

Does living in a retirement village extend life expectancy? The case of Whiteley Village

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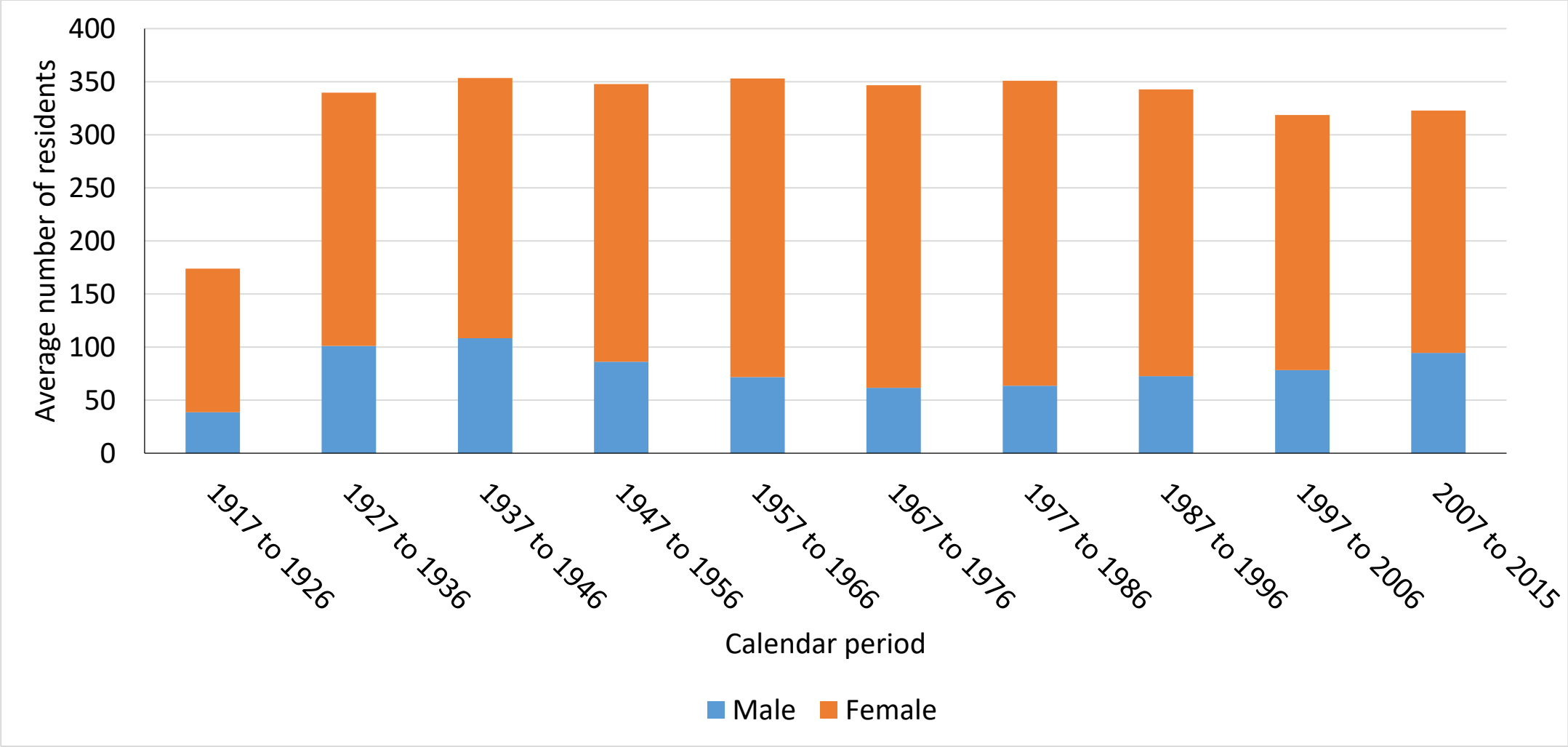
Background

- Around 500 residents, most of whom entered with limited financial means
- 262 cottages, 51 extra care apartments, a residential home and nursing home
- Cottage residents pay approx £1,000 per month
- The Whiteley Homes Trust aims to enable villagers to live as independently as possible
- Extensive social facilities offered

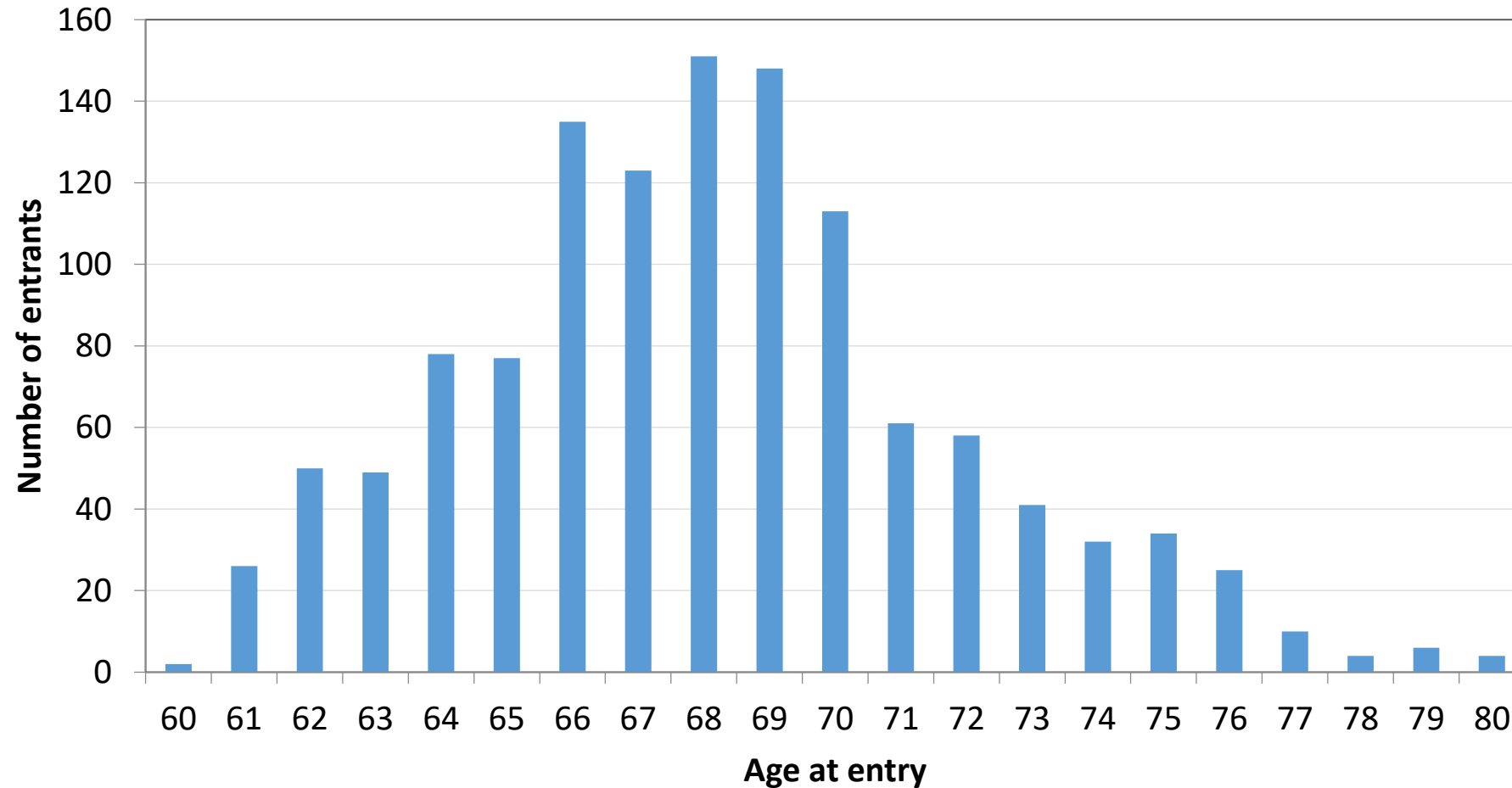
Eligibility criteria

- Whiteley was founded by a charitable bequest and had certain requirements of its intended villagers:
 - “Poor persons...of good character and of sound mind”
 - Relying on a State provided pension
 - Preference given to people “engaged in commercial or agricultural pursuits”
 - In good health at entry (ie expected to live independently for several years)

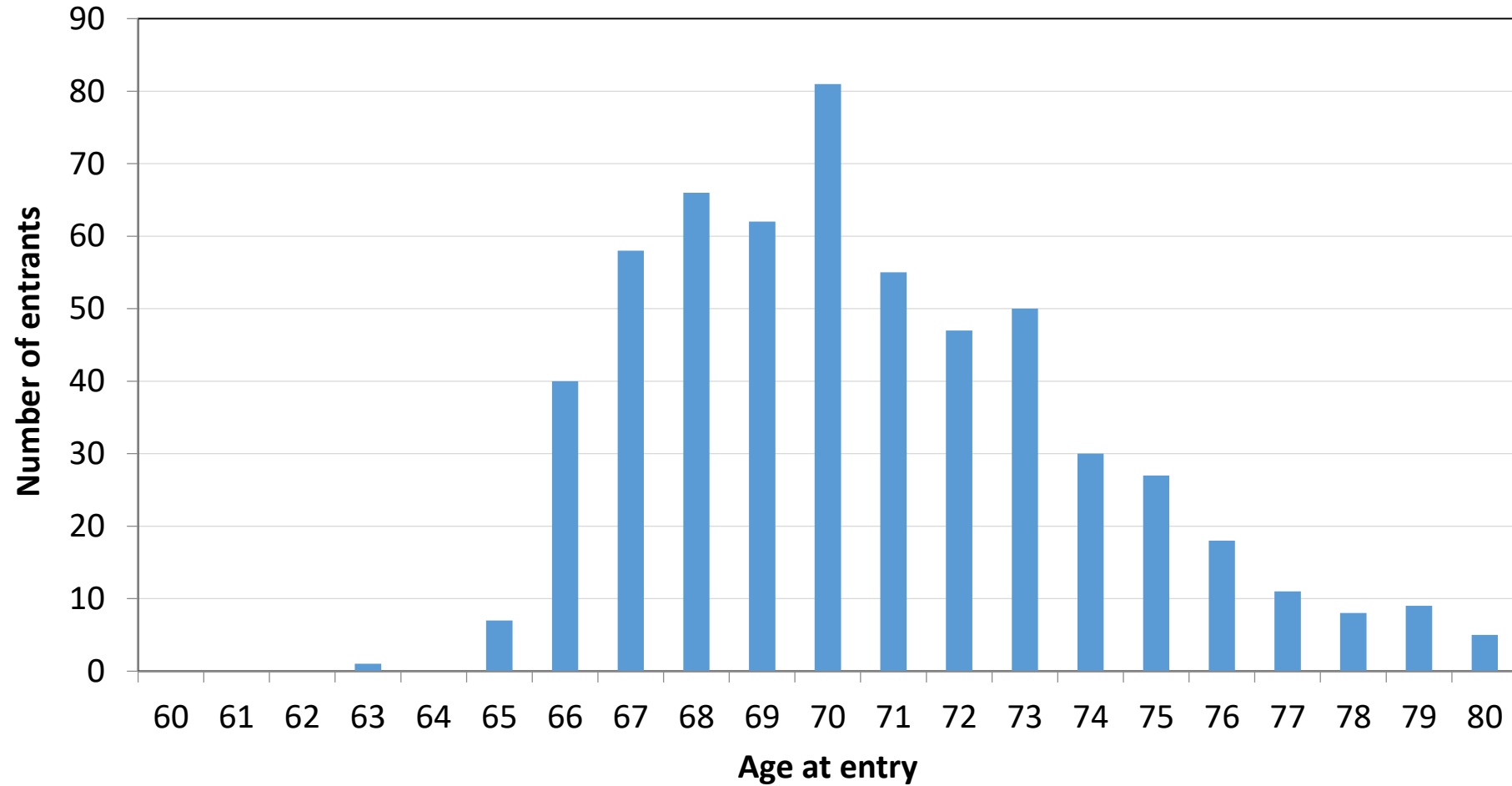
Gender breakdown of Whiteley population over time



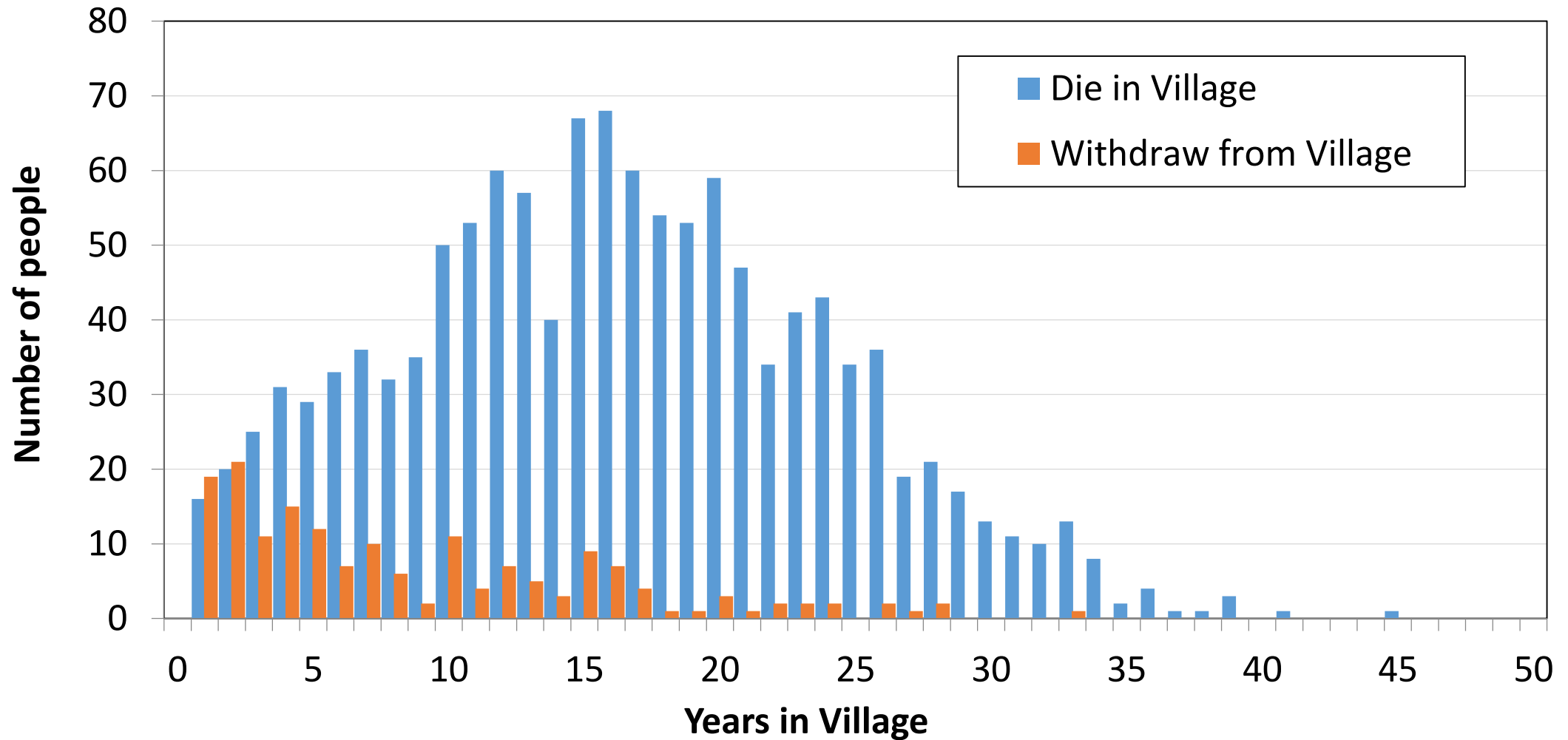
Age at entry in to Village - Women



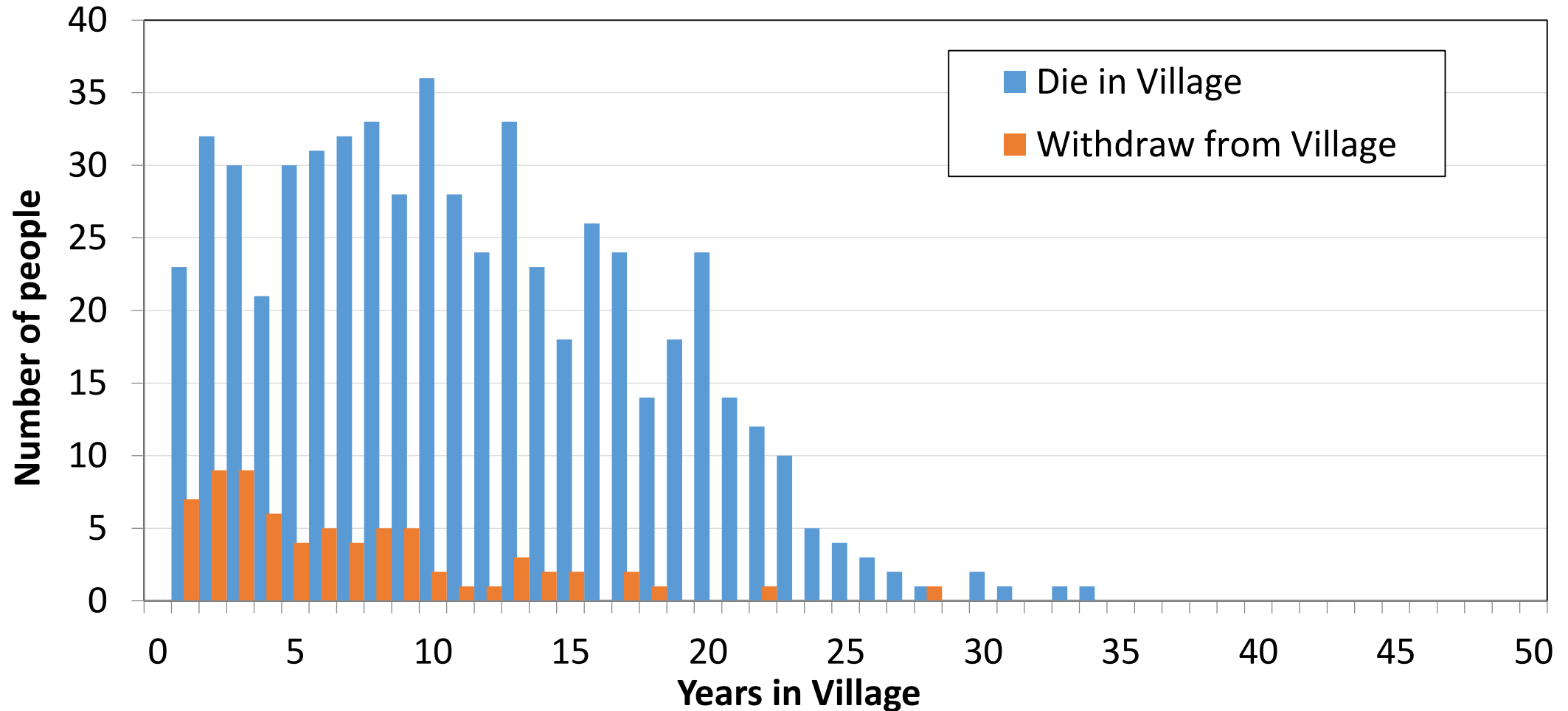
Age at entry in to Village - Men



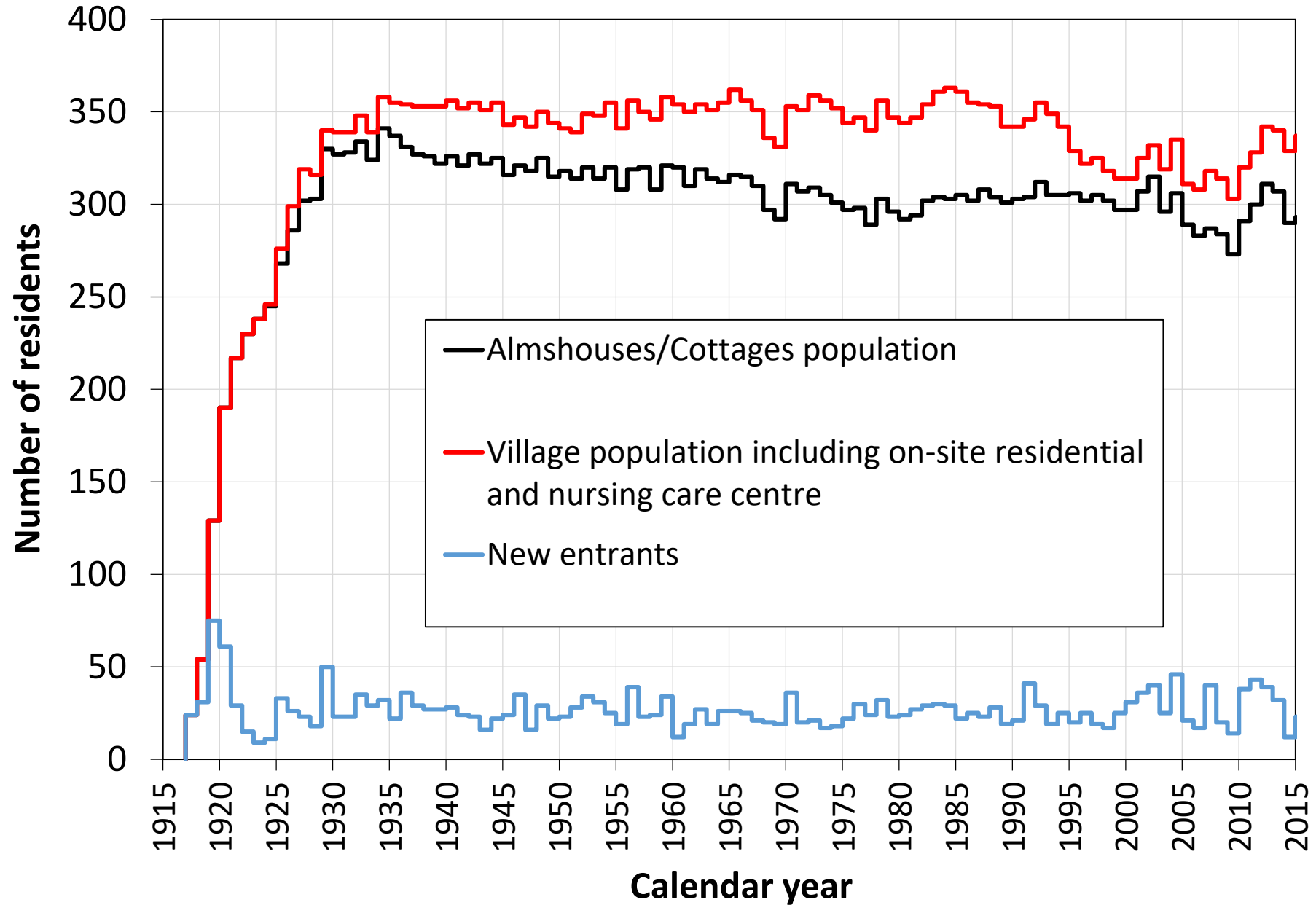
Lengths of Village stay - Women



Lengths of Village stay - Men



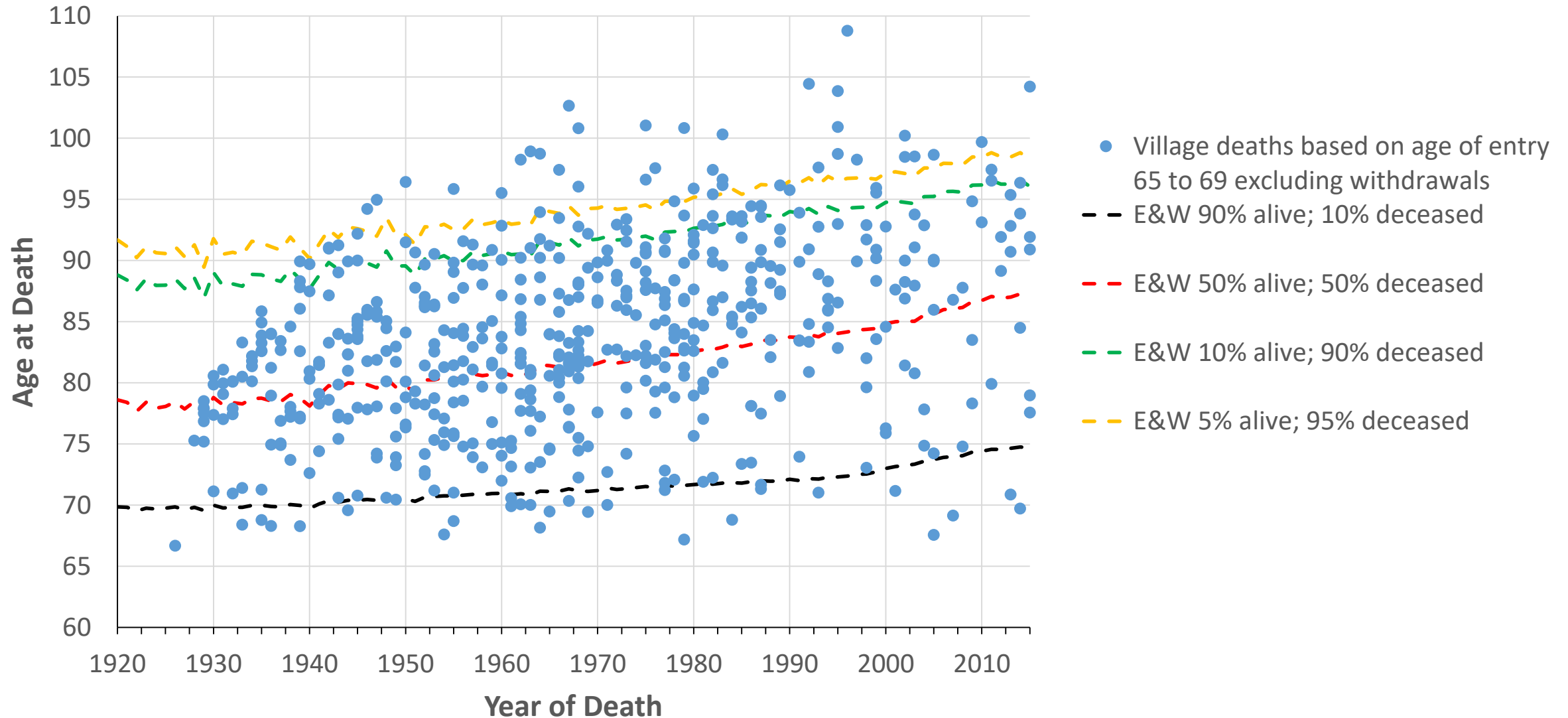
Changes in the Village (Almshouse) population over time



Methodology

- To test whether Whiteley has improved the Villagers' longevity we analysed the percentages of Villagers surviving to specific ages
- These ages were derived by looking at the survival percentages of the general population of England & Wales
- If a greater percentage of Villagers were surviving to these ages then this indicates a possible survival boost from village life
- We identified the following typical ages at entry
 - Women: entry age 65 to 69 (assume age 67)
 - Men: entry age 68 to 72 (assume age 70)

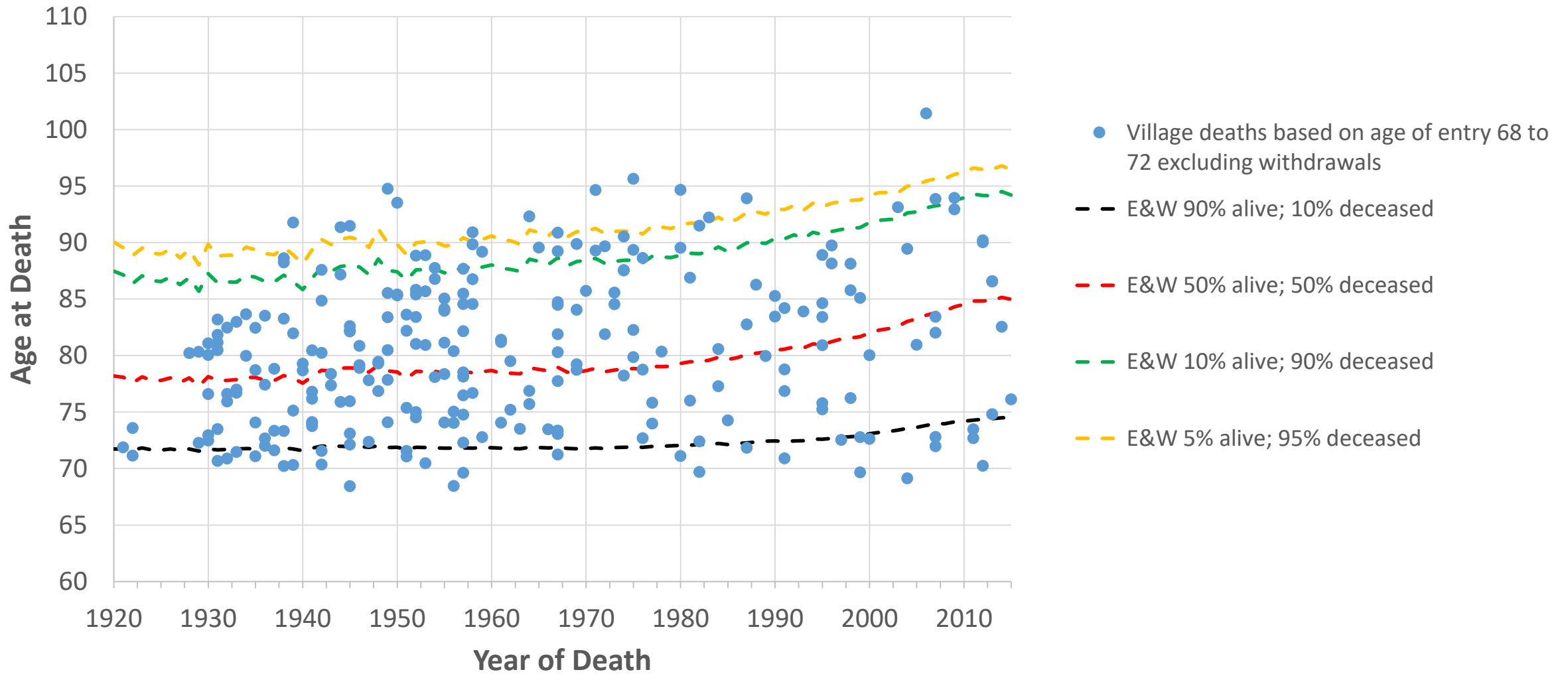
Age at death of female Villagers who entered between age 65 and age 69



Observed versus expected number of female deaths for each specified percentile cut-off

Percentage of deaths	10%	50%	90%	95%
Observed deaths	30	192	482	519
Expected deaths	55.6	278	500.4	528.2
N=556				
P-value: one-sided	0.0001	<0.0001	0.0046	0.0367

Age at death of male Villagers who entered between age 68 and age 72



Observed versus expected number of male deaths for each specified percentile cut-off

Percentage of deaths	10%	50%	90%	95%
Observed deaths	31	111	211	232
Expected deaths	24.5	122.5	220.5	232.75
N=245				
P-value: one-sided	0.9169	0.0709	0.0215	0.4130

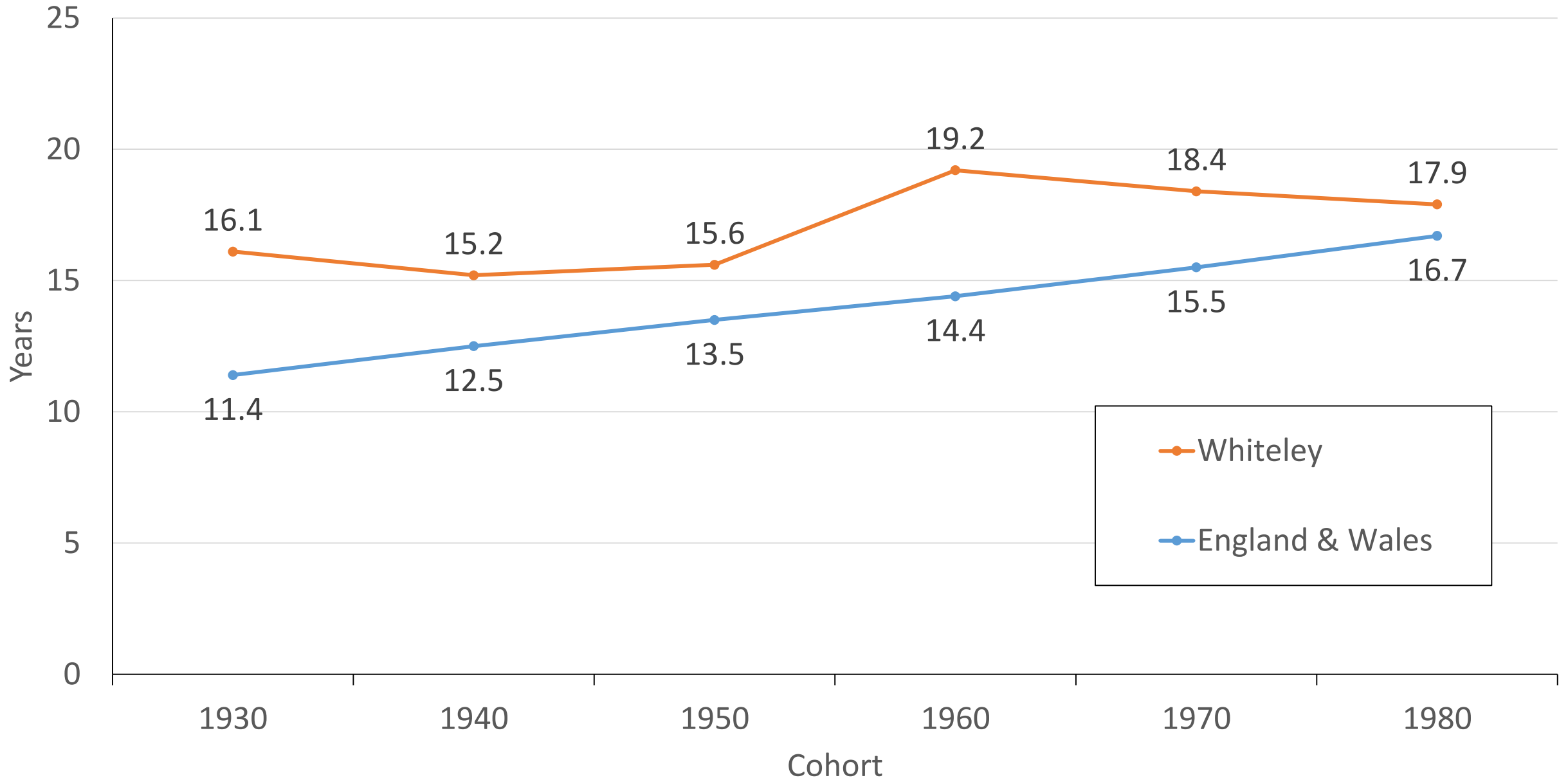
Life expectancy analysis - methodology

- Female cohort analysis by decade of entrants: Whiteley vs England & Wales cohort tables
- Whiteley entrants age 65 to 69 who died in the Village compared to age 67 E&W cohorts for 1930 to 1980
- E.g. Whiteley residents who entered between 1925 and 1934 were compared to E&W 1930 cohort
- We compared mean and median duration for the two populations

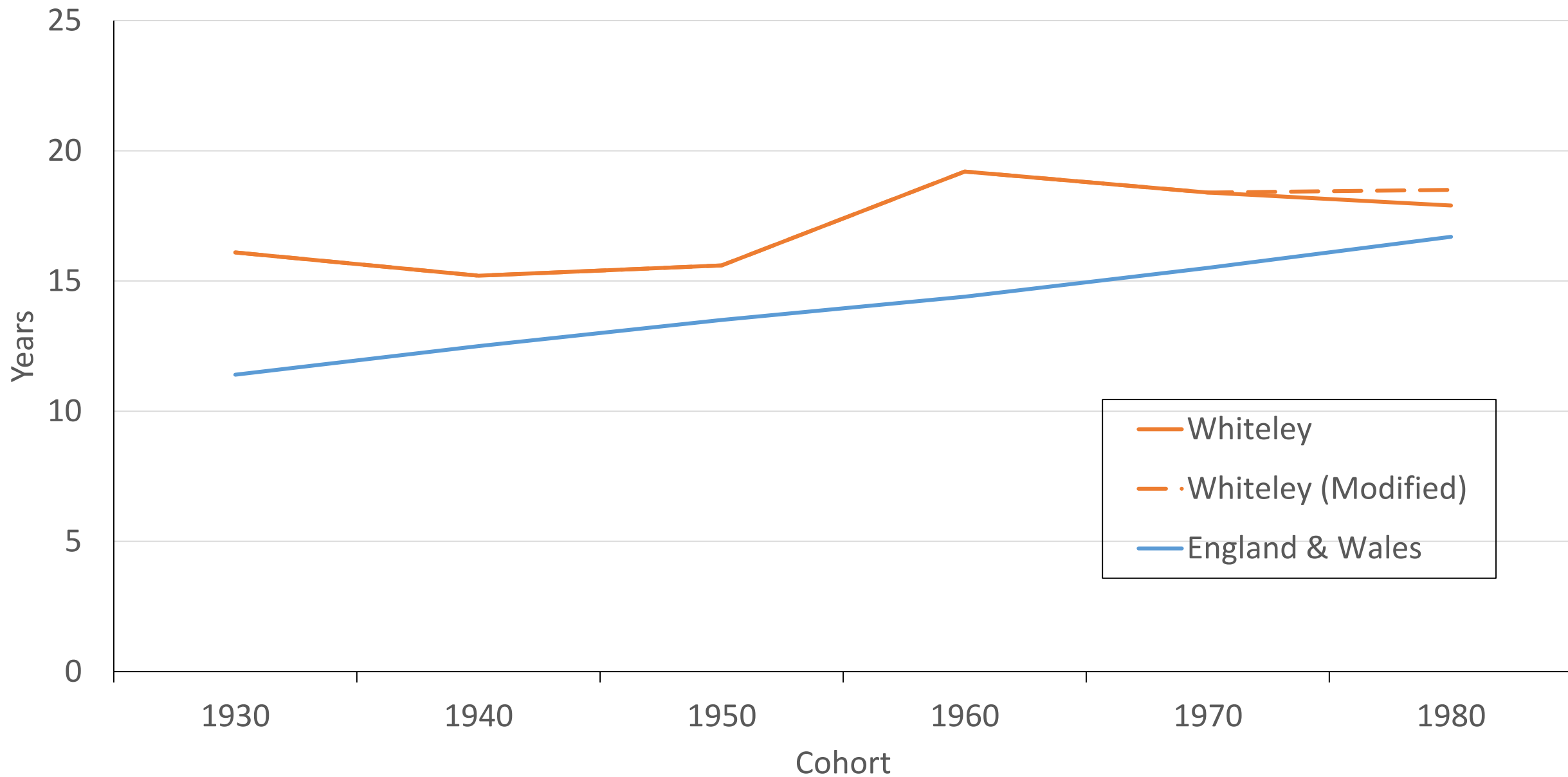
Median duration to death at age 67 for female Whiteley cohorts and corresponding England and Wales cohorts

			Median duration to death (years)		
Whiteley cohort centred on year	Sample size	Average age at entry	(A) Whiteley Residents	(B) E&W	(C) Difference (B)-(A)
1930	80	66.9	16.1	11.4	4.7
1940	78	67.2	15.2	12.5	2.7
1950	112	67.0	15.6	13.5	2.1
1960	101	66.8	19.2	14.4	4.9
1970	55	67.0	18.4	15.5	2.9
1980	45	67.2	17.9	16.7	1.3

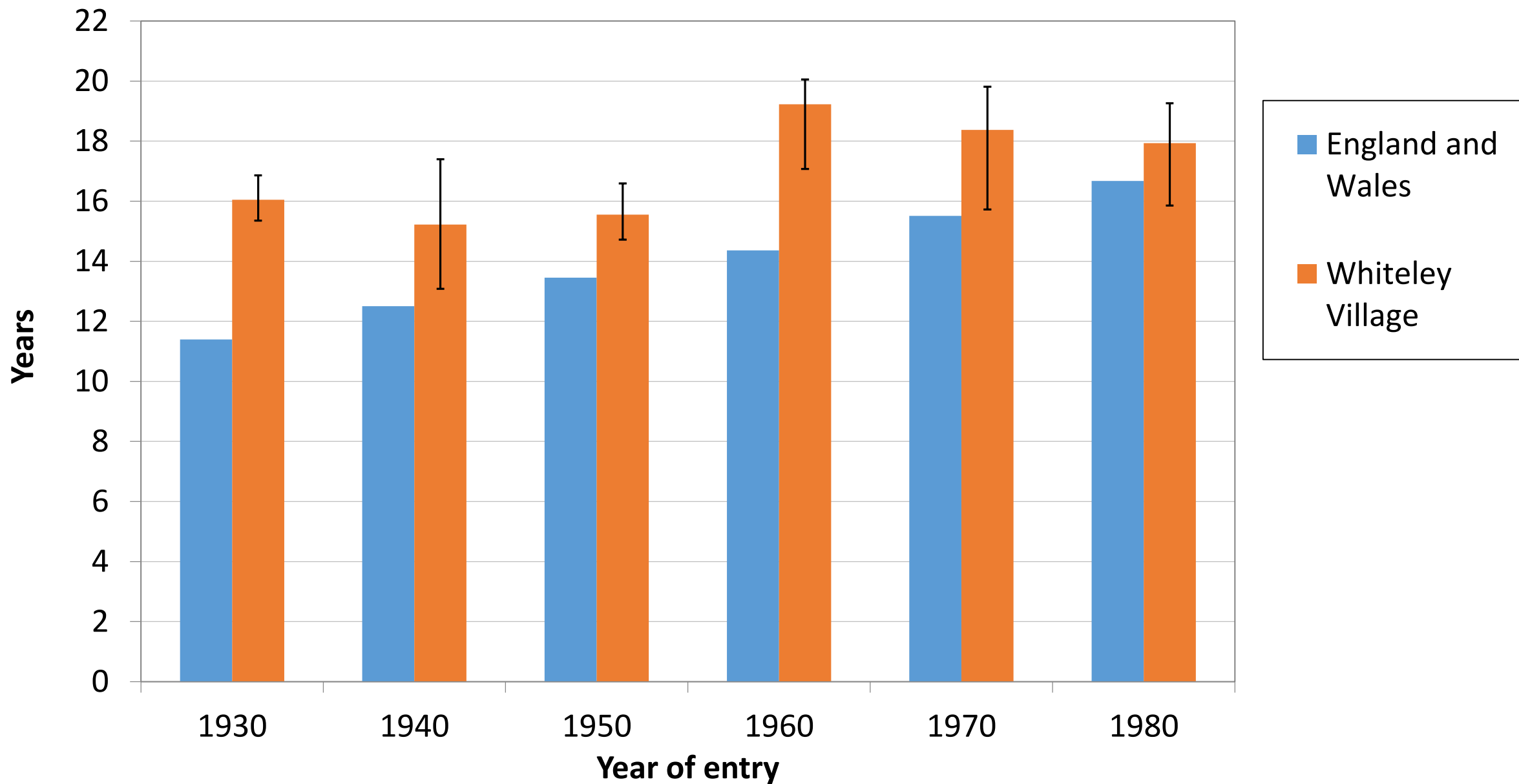
Whiteley and England & Wales median life expectancies



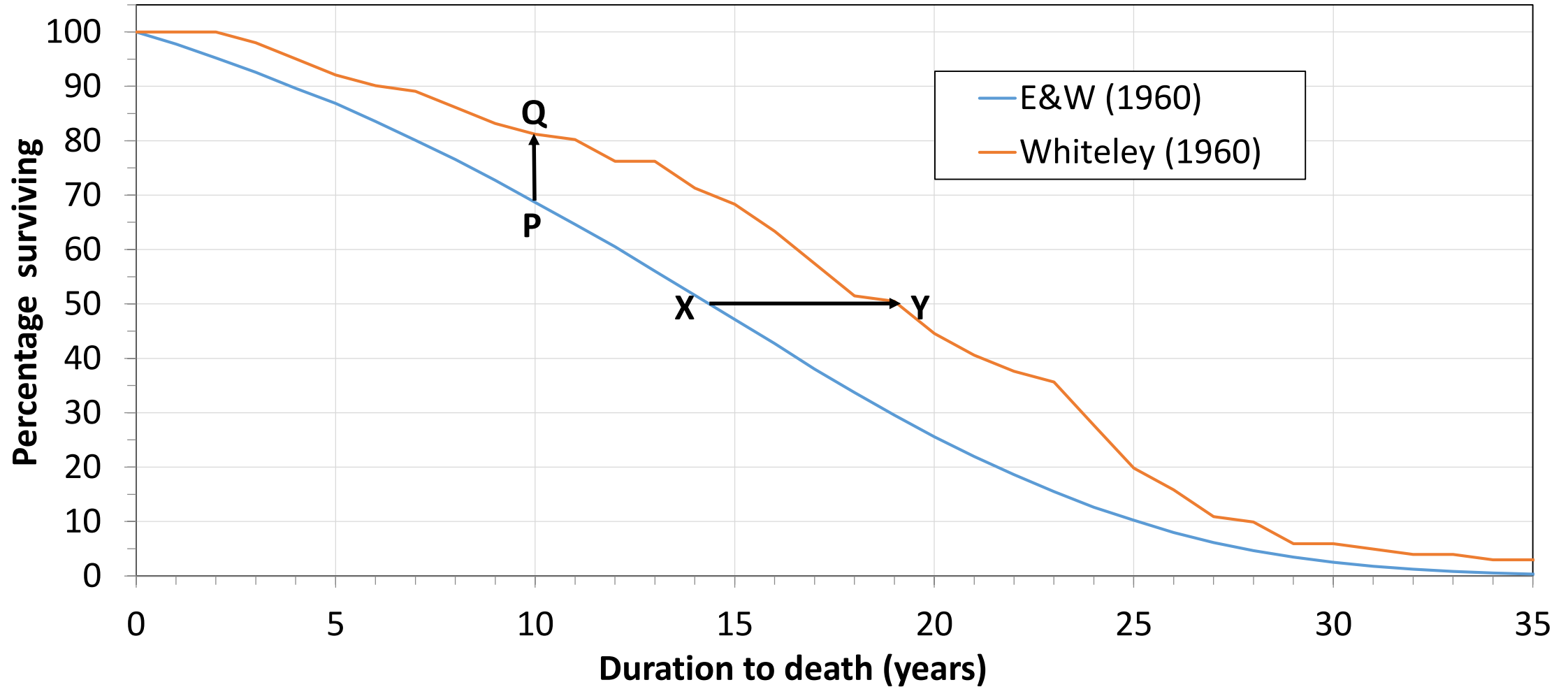
Whiteley and England & Wales median life expectancies



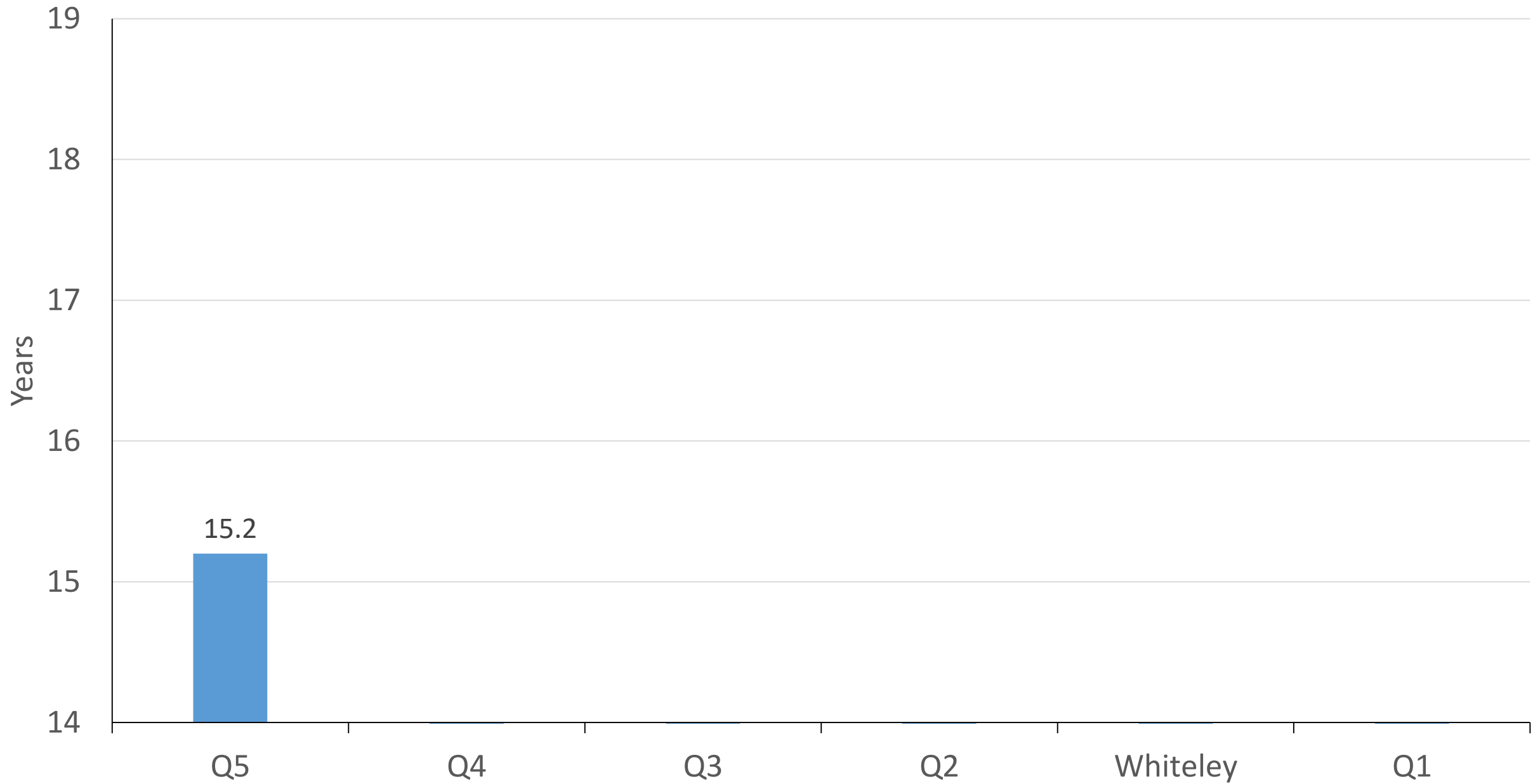
Median life expectancy with 90% confidence intervals



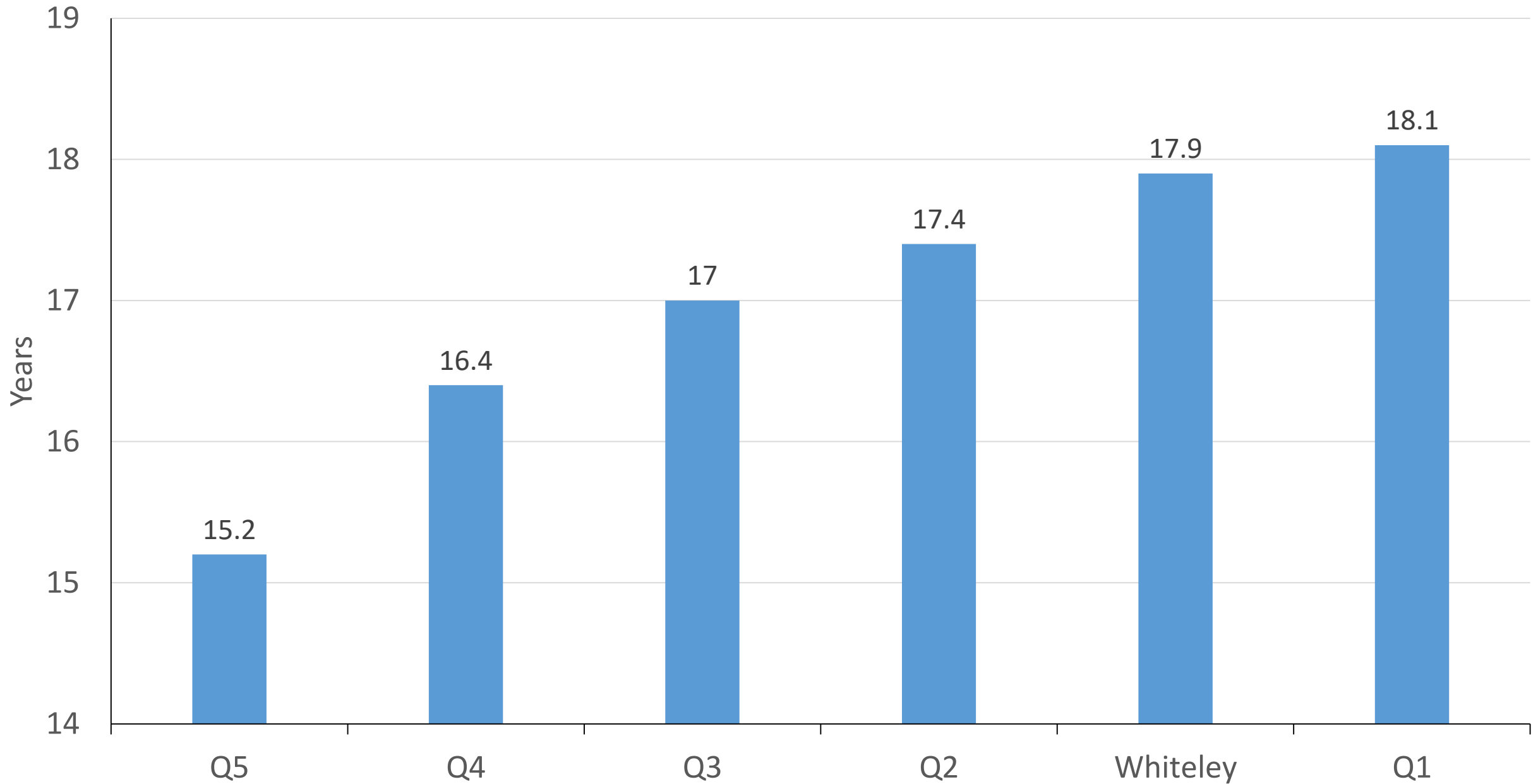
Female survival curves for the 1960 cohorts of E&W and Whiteley



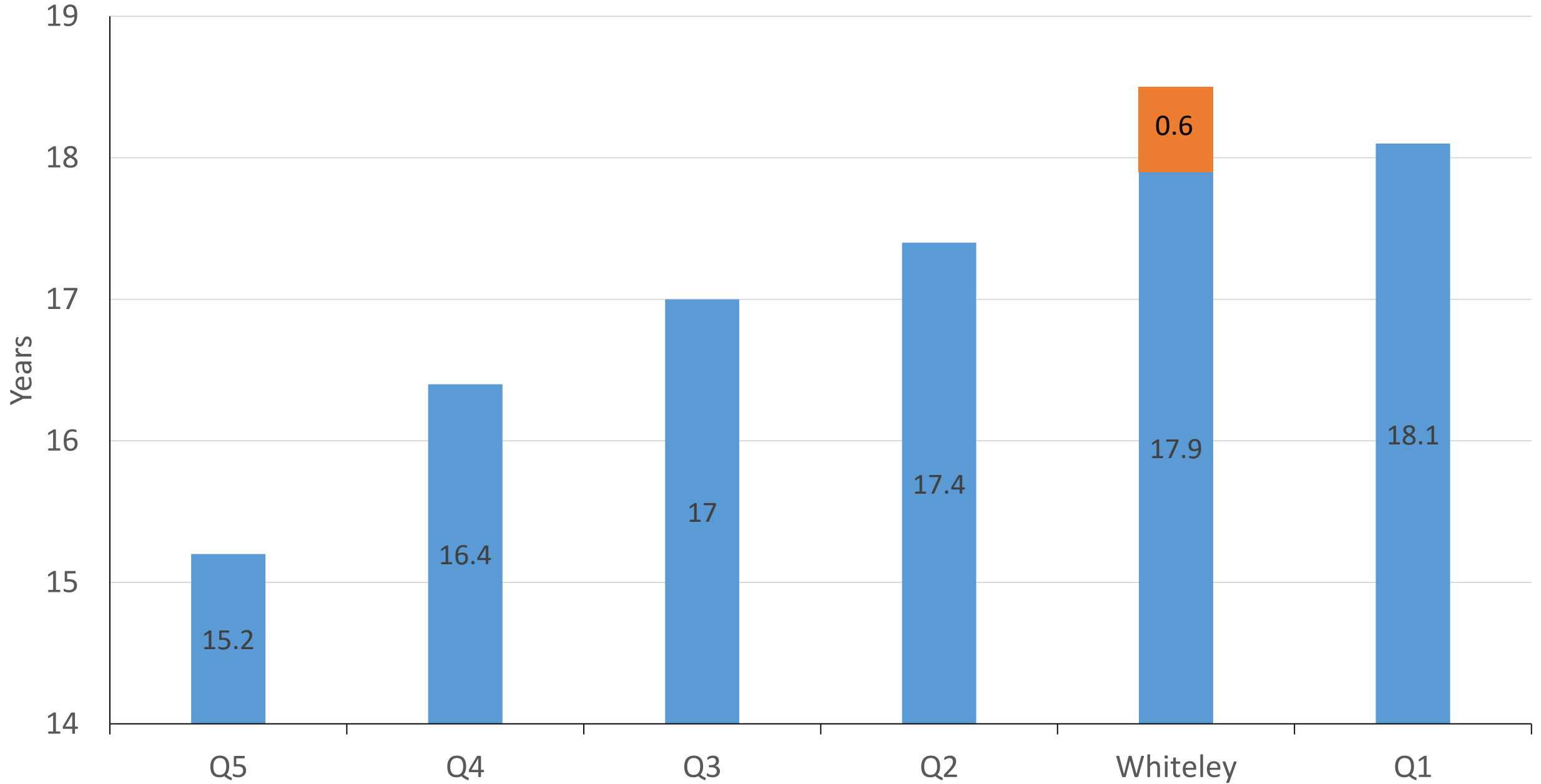
Median life expectancy by quintile (1980)



Median life expectancy by quintile (1980)



Median life expectancy by quintile (1980)



Caveats to our analysis

- To be allowed entry into the Village, residents must be deemed to be physically fit.... while not at level of life assurance underwriting, it is a form of selection
- We have excluded people who withdrew from the Village; remaining residents may be more social than the general population
- Residents may need to be relatively young to gain the survivorship boost
- The average age and gender mix of the Village changes over time and this may impact on the social cohesion of Whiteley

Conclusions

- Strong statistical evidence that females entering Whiteley between ages 65 and 69 received a substantial boost to their longevity
- Whiteley's longevity advantage reached a high of 4.9 years for females entering in the 1960 cohort
- This advantage lessened in 1970 and 1980, mainly due to the average pensioner in the wider population becoming wealthier relative to a Whiteley pensioner
- Indeed, the median duration of a female entrant in the 1980 cohort in Whiteley was between 2.7 and 3.3 years higher when compared to the poorest 20% of female 67 year olds in the wider population

Conclusions (continued)

- Whiteley appears to boost the longevity of female residents to the equivalent of them coming from quintile 1 or 2
- For males, there was evidence that the majority of residents lived at least as long as the general population
- Hence, being a Villager seems to nullify the higher mortality rates usually experienced by members of lower socio-economic groups
- Retirement villages appear to help in the Government's aim to reduce mortality inequalities experienced by the lower socio-economic groups, as well as enhancing quality of life