

The Role of Family Process on Academic Educational Achievements in the United States: Evidence from a longitudinal study

Ali Roghani

University of Texas at San Antonio

Abstract: This paper's main objective is to understand how the family process affects youth's educational outcomes in the U.S. Previous research does not have a conclusive understanding regarding parental influence and educational achievement. Some studies determine that some parental influence is connected with positive academic achievement, while others conclude that it is not associated with young adults' academic achievement. Using data from the National Longitudinal Survey of Youth 1997, an event history analysis was conducted to address how family process measures (family routines and parental monitoring) during adolescence change the rates and timing of the completion of a bachelor's degree. Although mothers' monitoring does not have a significant relationship with having an academic degree, higher father monitoring was positively associated with having the degree. Family routines provide a complex result. Average family routines are associated with a higher likelihood of academic achievements, while low and high family routines have the same outcomes. The research's findings imply the role of fathers and the multidimensional nature of the family process, suggesting that the family process is essential in determining rates and timing of academic achievements in the U.S.

I. INTRODUCTION

Parents may affect their adolescents' academic success in many aspects, from providing positive family environments and positive control to enhance adolescents' educational outcomes (Smith, Sheridan, Kim, Park & Beretvas, 2019). Positive parenting roles support adolescents' efforts at school and providing a pathway for future academic achievement (Moon, Kim, & Parrish, 2020). The quality of parent-adolescent interactions is linked to students' positive functioning (Sheridan et al. 2017). In addition, parents can significantly improve services and facilities available to support adolescents in meeting their learning or behavioral goals. By a positive family environment, adolescents' learning opportunities and experiences will be higher quality to have higher chances for success in educational attainment.

The present study examines the influences of the family process during adolescence on bachelors' degree completion in the transition to adulthood. This paper's main objective is to understand how parental characteristics affect the timing of bachelors' degree completion in the US. The academic achievements of youth are an essential component of the successes in US society. This paper compares the educational

outcomes of young adults relative to different family process levels in the US.

Although an extensive amount of research indicates the benefits of parents in their children's educational achievement, few studies examine the effects of family process in a longitudinal manner. Previous studies show that the relationship between adolescents and parents becomes more complicated than in the past. Besides, Census data from 1960 to 2010 shows an increase in the number of young adults living with their parents (Payne, 2012). The data provided by NLSY97 is a rich source to examine the relationship between parents and adolescents longitudinally. Therefore, the index of family routines and degree of parental knowledge scale is used to assess the influence of family processes on the timing of finishing a bachelor's degree through the transition to adulthood. This research applies an event history analysis methodology to examine how day-to-day family lives during adolescence influence individuals' educational attainment.

II. THEORETICAL FRAMEWORK

This research's framework is based on the transition to adulthood, which assesses events from adolescence to adulthood, and they are critical pathways for life decisions. As a result, parents-adolescents relationship during adolescence and early adulthood are strong determinants of future social mobility and integration. The transition to adulthood has many vital roles: finishing school, leaving the parental home, entering full-time work, and forming a family (Hogan and Astone 1986). Negative parenting would be associated with a higher risk for adolescents (i.e., early school dropout, lower rates of high school completion, and low college enrollment). In contrast, positive parenting increases the likelihood of higher education.

The family process as a crucial factor of parenting is a system affected by parental marital relationships and parent-adolescent relationships. The family process's quality depends on the whole of the family members, which means all family members can mutually interact. Additionally, contextual factors can change the family process's quality (Holmes et al., 2009). Therefore, during adolescence, the family process can create expectations and pathways for future events such as educational attainment.

Two measures of family processes are used in this study. First, family routines are defined as practices within the context of a family. Positive family routines provide a better quality of life among family members (Santos et al., 2015). In early adolescence, family routines provide positive family environments that can support higher parental involvement, positive relationships, and ultimately better condition to continue education (Mayberry et al., 2014). The second measure of the family process is parental monitoring, which is defined as monitoring children's education and relationships. High parental monitoring is crucial to hold higher expectations for adolescents to have higher educational aspirations, which provides better conditions for continuing education for adolescents (Gutvajin & Lepojević, 2020).

To examine the timing of life-course events, this research uses longitudinal and life history data. Previous research shows that longitudinal studies are essential to understanding family's influence on life events during the transition to adulthood (Roghani, Nyarko & Sparks, 2021). This research has important implications for the understanding of the mechanisms and characteristics that influence educational attainment. Early completion of the degree is an essential factor in increasing socioeconomic disparities in life-course. People who can finish their education on time are more likely to have a higher quality of life.

Data and Sample

The National Longitudinal Study of Youth 1997 (NLSY97), a prospective nationally representative survey of youth from the birth cohort 1980-84, was used for this research. In 1990, a list of housing units in selected areas of the United States was identified to start the interviews. Participants were selected by a random sample method and had a short interview to complete each household member's primary information. The first wave started in 1997 with 8,984 individuals with oversamples of Black and Hispanic youth when they were between the ages of 12 and 18. The respondents have been re-interviewed annually since then. The NLSY97 includes information about the family process and educational attainments. A resident parent or guardian was also identified at the first wave, which was used to collect data for more detailed family structure histories. This research used all eighteen rounds until 2017 when respondents were between 33 to 36 years old.

Measures

Dependent variable: The dependent variable in this research was the finishing of a bachelor's degree. NLSY97 asks participants the highest degree before the start of each academic school year in each wave. The completion of a bachelor's degree (BA, BS) was coded for the occurrence of the event. Those who had less education were considered the risk set for the analysis to estimate how respondents finished their bachelor's degree. Those who made the transition were excluded from subsequent waves. Therefore, the outcome is specified for those with less than a bachelor's degree.

Independent Variables: Two areas of family processes were measured, including family routines and parental monitoring. The study questions were designed based on Child Trends & Center for Human Resource Research (1999). Initial investigations examining the relationships between the family process measures and educational attainment in the NLSY97 showed that these associations were non-linear. Therefore, using this variable as a continuous measure, the impacts across the range of family processes were not clear.

First, Family routines were measured at baseline, applying the index of family routines, obtained from the family routines inventory (Jensen, James, Bryce, & Hartnett, 1983). Family Routine Index is the measurement for adolescents' routines and ritual activities within the parental home and includes four questions. Each question has a range of 0 to 7; therefore, the index ranged 0 to 28: in a typical week (1) how many days do you eat dinner with your family? (2) how many days does housework get done (when it is supposed to, for example, cleaning up after dinner, doing dishes, or taking out the trash?) (3) how many days do you do something fun as a family such as play a game, go to a sporting event, go swimming, and so forth? and (4) how many days do you do something religious as a family such as go to church, pray, or read the scriptures together?

Second, the scale of parental monitoring included four questions to assess how well parents know adolescent's relationships, education status, and activities. The scale is based on standard questions generally utilized by family study researchers to measure parents-adolescent's interactions (Maccoby & Mnookin, 1992). Each question of the scale ranged from 0 to 4. Thus, the total range is 0 to 16. The questions are :1) How much does he/she know about your close friends, that is, who they are? 2) How much does he/she know about your close friends' parents, that is, who they are? 3) How much does he/she know about who you are with when you are not at home? and 4) How much does he/she know about who your teachers are and what you are doing in school?

These were coded into three categories, including negative levels were defined (family process measures scores \leq Mean - 1 standard deviation [SD]), average-level (Mean - 1 SD < family process measures scores \leq Mean + 1 SD), and positive level (family process measures scores $>$ Mean + 1SD).

Control variables: In addition to using gender and race/ethnicity as controls in the analyses, several other variables were added to the analysis. Also, the study was controlled for employment status as the life-course events. A binomial time-varying variable was used to measure employment status, which identified those working part-time and full-time as employed, and those who were not working as unemployed. In addition, livings with two biological parents were included as parental characteristics.

Statistical Analysis

Event History Analysis was used to estimate the family structure's influences and parental marital quality on first union formation. The sample was organized in a person-period file, based on participants' age as the time point of risk exposure. Discrete-time binominal logistic regression was used for the analysis to estimate the relative risk of finishing a bachelor's degree, and the age pattern was modeled using a continuous B-Spline. Once the young adult reported the completion of a bachelor's degree, subsequent years of data were removed. The data were analyzed with the R programming language (version 3.5.2) (R Core Team, 2018).

III. RESULT

The sample includes 3157 young adults, and 52% of them were men. The majority of the samples were Whites (63%), and Hispanics were 20%. Blacks include 17% of the sample in this analysis. Most of the adolescents reported average family process measures. In terms of monitoring, 64% and 75% of the sample had average father and mother monitoring respectively. Just 8% of the sample had high mother monitoring, while 16% had high mother monitoring. The percentage of adolescents who reported low father monitoring was greater than low father monitoring (20% vs. 17%). Again, most of the sample had average family routines (73%). Around 35% of the parents in the sample had high school, and more than 43% of the parents had at least a college degree.

The multivariable analyses presented in Table 2 indicate that family routines and fathers' monitoring were associated with the completion of a bachelor's degree. Adolescents who reported high father monitoring were more likely to have a bachelor's degree than those with low father monitoring (OR= 0.76, p<0.001). Additionally, higher father monitoring was associated with higher odds of having a bachelor's degree in the transition to adulthood (OR= -0.40, P<0.001). In the second model, father monitoring was significant; however, the likelihood was decreased. Although mother monitoring did not have a significant relationship with the completion of a bachelor's degree, based on Fig. 2, low mother monitoring decreased the likelihood of having the degree. Model 1 shows that average family routines was associated with a higher likelihood of having an academic degree (OR= 0.40, p=0.001). The analysis indicates that by controlling the model, family routines were not significant. The second model shows that higher parental education was significantly associated with a higher likelihood of finishing a bachelor's degree.

Interestingly, father education showed a greater role in the analysis. Females were more likely to have an academic than males (OR=0.28, p=0.001). Finally, Whites are more likely to complete the degree than Blacks in the sample (OR=0.53, p<0.001).

Figures show young adults with the age of 22 and 23 were more likely to get the degree and higher parental monitoring is an important factor to have a bachelor's degree. After this age, the chance to get a degree decreases considerably. Fig. 3

demonstrates that an average family routine was more crucial than other levels of family routines.

Table 1 Descriptive Analysis (NLSY97)

	Overall (N=3157)
Gender	
Male	1653 (52.4%)
Female	1504 (47.6%)
Race	
Black	534 (16.9%)
Hispanic	643 (20.4%)
White	1980 (62.7%)
Father Monitoring	
Average	2024 (64.1%)
High	505 (16.0%)
Low	628 (19.9%)
Mother Monitoring	
Average	2375 (75.2%)
High	249 (7.9%)
Low	533 (16.9%)
Family Routines	
High	482 (15.3%)
Average	2288 (72.5%)
Low	387 (12.3%)
Mother Education	
High School	1112 (35.2%)
Less than High School	612 (19.4%)
Some College and More	1433 (45.4%)
Father Education	
High School	1118 (35.4%)
Less than High School	683 (21.6%)
Some College and More	1356 (43.0%)

Table 2 Summary of Results

<i>Predictors</i>	Model1		Model2	
	<i>Log-Odds</i>	<i>p</i>	<i>Log-Odds</i>	<i>p</i>
Intercept	-3.11	<0.001	-2.90	<0.001
Low Father Monitoring(Ref:High)	-0.76	<0.001	-0.55	0.001
Average Father Monitoring	-0.40	<0.001	-0.35	0.004
Low Mother Monitoring(Ref:High)	-0.18	0.365	0.11	0.617
Average Mother Monitoring	0.13	0.397	0.17	0.315
Low Family Routines (Ref : High)	0.22	0.204	0.08	0.665
Average Family Routines	0.40	0.001	0.19	0.151
High School-Mother(Ref: Some College and More)			-0.62	<0.001
Less than High School-Mother			-0.94	<0.001
High School-Father (Ref: Some College and More)			-0.67	<0.001
Less than High School-Father			-1.12	<0.001
Female(Ref:Male)			0.28	0.001
Hispanic(Ref:Black)			0.21	0.225
White			0.53	<0.001

Figure 1

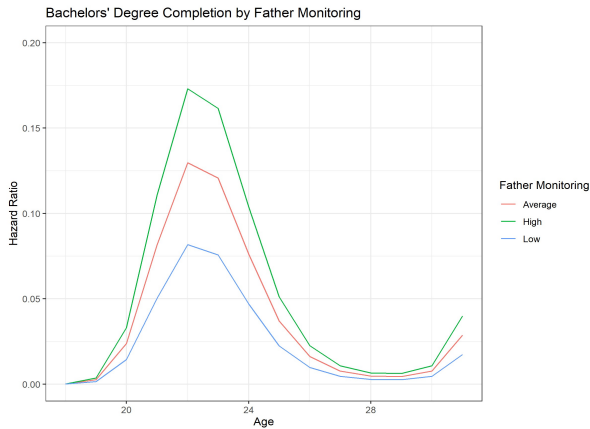


Figure 2

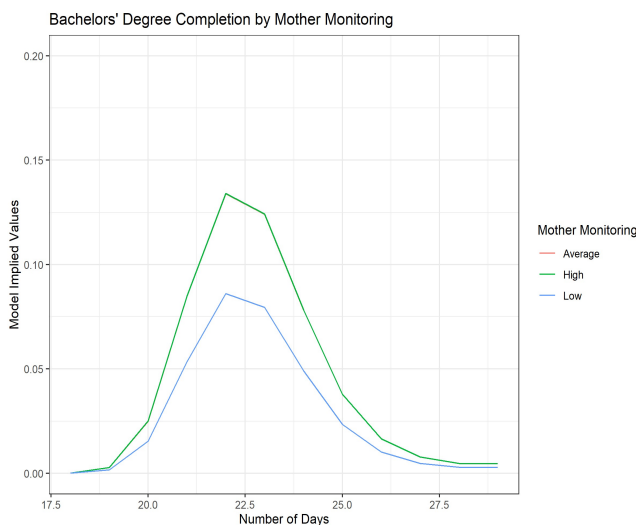
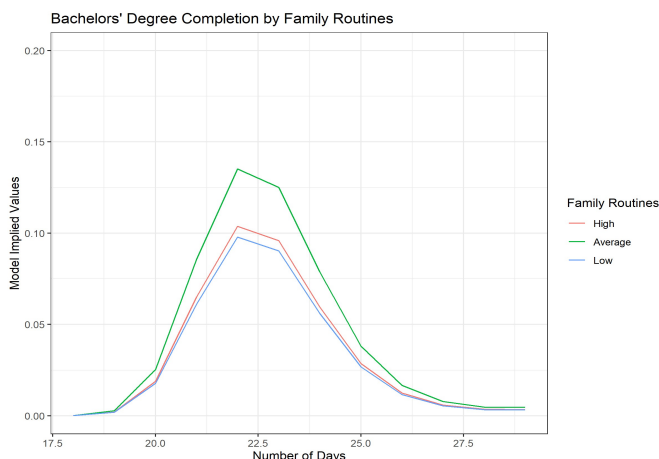


Figure 3



IV. DISCUSSION

This study has important contributions to the current, which shows that family process is an important predictor that increases the chance of getting a bachelor's degree in early twenty. However, in consistent with previous research, the

findings show that parental involvement may have mixed outcomes. (Castor et al., 2014). Previous Experimental research does not present a clear understanding of which particular kinds of parental influence are predictive of educational achievement. This lack of precision is the outcome of mixed findings from different studies. Some studies show that some parental involvement is connected with positive academic achievement, while others determine that it is not linked with young adults' academic achievement. Additionally, studies also found parental involvement to be negatively associated with achievement (Boonk et al., 2018).

This research has these complexities in its findings. The first elements of family process in this study is father monitoring which shows higher father monitoring was associated with higher academic educational attainments. The second measure was mother monitoring that indicates no association between mother controlling and involvement during adolescents with academic achievements during the transition to adulthood. Lastly, family routines provide a complex relationship between family environment and educational achievements. This study shows that adolescents who have a high involvement with their families have very close outcomes with those have low family routines. Although this study is not able to assess the mechanism behind this contradiction, it is consistent with previous study that shows supportive parenting was linked to later educational attainment (Melbyet al, 2008). Future study should examine how different levels of family involvement and family environments can change academic achievement outcomes.

This research also shows that fathers can have different effects than mothers. Research by Jeynes (2015) indicates father involvements are crucial for education achievements. However, currents study is not limited to fathers, and showed that mothers did not have same outcome as fathers have in the transition to adulthood. Another study that assessed the role of parents in the formation if first union examining the NLSY97 shows that fathers' role was more crucial than mothers (Roghani, Nyarko & Sparks, 2021). Moreover, second model demonstrates that fathers' education has more important for having an academic degree than mothers' education. Future study should focus on the roles of both parents by consideration of parents' socioeconomic in more details.

This study has some limitations. First family process measures were answered by adolescents. However, direct information from parents would be more helpful to have an accurate picture concerning parents' influence. The measures were used in this study mostly include parental involvement in school, and family community. Information of parental expectations and parental interest could enrich the findings. Lastly, recent data shows that young adults may stay their parent home longer than past, while the NLSY97 asked family process measures just for four years. Longer period information regarding family process would be essential to understand the relationship between parental influence and academic achievements.

V. CONCLUSIONS

This study provides evidence that family processes impact individuals' completion of bachelor's degree. The previous study highlighted those parental involvements on individuals' academic achievements. Although the findings show higher father monitoring and average family routines during adolescence plays a vital role in academic achievements, it provides some complex findings. Mother monitoring was not associated with having an academic degree, and adolescents with high family routines has lower achievements in academic education. This suggests a need of more study to examine family process measures which have multi directional outcomes in educational achievements. Fathers' influence during adolescence plays a critical role, which impacts future individuals' life-events. Policies should focus fathers' involvement and family environments during adolescence to increase the rates of academic achievements in the transition to adulthood. Future research should concentrate on fathers' influence and parents' socioeconomic resources to have a better understanding concerning family process and educational attainments.

REFERENCE

- [1] Boonk, L., Gijsselaers, H. J., Ritzen, H., & Brand-Gruwel, S. (2018). A review of the relationship between parental involvement indicators and academic achievement. *Educational Research Review*, 24, 10-30.
- [2] Bushnik, T., Tjepkema, M., & Martel, L. (2020). Socioeconomic disparities in life and health expectancy among the household population in Canada. *Health Rep*, 31(1), 3-14.
- [3] Castro, M.J., Expósito-Casas, E., Lopez-Martin, E., Lizasoain, L., Navarro-Asencio, E., & Gaviria, J.L. (2015). Parental involvement on student academic achievement: A meta-analysis. *Educational Research Review*, 14, 33-46.
- [4] Child Trends & Center for Human Resource Research. 1999. *NLSY97 Codebook Supplement Main File Round 1. Appendix 9: Family Process and Adolescent Outcome Measures*. Bethesda, MD: U.S. Department of Labor.
- [5] Gutvajin, N. M., & Lepojević, M. M. K. (2020). Parental Monitoring, Behavioral Problems, and School Achievement of Belgrade Secondary School Students2.
- [6] Hogan, Dennis P. and Nan Marie Astone. 1986. "The Transition to Adulthood." *Annual Review*
- [7] Holmes E, Jones-Sanpei H, Day R (2009) Adolescent outcome measures in the NLSY97 family process data set: Variation by race and socioeconomic conditions. *Marriage Fam Rev* 45(4): 374-391.
- [8] Jensen, E. W., James, S. A., Bryce, W. T., & Hartnett, S. A. (1983). The family routines inventory: Development and validation. *Social Science & Medicine*, 17, 201-211.
- [9] Jeynes, W. H. (2015). A meta-analysis: The relationship between father involvement and student academic achievement. *Urban Education*, 50(4), 387-423.
- [10] Maccoby, E. E., & Mnookin, R. H. (1992). *Dividing the child: Social and legal dilemmas of custody*. Cambridge, MA: Harvard University Press.
- [11] Mayberry, L., Shinn, M., Benton, J., & Wise, J. (2014). Families experiencing housing instability: The effects of housing programs on family routines and rituals. *American Journal of Orthopsychiatry*, 84(1), 95-109. doi: 10.1037/h0098946
- [12] Melby, J. N., Conger, R. D., Fang, S. A., Wickrama, K. A. S., & Conger, K. J. (2008). Adolescent family experiences and educational attainment during early adulthood. *Developmental psychology*, 44(6), 1519.
- [13] Moon, S. S., Kim, Y. J., & Parrish, D. (2020, December). Understanding the linkages between parental monitoring, school academic engagement, substance use, and suicide among adolescents in US. In *Child & Youth Care Forum* (Vol. 49, No. 6, pp. 953-968). Springer US. *Sociology* 12:109-30.
- [14] Payne, K. K. (2012). Young Adults in the Parental Home, 1940-2010 (FP12-22). National Center for Family & Marriage Research. Retrieved from http://ncfmr.bgsu.edu/pdf/family_profiles/file122548.pdf
- [15] Roghani, A., Nyarko, S., & Sparks, C. (2021). The first family formation among young Americans: the role of family process. *SN Social Sciences*, 1(2). doi: 10.1007/s43545-020-00045-x
- [16] Sheridan, S. M., Witte, A. L., Holmes, S. R., Wu, C., Bhatia, S. A., & Angell, S. R. (2017). The efficacy of conjoint behavioral consultation in the home setting: Outcomes and mechanisms in rural communities. *Journal of school psychology*, 62, 81-101. <https://doi.org/10.1016/j.jsp.2017.03.005>
- [17] Smith, T., Sheridan, S., Kim, E., Park, S., & Beretvas, S. (2019). The Effects of Family-School Partnership Interventions on Academic and Social-Emotional Functioning: a Meta-Analysis Exploring What Works for Whom. *Educational Psychology Review*, 32(2), 511-544. doi: 10.1007/s10648-019-09509-w