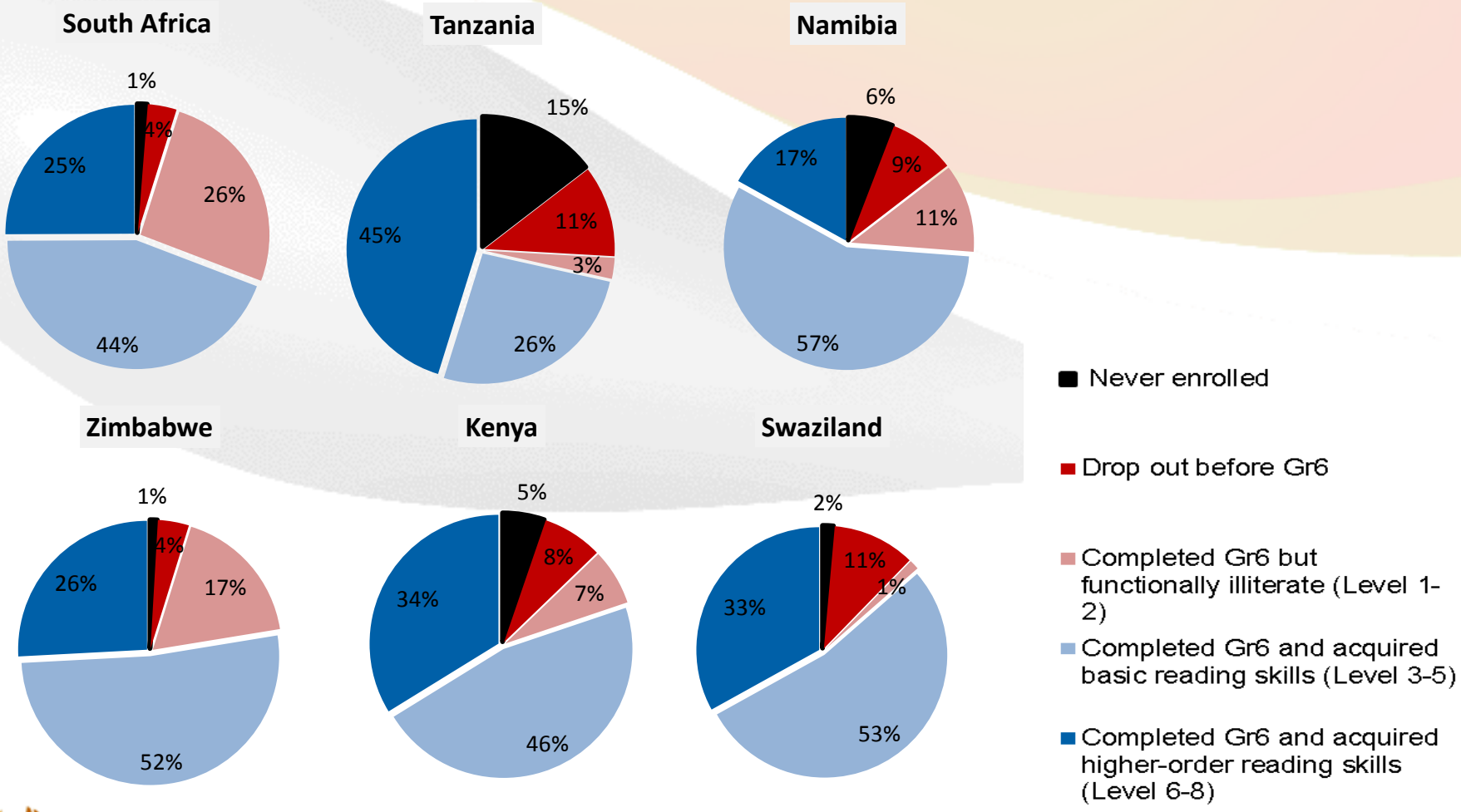

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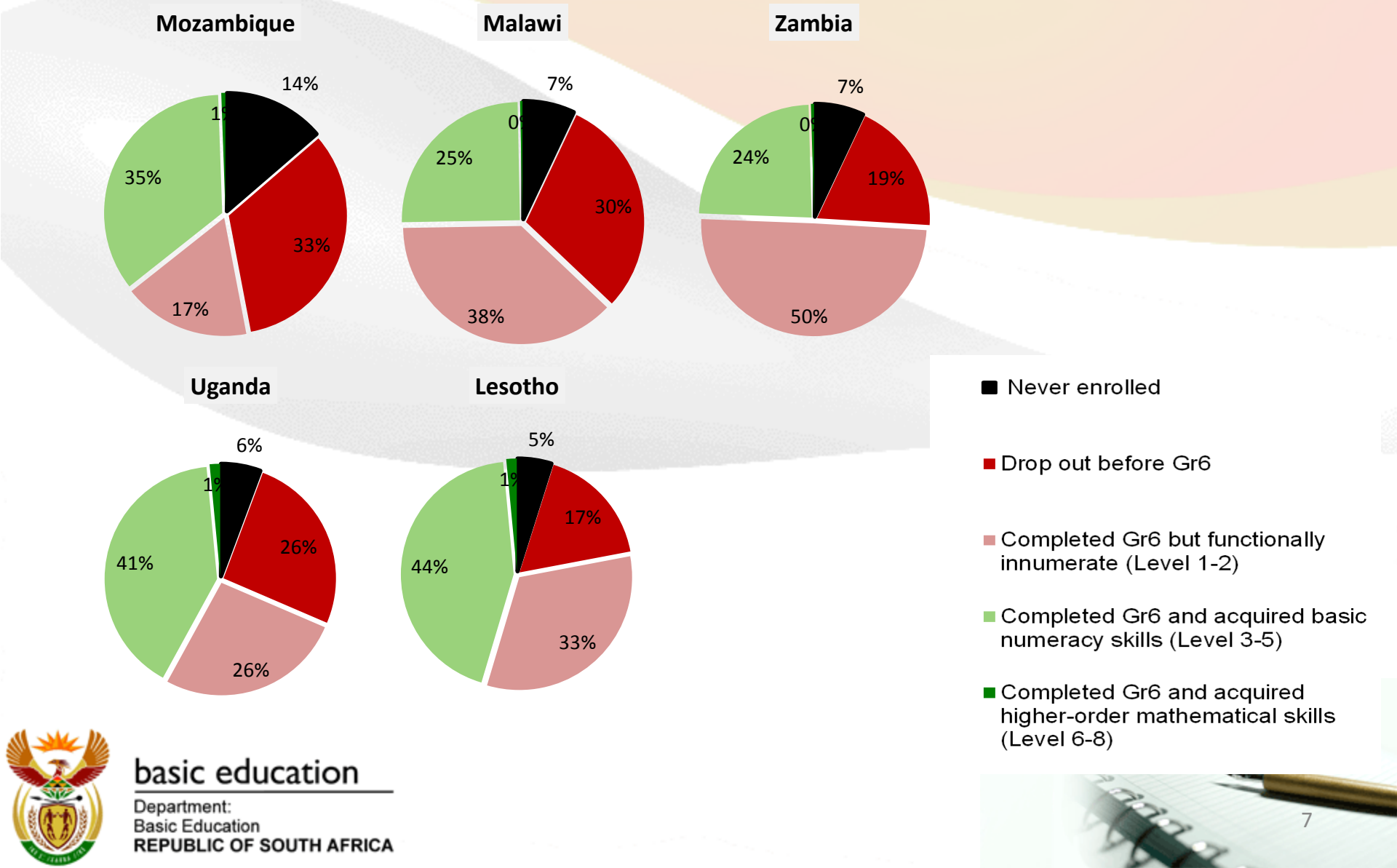
Access-Quality country profiles

Figure 2: Proportion of 19-23 year olds in each country who never enrol, drop out before grade 6, complete grade 6 but remain innumerate, complete grade 6 and acquire basic numeracy skills and those who complete grade 6 and acquire higher-order mathematics skills.



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Access-Quality country profiles

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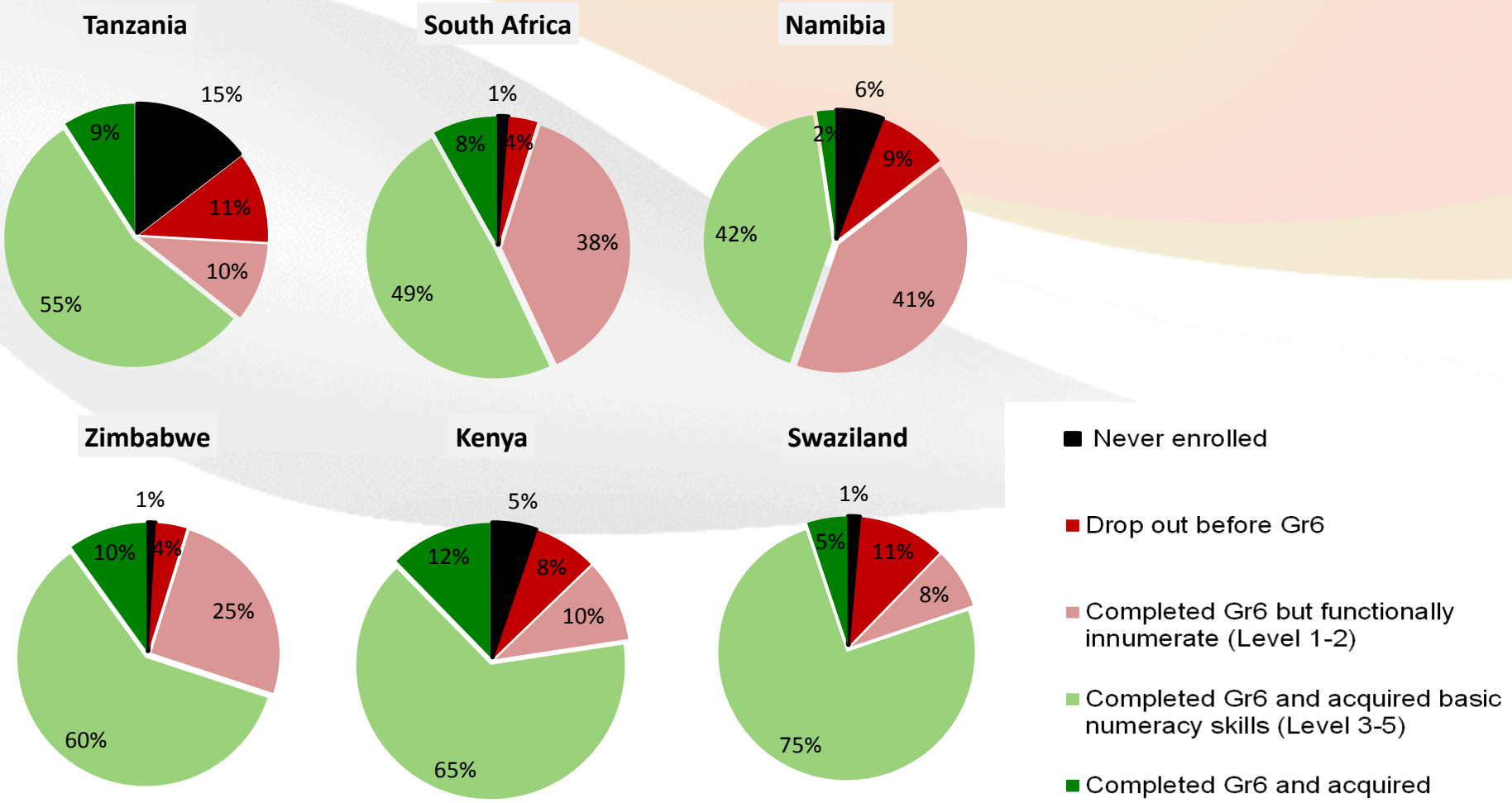

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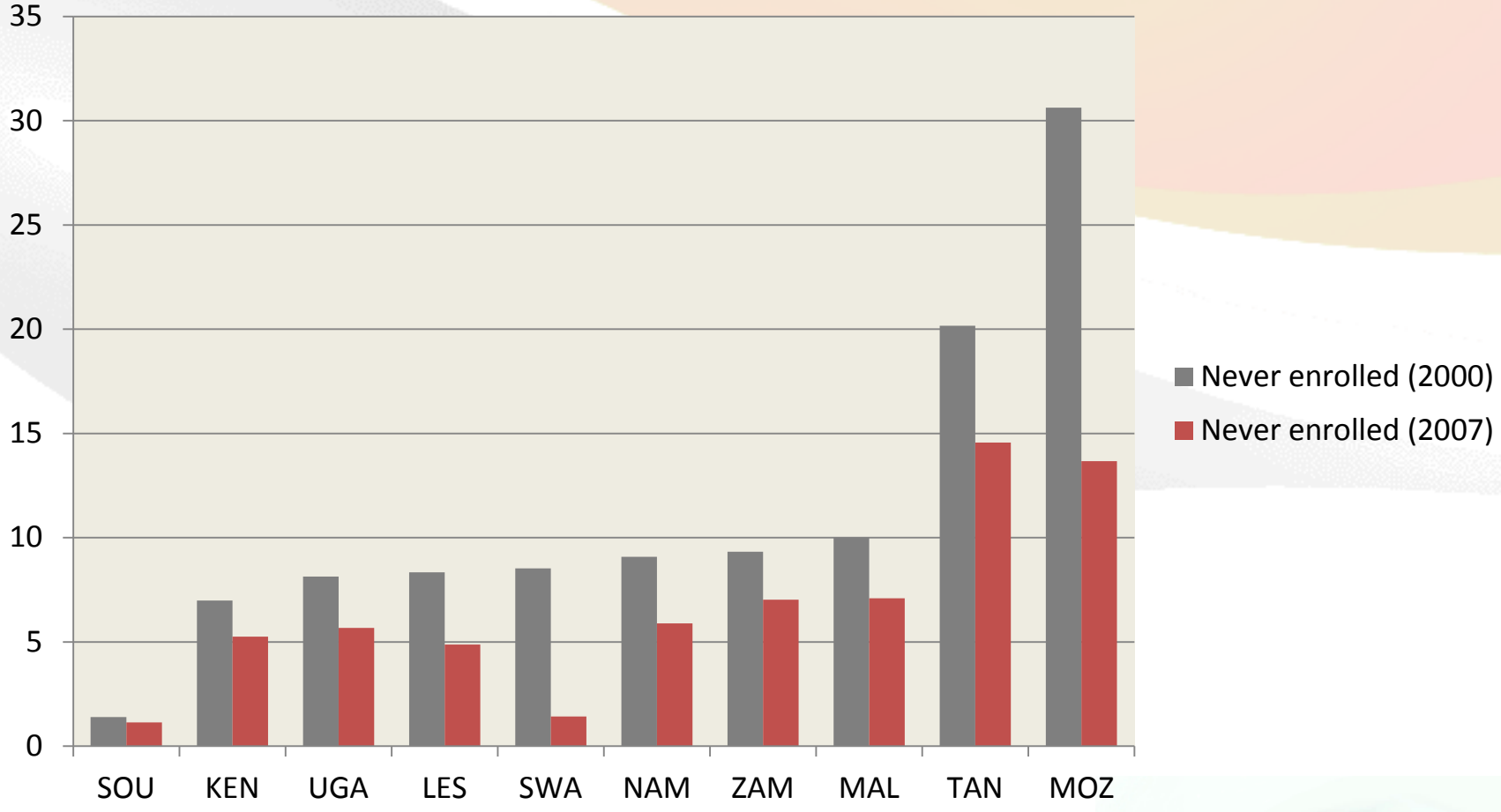
Never Enrolled

Proportion of all 19-23-year-olds



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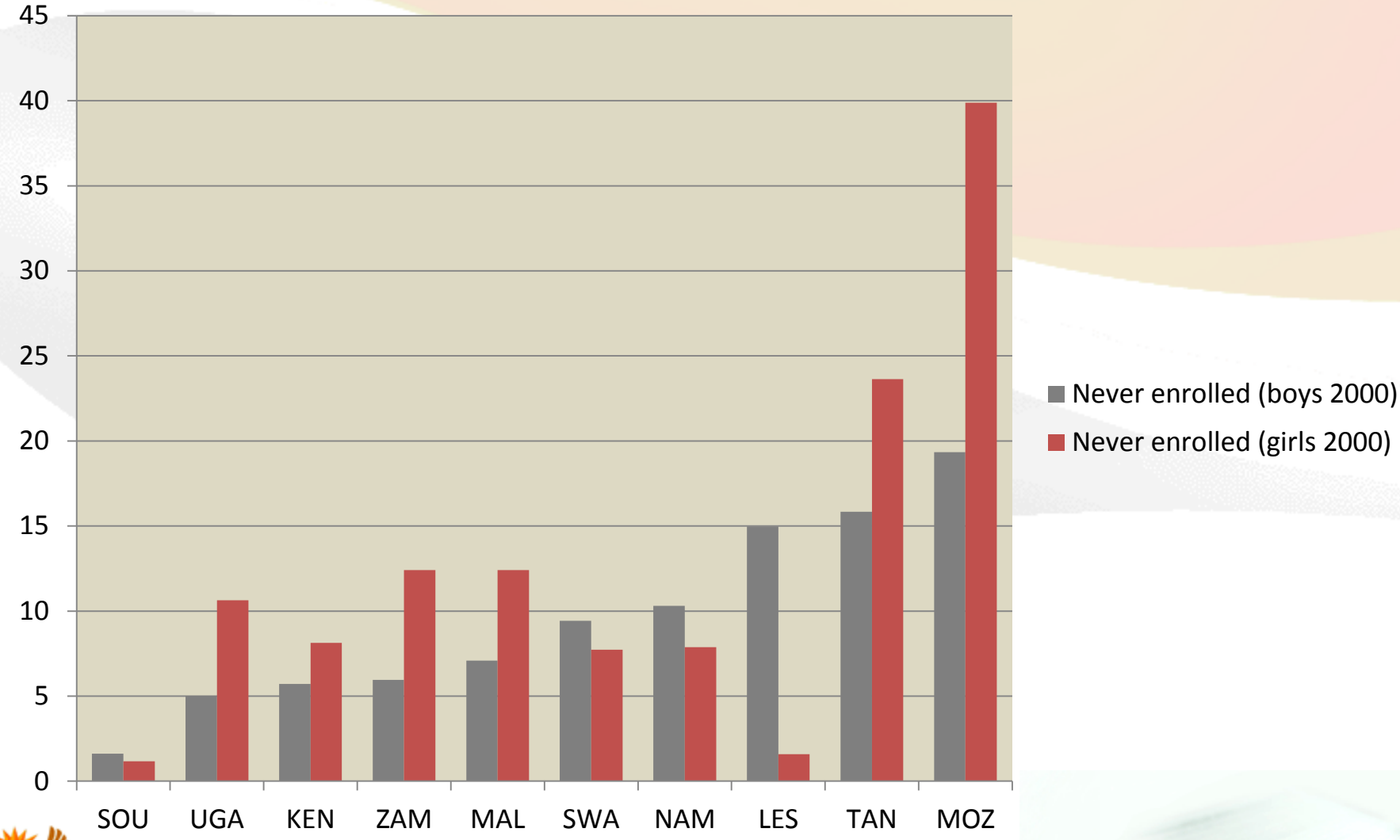
Gender gaps in 2000



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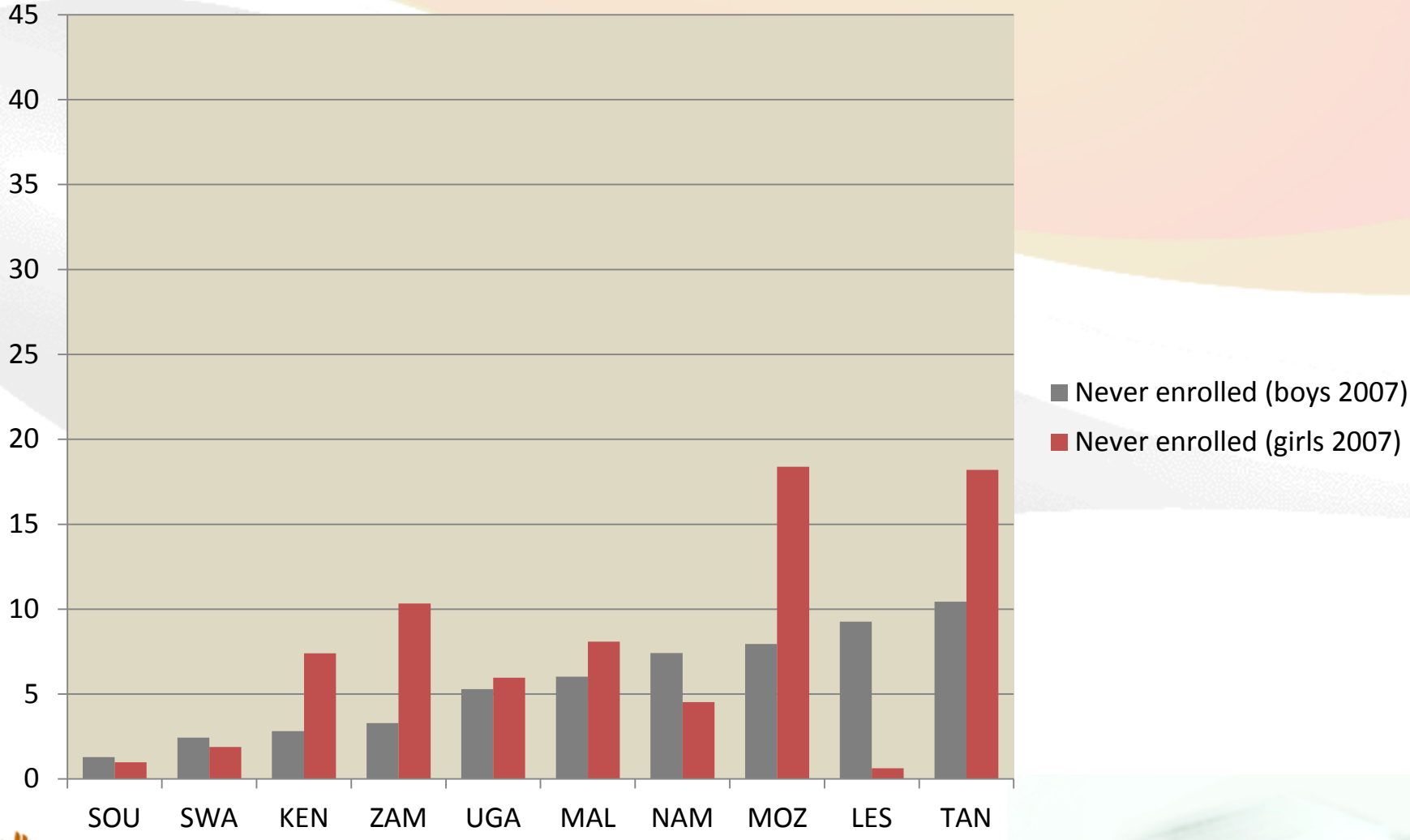
Gender gaps in 2007



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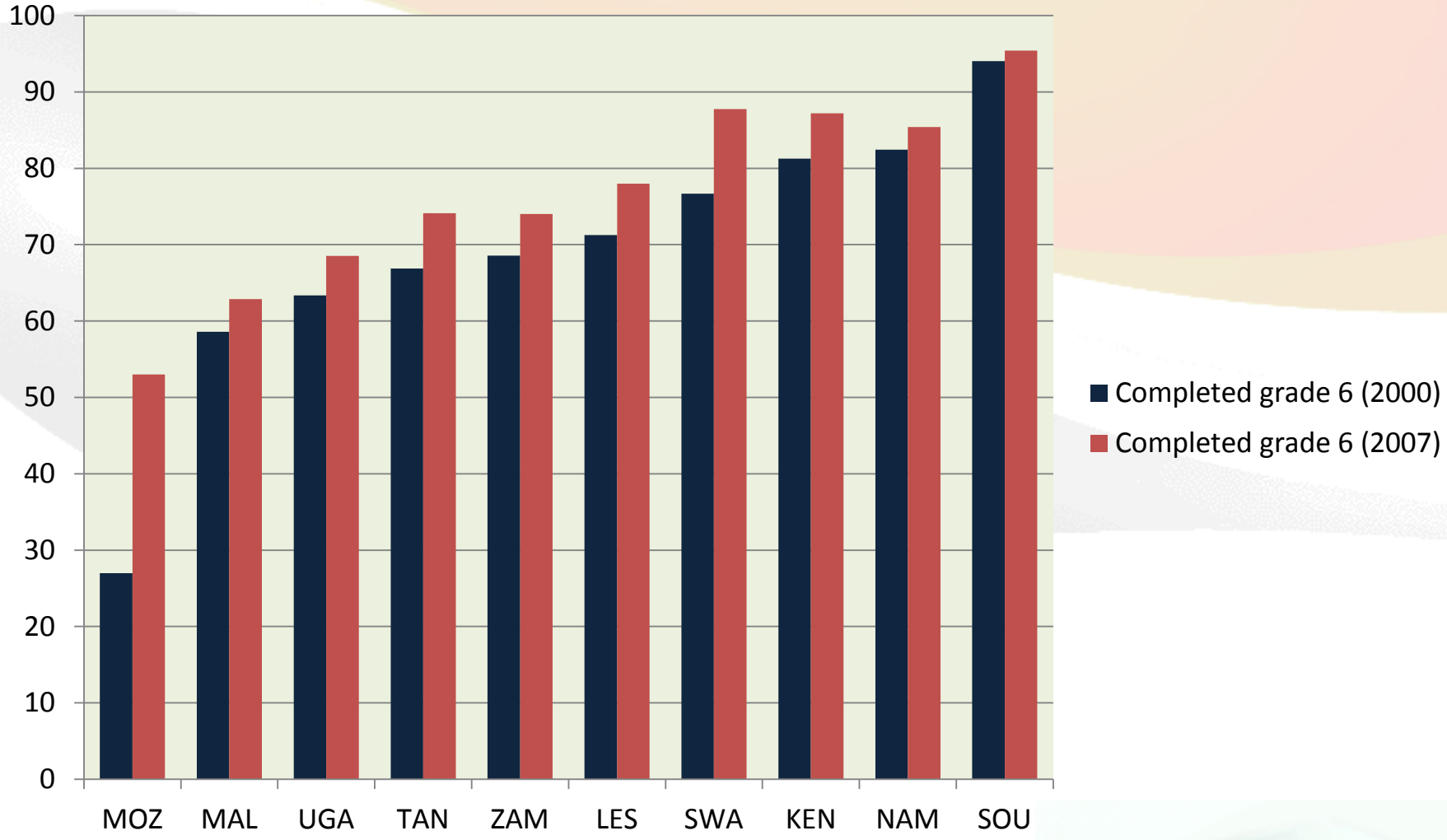
Completion of Grade 6

Proportion of all 19-23-year-olds



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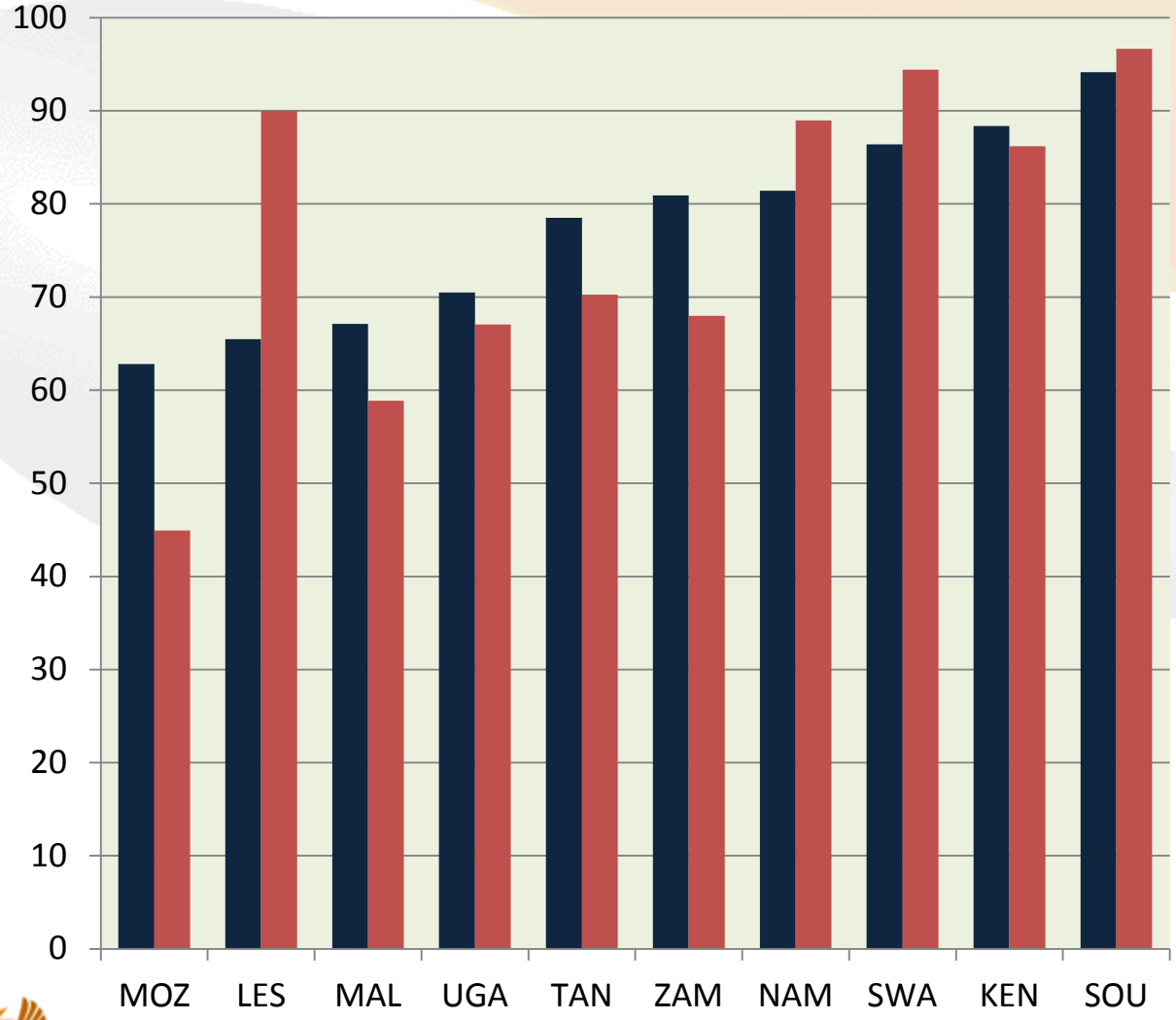
Gender gaps in 2007



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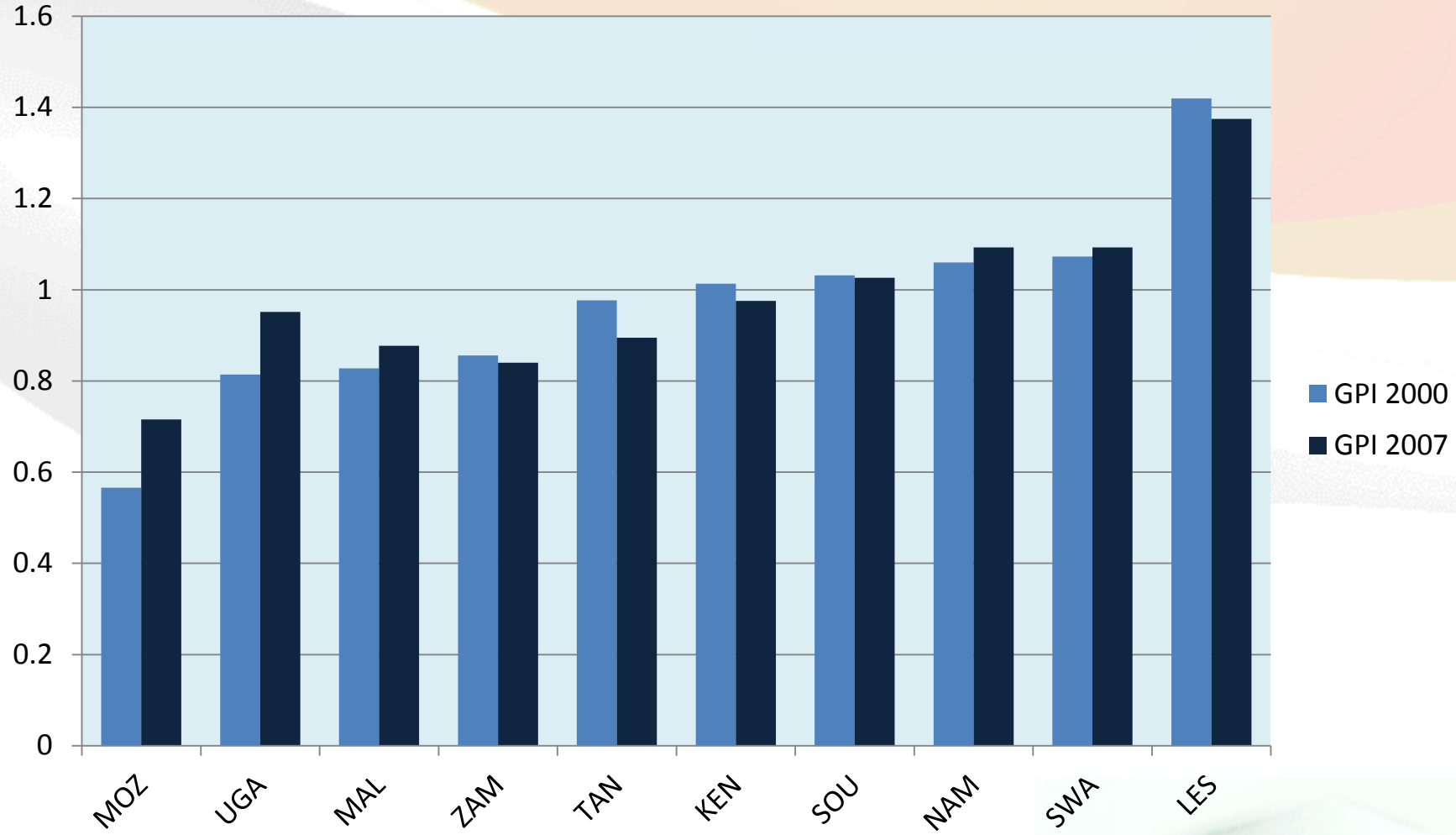
Gender differentials in 2000 & 2007 (completed grade 6)



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Functional Literacy amongst those attending grade 6

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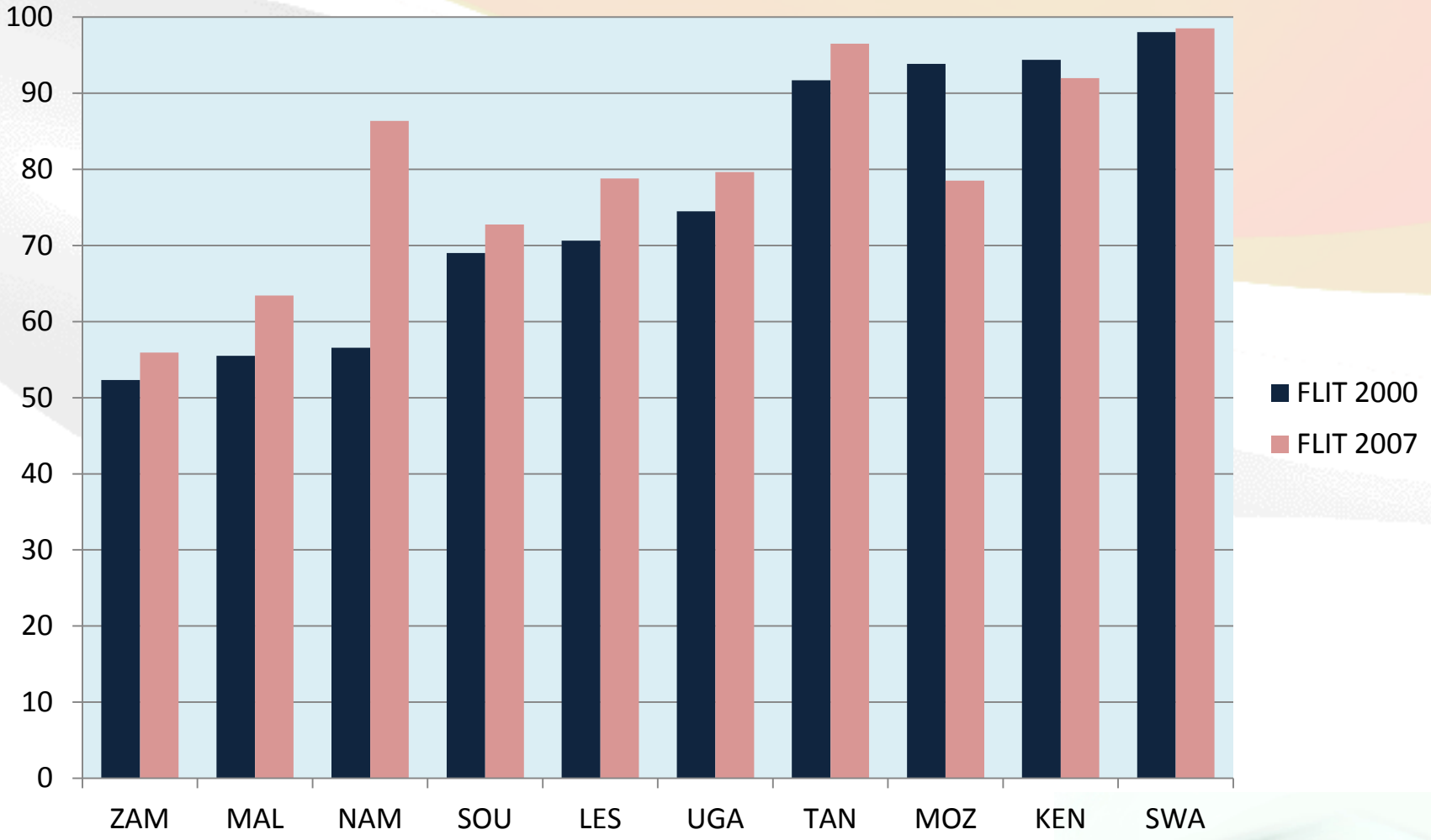
Proportion of grade 6 students FLIT



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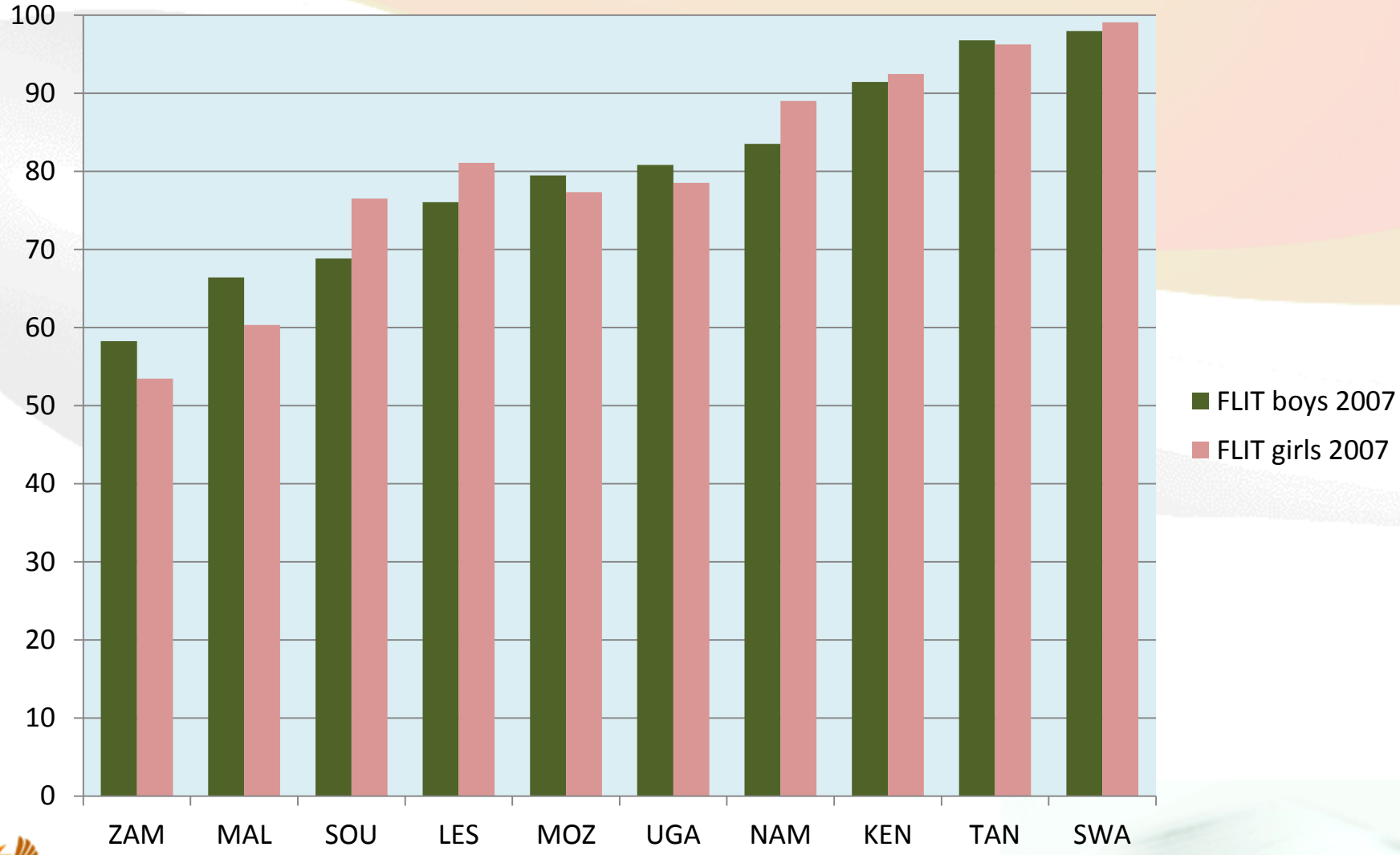

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Functional Literacy amongst entire population

Access to Literacy

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Functional Literacy amongst entire population

Access to Literacy

Grade 6 completion = 80%

Functional literacy = 50%

Access to literacy = 0.5*0.8 = 40%

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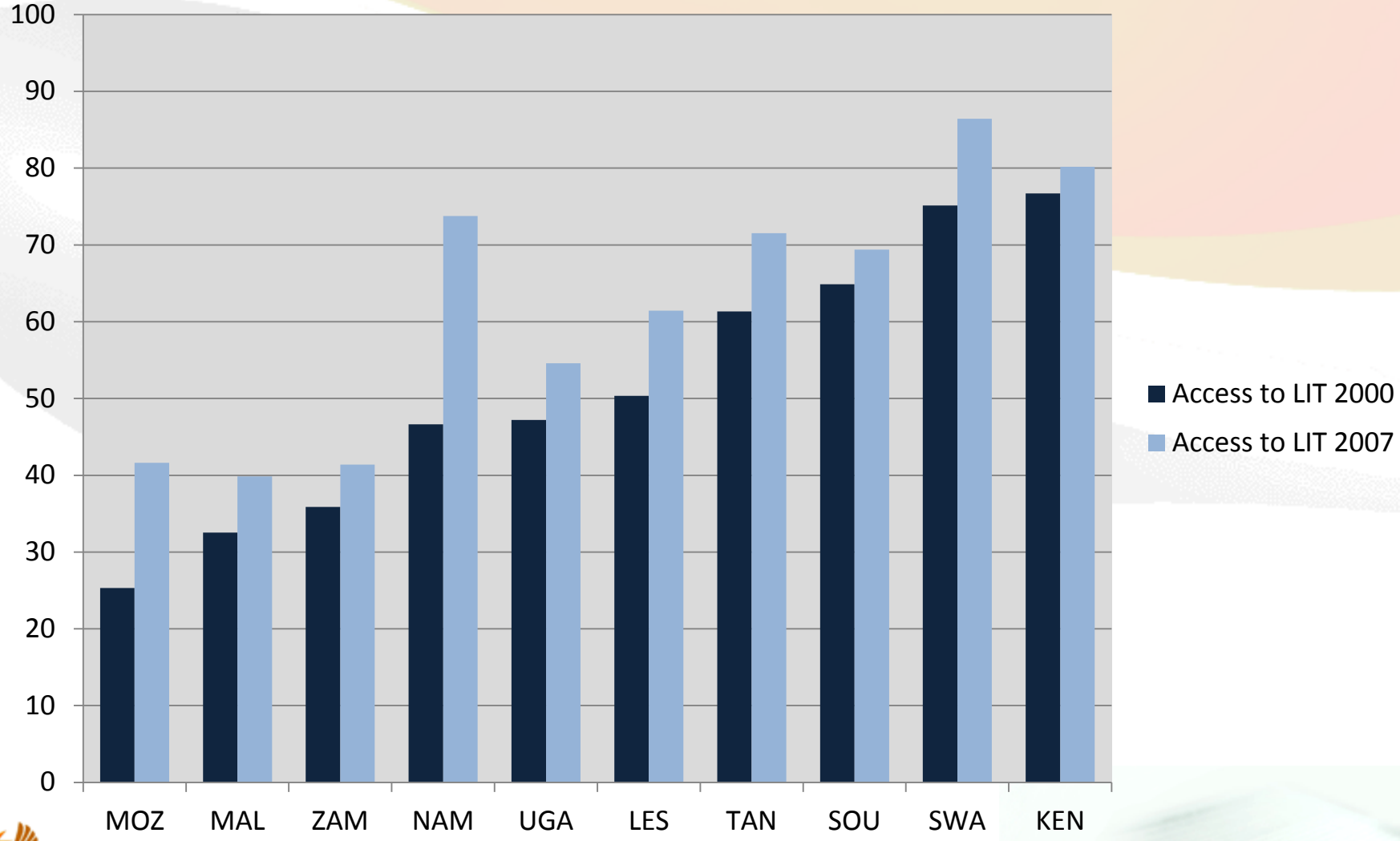
Access to Literacy



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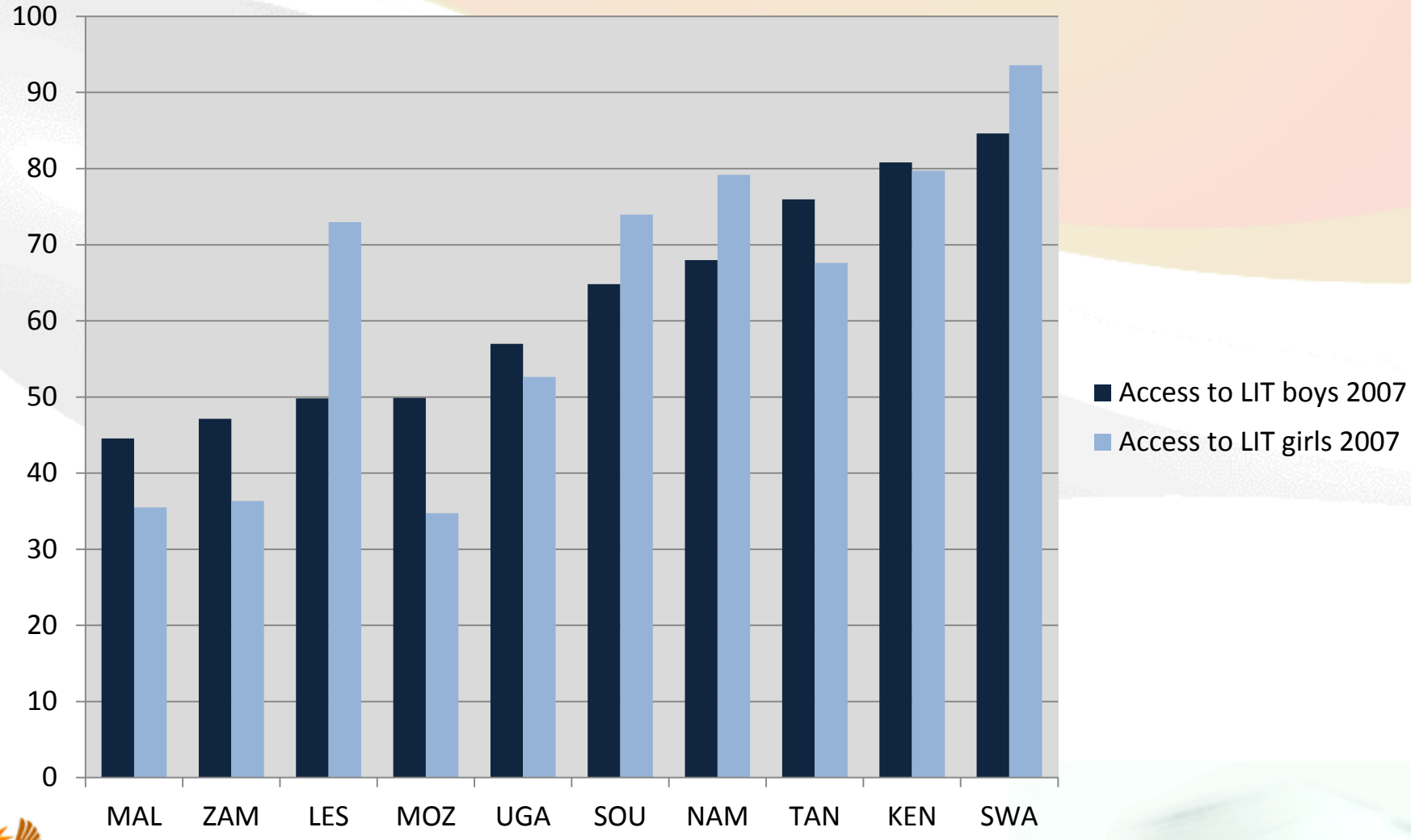
Access to Literacy



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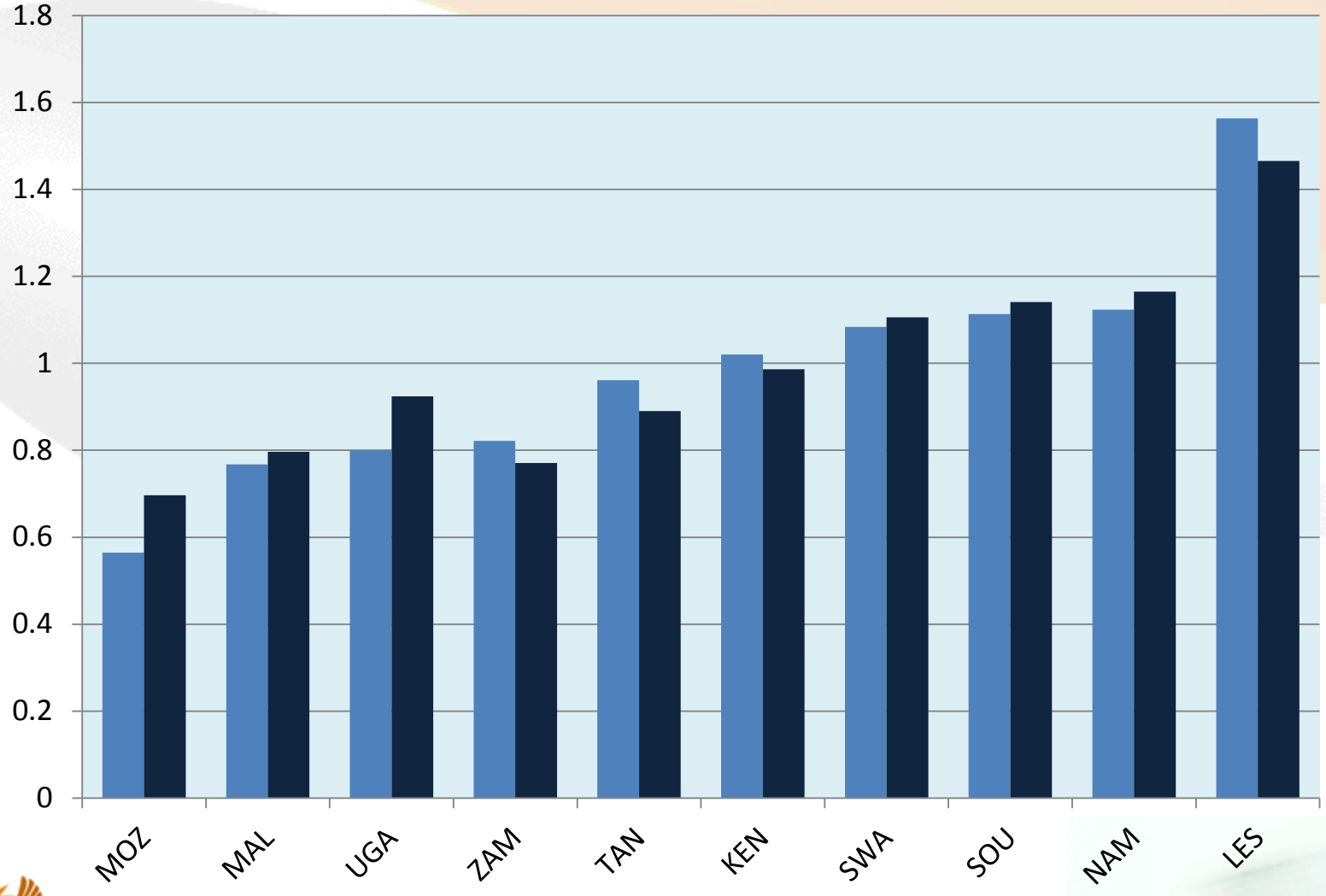
Access to Literacy



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Functional Numeracy amongst entire population

Access to Numeracy

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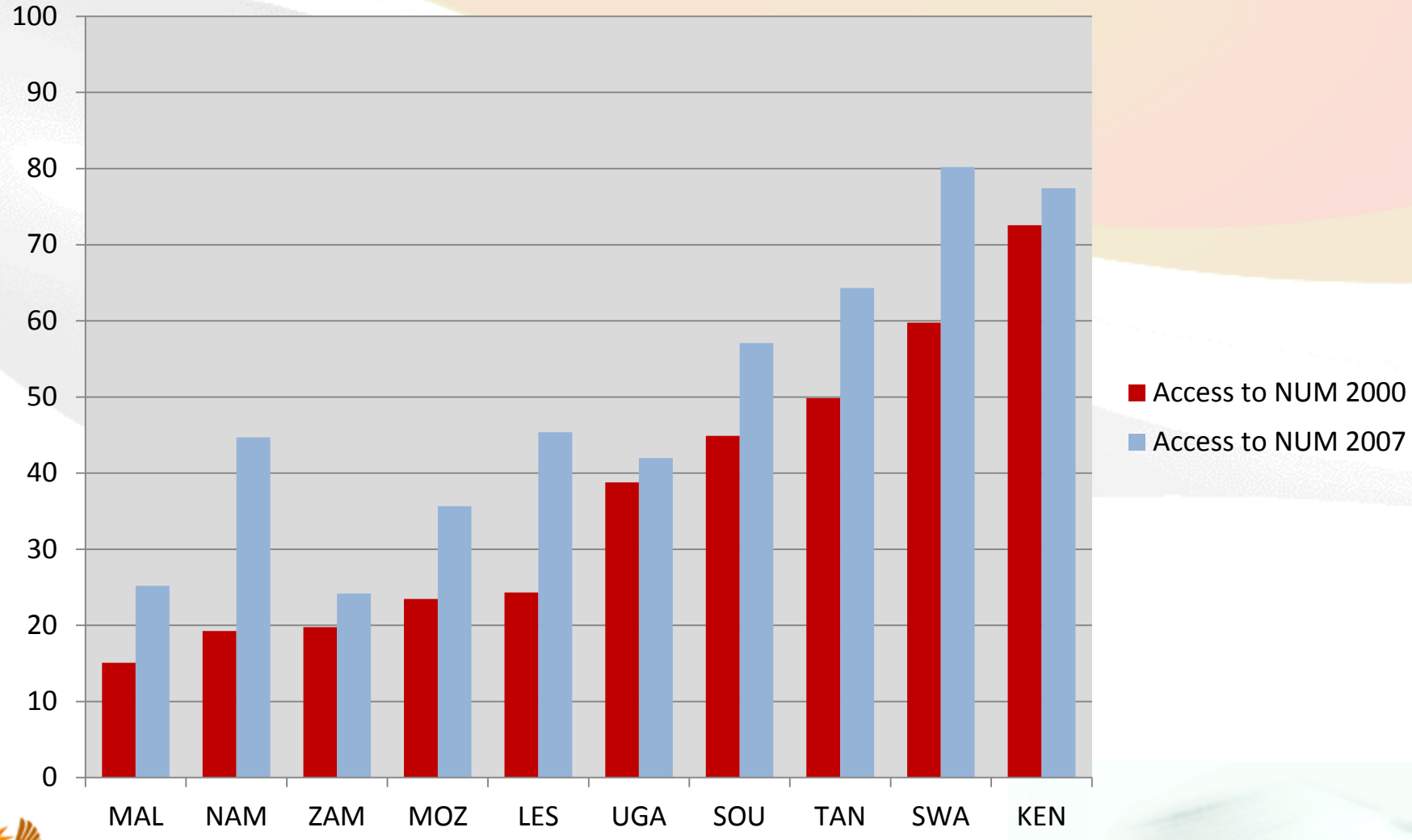
Access to Numeracy



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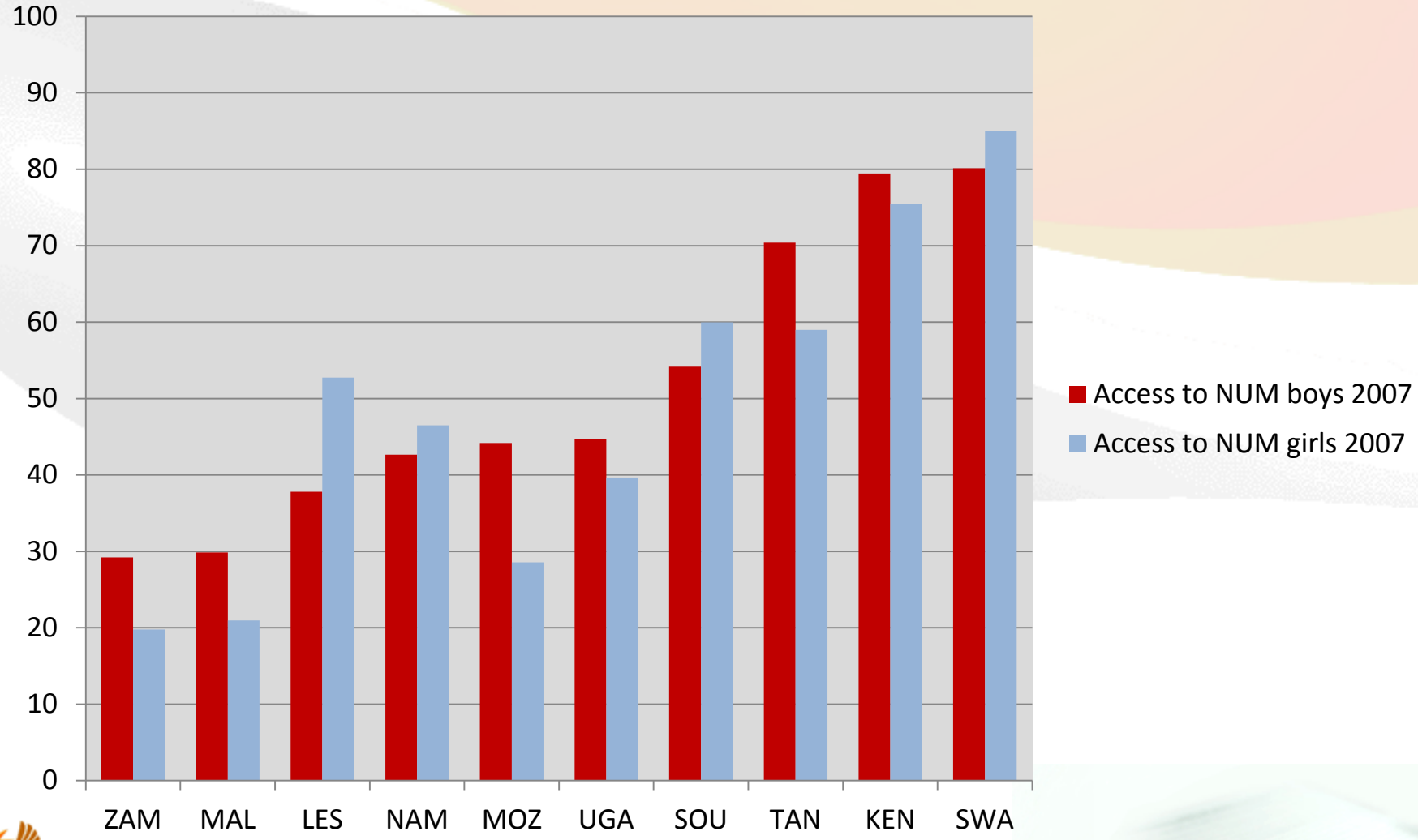
Access to Numeracy



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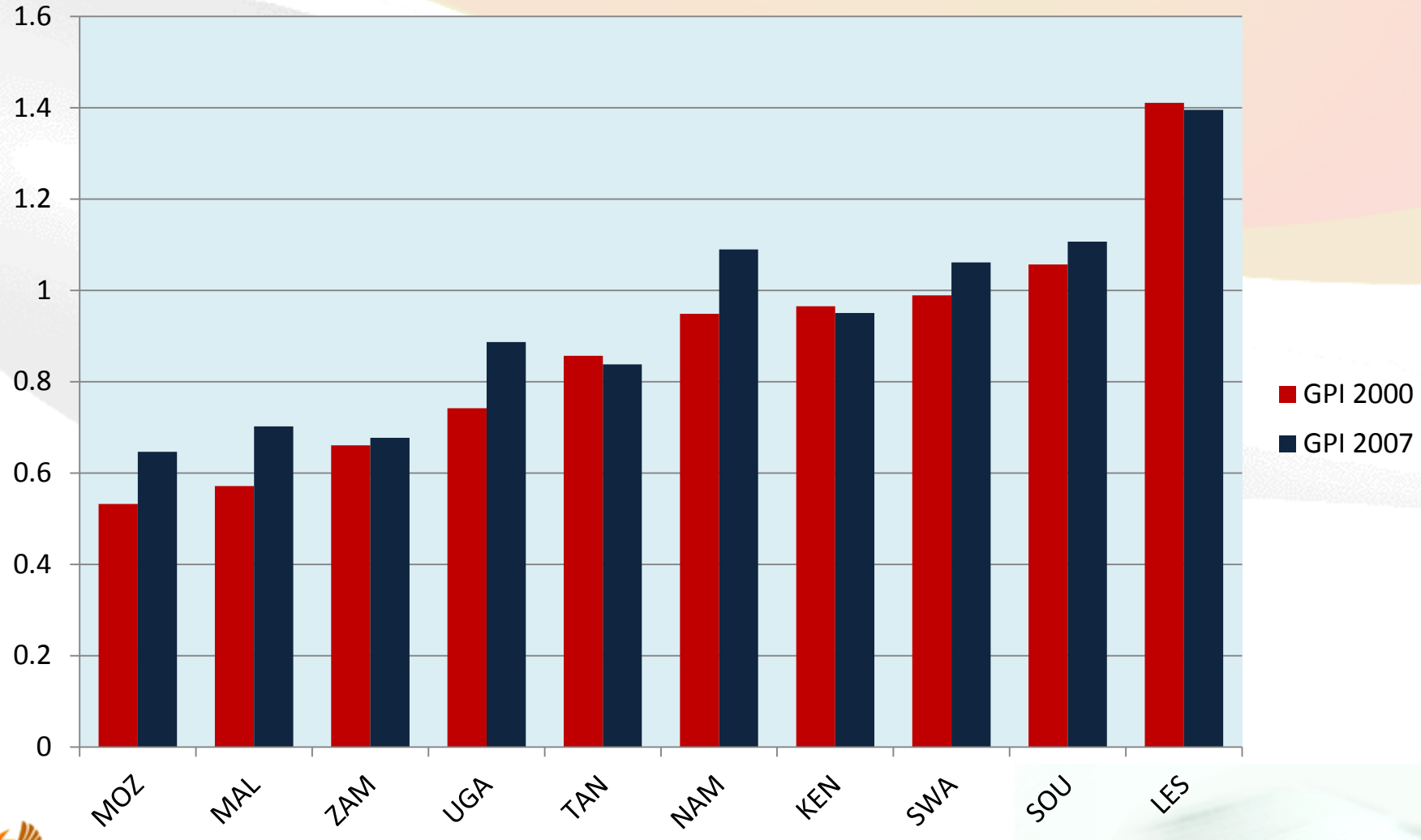

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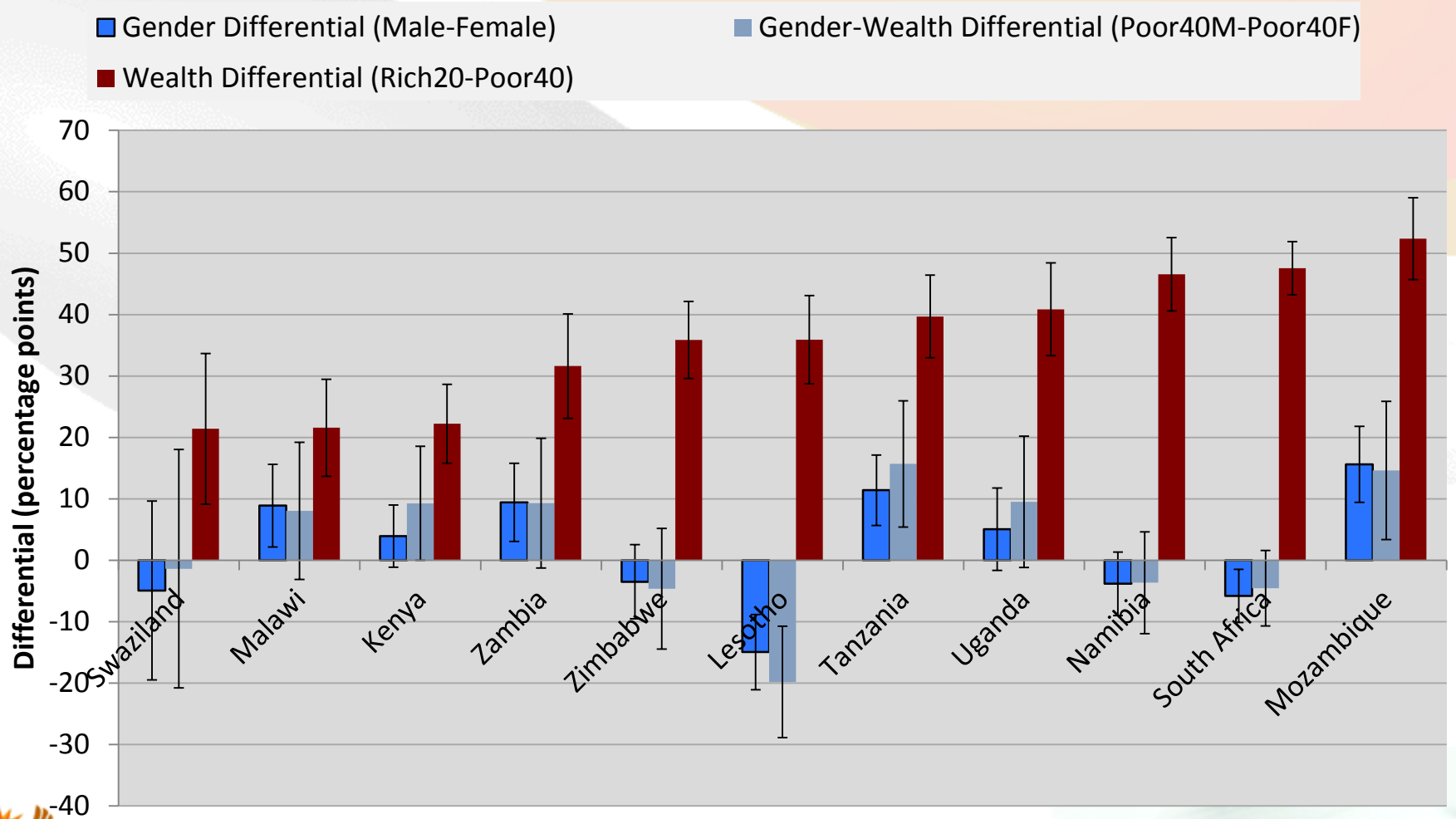
Gender gaps vs Socio-economic gaps

(Access to Literacy)



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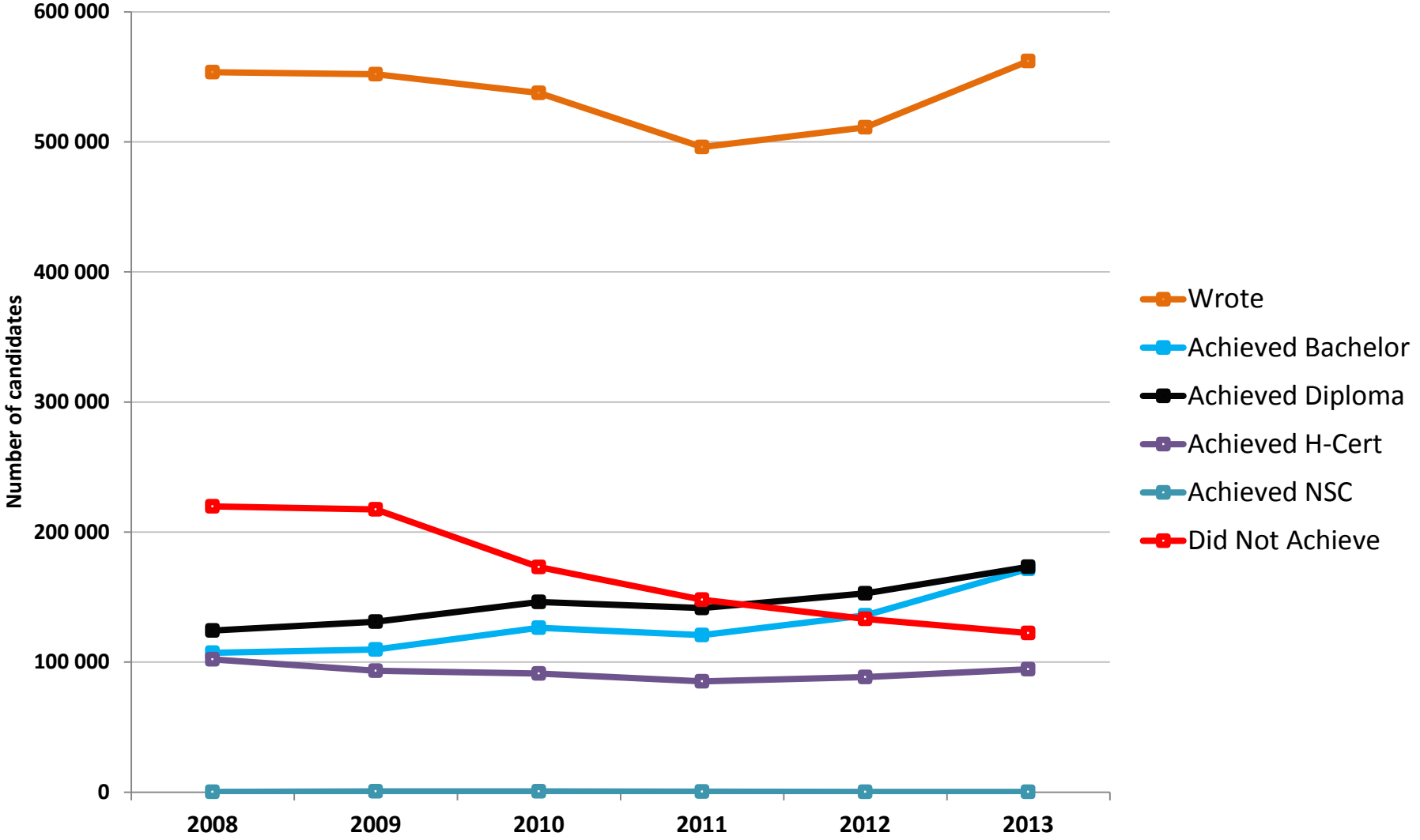
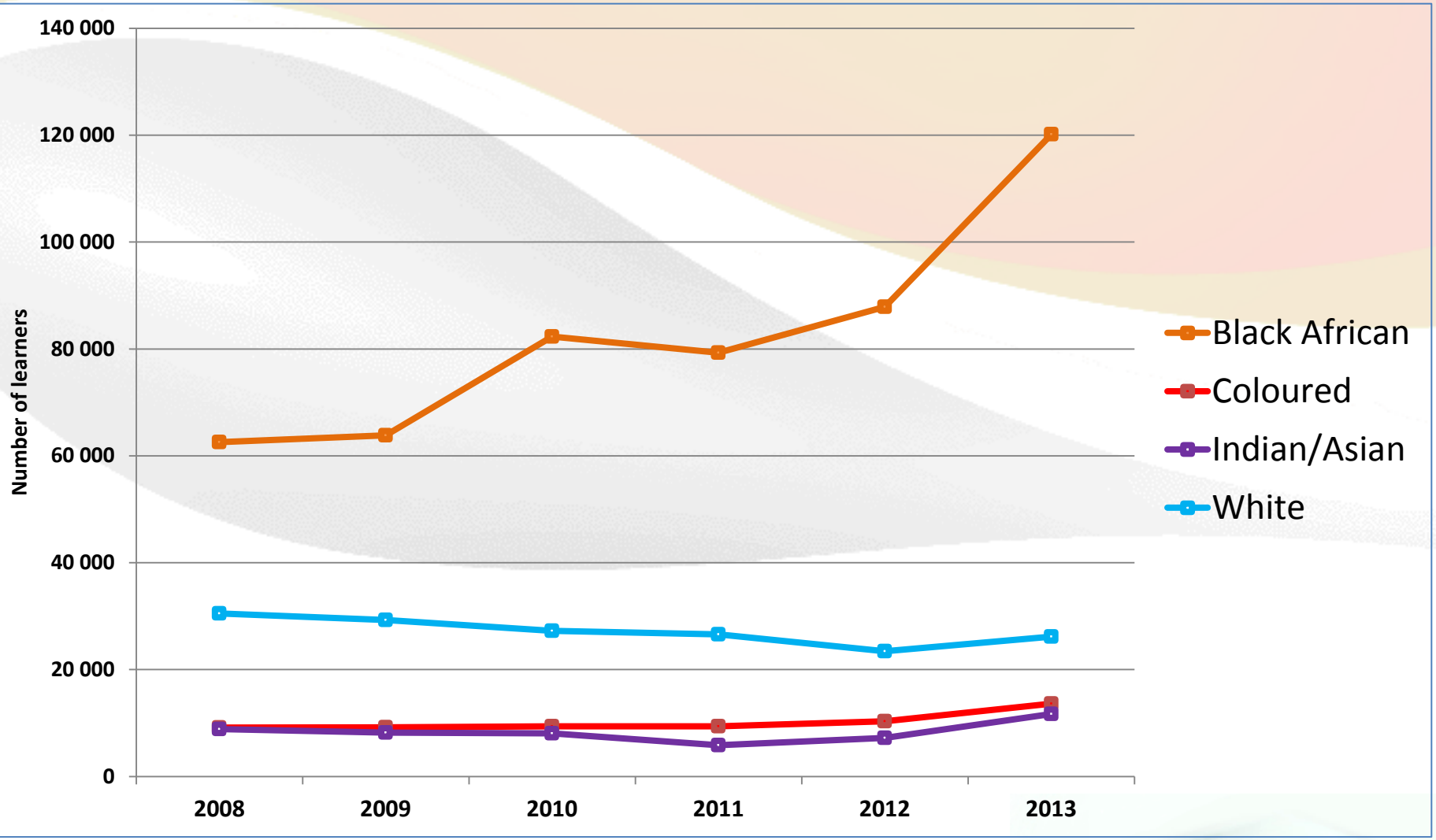
Trends for South African boys and girls in NSC

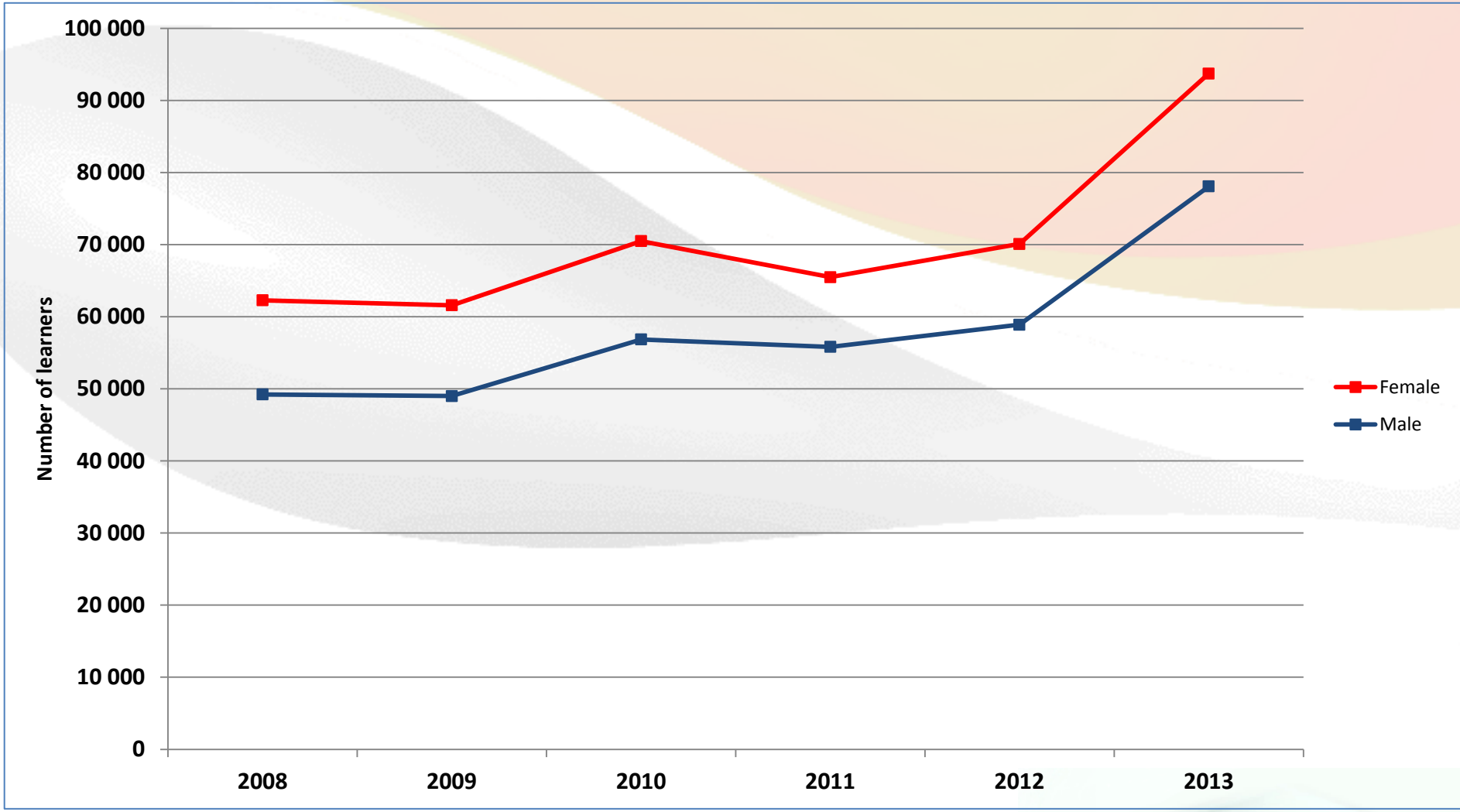
Learner participation in the NSC examinations, 2008 - 2014



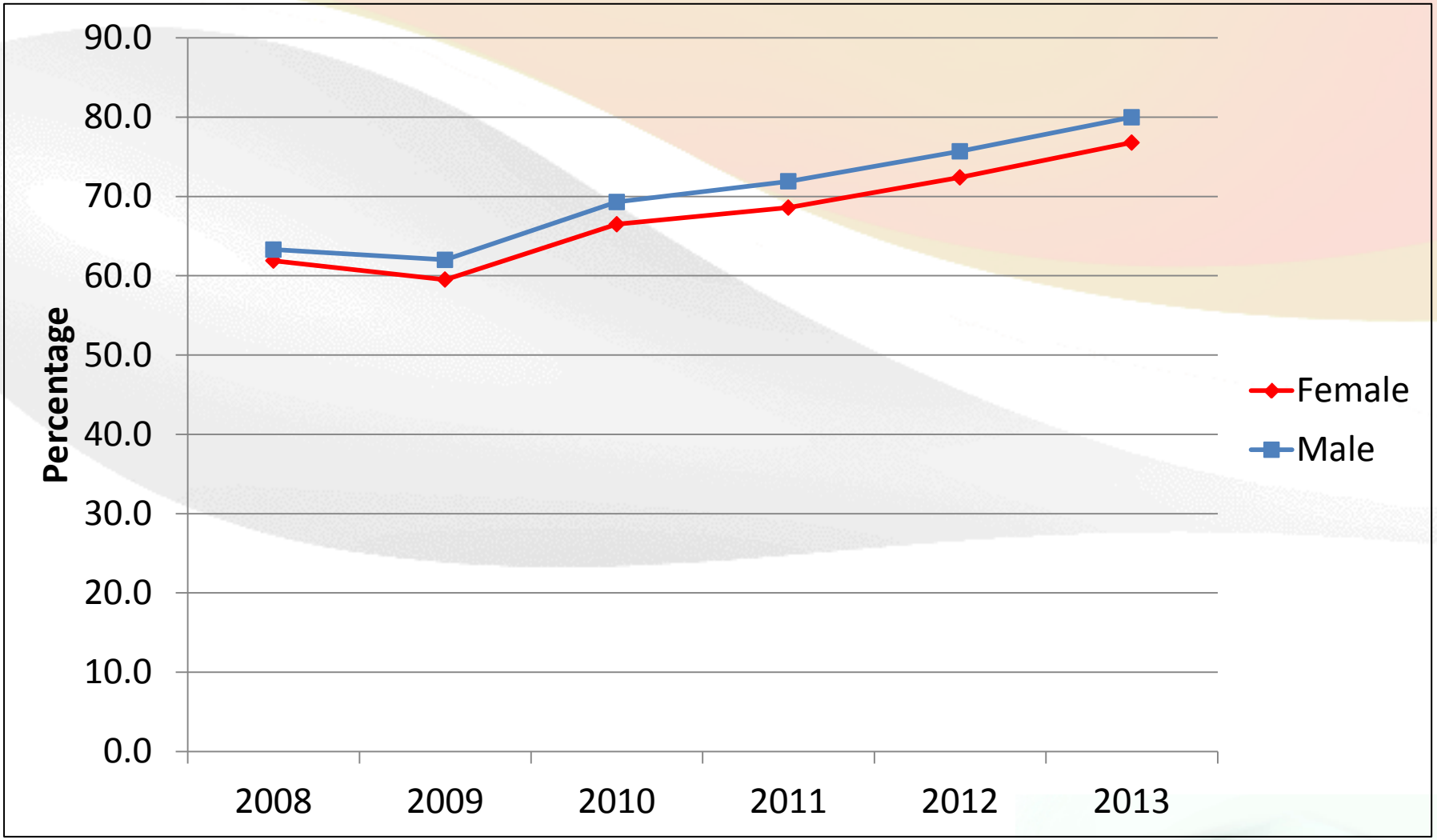
Bachelor passes in recent years



Bachelor passes by gender



Proportion of Males and Females passing matric



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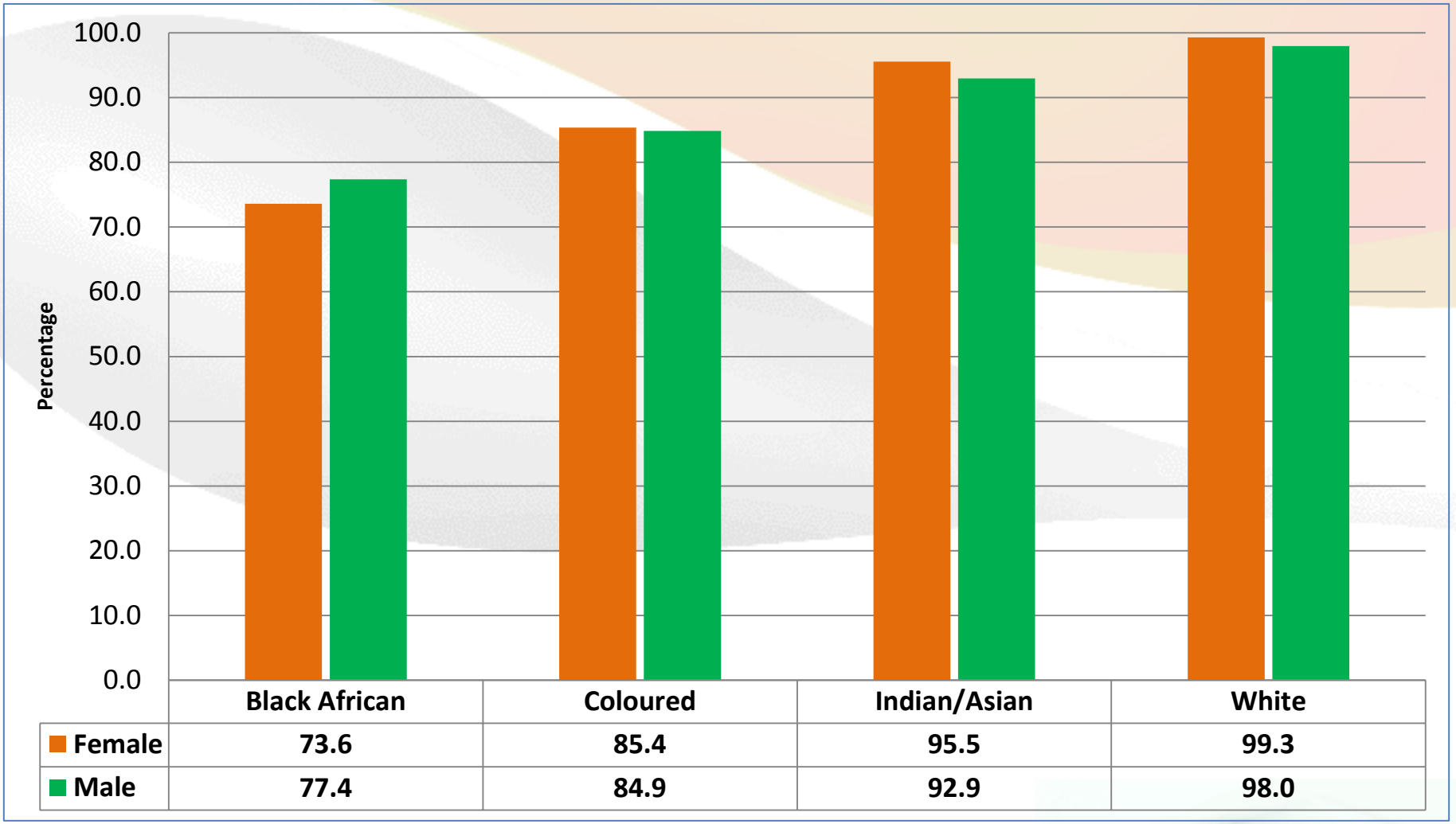
Gender outcomes by Race in 2013



	Black African	Coloured	Indian/Asian	White
Female	73.6	85.4	95.5	99.3
Male	77.4	84.9	92.9	98.0

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2013 NSC outcomes by gender

	2013: Learners that achieved in the NSC exams *(A)*		2013 NSC Pass rate *(A) / Learners wrote*		Pass rate relative to 2011 grade 10 enrolment *(A) / Grade 10 enrolment*		Pass rate relative to 2013 population *(A) / 18 year olds population*	
	Female	Male	Female	Male	Female	Male	Female	Male
EC	24,929	21,911	62.1	68.5	31.4	31.7	34.7	30.0
FS	12,490	11,199	86.0	89.0	40.0	37.1	44.7	39.6
GP	46,796	38,326	86.5	87.5	49.2	40.6	45.5	37.8
KZ	61,445	50,958	76.8	78.0	46.7	40.8	55.1	46.1
LP	30,202	28,982	68.4	75.7	33.5	33.1	48.1	46.1
MP	20,477	18,359	75.8	79.7	42.5	39.7	46.6	41.6
NW	13,816	11,598	85.9	88.8	39.3	35.4	41.4	33.8
NC	4,146	3,603	73.4	75.8	37.7	34.3	37.0	31.0
WC	22,737	17,805	84.3	86.3	54.8	50.7	44.7	34.7
SA	**237,038**	**202,741**	**76.8**	**80.0**	**42.1**	**38.2**	**45.9**	**39.2**

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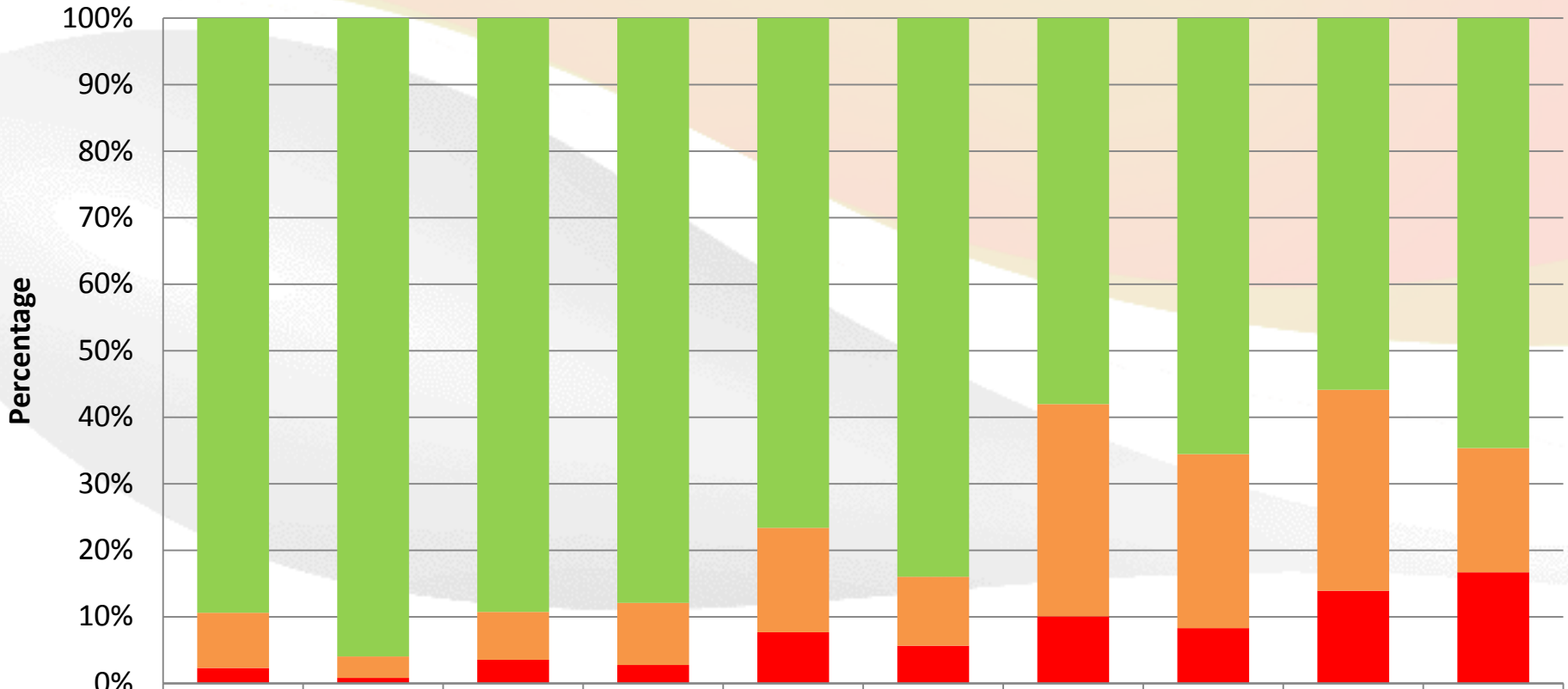
Source: 2011 Snap Survey, 2013 NSC, 2013 Stats SA population estimates

Progress through school between 2011 and 2012



	Grd 7		Grd 8		Grd 9		Grd 10		Grd 11	
	M	F	M	F	M	F	M	F	M	F
Pass	89%	96%	89%	88%	77%	84%	58%	66%	56%	65%
Repeat	8%	3%	7%	9%	16%	10%	32%	26%	30%	19%
Dropout	2%	1%	4%	3%	8%	6%	10%	8%	14%	17%

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Source: National Income Dynamics Study 2012, Wave 3. DBE calculations

Average age of Grade 12 learners

	2008		2009		2010		2011		2012		2013	
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
EC	19	19	19	20	19	19	19	20	19	20	19	20
FS	19	19	19	19	19	19	19	19	19	19	19	19
GP	18	19	18	19	18	19	18	19	18	19	18	19
KZ	19	19	19	19	19	19	19	19	19	19	19	19
LP	19	20	19	20	19	20	19	20	19	20	19	20
MP	19	20	19	19	19	19	19	19	19	20	19	19
NW	19	19	19	19	19	19	19	19	19	19	19	19
NC	19	19	19	19	19	19	19	19	19	19	19	19
WC	18	18	18	18	18	18	18	19	18	19	18	18

Source: National Income Dynamics Study 2012, Wave 3. DBE calculations

Gender outcomes by Subject in 2013

Subject	Wrote		% Achieve at 30% and Above		% Achieve at 40% and Above	
	Male	Female	Male	Female	Male	Female
Accounting	56,636	88,791	66.4	65.2	43.4	40.2
Business Studies	90,520	128,394	81.9	81.9	57.2	58.9
Economics	61,327	88,787	75.2	72.9	46.8	44.0
English FAL	206,923	247,743	98.7	98.9	87.9	89.3
Geography	115,034	124,623	82.8	77.5	56.6	50.4
History	52,271	56,775	87.5	86.7	66.9	67.2
Life Orientation	256,428	313,102	99.8	99.8	98.9	99.1
Life Sciences	132,904	168,814	73.6	73.8	47.6	48.1
Mathematical Literacy	146,357	177,740	88.3	86.1	66.0	59.5
Mathematics	108,725	132,784	64.9	54.3	46.6	35.5
Physical Sciences	86,388	97,995	69.3	65.7	46.6	39.2

Source: 2013 NSC

Excellence in both Mathematics and Physical Science

Males

Physics→ Maths↓	0-29	30-39	40-49	50-69	70-79	80-100	Total
0-29	17,708	5,169	1,100	123	0	0	24,100
30-39	4,240	6,209	2,927	572	3	0	13,951
40-49	1,297	4,321	5,170	2,268	14	3	13,073
50-69	253	1,566	4,930	10,815	1,027	71	18,662
70-79	2	28	191	2,988	2,136	556	5,901
80-100	0	0	10	511	1,355	2,797	4,673
Total	23,500	17,293	14,328	17,277	4,535	3,427	80,360
					Students with 70 or more in both subjects		6,844

Females

Physics→ Maths↓	0-29	30-39	40-49	50-69	70-79	80-100	Total
0-29	25,349	9,074	1,823	172	1	0	36,419
30-39	3,748	8,225	4,506	760	1	0	17,240
40-49	825	4,038	5,773	2,596	19	0	13,251
50-69	122	1,017	4,142	9,930	830	44	16,085
70-79	0	2	73	2,140	1,628	386	4,229
80-100	0	0	2	261	947	1,752	2,962
Total	30,044	22,356	16,319	15,859	3,426	2,182	90,186
					Students with 70 or more in both subjects		4,713

Source: 2013 NSC

Performance in mathematics over the years

Males

Year	0-29	30-39	40-49	50-69	70-79	80-100	Total
2008	49.9	16.3	9.8	14.2	4.9	4.9	100.0
2009	49.3	17.3	12.3	13.7	3.7	3.8	100.0
2010	46.5	18.1	13.1	14.1	3.7	4.5	100.0
2011	48.5	16.8	12.7	14.7	4.0	3.4	100.0
2012	41.6	17.7	14.3	17.8	4.9	3.8	100.0
2013	36.0	17.4	15.4	20.6	6.0	4.6	100.0

Females

Year	0-29	30-39	40-49	50-69	70-79	80-100	Total
2008	57.4	15.2	8.3	11.3	3.8	3.9	100.0
2009	57.2	16.2	10.4	10.7	2.8	2.6	100.0
2010	55.3	16.9	11.1	11.0	2.7	3.1	100.0
2011	57.9	15.9	10.6	10.9	2.8	2.0	100.0
2012	52.2	17.0	11.9	13.5	3.3	2.1	100.0
2013	46.6	17.8	13.5	15.8	3.9	2.5	100.0

Source: 2013 NSC

The impact of Principal gender and Teacher gender on boys and girls maths and science in NSC

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Science: Principal gender

	OLS	FE
Male	1.549	3.117*
	0.367*	0.159
Male Principal	-1.120	0.203
	0.420*	0.355
Male*Male Principal	1.592	0.027
	0.381*	0.177
N (Students)	502611	522090
N (Schools)	5418	5794
R-squared (overall)	0.3194	0.2406

Science: Teacher gender

	OLS	FE
Male	0.839*	1.734
	0.269	0.152*
Prop Science teachers male	-0.026*	-0.014*
	0.003	0.002
Male*Prop_male_teachers	0.034*	0.023*
	0.003	0.002
N (Students)	559548	576569
N (Schools)	5408	5720
R-squared (overall)	0.3235	0.2523

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Science: Teacher gender

	Learner is male	Learner is female
Proportion teachers male=0	51.73	50
Proportion teachers male=50	52.23	49.32
Proportion teachers male=100	52.72	48.64

Conclusions

- Girls remain at a disadvantage in most East African & poor countries
  - Mainly due to limited participation
- The boy disadvantage exists in Southern Africa
- Improvements in access to learning since 2000
- **In SA:**
- Girls are more persistent to reach grade 12
- Boys do better once there (driven by black population)
- There appears to be a matching story about teacher gender and learner gender, at least in Math & Science

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