Older Adults as Consumers: An Examination of Differences by Birth Cohort

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Abstract

The U.S. and much of the developed world are currently undergoing a demographic transition marked by fundamental changes in the age structure of the population. These changes pose a number of challenges for society such as understanding the consumption patterns of middle aged and older people. In this chapter, we use data from the Health and Retirement Study to explore consumption patterns among five cohorts of adults age 50 and older. We found that older, compared to younger birth cohorts of older adults reported less spending on food, transportation, trips and vacations, and durable goods; they spent more on donations and gifts; and all cohorts reported similar levels of spending on health-related expenses. Results also identified a critical middle age group (i.e., ages 70 to 80), in which the greatest differences in consumption patterns were evident. Such findings may be useful for industry and organizations allowing them to be responsive and competitive by helping them target goods and products that meet the changing needs of an aging society.
Older Adults as Consumers: An Examination of Differences by Birth Cohort

It has been widely recognized that the United States, indeed much of the developed world, is experiencing a demographic revolution (Kalache, Barreto & Keller, 2005). This demographic revolution is evidenced by a fundamental change in the age structure of the population. Whereas as recently as a hundred years ago the population could be described as shaped like a pyramid with a majority of people being children under the age of 16 and very few older people, this has shifted so drastically that the population structure is now most frequently described as a beanpole or barrel shape, with almost equal numbers of young and old people. This change is the result of both reduced fertility and increased longevity. Reduced fertility has been explained as a result of the industrial and technological revolutions that have led to a decreased need for farm or factory workers, as well as educational and pharmaceutical advances that have rendered fertility largely a convenient matter of choice. Increased longevity, on the other hand, is recognized as the result of important public health advances such as improved sanitation and significant medical breakthroughs, both of which have reduced the spread of infection and contained the advancement of disease (Antonucci & Wong, 2010).

Despite these successes, the changing population structure poses a number of challenges for society. One such challenge is the readiness of society to meet the needs of its aging population. To be both responsive and competitive, industries and organizations must be prepared to meet the needs of the aging population. In order to do so, it would be particularly useful to understand the income and consumption patterns of older people and how they are changing with increased longevity. It is unclear if consumption patterns of older adults will largely remain the same such that total consumption simply reflects an increase in the number of older consumers, or if consumption patterns will change across cohorts of older people as a result
of different gender ratios, racial compositions, or marital histories of the aging population across cohorts. In this chapter, we explore these issues by examining patterns of total consumption as well as specific consumption patterns among five cohorts of older adults in each of the following categories: food, transportation, trips and vacations, durable goods, health, and donations and gifts. We begin by first considering changes in several socio-demographic factors that are likely to influence consumption patterns.

**Changing Socio-demographic Characteristics**

An important component of the demographic revolution is the socio-demographic composition of the population. We highlight three factors that might influence changes in consumption: gender, race and marital status. It has long been recognized that women now commonly outlive men. In 1950, women lived an average of 68 years while men only lived 66 years. By the year 2000, women lived an average of 78 years and men 75. It is projected that by the year 2050 women will live 83 years and men 81. Interestingly, life expectancy also differs for men and women once they reach the age of 65. In 1950 a woman who had reached the age of 65 could expect to live until 80, a man until 78. By 2000, a woman surviving to 65 had a life expectancy of 83 years, a man 81 years. These figures are projected to have improved even further by 2050 when a woman surviving to 65 is projected to live 86 years and a man in the same circumstance to live 84 years. It is unclear what these changing patterns of longevity by gender will mean for future consumption patterns of older men versus women (U.S. Census Bureau, 2008). The racial (and ethnic) composition of the society is also changing with a decrease in the proportion of the population that is Euro-American and a concurrent increase in the numbers of ethnic and racial minorities, including African Americans, Hispanics and Asian
Americans. The U.S. Census Bureau (2008) projects that the number of non-Hispanic Whites will remain relatively stable from 2000 to 2050. They number approximately 200 million, which represented 65% of the population in 2000 and will represent approximately 46% of the population in 2050. On the other hand, the number of non-Hispanic Blacks will increase in number from approximately 31 million in 2000 to 52 million by 2050. While their absolute number will increase, they will remain approximately 12% of the population. Hispanics have been identified as the fastest growing population in the United States. In the year 2000, they represented 38 million or about 14% of the population; by the year 2050 they are expected to number over 133 million and represent about 30% of the population. In addition, the number and proportion of Asian Americans is also expected to increase. They will increase from approximately 15 million in 2000 to 33 million in 2050. This will represent an increase from approximately 4.5% of the population to 7.6% by 2050.

Finally, changes in marital status often accompany old age. However, even the nature of this change varies by cohort. A common trend from 1950 to 2050 is that fewer people are married as they age. Interestingly, the causes of non-marriage have changed with time. Whereas previously people most often became unmarried through widowhood, more people now become unmarried through divorce or separation, or were never married to begin with (Ryan, Smith, Antonucci & Jackson, 2009). Not only are the causes of being unmarried changing but the number of years people are living while unmarried also appears to be increasing.

There are many questions that have gone unanswered about the effects of these socio-demographic changes on consumption over time. In this chapter, we seek to begin addressing these questions by examining five cohorts of older people, that is, people born at different periods in time, from the early 1900s to the later 1900s. We examine how changing socio-
demographic characteristics, i.e., gender, race, and marital status, influence their consumption patterns. Several models of aging consumption have been suggested that predict how consumption patterns are likely to change with age. We next review these alternative predicted patterns.

**Models of Aging Consumption**

As people age, their level of spending declines and their spending patterns related to consumption change. In general, they spend relatively more on health care services, donations and gifts, and relatively less on trips and vacations, transportation (automobiles), and durable goods. The patterns of spending are of interest because they convey information about how people choose to allocate their resources as they age. These patterns also aid our ability to predict future demand for different types of goods and services, which is particularly important as this age group is increasing in raw numbers and relative proportions. This information will be especially useful for industry such that, with awareness of shifts in consumption, industry can time the introductions of new products to the market to meet these shifts, reducing the risks often associated with product adoption and market penetration.

One of the leading models for examining consumption by older adults is the life-cycle model of consumption (Gourinchas & Parker, 2002). The life-cycle model captures the allocation of the consumption of one type of good or service at a time. Another approach accounts for the consumption of different types of goods (as a share of total spending) within a single time period (rather than across time periods) (Deaton & Muellbauer, 1980). By combining the approaches represented by the life-cycle model and the within-period choice model, it is possible not only to document the changes in total spending as the population ages, but also to document shifts in the
demand for various goods that accompany aging and economic status as people approach retirement (Yoon, Cole & Lee, 2009).

We draw from a unique set of data (described in detail below) to examine age profiles of total consumption and its components for the U.S. population over the age of 50. According to the life-cycle model, the wealth of a person declines at advanced ages because spending becomes greater than income. As wealth declines, the fraction of total spending devoted to different categories of goods also changes. In addition, it is likely that the composition of spending will change because of a pure age effect. The utility of some types of goods is likely to change with age due to changes in physical and cognitive capacities as well as changing needs. For instance, as people age, they may drive less because they have increased difficulty driving in bad weather or after dark. In some cases, older people may also have a reduced need to drive as friends and family with whom they wish to maintain contact are likely to either live close to them or visit, rather than the reverse. Thus, we expect that given equal levels of total spending, consumption of automobiles will decline with age, and that this rate of decline will be greater than it is for some other categories (e.g. food).

Below we describe the data used to examine the question of consumption among older people. Drawing on the above age models of consumption, we examine cohort differences in total consumption as well as in food, transportation, trips and vacations, durable goods, health, and donations and gifts.

A Study of Consumption Changes with Age and Cohort

Description of Sample
The data analyzed for this chapter are drawn from the Health and Retirement Study (HRS, 2012). The HRS is a nationally representative longitudinal panel study of more than 26,000 adults aged 50 and older in the U.S. interviewed every two years. The Consumption and Activities Mail Survey (CAMS) (HRS, 2011) is a supplemental survey distributed to a subsample of the main HRS respondents every two years (in odd-numbered years), and specifically designed to assess household patterns of consumption. For the analyses reported in this chapter we included respondents who completed both the 2010 wave of HRS and the 2011 wave of CAMS (N=2363).

Measures

Demographics. The primary demographic characteristic examined in this chapter is age, indicated by birth year and grouped into five unique birth cohorts. The cohorts are described in detail below. Other demographic variables examined for this chapter include: Gender, coded as 0=male; 1=female; Race, coded as 0=White; 1=Non-White; and Marital status, measured in the 2011 CAMS and coded as 0=not married nor living with a partner (i.e., separated, divorced, widowed, never married); 1=married or living with a partner. Household annual income was measured in the 2010 HRS using a single item assessing the primary respondent’s and their spouse/partner’s (if applicable) combined total income for the year.

Consumption. Household Annual Consumption was assessed in 2011 in dollars. Total Consumption was measured as the sum of six unique categories of household consumption. Most of the consumption items were measured as amount spent in the last 12 months. For some items, respondents could report money spent on specific items and activities on a per-week or per-month basis or in the last 12 months. We standardized all responses to indicate money spent in the last year by multiplying per week responses by 52 and per month responses by 12.
The six categories of consumption used to calculate total consumption included: 1) *Food*; measured as a composite sum of two separate items including money spent on a) food and drinks (including alcoholic) bought in grocery or other stores; and b) dining/drinking out in restaurants, cafes, and diners, including take-out food. 2) *Transportation*; measured as a sum composite of four items including: a) vehicle insurance; b) vehicle maintenance (i.e., parts, repairs, and servicing); c) gasoline; and d) car payments (i.e., interest and principal). 3) *Trips and Vacations*; measured with a single item assessing money spent on transportation, accommodations, and recreational expenses on trips. 4) *Durable Goods*; measured as the amount of money spent in the past year on the purchase of a refrigerator, washing machine and/or dryer, dishwasher, television, and computer. If any of the items were not purchased, they received a value of zero for the item. 5) *Health*; measured as the sum of four items: a) health insurance (i.e., money spent out-of-pocket, including Medicare supplemental insurance); b) prescription and nonprescription medication costs not covered by insurance; c) health care services (i.e., out-of-pocket costs for hospital care, doctor services, lab tests, eye, dental, and nursing home care). 6) *Donations and Gifts*; measured as the composite sum of two items including: a) contributions to religious, educational, charitable, or political organizations; and b) cash/gifts to family/friends outside of the household, including alimony and child support.

**Sample Cohort Characteristics.** We examined the consumption patterns of five different birth cohorts, all within the same age range 58 to 102. These included people born in different periods of history. Cohort 1 consists of people born before 1924. This is a relatively small cohort, consisting of only 160 people or 7% of our sample. We call them Parents of the Boomers. Cohort 2 includes people born between 1924 and 1930. This is another small cohort, again consisting of only 189 people or 8% of our sample. This cohort is most notable for having
experienced the Depression during their formative years and are often called “Children of the Depression.” Those born between 1931 and 1941, Cohort 3, were born during the depression prior to World War II, and were labeled the Pre-War Babies. This is a relatively large portion of our sample since they were the focus of the original HRS, and consisted of 1285 people or 54% of our sample. Individuals born between 1942 and 1947 are part of what has been labeled War Babies, due to being born during or shortly after World War II. They represent Cohort 4 and were moderately sized at 351 or 15% of the sample. And finally, Cohort 5 represents the early- and mid-Baby Boomers, those born between 1948 and 1953. They are also a moderate portion of our sample and included 378 people or approximately 16% of the sample.

The total sample in the present study consisted of 2363 people. As can be seen in Table 1, the sample has more women than men with 1513 women, or 64% of the sample. There were 367 or approximately 16% of the sample who self-identified as non-white. Almost half (1119 or 47%) of the sample were married or living with a partner. Although we do not include age in the analyses reported below because age is naturally confounded with cohort, it is useful to know that the mean age of the sample is 72 with a standard deviation of 8.6.

Results

Descriptive information about income and consumption. The sample’s mean annual household income was $51,067 (SD=54,814) and ranged from $0 to $400,200. Total household consumption averaged $18,683 (SD=$17,016) in the past year, ranging from $0 to $340,708. In terms of consumption of specific categories of goods and services, the sample spent an average of $5,466 (SD= $4,463) on food, $4,450 (SD=$4,780) on transportation, $4,065 (SD=$6,244) on health, $3,241 (SD=$9,155) on donations and gifts, $1,492 (SD=$3,071) on trips and vacations, and $322 (SD=$709) on durable goods.
Race, gender, and marital status. As expected, females, racial/ethnic minorities, and those who were not married or living with a partner reported significantly lower annual household income (see Table 2). In terms of total annual consumption, we found a similar pattern, with females, racial/ethnic minorities, and those who were not married reporting significantly less consumption in the past year. In terms of gender and consumption of specific categories of goods and services, females reported spending less on food, transportation, and donations/gifts. Race was significantly related to all six categories of consumption except transportation. In all cases racial/ethnic minorities reported spending less. Lastly, marital status was significantly related to every category of consumption we examined with respondents who were married or living with a partner reporting greater consumption of all categories. This finding is not surprising given the reality of spending for two people in a household compared to one. It is important to note that household income was not controlled for in these models predicting consumption since age and declining levels are so intertwined. As a result, these findings linking race, gender and marital status to consumption may largely reflect income level differences between the groups.

Age and income. As expected birth cohort was significantly related to income. Generally, we found that income levels in the older cohorts were less than in the younger cohorts (see Table 2 and Figure 1). However, this decrease, as demonstrated in the post-hoc test results was not perfectly linear. The youngest birth cohort, the Baby Boomers, the group most likely to still be employed, reported the highest annual income, which was significantly higher than the oldest three birth cohorts (i.e., Parents of Boomers, Children of the Depression, and Pre-War Babies). The second youngest birth cohort, the War Babies, reported significantly greater income when compared to the two oldest cohorts, but not the middle cohort (Pre-War Babies). This
middle cohort, in addition to reporting income that was significantly smaller than the youngest cohort, reported income significantly greater than the oldest birth cohort. Lastly, the two oldest birth cohorts, Parents of Boomers and Children of the Depression did not significantly differ from each other.

**Age and consumption.** We found that birth cohort was significantly related to total consumption and all categories of consumption with the exception of health (see Table 2 and Figure 1). We observed that older cohorts generally consumed less overall, compared to younger cohorts. However, as with income, the negative relationship between birth cohort age and total consumption was not perfectly linear. The pairwise comparisons showed that the youngest three cohorts (Baby Boomers, War Babies, and Pre-War Babies) did not significantly differ from each other on total consumption. The second youngest cohort, the War Babies, reported significantly greater consumption than the second oldest cohort, Children of the Depression. Most of the observed differences were between the youngest three cohorts and the oldest cohort.

When we examined consumption within specific categories, we also found that the older cohorts generally consumed less than the younger cohorts on food, transportation, trips and vacations, and durable goods. Pairwise comparisons of the birth cohorts on reported consumption of food expenses showed the exact same pattern as total consumption (see Figure 2). This was not surprising given that food represents the largest portion of total consumption. Although we expected food consumption to be lower among the older cohorts, we were surprised by the large significant difference when comparing the youngest three birth cohorts to the oldest birth cohort. We believe this represents a true cohort difference in lifelong consumption. Older people are much more sensitive to food costs and are more likely to prepare foods at home if they are capable. Younger cohorts have been socialized in fast consumption out of the house, or at least
food that they eat at home that is already prepared and is therefore more expensive. It is also the case that as people get older their metabolism slows down, which may result in less food consumption, and ultimately less money spent on food. Additionally, among the older cohorts, who are more likely to be on a fixed income, food may be viewed as a controllable expense that can be adjusted downward to ensure enough resources are available for other expenses that are less controllable (i.e., prescription drugs, utilities, etc.).

Next we consider transportation, the consumption category that comprised the second largest portion of total consumption. Older cohorts, as expected, generally spent less than younger cohorts. When compared to each other, the two youngest birth cohorts did not differ on money spent for transportation. However, both of these cohorts spent significantly more than all three older cohorts. The decline across birth cohorts continued as the middle cohort, the Pre-War Babies, reported significantly greater consumption on transportation than the two oldest cohorts. The decline than leveled off as the two oldest cohorts, the Parents of the Boomers and Children of the Depression, reported no differences in transportation dollars spent.

Trips and vacations represented a smaller category of total consumption. This category of spending, as we expected, was highest among the younger cohorts and lowest among the older cohorts. We observed an almost perfect linear relationship between birth cohort and spending on trips and vacations. Every cohort spent significantly less on trips and vacations when compared to the next younger cohort. This pattern was upheld except between the two youngest cohorts, which reported similar levels of spending on this consumption category.

Consumption of durable goods was the smallest category of consumption. As expected, the oldest birth cohorts generally spent less on durable goods compared to the younger cohorts. However, there were some deviations from this general pattern, which were similar to the cohort
patterns observed in food consumption. It is also important to note that the two oldest birth cohorts reported similar levels of consumption of durable goods. This was the same unexpected pattern observed for food and transportation consumption. Particularly surprising when examining this category of consumption was the finding that the youngest cohort, the Baby Boomers, spent significantly fewer dollars on durable goods compared to the second youngest cohort, the War Babies.

Health was the only consumption category in which birth cohort had no effect (see Table 2). As shown in Figure 3, there were small descriptive differences between the five birth cohorts, but none were significant. The lack of a birth cohort effect on health spending was unexpected. We hypothesized that respondents born in earlier cohorts would spend much more on health as their health declined. Inclusion of key variables that are related to health, such as gender, race, and marital status, may explain why birth cohort had no independent effect on health consumption. In addition, the fact that approximately half of the War Babies and all the Baby Boomers (i.e., those born after 1944) in the study sample were not yet eligible for Medicare at the time of the 2011 CAMS may have meant that these two cohorts incurred health costs that were covered by Medicare for the other cohorts. The surprising stability in health spending across the birth cohorts may actually indicate a cohort effect in this category of consumption. We would expect as people age and their health deteriorates their consumption of health services and related products would go up. Instead what we found indicates similar levels of out of pocket health expenses among the cohorts, possibly reflecting surviving healthier older and/or sicker younger cohorts. However, this may not only be a reflection of health status, but may also reflect greater availability and use of over the counter health products (i.e., anti-aging products) and services (i.e., chiropractors) typically not covered by insurance among younger cohorts.
The amount spent on donations and gifts was the only consumption category (see Table 1) with significantly greater consumption among the older birth cohorts (see Figure 3). Descriptively, the oldest birth cohort, Parents of the Boomers, reported spending the most in this category. However, as indicated by the post-hoc test results, only the youngest cohort, the Baby Boomers reported significantly fewer dollars spent on donations and gifts, compared to the other four older cohorts.

The results presented in this chapter provide an overview of how overall consumption patterns vary in later life. In general, our findings reinforce results from other studies that older, compared to younger adults report less income and consume less (Gourinchas & Parker, 2002). Our unique use of more detailed data on people’s consumption of specific categories of goods and services allowed us to examine whether this trend differed across types of consumption. We found that older, compared to younger birth cohorts of older adults reported less spending on food, transportation, trips and vacations, and durable goods. They spent more on donations and gifts. All cohorts reported similar levels of spending on health-related expenses. The examination of five birth cohorts within a sample of older adults also allowed us to observe patterns of consumption across birth cohorts. Specifically we were able to examine at which stage in the life course spending on these specific categories begins to shift, decline or increase, across age groups.

The results indicate a general decline in spending across most categories with age. In particular, categories such as food, transportation and durable goods, show the greatest shift in the 70 to 80 age range and then remain the same at the lowest levels of spending among the two oldest birth cohorts. The only category of spending that showed a steady decline in spending across almost all the birth cohorts was trips and vacations. It is also important to note that in
three categories (i.e., food, transportation, and trips and vacations), the youngest two birth
cohorts did not significantly differ from each other in spending. This indicates little movement in
these consumption categories in the earlier part of older adulthood. These results also suggest a
plateau effect of age on consumption. The two oldest cohorts did not differ from each other in 3
of 6 categories of consumption, i.e., food, transportation, and durable goods.

Our data appear to have identified a critical middle age group, i.e., ages 70 to 80, in
which the greatest changes in consumption patterns are evident. Industry and organizations
would do well to recognize these changing patterns and target goods and products that meet their
changing needs. However, it should be recognized that this middle group may in fact represent
two distinct groups: one that is healthy and still physically active and another that is declining in
health and mobility. While both of these groups would be consuming fewer durable goods (e.g.
cars, washing machines, televisions), their needs and consumption patterns will obviously be
quite different. The healthy group should continue to go out to eat, be physically active, and
engage in vacation and other leisure activities while the less healthy group should be moving
towards disability, with reduced mobility and reduced consumption across the same categories.

One might imagine intervention programs targeted at pre-retirement individuals designed
to increase the likelihood of being a member of the former, rather than the latter group
(Antonucci, Ashton-Miller, Brant et al., 2012). This would have the dual effects of helping these
individuals maintain both their health and their pre-retirement consumption patterns. On the
other hand, if the frail and disabled group is getting younger, this will have negative effects on
both their personal well-being and their consumption patterns, likely reducing all forms of
consumption except for health care costs.
The data available suggest that these cohort differences may reflect both life stage and life-experience phenomena. If we assume a rational consumption process on the part of aging consumers, we would expect different, more short-term focused decisions. For example, older consumers may be less likely to invest in a brand new furnace that might outlive them, and might be more likely to invest in less costly repair insurance. Changing patterns of transportation use indicate little decline when comparing the two youngest cohorts, accelerated decline in the middle cohort, and then a leveling off among the oldest cohorts. Perhaps this lack of decline when comparing the two oldest birth cohorts reflects reduced or curtailed driving during this time period, which also reduces consumption in this category. While the recently retired cohorts often spend time in travel, travel becomes less attractive with age perhaps due to an unwillingness or inability to spend money and time in this activity. For example, with age, social networks decrease in size due to changing priorities and capabilities, including reduced interest in weak social ties, declining personal health, and loss of network members through death and disability. Transportation needs also change as family and other close network members more likely to visit elders and/or provide transportation as needed. As the number of older people increase, these forms of transportation support may become less available. Offering alternative means of transportation might especially benefit the middle and oldest cohorts and facilitate transportation among these elders.

The finding of no change in health consumption is not unimportant since this category represents the third largest consumption category. These findings suggest significant increases in this category may be present in comparison to even younger birth cohorts (i.e., Middle and Late Baby Boomers). The fact that no differences are found could also highlight the alarming growing rate of young old who are living with chronic conditions. In fact, the lack of differences suggests
there is a cohort effect in health status and/or level of consumption on health-related products and services. This could be driven by younger birth cohorts spending more than would be expected, older cohorts spending less, or both possibilities occurring simultaneously. The health care industry and health care providers might view these findings as useful since they indicate that health care consumption remains high throughout all the age and cohorts groups studied.

While these findings are intriguing and offer a preliminary glimpse into the consumption patterns of a number of older cohorts, several limitations to this study should be noted. We have provided a glimpse into the consumption patterns of only a limited number of categories. We were not able to capture all consumption categories, some of which are likely to be important and provide a very different view of consumption across age cohorts. For example, the present chapter does not consider consumption patterns related to technology. As younger cohorts age, with increasing technological experience throughout their adult years, their consumption patterns in old age will likely look very different from earlier cohorts. Another notable limitation is the cross-sectionality of the data. Future studies should utilize longitudinal data to examine individual changes in consumption patterns over time.

In sum, our findings suggest many differences in consumption patterns across birth cohorts especially for food, transportation, trips and vacations, durable goods, and donations and gifts. Only health expenses did not differ across cohorts. Although we recognize, as noted above, that there are limitations to the current data, the findings presented in this chapter suggest several areas where industry and organizations might direct future product development and marketing efforts.
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References


Table 1: Descriptive Statistics (N=2,363)

<table>
<thead>
<tr>
<th></th>
<th>% (N)</th>
<th>Mean</th>
<th>(SD)</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>71.9</td>
<td>8.6</td>
<td>58-102</td>
<td></td>
</tr>
<tr>
<td>Birth Cohorts</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) Parents of Boomers (1923 or earlier)</td>
<td>6.8 (160)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2) Children of the Depression (1924-1930)</td>
<td>8.0 (189)</td>
<td></td>
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<td></td>
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<tr>
<td>3) Pre-War Babies (1931-1941)</td>
<td>54.4 (1285)</td>
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<tr>
<td>4) War Babies (1942-1947)</td>
<td>14.9 (351)</td>
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<td></td>
<td></td>
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<tr>
<td>5) Baby Boomers (1948-1953)</td>
<td>16.0 (378)</td>
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<td></td>
<td></td>
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<tr>
<td>Gender (female)</td>
<td>64.0 (1513)</td>
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<tr>
<td>Race (Non-White)</td>
<td>15.5 (367)</td>
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<tr>
<td>Marital Status (married/living with partner)</td>
<td>47.4 (1119)</td>
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<tr>
<td>Household Annual Income ($)</td>
<td>51,067 (54,814)</td>
<td></td>
<td>0-400,200</td>
<td></td>
</tr>
<tr>
<td>Household Annual Consumption ($)</td>
<td>18,683 (17,016)</td>
<td></td>
<td>0-340,708</td>
<td></td>
</tr>
<tr>
<td>Total Consumption a</td>
<td>18,683 (17,016)</td>
<td></td>
<td>0-340,708</td>
<td></td>
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<tr>
<td>Food</td>
<td>5,466 (4,463)</td>
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<td>0-42,100</td>
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<tr>
<td>Transportation</td>
<td>4,450 (4,780)</td>
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<td>0-73,500</td>
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<tr>
<td>Trips and Vacations</td>
<td>1,492 (3,071)</td>
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<td>0-49,000</td>
<td></td>
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<tr>
<td>Durable Goods</td>
<td>322 (709)</td>
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<td>0-14,000</td>
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<tr>
<td>Health</td>
<td>4,065 (6,244)</td>
<td></td>
<td>0-133,200</td>
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<tr>
<td>Donations and Gifts</td>
<td>3,241 (9,155)</td>
<td></td>
<td>0-275,000</td>
<td></td>
</tr>
</tbody>
</table>

a Total includes a sum of the six categories listed below
Table 2: Model and Parameter Effects

<table>
<thead>
<tr>
<th>Birth Cohort</th>
<th>Household Annual Income</th>
<th>Household Annual Total Consumption</th>
<th>Tests of Model Effects (Wald Chi-Square)</th>
<th>Household Annual Consumption of</th>
<th>Tests of Model Effects (Wald Chi-Square)</th>
<th>Household Annual Consumption of</th>
<th>Parameter Estimates (b(SE))</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Food</td>
<td>Transportation</td>
<td>Trips &amp; Vacations</td>
<td>Durable Goods</td>
<td>Health</td>
<td>Donations &amp; Gifts</td>
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</tr>
<tr>
<td>Birth Cohort</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Female</td>
<td>48.63***</td>
<td>19.36**</td>
<td>27.19**</td>
<td>163.71***</td>
<td>248.85***</td>
<td>156.91***</td>
<td>8.64</td>
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<tr>
<td>Non-White</td>
<td>10.67**</td>
<td>5.20*</td>
<td>4.91*</td>
<td>12.00**</td>
<td>2.51</td>
<td>3.46</td>
<td>0.21</td>
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<tr>
<td>Non-White</td>
<td>39.95***</td>
<td>35.30***</td>
<td>26.18***</td>
<td>1.93</td>
<td>215.25***</td>
<td>59.23***</td>
<td>43.82***</td>
</tr>
<tr>
<td>Married/Living with Partner</td>
<td>181.21***</td>
<td>153.87***</td>
<td>90.27***</td>
<td>133.84***</td>
<td>305.77***</td>
<td>187.66***</td>
<td>180.92***</td>
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<tr>
<td>Female</td>
<td>-0.39 (.06)***</td>
<td>-0.35 (.06)***</td>
<td>-0.30 (.06)***</td>
<td>-0.08 (.06)</td>
<td>-0.87 (.06)***</td>
<td>-0.45 (.06)***</td>
<td>-0.39 (.06)***</td>
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<tr>
<td>Non-White</td>
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<td>0.55 (.04)***</td>
<td>0.43 (.04)***</td>
<td>0.52 (.04)***</td>
<td>0.81 (.05)***</td>
<td>0.63 (.05)***</td>
<td>0.61 (.05)***</td>
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<tr>
<td>Married/Living with Partner</td>
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*Data Analysis: To examine how the five birth cohorts varied in annual household income, total consumption, and consumption by category we conducted eight generalized linear models. This technique allowed us to model the non-normal distributions (right skew) of the income and consumption variables as a negative binomial distribution with a log link function. These models included birth cohort as a five-category factor and gender, race and marital status as control variables. Bonferroni post-hoc tests were conducted to examine if all pairwise combinations of birth cohorts significantly differed in terms of the estimated marginal means for income and consumption. Presented in the figures are the estimated marginal means in dollars for the eight outcome variables by birth cohort. Exact estimated marginal means are available from the authors upon request. * p-value <.05; ** p<.01; *** p<.001
Figure 1: Household Annual Income and Total Consumption by Birth Cohort. Estimated marginal means of income and consumption are presented.* Bonferroni pairwise post-hoc test p-value <.05; ** p<.01; ***p<.001
Figure 2: Household Annual Spending on Food, Transportation, Trips/Vacations, and Durable Goods by Birth Cohort. Estimated marginal means of consumption are presented. * Bonferroni pairwise post-hoc test p-value <.05; ** p<.01; ***p<.001
Figure 3: Household Annual Spending on Health and Donations/Gifts by Birth Cohort. Estimated marginal means of consumption are presented with ***, Bonferroni pairwise post-hoc test p-value <.001