



## Supporting Online Material for

### **Explaining the Relation Between Birth Order and Intelligence**

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Published 22 June 2007, *Science* **316**, 1717 (2007)

DOI: 10.1126/science.1141493

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## Material and Methods

### *Data sources*

We have established a database in order to study the relations between perinatal factors and intelligence in adult age. Information on all live and still births in 1967-98 were extracted from the Medical Birth Registry of Norway. The unique national identification number of child and parents allowed linkage with the education register of Statistics Norway and the National Conscripts Service routine registration of draft board examinations.

We selected women with a first birth in 1967-76. This provided a minimum follow-up of 22 years. We then extracted a sample including all mothers with single births, excluding 2.3% of women with multiple births. The sample comprised 248 162 mothers with a total of 580 198 births. Only sibships with at least one male of birth order 1-3 and a test result for intellectual performance (N=243 939) were included.

### *Study variables*

The main outcome variable was intellectual performance score obtained since 1953 as part of a compulsory military board examination of all Norwegian males aged 18 or 19 years (*S1*). The scores, recorded between 1985 and 2004, are standard nine (“stanine”), i.e. single-digit scores with values 1-9, based on a normal distribution with mean 5.0 and standard deviation 2. This score is highly correlated with WAIS ( $r=0.73$ ) (*S1*). We transformed the scores into IQ equivalents (mean=100, SD=15), which provided an IQ score of 100 for stanine 5 scores, and an increment/decrement of 7.5 IQ units for each stanine unit deviating from 5.

The main determinant under study was based on the mother’s reproductive history. We classified birth order two men into two categories depending on vital status of the elder sibling (stillborn or died in infancy, or alive at age 1 year). Birth order three men were accordingly classified into three groups, depending on number of deaths among elder siblings.

We considered five other factors that both correlated with early child loss and were associated with IQ level. These were parental educational attainment (five categories based on the parent with the highest education level), maternal age at birth (five categories), sibship size (mother's number of live children, five categories), birthweight (parity-specific z-score, seven categories), and year of conscription (20 categories).

More details on the material can be found in (S2).

### *Analysis*

Analyses were performed with the Stata SE9.2 package. A total of 241 310 men were analyzed after exclusion of 2629 (1.1%) of subjects with missing values on either of the study variables. We estimated IQ scores in separate strata of birth order and social order (elder sibling loss). Adjusted effects of birth order and social order on mean IQ scores with corresponding 95% confidence limits were obtained in multiple linear regression. All covariates were included as categorical variables. Standard diagnostic procedures were run to ensure that the assumptions of the regression method were not violated.

### *Text*

The full output of the analyses can be found in (S3).

Mean IQ among first-born men was 103.2 (SEM 0.04). Birth order two men without (social order two) and with (social order one) early loss of an elder sibling had means of 101.2 (0.04) and 102.9 (0.32), respectively. For third born means were 100.0 (0.07), 100.8 (0.26) and 102.6 (1.61) for conscripts with zero, one, and two early losses among elder siblings.

Separate analyses of birth order and social order effects in adjusted models show that both were negatively associated with IQ (Table S1, models 1 and 2). Model 3 with both birth order and social order included shows that social order remained associated with IQ, whereas birth order had only marginal and non-significant effect. The likelihood ratio test (S3) shows that model 2

provides a better fit than model 3, and that the effect of birth order is no longer significant when social order is accounted for.

Table S1. Effects of birth order and social order on mean IQ scores for male conscripts born in Norway to mothers with single births only and first birth 1967-1976.

<i>Category</i>	<i>Coefficient</i>	<i>SE</i>	<i>t-score</i>	<i>P-value</i>
<i>Model 1*</i>				
Birth order one	Reference			
Birth order two	-2.82	0.068	-41.43	0.000
Birth order three	-4.03	0.106	-37.91	0.000
<i>Model 2*</i>				
Social order one	Reference			
Social order two	-2.92	0.068	-42.80	0.000
Social order three	-4.26	0.111	-38.48	0.000
<i>Model 3*</i>				
Birth order one	Reference			
Birth order two	-0.21	0.288	-0.72	0.474
Birth order three	-0.24	0.368	-0.64	0.519
Social order one	Reference			
Social order two	-2.71	0.290	-9.37	0.000
Social order three	-4.03	0.378	-10.67	0.000

\*Adjusted for parental educational attainment, maternal age, sibship size, birthweight, and year of conscription

## References

S1. J. M. Sundet, D. G. Barlaug, T. M. Torjussen, *Intelligence*, **32**, 349 (2004).

S2. T. Bjerkedal, P. Kristensen, G. A. Skjeret, J. I. Brevik, *Intelligence*, (2007),  
doi:10.1016/j.intell.2007.01.004.

S3. Output of the analyses follows.

\* Comments in blue

```
.      log:  Y:\dat\ulikhet\IQ_loss_results_output.log
log type:  text
opened on:   9 Apr 2007, 13:10:39
```

```
. set more off
```

```
.
. *      Outcome variable IQ
. *      Main determinant BO(birth order) 1-3 and SO(social order) 1-3 or categorical
variable BO_SO with levels
. *      0 (BO=1, SO=1; reference); 1 (BO=2, SO=2); 2 (BO=2, SO=1); 3 (BO=3, SO=3), 4
(BO=3, SO=2), 5 (BO=3, SO=1)
. *      Covariates in categories:
. *      i.par_edu5 (parental education, 5 categories)
. *      i.mat_age5 (maternal age, 5 categories);
. *      i.siblive5 (live children in family, 5 categories);
. *      i.BWzcat7 (birthweight parity-specific z score, 7 categories) BO 1 mean 3477 g
(SD 524 g), BO 2 3645 (522) BO 3 3687 (545);
. *      i.year (conscript year, 20 categories 1985-2004, reference 1994);
. *      Parental education      0= graduate tertiary (reference)
. *                               1= undergraduate tertiary
. *                               2= final upper secondary
. *                               3= basic upper secondary
. *                               4= lower secondary or less
. *      Maternal age at birth  1= below 20 years
. *                               2= 20-24 years
. *                               3= 25-29 years
. *                               4= 30-34 years
. *                               5= 35 years or more (reference)
. *      Children in family      1= 1 (reference)
. *                               2= 2
. *                               3= 3
. *                               4= 4
. *                               5= 5 or more
. *      Birthweight             1= more than 3 SD below mean
. *                               2= 2-3 SD below mean
. *                               3= 1-2 SD below mean
. *                               4= 0-1 SD below mean
. *                               5= 0-1 SD above mean
. *                               6= 1-2 SD above mean
. *                               0= 2 or more SDs above mean (reference)
.
.
. use "Y:\dat\ulikhet\IQ_loss_analysis_3.dta", clear
.
.
. * Comment 1: Fig. 1 results
.
. *      First, computing IQ means across BO-SO categories, reference in the
following model is BO=1 SO=1 (IQ=103.2354).
.      mean IQ, over (BO SO)
```

```
Mean estimation      Number of obs      =   241310
```

```
      Over: BO SO
      _subpop_1: 1 1
      _subpop_2: 2 1
      _subpop_3: 2 2
      _subpop_4: 3 1
```

```
_subpop_5: 3 2
_subpop_6: 3 3
```

	Over	Mean	Std. Err.	[95% Conf. Interval]	
IQ					
_subpop_1		103.2354	.0410141	103.155	103.3158
_subpop_2		102.8648	.3233658	102.231	103.4985
_subpop_3		101.2387	.0436571	101.1531	101.3242
_subpop_4		102.5926	1.609221	99.43856	105.7466
_subpop_5		100.7953	.2548083	100.2959	101.2947
_subpop_6		100.0381	.0728798	99.89525	100.1809

## . \* Second, multiple linear regression model

```
. xi: regress IQ i.BO_SO i.par_edu5 i.mat_age5 i.siblive5 i.BWzcat7 i.year
i.BO_SO      _IBO_SO_0-5      (naturally coded; _IBO_SO_0 omitted)
i.par_edu5    _Ipar_edu5_0-4    (naturally coded; _Ipar_edu5_0 omitted)
i.mat_age5    _Imat_age5_0-4    (naturally coded; _Imat_age5_0 omitted)
i.siblive5    _Isiblive5_1-5    (naturally coded; _Isiblive5_1 omitted)
i.BWzcat7     _IBWzcat7_0-6     (naturally coded; _IBWzcat7_0 omitted)
i.year        _Iyear_0-2004     (naturally coded; _Iyear_0 omitted)
```

Source	SS	df	MS	Number of obs = 241310	
Model	6776291.98	42	161340.285	F( 42,241267) =	1043.00
Residual	37321223.2241267	154.688471		Prob > F =	0.0000
				R-squared =	0.1537
				Adj R-squared =	0.1535
Total	44097515.2241309	182.742936		Root MSE =	12.437

IQ	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
_IBO_SO_1	-2.920248	.0686824	-42.52	0.000	-3.054864	-2.785633
_IBO_SO_2	-.2268971	.294009	-0.77	0.440	-.803147	.3493528
_IBO_SO_3	-4.269396	.1110595	-38.44	0.000	-4.487069	-4.051722
_IBO_SO_4	-2.965913	.2465733	-12.03	0.000	-3.44919	-2.482636
_IBO_SO_5	.2327036	1.383167	0.17	0.866	-2.478267	2.943675
_Ipar_edu5_1	-4.557467	.1054163	-43.23	0.000	-4.764081	-4.350854
_Ipar_edu5_2	-9.244755	.1065748	-86.74	0.000	-9.453639	-9.035871
_Ipar_edu5_3	-11.99603	.1007749	-119.04	0.000	-12.19354	-11.79851
_Ipar_edu5_4	-17.15533	.1227794	-139.72	0.000	-17.39598	-16.91469
_Imat_age5_1	-.6756009	.1481424	-4.56	0.000	-.9659562	-.3852456
_Imat_age5_2	-1.529418	.1429959	-10.70	0.000	-1.809686	-1.24915
_Imat_age5_3	-3.270981	.1476527	-22.15	0.000	-3.560377	-2.981586
_Imat_age5_4	-5.395775	.1710056	-31.55	0.000	-5.730942	-5.060609
_Isiblive5_2	.8267366	.1085314	7.62	0.000	.6140178	1.039455
_Isiblive5_3	.9925834	.1144031	8.68	0.000	.7683564	1.21681
_Isiblive5_4	.8476345	.1386903	6.11	0.000	.5758052	1.119464
_Isiblive5_5	.2007077	.2015271	1.00	0.319	-.1942802	.5956956
_IBWzcat7_1	-.1062321	.1939244	-0.55	0.584	-.4863188	.2738546
_IBWzcat7_2	-.6107282	.184842	-3.30	0.001	-.9730138	-.2484426
_IBWzcat7_3	-1.431767	.1851703	-7.73	0.000	-1.794696	-1.068838
_IBWzcat7_4	-2.253075	.195491	-11.53	0.000	-2.636232	-1.869917
_IBWzcat7_5	-2.899021	.2497119	-11.61	0.000	-3.38845	-2.409593
_IBWzcat7_6	-4.419876	.3482175	-12.69	0.000	-5.102373	-3.737379
_Iyear_1985	-.6803454	.2034391	-3.34	0.001	-1.079081	-.28161
_Iyear_1986	.3830407	.1563388	2.45	0.014	.0766209	.6894606
_Iyear_1987	.0677215	.1351494	0.50	0.616	-.1971677	.3326108
_Iyear_1988	.4115894	.1302453	3.16	0.002	.1563121	.6668668
_Iyear_1989	.0246319	.1260414	0.20	0.845	-.2224059	.2716697
_Iyear_1990	.2895135	.1189609	2.43	0.015	.0563533	.5226736

_Iyear_1991	.2381113	.1143312	2.08	0.037	.0140253	.4621974
_Iyear_1992	-.0194008	.1124742	-0.17	0.863	-.2398474	.2010457
_Iyear_1993	.4637993	.1112478	4.17	0.000	.2457564	.6818421
_Iyear_1995	-.3534644	.1331673	-2.65	0.008	-.6144688	-.09246
_Iyear_1996	-.301849	.1444794	-2.09	0.037	-.585025	-.0186731
_Iyear_1997	-1.024216	.1541261	-6.65	0.000	-1.326299	-.7221327
_Iyear_1998	-1.722283	.1716026	-10.04	0.000	-2.05862	-1.385947
_Iyear_1999	-1.823012	.1983832	-9.19	0.000	-2.211838	-1.434186
_Iyear_2000	-1.382823	.2358007	-5.86	0.000	-1.844986	-.9206594
_Iyear_2001	-1.339878	.2815566	-4.76	0.000	-1.891722	-.7880348
_Iyear_2002	-1.798741	.2741985	-6.56	0.000	-2.336162	-1.261319
_Iyear_2003	-1.346069	.3008819	-4.47	0.000	-1.93579	-.7563486
_Iyear_2004	-1.987844	.3333219	-5.96	0.000	-2.641146	-1.334542
_cons	115.884	.2640766	438.83	0.000	115.3664	116.4016

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.  
. \* **Comment 2: Table S1 results**

. \* **Model 1**

```
. xi: regress IQ i.BO i.par_edu5 i.mat_age5 i.siblive5 i.BWzcat7 i.year
i.BO          _IBO_1-3          (naturally coded; _IBO_1 omitted)
i.par_edu5     _Ipar_edu5_0-4    (naturally coded; _Ipar_edu5_0 omitted)
i.mat_age5     _Imat_age5_0-4    (naturally coded; _Imat_age5_0 omitted)
i.siblive5     _Isiblive5_1-5    (naturally coded; _Isiblive5_1 omitted)
i.BWzcat7      _IBWzcat7_0-6     (naturally coded; _IBWzcat7_0 omitted)
i.year        _Iyear_0-2004     (naturally coded; _Iyear_0 omitted)
```

Source	SS	df	MS	Number of obs =	241310
Model	6758005.43	39	173282.19	F( 39,241270) =	1119.67
Residual	37339509.8241270	154	76234	Prob > F	= 0.0000
				R-squared	= 0.1533
				Adj R-squared	= 0.1531
Total	44097515.2241309	182	742936	Root MSE	= 12.44

IQ	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
_IBO_2	-2.815647	.0679573	-41.43	0.000	-2.948842	-2.682452
_IBO_3	-4.03274	.106375	-37.91	0.000	-4.241232	-3.824248
_Ipar_edu5_1	-4.558509	.1054414	-43.23	0.000	-4.765171	-4.351846
_Ipar_edu5_2	-9.249193	.1065995	-86.77	0.000	-9.458125	-9.040261
_Ipar_edu5_3	-12.00142	.1007976	-119.06	0.000	-12.19898	-11.80386
_Ipar_edu5_4	-17.16323	.122806	-139.76	0.000	-17.40392	-16.92253
_Imat_age5_1	-.6856608	.1481742	-4.63	0.000	-.9760784	-.3952433
_Imat_age5_2	-1.52189	.1430037	-10.64	0.000	-1.802174	-1.241607
_Imat_age5_3	-3.23884	.1476276	-21.94	0.000	-3.528186	-2.949493
_Imat_age5_4	-5.355325	.1709803	-31.32	0.000	-5.690442	-5.020208
_Isiblive5_2	.773589	.1082765	7.14	0.000	.5613698	.9858081
_Isiblive5_3	.8817159	.1139663	7.74	0.000	.6583449	1.105087
_Isiblive5_4	.7223428	.1382261	5.23	0.000	.4514233	.9932622
_Isiblive5_5	.0609714	.2011402	0.30	0.762	-.3332582	.4552009
_IBWzcat7_1	-.1087662	.1939699	-0.56	0.575	-.488942	.2714097
_IBWzcat7_2	-.6144002	.1848846	-3.32	0.001	-.9767692	-.2520312
_IBWzcat7_3	-1.430054	.1852122	-7.72	0.000	-1.793065	-1.067043
_IBWzcat7_4	-2.236864	.195528	-11.44	0.000	-2.620094	-1.853635
_IBWzcat7_5	-2.855229	.2497366	-11.43	0.000	-3.344706	-2.365751
_IBWzcat7_6	-4.327781	.3481838	-12.43	0.000	-5.010213	-3.64535
_Iyear_1985	-.6648781	.2034823	-3.27	0.001	-1.063698	-.2660582
_Iyear_1986	.4000313	.1563682	2.56	0.011	.0935537	.7065088
_Iyear_1987	.0963185	.1351537	0.71	0.476	-.1685792	.3612163
_Iyear_1988	.432938	.1302615	3.32	0.001	.1776289	.6882471



_Iyear_1989	.041901	.1260609	0.33	0.740	-.2051751	.2889772
_Iyear_1990	.3018317	.1189836	2.54	0.011	.068627	.5350365
_Iyear_1991	.2444362	.1143567	2.14	0.033	.0203002	.4685723
_Iyear_1992	-.0143357	.1124997	-0.13	0.899	-.2348322	.2061607
_Iyear_1993	.4658002	.1112742	4.19	0.000	.2477057	.6838948
_Iyear_1995	-.3926497	.1331422	-2.95	0.003	-.6536049	-.1316946
_Iyear_1996	-.3630634	.1443883	-2.51	0.012	-.6460607	-.0800661
_Iyear_1997	-1.097292	.1540161	-7.12	0.000	-1.39916	-.7954246
_Iyear_1998	-1.800725	.1714832	-10.50	0.000	-2.136828	-1.464623
_Iyear_1999	-1.910714	.1982223	-9.64	0.000	-2.299225	-1.522203
_Iyear_2000	-1.48119	.2355913	-6.29	0.000	-1.942943	-1.019438
_Iyear_2001	-1.446006	.2813399	-5.14	0.000	-1.997425	-.8945873
_Iyear_2002	-1.909534	.2739315	-6.97	0.000	-2.446433	-1.372636
_Iyear_2003	-1.458809	.300631	-4.85	0.000	-2.048038	-.8695803
_Iyear_2004	-2.104685	.3330705	-6.32	0.000	-2.757495	-1.451876
_cons	115.9171	.2640541	438.99	0.000	115.3996	116.4347

. estimates store ml

## . \* Model 2

```
. xi: regress IQ i.SO i.par_edu5 i.mat_age5 i.siblive5 i.BWzcat7 i.year
i.SO          _ISO_1-3          (naturally coded; _ISO_1 omitted)
i.par_edu5     _Ipar_edu5_0-4    (naturally coded; _Ipar_edu5_0 omitted)
i.mat_age5     _Imat_age5_0-4    (naturally coded; _Imat_age5_0 omitted)
i.siblive5     _Isiblive5_1-5    (naturally coded; _Isiblive5_1 omitted)
i.BWzcat7      _IBWzcat7_0-6     (naturally coded; _IBWzcat7_0 omitted)
i.year         _Iyear_0-2004     (naturally coded; _Iyear_0 omitted)
```

Source	SS	df	MS	Number of obs =	241310
Model	6776189.86	39	173748.458	F( 39,241270) =	1123.23
Residual	37321325.4241270	154	68697	Prob > F =	0.0000
				R-squared =	0.1537
				Adj R-squared =	0.1535
Total	44097515.2241309	182	742936	Root MSE =	12.437

IQ	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
_ISO_2	-2.916656	.0681441	-42.80	0.000	-3.050216	-2.783095
_ISO_3	-4.263926	.1108126	-38.48	0.000	-4.481116	-4.046737
_Ipar_edu5_1	-4.557923	.1054132	-43.24	0.000	-4.76453	-4.351315
_Ipar_edu5_2	-9.245719	.1065608	-86.76	0.000	-9.454576	-9.036863
_Ipar_edu5_3	-11.99735	.1007505	-119.08	0.000	-12.19482	-11.79988
_Ipar_edu5_4	-17.15731	.1227443	-139.78	0.000	-17.39788	-16.91673
_Imat_age5_1	-.6747614	.1481368	-4.55	0.000	-.9651056	-.3844171
_Imat_age5_2	-1.527864	.1429692	-10.69	0.000	-1.80808	-1.247648
_Imat_age5_3	-3.268202	.1475798	-22.15	0.000	-3.557454	-2.978949
_Imat_age5_4	-5.39043	.1708386	-31.55	0.000	-5.725269	-5.05559
_Isiblive5_2	.8270263	.1085178	7.62	0.000	.6143343	1.039718
_Isiblive5_3	.9928474	.11439	8.68	0.000	.768646	1.217049
_Isiblive5_4	.847899	.138681	6.11	0.000	.5760879	1.11971
_Isiblive5_5	.2010557	.2015184	1.00	0.318	-.193915	.5960265
_IBWzcat7_1	-.1058823	.1939226	-0.55	0.585	-.4859655	.274201
_IBWzcat7_2	-.6102282	.1848388	-3.30	0.001	-.9725074	-.2479489
_IBWzcat7_3	-1.431749	.1851657	-7.73	0.000	-1.794669	-1.068829
_IBWzcat7_4	-2.253887	.1954781	-11.53	0.000	-2.637019	-1.870755
_IBWzcat7_5	-2.901581	.2496661	-11.62	0.000	-3.39092	-2.412242
_IBWzcat7_6	-4.424572	.3480949	-12.71	0.000	-5.106828	-3.742315
_Iyear_1985	-.6760155	.203352	-3.32	0.001	-1.07458	-.2774509
_Iyear_1986	.3867253	.1562555	2.47	0.013	.0804687	.6929819
_Iyear_1987	.0689713	.1351288	0.51	0.610	-.1958776	.3338201

_Iyear_1988	.4121557	.1302348	3.16	0.002	.156899	.6674125
_Iyear_1989	.0248625	.1260344	0.20	0.844	-.2221615	.2718866
_Iyear_1990	.2894548	.1189589	2.43	0.015	.0562985	.5226111
_Iyear_1991	.2382263	.11433	2.08	0.037	.0141425	.4623101
_Iyear_1992	-.0196205	.1124733	-0.17	0.862	-.2400653	.2008243
_Iyear_1993	.4636503	.111247	4.17	0.000	.245609	.6816916
_Iyear_1995	-.3533725	.1331663	-2.65	0.008	-.614375	-.09237
_Iyear_1996	-.3018271	.1444771	-2.09	0.037	-.5849985	-.0186558
_Iyear_1997	-1.023998	.154125	-6.64	0.000	-1.326079	-.7219169
_Iyear_1998	-1.722159	.1715982	-10.04	0.000	-2.058487	-1.385831
_Iyear_1999	-1.822956	.1983735	-9.19	0.000	-2.211763	-1.434149
_Iyear_2000	-1.382629	.2357957	-5.86	0.000	-1.844782	-.9204758
_Iyear_2001	-1.339438	.2815539	-4.76	0.000	-1.891276	-.7875996
_Iyear_2002	-1.798143	.2741958	-6.56	0.000	-2.33556	-1.260727
_Iyear_2003	-1.345361	.3008788	-4.47	0.000	-1.935076	-.7556466
_Iyear_2004	-1.987086	.3333187	-5.96	0.000	-2.640382	-1.33379
_cons	115.8779	.2639382	439.03	0.000	115.3605	116.3952

estimates store m2

### Model 3

```

. xi: regress IQ i.BO i.SO i.par_edu5 i.mat_age5 i.siblive5 i.BWzcat7 i.year
i.BO          _IBO_1-3          (naturally coded; _IBO_1 omitted)
i.SO          _ISO_1-3          (naturally coded; _ISO_1 omitted)
i.par_edu5    _Ipar_edu5_0-4    (naturally coded; _Ipar_edu5_0 omitted)
i.mat_age5    _Imat_age5_0-4    (naturally coded; _Imat_age5_0 omitted)
i.siblive5    _Isiblive5_1-5    (naturally coded; _Isiblive5_1 omitted)
i.BWzcat7     _IBWzcat7_0-6     (naturally coded; _IBWzcat7_0 omitted)
i.year        _Iyear_0-2004     (naturally coded; _Iyear_0 omitted)

```

Source	SS	df	MS	Number of obs = 241310
Model	6776272.75	41	165274.945	F( 41,241268) = 1068.44
Residual	37321242.5241268	154.687909		Prob > F = 0.0000
				R-squared = 0.1537
				Adj R-squared = 0.1535
Total	44097515.2241309	182.742936		Root MSE = 12.437

IQ	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
_IBO_2	-.2061426	.2880554	-0.72	0.474	-.7707237 .3584386
_IBO_3	-.2373697	.3682831	-0.64	0.519	-.959195 .4844556
_ISO_2	-2.714444	.2895943	-9.37	0.000	-3.282042 -2.146847
_ISO_3	-4.031887	.3779142	-10.67	0.000	-4.772589 -3.291185
_Ipar_edu5_1	-4.557437	.1054161	-43.23	0.000	-4.76405 -4.350825
_Ipar_edu5_2	-9.244739	.1065746	-86.74	0.000	-9.453622 -9.035855
_Ipar_edu5_3	-11.99599	.1007746	-119.04	0.000	-12.19351 -11.79848
_Ipar_edu5_4	-17.15545	.1227787	-139.73	0.000	-17.39609 -16.91481
_Imat_age5_1	-.6755481	.1481421	-4.56	0.000	-.9659027 -.3851935
_Imat_age5_2	-1.529247	.1429948	-10.69	0.000	-1.809513 -1.248981
_Imat_age5_3	-3.270775	.1476513	-22.15	0.000	-3.560168 -2.981383
_Imat_age5_4	-5.395635	.1710048	-31.55	0.000	-5.7308 -5.06047
_Isiblive5_2	.8263189	.1085247	7.61	0.000	.6136132 1.039025
_Isiblive5_3	.9921609	.1143966	8.67	0.000	.7679466 1.216375
_Isiblive5_4	.8472569	.1386859	6.11	0.000	.5754362 1.119078
_Isiblive5_5	.2002671	.2015229	0.99	0.320	-.1947125 .5952467
_IBWzcat7_1	-.1061607	.1939239	-0.55	0.584	-.4862465 .2739251
_IBWzcat7_2	-.6106178	.1848414	-3.30	0.001	-.9729022 -.2483334
_IBWzcat7_3	-1.431659	.1851697	-7.73	0.000	-1.794587 -1.068732
_IBWzcat7_4	-2.252869	.1954898	-11.52	0.000	-2.636024 -1.869714
_IBWzcat7_5	-2.898902	.2497112	-11.61	0.000	-3.38833 -2.409475

_IBWzcat7_6	-4.418689	.3482006	-12.69	0.000	-5.101153	-3.736225
_Iyear_1985	-.6803414	.2034387	-3.34	0.001	-1.079076	-.2816068
_Iyear_1986	.3830095	.1563384	2.45	0.014	.0765902	.6894287
_Iyear_1987	.0675905	.1351486	0.50	0.617	-.1972972	.3324783
_Iyear_1988	.411568	.130245	3.16	0.002	.1562911	.6668449
_Iyear_1989	.0247685	.1260405	0.20	0.844	-.2222676	.2718047
_Iyear_1990	.2894714	.1189606	2.43	0.015	.0563118	.5226311
_Iyear_1991	.2381763	.1143308	2.08	0.037	.0140909	.4622616
_Iyear_1992	-.0194489	.112474	-0.17	0.863	-.239895	.2009971
_Iyear_1993	.4637996	.1112476	4.17	0.000	.2457571	.681842
_Iyear_1995	-.3533897	.1331669	-2.65	0.008	-.6143933	-.0923861
_Iyear_1996	-.3018946	.1444791	-2.09	0.037	-.5850699	-.0187192
_Iyear_1997	-1.024223	.1541258	-6.65	0.000	-1.326305	-.7221403
_Iyear_1998	-1.722347	.1716022	-10.04	0.000	-2.058683	-1.386012
_Iyear_1999	-1.823121	.1983826	-9.19	0.000	-2.211946	-1.434296
_Iyear_2000	-1.382908	.2358001	-5.86	0.000	-1.84507	-.9207456
_Iyear_2001	-1.339905	.281556	-4.76	0.000	-1.891747	-.7880621
_Iyear_2002	-1.798751	.274198	-6.56	0.000	-2.336172	-1.261331
_Iyear_2003	-1.346072	.3008813	-4.47	0.000	-1.935791	-.7563521
_Iyear_2004	-1.987835	.3333213	-5.96	0.000	-2.641136	-1.334534
_cons	115.8841	.2640761	438.83	0.000	115.3665	116.4017

```

.      estimates store m3

```

```

. *      Explanations: ll=log likelihood; AIC=Akaike's information criterion;
BIC=Schwarz' information criterion

```

```

.      estimates stats m1 m2

```

Model	Obs	ll(null)	ll(model)	df	AIC	BIC
m1	241310	-970784.5	-950713.4	40	1901507	1901922
m2	241310	-970784.5	-950654.6	40	1901389	1901805

```

.      estimates stats m2 m3

```

Model	Obs	ll(null)	ll(model)	df	AIC	BIC
m2	241310	-970784.5	-950654.6	40	1901389	1901805
m3	241310	-970784.5	-950654.3	42	1901393	1901829

```

.      lrtest m2 m3

```

```

Likelihood-ratio test                                LR chi2(2)  =      0.54
(Assumption: m2 nested in m3)                       Prob > chi2 =      0.7649

```

```

.
.
.

```

```

. log close

```

```

    log:  Y:\dat\ulikhet\IQ_loss_results_output.log

```

```

    log type:  text

```

```

closed on:   9 Apr 2007, 13:13:55

```