



## **Lawrence Transit System 2007 On-board Passenger Survey Results for Regular T Fixed-Route Service**

### **Introduction**

To follow up on efforts conducted last year by Dan Boyle and Associates regarding the feasibility of coordinating and/or consolidating city and University of Kansas transit services, transit staff felt it was necessary to conduct a second on-board passenger survey on the T fixed-route system.

On-board passenger surveys were conducted September through December 2007 on all T service routes and throughout the entire service day in an effort to ensure as much passenger feedback as possible was captured by those who may be riding at different times of the day. A total of 537 surveys were completed by those passengers willing to provide feedback. City staff along with volunteers distributed the surveys.

The results of this year's survey are compared to the feedback received from passengers last year to see if there were any significant changes. Last year's survey results collected from 531 riders and compiled by Dan Boyle and Associates are used as baseline information.

Furthermore, transit staff used the survey results gathered this year to conduct a comparative analysis based on data gathered from 150 on-board passenger surveys conducted by public transportation agencies nationwide from 2000 through 2005 regarding passenger demographics and travel characteristics. The national survey study information was compiled by the American Public Transportation Association, which released "*A Profile of Public Transportation Passenger Demographics and Travel Characteristics Reported in On-Board Surveys*" in May 2007, representing the largest ever on-board survey study about the public transportation industry. These surveys summarized the results of questionnaires completed by over 496,000 public transit riders sampled by transit systems that carry 60 percent of all transit trips in the United States.

The information gathered in the T on-board passenger survey will be used to assist city staff to measure customer satisfaction regarding the performance of the transit service provided, as well as to assist in developing strategies and conducting planning activities aimed at making service improvements to ensure the growth and long-term stability of the transit system in the community.

## Summary of Survey Findings

### DEMOGRAPHIC CHARACTERISTICS OF PUBLIC TRANSPORTATION RIDERS

**Age:** Public transportation in Lawrence is used largely by adults 25 to 34 years old (25%), followed closely by 18 to 24 year-olds (23%). Students 17 years old or under represent 10% of riders. Riders 65 or older represent 4% of total riders (See Fig. 13).

It is understandable that since Lawrence is a university community there would be a larger percentage of 18 to 24 year-olds using public transit as compared nationally. Also, a reason why there is such a low percentage of adults 65 or older using T service is they are likely utilizing T Lift paratransit service or Douglas County Senior Services instead. This could be a reason why T Lift continues to increase in ridership and experience increased demand. To better manage costs and increased demands of service in the long-term, it behooves the city to get more seniors using regular T fixed-route service.

Nationally, public transit is used primarily by adults with the majority, 59%, of trips taken by persons between 25 and 54 years of age. This compares with 43.6% of the American population being between 25 and 54 years of age.

In forecasting long-term trends, as our country and community continues to age, and as Lawrence continues to attract retirees, we likely are going to see a dramatic shift in the average age of people using public transit as “baby boomers” in the next twenty years will be reaching retirement, and some will begin to be unable to drive. However, being a university community, there will inherently always be a large number of 18 to 24 year old riders.

**Fare Category:** Most T riders paid for trips as adults (61%), followed by students (25%), seniors (8%), and the disabled (4%). The T defines seniors as age 60 or above (See Fig. 14).

Nationally, this is described as “Occupation,” where the primary occupational activity of public transit riders is employment, reported by 72.1% of transit riders. Students represent 10.7% of all public transit riders by occupation, followed by 6.4% unemployed, 6.7% retired, 2.0% homemakers, and 2.2% other. Occupation refers to

the riders' usual primary activity. It does not refer to the purposes of the transit trips being taken which are described under "Trip Purpose" in a later section.

**Ethnicity:** The largest portion of public transit riders, 55%, described themselves as White/Caucasian, while 16% described themselves as Black/African-American, 10% as Native American, 6% as Hispanic/Latino, 6% as Asian/Pacific Islander, and 7% as Other (See Fig. 15).

Nationally, the largest portion of public transportation riders, 40.6%, describe themselves as White/Caucasian while 33.1% describe themselves as Black/African American, 14.3% as Hispanic/Latino, 5.5% as Asian/Pacific Islander, and 6.6% as multi-ethnic or other ethnicities.

Based on the demographic make-up of Lawrence it is not surprising that there is a higher percentage of White/Caucasian riders and Native American riders as compared with the national averages.

**Gender:** Over half (53%) of T riders surveyed indicated that they were male (See Fig. 12).

Nationally, gender of public transportation riders is the opposite with over 55% of all public transportation trips taken by women.

This difference may be a reflection of the community's demographics rather than other reasons. If there was a greater variance between genders utilizing public transportation in the community it would be interesting to find out the reason.

**Household Income:** T riders reported a wide range of household incomes. However, almost half (46%) of riders indicated having a household income of less than \$15,000 per year, followed by 24% riders with a household income level of \$15,000 to \$24,999, 14% of riders with a household income level of \$25,000 to \$34,999, 9% of riders with a household income level of \$35,000 to \$49,999, and 7% of riders with a household income of \$50,000 or more annually (See Fig. 17).

Nationally, household incomes less than \$15,000 are reported by 20.1% of public transit riders, 45.6% report incomes from \$15,000 to \$49,999, 24.8% report incomes from \$50,000 to \$99,999; and 9.5% report incomes of \$100,000 or more. The median income of public transit users nationally is \$39,000 while for the U.S. population as a whole it is \$44,389. Incomes listed nationally are in 2004 dollars.

The difference in household income of T riders compared nationally is significant, possibly indicating the economic conditions of Lawrence and the fact that it also has a high number of students in the community.

**Vehicle Availability for Trip:** Over three quarters (78%) of T passengers indicated not having a vehicle available when deciding to make a transit trip (See Fig. 16).

Nationally, less than one-half, 45.4% of public transportation riders have a vehicle available when deciding to make a transit trip.

Economic conditions in Lawrence and a higher student population may be reasons why there is a significantly higher percentage of lack of vehicle availability compared to national averages. This also may indicate that Lawrence has more transit dependent residents than other communities. Compared to last year's survey data, there was a 2% increase in the lack of vehicle availability among T riders.

## TRAVEL CHARACTERISTICS OF PUBLIC TRANSPORTATION RIDERS

**Reason for Using Public Transportation:** The primary reason indicated by T passengers for using public transportation is convenience (39%), followed by no other choice (31%), cost (18%), and quality of service (12%) (*See Fig. 6*).

**Trip Purpose:** T riders continue to primarily use public transportation for employment and educational related trips making up 55% of total trips provided. (*See Fig. 2*) Comparing trip purpose to last year's survey results, trip purpose for work and school dropped slightly, but trips increased significantly for shopping or retail related trips.

In terms of public transportation supporting economic development in the community, these numbers are encouraging because the T is assisting employers in the community by getting a qualified workforce to and from their facilities daily; and assisting passengers' standard of living so that they can continue to live productive lifestyles and support the tax base in the community; in traveling to and from educational facilities where they are learning a variety of job skills that will assist them in future employment endeavors; and traveling to retail and shopping establishments where money spent supports the local economy.

When comparing trip purpose nationally, commuting to work is by far the most common reason a person rides public transportation, accounting for 59.2% of all transit trips reported in on-board surveys. Trips to school, including elementary, secondary, and college students, account for 10.6% of trips nationally. Shopping and dining is the trip purpose for 8.5% of trips, 6.3% of trips are for personal business, 6.8% are for social purposes, 3.0% are medical trips, and 5.7% are for other trips.

In Lawrence, 40% of T passengers indicated that they primarily use public transit to commute to work and 15% indicated that they primarily use transit to get to and from school. The higher than national average for school related trips is likely the result of Lawrence being a university community. Other T rider primary trip purposes include: 15% other, 13% shopping, 9% visit/personal business, and 8% medical. The higher than average medical purpose may be the result of Lawrence being a

growing destination for retirees who have medical needs or an indication that riders may have more medical needs.

**Method of Payment:** Cash still remains the primary method of fare payment by T passengers (65%). By comparison, payment of fares via bus passes represents less than one-third (27%) of payments (See Fig. 4).

**Access and Egress Mode:** By far, the primary means of travel from a person's trip origin to a public transportation vehicle is by walking (92%) (See Fig. 3). Transferring from another transit vehicle, bicycling, driving in a car and other methods of travel represent the balance of how people get to and from public transportation.

Nationally, 59% of people access public transportation by walking, along with higher percentages of vehicle transfers, and driving by car to transit. For Lawrence, it reiterates the importance of why having a comprehensive pedestrian/sidewalk program is important so that people walking have safe access to public transportation.

**Alternative Mode of Travel:** If public transportation were no longer available, 35% of T passengers indicated that they would walk, 23% would ride with someone else, 19% would not make the trip, 9% would drive, and 9% would bicycle, and 5% would use a taxi or other transportation service (See Fig. 5).

Compared nationally, 55.9% of public transit riders indicated that they would make the same trip by automobile or other personal vehicle; 23.9% would drive themselves, 22.1% would get a ride from someone else, and 9.9% would take a taxi. Besides there being increased traffic congestion, there also would be a substantial reduction in mobility because 21.6% of public transit riders would not be able to make their trips.

As growth of development and population in Lawrence continues, rising roadway congestion will present a challenge as well as the resources necessary to dedicate to expanding and maintaining additional infrastructure. Also, having almost 20% of riders not making the trip is significant when it comes to supporting economic development in our community and promoting productive and healthier lifestyles for all residents.

**Duration of Transit Ridership History:** Most T riders, 39%, indicated that they have been riding T service for more than 2 years, while 24% of riders indicated they have been riding for 1 to 2 years, 11% of riders indicated riding 6 months to 1 year, and 26% indicated they have been riding for less than 6 months (See Fig. 9).

Compared to last year's survey data, there has been a 12% increase in the amount of regular riders using the system for more than 2 years.

Compared nationally, most public transportation riders have been riding for an extended period, 57.1% having been riding over 2 years. At the same time, public transit is attracting new riders with 30.3% of trips taken by riders in their first year of riding their transit system.

The T has been successful in being able to retain and increase the amount of regular riders as well as continuing to attract new riders.

This information illustrates that the service routes as designed work for many riders who use the service daily to get primarily to and from work and school. In addition, the information illustrates that our public education, outreach, and marketing efforts continue to pay dividends as the T continues to attract new riders.

**Frequency of Transit Travel:** Most T riders, 55%, use the service regularly 5 days a week or more. In addition, another 28% of riders indicated they use the service at least 2 to 4 times per week, while 13% of riders indicated riding the T once a week or less. 4% of riders indicated that was their first trip (See Fig. 8).

Nationally, most public transportation trips are taken by regular riders. Nearly two-thirds, 65.5% of public transit trips are taken by persons who ride transit five or more days per week, and 81.2% of trips are taken by persons who ride 3 or more days per week.

**Importance of Direct Access to University of Kansas Campus:** Slightly over half, 52%, of T riders indicated that having direct access to the University of Kansas campus was important to them (See Fig. 10). This reiterates the need for further coordination with the University of Kansas transportation services so that the service area can be maximized and operational and service efficiencies realized. With limited resources available, the city will be unable to meet the needs of providing direct and timely service to the university as well as trying to maximize the service area within the community.

Last year's on-board passenger survey of T riders asked the importance of access to KU on Wheels. At that time, 47% of riders indicated that it was not important, 20% indicated that access to KUOW was important, and 33% of riders were uncertain.

**Source of Information about T service:** Slightly less than half, 48%, of T riders indicate that their primary source of obtaining information regarding T service is through information posted on transit vehicles or at transit shelters located along service routes. The second highest way, 22%, riders obtain information about T service is through its website at [www.lawrencetransit.org](http://www.lawrencetransit.org), followed by 15% of riders contacting the customer service telephone line, 11% of riders reading the newspaper, 2% by radio advertising, and 2% by television advertising (See Fig. 11).

It is evident that last year's efforts by transit staff to install bus schedule and route information at transit shelters has been extremely beneficial to riders. In the future, as the transit system moves away from a "wave-down" system to more "designated" bus stops, it will be imperative to design bus stops and signage that provide useful route and schedule information to the riders.

In addition, the high response rate by riders accessing the transit system's website for information reiterates why the city needs to continue to focus efforts on both maintaining and improving website services.

## CUSTOMER SATISFACTION OF RIDERS OF T SERVICE

Surveys asked riders to rate the service on a variety of customer service performance measurements based on a scale of one to five, with one being the lowest possible score and five being the highest possible score.

Overall, T riders indicate a passenger satisfaction rating for T service of 4.19, indicating a very high level of passenger satisfaction (*See Fig. 19*).

As compared with last year's on-board passenger satisfaction survey results of 4.22, there was a slight drop in satisfaction this year, however it is still an overall high rating for T service.

The highest rated performance measures were seat availability on the bus, followed by safety while on bus, bus operator courtesy, safety at bus stops, bus cleanliness and comfort, and travel time on the bus. The average of these scores was 4.30.

The lowest rated performance measures in the following order, lowest to highest, were span of service (days and hours of service), time waiting for bus, convenience (ability to get anywhere I need to go), and reliability (on-time performance). The average of these scores was 3.75.

Changes in satisfaction ratings as compared with last year's results were operator courtesy, convenience, reliability, bus cleanliness and comfort, and safety on bus and bus stops dropping slightly and seat availability on buses increasing slightly. As compared to last year's survey results, the changes were well within the typical margin of error.

According to Dan Boyle and Associates, based on their experience of conducting similar on-board passenger surveys nationwide for transit systems, a satisfaction rating for small to medium sized transit systems of 4.0 or greater is considered excellent. For large transit systems, a satisfaction score of 3.75 or higher would be considered excellent.

## IMPORTANCE VS. PERFORMANCE RATING FOR T SERVICE ELEMENTS

In order to utilize performance measurements in a manner that is helpful to transit staff in designing service improvements, it is important to know not only customer ratings on individual service attributes, but also the importance of each attribute in terms of overall satisfaction. The ratings are considered together with relative importance of each service attribute, divided into the following categories:

- **High Importance/High Performance** – represent important service attributes with high performance ratings that the T does well and that are important to riders. Transit staff should take whatever actions necessary to ensure continued high performance ratings on these attributes. Safety on bus, travel time on bus, and convenience (ability to get where I need to go) are service elements that fall within this quadrant.
- **Low Importance/High Performance** – represent high marks in performance but are relatively unimportant to riders. Often, attributes in this quadrant receive lower importance ratings from passengers because the transit system does a good job in these areas. Riders, like everyone else, tend to take areas in which their needs are met for granted. This suggests that the T needs to continue to monitor service delivery in these areas to ensure high performance, but that these elements of service area are not top priorities for improvements. Service attributes within this quadrant include seat availability, bus operator courtesy, safety at bus stops, and bus cleanliness and comfort.
- **Low Importance/Low Performance** – Service attributes found in this quadrant are relatively unimportant to riders and relatively low-scoring in terms of performance. While performance levels are relatively low for these attributes, these are not strong candidates for improvement due to their low levels of importance to riders. There are no attributes within this quadrant. In last year's on-board passenger survey, there were also no attributes listed.
- **High Importance/Low Performance** – Service attributes found in this quadrant represent critical priorities for the T. Riders consider these attributes important, but current performance ratings are less than desired. Time waiting for bus and span of service (days/hours operated) are in this quadrant. In last year's survey, span of service and time waiting for bus were listed in this quadrant. It is apparent based on rider feedback these are two areas that need improvement.

To improve time waiting for buses would require the city to allocate resources to improve the frequencies of T Route 7 and Route 8 so that all routes operate on the same frequency. Another option would be for the T to reduce the service area within the community. In order to serve most areas of the city, it is often necessary for riders to transfer buses to get to their final

destinations. To have route transfers function properly requires a careful balance between service frequency and service area. In many cases, route transfers are seamless and timely. However, when Routes 7 and 8 operate on 80 minute frequencies and other routes operate on 40 minute frequencies, it produces extended and inconvenient waiting times for route transfers.

Also, for the transit system to make improvements regarding span of T service will require additional resources allocated so that Sunday service and later operating hours can be provided.

## RIDER SUGGESTIONS ON SERVICE IMPROVEMENTS

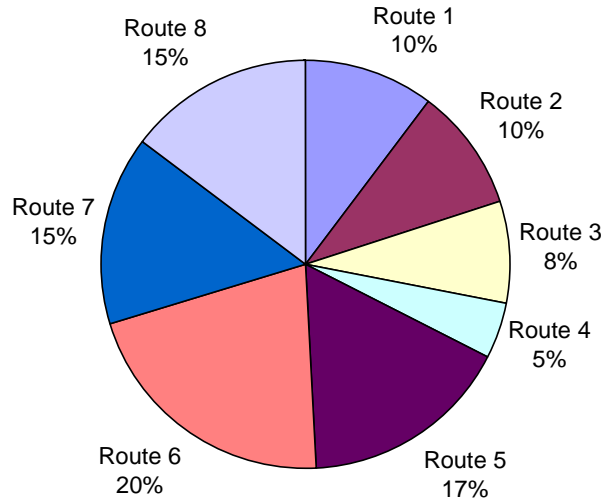
Riders were asked to provide one improvement they would like to see regarding T service in the future (*See Fig. 18*).

The highest response, 27%, was for later service hours, followed by 22% for Sunday service, 21% other, 14% greater frequency of service, 4% more routes, 4% more bus stops, 3% different routes, 3% direct route or more service to KU campus, 2% for earlier service hours.

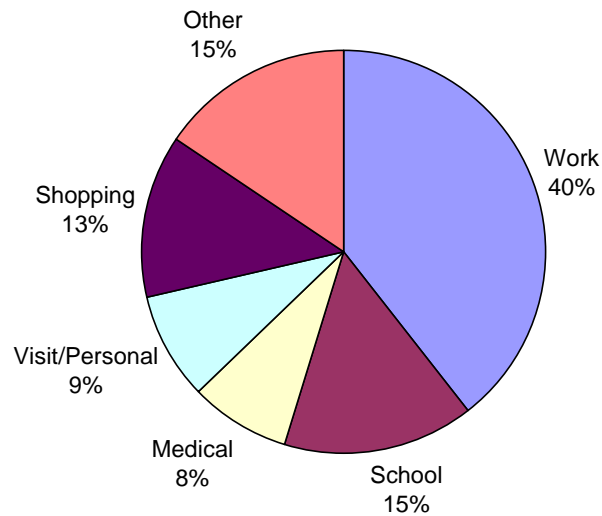
As compared with last year's on-board passenger survey, the highest response for service improvements was adding Sunday service at 27.5%, followed by 23.4% other, 21.3% greater frequency of service; 19.2% later service hours, and 8.6% for establishing new routes to new places.

The largest change in desired improvements in comparing the results of the two surveys is that passengers this year primarily would like for there to be later service hours before adding Sunday service.

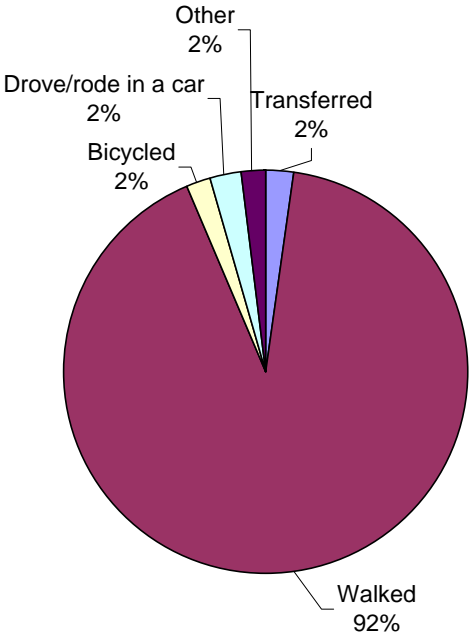
**Figure 1: Survey Response by Route**



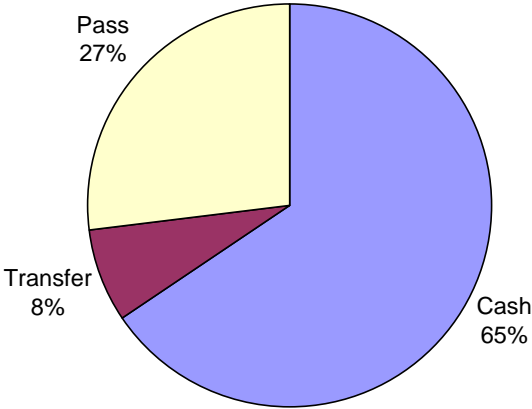
**Figure 2: Trip Purpose**



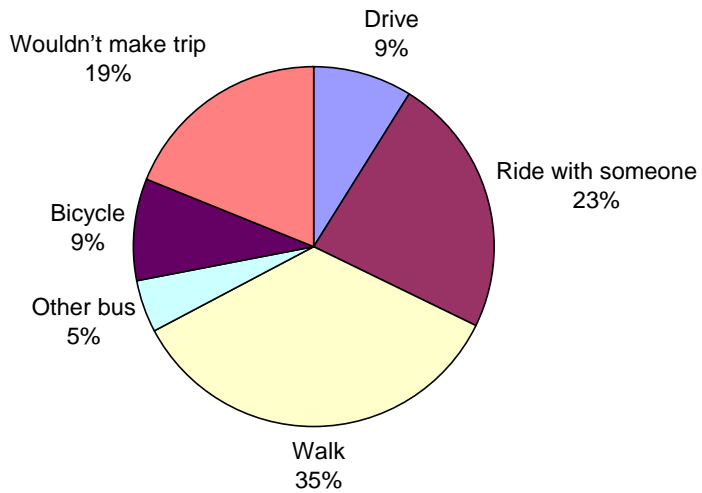
**Figure 3: Mode of Access to the Bus**



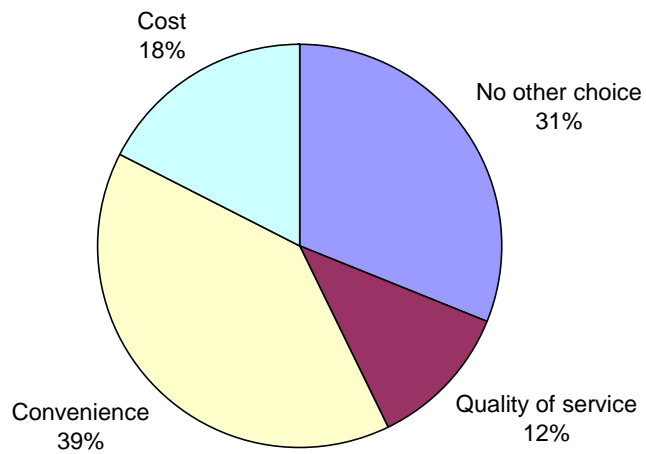
**Figure 4: Method of Payment**



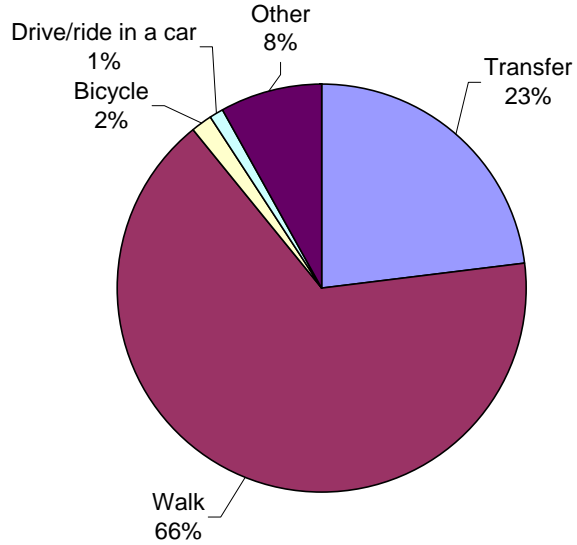
**Figure 5: Alternate Means of Travel if the Bus Were Not Available**



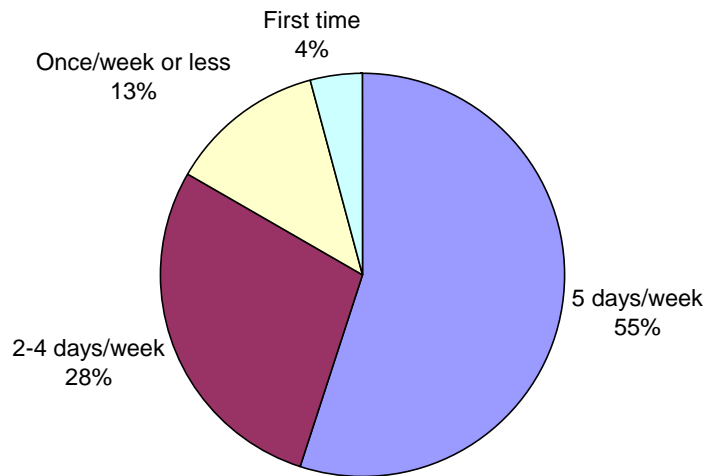
**Figure 6: Reason for using the T This Trip**



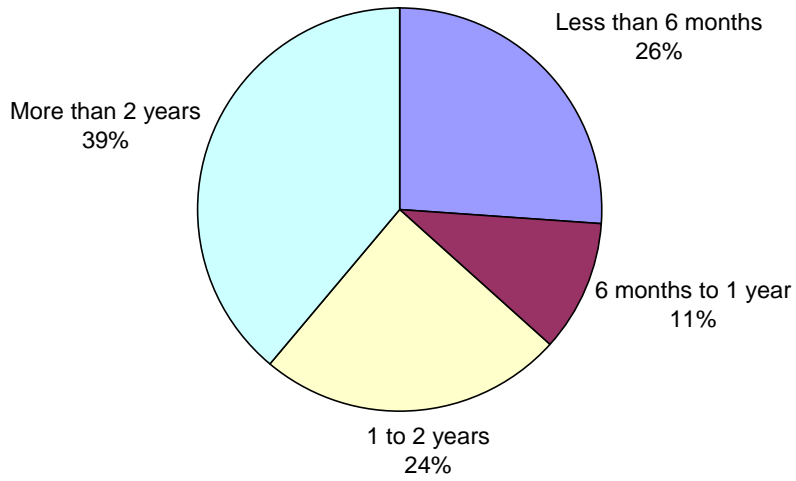
**Figure 7: Mode of Egress from the Bus**



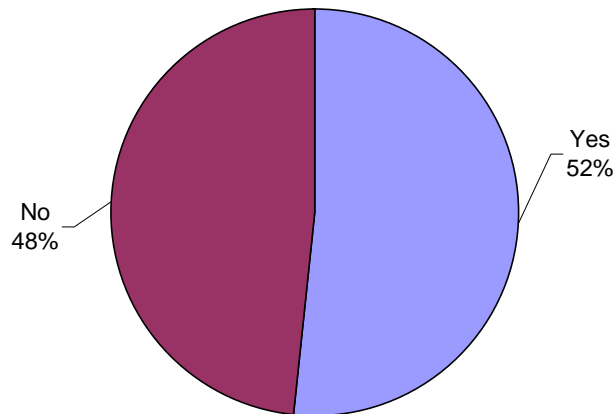
**Figure 8: Reported Frequency of Ridership**



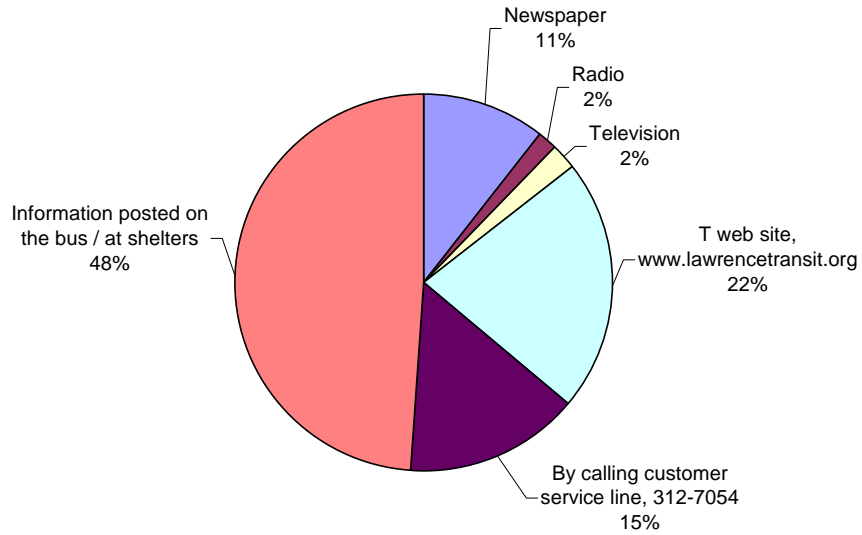
**Figure 9: Ridership History on the T**



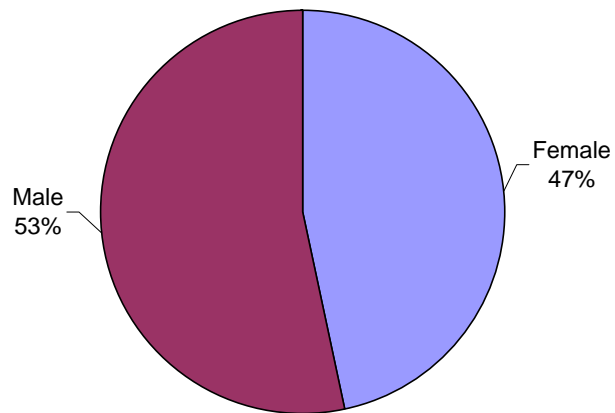
**Figure 10: Importance of Direct Access to KU Campus**



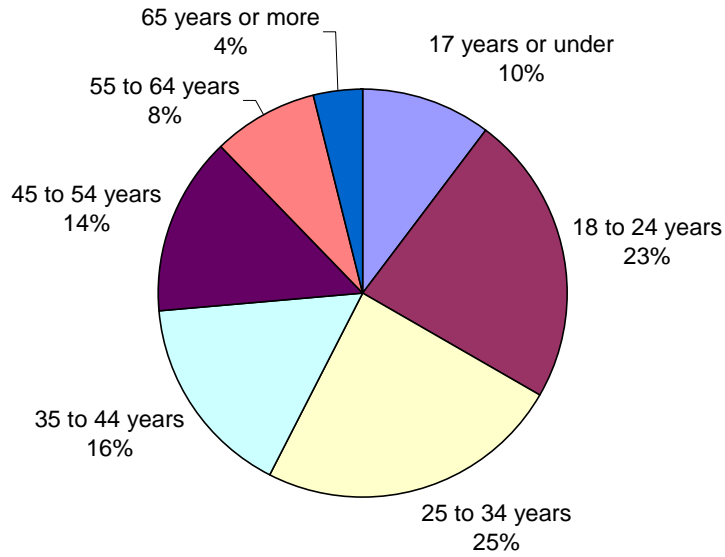
**Figure 11: Source of Information About the T**



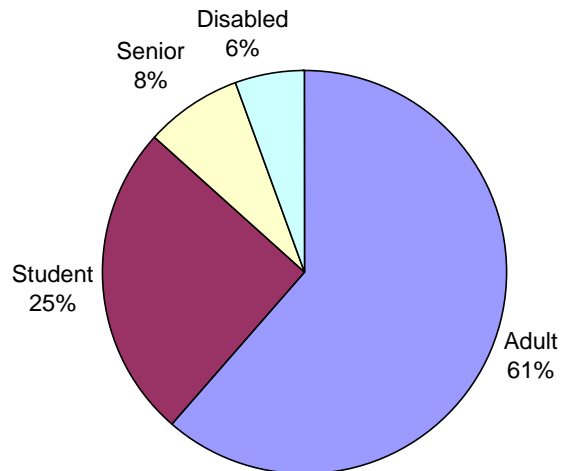
**Figure 12: Gender of T Riders**



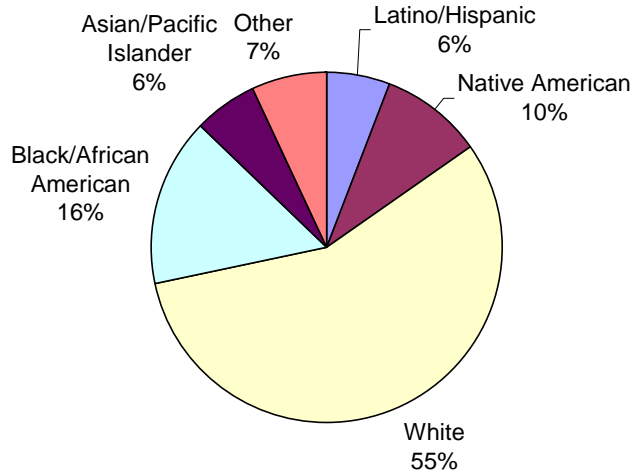
**Figure 13: Age of T Riders**



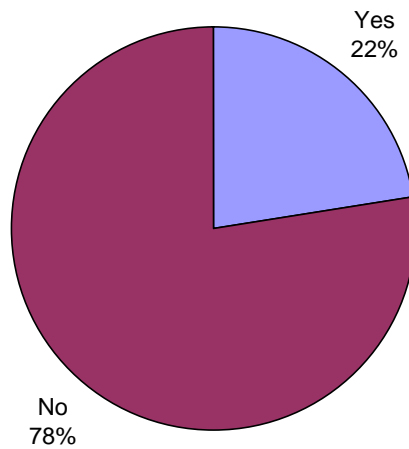
**Figure 14: Fare Category of T Riders**



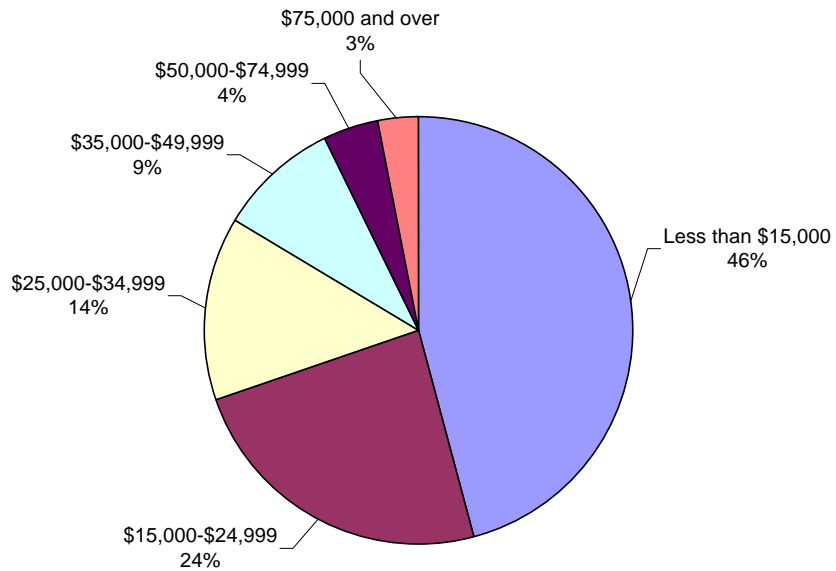
**Figure 15: Ethnicity of T Riders**



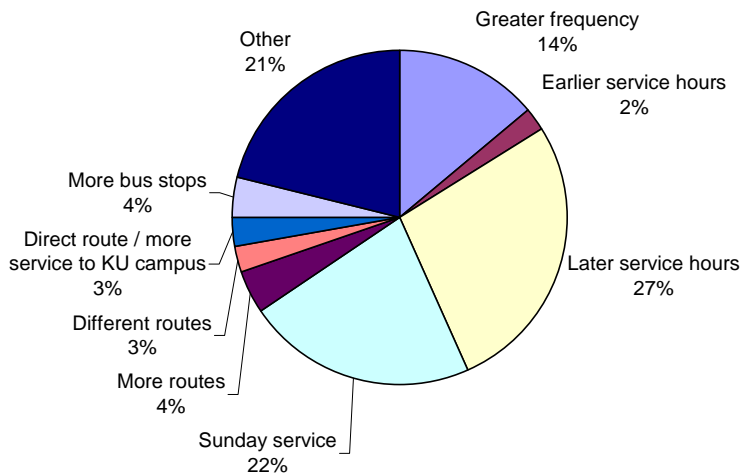
**Figure 16: Vehicle Availability for This Trip**



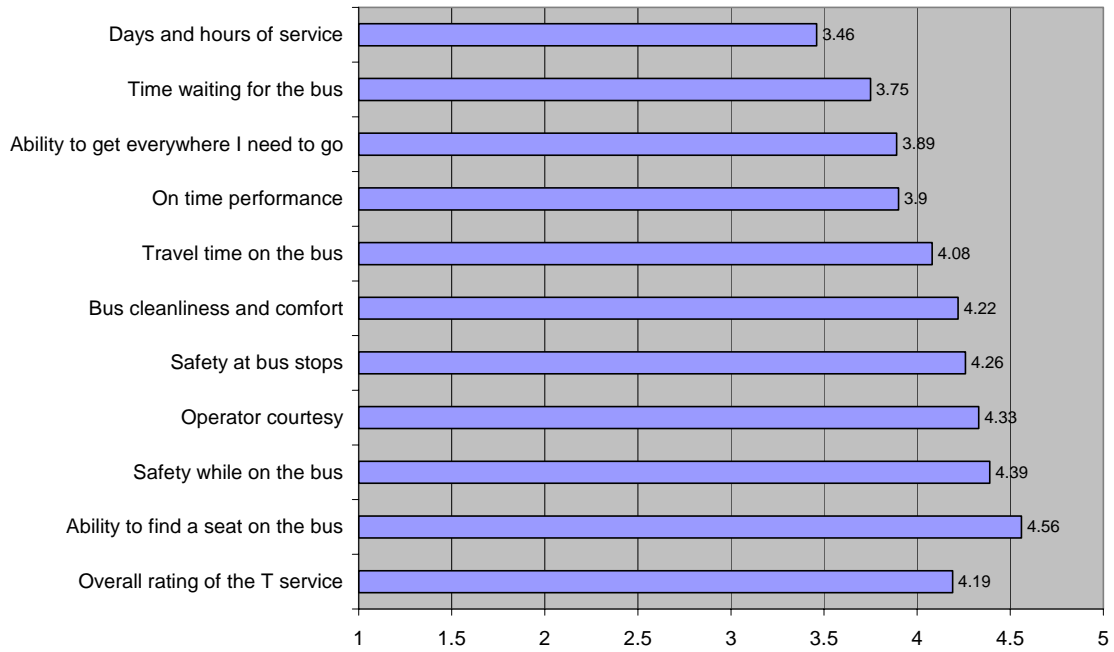
**Figure 17: Household Income Among T Riders**



**Figure 18: Riders' Suggestions for One Improvement to the T**



### Figure 19: Rider Satisfaction



### Figure 20: Importance vs. Performance of T Service Elements

