Supplementary material

Local context

With a distinct media landscape and strong regional tradition of communicating death via newspaper obituaries (Seethaler 2005), Vorarlberg with a population base of about 190,000 in 1946 (Land Vorarlberg 2024) is an ideal region to provide a better understanding of the historical development of lifespan inequalities. Between 1950 and 1970, Vorarlberg's economy was dynamic with the industry experiencing a considerable expansion and the gross domestic product being above the Austrian average. The Austrian welfare state also expanded during this time, including increased coverage of social insurance, pension, unemployment and sickness funds (Tálos 2006). On the other hand, Vorarlberg was among those affected by the worldwide economic crisis in the 1970s, particularly after 1979 (Bleyle n.d.).

Obituaries in *Vorarlberger Nachrichten*

While obituaries placed in the *Vorarlberger Nachrichten* (VN) in 2024 distinguish five main sizes and prices (Vorarlberger Nachrichten 2024), the prices of obituaries published after 1946 are unknown. However, an indication that the price of the obituary was also historically dependent on its space in the newspaper is given in the VN itself. Until early 1946, obituaries were not framed in boxes, but printed as paragraphs in the running text of the newspaper's 'personal' column. Newspaper notices were billed by word, with one word costing 12 Groschen (equivalent to around EUR 0.02 in 1946 prices) (Vorarlberger Nachrichten 1946). In 1946, obituaries were 105 words long on average (minimum: 24, maximum 214), implying an average price of 12.6 Schilling (equivalent to EUR 0.91 in 1946 prices). For comparison, a monthly subscription to the newspaper cost 3.75 Schilling (EUR 0.27 in 1946 prices). Upon request, VN was not able to report the exact prices of obituaries for the time between 1946 and 1981. However, the practice of higher

pricing by larger obituary frame size also historically was confirmed by a regional mortician.

Obituary prices are paid by the originator, which in the region of Vorarlberg most commonly is the deceased's family. In some cases, (additional) obituaries are placed by the (former) employer and other institutions and individuals that played a role in the deceased's life (Mayer, Berger, and Oberndorfer 2023).

Table A-1 Comparison of demographic data: deceased with obituaries published in *Vorarlberger Nachrichten* (VN) versus register-based deaths

	Absolute number of deaths			Sex composition				Mean lifespan		
	Registry data, n	Obituary data, n	Coverage of deaths in obituaries, %	Females (registry data), n	Females (obituary data), n	Females (registry data), %	Females (obituary data), %	Registry data, years	Obituary data, years	Difference in mean lifespan, years
1946	1929	447	23.17	931	197	48.26	44.07	53.50	60.04	6.54
1951	2039	638	31.29	990	262	48.55	41.07	N/A	65.30	N/A
1956	2143	779	36.35	1045	347	48.76	44.54	60.77	68.25	7.48
1961	2117	950	44.87	931	383	43.98	40.32	61.18	67.75	6.57
1966	2249	1215	54.02	1055	532	46.91	43.79	62.85	68.99	6.14
1971	2397	1486	61.99	1123	681	46.85	45.83	63.62	69.45	5.83
1976	2442	1846	75.59	1167	844	47.79	45.72	66.74	71.10	4.36
1981	2387	1994	83.54	1135	930	47.55	46.64	67.42	70.71	3.29

Note: N/A = not available. Obituary data excludes deaths prior to the year of newspaper publication (applicable between 1946 and 1961).

Source: 1946: Österreichisches Statistisches Zentralamt 1947, table 3, p. 172; 1951: Österreichisches Statistisches Zentralamt 1953, table 1, p. 1; 1956: Österreichisches Statistisches Zentralamt 1958, table 15, p. XXII; 1961–1981: Statistik Austria 2022.

Table A-2: Differences in mean lifespan by obituary size: adults aged 18 and above (sensitivity analysis)

	1946 (n=379)			**1951** (n=576)			**1956** (n=714)			**1961** (n=865)			**1966** (n=1144)			**1971** (n=1409)			**1976** (n=1773)			**1981** (n=1933)		
Lifespan	**Coef.**	**95% CI**		**Coef.**	**95% CI**		**Coef.**	**95% CI**		**Coef.**	**95% CI**		**Coef.**	**95% CI**		**Coef.**	**95% CI**		**Coef.**	**95% CI**		**Coef.**	**95% CI**	
Obituary size																								
Small	ref.			ref.			ref.			ref.			ref.			ref.			ref.			ref.		
Medium	2.80	-1.24	6.84	2.04	-1.79	5.87	-1.31	-4.39	1.77	3.47	0.61	6.33	-0.92	-3.37	1.54	0.52	-1.54	2.57	0.81	-0.72	2.33	1.77	0.28	3.27
Large	4.55	-5.46	14.56	7.28	-3.14	17.70	-5.93	-13.80	1.95	7.67	-0.01	15.36	2.08	-3.09	7.24	3.78	-3.45	11.02	5.25	-0.63	11.14	5.16	-0.32	10.65

Note: Differences are estimated by separate linear regressions adjusted for sex and multiple obituaries.

Table A-3: Demographic and sociodemographic characteristics of male deceased with published obituaries in Vorarlberg: 1946–1981 (sensitivity analysis)

	1946		1951		1956		1961		1966		1971		1976		1981	
	N	Mean (SD) or %	N	Mean (SD) or %	N	Mean (SD) or %	N	Mean (SD) or %	N	Mean (SD) or %	N	Mean (SD) or %	N	Mean (SD) or %	N	Mean (SD) or %
Lifespan	223	58.41 (21.11)	347	64.49 (16.05)	402	66.47 (15.68)	529	66.28 (17.12)	650	67.38 (15.20)	783	66.05 (18.13)	973	68.12 (16.62)	1052	66.76 (18.40)
Multiple obituaries	4	1.79	28	8.07	35	8.71	46	8.70	69	10.62	103	13.15	102	10.48	149	14.16
Originator																
Family	223	100.00	342	98.56	391	97.26	514	97.16	634	97.54	766	97.83	944	97.02	1029	97.81
Employer/others	0	0.00	5	1.44	11	2.74	15	2.84	16	2.46	17	2.17	29	2.98	23	2.19
Obituary size																
Small	152	68.16	283	81.56	317	78.86	414	78.26	514	79.08	614	78.42	728	74.82	738	70.15
Medium	62	27.80	56	16.14	74	18.41	101	19.09	109	16.77	158	20.18	232	23.84	295	28.04
Large	9	4.04	8	2.31	11	2.74	14	2.65	27	4.15	11	1.40	13	1.34	19	1.81
Tertiary education	4	1.79	13	3.75	17	4.23	17	3.21	29	4.46	24	3.07	29	2.98	30	2.85
Collar of Profession																
None (reported)	71	31.84	69	19.88	80	19.90	147	27.79	179	27.54	245	31.29	361	37.10	392	37.26
Blue collar	58	26.01	125	36.02	169	42.04	196	37.05	209	32.15	309	39.46	336	34.53	357	33.94
White collar	94	42.15	153	44.09	153	38.06	186	35.16	262	40.31	229	29.25	276	28.37	303	28.80
Honorary service	9	4.04	30	8.65	34	8.46	45	8.51	105	16.15	93	11.88	126	12.95	129	12.26

Note: Individuals without data on lifespan and death prior to the year of newspaper publication were excluded.

Table A-4: Demographic and sociodemographic characteristics of female deceased with published obituaries in Vorarlberg: 1946–1981 (sensitivity analysis)

	1946		1951		1956		1961		1966		1971		1976		1981	
	N	Mean (SD) or %	N	Mean (SD) or %	N	Mean (SD) or %	N	Mean (SD) or %	N	Mean (SD) or %	N	Mean (SD) or %	N	Mean (SD) or %	N	Mean (SD) or %
Lifespan	172	62.16 (18.59)	231	66.52 (16.36)	319	70.49 (15.44)	347	69.98 (14.82)	501	71.07 (15.23)	648	73.56 (13.40)	823	74.62 (13.18)	914	72.26 (14.32)
Multiple obituaries	1	0.58	2	0.87	8	2.51	5	1.44	7	1.40	2	0.31	13	1.58	22	2.41
Originator																
Family	172	100.00	231	100.00	319	100.00	346	99.71	499	99.60	644	99.38	819	99.51	908	99.34
Employer/others	0	0.00	0	0.00	0	0.00	1	0.29	2	0.40	4	0.62	4	0.49	6	0.66
Obituary size																
Small	130	75.58	209	90.48	275	86.21	309	89.05	444	88.62	563	86.88	657	79.83	697	76.26
Medium	38	22.09	20	8.66	41	12.85	36	10.37	51	10.18	80	12.35	158	19.20	208	22.76
Large	4	2.33	2	0.87	3	0.94	2	0.58	6	1.20	5	0.77	8	0.97	9	0.98
Tertiary education	0	0.00	0	0.00	1	0.31	1	0.29	0	0.00	1	0.15	4	0.49	3	0.33
Collar of Profession																
None (reported)	146	84.88	212	91.77	276	86.52	311	89.63	447	89.22	593	91.51	763	92.71	832	91.03
Blue collar	5	2.91	3	1.30	6	1.88	5	1.44	4	0.80	4	0.62	8	0.97	18	1.97
White collar	21	12.21	16	6.93	37	11.60	31	8.93	50	9.98	51	7.87	52	6.32	64	7.00
Honorary service	0	0.00	0	0.00	7	2.19	5	1.44	15	2.99	5	0.77	8	0.97	6	0.66

Note: Individuals without data on lifespan and death prior to the year of newspaper publication were excluded.

Table A-5: Differences in mean lifespan by binary obituary size: small compared to medium and large obituaries (sensitivity analysis)

	1946 (n=395)			**1951** (n=578)			**1956** (n=721)			**1961** (n=876)			**1966** (n=1151)			**1971 (n=1431)**			**1976 (n=1796)**			**1981 (n=1966)**		
Lifespan	**Coef.**	**95% CI**		**Coef.**	**95% CI**		**Coef.**	**95% CI**		**Coef.**	**95% CI**		**Coef.**	**95% CI**		**Coef.**	**95% CI**		**Coef.**	**95% CI**		**Coef.**	**95% CI**	
Obituary size																								
Small	ref.			ref.			ref.			ref.			ref.			ref.			ref.			ref.		
Medium and large	6.07	1.70	10.44	2.70	-1.07	6.47	-1.04	-4.28	2.21	4.71	1.73	7.70	-0.06	-2.50	2.38	1.19	-1.05	3.44	1.07	-0.59	2.74	2.70	1.06	4.33

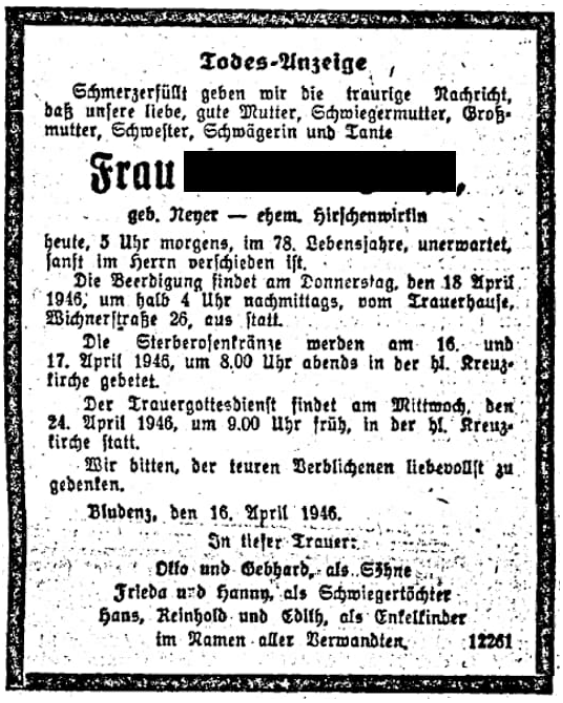
Note: Differences are estimated by separate linear regressions adjusted for sex and multiple obituaries.

Table A-6: Differences in mean lifespan by occupation type including reporting of the husband's profession for females (sensitivity analysis)

	1946 (n=395)			**1951** (n=578)			**1956** (n=721)			**1961** (n=876)			**1966** (n=1151)			**1971** (n=1431)			**1976** (n=1796)			**1981**
Lifespan	**Coef.**	**95% CI**		**Coef.**	**95% CI**		**Coef.**	**95% CI**		**Coef.**	**95% CI**		**Coef.**	**95% CI**		**Coef.**	**95% CI**		**Coef.**	**95% CI**		**Coef.**
Obituary size																						
None (reported)	ref.			ref.			ref.			ref.			ref.			ref.			ref.			ref.
Blue collar	16.69	10.71	22.68	3.45	-0.88	7.79	3.41	-0.22	7.05	2.48	-0.76	5.73	3.20	0.38	6.02	3.41	0.86	5.95	1.90	-0.22	4.02	1.02
White collar	13.63	8.70	18.55	4.84	0.87	8.81	3.89	0.53	7.26	4.79	1.75	7.83	2.25	-0.22	4.73	3.11	0.61	5.60	2.05	-0.02	4.13	3.31
Husband's profession reported	11.61	4.24	18.97	6.23	-0.19	12.65	3.04	-2.09	8.17	4.73	-0.18	9.63	7.96	3.09	12.83	6.66	1.28	12.03	9.48	2.87	16.10	6.45

Note: Differences are estimated by separate linear regressions adjusted for sex and multiple obituaries.

Figure A-1: Obituary published in *Vorarlberger Nachrichten* (17th of April 1946, 2nd volume, No. 80, p. 3; name censored)



Todes-Anzeige

Schmerzerfüllt geben wir die traurige Nachricht, daß unsere liebe, gute Mutter, Schwiegermutter, Großmutter, Schwester, Schwägerin und Tante

Frau [redacted],

geb. Neyer — ehem. Hirschenwirtin

heute, 5 Uhr morgens, im 78. Lebensjahre, unerwartet, sanft im Herrn verschieden ist.

Die Beerdigung findet am Donnerstag, den 18 April 1946, um halb 4 Uhr nachmittags, vom Trauerhause, Wichnerstraße 26, aus statt.

Die Sterberosenkränze werden am 16. und 17. April 1946, um 8.00 Uhr abends in der hl. Kreuzkirche gebetet.

Der Trauergottesdienst findet am Mittwoch, den 24. April 1946, um 9.00 Uhr früh, in der hl. Kreuzkirche statt.

Wir bitten, der teuren Verblichenen liebevollst zu gedenken.

Bludenz, den 16. April 1946.

In tiefer Trauer:

Otto und Gebhard, als Söhne
Frieda und Hanny, als Schwiegertöchter
Hans, Reinhold und Edith, als Enkelkinder
im Namen aller Verwandten.

12261

Figure A-2: Obituary published in *Vorarlberger Nachrichten* (18th of April 1966, 22nd volume, No. 88, p. 7; name censored)



Todesanzeige

Der allmächtige Gott hat heute unseren Vater, Großvater, Schwiegervater, Bruder, Onkel und Paten

Herrn [redacted]

Landwirt — Jahrgang 1891

nach kurzer Krankheit, versehen mit den hl. Sterbesakramenten, zu sich in den ewigen Frieden heimgeholt. Die Seelenrosenkränze beten wir am Montag, 18. April, und Dienstag, 19. April, jeweils um 19.30 Uhr in der Pfarrkirche Nüziders. Am Mittwoch, 20. April, um 8.45 Uhr geleiten wir unseren lieben Verstorbenen von der Leichenkapelle aus zur letzten Ruhestätte. Anschließend findet der Bestattnisgottesdienst statt.

Wir bitten, des lieben Verstorbenen im Gebete zu gedenken.

Nüziders, Bludenz, Bürs, Lauterach, St. Anton a. A., Lenzerheide (Schweiz), Flienland (Neuseeland), am 17. April 1966

In tiefer Trauer: **Gerold, Othmar, Juliane, Eugenie, August, Lydia, Alma und Karl als Kinder mit Schwiegerkindern und Enkelkindern im Namen aller Verwandten**

Figure A-3: Obituary published in *Vorarlberger Nachrichten* (17th of April 1981, 37th volume, No. 90, p. 9; name censored)



Todesanzeige

Herr, dein Wille geschehe.

Wir beugen uns dem Willen unseres Schöpfers, der meinen lieben Gatten, unseren guten Vater, Schwiegervater, Großvater, Sohn, Bruder, Schwiegersohn, Schwager, Onkel und Paten

Herrn [redacted]t

Gemeindearbeiter — Jahrgang 1926

nach kurzer Krankheit, unerwartet rasch, nach Empfang der heiligen Sterbesakramente, zu sich in den ewigen Frieden heimholte. Wir gedenken des lieben Verstorbenen bei der Karfreitagliturgie um 19.30 Uhr in der Pfarrkirche Viktorsberg. Die Beerdigung findet am Karsamstag statt. Weggang vom Trauerhaus um 10 Uhr. Den Seelengottesdienst halten wir am Ostermontag um 9 Uhr in der Pfarrkirche Viktorsberg.

Wir bitten um ein stilles Gedenken im Gebete.

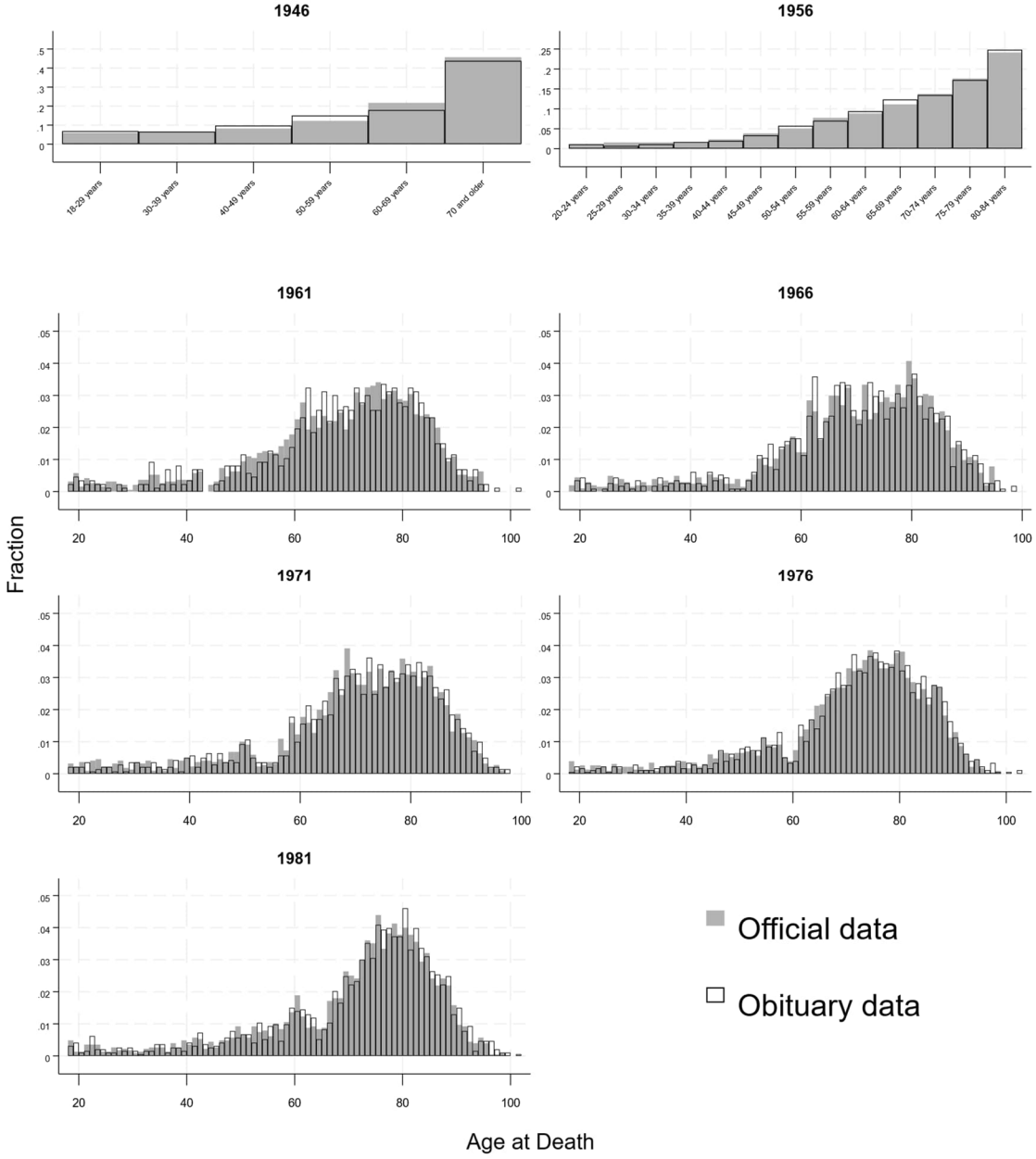
Viktorsberg, Berlin, Röthis, Dornbirn, am 16. April 1981

In Liebe und Dankbarkeit:

Theresia Lampert geb. Marte, Gattin
Christl und **Detlef Oderwald** mit **Thorsten**
Monika, Othmar und **Gerda**
als Kinder, Schwiegersohn und Enkel
Wwe. Anna Lampert, Mutter

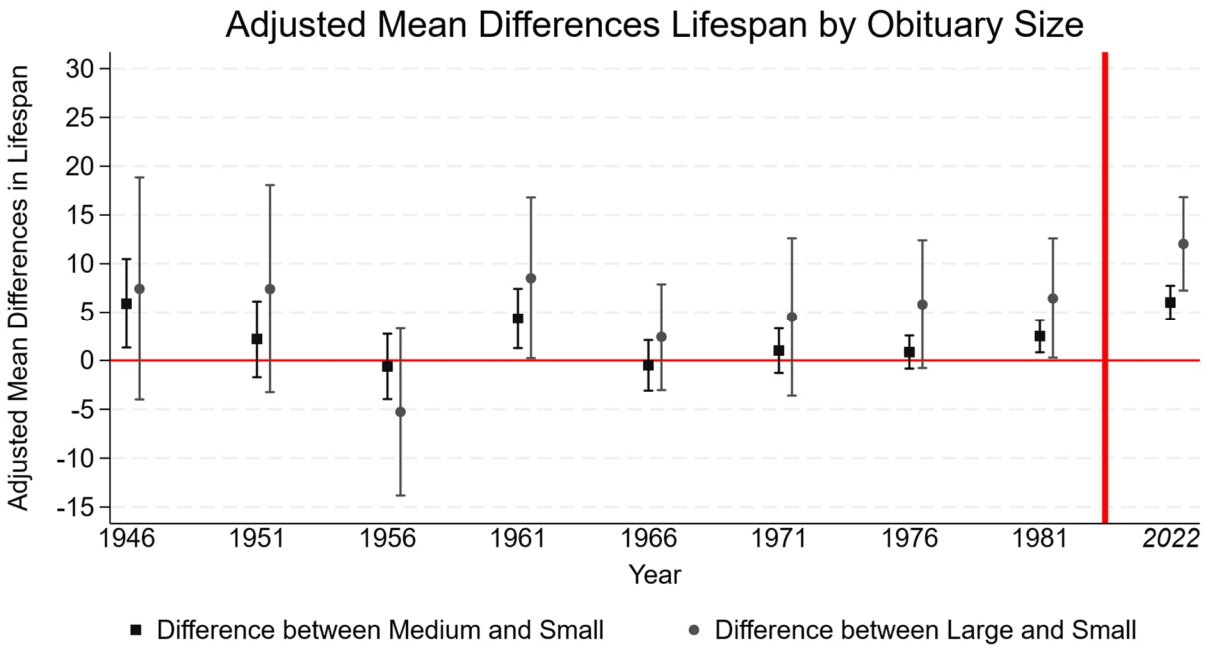
Hugo, Klaudia Nägele, Heinrich,
Fini Albinger, Geschwister, mit Familien
Wwe. Traudl Lampert,
Schwägerin, mit Kindern
Ludwig Marte, Schwiegervater
im Namen aller Verwandten

Figure A-4: Comparing annual lifespan distributions between obituary and register-based data for 1946, 1956, 1961, 1966, 1971, 1976, and 1981: excluding deaths before age 18 (sensitivity analysis)



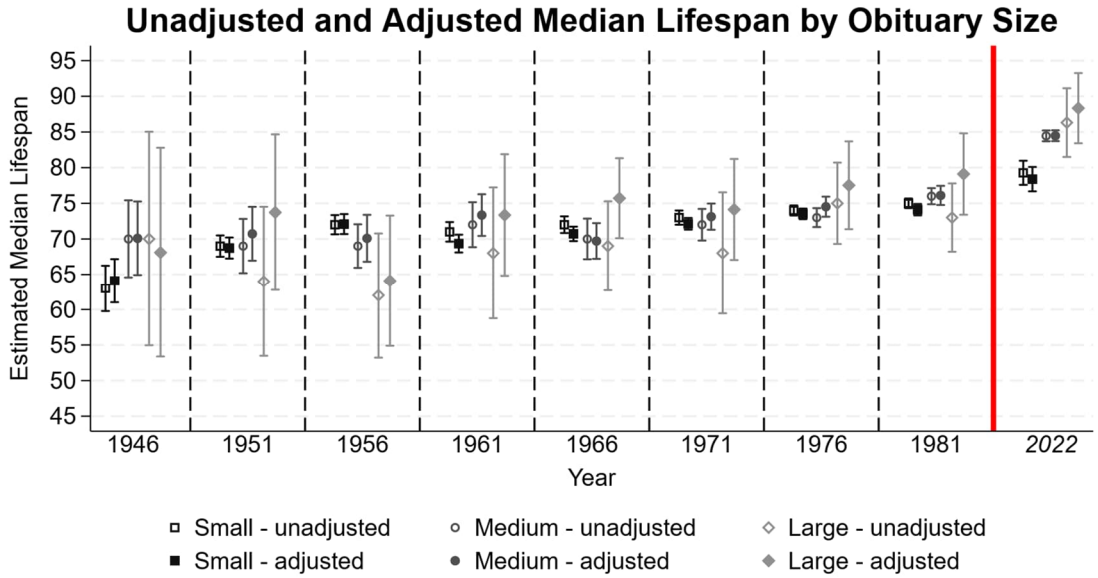
Note: Vertical axis refers the fraction of the population. Note that the register-based data reports in 1946 and 1956 provide data in five-year age bands with slightly different age definitions.

Figure A-5: Differences in mean lifespan estimated by linear regression and adjusted for sex and multiple obituaries



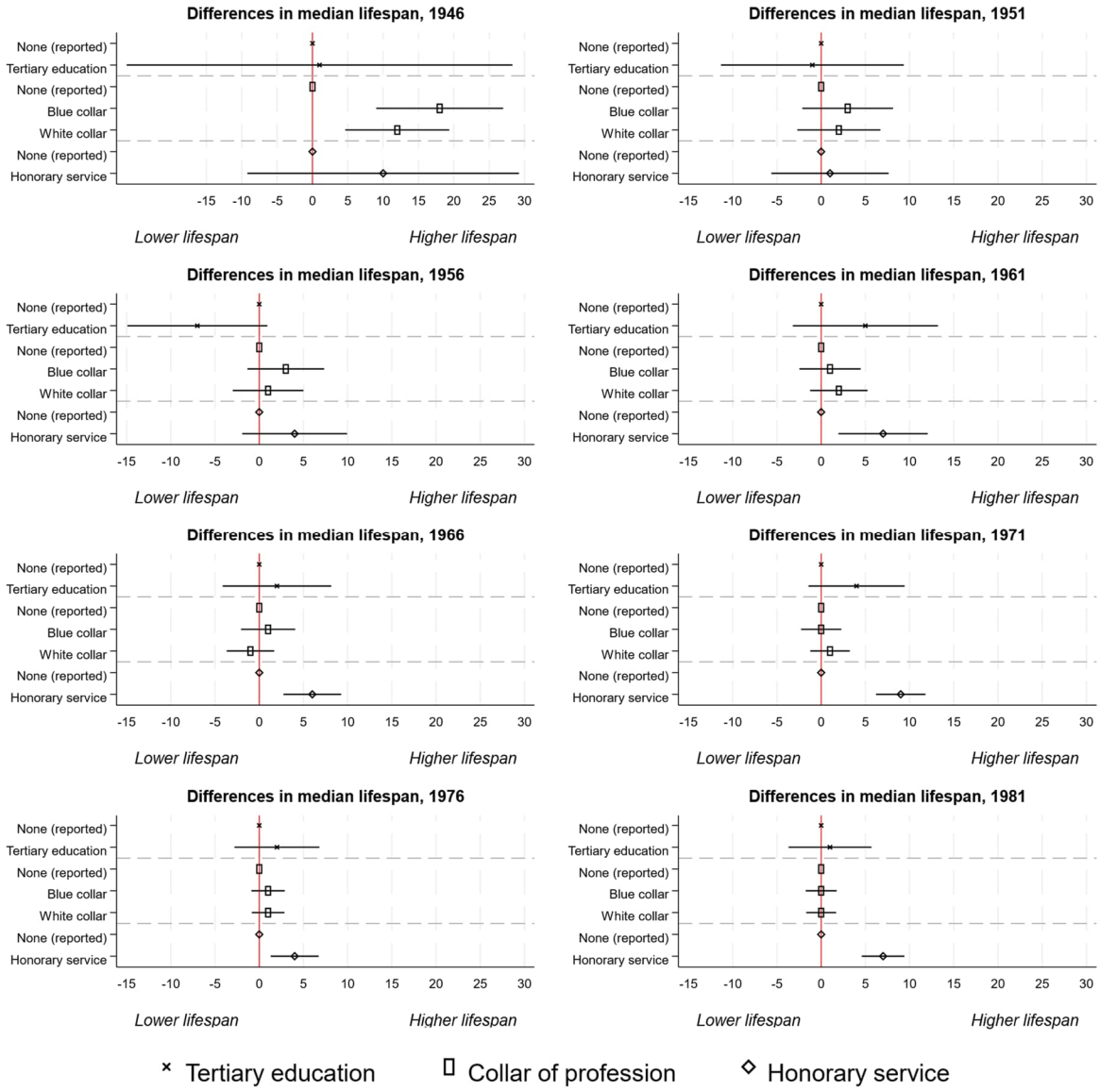
Note: Data for 2022 (Q3 & Q4) was previously published in Mayer, Berger, and Oberndorfer (2023); note that this datapoint is 41 years after the last datapoint in the series.

Figure A-6: Development of unadjusted and adjusted median lifespan for small, medium, and large-sized obituaries (sensitivity analysis)



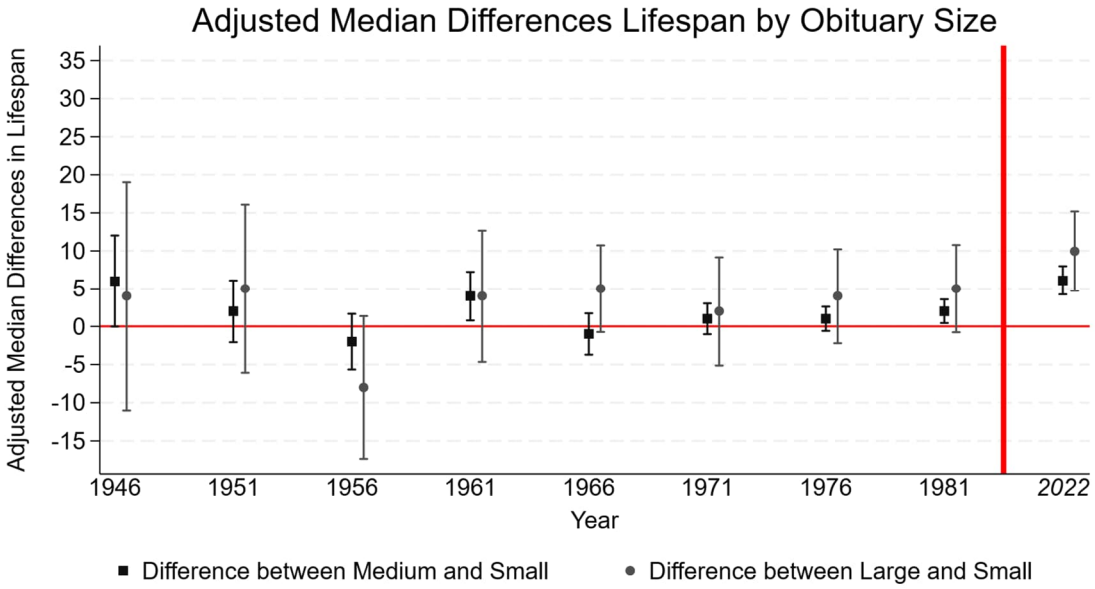
Note: Medians are separately estimated for each year by quantile regression. Adjusted estimates are controlled for sex and multiple obituaries. Data for 2022 was previously published in Mayer, Berger, and Oberndorfer (2023).

Figure A-7: Differences in median lifespan by different social and economic indicators collected from obituaries (sensitivity analysis)



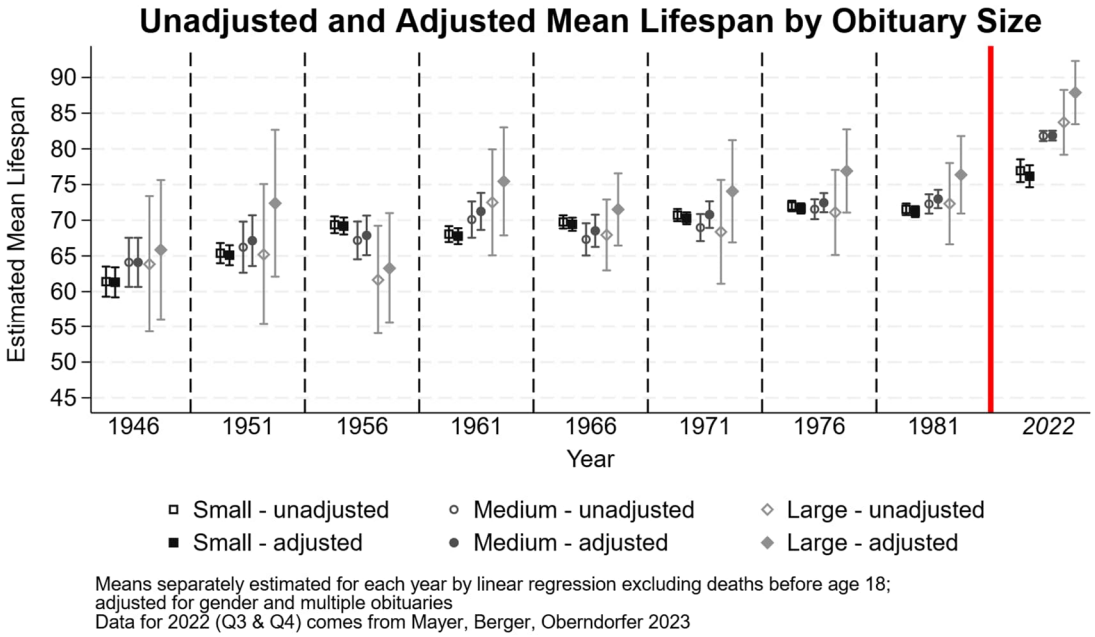
Note: Differences are estimated by separate quantile regressions adjusted for sex and multiple obituaries.

Figure A-8: Differences in median lifespan estimated by quantile regression and adjusted for sex and multiple obituaries (sensitivity analysis)



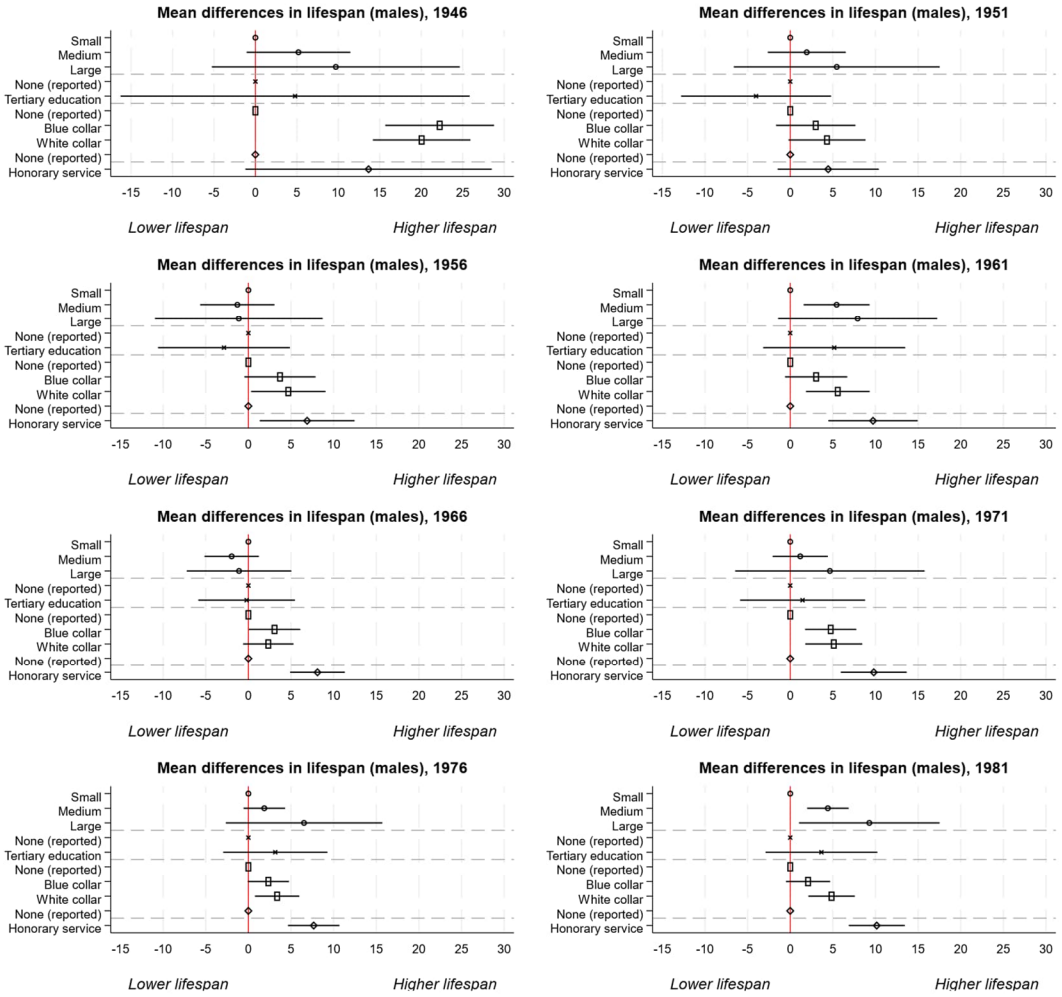
Note: Data for 2022 (Q3 & Q4) comes from Mayer, Berger, and Oberndorfer (2023).

Figure A-9: Development of unadjusted and adjusted mean lifespan for small, medium and large-sized obituaries: excluding deaths before age 18 (sensitivity analysis)



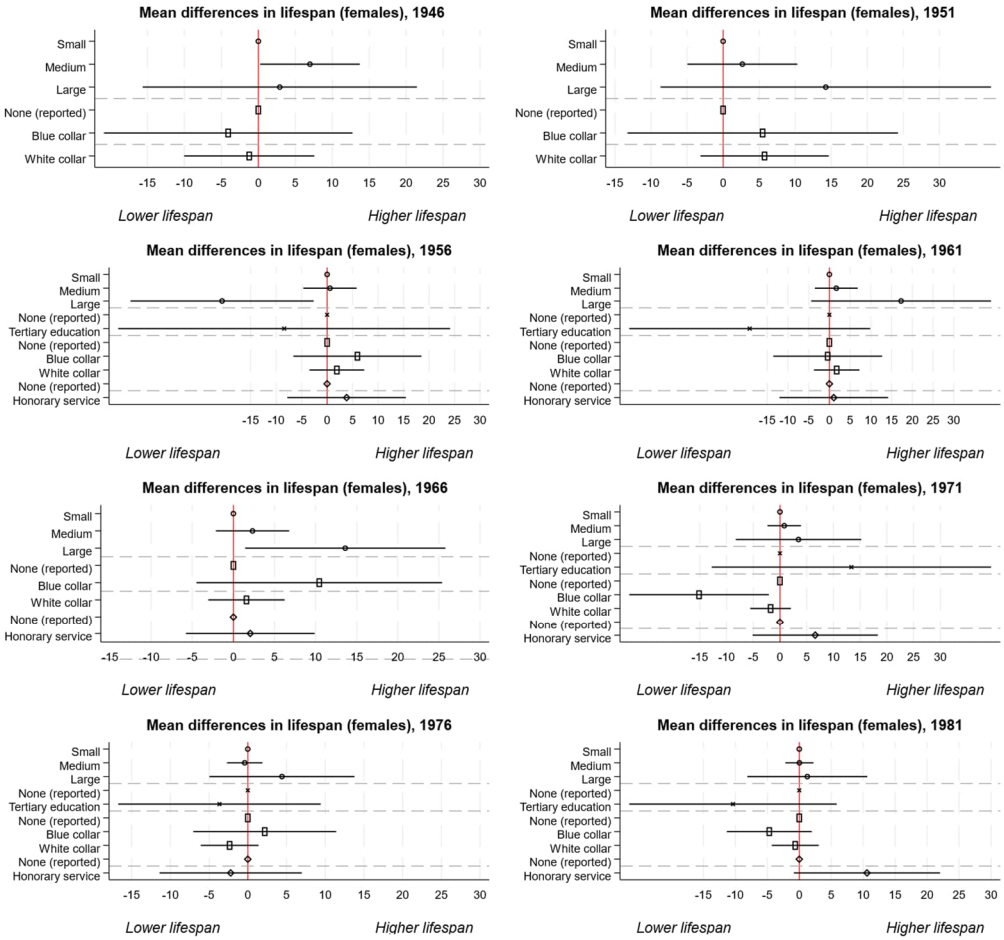
Note: Means are separately estimated for each year by linear regression. Adjusted estimates are controlled for sex and multiple obituaries. Data for 2022 (Q3 & Q4) was previously published in Mayer, Berger, and Oberndorfer (2023); note that this datapoint is 41 years after the last datapoint in the series.

Figure A-10: Differences in mean lifespan by different social and socioeconomic indicators collected from obituaries: <u>males</u> (sensitivity analysis)



Note: Differences are estimated by separate linear regressions adjusted for multiple obituaries.

Figure A-11: Differences in mean lifespan by different social and socioeconomic indicators collected from obituaries: <u>females</u> (sensitivity analysis)



Note: Differences are estimated by separate linear regressions adjusted for multiple obituaries.

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