Public Transit Training: A Mechanism to Increase Ridership Among Older Adults

by Susan Shaheen, Denise Allen, and Judy Liu

In Summer 2007, researchers evaluated the Rossmoor Senior Adult Community transit training through a "before-and-after" training survey. Surveys also were administered to participants who had taken the training over the past two years to identify any long-term changes (longitudinal). Results of the before-and-after survey revealed a positive shift in participant comfort levels with public transit and in finding transit information. More than 85% planned to take public transit more frequently. Longitudinal survey results revealed a significant decrease in private auto use after training. Both survey results suggest that training may have an impact on transit attitudes and a longer-term impact on travel behavior.

INTRODUCTION

As the number of older adults living in the United States (U.S.) continues to rise, providing adequate transportation services for an increasing number of older travelers presents several challenges (Shaheen and Rodier 2007; Burkhart, Craddock, Nelson, and Mitchell 2002). There are currently an estimated 35 million senior citizens living in the U.S., and this population is expected to more than double by the year 2030, comprising 20% of the U.S. population (Meyer 2000; Himel 2002). These travelers include the Baby Boomer cohort, some 76 million strong (Himel 2002). Not only will the Baby Boomers contribute to a substantial rise in the number of elderly travelers, but due to numerous medical advances, they will be among the healthiest and longest-living individuals in America. This large change in the demographic landscape of America will lead to great implications for all aspects of life, not the least of which will be transportation.

Automobiles are integral to the lives of older Americans and the aging Baby Boomer population. Elderly Americans rely on their personal auto for a majority of their trips, more than any other age group (Pucher and Renne 2003). Despite improvements in medicine, physical and cognitive changes continue to accompany the aging of older adults and may compromise their ability to drive, particularly after the age of 75 (Shaheen and Rodier 2007; Lyman, Ferguson, Braver, and Williams 2002). Driving cessation reduces the mobility of older adults, particularly if there are no other modes of transportation that are easily accessible (Bailey 2004). This lack of connection with the outside world only leads to greater psychological distress and lower life satisfaction (Lyman et al. 2002; Collia, Sharp, and Giesbrecht 2003).

Exacerbating the transportation problem are the phenomenon of aging-in-place and the movement of Baby Boomers into the suburbs. Aging-in-place is the situation where an individual chooses to stay and grow older in the same home that they lived and worked in during their younger years. The suburbanization of the elderly population removes them from easy access to public transit options, making driving more preferable and convenient. Giving up their driver's licenses would mean more than a cessation of driving and would radically change their lifestyles, likely reducing their travel outside of the home (Rosenbloom 2003). The aging of the Baby Boomers and the subsequent growth in the older American population is expected to strain current transportation resources in the U.S. (Rosenbloom 2003). A growing older adult population with increased longevity also means there will be a greater number of individuals relying on public transportation for a longer time period. To enable older adults to maintain healthy, active, and involved lifestyles, development of adequate transportation alternatives is needed (Harrison and Ragland 2003).
Despite the need for alternative transportation among older adults, public transit is grossly underused among this population (Pucher and Renne 2003; Rosenbloom 2003). Many older adults cannot access transit because there is a lack of available services in their neighborhoods and communities (Shaheen and Rodier 2007; Holmes, Sarkar, Emami, and Shuaies 2002). However, research indicates that older adults would not use public transit even if services were available to them (Shaheen and Rodier 2007; Holmes et al. 2002). In addition, many older travelers are unfamiliar with public transit and may experience a number of potential barriers that prevent them from accessing it, including physical and cognitive challenges and an overall lack of information on routes and services (Ritter, Straight, and Evans 2002; Burkhardt 2002; Burkhardt, McGavock, Nelson, and Mitchell 2002). Research suggests that older travelers may require additional information and instruction on how to access public transit, including “mobility planning and training programs” (Shaheen and Rodier 2007; Burkhardt et al. 2002).

This paper evaluates the effectiveness of an in-person, transit training program offered at the Rossmoor Senior Adult Community in Walnut Creek, California. This ongoing transit training class teaches residents about local transit options and how to access information resources. The training also includes a bus tour of the route lines of two major buses available to the community: the Rossmoor and County Connection buses. The class draws upon social cognitive theory and its emphasis on self-efficacy—or the idea that an individual’s perceptions of their own capabilities influence their actions and life events—to encourage older travelers to learn about public transit use and to promote desired behaviors in seniors (Bandura 1994). In Summer 2007, researchers implemented surveys with participants prior to and following the transit training session to assess changes in perceptions and intended transit use (before-and-after survey). In addition, a questionnaire was administered to residents who had taken the transit training course over the past two years to identify any long-term changes in their public transit use and attitudes (longitudinal survey).

This paper consists of four main sections. First, the authors begin with a review of the literature on aging trends and mobility, as well as self-efficacy and social cognitive theories relevant to the transit training. A methodological discussion follows, including survey design, response rate, and study limitations. Next, the authors present the study results. In the last section, a summary of key findings and conclusions are provided.

LITERATURE REVIEW

This literature review is focused on current and future trends associated with the growing senior population in the U.S. The authors also describe social cognitive and self-efficacy theories relevant to this transit training study. It includes six sections: 1) growth trends, 2) older drivers, 3) driving cessation, 4) public transportation barriers, 5) the aging-in-place phenomenon, and 6) self-efficacy and social cognitive theory.

Growth Trends

According to the U.S. Census Bureau (2000), individuals aged 65 and older numbered 35 million and made up 12% of the U.S. population (Meyer 2000; Himes 2002). This number is expected to double by 2030 as members of the Baby Boomer cohort—approximately 76 million born from 1946 to 1964—join the ranks of those aged 65 and older (Himes 2002). In 2000, life expectancy increased by approximately four years for men and women 65 and older (based upon 1950 projections) (Himes 2002; U.S. Census Bureau 2000). Individuals aged 85 and older have become the fastest growing population segment (Himes 2002). Furthermore, the gender gap is increasing (i.e., there are many more older women than older men) (Himes 2002). These changes in the U.S. demographic landscape will lead to notable impacts on all aspects of life, including transportation.

Older Driver Trends

Automobiles, once the domain of the young, will be driven by a rapidly aging population. The Household Travel Survey (2001) found that older drivers are likely to have more than one driver in their household, that by 2025, the number of older drivers is expected to increase by 40% among men and 70% among women, while the share of older drivers is expected to double (Reuschm, 2004).

Despite the increasing numbers of older drivers, concerns about strengths and weaknesses in physical and cognitive abilities may affect their mobility (Reuschm, 2004). In fact, by 2020 more than half of the population aged 65 and older (59%) will need assistance with daily activities, and needs will increase for those aged 85 and older (60%) as well (Reuschm, 2004). Driving an automobile is a factor in nearly all aspects of senior's lives, and those who drive their own cars tend to maintain a greater sense of control over their lives than those who do not drive (Reuschm, 2004).

Driving among seniors is associated with a variety of factors, including physical and cognitive changes, as the need for support increases (Reuschm, 2004). Among seniors, driving is the result of many factors, including need for support (Reuschm, 2004). Driving a car is a source of independence and self-sufficiency for many seniors (Reuschm, 2004). Many seniors who drive have a number of factors that contribute to their safety while driving, including physical and cognitive factors. As the need for support increases, driving a car is a source of independence and self-sufficiency for many seniors (Reuschm, 2004).
Older Drivers and Driving Cessation

Automobiles are integral to the lives of older Americans and the aging Baby Boomers. The National Household Travel Survey (NHTS) indicates that seniors rely on their personal auto for 89.1% of their trips—more than any other age group (Pucher and Renne 2003). The number of older U.S. drivers is likely to increase as Americans continue to age and live longer. Hu et al. (2000) predict that by 2025, drivers between the ages of 65 and 69 will increase by 7% among men and 28% among women, while drivers 85 and older will increase by 22.3% for men and 113% for women (Hu, Jones, Reuschem, Schmoyer, and Truett 2000).

Despite improvements in medicine, physical and cognitive changes continue to accompany aging in older adults and may compromise driving ability. Physical limitations, such as decreased strength and flexibility, make safe driving challenging (Shaheen and Niemeier 2001). Other health issues, including vision and hearing deterioration and declining cognitive and perceptual functions, also make older drivers a potential threat to road safety. Ultimately, these health problems often lead to driving cessation.

Driving cessation has additional implications for the lives and well being of older Americans besides decreased mobility. In their study of driving cessation impacts, Harrison and Ragland (2003) found that cessation adversely affects the quality of life of seniors, leading to feelings of lost independence and increased feelings of isolation and depression (Harrison and Ragland 2003). Driving cessation reduces mobility, particularly if there are no easily accessible alternative transportation modes. According to Foley et al. (2002), men between the ages of 70 and 74 will rely on alternative transportation an average of seven years after driving cessation, and women in the same age range for 10 years (Foley, Heimovitz, Guralnik, and Brock 2002). However, despite the need for alternative transportation modes, older adults grossly underuse available public transit—making up only 1.3% of all trips in 2001 (Pucher and Renne 2003; Rosenbloom 2003).

Public Transportation Barriers

There are a number of potential barriers that prevent older adults from using public transportation. In several research studies, participants mentioned the following concerns regarding public transit (Shaheen and Rodier 2007; Ritter et al. 2002; Burkhardt 2002; Burkhardt et al. 2002):

- Lack of door-to-door services
- Infrequent schedules
- Lack of direct routes and stops at certain key destinations
- Reliability of public transit services
- Transfers
- Safety on buses, walking to bus stops, and at bus shelters
- Physical concerns (e.g., climbing stairs, walking to bus stops, carrying large bags on board, etc.)
- Financial concerns about public transportation costs

Additionally, the tendency to perceive dependence on others as an inconvenience may serve as a potential barrier, as many seniors are consequently highly resistant to assistance (Burkhardt 1999). Furthermore, Dumbaugh (2008) posits the intrinsic barriers of the built environment as another barrier, emphasizing the impacts of community planning and design on public transportation, as well as a community’s ability to provide transportation services for older adults (Dumbaugh 2008).

According to the National Household Travel Survey, only about half of all Americans have access to public transportation (Bailey 2004; U.S. DOT 2004). This leaves many, particularly those in rural areas, with no viable alternatives to the private auto. And even where public transit is available, most seniors still prefer to drive. According to a study by Burkhardt et al. (2002), some of the qualities that make driving more appealing for younger people are the same as those that discourage older Americans from using public transit (Burkhardt et al. 2002).
Public Transit Training

“Senior-friendly” transit options that provide more direct routes are located in safe areas and employ drivers that can provide assistance to older travelers are needed to create better public transit options (Kerschner and Aizenberg 2004).

Aging-in-Place Phenomenon

Exacerbating the transportation problem is the aging-in-place phenomenon and movement of the Baby Boomers into the suburbs. This phenomenon has contributed to the “graying” of the suburbs where 56% of the elderly live (Rosenbloom 2003; DeSalles 2002).

The need for transportation alternatives is even more critical in light of the growing Baby Boomer population who will likely continue to live in the suburbs. A recent analysis of 102 metropolitan areas across the U.S. indicated that the suburbs are getting older, and individuals 35 years and older continue to move there at a higher rate than cities (Frey 2003). In 2000, 70% of those 35 and older lived in the suburbs (Frey 2003). Given this trend, institutions all over the U.S. are anticipating the strain this will cause on existing public transportation and are developing new services to prepare for the aging Baby Boomers.

Self-Efficacy and Social Cognitive Theory

Bandura’s (1997) social cognitive theory is an extension of social learning theory and stress the important influence of cognitive processes on human behaviors and motivations (Bandura 1997). According to social cognitive theory, human functioning results from the interaction among behavior, the environment, and personal factors—a relationship Bandura refers to as “mediated reciprocity” (Bandura 1986; Pajares 2002). Personal factors include what Bandura calls a “self-system” that allows individuals to reflect on and regulate their actions and thoughts and to therefore change their environment (Pajares 2003). According to this view, an individual’s perception of his or her own ability can be a better indication of future behaviors and motivations (Bandura 1997; Pajares 2002). This measure of self-efficacy is central to Bandura’s social cognitive theory.

Self-efficacy is the idea that an individual’s perceptions of their own capabilities influence their actions and life events (Bandura 1994). A strong sense of self-efficacy, or faith in one’s own abilities, leads to a more active and involved life in which difficult situations are not avoided but are seen as challenges to be overcome. This manner of approaching life reduces stress, lowers the risk of depression, and leads to a greater commitment to goal setting. On the other hand, those with a weak sense of self-efficacy may limit their potential and avoid situations in which failure may be a high possibility.

One way in which to build self-efficacy is through social modeling. Social modeling centers on the idea that when an individual witnesses peers perceived to be similar to himself succeed in a task, he is more likely to believe in his own ability to complete the task as well. The alternative may also be true—if the peers fail, the individual may expect to have the same result and may be discouraged from trying the task (Bandura 1994). Social models also provide a forum in which individuals may learn from those peers that possess capabilities that they themselves aspire to, and as such, they may acquire new knowledge or capabilities that increase their own self-efficacy (Bandura 1994).

It is especially important for older adults to maintain higher levels of self-efficacy. Older age often leads to physical disabilities that force seniors to reassess their capabilities. Rather than viewing this negatively, a more optimistic point of view would be to use the intellect and experiences gained over the years to make up for physical disabilities. Hough et al. (2008) found that women with higher self-efficacy tended to be more active than those with lower self-efficacy (Hough, Cao, and Handy 2008; Hough 2007). These women were more likely to participate in outside activities and travel more for diverse reasons (Hough et al. 2008). Furthermore, Grebowski et al. (1993) have found that self-efficacy is positively correlated to better mental and physical health in the elderly (Grebowski et al. 1993). Those with higher self-efficacy for health behaviors were more likely to partake in healthy behaviors, and this was likely a result of the behavioral and health benefits they perceived and succeeded in achieving (Rossow and Grebowski 1993). It is clear public transportation services are needed to accommodate this changing population.

METHOD

The Rossmoor Community is a retirement community that has been designed to provide the community with its own population of older adults. The community is set up so that many have accessed and can connect to the downtown areas.

Research used a before-and-after design in the Rossmoor Community. First, residents were surveyed in Summer 2002 (before-and-after). This survey was originally used to find the impact on public transportation use (“longer stay” ratio).

Both the younger and older population’s public transportation use is similar in terms of the Mann-Whitney U test to income. The younger population used public transportation more. The study participants were from both groups: the younger group (20-30), good, very good, and excellent; and the older group (40-50), very good, and excellent. The younger group was $10,000 to $15,000, and the older group $10,000 to $20,000, some college.

Recruiting for the study was done through within the community, and advertising. A selection of the respondents is based on selection.

Before-and-After Study of Public Transportation Use

The before-and-after study was conducted through a pre- and postquestionnaire survey. For this study, the participants were divided into three groups: 1) everyone, 2) residents on level 1, 3) attitudes, and 4) those who own a car in the same neighborhood. In one of the groups, the residents on level 1, the public transportation changes in terms of public transportation changes in terms of the Rossmoor Community.

Immediate Changes

Immediate changes in public transportation use before-and-after study showed that the younger group used public transportation more than the older group. The younger group was $10,000 to $15,000, and the older group $10,000 to $20,000, some college.
behaviors, such as seeking preventive care, and were healthier individuals. Finally, Shaheen (1999) found that individuals were more accepting of a transportation innovation after participating in a behavioral modeling study (i.e., watching a video that demonstrated individuals using a new service and successfully trying the innovation in a trial clinic) (Shaheen 1999). The transit training class at Rossmoor draws on social cognitive and self-efficacy theory to encourage older adults to learn about public transportation use.

METHODOLOGICAL APPROACH

The Rossmoor Senior Adult Community, located in Contra Costa County in Walnut Creek, California, has been offering a transit training program to residents since 2005. In 2008, the community had a population of 9,305 residents with 6,678 residential units on 2,200 acres of land. Most residents have access to a personal vehicle and also can take the Rossmoor bus within Rossmoor and to connect to the County Connection bus system, which takes travelers to outside locations, including downtown Walnut Creek and the local Bay Area Rapid Transit (BART) District station.

Research is needed to address the increasing mobility needs and perceived public transit barriers of older adults. In this paper, researchers evaluated the effectiveness of the Rossmoor Senior Adult Community transit training class. The research methodology consisted of two main components. First, researchers implemented questionnaires “before-and-after” six transit training sessions held in summer 2007 to assess changes in public transit attitudes and usage on the same day of the class (before-and-after survey). In the second part, researchers conducted a survey with individuals who had previously taken the transit training to identify any longer-term changes in transit attitudes or use (“longitudinal survey”).

Both surveys collected basic demographic data: age, gender, health, and income. The two study populations (before-and-after survey participants and longitudinal survey participants) had very similar p-values for the four demographic variables, ranging from 0.1 - 0.7. However, application of the Mann-Whitney U test (a non-parametric statistical test comparing two independent populations) to income data yielded a p-value of 0.05, indicating some significant differences between the two population’s income levels. This is likely explained by the notably higher incomes of longitudinal study participants than the before-and-after survey population. Over 80% of participants from both groups were age 75 and older. Also, more than 80% were female. Over 85% reported having good, very good, or excellent health. Annual incomes of both study populations varied from below $10,000 to more than $110,000. All participants graduated from high school, and most had at least some college or possessed higher degrees. Overall, participants were predominantly Caucasian.

Recruitment for the before-and-after and longitudinal surveys was conducted through flyers and advertisements in the local Rossmoor newspaper. Interested residents called the Rossmoor transportation office to enroll in the transit training study. To encourage study participation, respondents were entered into a $50 gift card raffle.

Before-and-After Survey

The before-and-after survey was conducted in conjunction with six training sessions, held June through August 2007. Two sessions were conducted on a single training day of each month. Each questionnaire took approximately 15 minutes to complete. A total of 42 residents participated in this study. Prior to each training session, respondents completed a “before” questionnaire to assess their: 1) experience with different transportation modes, 2) current travel behavior, 3) public transit attitudes, 4) barriers to transit use, and 5) training program expectations. Next, they participated in one of the six, two-hour training sessions, led by the transportation coordinator at Rossmoor. Immediately following each session, researchers administered the “after” questionnaire, which focused on potential changes in transit attitudes, knowledge gained through the training, and intended changes in travel behavior. The “after” survey also provided participants with the opportunity to
evaluate the training program and to suggest improvements. The before-and-after questionnaire is in the Appendix.

Longitudinal Survey

In the second study part, researchers administered a 15-minute questionnaire to prior training participants (individuals who had taken the class between six months to two years earlier) on August 15, 2007. A total of 61 participants completed the longitudinal survey. It included questions about travel behaviors prior to and after the training and perceived transit barriers, as well as an opportunity to comment on the training. The complete longitudinal survey is available from the authors on request.

Study Limitations

This study relied on the self-reported answers of participants. Due to privacy considerations, all participant surveys were anonymous, therefore making it impossible to verify if given information was correct. Furthermore, answers were based on respondent memories, and in the longitudinal survey, this was a long time—between six months to two years earlier. Poor memory or a misunderstanding of the questions could have led to false answers. In addition, many participants took part in different training sessions, which may have led to slightly different experiences.

Survey results may not be applicable to all older adult populations, since respondents are not representative of the diversity across the U.S. (e.g., the majority of them were Caucasian). Furthermore, the study was conducted in an area where there is an established public transportation system within the community. In contrast, many seniors in the U.S. are unable to easily access transit, and therefore they may respond differently than the participants of this study. Finally, respondents were educated with at least a high school diploma, and many were still able to drive. They all lived within the older adult community of Rossmoor. Despite these limitations, this study provides many insights into the potential of transit training in encouraging older adults to use public transit, an issue that all regions of the U.S. will likely face in the future.

RESEARCH RESULTS

A primary motivation of this study was to examine stated and actual behavioral changes following the Rossmoor transit training. The before-and-after and longitudinal surveys provided researchers with two methods for examining training impacts: immediate (intended response) and longitudinal (change over time). In this section, key findings from both study components are presented, including: 1) intended and actual travel behavioral changes, 2) public transit barriers, 3) public transit information resources, and 4) public transit training feedback.

Intended and Actual Behavioral Changes

Before-and-After Participants. Prior to training, the private automobile was the primary transportation mode for most participants (78.6%), followed by public transit (9.5%). Some reported equal use of both modes (2.4%). A majority of participants (69.1%) had not used the Rossmoor bus, while even more (76.1%) had never taken the County Connection bus prior to training. Some (9.5%) had even stopped driving but had not yet started using public transit. Immediately following the training, 85.7% of participants stated they intended to take transit more frequently in the future. The mode split of both study populations (before-and-after and longitudinal) prior to instruction was very similar; no statistical difference was found in their private auto use. The Two Sample Proportions test, however, showed that there was a difference in their public transit use ($p=0.0061$).
This is likely due to the greater proportion of before-and-after participants that used public transit as their primary mode prior to training.

**Public Transit Comfort Level Changes.** Respondents were asked a series of questions about their comfort level with taking the Rossmoor and County Connection buses prior to training. Comfort level refers to how comfortable participants felt traveling to various destinations via public transportation. Participants were given the choices: “Very Comfortable,” “Comfortable,” “Somewhat Comfortable,” and “Not Comfortable At All” to assess their own comfort levels. Results demonstrate that the course had a significant effect on public transit comfort perceptions. The McNemar test for paired proportions (a non-parametric statistical test comparing two correlated proportions) demonstrated $p$-values less than 0.01 for the Rossmoor and County Connection bus comfort questions.

Table 1 reflects a positive shift in participant comfort levels for the Rossmoor and County Connection buses. For instance, dramatic increases were demonstrated for trips to the Walnut Creek BART station and downtown Walnut Creek via County Connection. There was a 52.4 and 57.2 percentage point increase for trips to BART and downtown Walnut Creek, respectively.

**Table 1: Comfort Level Taking Rossmoor Bus and County Connection Bus Before-and-After Transit Training (N=42)**

<table>
<thead>
<tr>
<th>1 Feel Comfortable Taking the Rossmoor Bus to:</th>
<th>Before</th>
<th>After</th>
<th>$p^*$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Applicable</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Downtown Walnut Creek</td>
<td>10</td>
<td>33</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>I Do Not Know of the Rossmoor Bus</td>
<td>14</td>
<td>1</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Safeway Shopping Center</td>
<td>20</td>
<td>39</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1 Feel Comfortable Taking the County Connection to:</th>
<th>Before</th>
<th>After</th>
<th>$p^*$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not applicable. I do not visit any of these destinations.</td>
<td>5</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Medical appointments</td>
<td>10</td>
<td>22</td>
<td>0.004</td>
</tr>
<tr>
<td>Downtown Walnut Creek BART Station</td>
<td>12</td>
<td>34</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Downtown Walnut Creek</td>
<td>14</td>
<td>38</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>I do not know this transit provider.</td>
<td>17</td>
<td>0</td>
<td>--</td>
</tr>
</tbody>
</table>

$^*$McNemar test for paired proportions

**Longitudinal Participants.** Table 2 shows the primary transportation mode split of longitudinal participants before and following the training class. Although the private auto remained the primary mode for a majority of respondents after the training (67.2%), there was a significant decrease in private auto use (19.7 percentage points, with $p$-value equal to 0.001). In addition, there was a significant increase in public transit use (14.8 percentage points; $p=0.006$) after training. Increases in the number of participants reporting equal use of both modes (3.3 percentage points) were not significant.

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Some respondents expressed that the Rossmoor bus, which they reported as their primary mode of transportation, was not convenient. Some reported they had never ridden the Rossmoor bus, while others reported only occasional riding. Some (9.5%) reported that they did not know of the Rossmoor bus. Following the training, 76.2% expressed confidence in the future, with 73.8% reporting that the course prior to instruction was beneficial. A Chi Square Test of the Two Sample Proportions at a 0.05 significance level ($p=0.0061$).
Table 2: Primary Transportation Mode Split of Longitudinal Survey Participants (N=61)

<table>
<thead>
<tr>
<th>Modes</th>
<th>Before Training</th>
<th>After Training</th>
<th>Percent Difference</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Auto</td>
<td>86.9%</td>
<td>67.2%</td>
<td>-19.7</td>
<td>0.001</td>
</tr>
<tr>
<td>Transit</td>
<td>1.6%</td>
<td>16.4%</td>
<td>14.8</td>
<td>0.006</td>
</tr>
<tr>
<td>Equal Use</td>
<td>11.5%</td>
<td>14.8%</td>
<td>3.3</td>
<td>0.75</td>
</tr>
<tr>
<td>Other</td>
<td>0.0%</td>
<td>1.6%</td>
<td>1.6</td>
<td>--</td>
</tr>
</tbody>
</table>

*McNemar test for paired proportions

Post-training results showed no change in Rossmoor bus ridership (p=1). However, County Connection bus usage increased significantly (27.9 percentage points; p=0.002). Significant increases were also demonstrated in County Connection bus ridership to Downtown Walnut Creek (p=0.002) and medical appointments (p=0.041). Ridership to the BART station increased slightly but not significantly (p=0.238). Table 3 summarizes these results.

Table 3: Rossmoor and County Connection Bus Ridership (N=61)

<table>
<thead>
<tr>
<th>Ridership</th>
<th>Before Training</th>
<th>After Training</th>
<th>Percent Difference</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rossmoor</td>
<td>59.0%</td>
<td>59.0%</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>County Connection</td>
<td>37.7%</td>
<td>65.6%</td>
<td>27.9</td>
<td>0.002</td>
</tr>
<tr>
<td>County Connection to…</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Downtown Walnut Creek</td>
<td>9.8%</td>
<td>31.1%</td>
<td>21.3</td>
<td>0.002</td>
</tr>
<tr>
<td>Downtown Walnut Creek BART</td>
<td>27.9%</td>
<td>37.7%</td>
<td>9.8</td>
<td>0.238</td>
</tr>
<tr>
<td>Medical Appointments</td>
<td>14.8%</td>
<td>31.1%</td>
<td>16.3</td>
<td>0.041</td>
</tr>
</tbody>
</table>

*McNemar test for paired proportions

Public Transit Barriers

Both the before-and-after and longitudinal survey participants were asked to respond to statements regarding barriers that may have prevented public transit use. Not surprisingly, responses across both survey groups differ somewhat from the literature. The majority did not perceive many of the cited barriers. Most were neutral, disagreed, or strongly disagreed with statements that public transit was unsafe, expensive, inaccessible, and unfriendly across both populations. Most also disagreed with statements indicating difficulties entering the bus, reading bus schedules, purchasing tickets, and finding public transit information. This is likely due to the availability of a dedicated community bus service and the unique city-suburban environment in which study participants live.

Public Transit Information Resources

Respondents who took part in the before-and-after study were asked questions about their confidence levels in locating public transit information (e.g., schedules, routes) prior to and immediately following training. As shown in Table 4, there was a significant increase in participant confidence with finding public transit information after training among the before-and-after population (p=0.001). The number of those who felt very confident showed a 19.1 percentage point increase.
Table 4: Public Transit Information Resources: Changes in Before-and-After Survey Respondent Confidence and Longitudinal Survey Participant Use

<table>
<thead>
<tr>
<th>Before-and-After Changes in Confidence Level (N=42)</th>
<th>Not Confident/Somewhat Confident</th>
<th>Confident</th>
<th>Very Confident</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before</td>
<td>66.7%</td>
<td>30.9%</td>
<td>2.4%</td>
</tr>
<tr>
<td>After</td>
<td>33.3%</td>
<td>45.2%</td>
<td>21.5%</td>
</tr>
<tr>
<td>Overall $p^a$ value</td>
<td>0.001</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Longitudinal Changes in Use (N=61)

<table>
<thead>
<tr>
<th>Use</th>
<th>No Use</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before</td>
<td>49.2%</td>
<td>50.8%</td>
</tr>
<tr>
<td>After</td>
<td>19.7%</td>
<td>80.3%</td>
</tr>
<tr>
<td>Overall $p^a$ value</td>
<td>&lt;0.0001</td>
<td></td>
</tr>
</tbody>
</table>

$^a$ Wilcoxon Signed Rank Test
$^b$ McNemar test for paired proportions

Longitudinal survey respondents were also asked questions about their public transit information use prior to and after training (longer term). As shown in Table 4, there is a significant increase in transit resource use after training. Prior to training, 50.8% used public transit resources. After instruction, 80.3% used this information—revealing a 29.5 percentage point increase ($p<0.0001$).

Public Transit Training Feedback

Prior to transit training, participants were asked what motivated them to take the class and what they hoped to gain from it. Most respondents (85.7%) enrolled in it to plan for their future. Other reasons included the environment (e.g., air pollution), medical conditions, family member encouragement, and financial reasons (e.g., gasoline costs). Similarly, most longitudinal survey respondents (68.9%) enrolled in the course for the same reasons.

Ninety-three percent of before-and-after respondents found the training to be helpful or very helpful, and all but one reported that their expectations had been met. More than 70% of longitudinal participants recommended the class to friends. All participants found the informational handouts distributed during the training, bus tour, and knowledgeable instructor particularly helpful. Possible improvements include: expanding the training to include evening trips, indicating destinations of interest along the bus route, and providing more information on other public transit options (e.g., BART instruction).

CONCLUSIONS

In Summer 2007, researchers implemented surveys prior to and following the transit training sessions to evaluate the effectiveness of the Rossmoor class by assessing changes in perceptions and intended/actual behaviors following it. In addition, surveys were administered to residents who had taken the transit training course over the past two years to identify any longer-term changes in public transit use.

The transit class teaches participants about local public transportation options, information resources, and how to plan future trips. It also includes a bus tour of two major bus routes available to the community. The training draws upon social cognitive theory to encourage older travelers to
Public Transit Training

learn about public transit use. The following is a summary of key findings from the before-and-after survey:

- A majority of respondents (85.7%) stated that they planned to take public transit more frequently in the future
- A positive shift occurred in participant comfort levels taking the Rossmoor and County Connection buses to key destinations within the community (all p-values <0.004)
- Participant confidence with finding public transit information (e.g., schedules, routes) increased after training (p=0.001)

While the before-and-after survey relied on the reported intentions of participants to take public transit, the longitudinal survey allowed researchers to examine behavioral change following the training. Below is a summary of key findings from the longitudinal survey:

- After training, there was a significant decrease in private auto use as the primary transportation mode (p=0.001)
- Public transit use increased significantly (p=0.006)
- Rossmoor bus ridership showed no change (p=1), while ridership on the County Connection bus increased significantly (p=0.02)
- Use of public transit information resources increased significantly after training (p<0.0001)

Longitudinal survey findings are supported by feedback from the Rossmoor transit operator. Rossmoor bus ridership has increased slightly since August 2007. Furthermore, the Rossmoor Transportation Office has noticed a substantial increase in public transit schedule and route inquiries, as well as training requests. Consequently, the Rossmoor transit operator has expanded the training program to include additional instructors and sessions (Gretchen Hansen, unpublished data, July 2008).

Study limitations reflect the innate restrictions of the training (e.g., self-selection bias), self-reported behaviors, and the lack of diversity in the sample population (e.g., primarily Caucasian participants). Thus, the survey results may not be applicable to all older adult populations. Despite these limitations, this study provides many insights into the potential of transit training in encouraging older adults to seek public transit information and increase their familiarity and comfort with public transportation.

Researchers recommend enhancing the transit training by implementing several improvements: 1) developing a follow-up class one month after the initial training, as older adults may need repeated sessions to strengthen their memories and understanding; 2) adding training on evening routes and other public transit options (i.e., BART and Muni); and 3) providing uniformity across all sessions to ensure participants are provided with the same information and handouts. Other suggested improvements include: 1) media campaigns encouraging seniors to plan ahead; 2) area- or provider-specific websites that supply riders with reliable, up-to-date information about available transportation options (U.S. GAO 2004); 3) streamlining connectivity between public transit providers to improve transfers and accessibility for older adults; and 4) offering more direct and evening routes.

Opportunities for further research include re-surveying the before-and-after participants to assess behavioral change and modal shifts over time. Additional research could include post-training focus groups where class feedback, travel behaviors, mode choice, and public transit barriers are probed in greater detail. In addition, researchers could conduct similar studies in both urban and rural areas, which may offer greater understanding of the transportation needs of older adults. Finally, research could be expanded to examine more diverse populations (e.g., different ethnic groups and income levels).
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References


Hough, J.A. Realized Travel Demand and Relative Desired Mobility of Elderly Women in Rural and Small Urban North Dakota. Upper Great Plains Transportation Institute, North Dakota State University, 2007.
Public Transit Training


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APPENDIX: BEFORE AND AFTER SURVEY

Transit Barriers: An Evaluation of the Rossmoor Transit Training Program

BEFORE—QUESTIONNAIRE

Survey No. __________________

Please complete this survey prior to taking part in the transit training course. This survey is anonymous—please do not write your name on any of these pages.

Thank you for contributing to our research.

In the first section, we would like to learn about your transportation patterns:

1. Please indicate the modes of transportation you use one or more times per week. Please check all that apply.
   - County Connection bus
   - Rossmoor bus
   - BART
   - Personal auto
   - Carpool
   - Bike
   - Walk
   - Other (Please specify): ____________

2. Have you ever used any of the following modes of transportation? Please check all that apply.
   - County Connection bus
   - Personal auto
   - Rossmoor bus
   - Carpool
   - Muni
   - Bike
   - BART
   - Walk
   - Other (Please specify): ____________

3. Prior to moving to Rossmoor, have you ever lived or worked in a community in which you typically used transit one or more times per week?
   - Yes
   - No

4. Do you drive?
   - Yes
   - No

5. How many people in your household drive (including yourself)? ____________

6. How many autos are available to your household for tripmaking? ____________

7. Is your private auto your primary mode of transportation?
   - Yes
   - No

8. Is transit your primary mode of transportation?
   - Yes
   - No

9. To which destinations, if any, do you travel one or more times per week? Please check all that apply.
   - Work commute
   - Running errands
   - Doctor's visit
   - Shopping
   - Visiting relatives and friends
   - Leisure travel
   - Other (Please specify): ____________
10. What transportation modes do you use when traveling to these frequent destinations? Please check all that apply.

- County Connection bus
- Rossmoor bus
- Muni
- BART
- Other (Please specify): ______________

11. How does the cost of gasoline influence your travel? Please check all that apply.

- I make fewer driving trips.
- I drive to destinations that are closer to my home.
- I carpool.
- I combine two or more driving trips into one.
- I substitute driving trips with transit.
- Other (Please specify): ______________

The next section will help us understand what transportation modes you prefer.

1. Which of the following destinations do you feel comfortable driving to by yourself? Please check all that apply.

- Downtown Walnut Creek
- Downtown Walnut Creek BART Station
- Medical appointments (John Muir Medical Center or Kaiser)
- Not applicable. I do not visit any of these destinations.

2. Which of the following destinations do you feel comfortable taking a Rossmoor bus to by yourself? Please check all that apply.

- Safeway shopping center
- Downtown Walnut Creek
- Not applicable. I do not visit any of these destinations.
- I do not know about this transit provider.

3. Which of the following destinations do you feel comfortable taking a County Connection bus to by yourself? Please check all that apply.

- Downtown Walnut Creek
- Downtown Walnut Creek BART Station
- Medical appointments (John Muir Medical Center or Kaiser)
- Not applicable. I do not visit any of these destinations.
- I do not know about this transit provider.

4. Which of the following destinations do you currently travel to on County Connection buses? Please check all that apply.

- Downtown Walnut Creek
- Downtown Walnut Creek BART Station
- Medical appointments (John Muir Medical Center or Kaiser)
- Not applicable. I never travel to these destinations.

5. How confident do you feel about finding transit information when you need it? Please check one of the response options below.

Not confident at all Somewhat confident Confident Very confident
- □ □ □ □ □
6. How would you describe your overall familiarity with transit? Please check one of the response options below.

- Unfamiliar
- Somewhat familiar
- Familiar
- Very Familiar

7. What would increase your comfort level with taking transit? Please check all that apply.

- Announcement of next vehicle arrival
- Better connections between different transit options
- More frequent schedules (shorter waits)
- More direct routes
- Later schedules (e.g., evening and night services)
- Better safety measures (e.g., visible security, better lighting)
- More available seating
- Easy-to-read schedules
- Easier parking at transit stations/bus terminals
- Other (Please specify): ____________________________

The following questions will provide us with a better understanding of how you find transit information.

1. When using transit, what are the resources you use to find transit information? Please check all that apply.

- Not applicable. I don’t use transit.
- Paper schedule from the bus station
- Rossmoor bus transportation information line
- Internet
- Brochures
- Ask a family member or friend
- Transit training class
- 511 transit & traffic information phone line or website
- Other (Please specify): ____________________________

2. Are you familiar with the following sources of transit information? Please check all that apply.

- County Connection (CCCTA) website
- BART website
- 511.org website
- 511 transit & traffic information phone line
- Rossmoor bus transportation info line

3. Have you participated in the Rossmoor transit training class previously?

- Yes
- No

If yes, how many times have you participated in the transit training class? _____

This section will provide you with a chance to reflect on whether or not you agree, I strongly agree, or strongly disagree.

1. It is difficult to use the transit system. 
   - Strongly Disagree
   - Disagree
   - Agree
   - Strongly Agree

2. Transit stations are confusing to use.
   - Strongly Disagree
   - Disagree
   - Agree
   - Strongly Agree

3. Transit does not get me where I need to go. 
   - Strongly Disagree
   - Disagree
   - Agree
   - Strongly Agree

4. I am not comfortable using transit. 
   - Strongly Disagree
   - Disagree
   - Agree
   - Strongly Agree

5. Transit service is not dependable. 
   - Strongly Disagree
   - Disagree
   - Agree
   - Strongly Agree

6. Transit is too expensive.
   - Strongly Disagree
   - Disagree
   - Agree
   - Strongly Agree

7. Transit is unsafe.
   - Strongly Disagree
   - Disagree
   - Agree
   - Strongly Agree

8. I am uncomfortable having my personal information collected.
   - Strongly Disagree
   - Disagree
   - Agree
   - Strongly Agree

9. Friends or family members do not encourage me to use transit. 
   - Strongly Disagree
   - Disagree
   - Agree
   - Strongly Agree

10. It is difficult to get to the bus stop. 
    - Strongly Disagree
    - Disagree
    - Agree
    - Strongly Agree

11. It is challenging to use public transit. 
    - Strongly Disagree
    - Disagree
    - Agree
    - Strongly Agree

12. I do not know what to expect on the bus. 
    - Strongly Disagree
    - Disagree
    - Agree
    - Strongly Agree
This section will help us identify potential barriers to transit use.

What prevents you from using transit or from using transit more often? (Please respond by checking one of the following response options: I strongly disagree, I disagree, I am neutral, I agree, I strongly agree.)

1. It is difficult to read the bus or train schedules.
   Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree

2. Transit stations are not easily accessible (bus shelters, BART station, etc.).
   Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree

3. Transit does not provide door-to-door service.
   Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree

4. I am not comfortable making transit transfers.
   Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree

5. Transit service is unfriendly.
   Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree

6. Transit is too expensive.
   Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree

7. Transit is unsafe.
   Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree

8. I am uncomfortable going to unfamiliar areas using transit.
   Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree

9. Friends or family have advised against transit use.
   Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree

10. It is difficult stepping on or off the bus or train.
    Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree

11. It is challenging to purchase tickets or pay the fare.
    Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree

12. I do not know where to find information about how to take transit.
    Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree
Public Transit Training

The following questions will help us to understand why you decided to enroll in the Rossmoor transit training.

1. Why did you enroll in the transit training program? Please check all that apply.
   - I am attending for environmental reasons.
   - I am attending for financial reasons.
   - A family member encouraged me to attend.
   - I am attending with a friend.
   - A family member has a medical condition that impacts their ability to drive.
   - I have a medical condition that impacts my ability to drive.
   - I am planning for the future.
   - Other (Please specify): _____________________

2. What do you hope to get out of the transit training program? Please check all that apply.
   - I want to feel more confident when taking transit.
   - I want to take transit to my frequent destinations.
   - A family member wants to take transit to their frequent destinations.
   - I want to replace some driving trips with transit.
   - I want to replace all driving trips with transit.
   - Other (Please specify): _____________________

3. Do you plan on taking transit more often after completing the transit training program?
   - Yes
   - No

Transit Barriers: An Evaluation of the Rossmoor Transit Training Program

AFTER—QUESTIONNAIRE

Survey No. ________________

Please complete this survey after taking part in the transit training course at Rossmoor. This survey is anonymous—please do not write your name on any of these pages. Thank you for contributing to our research.

1. Now that you have taken part in the transit training class, do you think that you will take transit more frequently?
   - Yes
   - No
   Please describe why or why not: _____________________

2. Which transit options, if any, would you consider taking more frequently. Please check all that apply.
   - County Connection bus
   - Rossmoor bus
   - BART
   - Other (Please specify): _____________________
   - I do not plan to take transit more frequently.
3. Which of the following destinations do you now feel comfortable taking the Rossmoor bus to by yourself? Please check all that apply.
   □ Safeway shopping center
   □ Downtown Walnut Creek
   □ Other (Please specify): _______________________
   □ Not applicable. I do not visit these destinations.
   □ I do not know this transit provider.

4. Which of the following destinations do you now feel comfortable taking the County Connection bus to by yourself? Please check all that apply.
   □ Downtown Walnut Creek
   □ Downtown Walnut Creek BART Station
   □ Medical appointments (John Muir Medical Center or Kaiser)
   □ Other (Please specify): _______________________
   □ Not applicable. I do not visit any of these destinations.

5. Which of the following destinations would you now consider taking a County Connection bus to instead of driving? Please check all that apply.
   □ Downtown Walnut Creek
   □ Downtown Walnut Creek BART Station
   □ Medical appointments (John Muir Medical Center or Kaiser)
   □ Other (Please specify): _______________________
   □ Not applicable. I never travel to this destination.

6. What sources of transit information are best suited for your personal transit use in the future? Please check all that apply.
   □ Paper schedule from the bus station
   □ Rossmoor bus transportation information line
   □ Internet
   □ Brochures
   □ Ask a family member or friend
   □ Travel training class
   □ 511.org website
   □ 511 transit & traffic information phone line
   □ Other (Please specify): _______________________
   □ Not applicable. I do not plan to use transit in the future.

7. In the future, what sources of transit information would you use when planning transit travel? Please check all that apply.
   □ County Connection (CCCTA) website
   □ BART website
   □ 511.org website
   □ 511 transit & traffic information phone line
   □ Rossmoor bus transportation info line
   □ Not applicable. I do not plan to use transit in the future.
Public Transit Training

8. How confident do you feel about finding transit information in the future? Please check one of the response options below.
   - Not confident at all
   - Somewhat confident
   - Confident
   - Very confident

9. How comfortable do you feel informing others about using transit? Please check one of the response options below.
   - Not comfortable at all
   - Somewhat comfortable
   - Comfortable
   - Very comfortable

10. After taking transit training, I now know how to take transit. Please check one of the response options below.
    - Strongly Disagree
    - Disagree
    - Neutral
    - Agree
    - Strongly Agree

The following questions will help us get a better understanding of how to improve the Rossmoor transit training program.

1. How helpful did you find the transit training class? Please check one of the response options below.
   - Not Helpful
   - Somewhat Helpful
   - Helpful
   - Very Helpful

2. Did you get what you need out of the class?
   - Yes
   - No
   Why or why not?

3. What did you find most helpful about the transit training class? Please check all that apply.
   - I now know where to find transit information.
   - The training included my frequent destinations.
   - The training included the types of transit I plan to use in the future.
   - The training was specific to Rossmoor residents.
   - The instructor was able to answer my transit questions.
   - Other (Please specify):

4. What did you find least helpful about the transit training class? Please check all that apply.
   - I am unclear on where to find transit information.
   - The training did not include my frequent destinations.
   - The training did not include the types of transit I plan to use in the future.
   - The instructor was unable to answer my transit questions.
   - Other (Please specify):
5. How do you suggest we improve the transit training class? Please check all that apply.
   □ Expand the training to include BART trips
   □ Expand the training to include evening trips
   □ Other (Please specify):
   □ Not applicable. I am satisfied with the transit training.

6. Do you have any final comments or suggestions to share regarding the transit training class? Please provide your thoughts in the space below.

The last section asks for basic demographic data.

1. Are you... □ female □ male?

2. What is your age?
   □ 55 to 64 □ 65-74 □ 75-84 □ 85 or older

3. Which of the following best describes your current health status? Please check one of the response options below.
   Poor □ Fair □ Good □ Very Good □ Excellent

4. I have health problems that impact my ability to drive. Please check one of the response options below.
   Strongly Disagree □ Disagree □ Neutral □ Agree □ Strongly Agree

5. I have health problems that impact my ability to access transit. Please check one of the response options below.
   Strongly Disagree □ Disagree □ Neutral □ Agree □ Strongly Agree

6. What is your current marital status?
   □ Single □ Married □ Separated □ Divorced □ Widowed

7. What is the last level of education that you completed?
   □ Grade school □ Bachelor’s degree
   □ Some high school □ Some graduate school
   □ Graduated high school □ Master’s degree
   □ Associate’s degree □ Ph.D. or higher
   □ Some college □ Other (Please specify):
8. How long have you lived in Rossmoor? ______________

9. What is your ethnicity? (Please choose one)
   □ White/Caucasian
   □ Black/African American
   □ Native American
   □ Asian
   □ Hispanic
   □ Pacific Islander
   □ Other (Please specify): ______________
   □ Decline to answer

10. What was your household’s 2006, pre-tax income?
    □ Under $10K
    □ $10K - $19.9K
    □ $20K - $49.9K
    □ $50K - $79.9K
    □ $80K - $109.9K
    □ More than $110K
    □ Decline to respond

11. Do you use a...
    □ Cellular phone
    □ Personal Digital Assistant (PDA)
    □ E-mail
    □ Internet

Transportation and Production:

by Michael W. Babcock

The rapid expansion of transportation systems into the 21st century era. Nationally, fuel sales rose by 9.239 million gallons in 2006 alone. As of December 2009, the production capacity of transportation systems is unknown ways. Historical data from Oklahoma, and Texas shows a pattern in unknown ways. The purpose of this research is to investigate the transportation systems and determine the point of view of their impact on the Kansas railroad industry and conditions in the victim.

Anticipated result...plants by mode and on transportation production has altered.

INTRODUCTION

The rapid expansion of transportation systems into the 21st century market into a new era. Nationally, fuel sales rose by 9.239 million gallons in 2006 alone. As of December 2009, the production capacity of transportation systems is unknown ways. Historical data from Oklahoma, and Texas shows a pattern in unknown ways. The purpose of this research is to investigate the transportation systems and determine the point of view of their impact on the Kansas railroad industry and conditions in the victim.

Many factors have contributed to the energy independence from foreign oil and the warming caused in part by energy dependence. Economic development and Federal energy policies have contributed a lot.

Renewable Fuel Standard (RFS) required the blending of renewable fuels into gasoline at 9.239 million gallons in 2006 alone. These national ethanol plants have been operational ethanol plants in Kansas and the Corn Belt since 1988. These national ethanol plants are concentrated in Kansas, with almost all ethanol production between 2004 and 2008. The growth of ethanol production in Kansas has been substantial.