Additional simulation/robustness check on potential survivor bias.

We selected persons aged 60-75 at time of interview (2008). Due to differential mortality, this is not a perfectly representative sample of persons born 1933-1948.

First, higher education is associated with longevity (e.g., Dolbhammer 2000).
This would only affect the marginal distribution of education in our sample.
Since our analysis is stratified by education, this is not a severe issue for our findings.

Second, mortality may differ by fertility history. The literature suggests that childless women and higher-parity women have a slightly higher mortality risk compared to women in typical parity (2-3 children) (e.g., Lund et al. 1990 for Norway). However, meta analyses (Hurt et al. 2006) report inconsistent associations between women's number of births and mortality with typically very small effect sizes. For contemporary populations either no effect or slightly elevated mortality for women with large number of children was reported. Findings for Austria (which is closest to the German case) suggest that the influence of reproductive history on longevity is small compared to differences in longevity stemming from environmental factors such as level of education or family status (Doblhammer 2000).

Hence, while survivor bias may affect marginal distributions of education, it is unlikely to substantially distort our findings on the transition to parenthood and grandparenthood within educational groups.

However, to challenge these assumptions we did additional robustness checks by adjusting for potential survivor bias due to mortality differentials by family history using parameters found for the Austrian case as reported by Dolbhammer (2000).

Conditional on other factors, relative mortality risks (in terms of odds ratios) for women aged 50+ were (see Dolbhammer 2000, p. 171, Table 1)

0 births	1.15
1 birth	1.01
2 births	1.00 (ref)
3 births	1.02
4 births	1.06
5+ births	1.10

Using these odds ratios, we re-weighted the data in order to counteract potential selection bias. Consequently, childless persons and child-rich persons receive a higher relative weight compared to persons with 2 children.

Note that the association between fertility and mortality in men is much lower than in women. Hence, by assigning the same weights to men, we are overly conservative here.

We re-calculated our main results in Tables 2 & 3 and Figures 1 & 2 applying the weighting. Note that using the weights, standard errors could not be calculated. Hence, we compared point estimates to assess the robustness of our main findings. As the following material will show, estimates obtained from the weighted analyses were very close to the unweighted estimates. If at all, educational differences in parent- and grandparenthood seem to be even

more pronounced when taking into account potential selectivity by the reweighting. None of our results changed substantially.

All these analyses are available in our Stata package (04_Additional_Analyses.do).

References:

Lund, E., Arnesen, E., & Borgan, J. K. (1990). Pattern of childbearing and mortality in married women-a national prospective study from Norway. Journal of Epidemiology and Community Health, 44(3), 237–240. http://doi.org/10.1136/jech.44.3.237

Hurt, L. S., Ronsmans, C., & Thomas, S. L. (2006). The effect of number of births on women's mortality: Systematic review of the evidence for women who have completed their childbearing. Population Studies, 60(1), 55–71. http://doi.org/10.1080/00324720500436011

Doblhammer, G. (2000). Reproductive history and mortality later in life: a comparative study of England and Wales and Austria. Population Studies, 54(2), 169–176. http://doi.org/10.1080/713779087

Table A2 Men's cumulative probability of being father and grandfather at different ages by part of Germany and educational level (inverse odds ratio weighting)

	East						West					
	Fathers			Grandfathers			Fathers			Grandfathers		
At age	Lower	Higher	OR	Lower	Higher	OR	Lower	Higher	OR	Lower	Higher	OR
20	9	5	2.04		–		3	2	1.91		–	
25	51	45	1.28		–		35	23	1.82		–	
30	75	75	0.97		–		68	60	1.42		–	
35	82	85	0.80		–		81	77	1.27		–	
40	83	89	0.61	2	1	2.29	83	81	1.16	1	0	2.35
45	84	90	0.58	25	16	1.73	84	82	1.16	6	2	3.56
50	84	90	0.59	47	39	1.37	85	84	1.10	20	8	2.85
55	84	90	0.59	61	56	1.27	85	84	1.10	38	21	2.37
60	84	90	0.59	68	69	0.96	85	84	1.10	56	35	2.31
65	84	90	0.59	71	74	0.85	85	84	1.07	63	51	1.68
70	84	90	0.59	72	78	0.74	85	84	1.07	68	62	1.29

Notes: Recalculation of Table 2 using inverse odds ratio weighting.

Table A3 Women's cumulative probability of being mother and grandmother at different ages by part of Germany and educational level (inverse odds ratio weighting)

	East						West					
	Mothers			Grandmothers			Mothers			Grandmothers		
At age	Lower	Higher	OR	Lower	Higher	OR	Lower	Higher	OR	Lower	Higher	OR
20	25	15	1.97		–		15	1	12.22		–	
25	74	64	1.62		–		59	22	4.99		–	
30	88	85	1.27		–		80	46	4.70		–	
35	90	90	1.00		–		85	64	3.24		–	
40	90	90	1.08	9	3	2.74	86	67	2.97	3	0	n.e.
45	91	90	1.18	36	22	1.95	86	69	2.74	13	1	9.91
50	91	90	1.18	59	43	1.90	86	69	2.74	29	4	9.30
55	91	90	1.18	69	64	1.29	86	69	2.74	46	15	4.71
60	91	90	1.18	76	69	1.40	86	69	2.74	59	33	2.94
65	91	90	1.18	79	75	1.21	86	69	2.74	69	42	3.07
70	91	90	1.18	79	75	1.21	86	69	2.74	73	47	3.12

Notes: Recalculation of Table 3 using inverse odds ratio weighting.

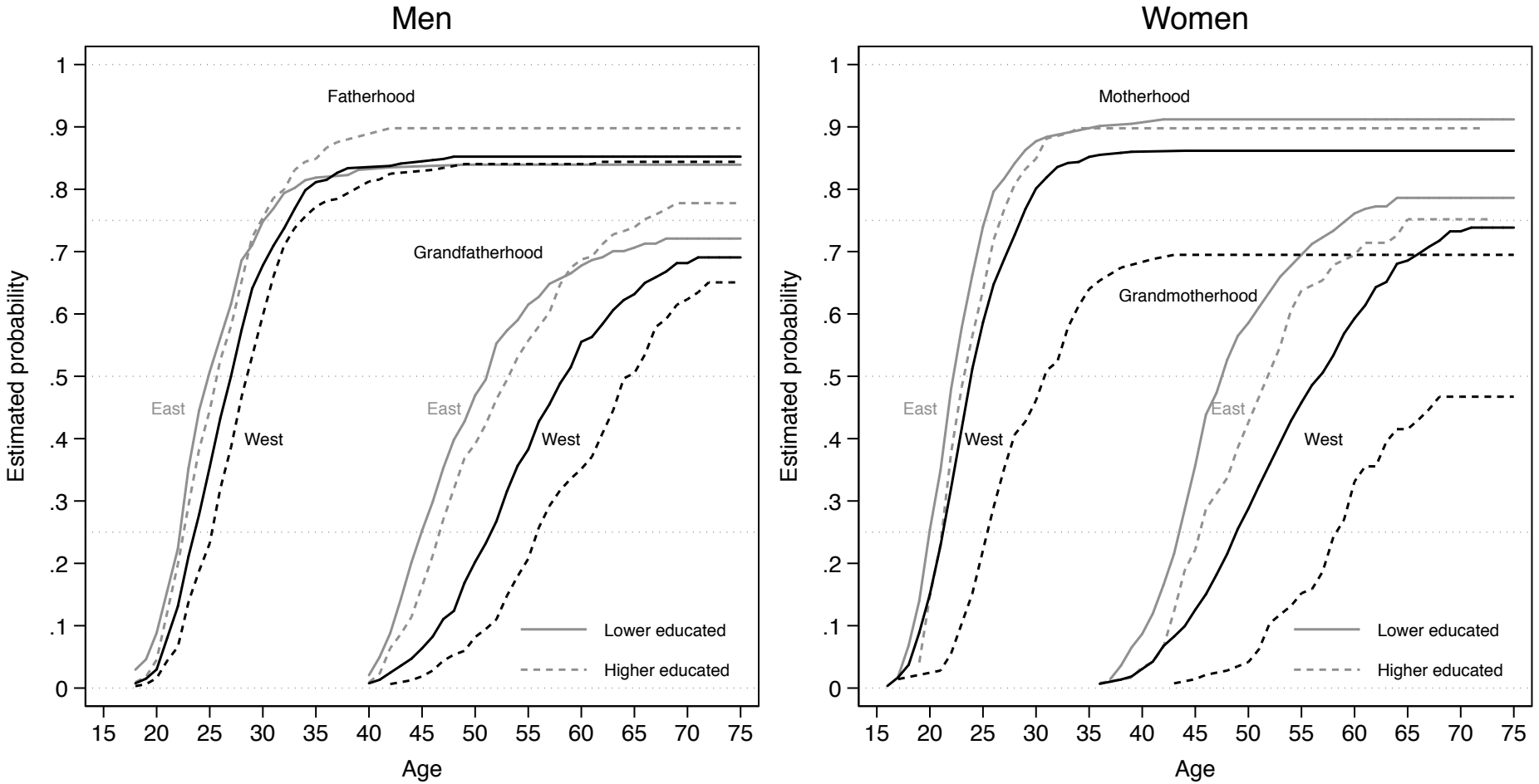

Fig. A1 Probability of parenthood and grandparenthood by gender, part of Germany, and education. Cumulated probability functions obtained by Kaplan-Meier estimation (inverse odds ratio weighting)

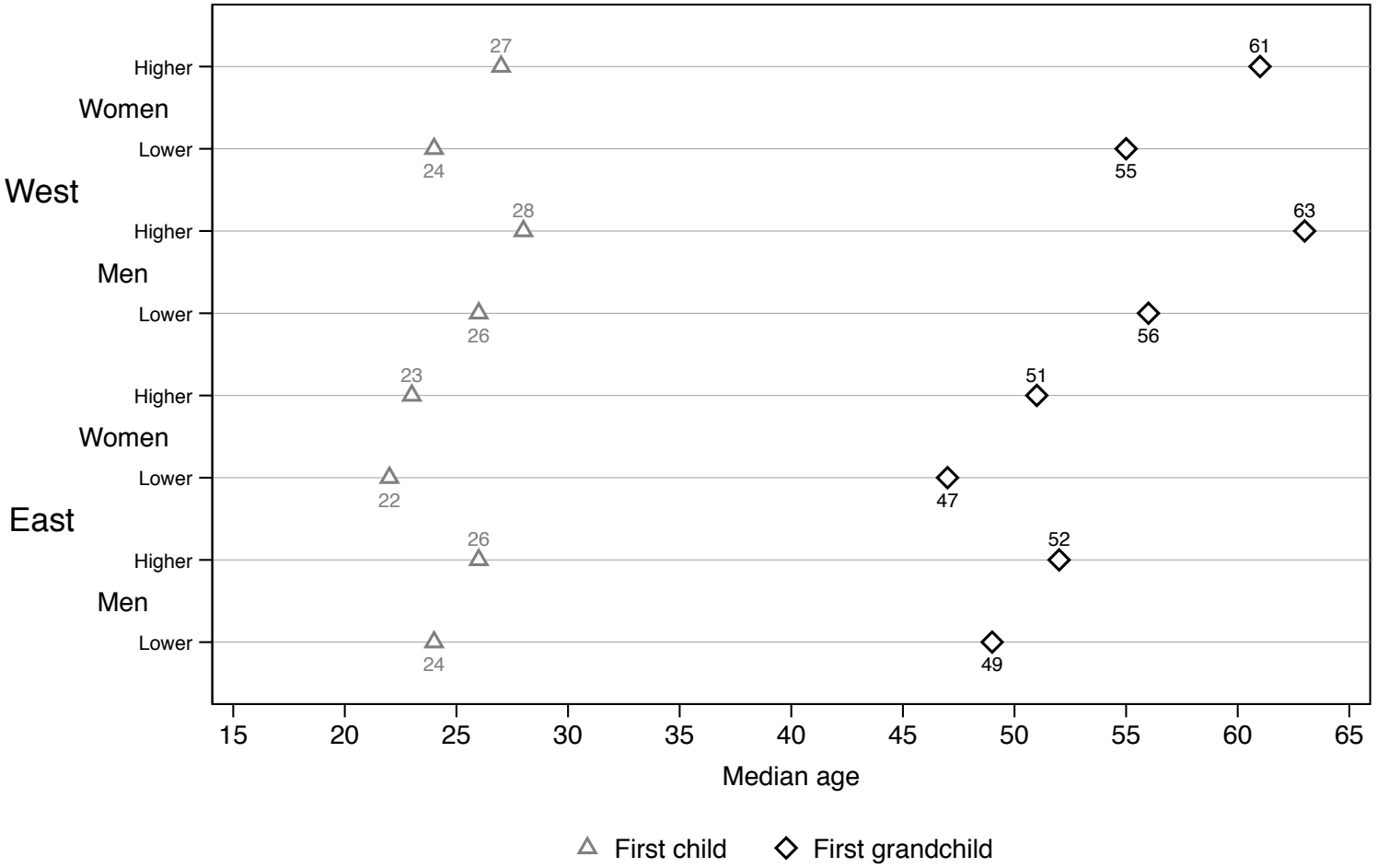

Fig. 2 Educational differences in median age at grandparenthood. Calculations of median ages and 95% confidence intervals based on Kaplan-Meier estimation for parents (inverse odds ratio weighting)