RURAL PUBLIC TRANSPORTATION AN ON-BOARD SURVEY OF TRANSIT USERS IN RURAL ALABAMA COUNTIES: A PILOT STUDY

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ABSTRACT

The economic benefits of rural transit rider characteristics can be examined from two main perspectives; that is, the riders themselves, and important consideration concerning the trip purpose and the characteristics of rural dependant riders. Although the rural elderly riders may be fewer than there urban counterparts, the economic benefits for these groups of rural dependant riders are important. Transit alternatives for the elderly dependant are few. This study investigates perception of selected rural public transportation system. The study attempted to obtain information on the specific riders' needs that are met through the rural transit program, and the availability of alternative modes of travel. The data for this study was collected by the researcher through an on board sample survey of rural transit riders in selected counties of Alabama in 2005. The project was supported by a grant from the Alabama Department of Transportation (ALDOT). The study found that the largest proportion of transit trips were for medical purposes, which account for 63.3% of all trips. 18.2% of trips were for other purposes, 9.1% for work and education purposes. Of the individuals who indicated that they were using rural transit for the purpose of commuting to or from work, 36.4% said that they would be unable to work without the absence of rural transit. 45.5% indicated other because they do not work, or indicated other means of transport to work. Overall, the paper concludes that rural transit services in Alabama provide a means for those without other transportation access, especially the elderly and disabled, to reach places of medical services. There is a portion of trips that, in the absence of rural transit, would lead to increased dependence on home healthcare.

Keywords: Rural transit, Transit Users, Economic benefits, Trip purpose

1. INTRODUCTION

The economic benefits of rural transit rider characteristics can be examined from two main perspectives; that is, the riders themselves, and important consideration concerning the trip purpose and the characteristics of rural dependant riders. Although the rural elderly riders may be fewer than there urban counterparts, the economic benefits for these groups of rural riders are important.

Evaluation is a vital and important element of any successful business information on riders' motivation trip, purpose and available alternatives is also important for improvement and performance evaluations are essential to the rural transit system planning process. Levinson (1992) reported that business managers monitor programs and conduct evaluations to determine whether goals and objectives are achieved and how well the business is functioning (Levinson, 1992). Similarly, in the transportation industry,

evaluations enable system operators to monitor efficiency, to measure effectiveness, and to generate data that can be used to improve overall service delivery (Stopher & Arnim, 1992). According to Radow & Winters (1999), performance evaluations are essential to the rural transit system planning process and to the achievement of transit goals and objectives. Without proper evaluation data, transit manager have no yardstick or benchmark to improve or plan for future services, or to justify the continuation of existing transit services.

Both Fielding (1987) and Smerk (1992) believe that good transit management practices require regular evaluations of performance. Fielding (1987) argues that a transit manager who do not measure and monitor performance is merely supervising operations. Data from evaluations must be used to identify and remedy problems, to justify budgets and expenditures, to gauge improvements in performance, and to document the system's impact on the community (Smerk 1992). Smerk (1992) recommends yearly internal evaluations on key functional areas (e.g., maintenance, finances, and staff performance) and 3-year comprehensive evaluations on each aspect of transit management and operation. Regular evaluations provide the database to document performance and to persuade funding agencies that more money is needed to improve service delivery (Radow & Winters, 1999).

Transportation infrastructure provides rural residents improved access to opportunities outside the local community. Moon (1987, 1988) reported global development impacts of interstate highway within rural communities in Kentucky. The study examined factors that explained development prospects along highway interchanges on rural Kentucky during mid 1980's. Also presented are possible developmental effects for remote and isolated transportation interchange sites.

According to Peckham and Isserman (1994) transportation infrastructure has proven the ability to enhance linkage between people, business and community and its vital for rural economic development. Transit infrastructure does influence location decisions of households within the community settings.

Using dichotomous choice modeling Peckham and Isserman (1994) confirmed that residential choices and community patterns do attract business and industries and also affects the location decisions of firms. Transportation Equity Act for the 21st century (TEA-21) is the single largest public works bill in U.S. history that provided $175 billion in Federal funding for the Nations most important roads over 1998 to 2003. TEA-21 has also pointed to the benefits of the business sector of improved transport system within rural areas from additions to rural infrastructure.

Ormand et al. (2000) reported that the healthcare industry is changing not only in urban areas but also in rural areas due to policy-and market-driven forces. Furthermore the availability of quality health care is critical to long-term economic development in rural communities (Doeksen et al., 2000).

1.1 Research Questions/Propositions

RQ1. Do the ridership various purposes of the rural transit riders have any effects on healthcare and shopping/recreational related consequences of no public transit service?

RQ2. Do ridership characteristics play an significant role in motivating rural transit users to utilize the transit system?

1.2 Purpose of the Paper

The purpose of this research study is to investigate riders perception of selected rural public transportation system. The study attempts to obtain information on riders' motivation trip, purpose and available alternatives. The data for this study came from the year 2005 on board survey of transit riders in rural Alabama counties conducted in July by the author under Alabama Department of Transportation Research Grant.

2. DATA ANALYSIS AND RESULTS

2.1 Demographics

Table 1 below shows the selected population information detailing historical growth, population density, current age distribution, and household information for Madison County and Alabama are presented. As shown in Table 1, between 1990 and 2000, Alabama's population increased by 10.1% and Madison County also experienced an increase of 15.8%. Furthermore, Madison County has a population density of 343.8 persons per square mile, and the State with 87.6 persons per square mile. It should be noted that the County's older residents is 2.1% higher than the state as a whole.

With reference to the 2000 census, the population of Madison County was 72.1% White and 22.8% Black. These numbers are somewhat different than those of the State.

Table 1. Selected Demographic Data for Madison County and Alabama.

Item	County	Alabama
Population, 2000	276,700	4,447,100
Population, Percent Change, 1990-2000	15.8%	10.1%
Persons per Square Mile, 2000	343.8	87.6
Populations by age, Percent of total, 2000		
Under 19	28.6%	28.3%
19-60	56.3%	58.8%
60-older	15.1%	13%
Race		
White	199,401	3,162,808
Black	63,025	1,155,930
Household Size, 2000 (avg)	2.45%	2.49%
Household Income, 2000 (median)	$44,704	$34,135
Persons Below Poverty, %	10.5%	16.1 %

Sources: www.census.gov
http://recenter.tamu.edu

2.2 Economic Indicators

The data presented in Table 2 give general observations of economic activity in Madison County and Alabama. In 2000, the County's annual personal income was more than $28 million, providing slightly more than $23,000 of annual income per person, which is about $5,000 higher than the state average of $18,189. The median household income in Madison county is income value $34,135 and the County's poverty rate at 10.5% is lower than the State's (16.1%).

Table 2. Selected Economic Data for Madison County and Alabama.

Item	County	Alabama
Personal Income, 2000 ($1000)	$28,995	$27,450.5
Personal Income per Capita, 2000	23,091	18,189
Civilian Labor Force, 2000	143,109	2,039,381
Unemployment, 2000	3.2	3.7
Full-time and Part-time Employment by Place of Work, 2000		
Management, professional, and related occupations	58,476	29.5
Service occupations	16,734	13.5
Sales and office occupations	32,115	25.9
Farming, fishing, and forestry occupations	231	0.8
Construction, extraction, and maintenance occupations	10,104	11.3
Production, transportation, and material moving occupations	17,256	19.0
Retail Sales 1997, ($1000)	2,610,697	36,623,327
Retail Sales per Capita, 1997	$9,585	$8,477

Sources: http://recenter.tamu.edu
http://factfinder.census.gov

There are 3.2% unemployed people, which do not have any paid employees. Retail sales in the County were more than $2 million in 1997. This is slightly more than $9,585 per person per year and slightly higher than the state average $8,477.

2.3 Survey Results of the Pilot Study

2.3.1 Madison Rural Transit Riders Demographic Characteristics

The survey indicates that the majority of rural Madison transit riders are women with 63.6%, while 36.4% were men (See Table 1).

Table 1. Respondent's Gender Distribution.

Gender	**Frequency**	**Percent**
Male	4	36.4
Female	7	63.6
Total	11	100.0

The age of transit riders using Madison rural public transportation system vary. Of the transit riders in Madison, 27.3% of them were aged 60 and above, 18.2% were between the ages of 50-54, 18.2% were between the ages of 40-44, 9.1% between the ages 15-19, 35-39, 45-49, and 55-59 respectively. However the majority of the respondents were within the 40-50 years of age (see Table 2).

Table 2. Respondent's Age Distribution.

Age Group	Frequency	Percent
20-24	1	9.1
35-39	1	9.1
40-44	2	18.2
45-49	1	9.1
50-54	2	18.2
55-59	1	9.1
60+	3	27.3
Total	11	100.0

2.3.2 Riderships

The Madison survey of transit rider's results indicated that the categories of ridership were disabled with 45.5%, while 27.3% were elderly and 27.3% were general public users (see Table 3).

Table 3. Ridership Categories.

Ridership	Frequency	Percent
Elderly	3	27.3
Disabled	5	45.5
General Public	3	27.3
Total	11	100.0

2.3.3 Rural Trip Purpose

The responses from the rural rider survey indicated that the largest proportion of transit trips in Madison County are for medical purposes, which account for 63.6% of all trips. 18.2% of trips were for other purposes, 91% for work and education purposes (See Table 4).

Table 4. Trip Purpose of Rural Transit Riders.

Trip Purpose	Frequency	Percent
Medical	7	63.6
Work	1	9.1
Education	1	9.1
Other Purposes	2	18.2
Total	11	100.0

2.3.4 Work Purpose Riders

Of the individuals who responded that they were using rural transit for the purpose of community to or from work, 36.4% said that they would be unable to work in the absence of rural transit. 45.5% indicated other because they do not work or indicated other means of transport to work via and alternative transportation mode (See Table 5).

Table 5. Respondent's Work Related Consequences.

Work Related Consequences	Frequency	Percent
Not be able to Work	3	27.3
Work at Home	1	9.1
Use other Means of Transportation	1	9.1
Other	6	54.5
Total	11	100.0

2.3.5 Educational Purposes Riders

According to respondents to the question, they were indicated using rural transit for the purpose of community to or from educational institutions, 81.8% indicated that using would have made the same trip, but via an alternative transportation mode, while 18.2% indicated that they would not be able to attend school or college (See Figure 6).

Table 6. Respondents' Education Related Consequences.

Education Related Consequences	Frequency	Percent
Not be able to Attend School/College	2	18.2
Other	9	81.8
Total	11	100.0

2.3.6 Healthcare Purpose Riders

In terms of healthcare purpose riders that they were using rural transit for the purpose of commuting to or from medical appointments, 54.5% indicated that they would not seek medical assistance as often, 36.4% indicated that they would use another means of transportation in the absence of public transit they would have made the same trip; but via an a alternative transport mode (See Table 7).

Table 7. Respondents' Healthcare Related Consequences.

Healthcare Related Consequences	Frequency	Percent
Not Seeking Medical Assistance as often	6	54.5
Select another Physician/Care Provider	1	9.1
Use another means of Transportation	4	36.4
Total	11	100.0

2.3.7 Shopping, Recreation and Tourism Purpose Riders

The individuals who responded to the question of consequences they would face if there were no public transit service reveals that 36.4% indicated that without transit they would have made the same trip, but via an alternative transportation mode, 36.4% would choose another mode of transport (i.e. walking or bike riding), 18.2% would make less shopping trips, while 9.1% would choose to shop online or by catalogue (See Table 8).

Table 8. Shopping, Recreational or Tourism Related Consequences.

Shopping Related Consequences	Frequency	Percent
Make Less Shopping	2	18.2
Shop online or by Catalog	1	9.1
Use another means of Transportation	4	36.4
Other	4	36.4
Total	11	100.0

2.3.8 Alternative Transportation Modes

The individuals who responded to the question of what mode they would most likely choose to replace the transit trip. The figure shows that 72.7% would make the same trip via an alternative transportation mode by riding with family or friends, while 27.3% would make the same trip via other means of transport (See Figure 9).

Table 9. Alternative Mode to Replace the Transit Trip.

Alternative Mode	Frequency	Percent
Ride with Family	8	72.7
Other	3	27.3
Total	11	100.0

3. CONCLUSIONS

The economic influence of providing rural transit services is often overlooked when analyzing the local economy. This paper is part of an ongoing study which surveys a larger sample of riders from the 29 rural transit system of the state of Alabama. The information collected from this part of the study as well as ongoing research activities will allow for assessing the economic impact of rural public transit systems on the regions they serve. The research results reveal the importance of the health care sector in a rural economy. The economic viability of a community can depend on a strong and growing health care sector. The local rural transit sector can be viewed as economic development engine.

The main conclusion that has emerged from this study is that rural transit services in Alabama provide a means for those without other transportation access, especially the elderly and disabled, to reach places of medical services. There is a portion of trips that, in the absence of rural transit, would lead to increased dependence on home healthcare.

However the demand for rural transit services within a geographical area is dependent upon several factors relating to socioeconomic and health status indictors. Some of these factors include the current age distribution, population density, and health status of county residents'

In overall conclusion, the service that provided by the Madison County Rural Transit is crucial to the well being of the entire community. It is imperative that the desires of the riders are constantly taken into consideration so that frequent improvements are made.

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