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## Appendix

**Table 3 Sample size per country**

Name of Country	Number of respondents <sup>a</sup>	Name of Country	Number of respondents <sup>a</sup>
South Africa	1,721	Burkina Faso	64
Nigeria	660	Côte d'Ivoire	61
Algeria	286	Botswana	60
Tunisia	275	Senegal	57
Kenya	186	Benin	45
Morocco	170	Malawi	37
Egypt	149	Congo	24
Ethiopia	143	Togo	20
Uganda	133	Madagascar	18
Cameroon	123	Niger	16
Ghana	117	Mali	15
Zambia	91	Democratic Republic of the Congo	14
Zimbabwe	88	Gabon	10
Tanzania	78	Central African Republic, Guinea, Burundi, Seychelles, and Chad <sup>b</sup>	15
<b>Total</b>			<b>4,676</b>

Note: <sup>a</sup> The number of respondents by country is provided in appendix 1 (pp. 184-185) of the published book: The next Generation of Scientists in Africa: <https://www.africanminds.co.za/the-next-generation-of-scientists/>.

<sup>b</sup> For confidentiality reasons, and to respect the ethics certificate of this project, data where the number of respondents is less than 10 cannot be disclosed.

**Table 4 Variable description**

Variable	Type	Description	Survey questions <sup>c</sup>
<b>Dependent variable</b>			
<i>Number of articles</i>	Continuous	Natural logarithm of the number of articles published/accepted (including co-authored) in refereed or peer-reviewed academic journals	<i>“Please indicate how many of the following research output types you have produced over the last three years: articles published/accepted (including co-authored) in refereed or peer-reviewed academic journals”</i>
<b>Independent variables</b>			
<i>Main care &amp; housework</i>	Dummy	Takes the value 1 if the proportion of care-work and general housework for all dependents performed by the respondent is above 50% of the total, and 0 otherwise	First: <i>“How is the care-work for all dependents distributed in your family or relationship? (in percentage) [ ]% me [ ]% partner [ ]% others (e.g. extended family, paid service)”</i> Second: <i>“How is general housework distributed in your family or relationship? (in percentage) [ ]% me [ ]% partner [ ]% others (e.g. paid service)”</i>
<i>Early-career researcher</i>	Dummy	Takes the value 1 if the respondent is an early-career researcher ( $\leq 40$ years of age), and 0 otherwise	
<i>Mid-career researcher</i>	Dummy	Takes the value 1 if the respondent is a mid-career researcher ( $< 40$ and $\geq 50$ years of age), and 0 otherwise	<i>“What is your year of birth?”</i>
<i>Late-career researcher (reference category)</i>	Dummy	Takes the value 1 if the respondent is a late-career researcher ( $< 50$ years of age), and 0 otherwise	
<i>Teaching hours</i>	Continuous <sup>a</sup>	Number of working hours spent on undergraduate and postgraduate teaching	First <i>“On average, how many hours do you spend on your main job per week?”</i>
<i>Supervising hours</i>	Continuous <sup>a</sup>	Number of working hours spent on training/supervising postgraduate students	Combined with second <i>“In a typical year, what percentage of your working time do you spend on each of the following tasks?”</i>

Variable	Type	Description	Survey questions <sup>c</sup>
<b>Research hours</b>	Continuous <sup>a</sup>	Number of working hours spent on research	
<b>Admin hours</b>	Continuous <sup>a</sup>	Number of working hours spent on administration and management	
<b>Service hours</b>	Continuous <sup>a</sup>	Number of working hours spent on service (counselling of patients, voluntary services within or outside the organisation, article review, editorial duties)	
<b>Consultation hours</b>	Continuous <sup>a</sup>	Number of working hours spent on consultancy	
<b>Fundraising hours</b>	Continuous <sup>a</sup>	Number of working hours spent on raising funds/grants for research	
<b>Funding</b>	Continuous	Total amount of research funding received during the past three years	<i>“Which amount best correspond to the total amount of research funding you have received during the past three years?”</i>
<b>Study-related mobility</b>	Dummy	Takes the value 1 if the respondent obtained his/her highest degree from an institution in a country other than the country of his/her home country, and 0 otherwise	<i>“Did you complete all aspects of your doctoral (or equivalent) education in what you would consider to be your home country?”</i>
<b>Work-related mobility</b>	Dummy	Takes the value 1 if the respondent has worked in a country other than what he/she would consider his/her home country (i.e. abroad), and 0 otherwise	<i>“During the past five years, have you lived or worked in a country other than what you would consider your home country?”</i>
<b>Collaboration with own inst./country</b>	Dummy <sup>b</sup>	Takes the value 1 if the respondent has collaborated often (4) or very often/always (5) with researchers from his/her own institution, and 0 otherwise	
<b>Collaboration with own country</b>	Dummy <sup>b</sup>	Takes the value 1 if the respondent has collaborated often (4) or very often/always (5) with researchers from his/her own country, and 0 otherwise	
<b>Collaboration within Africa</b>	Dummy <sup>b</sup>	Takes the value 1 if the respondent has collaborated often (4) or very often/always (5) with researchers from institutions in <b>other</b> African countries, and 0 otherwise	
<b>Collaboration outside Africa</b>	Dummy <sup>b</sup>	Takes the value 1 if the respondent has collaborated often (4) or very often/always (5) with researchers institutions outside of Africa (e.g. Europe, North America, Asia, etc.), and 0 otherwise	<i>“How often during your career so far have you collaborated in joint research projects with the following groups of researchers?”</i>
<b>Moderating variable</b>			
<b>Woman</b>	Dummy	Takes the value 1 if the respondent is a woman, and 0 otherwise	<i>“Are you: [ ] Male [ ] Female?”</i>
<b>Control variables</b>			
<b>South Africa</b>	Dummy	Takes the value 1 if the respondent’s country of work is South Africa, and 0 otherwise	<i>“In which country do you currently work / reside?”</i>
<b>STEM fields</b>	Dummy	Takes the value 1 if the respondent’s research discipline is in Science, Technology, Engineering and Mathematics (STEM) fields, and 0 otherwise	
<b>Health fields</b>	Dummy	Takes the value 1 if the respondent’s research discipline is in the Health Science fields, and 0 otherwise	
<b>SSH fields</b>	Dummy	Takes the value 1 if the respondent’s research discipline is in the Social Sciences and Humanities fields, and 0 otherwise	<i>“In which field did you obtain your highest qualification?”</i>

Note: <sup>a</sup> The number of hours was calculated by multiplying the total number of hours reported by the respondent and the corresponding proportion of their time devoted to a particular academic task.

<sup>b</sup> 5-point Likert scales (1 = Never or very rarely, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Very often/always) transformed into dummy variables.

<sup>c</sup> A slightly modified version of the questionnaire used for this study is provided in appendix 2 of the published book: The next Generation of Scientists in Africa:

<https://www.africanminds.co.za/the-next-generation-of-scientists/>.

**Table 5 Descriptive statistics**

Variables	All				Men		Women		Diff. p
	Mean	Std. Dev.	min	max	Mean	Std. Dev.	Mean	Std. Dev.	
<b>Dependent variable</b>									
<i>Number of articles</i>	8.3488	(6.6592)	0	21	8.8994	(6.7961)	7.1065	(6.1634)	***
<b>Independent variables</b>									
<i>Age</i> <sup>a</sup>	46.1642	(10.1235)	23	75	46.6401	(10.2612)	45.0905	(9.7241)	
<i>Early-career researcher</i>	0.3317	(0.4709)	0	1	0.3139	(0.4641)	0.3719	(0.4835)	***
<i>Mid-career researcher</i>	0.3518	(0.4776)	0	1	0.3556	(0.4788)	0.3433	(0.4750)	
<i>Late-career researcher</i>	0.3165	(0.4652)	0	1	0.3306	(0.4705)	0.2848	(0.4515)	***
<i>Proportion of care- &amp; housework</i> <sup>a</sup>	43.6276	(26.5533)	0	100	37.4565	(24.6117)	57.5513	(25.4914)	***
<i>Main care &amp; housework</i>	0.4279	(0.4948)	0	1	0.3164	(0.4651)	0.6797	(0.4668)	***
<i>Teaching hours</i>	7.8602	(8.4573)	0	69.7	8.1059	(8.6217)	7.3057	(8.0496)	***
<i>Supervising hours</i>	5.7495	(5.8676)	0	50.0	5.4726	(5.5534)	6.3743	(6.4797)	***
<i>Research hours</i>	10.5896	(10.2197)	0	90.0	10.4045	(9.9809)	11.0071	(10.7309)	*
<i>Admin hours</i>	5.7383	(7.7908)	0	68.8	5.3547	(7.6133)	6.6038	(8.1135)	***
<i>Service hours</i>	2.6186	(4.6384)	0	80.0	2.4549	(4.4431)	2.9878	(5.0335)	***
<i>Consultation hours</i>	1.8720	(4.8592)	0	100.0	2.0049	(4.9406)	1.5722	(4.6581)	***
<i>Fundraising hours</i>	1.7458	(2.9381)	0	33.3	1.7001	(2.9201)	1.8488	(2.9768)	
<i>Funding</i>	82,489	(208226)	0	1,000,000	80,634	(207475)	86,675	(209921)	
<i>Study-related mobility</i>	0.3606	(0.4802)	0	1	0.4012	(0.4902)	0.2688	(0.4435)	***
<i>Work-related mobility</i>	0.3349	(0.4720)	0	1	0.3654	(0.4816)	0.2660	(0.4420)	***
<i>Collaboration with own inst.</i>	0.6097	(0.4879)	0	1	0.6244	(0.4844)	0.5766	(0.4943)	***
<i>Collaboration with own country</i>	0.3516	(0.4775)	0	1	0.3627	(0.4808)	0.3266	(0.4691)	**
<i>Collaboration within Africa</i>	0.1518	(0.3589)	0	1	0.1660	(0.3722)	0.1198	(0.3248)	***
<i>Collaboration outside Africa</i>	0.3749	(0.4841)	0	1	0.3830	(0.4862)	0.3565	(0.4791)	*
<b>Moderating variable</b>									
<i>Woman</i>	0.3071	(0.4613)	0	1					
<b>Independent variables</b>									
<i>South Africa</i>	0.3482	(0.4764)	0	1	0.2728	(0.4455)	0.5181	(0.4998)	***
<i>STEM fields</i>	0.5357	(0.4988)	0	1	0.5762	(0.4942)	0.4443	(0.4971)	***
<i>Health fields</i>	0.2254	(0.4179)	0	1	0.2108	(0.4079)	0.2584	(0.4379)	***
<i>SSH fields</i>	0.2389	(0.4264)	0	1	0.2130	(0.4095)	0.2974	(0.4573)	***

Note: N<sub>total</sub> = 4,676 observations; N<sub>men</sub> = 3,240 observations; N<sub>women</sub> = 1,436 observations.

\*\*\*, \*\*, \* represent significance at the 0.01, 0.05 and 0.1 levels.

<sup>a</sup> Age and the Proportion of care- & housework were transformed into dummy variables prior to being used in the regression analysis.

**Table 6 Correlation table**

Variables	1	2	3	4	5	6	7	8	9	10	11	12		
<i>Number of articles</i> <sup>a</sup>	1													
<i>Woman</i>	2	-0.1257 *	1											
<i>Age</i> <sup>b</sup>	3	0.1380 *	-0.0706 *	1										
<i>Early-career researcher</i>	4	-0.1620 *	0.0568 *	-0.7408 *	1									
<i>Mid-career researcher</i>	5	0.0838 *	-0.0118	-0.0673 *	-0.5190 *	1								
<i>Late-career researcher</i>	6	0.0779 *	-0.0454 *	0.8190 *	-0.4794 *	-0.5013 *	1							
<i>Main care &amp; housework</i>	7	-0.1063 *	0.3387 *	-0.0808 *	0.0810 *	-0.0398 *	-0.0412 *	1						
<i>Teaching hours</i> <sup>a</sup>	8	0.0889 *	-0.0513 *	-0.0162	-0.0497 *	0.0623 *	-0.0137	-0.0019	1					
<i>Supervising hours</i>	9	0.2876 *	0.0541 *	0.1578 *	-0.1749 *	0.0642 *	0.1111 *	-0.0186	0.3623 *	1				
<i>Research hours</i> <sup>a</sup>	10	0.1067 *	0.0159	-0.0866 *	0.0991 *	-0.0410 *	-0.0582 *	0.0268	-0.1163 *	0.1392 *	1			
<i>Admin hours</i> <sup>a</sup>	11	-0.0090	0.0951 *	0.0645 *	-0.0899 *	0.0167	0.0738 *	0.0186	-0.0424 *	0.1356 *	0.0706 *	1		
<i>Service hours</i> <sup>a</sup>	12	0.0555 *	0.0593 *	0.0487 *	-0.0516 *	0.0261	0.0254	-0.0100	0.0227	0.1362 *	0.0961 *	0.2123 *	1	
<i>Consultation hours</i> <sup>a</sup>	13	-0.0387 *	-0.0846 *	0.0507 *	-0.0335 *	0.0068	0.0270	-0.0593 *	-0.1107 *	-0.0323 *	-0.0185	0.0391 *	0.1372 *	
<i>Fundraising hours</i> <sup>a</sup>	14	0.1851 *	0.0269	-0.0384 *	0.0160	0.0163	-0.0329 *	-0.0219	-0.0896 *	0.1915 *	0.3075 *	0.2432 *	0.1478 *	
<i>Funding</i> <sup>a</sup>	15	0.2345 *	0.0357 *	0.1351 *	-0.1222 *	0.0082	0.1153 *	-0.0181	-0.0403 *	0.2041 *	0.2321 *	0.1247 *	0.0095	
<i>Study-related mobility</i>	16	0.0376 *	-0.1272 *	0.0285	-0.0371 *	0.0279	0.0090	-0.0770 *	0.0095	-0.0252	0.0020	-0.0684 *	-0.0519 *	
<i>Work-related mobility</i>	17	0.0558 *	-0.0972 *	-0.1343 *	0.1180 *	-0.0066	-0.1127 *	-0.0377 *	-0.0169	-0.0257	0.1080 *	-0.0575 *	-0.0009	
<i>Collaboration with own inst.</i>	18	0.1770 *	-0.0452 *	-0.0072	-0.0109	0.0147	-0.0041	-0.0567 *	-0.0615 *	0.0782 *	0.1296 *	0.0121	0.0095	
<i>Collaboration with own country</i>	19	0.1683 *	-0.0348 *	0.0093	-0.0260	0.0222	0.0035	-0.0367 *	-0.0859 *	0.0371 *	0.0973 *	0.0256	-0.0009	
<i>Collaboration within Africa</i>	20	0.1603 *	-0.0595 *	0.0082	-0.0323 *	0.0277	0.0042	-0.0793 *	-0.0882 *	0.0113	0.0769 *	0.0265	-0.0255	
<i>Collaboration outside Africa</i>	21	0.1663 *	-0.0252	0.0097	-0.0154	0.0114	0.0039	-0.0251	-0.0966 *	0.0763 *	0.1226 *	-0.0014	-0.0391 *	
<i>South Africa</i>	22	-0.0948 *	0.2375 *	0.1229 *	-0.0276	-0.0984 *	0.1291 *	0.1418 *	-0.0773 *	0.1692 *	0.1258 *	0.2880 *	0.1185 *	
<i>STEM fields</i>	23	0.0192	-0.1220 *	-0.0653 *	0.0447 *	-0.0155	-0.0294 *	-0.0260	-0.0067	-0.0212	0.0058	-0.1041 *	-0.1810 *	
<i>Health fields</i>	24	0.1054 *	0.0525 *	-0.0128	0.0048	0.0270	-0.0326 *	-0.0238	-0.0239	0.0200	-0.0051	0.0397 *	0.2135 *	
<i>SSH fields</i>	25	-0.1258 *	0.0913 *	0.0889 *	-0.0570 *	-0.0084	0.0663 *	0.0537 *	0.0313 *	0.0051	-0.0017	0.0828 *	0.0026	
		<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>
<i>Consultation hours</i> <sup>a</sup>	13	1												
<i>Fundraising hours</i> <sup>a</sup>	14	0.0700 *	1											
<i>Funding</i> <sup>a</sup>	15	-0.0397 *	0.3939 *	1										
<i>Study-related mobility</i>	16	0.0168	0.0657 *	0.0908 *	1									
<i>Work-related mobility</i>	17	0.0431 *	0.1273 *	0.0703 *	0.1598 *	1								
<i>Collaboration with own inst.</i>	18	-0.0020	0.1461 *	0.1472 *	0.0046	-0.0203	1							
<i>Collaboration with own country</i>	19	0.0230	0.1750 *	0.1399 *	-0.0016	0.0260	0.2411 *	1						
<i>Collaboration within Africa</i>	20	0.0087	0.1765 *	0.1703 *	0.1229 *	0.1366 *	0.1479 *	0.2776 *	1					
<i>Collaboration outside Africa</i>	21	-0.0306 *	0.2015 *	0.2740 *	0.1251 *	0.1525 *	0.0790 *	0.2171 *	0.2632 *	1				
<i>South Africa</i>	22	-0.0147	0.0854 *	0.1649 *	-0.1963 *	-0.1315 *	-0.0595 *	-0.0257	-0.1016 *	0.0080	1			
<i>STEM fields</i>	23	-0.0541 *	0.0332 *	-0.0105	0.0168	-0.0117	0.0577 *	0.0739 *	-0.0040	0.0655 *	-0.1234 *	1		
<i>Health fields</i>	24	0.0464 *	0.0197	0.0045	-0.0288 *	0.0065	0.0749 *	0.0144	0.0313 *	0.0136	-0.0483 *	-0.5795 *	1	
<i>SSH fields</i>	25	0.0178	-0.0581 *	0.0079	0.0086	0.0073	-0.1409 *	-0.1005 *	-0.0260	-0.0899 *	0.1917 *	-0.6018 *	-0.3022 *	1

Note: Significance level: \* p<0.05.

<sup>a</sup> All continuous variables were transformed using the natural logarithm: ln(variable + 1);

<sup>b</sup> Age is not used in the regression analysis.

**Table 7 Interactive variable coefficient comparison tests (t-tests) – Gender vs Main care and housework**

		Women			
		Main care & housework			
Men	Main care & housework	NO	YES	Main care & housework	
	NO	***	***	NO vs YES [Women]	***
	YES	**	***	NO vs YES [Men]	NS

Notes: \*\*\*, \*\*, \* represent significance at the 0.01, 0.05 and 0.1 levels.

**Table 8 Interactive variable coefficient comparison tests (t-tests) – Gender vs career stage**

				Women			
				Early- vs Mid-career	Early- vs Late-career	Mid- vs Late-career	
				***	***	*	
				Women			
				Early-career	Mid-career	Late-career	
Men	Early- vs Mid-career	***	Men	Early-career	***	NS	*
	Early- vs Late-career	***		Mid-career	***	***	**
	Mid- vs Late-career	NS		Late-career	***	***	**

Notes: \*\*\*, \*\*, \* represent significance at the 0.01, 0.05 and 0.1 levels.

**Table 9 Interactive variable coefficient comparison tests (t-tests) – Gender vs mobility**

a)

		Women			
		Study-based mobility			
Men	Study-based mobility	NO	YES	Study-based mobility	
	NO	***	***	NO vs YES [Women]	NS
	YES	***	***	NO vs YES [Men]	*

b)

		Women			
		Work-based mobility			
Men	Work-based mobility	NO	YES	Work-based mobility	
	NO	***	**	NO vs YES [Women]	*
	YES	***	***	NO vs YES [Men]	NS

Notes: a) study-related mobility; b) work-related mobility.  
 \*\*\*, \*\*, \* represent significance at the 0.01, 0.05 and 0.1 levels.

**Table 10 Interactive variable coefficient comparison tests (t-tests) – Gender vs Collaboration**

a)

		Women			
		Collaboration with own inst.			
Men	Collaboration with own inst.	NO	YES	Collaboration with own inst.	
	NO	***	NS	NO vs YES [Women]	***
	YES	***	***	NO vs YES [Men]	***

b)

		Women			
		Collaboration with own country			
Men	Collaboration with own country	NO	YES	Collaboration with own country	
	NO	***	NS	NO vs YES [Women]	***
	YES	***	***	NO vs YES [Men]	***

c)

		Women			
		Collaboration within Africa			
Men	Collaboration within Africa	NO	YES	Collaboration within Africa	
	NO	***	NS	NO vs YES [Women]	***
	YES	***	NS	NO vs YES [Men]	**

d)

		Women			
		Collaboration outside Africa			
Men	Collaboration outside Africa	NO	YES	Collaboration outside Africa	
	NO	***	NS	NO vs YES [Women]	***
	YES	***	***	NO vs YES [Men]	***

Notes: a) with own inst.; b) with own country; c) within Africa; d) outside Africa.  
 \*\*\*, \*\*, \* represent significance at the 0.01, 0.05 and 0.1 levels.