

# Young-Old Elderly and Baby Boomers

## Explanatory Analysis of Activity Duration, Time-of-Day Choice, and Planning Time Horizons

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At the beginning of 2011, the first generation of more than 77 million baby boomers began to turn 65. In this study, researchers explore the situation in which those baby boomers who are currently 55 to 64 years old will replace current senior citizens, 65- to 74-year-olds. This study presents a detailed descriptive analysis of activity generation and the planning and scheduling behavior of these two age groups. Global Positioning System-based data from a prompted recall activity-travel survey (the Urban Travel Route and Activity Choice Survey) are used in this study. This highly disaggregate survey with detailed activity attributes has made it possible to distinguish the preferences and flexibilities of preretirement baby boomers (55 to 64) and senior citizens (65 to 74) with respect to their daily activities. The study focuses on a diverse set of activity categories that include the following: work, school, personal, religious, health care, services, errands, discretionary, and shopping. For these activities, activity durations, times of day, and planning time horizons were studied, compared, and analyzed for both age groups. It was revealed that the main difference between these two age groups was the difference in the participation in mandatory activities. Although the two age groups had very similar behavior in choice of activity duration, their time-of-day choice behavior was very different. In addition, both age groups executed a major part of their activities impulsively. Seniors and baby boomers planned 61.6% and 56.9%, respectively, of their activities on “less than 1 h” and “same-day” planning time horizons.

The U.S. Department of Health and Human Services projects the elderly (older than 65 years) population to be 72.1 million in 2030, or twice as large as in 2000. According to this projection, a considerable increase in the elderly population has already occurred after baby boomers began turning 65 in 2011 (1). Baby boomers, born between 1946 and 1965, as illustrated in Figure 1, represent the peak rate of U.S. births dating back to 1930 (2, 3). Baby boomers, who have experienced major social transformations, will behave differently from previous generations, and as they age, baby boomers will require services that have never been provided before (4, 5).

To plan for the coming years, one must recognize the attributes of elderly people who have been shaping things for the next elderly

generation in the coming two decades (6). Studying the present senior population can provide information about the nature of their travel behavior, whereas analyzing baby boomers reveals knowledge about the future elderly population. Both studies are essential to understanding the travel patterns of the next generations, when demographics will be significantly altered. However, there are some surveys that reveal that about 80% of preretirement baby boomers (55- to 64-year-olds) plan to work at the same capacity past their retirement age (7, 8). If baby boomers do work after retirement age, it would be more likely that the travel behavior of this next young-old elderly group (65- to 74-year-olds) would be similar to the observed behavior of preretirement (55- to 64-year-olds) baby boomers.

Despite its importance, this huge demographic change and its impact on the travel pattern of metropolitan areas are still a mystery that requires substantial research. Mohammadian and Bekhor emphasized the point that the travel patterns of special population groups, including seniors, need to be “closely” studied (9). Hildebrand in 2003 addressed “the current lack of a detailed description of elderly travel characteristics and behaviors” as a deficiency in the area of transportation planning (10).

The 55- to 64-year-old baby boomers have experienced the industrial and technological era of the early 21st century and have grown accustomed to high mobility and accessibility. Individuals in this generation are considerably auto-dependent, especially compared with previous generations. But their demand for multiple types of transportation modes increases as they age. This demographic surge in the total number of seniors necessitates serious attention to maintain equity, welfare, and quality of life at desirable levels. If the new generation (55- to 64-year-olds) of seniors decide to maintain their traveling habits, then a significant change is expected in the behavior of older (65- to 74-year-olds) citizens.

This study attempts to fill this lacuna by investigating some life-style aspects of seniors who are 65 to 74 years old. These aspects include travel behaviors such as activity planning and trip attributes that have not been adequately addressed so far; a comparison between travel behavior of young-old seniors, 65 to 74 years old, and nonsenior baby boomers, 55 to 64 years old, is also provided.

The comparison between young-old seniors and baby boomers should be done in a comparable environment. In this study, the Urban Travel Route and Activity Choice Survey (UTRACS), a survey based on Global Positioning System (GPS) data, is used as the data source (11, 12). UTRACS was collected in the Greater Chicago Area during a 1-year period, 2009–2010. It includes 51 elderly (older than 65) and 59 nonelderly (younger than 65) participants. More discussion on sample bias and data validation can be found elsewhere (12).

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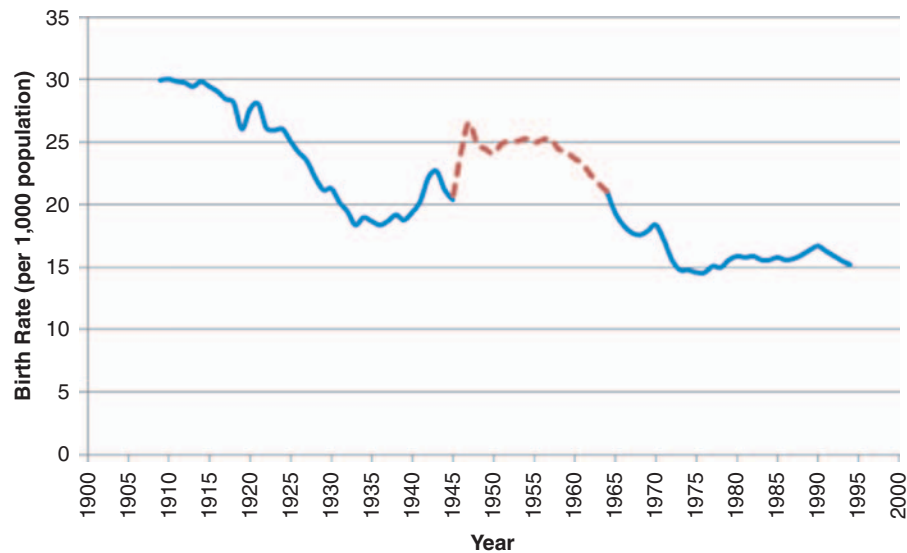


FIGURE 1 U.S. birthrate plot [dotted line = baby boomers' birthrate (3)].

The rest of this study is structured as follows: First, a discussion about research attempts to analyze the travel behavior of seniors and the generation entering retirement will be presented. Next, the study's database and its specifications will be discussed, followed by a discussion on the methodology used. A descriptive analysis will be presented on issues and alternatives such as activity duration versus activity type, time-of-day choice versus activity type, activity duration versus planning time horizons, and time-of-day choice versus planning time horizons. A separate presentation will be given for the two age groups.

## LITERATURE REVIEW

The increase of elderly people in the United States has made the elderly an attractive research subject in various scientific fields. Transportation planners have tried to understand and answer the needs of the elderly during the preceding decades from the perspectives of travel behavior and pattern. Wachs performed a 2-year study on the transportation needs of elderly people. He defined seven life groups for them concerning their "social patterns, living conditions, residential locations, and travel habits" (13). He also conducted an analysis to predict the travel patterns and lifestyle decisions of elderly people for 2000. Meyer investigated the travel patterns of elderly people in Willimantic, Connecticut. She found income, sex, and residential location to be modest factors for the activity pattern of elderly people (14).

In many studies, researchers have attempted to recognize the travel behavior of elderly people and indicate its differences with that of nonelderly people (15–17). Giuliano et al. tested the relationships between travel patterns of elderly people and their residential locations by using the 1995 Nationwide Personal Transportation Survey (15). They found a strong relationship between land use and travel patterns for elderly people. They also analyzed the effects of different land use strategies on the mobility of elderly people. Mercado and Páez examined the determinants of mean distance traveled by different age groups, including elderly cohorts, by using data from the Hamilton census metropolitan area in Canada (16). Their analysis

revealed that as age increases, traveled distance decreases. Gender, employment constraints, and household characteristics were found to be other significant factors for traveled distance. Páez et al. used mixed ordered probit models to conduct a demographic and spatial analysis of trip generations of different age groups, including elderly people (17). Newbold et al. conducted a generational analysis of Canada's elderly population (18). They used the 1986, 1992, and 1998 General Social Surveys databases and showed tangible changes in travel behavior of the oldest generation. Frignani et al. compared decision-making and tour formation processes of elderly and non-elderly people (19). They used UTRACS data as their database, which provided very detailed information on planning horizons and flexibilities of travel activity attributes for these age groups.

Alternatively, some researchers, by accepting differences between elderly and nonelderly people, have tried to define separate models for seniors (10, 10, 21). Highly capable activity- and tour-based models have provided the basis on which the travel behavior of different homogeneous population groups can be captured separately and integrated together. These models, formed of diverse submodels, try to approximate real daily travel behavior. Some of the efforts in modeling aspects of travel behavior of elderly people are moving in this direction. Chang and Wu used a multinomial logit (MNL) model to illuminate the mode choice behavior of elderly people in Taiwan (20). They found age, gender, and living environment to be significant factors in the mode choice decisions of elderly people. Van den Berg et al. studied travel demand of elderly citizens in the Netherlands to model the number of trips, travel mode, and travel distance (21). They used paper-and-pencil social activity diary data collected for 2 days. Su et al. examined mode choice behavior of elderly people for shopping trips (22). They ran MNL and nested logit models on the London Area Travel Survey. Their analysis revealed that the passenger car mode was of high importance for the shopping activity of elderly people.

There are many yet unknown aspects of the travel behavior of elderly people that still need to be studied. This study is the first to investigate time-of-day choice behavior, activity duration, and planning time horizons of elderly people in comparison with nonelderly people. This study puts the focus on two adjacent 10-year age groups of

elderly and nonelderly people. The young-old elderly—also referred to in this paper as young-old seniors—and 55- to 64-year-old baby boomers becoming seniors during the next decade have been selected.

## DATA

For this study, data from UTRACS, which is an online prompted recall activity-based GPS travel survey, are used. A short activity planning and scheduling survey is also included (11, 12). UTRACS was conducted in the Chicago region during the course of 1 year, from March 2009 to March 2010. Fifty-one elderly and 59 non-elderly people participated in a 2-week-long survey and executed 5,339 trips and 6,041 activities (12). Table 1 shows the sample descriptions of young-old elderly (65 to 74 years) and preretirement baby boomers (55 to 64 years).

The average number of recorded response days in UTRACS was about 12 days, with a standard deviation of 6 days per household. The elderly respondents constituted 46% of the total respondents, which provided a meaningful sample of elderly people for the analytical purposes of this study. Elderly individuals executed 2,706 activities out of 6,041 total activities, and 1,656 of those activities were performed by the young-old elderly. Fifty-two percent of young-old elderly activities were performed by females, who constitute 60% of the respondents. Of 3,335 activities performed by nonelderly people, baby boomers 55 to 64 years of age executed 893 activities. Seventy-two percent of baby boomers' activities were performed by females, who constituted 75% of respondents.

## METHODOLOGY

In this study, an explanatory analysis is conducted on the travel activities of young-old seniors and baby boomers. The initial focus of this analysis is on time-of-day choice, activity duration, and planning time horizons to see how different the groups of young-old seniors and

baby boomers behave. The comparison between these two groups opens avenues to understanding their behavioral differences. By providing different nonparametric probability density plots of activity duration, time-of-day choice, activity type, and planning time horizons, a schematic analysis on how travel behaviors evolve over time as middle-aged people age can be seen.

The unpaired *t*-test and Fisher's test (*F*-test) are used to understand how statistically corresponding plots differ from one another. These two tests are based on the assumption that population is Gaussian (normal distribution). For the null hypothesis of the *F*-test it is assumed that the variances of the two samples are statistically equal. Similarly, the null hypothesis in the two-sample *t*-test considers that the means of two samples are statistically identical.

## EXPLANATORY ANALYSIS

In this section, an explanatory analysis of some aspects of the travel behavior of baby boomers and the young-old elderly is presented. The travel behaviors of these two age groups are discussed in four parts: activity duration versus activity type, time-of-day choice versus activity type, activity duration versus planning time horizons, and time-of-day choice versus planning time horizons.

### Activity Duration Versus Activity Type

Eleven activity classifications are bundled into five aggregate categories on the basis of their similarities, as shown in Table 2. From this point on the analyses presented in this paper are constructed across these five activity categories. As can be discerned in Table 2, older people are less involved in mandatory activities, but they are busy with other types of activities. This intuitive finding justifies the general public expectation that as people reach retirement, they become engaged in more flexible and nonmandatory activities. This activity type switch has a significant effect on other activity attributes such as mode choice, activity duration, and time of day. Although a relatively small portion of activities are related to personal, religious, health care, service, errands, and pickup and drop-off activities, over time their importance in day-to-day life remains unchanged as middle-aged individuals become seniors.

The first schematic analysis of the previously mentioned four categories concerns activity duration across different activity types for the weekend and weekdays, and for young-old seniors and baby boomers. Figure 2 pictures the nonparametric probability density functions of activity duration calculated by dividing the total number

**TABLE 1** Sample Descriptions of Young-Old Elderly and Preretirement Baby Boomer Cohorts

Variable	Young-Old Elderly (65–74 years)	Baby Boomers (55–64 years)
Household size (average)	1.91	2.35
Vehicle availability (%)		
No vehicle	2.94	0.00
1 or more vehicles	97.06	100.00
Household income (%)		
\$34,999 or less	19.23	18.75
\$35,000 to \$49,999	15.38	31.25
\$50,000 to \$74,999	15.38	18.75
\$75,000 to \$99,999	30.77	12.50
More than \$100,000	19.23	18.75
Race (%)		
White	86.11	77.27
African-American	11.11	22.73
Other	2.78	0.00
Gender (%)		
Male	38.89	22.73
Female	61.11	77.27
Total number of respondents	34	22

**TABLE 2** Shares and Definitions of Different Activity Types for Young-Old Seniors and Baby Boomers

Definition	Young-Old Seniors (%)	Baby Boomers (%)
Work, school, and volunteer	8.0	29.9
Personal, religious, and health care	16.9	14.3
Services (barbershop, auto service, etc.), errands, and pickup or drop-off	9.6	7.1
Discretionary	30.7	23.9
Shopping	34.8	24.9

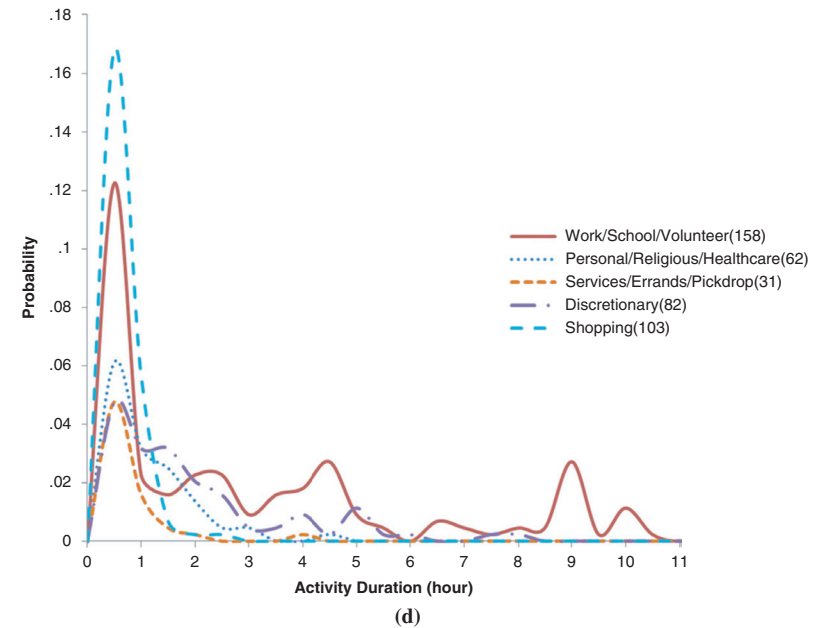
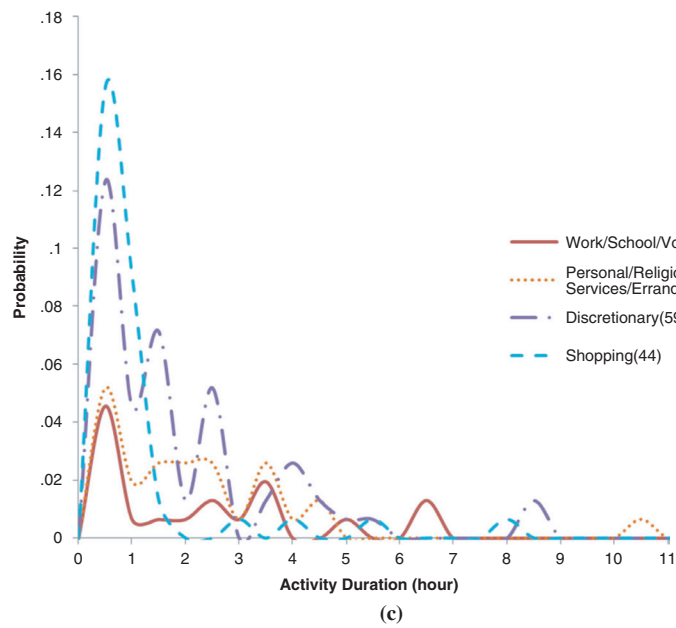
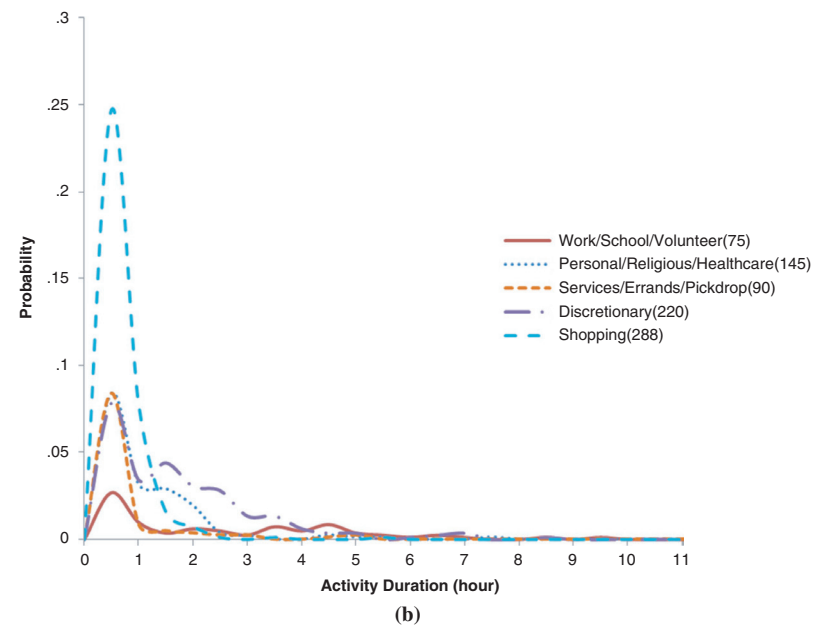
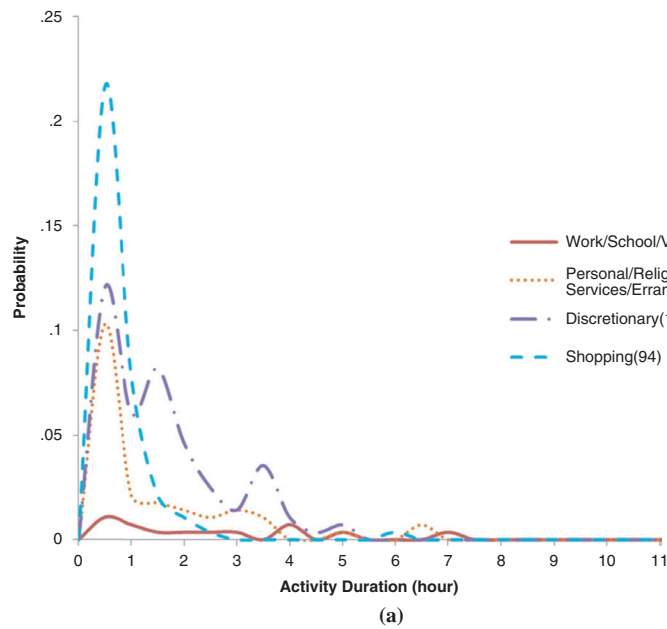


FIGURE 2 Activity duration probability plots for different activity types: (a) young-old seniors on weekends, (b) young-old seniors on weekdays, (c) baby boomers on weekends, and (d) baby boomers on weekdays (pickdrop = pickup or drop off).

of executed activities of a specific activity type in a 30-min batch by the total number of all executed activity types during weekdays or weekends.

The general pattern of all four diagrams in Figure 2 shows that as duration increases up to 30 min, the probability of activity execution also increases. After that, the probability steadily decreases. However, mandatory trips do not follow this pattern, but rather have a smoother shape with very small peaks, especially for young-old seniors on weekends. The probability of activity execution is very high during the first hour and declines over time. Further inferences from Figure 2 show that the probability of becoming active in an activity with short duration is very high during weekdays, whereas during weekends both age groups are open to participate in longer duration activities. Activity types included in the service activity category are more important for seniors, whereas mandatory activities are obviously more critical in the view of baby boomers.

In Table 3 statistical tests on corresponding plots of Figure 2 are presented. Numbers displayed in the table represent the  $p$ -value for the null hypothesis. Except for the case of elderly people's weekdays versus baby boomers' weekdays, because of the low number of observations, personal, religious, health care and services, errands, and pickup and drop-off activity types are mixed and then compared with each other. That is why there are five rows for the third column, in which the weekday activities of elderly people and baby boomers are compared, whereas other categories have four rows. As explained previously, the null hypothesis for the  $t$ -test assumes that the two sample means are equal. Similarly, for the  $F$ -test, the null hypothesis considers whether variances of the two samples are the same. For example, these tests reveal that baby boomers' behavior to choose shopping activity duration is statistically the same during weekdays and weekends.

### Time-of-Day Choice Versus Activity Type

Activity start time is of great significance and value in activity-based models and even conventional four-step models (23–26). Thus, in this section, the attempt is made to study whether there is any distinct difference between young-old seniors and preretirement baby boomers related to time-of-day choice behavior. In Figure 3, probability density plots of different activity types across a range of activity start times for young-old seniors and baby boomers are depicted sepa-

ately for weekends and weekdays. Two-hour bins are used to calculate probabilities. From the comparison between Figures 2 and 3, it can be concluded that although young-old seniors and baby boomers have similar behavior in relation to activity duration, the two groups are totally different in regard to chosen time of day.

The focus is first on Figure 3*b*, which shows time-of-day choice behavior of young-old seniors during weekdays. The general patterns of some of the activities are very similar, meaning that young-old seniors perform these activities consecutively. The probability density function (pdf) curve of services, errands, and pickup and drop-off activities almost matches the pdf curve of work, school, and volunteer activities; the pdf curve of personal, religious, and health care activities stands very close to the pdf curve of discretionary activity. Only the shopping activity stands alone above all the four other curves.

Before 10:00 a.m., the probability of participating in a discretionary activity is higher than participating in other activities for seniors; after that time, until 6:00 p.m., the chance of shopping is dominant over other activities. If all plots in Figure 3*b* are summed, it can be said that, roughly, morning and afternoon peak hours for young-old seniors are at noon and 4:00 p.m. Therefore, seniors are more likely to be seen on streets around these two peak hours. This finding should be of interest to firms providing services to this specific age group.

In figure 3*d*, which displays time-of-day choice behavior for baby boomers on weekdays, it can be seen that the pdf curve of work, school, and volunteer activities, especially in the morning, stands above the other activity types. After noon, the chance of a shopping activity being performed steadily increases until 4:00 p.m., while work, school, and volunteer remain the dominant activity. After 6:00 p.m., the probability of shopping and discretionary activities stays higher than for others. Only the shopping and work, school, and volunteer activities show a prominent peak point. These activities have a higher probability of being executed between noon and 6:00 p.m.

During weekends, plots of discretionary and shopping activities remain on top for both age ranges (Figure 3, *a* and *c*). The shapes of these two activity types are similar to each other, indicating that people execute them consecutively. Table 4 presents statistical tests on corresponding plots in Figure 3. It can be seen that in most cases, the null hypothesis of the  $F$ -test is rejected ( $p$ -value > .05). That result again indicates that young-old elderly and baby boomers display very dissimilar behavior in time-of-day choices.

TABLE 3 Statistical Tests on Plots Presented in Figure 2:  $p$ -Values for Null Hypothesis

Group of Activity Types	Elderly (weekends versus weekdays)		Baby Boomers (weekends versus weekdays)		Weekdays (elderly versus baby boomers)		Weekends (elderly versus baby boomers)	
	$F$ -Test	$t$ -Test	$F$ -Test	$t$ -Test	$F$ -Test	$t$ -Test	$F$ -Test	$t$ -Test
Work, school, and volunteer	— <sup>a</sup>	— <sup>a</sup>	— <sup>a</sup>	— <sup>a</sup>	0.30	0.54	— <sup>a</sup>	— <sup>a</sup>
Personal, religious, and health care	0.01	0.04	0.00	0.01	0.02	0.86	0.08	0.06
Services, errands, pickup, and drop-off	— <sup>b</sup>	— <sup>b</sup>	— <sup>b</sup>	— <sup>b</sup>	0.12	0.75	— <sup>b</sup>	— <sup>b</sup>
Discretionary	0.51	0.70	0.48	0.85	0.02	0.96	0.12	0.93
Shopping	0.01	0.42	0.00	0.05	0.01	0.29	0.00	0.15

<sup>a</sup>— = number of activities less than 30.

<sup>b</sup>— = activities mixed with personal or religious or health care activities.



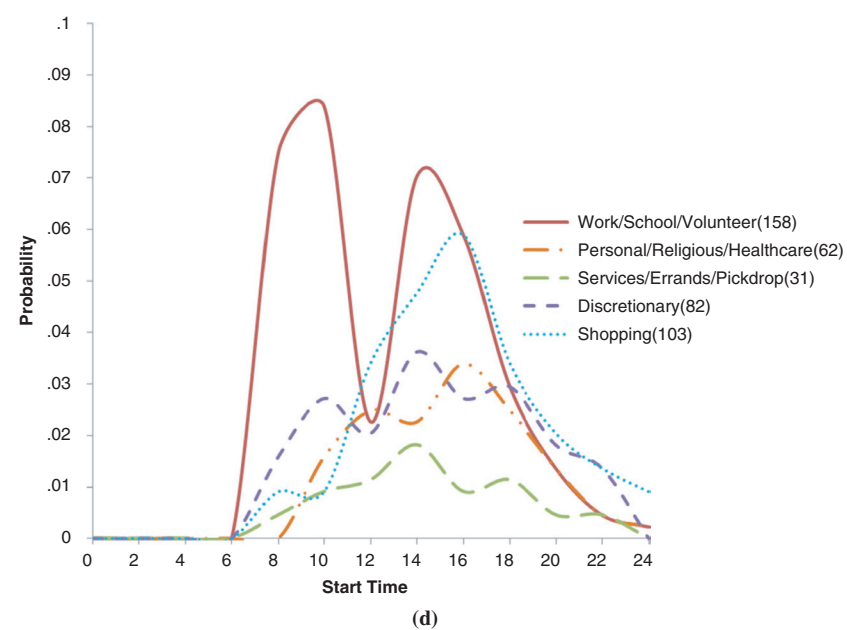
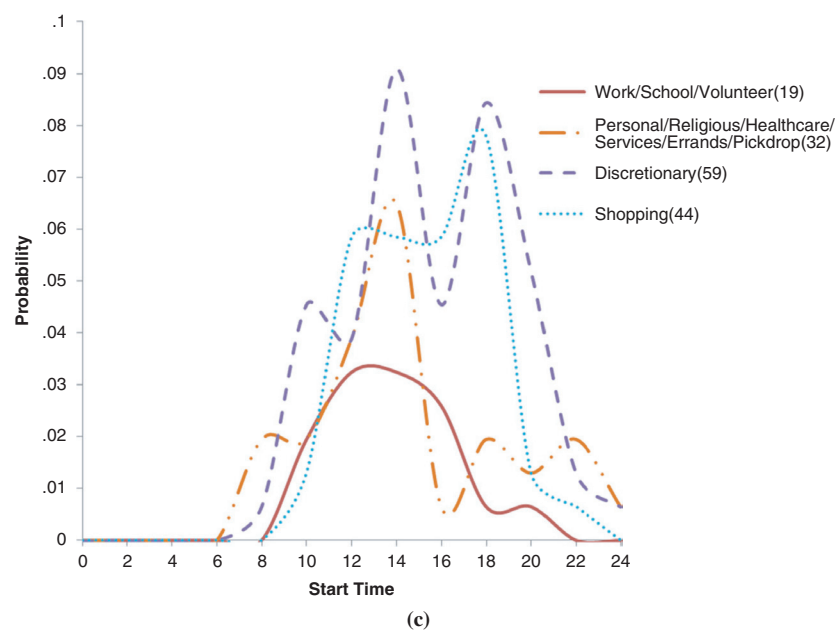
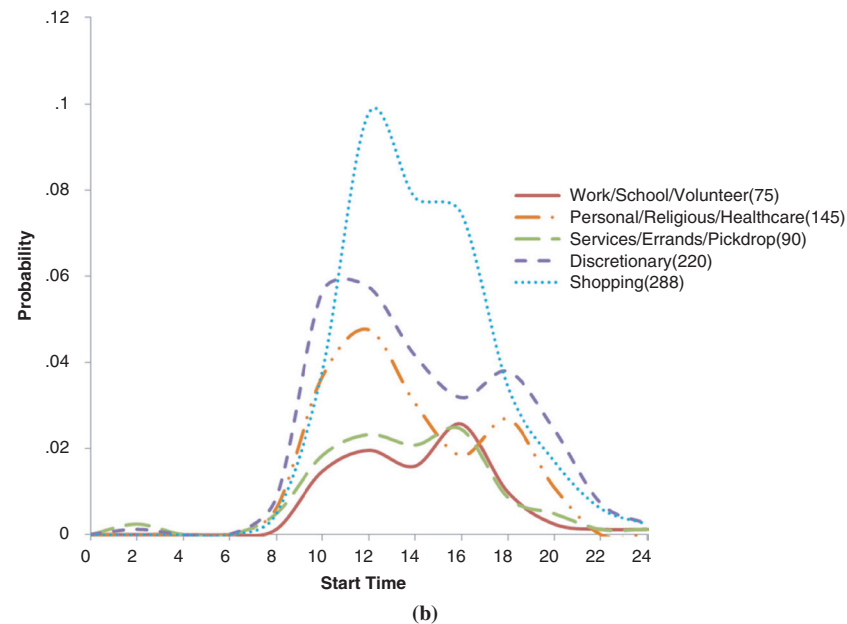
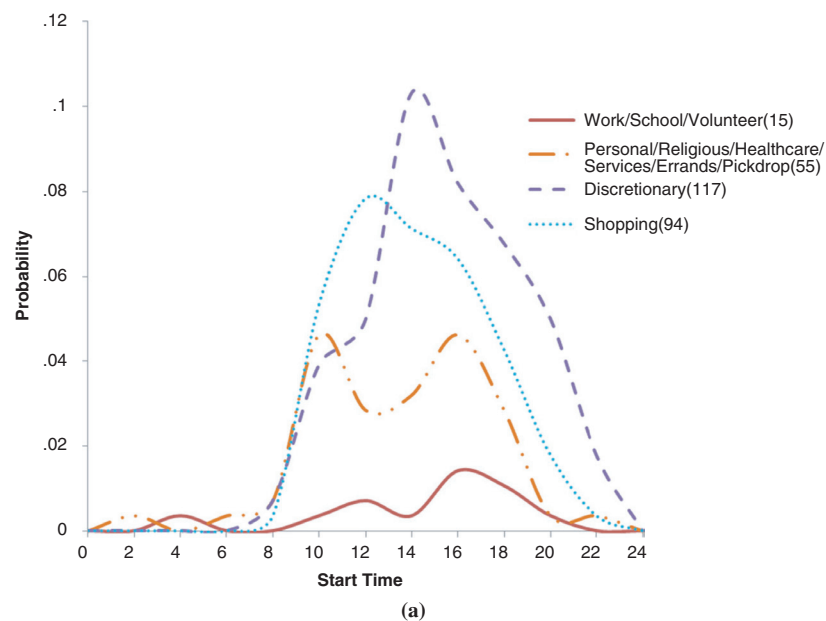


FIGURE 3 Probability plots of chosen time of day for different activity types: (a) young-old seniors on weekends, (b) young-old seniors on weekdays, (c) baby boomers on weekends, and (d) baby boomers on weekdays.

TABLE 4 Statistical Tests on Plots Presented in Figure 3: *p*-Values for Null Hypothesis

Group of Activity Type	Elderly (weekends versus weekdays)		Baby Boomers (weekends versus weekdays)		Weekdays (elderly versus baby boomers)		Weekends (elderly versus baby boomers)	
	<i>F</i> -Test	<i>t</i> -Test	<i>F</i> -Test	<i>t</i> -Test	<i>F</i> -Test	<i>t</i> -Test	<i>F</i> -Test	<i>t</i> -Test
Work, school, and volunteer	— <sup>a</sup>	— <sup>a</sup>	— <sup>a</sup>	— <sup>a</sup>	0.02	0.01	— <sup>a</sup>	— <sup>a</sup>
Personal, religious, and health care	0.56	0.85	0.12	0.37	0.66	0.01	0.29	0.28
Services, errands, pickup, and drop-off	— <sup>b</sup>	— <sup>b</sup>	— <sup>b</sup>	— <sup>b</sup>	0.79	0.12	— <sup>b</sup>	— <sup>b</sup>
Discretionary	0.10	0.01	0.51	0.28	0.50	0.10	0.28	0.73
Shopping	0.53	0.96	0.04	0.37	0.01	0.01	0.45	0.06

<sup>a</sup>— = number of activities less than 30.<sup>b</sup>— = activities mixed with personal or religious or health care activities.

TABLE 5 Shares and Definitions of Different Planning Time Horizons for Young-Old Seniors and Baby Boomers

Definition	Young-Old Seniors (%)	Baby Boomers (%)
Planned less than 1 h before activity performance	37.9	37.3
Planned same day of activity performance	23.7	19.6
Planned previous day before activity performance	7.6	6.1
Planned 2 days ago or more before activity performance	15.4	11.8
Routine activity	15.4	25.2

### Activity Duration Versus Planning Time Horizons

Planning time horizon is an important variable in modeling activity scheduling of planned activities (27, 28). Planning time horizon is defined as the duration between the decision to partake in and the actual performance of an activity. During this period, the decision maker may resolve possible conflicts with other activities and eval-

uate the importance of the activity compared with other potential activities. Table 5 shows classifications that are used in the planning time horizons analysis of this paper. From Table 5, it can be seen that the main difference between young-old seniors and baby boomers is related to routine activities. The observation from Table 5 provides evidence for the conclusion that was mentioned in the previous section, that baby boomers are more involved in mandatory activities than are young-old seniors.

Planning time horizon has a very close connection with activity duration. Therefore, to demonstrate how duration of an activity can affect planning time horizons, the probabilities of different planning time horizons versus activity duration are displayed in Figure 4.

If “less than 1 h” and “same-day” planning time horizons are assumed to be indicators of impulsive activities, then it can be seen that people impulsively plan for their short activities.

In the case of each curve in Figure 4, the steeper slope of a curve represents the more sensitive the planning time horizon should be to the activity duration. Therefore, activities that were planned in the previous day, 2 days before, or more are less sensitive to activity duration. In contrast, activities with “less than 1 h” and “same-day” planning time horizons show high sensitivity to activity duration, especially for durations of less than 1.5 h. For durations greater than 1.5 h, the planning process does not show sensitivity to duration

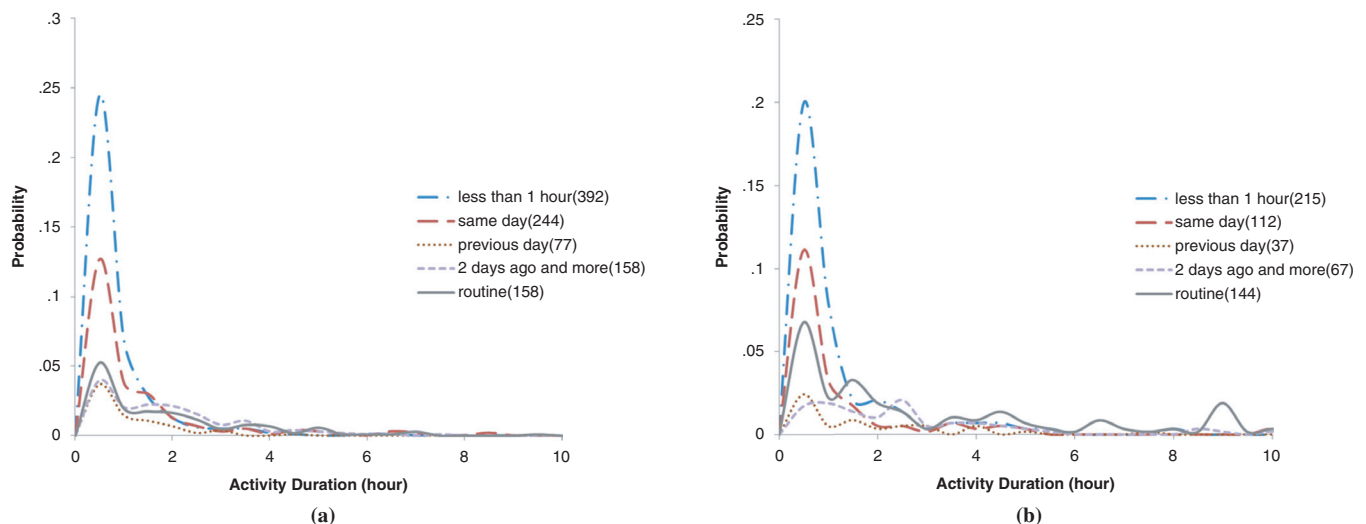


FIGURE 4 Probability plots of activity duration for different planning time horizons for (a) young-old seniors and (b) baby boomers.

**TABLE 6 Statistical Tests on Plots Presented in Figure 4:  $p$ -Values for Null Hypothesis**

Planning Time Horizon	$F$ -Test	$t$ -Test
Planned less than 1 h before activity performance	0.79	0.06
Planned same day of activity performance	0.08	0.96
Planned previous day before activity performance	0.01	0.03
Planned 2 days ago or more before activity performance	0.29	0.10
Routine activity	0.01	0.01

of activity. A comparison between the curves in Figure 4, *a* and *b*, shows that the major disparity between young-old seniors and baby boomers is in routine activities. For other time horizons in the behavior of young-old seniors and baby boomers, the curves show a very close relationship.

Similar to in previous sections, statistical tests on corresponding plots in Figure 4 are presented in Table 6. For activities planned the previous day or earlier and for routine activities, it can be seen that the  $p$ -values of the null hypothesis (equality of means and variances) are small. This small value means that the young-old elderly and pre-retirement baby boomers display similar behavior in their planning processes. For impulsive activities there is significant disparity in either variance or mean.

### Time-of-Day Choice Versus Planning Time Horizons

As with activity duration, there is a close affinity between planning time horizon and activity start time. It is understandable that if an activity is planned in the early morning at peak hour, it is treated differently than a similar activity that could be completed during off-peak hours. In Figure 5, the probability density function curves of different planning time horizons versus the chosen time-of-day have been plotted. As shown in Figure 5*a*, for young-old seniors their impulsive activities are more sensitive to time-of-day choice than are their planned activities (previous day or more). For impulsive activities, young-old seniors show a greater tendency to execute their activities sometime between the periods from 11:00 to 13:00 and 14:00 to 16:00. In Figure 5*b*, it can be seen that baby boomers' morning

**TABLE 7 Statistical Tests on Plots Presented in Figure 5:  $p$ -Values for Null Hypothesis**

Planning Time Horizon	$F$ -Test	$t$ -Test
Planned less than 1 h before activity performance	0.02	0.01
Planned same day of activity performance	0.39	0.03
Planned previous day before activity performance	0.45	0.62
Planned 2 days ago or more before activity performance	0.69	0.03
Routine activity	0.92	0.01

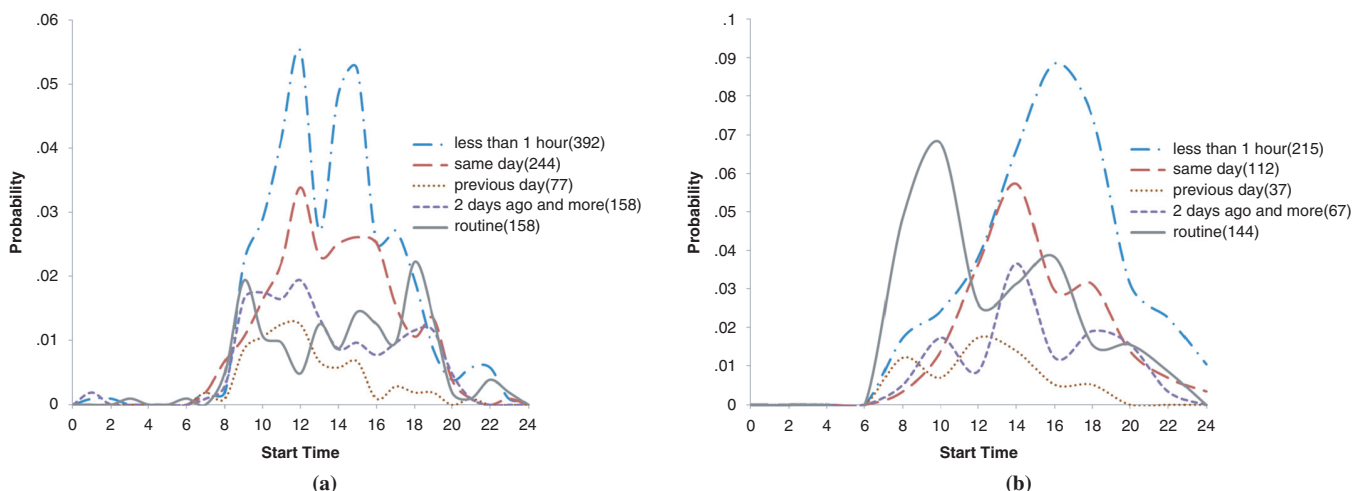
activities are highly correlated with their routine activities. During the afternoon and evening, they perform a major part of their activities impulsively, especially between 1:00 and 7:00 p.m.

Statistical tests presented in Table 7 indicate that the means of the corresponding plots are statistically equal (except planned previous day horizon); however, the dispersion of the plots is statistically different, on the basis of  $F$ -test results.

### CONCLUSIONS

The United States has seen an exponential increase in the population of senior citizens as the first of the generation of baby boomers turned 65 at the beginning of 2011. During the next decade, baby boomers ranging from 55 to 64 years of age will become the young-old elderly (65 to 74 years) population. This study is the first to run an explanatory analysis on travel and activity attributes of these two sequential age groups. Researchers used the UTRACS data set, which was collected through an Internet-based prompted recall activity-based travel survey using GPS data collection techniques from the Chicago region.

This study can also be seen as a contribution to activity-based models. These models provide a suitable basis to combine the travel behavior of different homogeneous population groups. These models, which are highly disaggregated, are looking for a trade-off between run time and precision. The analysis on preretirement baby boomers and young-old elderly as two homogeneous groups revealed that although choice of activity duration behavior is almost the same for the different activity groups, their time-of-day choice behavior is sig-



**FIGURE 5 Probability plots of chosen time of day for different planning time horizons for (a) young-old seniors and (b) baby boomers.**



nificantly different, which must be considered in the activity-based models.

The analysis also showed that activity duration is strongly sensitive to the type of activity. This sensitivity is higher for durations less than 2 h. For all presented activity types, except work, school, and volunteer activity, baby boomers and young-old seniors show very similar sensitivities to change in activity duration.

In contrast to the duration of activity, the two age groups display completely dissimilar behaviors in the choice of a start time for activities. The reason is that the baby boomers' activity plan is highly affected by mandatory activities (work, school, volunteer). This pattern is opposite for young-old seniors, for whom mandatory activities have the smallest share.

Both age groups execute a major part of their activities impulsively. Young-old seniors and baby boomers plan 61.6% and 56.9% of their activities on "less than 1 h" and "same-day" planning time horizons, respectively. The analysis of planning time horizons also revealed that for specific activity duration, the chance that a specific time horizon will be selected is almost the same for the two groups. But for a specific time of day, the chances of selection for the two groups differ greatly.

There is much more research needed to better understand the complex and multifaceted travel behavior of seniors. Better data sources should be collected that specifically address life turning-point events (e.g., entering retirement, becoming empty nesters, and moving back to the city) in the lives of seniors and baby boomers.

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