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Child Citizenship Status in Immigrant Families and Differential Parental Time Investments in Siblings

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Abstract: This study describes how parental time investments in children in immigrant families vary according to children's citizenship status. In families with multiple children, parents make allocation decisions about how to invest in each child. In immigrant households, a child's citizenship status may shape parental time allocations because of how this status relates to a child's prospects for socioeconomic mobility. It is unclear whether parents reinforce citizenship differences among siblings, compensate for these differences, or treat all siblings equally regardless of citizenship status. Moreover, past empirical research has not investigated differences in parental time investments in siblings with different citizenship statuses. To evaluate differential time investments in children based on citizenship, we conduct a quantitative analysis using data from the American Time Use Survey from 2003–2019 and focus on children in immigrant households with at least two children (N = 13,012). Our research shows that parents spend more time with children who have citizenship, but this result is primarily explained by a child's age and birth order. Our study provides a basis for further inquiry on how legal contexts shaping socioeconomic mobility may influence micro-level family processes in immigrant households.



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1. Introduction

This study focuses on differences in parental investments in children in immigrant families according to children's citizenship status. Parental time with children is a key input into child development and outcomes. Parents have a unique ability to transmit human capital to children (Becker and Tomes 1976), and parent–child time is an important channel for promoting the intergenerational transmission of human capital, thus fostering children's educational and social mobility (Attanasio et al. 2020; Breining et al. 2020; Gertler et al. 2014; Gould et al. 2019). In families with multiple children, siblings compete for scarce family resources as parents make decisions about allocations to children (Becker and Tomes 1976; Blake 1981). Parents with two or more children spread their time across children, and parents may not allocate time investments equally across all children. In fact, differential parental time allocation can be based on child characteristics including sex, age, birth order, adoption status, and health (Baker and Milligan 2016; Choi and Hwang 2015; Currie and Almond 2011; Gibby et al. 2021; Kalil et al. 2012; Lundberg and Pabilonia 2007; Price 2008; Wikle and Jensen 2021; Wikle and Wilson 2021). Whether intentional or unconscious, the parental differential treatment of children can shape family relationships and youth development (Kowal et al. 2006).

Immigrant households in the U.S. with two or more children with differing citizenship statuses offer a unique opportunity to investigate how a macrosystem policy context (immigration policy) shapes differential parental investments in children by citizenship status. Child citizenship status, or the lack thereof, may prompt different levels of parent–child interactions because of the ways that citizenship status in the U.S. shapes prospects

for educational and social mobility and family life (Dreby 2015; Gonzales 2009, 2011). On the one hand, because non-citizen children face more barriers to socioeconomic mobility, parents may invest more in their non-citizen children to compensate for differences in citizenship status among their children in order to equalize child outcomes. On the other hand, because of the enhanced prospects for socioeconomic mobility afforded by U.S. citizenship, parents could invest more in citizen children as a way to secure economic mobility for the family. Finally, it is possible that immigrant parents attempt to treat each child equally, regardless of their citizenship status. With competing predictions about how immigrant parents may respond to citizen versus non-citizen children and a dearth of empirical research evaluating this context, it is unknown how parents with mixed-status immigrant children in the U.S. allocate time to children with different citizenship statuses.

This study uses nationally representative data from the American Time Use Survey (ATUS) from 2003 to 2019 to explore whether parental time investments in children (ages 0–17) differ according to children's (siblings') citizenship statuses. We focus on a subsample of immigrant families in the ATUS (those families with at least one immigrant parent) with two or more children in the household in order to observe sibling differences in parental time investments. We examine parent-reported total time, one-on-one time, and quality time with children, comparing these time-use patterns across three groups of immigrant families: (1) Families with mixed-status citizenship children; (2) Families with no citizen children in the household; (3) Families with exclusively citizen children in the household. The ATUS includes information about family relationships and time use, so it is possible to identify which child in the family the parent is spending time with in their reported time use. Because birth order is strongly correlated with the types of mixed-status siblings observed in the ATUS sample (e.g., the non-citizen child is usually the oldest child), we further focus on parent time with the two oldest children in the household and restrict the families with mixed-status siblings to those where the oldest child was a non-citizen and the second child was a citizen.

This study contributes to the theme of “Rethinking the Mobilities of Migrant Children and Youth across the Americas” in two key ways. First, by focusing on immigrant families, parental time investments, and children's citizenship statuses, our analysis addresses the issue of migration and legal status within families. We expand the knowledge of mixed-status families in the U.S. beyond parent-child differences in citizenship status, focusing on siblings with different citizenship statuses as a potentially influential factor for family interactions. Second, we examine how the potential of children of immigrants for educational and social mobility, as indicated by their citizenship statuses, may influence parental time investments in immigrant households. We therefore provide a greater understanding of how migration and the prospects for educational and social mobility embedded in citizenship status shape the lives of children and youth.

1.1. Parental Time Investments in Children

Because parental time with children is a key input in a child's development (Kalil et al. 2012; Moroni et al. 2019), it is often termed an “investment” in children (Sayer et al. 2004). The idea that parental time investments shape child outcomes is rooted in the concept that parents convey skills and knowledge through their parenting behaviors and practices when spending time with their children. Parental time investments play a vital part in child development (Attanasio et al. 2020; Del Boca et al. 2014; Fiorini and Keane 2014; Price and Kalil 2019). Empirical research links parental time with children to positive child outcomes (Attanasio et al. 2020; Breining et al. 2020; Fomby and Musick 2018; Gertler et al. 2014; Gould et al. 2019; Lam et al. 2012; Milkie et al. 2015).

Parents handle parent-child time differently than time spent on leisure and home production (Aguiar and Hurst 2007; Gugl and Welling 2012; Guryan et al. 2008; Kimmel and Connelly 2007), and this pattern points to parents having different reasons for spending time with children rather than on other activities. Parents model and transmit social skills when they are with children (Lam et al. 2012; Wikle et al. 2019). Parents often

communicate love and values to children when they are together (Milkie et al. 2015). Time spent with children also correlates with higher child self-worth (Lam et al. 2012) and child well-being (Fomby and Musick 2018) in the short run, as well as fewer child behavioral problems, less substance abuse, better academic outcomes, and fewer delinquent behaviors (Milkie et al. 2015). Parental time with children also has persistent links with better long-term educational outcomes for children as well (Gould et al. 2019) and decreased involvement in the criminal justice system in adulthood (Breining et al. 2020).

While Becker and Tomes (1976) conceptualized parental investments in children as generic, in reality, different forms of parental investments may influence child development differently (Cobb-Clark et al. 2019; Del Bono et al. 2016; Fiorini and Keane 2014). The benefits of parental time with children may be sensitive to the context in which shared time occurs and to the activities carried out together. For example, one-on-one time between a parent and a child may promote child development in ways not easily replicated in other contexts. During one-on-one time, parents more often focus on children (Larson et al. 1996; Wikle et al. 2019), and they may be highly responsive to children during this time (Crouter and Crowley 1990). One-on-one time between a parent and a child is associated with greater self-worth in children (Lam et al. 2012) and increased parent–child closeness (Larson and Richards 1991; Larson et al. 1996).

Parent–child quality time is another valuable form of parental time investment. An activity-based concept of quality time suggests that activities that foster a high level of parent–child interaction include playing, reading, academic tutoring, and meals and shows that these activities likely contribute to child development (Price 2008). Past research demonstrates that positive engagement activities between parents and children promote cognitive growth (Attanasio et al. 2020) and child development (Keown and Palmer 2014; Offer 2013), and joint activities provide a basis for individual competence in children, close relationships between parents and children, and the psychological adjustment of children (Crouter et al. 2004).

1.2. Parental Time Investments in Children with and without Citizenship Status

In a context with multiple children, siblings compete for parental investments, as parents make decisions about allocations of scarce resources to children (Becker and Tomes 1976; Blake 1981). Most parents would like to think that they treat their children equally, but empirical research shows that several child characteristics are known contributors to differential parental time investments in children. To be sure, parents may spend time differently with children based on characteristics such as a child's health (Currie and Almond 2011; Wikle and Jensen 2021), sex (Baker and Milligan 2016; Choi and Hwang 2015; Lundberg and Pablonia 2007), age (Kalil et al. 2012; Wikle and Wilson 2021), birth order (Price 2008), and adoption status (Gibby et al. 2021).

In immigrant families, parent time investments could be related to children's citizenship statuses because of the way that citizenship shapes prospects for educational and social mobility (Dreby 2015; Gonzales 2009; Gonzales 2011). In the context of immigration to the U.S., differences in citizenship status among siblings most often occur when siblings are born in different countries. A child born prior to a family's international migration typically would be born outside of the U.S. and would not hold U.S. citizenship except after migration and the process of naturalization. If an additional child or children is/are born in the U.S. to non-citizen immigrant parents after migration, they will hold U.S. citizenship because of birthright citizenship.

Children with citizenship status face a different opportunity structure in the U.S. than non-citizen children. Legal status in the U.S. is a primary factor determining immigrant families' use of public programs and services (Xu and Brabeck 2012). Families with mixed-citizenship status navigate uneven public program access based on stratified legal categories (Abrego 2019). For example, there are clear differences in eligibility for and access to Medicaid and CHIP programs based on a child's citizenship. Children with citizenship can also provide their family with expanded access to SNAP and TANF, something their

non-citizenship siblings cannot do. This suggests that children with citizenship may play a role in providing a family with tangible resources. These differences in access to public programs are salient for children and their outcomes. For example, a quantitative study documented worse health outcomes for non-citizen children relative to siblings with citizenship due to the different access to public health insurance and healthcare (Jewers and Ku 2021). Program access is one channel that may cause parents to differentiate their children on the basis of immigration status.

In addition to differences in program access, citizenship status in the U.S. confers access to a number of social rights and can be particularly salient in influencing children's educational and labor market trajectories (Catron 2019; Gonzales 2011). This close relationship between citizenship status and mobility is evidenced by the effects of policies that eliminate (or create) barriers to educational and labor market participation for non-citizen immigrant youth and young adults. For example, in-state tuition policies for undocumented immigrant students in higher education have been shown to increase the educational enrollment of non-citizen youth and young adults at both the secondary and postsecondary education levels (Amuedo-Dorantes and Sparber 2014; Bozick and Miller 2014; Dickson et al. 2017; Kaushal 2008; Potochnick 2014), whereas the denial of in-state tuition has suppressed the college enrollment of this group (Bozick et al. 2016). The Deferred Action for Childhood Arrivals (DACA) program has had more mixed effects on the educational and labor market outcomes of DACA-eligible youth and young adults, which may be due to the fact that DACA places eligible youth and young adults in a "liminal" status and does not confer the same advantages as full citizenship status (Amuedo-Dorantes and Antman 2017; Dickson et al. 2017; Hamilton et al. 2021; Kuka et al. 2020; Pope 2016). Therefore, because of how citizenship status shapes the prospects for social and educational mobility, a child with citizenship status may have a greater prospect for educational and social mobility and a higher earnings potential in adulthood relative to a sibling without citizenship. In families where children have mixed-citizen statuses, parental investments in children could differ based on parental perceptions of children's prospects for educational and social mobility within this unequal opportunity structure.

If parents seek to maximize future family resources, they may over-allocate time investments to the child or children with citizenship status, because this child or these children may have the greatest prospects for educational and social mobility. In other words, the citizen child or children may have the greatest prospects for a high financial return on parental time investments (Becker and Tomes 1976). In this scenario, immigrant parents would invest more time in a citizen child relative to a non-citizen child as a way to potentially improve the family's future economic opportunities. Immigrant parents would invest more time in the citizen child because this child is in the best position to leverage a more open opportunity structure. In doing so, however, parents could be effectively reinforcing pre-existing differences between siblings.

In contrast, parents may be interested in equalizing outcomes among their children. If children have different needs, then equalizing outcomes may entail parents investing more time in the children with the highest needs (Behrman et al. 1994). Non-citizen children may be perceived to have higher needs than citizen children because their future opportunities for educational and social mobility in the U.S. are more limited. Immigration uncertainty is known to have negative consequences for youth and their development (Berger Cardoso et al. 2021; Dreby et al. 2022), and youth without citizenship may face high pressure, stress, and uncertainty about their future (Gonzales 2011).

Resilience development in children and youth remains a key protective factor to manage stress related to citizenship status and immigration uncertainty (Dreby et al. 2022). The most reliable way to develop resilience in children and youth is through consistent interactions with caring people (Ungar 2013), secure connections with parents and other adults (Ungar et al. 2013), and warm relationships with parents and other family members (Dreby et al. 2022). Parents of children without citizenship may sense a greater need to develop resilience in these children and may respond to that need by spending more time

with them relative to siblings with citizenship. Thus, parents may seek to compensate for sibling citizenship differences.

While previous research addresses intrahousehold behavior in immigrant families, there is very little research studying differences in citizenship between siblings. Most of the research on mixed-status families addresses family dynamics and outcomes in comparing couples (Grossbard and Vernon 2020; Nottmeyer 2014; Vargas and Chavez 2010) or households with citizen children and non-citizen parents (see, for example, Van Hook and Balistreri 2006; Vargas and Ybarra 2017; Yoshikawa and Kalil 2011). In fact, mixed-status families are often defined as families where there is at least one U.S.-born child and one non-citizen (and/or unauthorized) adult parent (Passel 2011).

The prior literature on mixed-status families shows that children in these mixed-status families are keenly aware of the opportunities afforded by citizenship (Mangual Figueroa 2012; Zayas and Gulbas 2017) and confirms that the non-citizen status of one family member can have ripple or spillover effects for the whole family (Castañeda and Melo 2014; Enriquez 2015; Mangual Figueroa 2012). One qualitative study of family dynamics among siblings with different citizenship/documentated statuses (from the perspective of the non-citizen undocumented child) showed evidence of differential treatment by parents based on children's immigration status, mainly in the form of social comparisons of siblings by immigration status (Romero Morales and Consoli 2020). This literature, while small, suggests that social, legal, and policy contexts shape family conversations, sibling interactions, and parent decisions. It is unclear, however, whether parent time with children differs according to children's citizenship statuses.

1.3. Research Questions

We investigate the following research questions on parental time investments in immigrant families by children's citizenship status:

1. How does overall time with parents, one-on-one time with parents, and quality time with parents vary for children in immigrant families in mixed-citizenship status sibships versus those in same-citizenship status sibships (i.e., all citizens and all non-citizens)?
2. Which child, parent, and household factors best account for the observed differences in parental time investments by children's citizenship sibship type (mixed-status versus same-status)?

2. Materials and Methods

2.1. Data

We use the American Time Use Survey (ATUS) from 2003 to 2019 to evaluate parental time investments in children (Hofferth et al. 2020). The Bureau of Labor Statistics administered the survey. Participants were selected for the ATUS in two steps. First, the ATUS sampled households from the outgoing rotation of the Current Population Survey, and then the ATUS randomly selected one household member aged 15 years or older to participate in the time diary survey (Bureau of Labor Statistics 2019). The survey had good response rates, ranging from 57.8% in 2003 to 42.0% in 2019 (Bureau of Labor Statistics 2019).

The ATUS conducted a single time diary interview by phone, which lasted about 30 min. During the interview, participants accounted for their time use from 4 a.m. of the previous day until 4 a.m. of the interview day (Bureau of Labor Statistics 2019). Interviewers used computer assistance and the Day Reconstruction Method to collect time use data. The Day Reconstruction Method effectively prompts high-quality recall by participants and has been validated against experience sampling data collection (Kahneman et al. 2004). The ATUS interviewed participants throughout the year, including weekdays and weekends. The ATUS oversampled weekends to have a good coverage of times through the week, when time use patterns may differ. We used sampling weights provided by the ATUS to correct for sample non-response and to adjust for weekend oversampling. Following weighting, average time was reflective of the United States national population. We

assigned each focal child their household weight to have estimates that were representative of children in the United States.

The original ATUS sample included 581,555 individuals in 210,586 households. To focus on parental time investments with each household child, the household children, aged 18 years or younger, of a responding parent were the unit of observation. In other words, each child's measured time with a parent was based on the parental report of time spent with that child. The ATUS classified the family relationships and identified the children of respondents, and we followed these classifications. Household children included biological children, adopted children, and stepchildren.¹

We dropped 437,477 people in ATUS households who were not classified as household children (aged 18 years or younger) of a respondent parent in the sample.

Next, to focus on immigrant families, we dropped 110,637 youth who did not have at least one immigrant parent in the household (defined as being born outside of the United States). The parent reporting time spent with children, however, may not have been the immigrant parent in the household. We dropped 2017 children who lived in households where at least one child was missing information about their citizenship status.² Finally, to study siblings while also reducing selection based on family size, we restricted the sample to families with two household children by dropping 6089 youth. This left a final analytical sample of 10,193 parents reporting on 13,012 parent–child dyads.

Table 1 provides a demographic overview of the sample of children in immigrant families, split by whether a focal child was a citizen, was not a citizen but had at least one sibling who was a citizen, lived in a household with no citizen children, or lived in a household with exclusively citizen children. The most notable differences were the age differences between the children who were citizens that had a non-citizen sibling and the children who were non-citizens and had citizen siblings. The child who was a citizen was usually the youngest compared to non-citizen children, as seen in Table 1. In fact, in 93% of mixed-status sibling situations in our sample, the oldest child in the household was not a citizen. This situation likely arises when an immigrant family migrates to the U.S. with a non-citizen child or children and then has a subsequent child or children after arrival, who have birth-right citizenship. Because these mixed-status sibling situations are highly correlated with birth order, we controlled for all observable factors listed in Table 1 in the adjusted models.

Table 1. Individual and Household Characteristics of Children of Parent Respondents in Immigrant Households.

	Group A—Has Citizenship, Sibling Does Not	Group B—No Citizenship, Sibling Has Citizenship	Group C—No Children in Household Have Citizenship	Group D—All Children in Household Have Citizenship
	N = 533	N = 533	N = 902	N = 11,044
Characteristics of the Focal Child				
Age	5.59 ^{bcd}	11.10 ^{ad}	11.01 ^{ad}	8.35 ^{abc}
Female	0.51	0.46	0.47	0.49
Black non-Hispanic	0.09 ^c	0.09 ^c	0.06 ^{ab}	0.07
White non-Hispanic	0.13 ^d	0.10 ^d	0.14 ^d	0.21 ^{abc}
Hispanic	0.54	0.56	0.54	0.53
Oldest household child	0.07 ^{bcd}	0.93 ^{acd}	0.50 ^{ab}	0.50 ^{ab}
Youngest household child	0.93 ^{bcd}	0.07 ^{acd}	0.50 ^{ab}	0.50 ^{ab}

Table 1. Cont.

	Group A—Has Citizenship, Sibling Does Not	Group B—No Citizenship, Sibling Has Citizenship	Group C—No Children in Household Have Citizenship	Group D—All Children in Household Have Citizenship
	N = 533	N = 533	N = 902	N = 11,044
Characteristics of the Focal Parent				
Parent is female	0.53	0.53	0.54	0.53
Parent is married	0.91 ^d	0.91 ^d	0.91 ^d	0.87 ^{abc}
Age of parent	37.64 ^{cd}	37.64 ^{cd}	39.93 ^{abd}	38.99 ^{abc}
Parent is an immigrant	0.98 ^d	0.98 ^d	0.98 ^d	0.84 ^{abc}
Highest education of parent				
Less than High School	0.29 ^d	0.29 ^d	0.30 ^d	0.24 ^{abc}
High School	0.25	0.25	0.21 ^d	0.25 ^c
Some College +	0.46 ^d	0.46 ^d	0.49	0.51 ^{ab}
Works full-time	0.62 ^{cd}	0.62 ^{cd}	0.69 ^{ab}	0.71 ^{ab}
Characteristics of the Household				
Yearly family income	61,428.05 ^d	61,428.05 ^d	63,534.76 ^d	77,104.60 ^{abc}
Average age of household children	8.35 ^c	8.35 ^c	11.01 ^{abd}	8.35 ^{abd}
Std. dev. of age of household children	4.25 ^{cd}	4.25 ^{cd}	2.68 ^{ab}	2.62 ^{ab}
Fraction female of household children	0.48	0.48	0.47	0.49

Note: American Time Use Survey, 2003–2019. Sample consists of families with two household children and at least one immigrant parent. Family income top-coded at USD 150,000. Letters represent the significance of two-sample unpaired *t*-tests with unequal variances for $p < 0.05$. ^a compares to Group A, ^b compares to Group B, ^c compares to Group C, ^d compares to Group D.

2.2. Measures

2.2.1. Primary Explanatory Variable: Citizenship Status of a Child

The final wave of the CPS survey collected information on the citizenship status of each household member, including children. Citizenship information was collected at the time of the final CPS interview, and this information was self-reported by the child or a family member. Using this information from the CPS, the study classified all children in the household of the ATUS participant using a categorical variable with four categories based on the focal child's citizenship and their sibling/s' citizenship status/es: (1) focal child had citizenship in the United States and at least one household sibling did not, (2) focal child did not have citizenship and at least one household sibling did, (3) focal child and household siblings did not have citizenship, and (4) focal child and all household siblings had citizenship.

2.2.2. Dependent Variables: Parental Time Investments

The study used three dependent variables which were measures of parental time investments in a focal child. For all activities carried out on the sample day, interviewers asked respondents, "who was with you?" (Bureau of Labor Statistics 2019). This measure focused on in-person contact only, and electronic communications were not measured. Interactions between the parent participant and each household child were measured separately. Once time with focal children from each household was identified, we used detailed activity codes from the data to construct measures of parental time with each household child, and the construction of these measures is documented in the Appendix A Table A1. We measured the total time a parent spent with a focal child (in minutes per day), which was not specific to who else may have been present (another parent, a sibling, etc.) or the activity being carried out. One-on-one time with a child (minutes per day) required that

no other people were present and was not specific to the activity being carried out. Minutes per day of quality time were focused on the activity shared by a parent and child. This variable was designed to measure the time during which a reasonable level of interaction between parents and children likely occurred, such as playing, reading, academic tutoring, eating meals, and attending events (Price 2008). Measures of parental time were not conditional on spending positive time with a focal child, and some parent–child dyads reported spending no time on the sample day.

2.2.3. Control Variables

Additional compositional and contextual factors were measured to account for observable characteristics that may correlate with a child’s citizenship status as well as parent–child interactions. Individual characteristics were measured and controlled in regression models. The sex of a child relates to parental time investments (Lundberg and Pablonia 2007; Mammen 2011), and we constructed a binary variable to control for whether the focal child was female (1 = female, 0 = not female). A child’s age also relates to parental time investments (Lam et al. 2012), and we measured age using a continuous variable. A child’s birth order correlates with parental time investments (Price 2008); we therefore used a categorical variable to control for household birth order (1 = oldest, 2 = middle, 3 = youngest). We measured race and ethnicity using categorical variables to indicate whether the focal child was Hispanic or non-Hispanic Black.

We measured the characteristics of a focal parent, including a binary for whether the head of the household was a female. We measured the age of the oldest household parent (in years). We controlled for the highest level of education attainment by household parents with categorical variables. A binary variable captured whether at least one household parent worked full time, and a binary variable measured whether the household was dual-income (Cha and Park 2020; Keown and Palmer 2014; Milkie et al. 2015). We controlled for family income as a continuous variable, noting that the ATUS top-coded family income was at USD 150,000 in nominal terms each year. Income was adjusted for inflation to reflect real 2019 dollars (the final year included in the study). To control for sibling composition, we included measures of the number of household children, the average age of household children, and the percentage of household children who were female. To control for child spacing, we included the standard deviation of age of household children. To account for how geography may shape parental time investments, we included a binary measure of whether a household was in an urban area, as designated by the ATUS. The region of the United States was included as a categorical variable (1 = Northeast, 2 = Midwest, 3 = South, 4 = West).

To ensure that the results were not based on the timing of the interview, we included several timing controls including binary variables for each survey year, binary variables for the survey month, and binary variables for the day of the week on which the survey was taken.

2.3. Analytical Approach

The study provided a description of parental time investments across families, comparing family and child citizenship status (N = 13,012) using descriptive statistics on the sample to show patterns in the data. The study used t-tests to detect whether groups demonstrated differences in means. We note that citizenship in mixed-citizenship families was connected to birth order, with younger children more often having citizenship. Typically, parents spend less time with children as children age (Wikle and Wilson 2021) due to children growing in autonomy and spending less time at home (Steinberg 2020), and it would be expected that parents would spend more time with younger children. Therefore, in addition to descriptive overall patterns, the study evaluated patterns with sensitivity to birth/age order (see Figure 1). Again, t-tests were used to evaluate group differences.

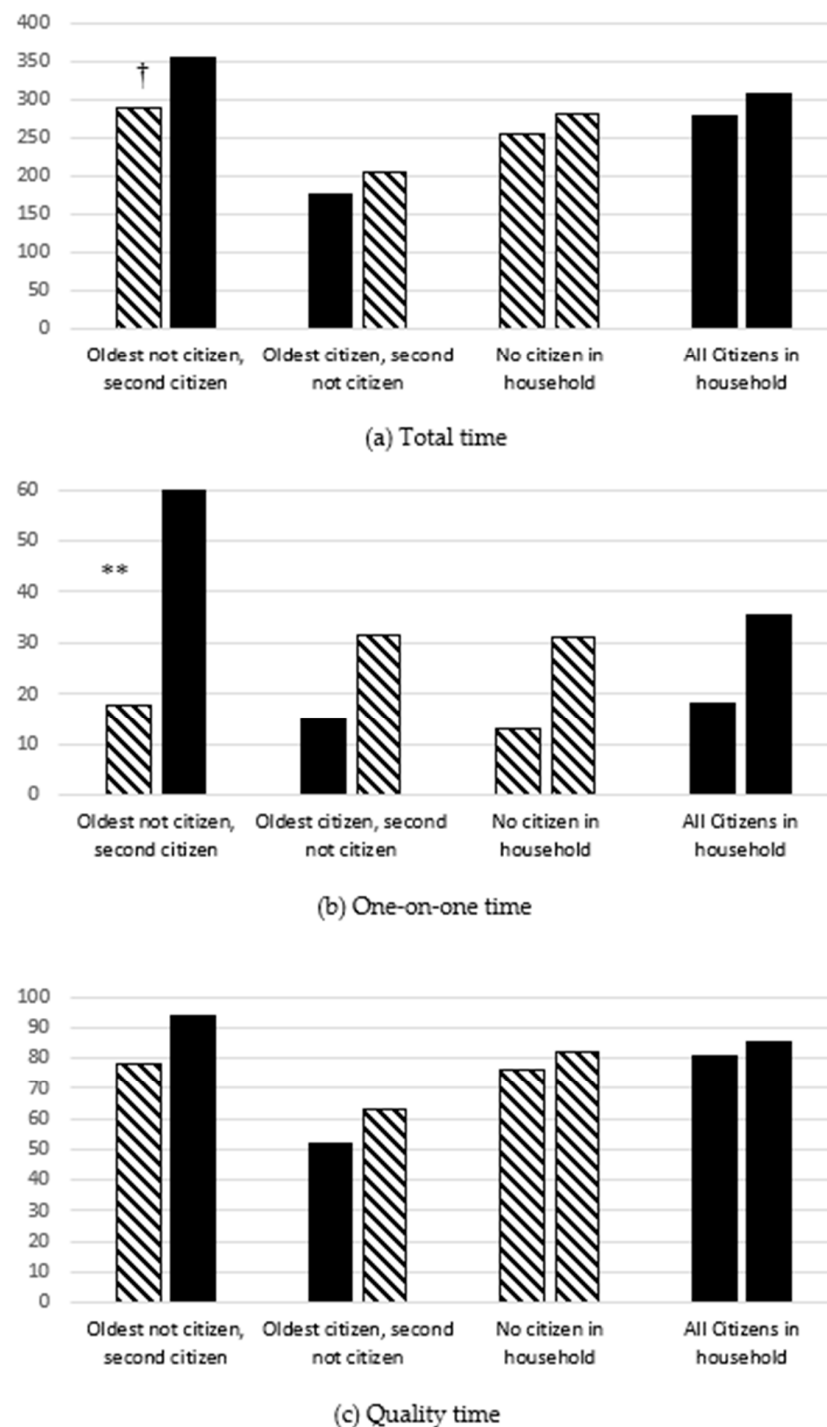


Figure 1. Parental Time Investments in Children by Birth Order and Citizenship Status. Data: American Time Use Survey, 2008–2019. Sample of families with two household children and at least one immigrant parent. For each family type, the oldest child is on the left and the second child is on the right. Dashed bars represent non-citizen children. Black bars represent citizen children. Asterisks (** $p < 0.01$) and daggers ($^{\dagger} p < 0.10$) represent a significant difference in the sibling gap relative to the sibling gap in families with no child with citizenship in the household.

We used Ordinary Least Squares regressions to estimate models. Our models included three dependent variables which were each estimated as separate OLS regressions, including parental time investments in minutes per day of (1) total shared time, (2) one-on-one time, and (3) quality time. The analysis was not conditioned on having positive time in a dependent variable; observations reporting no time in a particular activity were included.

Because zeros were generally not due to censoring, an OLS model is more robust than a Tobit model when working with time use data (Stewart 2013). We included categorical information on a focal child's citizenship classification; the omitted group was children in households where all siblings had citizenship, and all comparisons were relative to that base group. All individual, household, and timing controls described in Section 2.2 were also included in regression models. Standard errors were clustered at the household level to account for correlations among siblings.

Next, we focused only on immigrant families with children of mixed citizenship (at least one citizen and one non-citizen child) and evaluated within-family sibling comparisons of parental time investments (N = 2989). We estimated a regression model with parent fixed effects to account for invariant individual and household characteristics that may correlate with the citizenship status of children. The effect of having citizenship on parental time investments is identified if, within a family, the occurrence of citizenship is exogenous to parental investments (Currie and Almond 2011; Rosales-Rueda 2014). To the extent that we were able to, we controlled for correlated variables, including a child's age, gender, birth order, and race/ethnicity, to account for observable correlates of parent time investments, although we acknowledge that the potential for endogeneity remains.

The survey provided high-quality data with minimal missing data; however, six percent of observations were missing information on family income, race, and ethnicity. The analyses used multiple imputation with chained equations (with 100 imputed datasets) to account for missing information on these covariates in the sample.

3. Results

3.1. Descriptive Results

In descriptive data patterns in mixed-citizenship households, all three forms of parental time investments (total time, one-on-one time, and quality time) were highest among children who had citizenship but whose siblings did not, as seen in the upper panel of Table 2. The total time with children was also higher for children in all-citizen sibships relative to those with all non-citizen sibships. Parents spent the least amount of one-on-one time and quality time with children who did not have citizenship but whose sibling/s had citizenship, relative to children in households where all children had citizenship (for one-on-one time) and relative to their siblings (for one-on-one time and quality time). Interestingly, parental one-on-one time and parent quality time were quite similar in households where no children had citizenship compared to households where all children had citizenship.

Table 2. Minutes Per Day of Parental Time Investments in Each Child.

Unadjusted Results				
	Group A—Has Citizenship, Sibling Does Not N = 533	Group B—No Citizenship, Sibling Has Citizenship N = 533	Group C—No Children in Household Have Citizenship N = 902	Group D—All Children in Household Have Citizenship N = 11,044
Total time	342.97 ^{bcd}	284.87 ^a	268.74 ^{ad}	292.52 ^{ac}
One-on-one time	56.38 ^{bcd}	18.88 ^{ad}	22.10 ^a	26.70 ^{ab}
Quality time	91.13 ^{bc}	77.26 ^a	79.28 ^a	82.99
Adjusted Results				
Total time	300.62	290.22	289.76	292.52
One-on-one time	30.45	23.75	25.74	26.70
Quality time	85.01	80.66	88.61	82.99

Data: American Time Use Survey, 2003–2019. Sample consists of families with two household children and at least one immigrant parent. Adjusted values correspond to the regression results shown in Appendix A Table A2. Letters represent the significance of two-sample unpaired *t*-tests with unequal variances for $p < 0.05$. ^a compares to Group A, ^b compares to Group B, ^c compares to Group C, ^d compares to Group D.

Because there is a strong relationship between birth order and types of mixed-citizen sibships (Table 1), we further analyzed these patterns by splitting the sample by birth order. Figure 1 shows the differences between the oldest and youngest child in two child households in terms of time spent with parents. Even when separating citizenship from birth order in Figure 1, patterns continued to show that, in mixed-citizen families, parents spent the most total time with children who had citizenship and were the youngest child. The gap in time with parents was significant between siblings where the oldest child was a non-citizen and the youngest sibling was a citizen for total time (at $p < 0.10$) and especially for one-on-one time (at $p < 0.01$). Parents spent less time with older siblings than with younger siblings in other families, but this gap in parent-child time was statistically similar for children in mixed-citizen sibships where the citizen was the oldest child, in all-citizen sibships, and in all non-citizen sibships. These patterns suggest that citizenship differences among siblings within a household were correlated with differential parental time investments and that birth order was an important consideration in the time investments.

3.2. Multivariate Model Results

The lower panel of Table 2 displays the adjusted time spent with children, and the corresponding multivariate model results are found in Table 3. In our cross-family comparisons, the adjusted results in Table 2 demonstrated that, once control variables were included in models (and relative to children in all-citizen sibships), parents spent equal amounts of total time and one-on-one time with children who were citizens but had at least one non-citizen sibling and with children who were all non-citizens. Parents spent similar total time and comparable one-on-one time with their non-citizen children who had citizen siblings compared to parents of all-citizen siblings.

Table 3. Associations between Childhood Citizenship Status and Parental Time Investments (N = 13,012).

	Total Time		One-on-One Time		Quality Time	
	β	SE(β)	β	SE(β)	β	SE(β)
Citizenship						
Has citizenship, sibling does not	8.10	11.89	3.75	5.72	2.02	4.65
Has no citizenship, sibling does	-2.30	11.64	-2.95	2.77	-2.33	4.25
No citizenship, self or siblings	-2.76	10.82	-0.96	2.84	5.62	4.37
Citizenship, self and sibs (reference)	-	-	-	-	-	-
Female	1.09	3.08	-0.61	2.31	-0.27	0.93
Age	-9.79 ***	1.18	-6.79 ***	0.97	-2.00 ***	0.39
Birth order						
Oldest (reference)	-	-	-	-	-	-
Youngest	-7.28	4.26	-7.76 *	3.34	-1.94	1.44
Race/ethnicity						
Black, non-Hispanic	-33.85 **	12.76	1.59	3.65	-27.34 ***	4.87
Hispanic	5.11	7.24	0.94	1.91	-11.01 ***	3.08
Other (reference)	-	-	-	-	-	-
Female responding parent	59.66 ***	6.61	13.43 ***	1.79	7.89 **	3.00
Married responding parent	30.51 **	10.14	-5.77	3.19	14.29 ***	4.00
Age of responding parent	-1.40 **	0.52	0.12	0.15	-0.12	0.23
Responding parent is an immigrant	16.61 *	7.70	0.65	2.02	11.78 ***	3.29
Highest education of responding parent						
Less than High School	10.99	9.19	-5.72 *	2.56	-9.10 *	4.40
High School	-10.76	8.16	-3.59	2.20	-8.09 *	3.19
Some College + (reference)	-	-	-	-	-	-
Responding parent worked full time	-120.20 ***	7.49	-22.39 ***	2.36	-34.41 ***	3.48
Yearly family income ^a	-0.00	0.00	0.00 ***	0.00	0.00	0.00
Average age of household children	-2.92 *	1.44	6.18 ***	1.00	-2.43 ***	0.53
Std. dev. of age of household children	-0.33	1.60	6.21 ***	0.65	-1.35	0.72
Fraction female of household children	11.38	8.88	3.87	3.21	-1.86	4.25
Mean	292.54		27.25		82.82	
R ²	0.18		0.06		0.09	

Data: American Time Use Survey, 2003–2019. The sample is limited to immigrant households with two household children aged 18 years or younger consisting of two types of families: (1) children in the household have mixed citizenship status, (2) no child in the household is a citizen. The base group is children in fully non-citizen sibling groups, and comparisons are relative to that group. * $p \leq 0.05$. ** $p \leq 0.01$. *** $p \leq 0.001$.

Parents with children in both types of mixed-citizenship sibships spent similar quality time with their children compared to parents of children in all-citizen sibships (net of covariates). The differences between the descriptive data patterns and the adjusted results in Table 2 were primarily due to differences across the focal groups in children's ages, parental education levels, parental employment, and family size.

Other factors beyond a child's citizenship status relate to parental time with children, as shown in Table 3. Children tended to spend less time with parents as they aged, which is a normal part of building autonomy and independence. Black non-Hispanic families experienced less parent-child time than other families. Mothers spent more time with their children than fathers. Married parents also spent more time with their children than non-married parents. Finally, working full-time limited the time parents spent with their children.

As a sensitivity test, we included an additional control variable indicating whether the responding parent's interview was conducted in a language other than English. Considering this information was only available from 2006 onward, the analysis was conducted on a subsample. As seen in Appendix A Table A2, the results were qualitatively similar to the main models presented in Table 3, and the English language proficiency control variable was not significant in any model. As a sensitivity test, we included families with two or more children (rather than limiting to families with exactly two children) to ensure that the results were not unique to the particular families used in our chosen sample; the results shown in Appendix A Table A3 show that the results were qualitatively similar when broadening the sample to include more varied family types.

Finally, Table 4 shows the results of parent fixed effects models that net out differences in invariant child and household characteristics between siblings in mixed-status households. As seen in Table 3, there were no differences in parental time investments of any form between children with and without citizenship in mixed-citizenship households, once accounting for invariant individual and household characteristics. However, given the strong correlation between birth order and citizenship in this sample, it may not be possible to separately identify the effect of child citizenship status on parental time investments.

Table 4. Fixed Effects Within-family Sibling Comparisons of Parental Time Investments in Families where Siblings have Mixed Citizenship Status (N = 2989).

	Total Time	One-on-One Time	Quality Time
	β	β	β
Has citizenship	2.85 (9.83)	−3.23 (4.57)	3.79 (3.53)
Female	13.03 (6.57)	2.47 (3.64)	2.05 (2.09)
Age	−8.22 *** (1.49)	−2.58 *** (0.77)	−1.33 ** (0.50)
Birth order			
Oldest (reference)	−	−	−
Middle	−22.80 * (9.51)	−11.22 * (4.75)	−1.73 (2.97)
Youngest	−5.14 (12.52)	12.79 * (6.37)	−0.96 (3.69)
Mean	317.98	23.77	85.15
R ²	0.80	0.55	0.72

Data: American Time Use Survey, 2003–2019. The sample was limited to children in two-child immigrant households aged 18 years or under with mixed citizenship. The base group is children without citizenship, and comparisons are relative to that group. * $p \leq 0.05$. ** $p \leq 0.01$. *** $p \leq 0.001$.

4. Discussion

This study aimed to evaluate whether a child's citizenship status related to parental time investments. We examined how the potential of children of immigrants for educational

and social mobility, as indicated by their citizenship statuses, may influence parental time investments in immigrant households. This study therefore sheds light on how geographic, educational, and social mobility embedded in citizenship status shape the lives of children and their families. We speculated that parents might spend more time with non-citizen children as a way to compensate for the lack of opportunities for educational and social mobility that these children face outside of their households relative to their citizen child counterparts. Then again, it was also possible that parents might try to invest more time in citizen children to leverage these children's more amplified opportunity structures as an investment in the entire family or that parents would disregard children's citizenship statuses and attempt to treat all children equally.

We found large differences in the descriptive results for parental time investments in children by child citizenship status. Parents of children who were citizens and who had at least one non-citizen sibling spent the most total, one-on-one, and quality time with citizen children—even more time than the parental time with citizen children in all-citizen households. There was a large and significant gap in parental time investments in children in mixed-status sibships. Specifically, parents were spending significantly more total time and one-on-one time with a younger sibling who had citizenship relative to an older sibling who did not have citizenship in these households. This same gap was not present for parental time investments with the two oldest children in all-citizen and all non-citizen sibships.

However, these raw differences were explained by compositional differences in families rather than parents' differential treatment based on citizenship status. In fact, some of the patterns in the raw data were reversed in the adjusted models. For instance, parents spent more adjusted total time with children who were non-citizens but who had at least one citizen sibling relative to parents of children in all-citizen sibships. Additionally, having at least one non-citizen child in the household was associated with more quality time with parents. Furthermore, in fixed effects models for the subsample of children in mixed-citizen sibships, there was no difference in parental time investments by child citizen status.

The results suggest that, while parents in immigrant households may respond to differences in citizenship statuses among siblings in other ways, they did not appear to differentiate between these children in their time investments when other relevant predictors of parental time investments were taken into account, especially the children's age and birth order. Our findings suggest that, despite citizenship status providing increased opportunities for socioeconomic mobility, parents did not appear to respond to this factor in how they spent time with their children. Despite the differential external barriers to upward educational and social mobility (Catron 2019; Gonzales 2011) and the emotional uncertainties (Berger Cardoso et al. 2021; Dreby et al. 2022) faced by non-citizen versus citizen children in a mixed-status sibships, children in these sibships appeared to have equal access to parental time given invariant individual and household background characteristics. This outcome could be due to an ethos among immigrant parents with mixed-status children to treat all children equally. It could also be due, in part, to a present bias by parents in immigrant households who may not fully internalize the barriers to mobility faced by non-citizen children later in adulthood (Gonzales 2011). Finally, the findings could reveal a belief among parents that their ability to shape socioeconomic mobility remains separate and independent from macro-policy factors such as citizenship. More research is needed to understand the mechanisms behind the patterns of parental time use observed in this study.

The findings from the cross-family comparisons in the raw data patterns appeared to be the most consistent with theories of reinforcing parent behavior, where parents in immigrant households were investing more time in the citizen child in a mixed-citizenship sibship. Once controls were included in the multivariate OLS models and fixed effects methods were applied, however, the patterns were more consistent with a story of the equal treatment of children with differing citizenship statuses in immigrant households. We even found some support for the compensatory perspective of greater parental time investments in non-citizen children. For example, we revealed evidence of a "quality parent

time” advantage for children in immigrant households with non-citizen children relative to those in households where all children were citizens.

Our findings of no parental differential treatment based on child citizenship status differences are important to note, as this result stands in contrast to a growing literature which documents how other child characteristics shape differential parental time investments (Currie and Almond 2011; Gibby et al. 2021; Kalil et al. 2012; Lundberg and Pabilonia 2007; Price 2008). Given that parental time investments affect child cognitive development in the short- and long-run (Attanasio et al. 2020), our findings have important implications for the developmental course of children with and without citizenship.

More generally, this study poses new questions about the role that a child’s citizenship status vis-à-vis their sibling/s may play in altering the home environment and developmental inputs made in the family context (Dreby 2015). As noted, there is a dearth of research evaluating within-household differences in the citizenship status of all family members (Grossbard and Vernon 2020; Van Hook and Balistreri 2006). Our research suggests that child citizenship may be important to consider when evaluating broader parental investments to more thoroughly understand parental equal and differential treatment within families (Romero Morales and Consoli 2020). More research is needed to explore other forms of parental investments in children based on citizenship status, such as educational or financial investments. This research also suggests that families with mixed-citizenship children may be a distinct group relative to immigrant families with children who all have or do not have citizenship. Further research on these families could shed new light on how parents and children within these types of families navigate multiple mobilities—immigration, citizenship status, and prospects for educational and social mobility.

This research makes important contributions in understanding the lives of children and families in the context of immigration, child citizenship, and prospects for socioeconomic mobility; yet, limitations remain. The ATUS did not include more background information about the circumstances giving rise to immigrant families moving to the United States or how long families intended to stay, and these factors may be important for better understanding daily family processes such as parent–child time. The ATUS did not include information on parent–child or sibling relationship quality, and future research should evaluate how citizenship status differences in immigrant families relate to the relationship quality between family members. The ATUS was cross-sectional, preventing a deeper study of changes over the life course and differences in the long-term trajectories of parent–child time for children with different citizenship statuses. Future research could evaluate longer time horizons to see if patterns change as children move through the life course.

As we show, it is also difficult to isolate the effect of citizen versus non-citizen child status in parental time investments because mixed-citizenship sibships tend to follow a particular pattern that is related to birth order. To be sure, the most common type of mixed-status sibship is where the oldest child is a non-citizen and the younger sibling (or siblings) is a citizen. This pattern likely emerges when an immigrant family migrates to the U.S. with a non-citizen child and then later has one or more subsequent children who are born in the U.S. and thus have birthright citizenship. Child citizenship in these mixed-status sibships is strongly related to being a younger sibling, and parents usually spend more time with younger versus older siblings. A larger sample of parents with children in mixed-status sibships, where older children are citizens and younger children are non-citizens, would be needed to further isolate the effect of child citizenship status on parental time investments.

5. Conclusions

This study gave greater insight into how parents navigated the immigration policy context in their time investments when their children differed in terms of citizenship status—a status that encompasses prospects for upward educational and social mobility. The study provided quantitative evidence that parents spent considerable time with all of their children regardless of citizenship status when other predictors of parental time

use were taken into account. This study highlighted that time use data can be particularly helpful in understanding the lived experiences of families whose lives are shaped by immigration, citizenship, and social policy and in understanding broader patterns of child development in mixed-status families.

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Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

Table A1. Description of the Construction of Parental Time Investment Measures.

	Activity Description	ATUS Activity Codes
Total Time	Any time the parent spends with the focal child	All activity codes
One-on-one Time	Any time the parent spends with only the focal child and no other people	All activity codes
Quality Time	Activities carried out with the focal child including reading, arts and crafts, playing sports, exercise, talking with or listening to, homework or home schooling, providing medical care to, eating and drinking, playing games, hobbies, attending museums and performing arts, religious services, and religious activities	30102-30106, 30201, 30203, 30301, 110101, 110199, 110201, 110299, 119999, 120307, 120309-120313, 120401, 120402, 130101-130136, 130199, 140101-140102, 149999

Table A2. Associations between Childhood Citizenship Status and Parental Time Investments when Controlling for Parent English Language Proficiency (N = 10,562).

	Total Time		One-on-One Time		Quality Time	
	β	SE(β)	β	SE(β)	β	SE(β)
Citizenship						
Has citizenship, sibling does not	0.22	13.37	0.68	6.31	3.05	5.35
Has no citizenship, sibling does	−12.09	13.19	−4.44	3.12	−3.45	4.89
No citizenship, self or siblings	0.96	12.23	−0.21	3.31	4.21	5.01
Citizenship, self and sibs	−	−	−	−	−	−
Female	1.04	3.40	−0.45	2.63	−0.04	1.05
Age	−9.64 ***	1.33	−7.08 ***	1.10	−1.91 ***	0.44
Birth order						
Oldest (reference)	−	−	−	−	−	−
Youngest	−7.20	4.72	−8.30 *	3.80	−1.71	1.62
Race/ethnicity						
Black, non-Hispanic	−32.50 *	13.72	2.15	3.97	−27.87 ***	5.36
Hispanic	3.53	8.35	2.32	2.40	−9.36 **	3.54
Other (reference)	−	−	−	−	−	−

Table A2. Cont.

	Total Time		One-on-One Time		Quality Time	
	β	SE(β)	β	SE(β)	β	SE(β)
Female responding parent	58.67 ***	7.25	13.16 ***	2.02	7.41 *	3.37
Married responding parent	33.80 **	11.03	−6.54	3.55	16.44 ***	4.51
Age of responding parent	−1.33 *	0.56	0.13	0.17	−0.09	0.26
Responding parent is an immigrant	14.29	8.51	0.53	2.33	13.50 ***	3.59
Responding parent is not English language proficient	10.52	10.06	−2.22	2.90	−1.75	4.40
Highest education of responding parent						
Less than High School	8.38	10.60	−5.11	2.88	−7.69	4.90
High School	−14.37	9.02	−3.34	2.48	−8.43 *	3.58
Some College + (reference)	−	−	−	−	−	−
Responding parent worked full time	−119.47 ***	8.18	−22.82 ***	2.66	−33.81 ***	3.98
Yearly family income ^a	−0.00	0.00	0.00 ***	0.00	0.00	0.00
Average age of household children	−2.71	1.60	6.43 ***	1.14	−2.76 ***	0.59
Std. dev. of age of household children	−0.64	1.79	6.31 ***	0.73	−1.33	0.84
Fraction female of household children	13.09	9.72	4.64	3.60	−4.07	4.70
Mean	292.54		27.25		82.82	
R ²	0.18		0.06		0.09	

Data: American Time Use Survey, 2003–2019. The sample is limited to immigrant households with two household children aged 18 years or younger consisting of two types of families: (1) children in the household have mixed citizenship status, (2) no child in the household is a citizen. The base group is children in fully non-citizen sibling groups, and comparisons are relative to that group. * $p \leq 0.05$. ** $p \leq 0.01$. *** $p \leq 0.001$.

Table A3. Minutes Per Day of Parental Time Investments in Each Child In Families with Two or More Children.

Unadjusted Results				
	Group A—Has Citizenship, Sibling Does Not N = 1669	Group B—No Citizenship, Sibling Has Citizenship N = 1491	Group C—No Children in Household Have Citizenship N = 1641	Group D—All Children in Household Have Citizenship N = 20,923
Total time	339.02 ^{bcd}	293.49 ^a	276.47 ^{ad}	297.28 ^{ac}
One-on-one time	31.96 ^{bcd}	14.25 ^{acd}	21.88 ^{ab}	21.79 ^{ab}
Quality time	90.42 ^{bcd}	79.00 ^a	83.03 ^a	82.27 ^a
Adjusted Results				
Total time	305.23	296.63	304.24	297.28
One-on-one time	30.8	22.57	25.66	21.79
Quality time	88.26	84.64	91.88	82.27

Data: American Time Use Survey, 2003–2019. Sample consists of families with at least one immigrant parent and two household children. Adjusted values correspond to the regression results shown in Appendix A Table A2. Letters represent the significance of two-sample unpaired *t*-tests with unequal variances for $p < 0.05$. ^a compares to Group A, ^b compares to Group B, ^c compares to Group C, ^d compares to Group D.

Notes

- ¹ The ATUS classified household children of a coresident partner as children of the respondent about half of the time, and foster children were not classified as children of the respondent.
- ² Children in households with missing information on child citizenship differed in terms of individual and household characteristics. They were younger, had younger parents, had more educated parents, had higher household incomes, and had fewer children in the family compared to those providing citizenship information. They were also more likely to be missing information on race and ethnicity.

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