Implementation in Excel

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	alpha	1.204	B(alpha, beta)		1.146									
2	beta	0.750												
3	gamma	0.657	B(gamma, delta)		0.729									
4	delta	2.783												
5														
6	LL	–33,225.6												
7														
8	x	t_x	n	# donors	L(.|x = x, t_x, n)		n -t_x – 1		0	1	2	3	4	5
9	6	6	6	1,203	–2,624.6	0.1129	–1	0.1129	0	0	0	0	0	0
10	5	6	6	728								0	0	0
11	4	6	6	512								0	0	0
12	3	6	6	357								0	0	0
13	2	6	6	234	–1,322.5	0.0035	–1	0.0035	0	0	0	0	0	0
14	1	6	6	129	–630.0	0.0076	–1	0.0076	0	0	0	0	0	0
15	5	5	6	335	–1,24		0	0.0036	0.0107	0	0	0	0	0
16	4	5	6	284	–1,447.1	0.0061	0	0.0046	0.0015	0	0	0	0	0
17	3	5			3.5	0.0036	0	0.0030	0.0006	0	0	0	0	0
18	2	5	6	173	–952.6	0.0041	0	0.0035	0.0005	0	0	0	0	0
19	1	5	6	119	–567.3	0.0085			009	0	0	0	0	0
20	4	4	6	240	–923.6	0.0213	1	0.0046	0.0152	0.0015	0	0	0	0
21	3	4	6	181	–915.7	0.0063	1	0.0030	0.0027	0.0006	0	0	0	0
22	2	4	6	155	–805.3	0.0055	1	0.0035	0.0015	0.0005	0	0	0	0
23	1	4	6	78	–356.5	0.0104	1	0.0076	0.0018	0.0009	0	0	0	0
24	3	3	6	322	–1,135.8	0.0294	2	0.0030	0.0230	0.0027	0.0006	0	0	0
25	2	3	6	255	–1,151.6	0.0109	2	0.0035	0.0054	0.0015	0.0005	0	0	0
26	1	3	6	129	–545.0	0.0146	2	0.0076	0.0043	0.0018	0.0009	0	0	0
27	2	2	6	613	–1,846.4	0.0492	3	0.0035	0.0383	0.0054	0.0015	0.0005	0	0
28	1	2	6	277	–993.9	0.0276	3	0.0076	0.0130	0.0043	0.0018	0.0009	0	0
29	1	1	6	1,091	–2,497.1	0.1014	4	0.0076	0.0737	0.0130	0.0043	0.0018	0.0009	0
30	0	0	6	3,464	–4,044.3	0.3111	5	0.0362	0.1909	0.0459	0.0189	0.0098	0.0058	0.0037

=EXP(GAMMALN(B1)+GAMMALN(B2)–GAMMALN(B1+B2))

=EXP(GAMMALN($B$1+A9)+GAMMALN($B$2+C9–A9)–GAMMALN($B$1+$B$2+C9))/$E$1*EXP(GAMMALN($B$3)+GAMMALN($B$4+C9)–GAMMALN($B$3+$B$4+C9))/$E$3

=SUM(E9: E30)

=IF(I$8<=$G9,EXP(GAMMALN($B$1+$A9)+GAMMALN($B$2+$B9–$A9+I$8)–GAMMALN($B$1+$B$2+$B9+I$8))/$E$1*EXP(GAMMALN($B$3+1)+GAMMALN($B$4+$B9+I$8)–GAMMALN($B$3+$B$4+$B9+I$8+1))/$E$3,0)

=C15-B15-1

=D19*LN(F19))

=SUM(H19: N19)

More details available here: http://brucehardie.com/notes/010/. And for R users: http://cran.r-project.org/web/packages/BTYD/