Older Moms Deliver

How Increased Births to Older Mothers Are Impacting School Enrollment

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What our research is about

- An outgrowth of our demographic support for Portland Public Schools, one part being enrollment forecast for the District and its schools.

- Illustrates the use GIS tools to analyze demographic changes at macro and micro levels.

- Shows some of the ways in which we link birth trends to housing trends and gentrification of Portland neighborhoods.

- A work in progress.
An Oregonian article in Fall 2008 noted the increase in kindergarten enrollments.

What factors lay behind this upturn, especially in parts of the District where enrollments have been declining for years?
The ups and downs of enrollment

[Graph showing enrollment trends with key events labeled: WWII, The Depression, Baby Boom, Baby Boom Ends, Echo of Baby Boom, Post 1996 Declines]
Housing in the Portland Public Schools District

- Most of the single family building permits were issued for areas outside of the District (in yellow).

- The multifamily units in the core area (A) of the District house few school age children.

- Other than the Forest Park area (B), single family construction has had a modest impact on the District’s enrollment.
Age Specific Fertility Rates in 2000
the Spatial Nature of Birthrates
Age Specific Fertility Rates

- Age Specific fertility - the numbers of births by age of mother.

- The time dimension here is the age cohort of women.

- The clock with the rose sector shows birth rates for the age cohort.
Age Specific Birth Rates – Animation

- Income and ethnicity impact birth rates

- Minority mothers are younger (H, B)

- Affluent mothers are older ($)
Proportion of Births to Older Mothers

There was growth in the number of births to older mothers across the District, but that on the east side was mainly after 2000.
Here is the same series of maps animated

- Who are the older moms?

- More educated and affluent.

- Married later and postponed motherhood.

2008-09
Areas of Concentration of Age 30+ Mothers

“Older Moms”

- In the areas in blue, green and yellow 75% or more of the births were to mothers age 30 and over.
- Area A on the east side of the Willamette River is the area where births to older mothers has recently expanded.
- Areas B and C are discussed in the analysis.
- There are a number of older moms areas on the west side of the Willamette River that are affluent settled neighborhoods.
- Data for the area outside of the 12 older moms areas are presented for contrast.
Births by Race and Age of Mother
For Area A and
PPS outside of older mom areas

Outside Older Mom areas
White
Black
Hispanic

Inside Area A
White
Black

Region = P01
Period = (All)
B Order = (All)
Race = Black
Hispanic = All

30 & Older
Under 30
Characteristics of mothers and their dwellings

- Educational levels of mothers in the district and in gentrifying areas
- Length of residence in their homes
- Size of residences (building square feet)
Educational levels for mothers for selected areas by tenure and land use

PPS outside *older mom* areas

- Single family own
- Single family rent

Area A

- Single family own
- Single family rent

Area B

- Single family own
- A stable high income area

Area C

- Single family own
- A gentrifying area with smaller housing units and lower costs than A
Length of Residence by Tenure and Birth Order
Mothers residing in single family owner occupied units
Area A for the 2006-2009 period

First births were most numerous for older moms in this area and were most numerous for mothers who moved in about five years previous (2001 to 2004) with these children becoming kindergarten age five years later (2006 to 2009).
Map showing years since last sale for single family owner occupied housing

Note that area A shows some of the longest periods of residence.

Along the margins of area A turnover is much higher.
Building Square Feet by Tenure and Birth Order
Mothers residing in single family owner occupied housing
Area A and outside of “older moms” areas

Building square feet

Outside of “older moms” areas

Area A
Here is a map showing building square feet

By tax-lot. Note the heterogeneous nature.

Generalized by area

Many older homes were built with only Two bedrooms. This is a constraint on the gentrification process.
The gentrifying areas to the east of the Willamette River were mainly built prior to 1930.

Areas of newer housing outside of the district present a variety of housing options, many of which are less expensive than that in the district.
Animation of housing value – Single Family

- Gentrification spread from high value core areas outward
- Housing values peaked in 2009
This map is based on census and ACS data for 1990, 2000, and 2005-2009. It shows where the percent with a 4 year degree or higher have increased.

This is a common identifier for gentrification.

Note the correspondence between areas “A”, “B”, and “C” where the density of births to older mothers increased.
The impacts on school enrollment

- For all PPS students the growth in the gentrifying areas boosted enrollment, especially for grades KG-02

- The impact was greater for white students, countering the loss of black students
Another view for white students

- For those parts of the District outside of the older moms areas enrollment of white students declined with a small up tick in 2007.

- In area A (P01) the growth of enrollment began in 2001 for grades KG-02 and has carried through into the higher grades.

- For the other gentrifying areas (P02-P11) the impacts on enrollment have been less pronounced.
Grade Progression Ratio Animation

Shows gains by cohort for lower grades
Conclusions

- The influx of older mothers into the gentrifying area on the east side of the Portland School District has in fact caused a rise in school enrollments in this area and has helped to counteract the losses of students from other areas and black students from this same area.

- Linking tax-lot, student, and birth data allows us to create a variety of useful queries about birth mothers, students, and their housing context at a high degree of geographical detail. The ability to make these linkages is especially important because of the thin sampling of the ACS that limits detailed geographical analysis.

- The set up for the GIS/tabular analysis was laborious for the exploratory analysis for this paper. With the completed database carrying out the queries is efficient.

- In our demographic work for school districts we make use of these linkages to better coordinate school and community planning. Oregon laws require both school districts and communities to cooperate in planning for the need for schools and to consider their impacts on the community. We are beginning a project with planners for the city of Portland to look into how this best can be done.
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