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Birth Order and Occupational Choices in Young Adulthood: Evidence from the National Longitudinal Survey of Youth

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Abstract

The family of an individual's origin is the first social institution they will ever be a part of. A person's family plays a key role during some of the most crucial developmental phases. Though there have been a number of studies conducted in the last century analyzing sibship and birth order's effect on personality, marriage, and educational achievement there have been no studies looking specifically at how an individual's birth order may influence the occupation they choose. The study uses data from the National Longitudinal Survey of Youth 1997 cohort (N = 5,792) and employs multinomial logistic regression models to investigate how the presence of siblings and birth order affects occupational choices in young adulthood. The results show that although the number of siblings have little effect on occupational choices, the oldest and the youngest of children are less likely to be in physical or service than in professional or mid-level office occupations compared to only and middle children.

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Introduction

With the increased income inequality and marital instability, parental resources play a more important role in determining children's social economic status. Having siblings usually means that parental resources are divided. However, siblings can be valuable resources as well, although who benefit and to what degree may depend on the birth order. Previous studies have been conducted in the last century analyzing sibship and birth order's effect on personality, marriage, and educational achievement, though none have been done look specifically at occupation. A Better understanding of how birth order influences occupational placement in adulthood may shed light on how parental resources are distributed within families and which children are the most vulnerable to resource dilution. As a result, more efficient policies targeted at specific families types and sibship structures could be implemented to facilitate children's socio-economic mobility.

Literature Review

The family is the foundation for the beginning of an individual's life. It can provide a stable framework for a child's growth, but it can also be a source of inequality. We live in a society where resources are limited and when a family unit has multiple children they will need to determine how their resources will be distributed among them. As Conley (2004) points out "Parental time, attention and money are somewhat fixed pieces of pie and each additional slice means less for everybody." As these parental resources are being

distributed among siblings some may receive more than others, which could possibly lead to differences in achievement later in life. There may also be more resources available for the oldest and youngest children, in families of more than two, because each will likely spend time as the only dependent in their house under their parents. (Sulloway 2010) This would allow more resources to possibly be allocated to them during these times, and may have an effect on the path they take in life.

Parents are also at different stages in their lives when they have each child under their care. "With each successive child, parents bring differing skills, experiences, marital relationships, and life-stage concerns to their child-rearing efforts." (Sulloway 2010) This may change the way in which they raise each child, which could in turn have an effect on their educational and occupational outcomes. In the earlier stages of their lives, when they are taking care of their oldest children, they may still be struggling to establish themselves and to settle down in their desired jobs and living areas. Chung (2013) notes how older siblings often notice more of the struggles their parents have gone through than younger siblings who may only have memories of their families being well established. Situations like these could also play a role in the kind of occupation a person may choose. Older siblings that watch their parents struggle may feel more compelled to take on more roles and jobs to help their family, while younger siblings may be less concerned with financials. It may be possible then that these differing characteristics could later have effects on these individuals choosing an occupation to provide for their own family. Though this situation may not always be the case in every family it is important to investigate the possibility of its effects.

Relationships between siblings may also be increasingly important with the changing family dynamics resulting from divorce rates, single parent homes and demanding adult occupations that are becoming more and more common in our modern society. The relationships between siblings could have a significant effect on each individual as they are growing up. "Brothers or sisters can be a source of frequent companionship, help, or emotional support. Older siblings can serve as caretakers, teachers, or models; in some instances they can even help compensate for absent or distant parents." (Wyndol 1985) If one or both parents are absent from the household or consistently away at work many household roles and even monetary earning roles may need to be fulfilled by one or more of the household's children. Siblings will often rely on each other to fulfill different roles and it's possible that these roles could be replicated later in life when choosing their occupations. "Increasingly romantic relationships are severed from childrearing arrangements; the old model of lifelong monogamy and clear gender roles is dead in many sectors of US society." (Conley 2004) Many siblings are growing up with only one parent, multiple sets of parents or anywhere in between. Lacking one or both parents may lead to siblings relying on each other more for resources and caretaking than they would have in a two parent home. Chung (forthcoming) notices that younger siblings may also rely on older siblings for financial support later in life and how older siblings are commonly seen as setting an example for the rest of their younger family to follow.

"[Her younger sister] wants to be a university professor, which might not give her a huge salary, but yet she leans on her sister whose financially very independent and well off to provide things for her, so it's kind of this weird relationship. And the older sister does it very willingly, but it's just a weird dynamic that they have because the second child is very idealistic about the agenda she has when it comes to our generation...without any regard for what she'll be doing, or how she'll be doing financially down the road. She figures that will get worked out. Which is fine, but her sister, is very funny, because her sister has a very

overwhelming sense of responsibility. She almost has more of a sense of duty as a female, first born female."

Though this research was conducted on Asian American immigrants it is highly applicable to mainstream American society. This kind of responsibility and behavior could propel older siblings to choose more prestigious and high paying jobs in order to support their other family members and to set an example for them. Younger siblings may also feel less obligated to choose a high paying prestigious job if they feel they can rely on an older sibling to support them. Not all sibling relationships may resemble this kind of dynamic but it could be conducive to examine its commonality and effects on mainstream American Society.

However, not all relationships between siblings are harmonious or helpful. "Sibling relationships can be egalitarian or asymmetrical in terms of power and status. The affective tone can also vary; relationships may be close or distant, harmonious or conflicted, cooperative or competitive." (Wyndol 1985) Relationships between some siblings may contain a significant amount of rivalry. Competing for their parents' resources and attention can often cause siblings to try to differentiate themselves from each other to try to further their interests. "Siblings are often most different from those brothers and sisters who are adjacent in age and birth order. Siblings sometimes vary in the parent to which they are closest, reflecting competitive specialization in the quest for parental affection." (Suloway 2010) This kind of rivalry among siblings could cause them to choose different professions in their adult lives, still trying to differentiate themselves from their siblings.

There is not a significant amount of current research done in this area. Though there are studies conducted on the correlation between birth order and a number of variables there have not been any done pertaining to occupation. The culture of the United States is constantly evolving at a rapid pace, as is the world's. This study will help provided a recent analysis of the effects of the institution of the family within our current culture.

Hypothesis

The hypothesis of this study is that a higher birth order will be associated with a higher probability of choosing a higher level occupation. This is because of the level of resources invested in older siblings by parents as well as the level of responsibilities typically placed on older siblings. This will be explored throughout the data analysis.

Data and Methods

This study uses data from the National Longitudinal Survey of Youth 1997. This set of data is a nationally representative survey of the United States and is made up of individuals born between the years 1980-1984. It is made up of two sub samples, one being a cross-sectional of 6,748 individuals designed to be representative of the US population in 1997. The second sub sample is a supplemental sample of 2,236 individuals designed to oversample Hispanic and African American individuals living in the United States. This sample is also made up of 51% male individuals and 49% female. Information was collected from participating individuals in the base year of 1997 when they were between the ages of 12-17. Information was then collected in 16 rounds to date to monitor their activities longitudinally, with the most recent data collected in 2013. There were 8,984

individuals in the initial interview and 7,141 of these individuals remained in the last survey round, giving this set of data 79.49% retention rate.

The main dependent variable of this study is occupation. Individuals were placed into one of four different occupation categories of physical, service, mid-level office, and professional services. Physical occupations are positions that require a significant amount of physical labor to perform, like construction workers or military members. The service category includes entry level jobs that do not typically require schooling after high school, like working in retail or food service. The mid-level office category includes positions within offices that may require some schooling but not a large amount. This also doesn't include management positions. The professional services category includes positions that generally require professional degrees, training or certifications to achieve, like managers, doctors or lawyers.

The main independent variable of this study is birth order. A person's "birth order" is defined by what order individuals within a family were born. Using the household roster data from the initial survey rounds in 1997 I could identify what individuals are siblings of each other. Based on their birth year I could identify which siblings are oldest, youngest or in the middle, as well as respondents without any siblings. The data on individual's occupation is taken from the most recent round of surveys, 2013 and 2011. In the 2013 survey round all participating individuals were between the ages of 28-34. This age allows for the majority individuals to be finished with their schooling and to have spent at least a few years in the full time work force.

I also use the information about respondents' age, sex, race (collected in the initial wave) and education level (collected at the later wave) to account for possible confounding influences in statistical models.

Because the dependent variable is categorical, I used Pearson's chi square test and multinomial logistic regressions to explore the relationship between birth order and chosen occupation. First, I use chi-square test to investigate whether there is a bivariate association between one's birth order and occupation. Then I use multinomial logistic regression to explore the association between one's birth order and probability of being in certain occupational category controlling for age, gender, race and education.

Results

Table 1 displays a cross tabulation of the number of siblings an individual has with the occupation they have chosen. The chi square test shows that the relationship between these variables is statistically significant ($p < 0.01$). This shows that the number of siblings an individual has is associated with type of occupation they choose to pursue.

Table 2 is a cross tabulation of the variable occupation and birth order. The chi square test shows that the association between these two variables is statistically significant ($p < 0.001$). The type of occupation an individual is more likely to pursue varies depending on their birth order.

Table 3 displays a multinomial logistic regression of the birth order and occupation variable, taking into account race, ethnicity, sex, age, and education. The professional services category is the base variable of this regression. Education and gender seem to be highly significant for all of the occupation. Race only seems to have an effect in some cases,

for example Native Americans working in service occupations and Hispanics working in physical occupations. Being the oldest is associated with higher odds of having an occupation requiring physical labor than having a professional occupation compared to being an only child. They are also less likely to hold a mid-level office position than an only child. Youngest children are also associated with higher odds of having an occupation requiring physical labor compared to only children. They are also associated with lower odds of working in a service position or mid-level office position compared to only children. Middle children are not significantly different from only children. These results are also only significant for male individuals.

Table 4 displays predicted values of birth order compared to occupation in a bar chart format. It can be seen which individuals have higher frequencies in each kind of occupation. There are high frequencies of middle children in professional positions and mid-level office positions, while there are less middle children in service positions and physical labor positions.

Conclusion

There is a number of studies that indicate siblings of different birth orders experience their families in different ways and have access to different resources. It is reasonable to assume there may be a correlation between an individual's birth order and the occupation they end up working in their adult life. There seems to be some correlation between birth order and occupation, though gender and education seem to be stronger. This is not necessarily surprising as we live in a culture that has a high gender differentiation and places a high importance on education. Being an only child seems to be

the most advantageous, in terms of the occupation they pursue. This also makes sense because they are receiving all of their parent's resources unlike others that may receive on a half or a third. Being the oldest is associated with higher odds of having an occupation requiring physical labor than having a professional occupation compared to being an only child. Being the oldest or youngest child is also associated with lower odds of having a mid-level office than a professional occupation compared to being an only child. Middle children are not significantly different from only children. Parents may be interested to hear that the level of resources they provided to each child can be effective of the occupation they eventually choose to go into.

Appendix

Table 1 Chosen Occupation compared to number of siblings

Occupation	Only Child	1 Sibling	2-3 Siblings	4-5 Siblings	6 or more Siblings	Total
Physical	47 14.20%	232 16.62%	467 18.30%	144 15.74%	124 19.22%	1,014 17.37%
Service	58 17.52%	204 14.61%	418 16.38%	158 17.27%	114 17.67%	952 16.30%
Mid-level Office	57 17.22%	279 19.99%	409 16.03%	137 14.97%	89 13.80%	971 16.63%
Professional Services	169 51.06%	681 48.78%	1,258 49.29%	476 52.02%	318 49.30%	2,902 49.70%
Total	331 100.00%	1,396 100.00%	2,552 100.00%	915 100.00%	645 100.00%	5,839 100.00%

Table 2 Chosen Occupation compared to Birth Order

Occupation	Only Child	Oldest	Middle	Youngest	Total
Physical	492 15.49%	270 19.96%	8 8.99%	314 20.38%	1,084 17.60%
Service	539 16.97%	231 17.07%	11 12.36%	238 15.44%	1,019 16.54%
Mid-level Office	576 18.14%	201 14.86%	20 22.47%	219 14.21%	1,016 16.50%
Professional Services	1,569 49.40%	651 48.12%	50 56.18%	770 49.97%	3,040 49.36%
Total	3,176 100.00%	1,353 100.00%	89 100.00%	1,541 100.00%	6,159 100.00%

Table 3. Log odds from the multinomial logistic regression model predicting occupation at age 28-34 (National Longitudinal Survey of Youth, N=5,792)

Variables	Physical (vs. Professional)	Service (vs. Professional)	Mid-level Office (vs. Professional)
<i>(Only child)</i>	-	-	-
Oldest	0.218* (0.108)	-0.021 (0.105)	-0.217* (0.106)
Middle	-0.639 (0.406)	-0.735 (0.393)	0.086 (0.288)
Youngest	0.204* (0.103)	-0.223* (0.101)	-0.202* (0.100)
<i>(0-2 siblings)</i>	-	-	-
3+ siblings	0.008 (0.092)	-0.051 (0.089)	-0.159 (0.084)
<i>(Male)</i>	-	-	-
Female	-1.94*** (0.093)	-0.5*** (0.077)	-0.645*** 0.076
<i>(White)</i>	-	-	-
Black	-0.815*** (0.1)	-0.083 (0.091)	-0.288** (0.095)
Native American	0.315 (0.465)	0.964* (0.378)	0.302 (0.46)
Asian	-0.557 (.317)	0.02 (0.304)	0.025 (0.256)
Other	0.145 (0.157)	0.226 (0.149)	0.082 (0.145)
<i>(Not Hispanic)</i>	-	-	-
Hispanic	-0.526*** (0.13)	-0.112 (0.125)	0.126 (0.12)
Age	0.001 (0.003)	-0.001 (0.003)	0.002 (0.002)
Education	-0.526*** (0.041)	-0.461*** (0.039)	0.078* (0.033)
Constant	1.222 (0.5)	0.632 (0.473)	-1.187* (0.462)
Pseudo - R ²		0.078	
χ^2 (df)		1121.52(36)	
Log likelihood		-6648.6	

*** p<0.001, ** p<0.01, * p<0.05. Standard errors in parentheses.

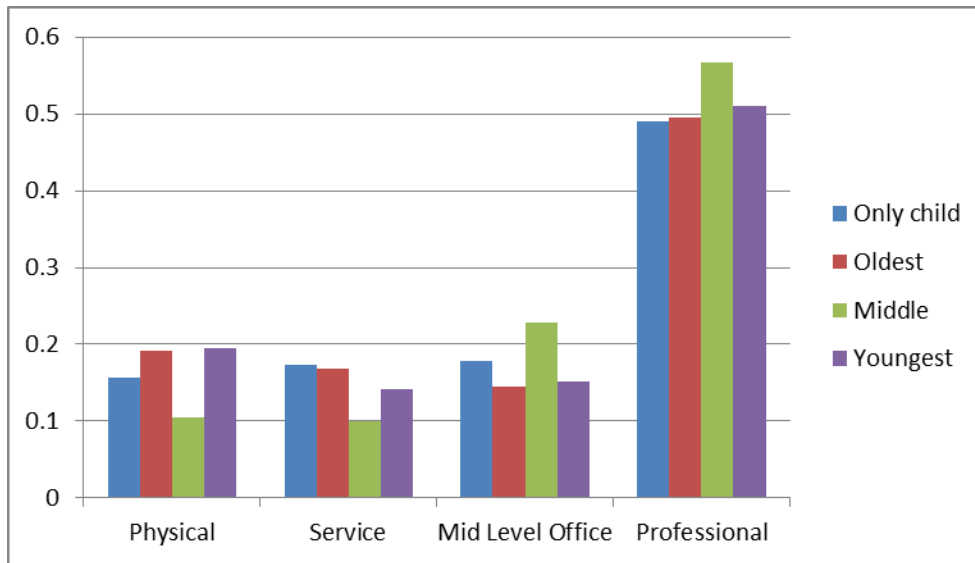
Table 4 - Predicted Probabilities of Birth Order compared to Occupation

Table 5 - Descriptive Statistics

Variables	Percentages	Mean
Birth Order	-	1.009
Only child	26.57	-
Oldest	59.28	-
Middle	0.84	-
Youngest	13.31	-
3 or more siblings	-	0.715
0-2 siblings	28.51	-
3+ siblings	71.49	-
Sex	-	1.488
Male	51.17	-
Female	48.83	-
Race	-	1.836
White	57.32	-
Black	27.94	-
Native American	0.72	-
Asian	1.86	-
Other	12.17	-
Ethnicity	-	0.213
Not Hispanic	78.69	-
Hispanic	21.31	-
Age	-	178.197
Education	-	2.635
N=5,792		

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