

Appendix. Summary Statistics

	Mean	SD	Min	Max
Ego Rank	5.43	3.08	0	10
Ego Sex	0.38	0.49	0	1
Parent Rank	6.73	3.35	0	10
Grandparent Rank	6.94	3.23	0	10
Ego Firstborn	0.06	0.24	0	1
Parent Firstborn	0.33	0.47	0	1
Grandparent Firstborn	0.38	0.49	0	1
Sibling Number	5.05	2.4	1	11
Children Number	3.21	2.03	1	14
Children Number $R \geq 2$	1.92	1.93	0	10
Children Number $R \geq 5$	1.67	1.77	0	10
Children Number $R \geq 8$	0.63	1.02	0	9

Table 10. Seonghwabo

	Mean	SD	Min	Max
Ego Rank	3.05	3.35	0	10
Ego Sex	0.22	0.41	0	1
Parent Rank	6.1	2.86	0	10
Grandparent Rank	6.02	2.95	0	10
Ego Firstborn	0.07	0.26	0	1
Parent Firstborn	0.36	0.48	0	1
Grandparent Firstborn	0.36	0.48	0	1
Sibling Number	4.57	2.3	1	25
Children Number	2.95	1.88	1	30
Children Number $R \geq 2$	0.84	1.27	0	11
Children Number $R \geq 5$	0.7	1.14	0	11
Children Number $R \geq 8$	0.25	0.58	0	6

Table 11. Gajeongbo

**Supplementary Material of “Quality Over Quantity
A Lineage-Survival Strategy of Elite Families
in Pre-Modern Korea”**

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S1. The Number of *jokbo* Members by Generation

Table 1 shows the number of elite family members in Sunghwabo and Gajeongbo by generation. The shaded cells indicate the subset of data we used in our analysis. As we have discussed in the manuscript, the portion of the data before the shaded cells (generation 1 to 15 in Sunghwabo and generation 1 to 16 in Gajeongbo) contain many recall biases and missing data as these records preceded original *jokbo* compliers. The portion of *jokbo* data after the shaded cells (generation 20 to 22 in Sunghwabo and generation 21 to 25 in Gajeongbo) is not included in the analysis because the information on their children and grandchildren are incompletely available in *jokbo*.

Generation	Sunghwabo	Gajeongbo
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	3
9	3	3
10	6	10
11	9	26
12	18	73
13	39	210
14	60	578
15	153	1429
16	363	2800
17	958	5202
18	2019	8438
19	3327	11313
20	2547	10905
21	728	6458
22	5	1732
23		142
24		17
25		15
Total	10243	49362

Table 1. The Number of *jokbo* Members by Generation. Shaded cells indicate the prospective subset data used in the analysis.

S2. Replication R codes for the Synthetic Example

This R code will create the synthetic mobility data in the manuscript and replicate the regression analysis.

```
require(stargazer)
## generate data
data <- data.frame(y = c(10, 2, 2, 1, 2, 3, 1, 2, 3, 3, 4, 5, 4, 5, 6, 6, 5, 7),
                  x1 = c(rep(10, 3), rep(2, 3), rep(2, 3), rep(3, 3), rep(5, 3), rep(6, 3)),
                  x2 = c(rep(8, 9), rep(5, 9)))
data$group <- c(rep(1, 9), rep(2, 9))

## R print
a1 <- with(subset(data, group==1), lm(y ~ x1))
a2 <- with(subset(data, group==2), lm(y ~ x1))
a3 <- with(data, lm(y ~ x1 + x2))

stargazer(a1, a2, a3, type="text", star.cutoffs = 0.05, dep.var.labels=c("Individual Social Ranks"), out
"models.htm")
```

S3. Replication R codes for Mobility Tables

This R code will create the mobility tables of Sunghwabo in the manuscript.

```
library(corrplot)
(t11 <- with(Sunghwabo, table(GrandparentRank, ParentRank )))
r1 <- prop.table(t11, 1)

(t13 <- with(Sunghwabo, table(ParentRank, NumberOfChildrenOver8)))
r3 <- prop.table(t13, 1)

write.table(round(r1, digits=2), file = "mobtab1.txt", sep = ",", quote = FALSE, row.names = T)
write.table(round(r3, digits=2), file = "mobtab3.txt", sep = ",", quote = FALSE, row.names = T)
```

S4. Additional Regression Analysis Results

Table 3 shows the results of the Poisson mixed-effects analysis for parents without siblings. Unlike the results in the manuscript, here we used the number of children as a control variable. The results do not change much from Table 6 in the manuscript and Children Number is

statistically significant and positive as we expected. That is, parents with a large number of children tend to have a larger number of successful children than parents with a small number of children on average. The positive sign of Children Number could be simply due to the truncation: parents with k number of children could not have more than k number of successful children. Or, it could be due to a larger probability of having successful children by parents with a large number of children. Another interesting path is an interaction of fertility and social status: parents with high social status tend to have more children, many of whom are very successful thanks to many factors such as superior genes, their parent's social connections and reputation, peer competition/cooperation among their siblings, and parents' inputs to their education and social success.

<i>Dependent variable:</i>	Seonghwabo			Gajeongbo		
	$R \geq 2$ (1)	$R \geq 5$ (2)	$R \geq 8$ (3)	$R \geq 2$ (4)	$R \geq 5$ (5)	$R \geq 8$ (6)
Sex	0.008 (0.120)	0.051 (0.129)	0.518* (0.195)	-0.025 (0.120)	-0.027 (0.135)	-0.087 (0.221)
Parent Rank	0.130* (0.066)	0.138 (0.071)	0.145 (0.113)	0.325* (0.040)	0.355* (0.045)	0.323* (0.072)
Grandparent Rank	0.016 (0.065)	-0.011 (0.070)	-0.007 (0.112)	0.127* (0.047)	0.120* (0.052)	0.019 (0.081)
Grandparent Firstborn	-0.108 (0.135)	-0.087 (0.145)	0.310 (0.217)	-0.069 (0.093)	-0.073 (0.105)	-0.017 (0.173)
Children Number	0.323* (0.024)	0.330* (0.026)	0.353* (0.041)	0.307* (0.018)	0.323* (0.021)	0.292* (0.033)
Constant	-0.335 (0.199)	-0.462* (0.211)	-1.636* (0.331)	-1.297* (0.133)	-1.564* (0.149)	-2.492* (0.249)
Observations	169	169	169	895	895	895
Log Likelihood	-237.340	-223.574	-158.406	-915.822	-837.051	-475.721
AIC	494.681	467.148	336.811	1,851.643	1,694.102	971.442
BIC	525.980	498.447	368.110	1,899.611	1,742.070	1,019.410

Table 3. Children Number as a Control Variable. Parents without sibling are included in this analysis. Random effects are added at the parent level and at the grandparent level. Generation fixed effects are not reported to save space. Continuous variables are centered for the analysis. * indicates $p < 0.05$.

Table 4 shows regression results of models with an interaction term between Parent Rank and Grandparent Rank. The intuition is that the parent effect on children's social status may have a multiplicative effect with the grandparent effect and ignoring this multiplicative effect could generate a bias in our analysis. However, when we introduce the interaction term, we could not find a statistically significant sign from them. Across all measures and specifications, the interaction term is not statistically different from zero.

<i>Dependent variable:</i>	Seonghwabo			Gajeongbo		
	$R \geq 2$ (1)	$R \geq 5$ (2)	$R \geq 8$ (3)	$R \geq 2$ (4)	$R \geq 5$ (5)	$R \geq 8$ (6)
Sex	-0.105 (0.119)	-0.068 (0.127)	0.359 (0.189)	-0.051 (0.116)	-0.060 (0.130)	-0.109 (0.215)
Parent Rank	0.221* (0.063)	0.234* (0.068)	0.275* (0.107)	0.345* (0.038)	0.380* (0.043)	0.335* (0.069)
Grandparent Rank	0.098 (0.079)	0.075 (0.085)	0.059 (0.140)	0.150* (0.052)	0.152* (0.058)	0.060 (0.090)
Grandparent Firstborn	-0.021 (0.132)	-0.002 (0.142)	0.361 (0.211)	-0.116 (0.089)	-0.124 (0.101)	-0.050 (0.167)
Parent Rank×Grandparent Rank	-0.090 (0.063)	-0.094 (0.067)	-0.078 (0.107)	-0.027 (0.039)	-0.037 (0.044)	-0.054 (0.067)
Constant	-0.388* (0.168)	-0.490* (0.178)	-1.545* (0.271)	-1.184* (0.096)	-1.387* (0.109)	-2.428* (0.185)
Observations	169	169	169	895	895	895
Log Likelihood	-232.457	-223.080	-161.667	-911.101	-836.458	-473.823
AIC	484.914	466.161	343.335	1,842.202	1,692.917	967.647
BIC	516.213	497.460	374.634	1,890.170	1,740.885	1,015.615

Table 4. Interaction Analysis. Parents without sibling are included in this analysis. Generation fixed effects are not reported to save space. Random effects are added at the parent level and at the grandparent level. Continuous variables are centered for the analysis. * indicates $p < 0.05$.

We also tried different summary measures of children's social status at the parent level. The first one is the average social status of all children by a parent and the next one is the maximum social status of all children by a parent. For easy comparison between the two dependent variables, we use a linear model with generation fixed-effects with a log transformed children number as a covariate.

Table 5 shows that Parent Rank has a positive and statistically significant effect on the average and the maximum rank of children in both lineages. However, we could not find the grandparent effect from these dependent variables. One possibility is that the grandparent effect may work at a lower level ($R < 8$) as we found in the manuscript using the number of successful children and this mechanism could not be identified by the average or the maximum rank of children.

<i>Dependent variable:</i>	Seonghwabo		Gajeongbo	
	Average Children Rank (1)	Maximum Children Rank (2)	Average Children Rank (3)	Maximum Children Rank (4)
Sex	0.434 (0.437)	-0.103 (0.193)	0.693 (0.494)	-0.385 (0.278)
Parent Rank	0.657* (0.214)	0.645* (0.070)	0.787* (0.242)	0.960* (0.102)
Grandparent Rank	0.289 (0.249)	0.075 (0.079)	0.499 (0.282)	0.084 (0.114)
Grandparent Firstborn	0.375 (0.483)	-0.118 (0.158)	0.066 (0.546)	-0.011 (0.229)
Log Children Number	0.909* (0.320)	0.115 (0.115)	2.637* (0.362)	1.918* (0.166)
Constant	3.178* (0.804)	2.176* (0.204)	2.946* (0.909)	2.097* (0.295)
Observations	169	895	169	895
R ²	0.181	0.158	0.370	0.281
Adjusted R ²	0.140	0.151	0.338	0.275
Residual Std. Error	2.655 (df = 160)	2.137 (df = 886)	3.002 (df = 160)	3.086 (df = 886)
F Statistic	4.421* (df = 8; 160)	20.806* (df = 8; 886)	11.727* (df = 8; 160)	43.282* (df = 8; 886)

Table 5. Average Children Rank and Maximum Children Rank as a Dependent Variable. Parents without sibling are included in this analysis. Generation fixed effects are not reported to save space. Random effects are added at the parent level and at the grandparent level. Continuous variables are centered for the analysis. * indicates $p < 0.05$.

Table 6 shows the same results for parents with sibling. We can see similar results with Table 5. Parent Rank is positive and statistically significant but Grandparent Rank is not statistically different from zero.

<i>Dependent variable:</i>	Seonghwabo		Gajeongbo	
	Average Children Rank (1)	Maximum Children Rank (2)	Average Children Rank (3)	Maximum Children Rank (4)
Sex	0.073 (0.106)	-0.072 (0.049)	0.143 (0.123)	-0.125 (0.073)
Parent Rank	0.912* (0.059)	0.599* (0.020)	0.860* (0.068)	0.883* (0.029)
Grandparent Rank	-0.083 (0.060)	0.029 (0.022)	-0.054 (0.070)	0.046 (0.032)
Grandparent Firstborn	0.308* (0.119)	0.106* (0.045)	0.256 (0.139)	0.110 (0.067)
Log Children Number	0.114 (0.081)	0.066* (0.033)	1.957* (0.094)	1.826* (0.049)
Constant	4.017* (0.192)	1.973* (0.058)	4.001* (0.223)	1.929* (0.086)
Observations	2,530	11,173	2,530	11,173
R ²	0.134	0.121	0.256	0.237
Adjusted R ²	0.131	0.120	0.254	0.236
Residual Std. Error	2.585 (df = 2521)	2.134 (df = 11164)	3.003 (df = 2521)	3.163 (df = 11164)
F Statistic	48.813* (df = 8; 2521)	191.707* (df = 8; 11164)	108.573* (df = 8; 2521)	433.449* (df = 8; 11164)

Table 6. Average Children Rank and Maximum Children Rank as a Dependent Variable. Only parents with sibling are included in this analysis. Generation fixed effects are not reported to save space. Random effects are added at the parent level and at the grandparent level. Continuous variables are centered for the analysis. * indicates $p < 0.05$.