Type	Cases	Sex	Z	a	b	σ	ρ
St.p.	1641	M	M	$9.9*10^{-4}$	.12	2.5	.48
Estimation				.000138	.0809	1.397	.001
St.Error				$1.1*10^{-8}$	.0004	.0017	.02
St.p.	1737	F	M	$9.9*10^{-4}$	.12	2.5	.48
Estimation				$9.45*10^{-5}$	.0812	1.062	.0014
St.Error				$1.7*10^{-7}$	.00027	.075	.0087
St.p.	3059	M	D	$9.9*10^{-4}$	.12	1	.5
Estimation				.00018	.0783	1.2476	.3775
St.Error				$1.84*10^{-5}$	.0013	.12225	.0443
St.p.	3327	F	D	$9.9*10^{-4}$	.12	1	.48
Estimation				.0001486	.0757	1.8775	.2362
St.Error				$8.73*10^{-9}$	.00023	.00066	.0001

Here the the estimation and the standard error as well as the starting point of the estimation procedure are presented. The unknown parameters of the model are: a and b are the parameters of Gompertz mortality, is the correlation coefficient between the twins and is the variance of the Gamma distributed frailty.

In the case of monozygotic males, the fitting of parameters of the univariate mortality is shown on fig.2, the observed survival function is in fig.3. On fig.4 the absolute difference between observed and estimated survival functions is shown. The observed survival function is calculated according to Lin & Ying (1993). It is seen that up to the age of 70 the estimation is very good, after that age the error becomes larger. The survival function is overestimated for the ages about 60, and underestimated for the ages about 30. For the ages near 100 the error becomes small again due to the small values of survival function in that age. To study this one can consider the relative distance

$$\frac{S_{obs} - S_{est}}{S_{est}}.$$

On fig.5 we can see that the relative error is very small for the ages up to 60 and then increases with the age. This is due to the larger value of the estimated survival function in these ages. One possible reason for this is that in these ages there are few observations, so the observed survival function is not well approximated with the estimated one. As the underlying pattern is almost rectangular the estimation of correlation coefficient is precise.

Similar results can be obtained in the cases of monozygotic females and dizygotic males and females.