

## ADDITIONAL MATERIALS AND ONLINE APPENDICES

Table A.1: Classification of sub-Saharan African countries into institutional regions and years of survey and sample size for each country

<b>East Africa</b>	Years of survey	Sample size of twins
Burundi	1987	198
Comoros	1996	294
Ethiopia	2000, 2005	1,740
Kenya	1989, 1993, 1998, 2003	2,572
Madagascar	1992, 1997, 2003/04	1,282
Malawi	1992, 1996, 2000, 2004	3,584
Mozambique	1997, 2003	2,086
Rwanda	1992, 2000, 2005	1,702
Sudan	1990	684
Tanzania	1992, 1996, 2004	3,228
Uganda	1988, 1995, 2000/01	1,618
Zambia	1992, 1996, 2001/02	2,334
Zimbabwe	1988, 1994, 1999, 2005/06	2,078
<b>Central Africa</b>		
Central African Republic	1994/95	444
Cameroon	1994, 1998, 2004	2,116
Chad	1996/97, 2004	1,350
Gabon	2000	532
<b>Southern Africa</b>		
Lesotho	2004	422
Namibia	1992, 2000	684
South Africa	1998	558
<b>Western Africa</b>		
Benin	1996, 2001	1,880
Burkina Faso	1992/93, 1998/99, 2003	2,520
Côte d'Ivoire	1994, 1998/99, 2005	1,486
Ghana	1988, 1993, 1998, 2003	1,890
Guinea-Bissau	1999, 2005	1,900
Liberia	1986	698
Mali	1987, 1995/96, 2001	2,788
Niger	1992, 1998	1,558
Nigeria	1990, 1999, 2003	2,628
Senegal	1986, 1992/93, 1997, 1999, 2005	2,608
Togo	1988, 1998	1,532
<b>Total</b>		50,994

Table A.2: Summary statistics of twins in sub-Saharan Africa by institutional regions

	Central Africa			Western Africa			Eastern Africa			Southern Africa			All twins		
	<i>N</i>	Mean	SD	<i>N</i>	Mean	SD	<i>N</i>	Mean	SD	<i>N</i>	Mean	SD	<i>N</i>	Mean	SD
Child is Male	4,442	0.520	0.500	21,488	0.507	0.500	23,400	0.499	0.500	1,664	0.484	0.500	50,994	0.504	0.500
Maternal Characteristics															
Age	4,442	35.306	7.746	21,488	36.464	7.398	23,400	36.332	7.585	1,664	37.704	7.258	50,994	36.343	7.521
<b>Marital status</b>															
Single	4,442	0.025	0.155	21,488	0.006	0.079	23,400	0.012	0.111	1,664	0.139	0.346	50,994	0.015	0.122
Married	4,442	0.667	0.471	21,488	0.867	0.340	23,400	0.718	0.450	1,664	0.573	0.495	50,994	0.771	0.420
Widowed	4,442	0.164	0.370	21,488	0.063	0.243	23,400	0.113	0.316	1,664	0.112	0.315	50,994	0.096	0.295
Living with a partner	4,442	0.054	0.225	21,488	0.031	0.175	23,400	0.065	0.246	1,664	0.083	0.276	50,994	0.050	0.218
Not living with a partner	4,442	0.026	0.159	21,488	0.016	0.125	23,400	0.045	0.207	1,664	0.024	0.153	50,994	0.030	0.172
Divorced or separated	4,442	0.064	0.245	21,488	0.016	0.127	23,400	0.047	0.213	1,664	0.069	0.253	50,994	0.037	0.188
<b>Mother's education</b>															
Not educated	4,442	0.443	0.497	21,488	0.778	0.415	23,396	0.406	0.491	1,664	0.167	0.373	50,994	0.558	0.497
Primary	4,442	0.349	0.477	21,488	0.151	0.358	23,396	0.484	0.500	1,664	0.565	0.496	50,994	0.335	0.472
Secondary or higher	4,442	0.208	0.406	21,488	0.070	0.255	23,396	0.110	0.313	1,664	0.268	0.443	50,994	0.107	0.309
<b>Father's Education</b>															
Not educated	4,124	0.371	0.483	19,754	0.700	0.458	21,940	0.260	0.438	1,362	0.310	0.463	47,180	0.455	0.498
Primary	4,124	0.297	0.457	19,754	0.153	0.360	21,940	0.530	0.499	1,362	0.433	0.496	47,180	0.349	0.477
Secondary or higher	4,124	0.331	0.471	19,754	0.147	0.354	21,940	0.211	0.408	1,362	0.257	0.437	47,180	0.196	0.397
<b>Household Characteristics</b>															
Household size	4,442	8.965	5.019	21,488	9.620	5.537	23,400	7.350	3.451	1,664	7.356	4.242	50,994	8.447	4.728
Has electricity (0/1)	4,300	0.313	0.464	19,696	0.200	0.400	22,446	0.110	0.313	1,632	0.268	0.443	48,074	0.170	0.376
Has radio (0/1)	4,300	0.574	0.495	21,206	0.619	0.486	23,106	0.487	0.500	1,634	0.671	0.470	50,246	0.556	0.497
Has TV (0/1)	4,300	0.194	0.396	20,488	0.146	0.353	21,978	0.082	0.274	1,632	0.222	0.416	48,398	0.124	0.329
Has car (0/1)	4,298	0.047	0.213	20,500	0.044	0.206	21,952	0.026	0.159	1,628	0.124	0.330	48,378	0.039	0.193

Table A.3: Linear probability model estimates of sex differences in infant mortality based on twins' data by institutional region

	<b>Effects of biology + preconception environment</b>	<b>Effects of biology + preconception environment after controls</b>	<b>Effect of biology</b>	<b>Effect of preconception environment</b>
	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4) = (1) – (3)</b>
<b>Panel A: Central Africa</b>				
Male	0.073*** (0.013)	0.072*** (0.013)	0.029* (0.015)	0.044** (0.019)
Observations	4,442	4,442	4,442	4,442
<b>Panel B: Western Africa</b>				
Male	0.048*** (0.006)	0.044*** (0.006)	0.032*** (0.008)	0.016 (0.010)
Observations	21,488	21,488	21,488	21,488
<b>Panel C: Eastern Africa</b>				
Male	0.043*** (0.006)	0.041*** (0.006)	0.023*** (0.007)	0.020** (0.009)
Observations	23,400	23,400	23,400	23,400
<b>Panel D: Southern Africa</b>				
Male	0.012 (0.021)	0.017 (0.021)	0.017 (0.023)	-0.005 (0.031)
Observations	1,664	1,664	1,664	1,664
<b>Twin Fixed Effect</b>	<b>No</b>	<b>No</b>	<b>Yes</b>	<b>-</b>
<b>Controls</b>	<b>No</b>	<b>Yes</b>	<b>No</b>	<b>-</b>

Robust standard errors are in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

Note: Controls include fixed effects of: child's year of birth; mother's characteristics (age at survey, education, and marital status); husband's education; household's characteristics (household size and assets (car, television, radio, and electricity)); and country-by-survey.