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Do Travel Costs Matter For Persons With Lower Incomes?

Using Psychological and Social Equity Perspectives to Evaluate the Effects of a Low-Income Transit Fare Program on Low-Income Riders

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by

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16. Abstract

Objective: Access to transit can deliver a host of benefits to the riders and to the region. Previous research aiming to study these benefits has primarily relied on data collected from the opening of new routes or transit systems and focused on the general population. Little is known how low-income riders (LIR) react and benefit in response to when the cost barrier to access to transit is removed. With an intention to increase ridership while addressing the needs of transit-dependent riders in the region, TriMet (Portland, OR) expanded the Honored Citizens Program (HCP) in July 2018 to include low-income riders (LIR).

Methods: In pre-test, post-test design, TriMet riders took two self-reported surveys, the first after recently enrolling or renewing their enrollment in HCP to examine changes in behavior, such as their usage in modes of transportation, especially public transit; as well as changes in ill-being; access to schooling- and employment-related opportunities; and perceptions of TriMet as an organization. Riders of other status (i.e., Non-LIRs) served as a comparison group. The final sample with matching surveys was 98 LIR and 20 others, for a total of 118 riders over the age of 18. Twenty LIR were also interviewed for supplementary qualitative data. Descriptive statistics, mixed ANOVA, repeated measures and two-sample t-tests were conducted.

Results: There was evidence for an interaction between groups and timepoints for frequency of public transit use such that Non-LIR demonstrated a significant decrease in use across timepoints but LIR did not. LIR reported higher levels of walking, carpooling or ridesharing, and psychological ill-being than the Non-LIR groups. Non-LIR reported higher levels of sense of community than LIR.

Conclusion: The impact of COVID-19 during the data collection stage interfered with this project's capacity to detect meaningful changes of rider experiences over time. Despite this, LIR reported no significant changes (i.e., constant usage) in public transit use, suggesting a larger dependency than non-LIR. Findings suggested the HCP positively adds to riders' lives in various ways including professional and recreational opportunities and physical and mental health, which is most apparent from qualitative interviews.

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EXECUTIVE SUMMARY

This report presents data from a study that was conducted by researchers from Portland State University in partnership with TriMet to examine riders' experiences after joining the low-income rider program offering discounted fares, known as the Honored Citizen Program (HCP). The goal of the study was to investigate the link between access to transit, well-being, and access to opportunities (e.g., work and school), among low-income riders in comparison to other riders.

The general findings of this study were heavily influenced by COVID-19 such that:
- Public transit use was still in the process of returning to normal levels during quantitative data collection (November 2021-August 2022) and qualitative data collection (August 2022-October 2022).
- Approximately **55%** of all riders believed it was *at least* somewhat likely to catch COVID-19 from public transit.
- COVID-19 impacted other areas of life such as work and housing stability, which in turn relate to public transit use and other outcomes measured such as health and sense of community.
- **The impact of COVID-19 interfered with this project's capacity to detect meaningful changes of rider experiences over time.**

Differences between Low-Income Riders (LIR) and Non-Low-Income Riders (Non-LIR):
- LIR reported no significant changes in public transit use. Non-LIR reported similar levels of use as LIR at Time 1 but lower levels at Time 2.
    - **Non-LIR initially reported using public transit approximately "a few times a week", then later reported "once a week" on average.**
- LIR reported higher levels of walking, on average, than Non-LIR.
    - **Approximately 56% of LIR reported walking daily or several times a day.**
- LIR reported higher levels of carpooling or ridesharing, on average, than Non-LIR.
    - **Approximately 18% of LIR did so once a month, 18% reported a few times a month, 6% reported once a week, and 20% reported a few times a week.**
- LIR reported having higher levels of psychological ill-being, on average, than Non-LIR. Furthermore, LIR, but *not* Non-LIR, had significantly lower ill-being scores at Time 2.
    - **LIR, on average, "sometimes" felt negative psychological experiences.**
- LIR reported having lower sense of community (SoC) levels, on average, than Non-LIR.

○ **LIR reported "neutral," on average, for agreements with SoC statements.**

Qualitative Findings and Themes from Interviews with Low-Income Riders (LIR):
- LIR reported TriMet enables them to access important resources such as community events/groups, healthcare, and work and school.
- LIR reported enrollment in the HCP improved their financial well-being through increasing access to job opportunities and increasing cost savings.
- LIR provided a variety of suggested improvements for TriMet, including expanding access to TriMet services as well as increasing rider safety.

Qualitative data from interviews with 20 LIR supported these findings and provided additional context and detail. Interviewees revealed reasons for preferring public transit and the resulting accessibility to professional and personal activities. They also shared ways that transit use positively related to their physical and mental health directly and indirectly.

1.0   INTRODUCTION

Greater adoption of active transportation modes is critical for addressing not only negative societal effects from automobile usage (e.g., greenhouse gas emissions; United States Environmental Protection Agency (USEPA), 2017), but also the severe health disparities between disadvantaged and general populations (e.g., evidence for health consequences of passive commuting; Berglund et al., 2016; Pignier, 2015). Examples of such disparities include reports that low-income men in the United States live up to 15 years less than their high-income counterparts (Chetty et al., 2016), and that people of low-income status (at, or lower than, 200% of the federal poverty level) tend to have 30-50% higher rates of diabetes and obesity (Valero-Elizondo et al., 2018).

TriMet in Portland, OR, is uniquely situated to play a pivotal role in addressing these important issues by increasing ridership, especially addressing the disparity between disadvantaged and general populations, with the expansion of the popular Honored Citizens Program (HCP) in 2018 to include the low-income fare component. The expanded HCP provides discounted public transit prices for low-income adults aged 18 to 64, in addition to other disadvantaged populations like those with a senior-citizen status and those with physical or mental disabilities. The addition of low-income riders (LIR) provides a natural opportunity for researchers to investigate the link between access to transit, well-being, and access to school- and job-related opportunities, beyond the savings in fares that the program delivers to the client.

Such understanding is critical for transportation planners, policymakers, and public transportation agencies to devise strategies to better facilitate more effective multi-modal planning and shared use of infrastructure, such as through promoting more efficient usage of public transit and other commute modes among diverse populations. Broadly speaking, our proposed research also answers the calls by the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) for metropolitan planning organizations to assess the transportation and employment patterns of minority and low-income populations in order to identify and meet their needs, as well as to distribute the benefits of transportation investments more fairly (Federal Highway Administration, 2012; Federal Highway Administration & Federal Transit Administration, 2000). Furthermore, Portland's current economic climate provides a helpful backdrop for understanding how transportation impacts homelessness. The state of Oregon has one of the highest rates in the nation of unsheltered people experiencing homelessness (U.S. Department of Housing and Urban Development, 2017), and low-income earners in Portland face ever-increasing living costs and may be particularly at risk of losing their homes (Gallen, 2019).

Examining the relations between transportation and the aforementioned outcomes within low-income populations will not only fill a major gap in the scientific literature, but will also address a timely issue pertinent to the city of Portland. Our study findings may inform policymakers and city planners alike on effective ways of allocating transportation-related resources to support vulnerable populations.

2.0   DATA AND METHODS

2.1 PROCEDURE

TriMet riders were recruited using a variety of strategies, including in-person recruitment at highly trafficked TriMet stops, online ads, the Riders Club listserv, as well as through the TriMet HCP online application. The research was conducted in three main phases. The first phase consisted of a 20-minute online survey that riders could access through their phones or a computer. It included questions, mostly with Likert scales, assessing access to transit; the frequency of use of TriMet services; the purpose of use of TriMet services; perceived corporate social responsibility and satisfaction with TriMet; health and well-being indicators; work, housing, and transit-related changes due to COVID; as well as demographic questions. Riders who completed the first phase received a $5 Target gift card as compensation.

The second phase consisted of a follow-up online survey that took 20 minutes to complete. Riders were sent the follow-up survey approximately two months after their enrollment in the Honored Citizens Program. The follow-up survey primarily included the same questions from the first survey in order to assess changes in experiences before and after enrolling in the HCP. Riders who completed the second phase received a $15 Target gift card as compensation.

Finally, the third phase consisted of interviews with a total of 20 low-income riders who were randomly selected and invited to participate. Interviews were conducted to better understand and contextualize findings from the two surveys in addition to gaining insight to the experiences of LIRs that were not captured in phase 1 or 2. These interviews were maximum one hour long and were conducted both in person and virtually. Individuals who completed the interviews received a $30 Target gift card as compensation.

2.2 MEASURES

2.2.1 Outcome Variables

The outcome variables investigated focused on changes in behavior such as transportation habits, ill-being, access to opportunities, the impact of COVID-19, sense of community, housing difficulties, and opinions of TriMet.

Change in behavior was measured using a frequency 7-point Likert scale ranging from not at all, once a month, a few times a month, once a week, a few times a week, daily, and several times a day. Participants were asked to rate how frequently they engage with, or in, the following to help them get to places: TriMet transit tracker (real-time arrival information system for TriMet buses and trains); Hop Fastpass app (mobile phone app that enables fare payment and tracking for TriMet services); walking; biking; public transit; drive solo; and carpool or rideshare. Behavior was also measured based on the reasons participants used public transit, which included 10 purposes: commuting

to work; commuting to school; household errands; personal business; eating meals outside of home; healthcare; civic religious activities; socialization; recreation/entertainment; and job-related activities. Riders were asked to rate how frequently they used TriMet over the last month for these purposes using a 6-point Likert scale ranging from "do not have transit" for, never (zero times); rarely (one or two times); occasionally (three to five times); frequently (six to nine times); and very frequently (at least 10 times).

Well-being was measured using three scales: physical health, psychological ill-being, and positive affect (mood). Physical health was measured using a single item and riders were asked to indicate on a sliding scale ranging from 0 (poor health) – 100 (great health) how good or bad their own health was in the past month. Psychological ill-being was measured using a 5-point Likert scale ranging from never, rarely, sometimes, often, and always. Riders were asked to indicate the extent to which they felt mentally unwell over the past month. A sample item included, "*Please indicate to what extent you have felt jittery over the past month."* Positive mood was measured using a 5-point Likert scale ranging from not at all, a little, moderately, quite a bit, and extremely. Riders were asked to indicate how frequently they experienced five different emotions in the past month. An example item included, "*Please indicate to what extent you have felt inspired in the past month."*

Access to opportunities was measured using three questions. Riders were asked to answer the following questions to the best of their knowledge: (1) How many bus lines are within reasonable walking distance from your home? (fill-in); (2) Do you have a streetcar, WES, or MAX stop near you? (Response options were no or yes); and (3) How easy is it for you to get to a community support center (ex., job placement, food bank, Department of Human Services office, etc.)? (Response options were not at all, a little, moderately, very, and I don't know).

Impact of COVID-19 assessed (a) COVID-related housing changes; (b) COVID-related work changes; and (c) COVID-related changes in public transportation usage.

For COVID-related housing changes, riders were asked if they experienced housing instability or homelessness due to the impacts of COIVD-19. If riders did experience housing instability or homelessness due to COVID-19, they were asked to describe their experiences. Further, riders were also asked if they had to leave their housing and/or find new housing during the pandemic due to inability to pay rent; problems with roommates; feeling unsafe; illness (self); illness (someone they lived with); illness (someone else you know who you had to help care for); or other.

For COVID-related work changes, riders were asked if they were laid off or fired from a job because of the pandemic (response options were yes or no). If they were not laid off or fired due to the pandemic, they were asked if they experienced reduced hours in work or furlough because of the pandemic (response options were yes or no). If they had experienced reduced hours or furlough, they were asked to indicate what percentage their hours/FTE/pay were reduced. Riders were also asked if they experienced a pay cut due to the pandemic. If they experienced a pay cut, they were

asked what percentage their pay was reduced. Finally, riders were also asked if any plans for employment or paid work fell through because of the pandemic (response options were yes or no).

For COVID-related public transportation usage changes, riders were asked how much their public transportation usage had been reduced because of the pandemic. Changes in public transportation usage were measured using an 8-point Likert scale ranging from no changes in public transit use; one fewer day a week; two fewer days a week; three fewer days a week; four fewer days a week; five fewer days a week; six fewer days a week; and "I no longer use public transit." Riders were also asked about their perception of how likely it was for them to catch COVID from taking public transit. Perception of catching COVID from transit was measured with a 5-point Likert scale ranging from not at all likely, slightly likely, somewhat likely, very likely, and extremely likely.

Sense of community was measured using a 5-point Likert scale ranging from strongly disagree, disagree, neither agree nor disagree, agree, and strongly agree. Riders were asked to indicate their level of agreement with 12 statements about their neighborhood. "Neighborhood" was defined as "the few blocks in any direction from the place you live or the place you spend the most time." An example item included, "Please indicate your level of agreement with the following statement – *I think my neighborhood is a good place for me to live,"*

Housing difficulties were measured by asking which of the following places participants stayed overnight in the last two months. Response options included (a) In a rented or owned single-family home; (b) In a rented or owned apartment or duplex; (c) In a rented or owned mobile home; (d) At a shelter; (e) Temporarily staying with a relative, friend, or couch surfing until I find other housing; (f) Temporarily at a hotel or motel without a permanent home to return to (not on vacation or business travel); (g) In transitional housing or independent living program; (h) On the street, in a tent, empty building, car, transit stop, etc.; or (i) Other (Please briefly explain). If participants selected options D-I, they were asked to indicate how many times, in total, over the past two weeks they had stayed overnight in options D-I.

Corporate social responsibility was measured using a 5-point Likert scale ranging from strongly disagree, disagree, neither agree nor disagree, agree, and strongly agree. Riders were asked to indicate their level of agreement with seven statements about their perceived corporate social responsibility and satisfaction with TriMet. An example item included, "*Please indicate your level of agreement with the following statement – I am satisfied with TriMet transportation."*

2.2.2 Data Analyses

Descriptive statistics, mixed ANOVAs, and follow-up repeated measures and two-sample *t*-tests were employed when analyzing the data. The variables were examined by group (LIR vs Non-LIR) and timepoint (Time 1 and Time 2). First, the general distribution of variables was examined using percentages for categorical variables, and

the mean and standard deviation were examined for continuous variables. Categorical variables included the 10 items for frequency of purpose for TriMet use. Note that the lowest anchor for this measure was "do not have transit for," which changes the interpretation of the scale. Next, we ran 2x2 mixed ANOVAs for all frequency of use items, the well-being measures, sense of community, corporate social responsibility, and perceptions of catching COVID-19 from public transit use. The first factor was rider group (LIR vs Non-LIR) and the second factor was timepoint (Time 1 vs Time 2). Two-sample *t*-tests served as a follow-up to significant findings for the group factor and repeated measures *t*-tests served as a follow-up to significant results for the timepoints factor. Before conducting *t*-tests, we examined the homogeneity of variances to know which *t*-tests may need to account for unequal variances between factors. Variables were considered significant if the *p*-value was less than .05. Statistical analysis for the mixed ANOVAs were conducted using SPSS version 20 for Windows, and all other analyses were done in R version 4.2.1

3.0 RESULTS

3.1 SAMPLE CHARACTERISTICS

3.1.1 Rider Status

Participants were asked to indicate which type of HOP card they applied for or currently had at the time of completing the first survey. The majority of riders (83%) indicated that they were Honored Citizens: Low-Income Rider – New (64%) or Honored Citizen: Low-Income Rider – Renew (19%). The remaining riders (17%) were comprised of Honored Citizens: Riders with Disabilities – Renew (3%); Honored Citizen: Seniors 65 and older and Medicare Beneficiaries – New (1%); Honored Citizen: Seniors 65 and older and Medicare Beneficiaries – Renew (2%); Regular Adult – New (5%); and Regular Adult – Renew (6%).

Table 1.1 Rider Membership Breakdown				
	Rider Membership Group	**%**	**Count**	**Total**
LIR	Honored Citizens: Low-Income Rider – New	64%	75	98
	Honored Citizen: Low-Income Rider – Renew	19%	23	
Non-LIR	Honored Citizen: Riders with Disabilities – New	0%	0	20
	Honored Citizen: Riders with Disabilities – Renew	3%	4	
	Honored Citizen: Seniors 65 and older and Medicare Beneficiaries – New	1%	1	
	Honored Citizen: Seniors 65 and older and Medicare Beneficiaries – Renew	2%	2	
	Regular Adult – New	5%	6	
	Regular Adult – Renew	6%	7	
Total		100%	118	118

3.1.2 General Demographics

General demographics indicated that the majority of participants were female for LIR (61%) and about half were female for Non-LIR (50%). The majority of participants were white for both LIR (66%) and Non-LIR (85%). The average age for LIR was 31.97 years old, whereas the average age for Non-LIR was 38.95 years old.

Table 1.2 Participant Demographics					
	Age (SD)	**Male**	**Female**	**Non-Binary**	**Other**
LIR	31.97 (11.80)	26 (27%)	60 (61%)	10 (10%)	2 (2%)
Non-LIR	38.95 (16.28)	7 (35%)	10 (50%)	2 (10%)	1 (5%)

Table 1.3 Participant Race/Ethnicity							
	Hispanic	**White**	**Black or African American**	**American Indian, Alaskan Native**	**Asian**	**Hawaiian or Pacific Islander**	**Other**
LIR	10 (10%)	65 (66%)	1 (1%)	2 (2%)	8 (8%)	0 (0%)	12 (12%)
Non-LIR	0 (0%)	17 (85%)	0 (0%)	0 (0%)	2 (10%)	0 (0%)	1 (5%)

3.1.3 Work-Related Demographics

Demographics relating to participants' employment and jobs demonstrated that. on average, LIR reported having 1.18 jobs whereas Non-LIR reported having 1.00 jobs. A total of 34% of LIR were unemployed, whereas 24% were employed full time, 32% were employed part time, and 10% reported other. A total of 30% of Non-LIR were unemployed, whereas 35% of Non-LIR were employed full time, 25% were employed part time, and 10% reported other. Out of the 34% of LIR who were unemployed, the majority reported that they were looking for a job (42%) or were students (27%).

Participants were also asked about the average number of hours worked per week over the past two months. On average, LIR reported working 26.11 hours per week, whereas Non-LIR reported working 28.43 hours per week. The majority of LIR reported working in the service industry (29%), whereas Non-LIR reported working in other professions such as education (25%).

Finally, a total of 48% of LIR and 55% of Non-LIR reported that their work schedule stays fairly consistent from week to week. Further, the majority of both LIR and Non-LIR reported that their job(s) did not require a personal vehicle available while at work.

3.1.4 School-Related Demographics

Demographics relating to participants' experience with school demonstrated a varied distribution of educational attainment. Only 1% of LIR and none of Non-LIR had received a 12th grade education or less; 12% of LIR and 10% of Non-LIR had a high school diploma or GED; 36% of LIR and 15% of Non-LIR had some college credit (but no degree); 11% of LIR and 10% of Non-LIR had an associate degree; 35% of LIR and Non-LIR had a bachelor's degree; 3% of LIR and 30% Non-LIR had a graduate degree; and 2% of LIR and no Non-LIR reported other.

Some LIR and Non-LIR reported being enrolled in school (either technical or university). A total of 26% of LIR reported full-time enrollment and 11% reported part-time enrollment. A total of 15% of Non-LIR reported full-time enrollment and 0% reported part-time enrollment.

3.1.5 Transit Dependent vs. Transit Reliant

Four demographics questions examined whether participants were transit dependent or transit reliant. When asked if they had a driver's license, 59% of LIR said yes compared to 80% of Non-LIR. When asked if they owned a bike, 52% of LIR said yes compared to 65% of Non-LIR. Finally, when asked if they had access to a car, 48% of LIR said yes compared to 65% of Non-LIR.

3.2 DESCRIPTIVES

Behavioral frequency items represented activities that were examined for evidence of change in behavior. The distributions for the seven behaviors —TriMet transit tracker (real-time arrival information system for TriMet buses and trains); Hop Fastpass app (mobile phone app that enables fare payment and tracking for TriMet services); walking; biking; public transit; drive solo; and carpool or rideshare — were similar between rider groups and timepoints, in general. Table 1.4 shows the means and standard deviations for each behavior by group. In summary, on average LIR walked the most (multiple times a week), followed by public transit (a little more than once a week), and biked the least (about once a month). Non-LIR also walked the most followed by public transit, but carpooled or rideshared the least. Significant group comparisons across time are discussed in Section 3.3.

Table 1.4 Frequency of Use				
	Group	**n**	**Mean**	**SD**
TriMet Transit Tracker	**LIR**	98	3.39	2.17
	Non-LIR	19	2.84	2.03
Hop Fastpass App	**LIR**	98	3.04	1.95
	Non-LIR	18	2.39	1.58
Walking	**LIR**	98	5.28	1.66
	Non-LIR	19	4.32	1.89
Biking	**LIR**	98	2.01	1.61
	Non-LIR	19	2.53	2.14
Public Transit	**LIR**	98	4.76	1.53
	Non-LIR	19	4.00	1.56
Drive Solo	**LIR**	98	2.48	1.95
	Non-LIR	20	3.10	1.92
Carpool or Rideshare	**LIR**	98	2.70	1.62
	Non-LIR	19	1.47	1.02

Reasons for transit use were coded as categorical variables and, therefore, their distributions were the focus of analyses. Distribution graphs divided by rider group for each of the 10 purposes — commuting to work; commuting to school; household

errands; personal business; eating meals outside of home; healthcare; civic religious activities; socialization; recreation/entertainment; and job-related activities — can be found in Appendix A. The following are some notable results from those distributions.

- 35% of LIR very frequently use TriMet to commute to work, whereas 30% of Non-LIR reported never using it for that reason.

- 27% of LIR use TriMet to complete household errands occasionally, followed by 17% reporting using TriMet frequently, and 9% reporting very frequently.

- 39% of LIR use TriMet for socializing occasionally or more, in contrast to 15% of Non-LIR.

- In general, household errands, socializing, and recreational/entertainment purposes had the most normal distributions for both rider groups, with responses "rarely" and "occasionally" representing the middle.

For all three health measures, average scores for Non-LIR demonstrated more physical health and positive mood and less psychological ill-being than their LIR counterparts for both timepoints. Similarly, Non-LIR had a higher mean at both timepoints for sense of community. Finally, the LIR mean for corporate social responsibility was higher than the Non-LIR mean. Group comparisons of means across time were calculated using mixed 2x2 ANOVAs; see Section 3.3 for those results. Table 1.5 and Table 1.6 demonstrate the mean and standard deviations for the measures.

Table 1.5 Health and Well-Being Indicators					
	Group	**Time 1 Mean**	**Time 1 SD**	**Time 2 Mean**	**Time 2 SD**
Physical Health	**LIR**	65.02	18.49	67.64	17.29
	Non-LIR	73.28	21.27	75.55	19.16
Positive Mood	**LIR**	2.92	.77	3.07	.70
	Non-LIR	3.22	.77	3.21	.73
Psychological Ill-being	**LIR**	3.06	.73	2.89	.71
	Non-LIR	2.43	.89	2.50	.75
	LIR	2.95	.61	3.00	.59

	Group				
Sense of Community	**Non-LIR**	3.32	.62	3.30	.59

Table 1.6 Corporate Social Responsibility					
	Group	**Time 1 Mean**	**Time 1 SD**	**Time 2 Mean**	**Time 2 SD**
Corporate Social Responsibility	**LIR**	3.59	.66	3.69	.60
	Non-LIR	3.50	.75	3.55	.69

Riders were also asked about job-seeking behaviors, although approximately one-third of LIR and three-fifths of Non-LIR responded that the question did not apply to them. A total of 18% of LIR and 15% of Non-LIR reported they spent a great deal of effort looking for a job in the previous two months. The amount of hours committed to job searching varied from zero hours to 20 hours or more. Distribution graphs for effort and hours by group can be found in Appendix B. Approximately one-third of LIR were dismissed from their jobs due to COVID-19, compared to approximately one-seventh of Non-LIR respondents. An additional 22 low-income riders (22%) reported experiencing reduced hours or furlough because of COVID-19, with an average of 52.09% reduction of hours. Eleven low-income riders (11%) experienced a pay cut, with an average reduction of 40.73% in pay. The pandemic interfered with plans for employment or paid work for 40 low-income riders (41%).

Riders were also asked to indicate how much their use of public transportation had been reduced because of the pandemic. Overall, responses varied by group from Time 1 (T1) to Time 2 (T2). There was a 2% increase in "no changes in public transit use" for LIR (59% T1 vs 61% T2), and a 5% decrease for Non-LIR (45% T1 vs 40% T2). For "1 fewer day a week," there was a 2% decrease for LIR (11% T1 vs 9% T2), and a 10% increase for Non-LIR (5% T1 vs 15% T2). For "2 fewer days a week," there was a 4% increase for LIR (6% T1 vs 10% T2), and a 15% decrease for Non-LIR (20% T1 vs 5% T2). For "3 fewer days a week," there was a 2% increase for LIR (6% T1 vs 8% T2), and a 15% increase for Non-LIR (5% T1 vs 20% T2). For "4 fewer days a week," there was a 2% increase for LIR (1% T1 vs 3% T2), whereas Non-LIR remained consistent across both timepoints (5% T1 and 5% T2). For "5 fewer days a week," there was a 3% decrease for LIR (5% T1 vs 2% T2), and a 5% decrease for Non-LIR (10% T1 vs 5% T2). For "6 fewer days a week," there was a 4% decrease for LIR (8% T1 vs 4% T2), and a 10% increase for Non-LIR (0% T1 vs 10% T2). Finally, for "I no longer use public transit," there was a 2% decrease for LIR (3% T1 vs 1%T2), and a 5% decrease for Non-LIR (5% T1 vs 0% T2).

In addition, riders were asked to report their perception of how likely it was for them to catch COVID-19 from taking public transit. Overall, responses for "not likely at all" stayed fairly consistent between both timepoints for LIR [11% T1 vs 10% T2] and Non-LIR [25% T1 and 25% T2]. There was a 4% increase in "slightly likely" for LIR [34% T1 vs 38% T2] and a 5% increase for Non-LIR [10% T1 vs 15% T2]. There was an 8% decrease in "somewhat likely" for LIR [37% T1 vs 29% T2], and a 5% increase for Non-LIR [40% T1 vs 45% T2]). There was a 3% decrease for "very likely" for LIR [16% T1 vs 13% T2], and a 5% decrease for Non-LIR [15% T1 vs 10% T2]. Finally, there was a 7% increase for "extremely likely" for LIR [2% T1 vs 9% T2], and a 5% decrease for Non-LIR [10% T1 vs 5% T2]. Distribution graphs for both reduction in public transportation use and perception of catching COVID-19 from transit use by timepoint and group can be found in Appendix C.

Riders were also asked about potential housing difficulties. The **number one** reason riders had to leave their housing situation was rent for Time 1 and Time 2. Other reasons included problems with roommates, feeling unsafe, and illness of self or others. Feeling unsafe was also listed as the number one reason for Time 2. Riders could select multiple reasons.

When asked to describe their experiences of housing instability or homelessness during COVID-19 in the surveys, riders shared issues that have been observed across the country such as **job loss, difficulty paying rent, difficulty finding affordable housing, (threat of) eviction, and displacement due to COVID-19 driven isolation**.

3.3 ANOVA AND FOLLOW-UP T-TEST RESULTS

Notable differences in means between groups and timepoints warranted further investigation using a 2x2 mixed ANOVA design with time and group as factors. The following are the significant results found.

Frequency of walking differed significantly both between timepoints $F(1,115)= 6.95$, $p = .01$ and groups $F(1,115)= 4.71$, $p = .03$. Results from a follow-up repeated measures t-test, $t(116)= 2.72$, $p = .008$, demonstrated significance. Additionally, results from a follow-up Welch's two sample t-test for Time 2 demonstrated a significant difference between groups, $t(115)= 2.25$, p = .03. LIR walked more often ($m= 5.28$, $SD= 1.66$) at Time 2 than Non-LIR ($m= 4.32$, $SD= 1.89$), but both groups reported walking less than Time 1. Approximately, 5.8% of the variance in walking frequency was accounted for by timepoint ($\eta^2= .057$), and 3.9% of the variance was accounted for by rider group ($\eta^2= .039$).

Frequency of carpooling or ridesharing differed significantly between rider groups, $F(1,112)= 12.15$, $p = .001$. Results from a follow-up Welch's two sample t-test at Time 1, $t(60.91)= 4.46$, $p < .001$ and Time 2, $t(38.19)= 4.31$, $p < .001$, also showed significant differences. LIR carpooled or rideshared more than at Time 1 ($m= 2.35$, $SD= 1.44$) and Time 2 ($m= 2.72$, $SD= 1.61$) than Non-LIR Time 1 ($m= 1.37$, $SD= 0.68$) and Time 2 ($m=

1.47, SD= 1.02). Approximately, 9.8% of the variance of carpool or ridesharing frequency was accounted for by rider group (η^2= .098).

Frequency of public transit analysis revealed an interaction between timepoints and groups such that public transit use differed significantly between groups for one timepoint, $F(1,115)$= 4.64, p = .03. Results from two follow-up two sample measures t-tests at Time 1, $t(116)$= 0.58, p = .562, and Time 2, $t(115)$= 1.96, p = .053 demonstrated significant differences between groups at Time 2. Non-LIR reported using public transit at similar levels (m= 4.79, SD= 1.32) as LIR (m= 4.88, SD= 1.63) at Time 1. In contrast, Non-LIR reported less public transit use at Time 2 (m= 4.00, SD= 1.56) than LIR (m= 4.76, SD= 1.53). Approximately 3.9% of the variance was accounted for by the interaction between timepoints and group (η^2= .039).

Sense of community scores differed significantly between rider groups, $F(1,115)$= 5.74, p < .001. Results from a follow-up two sample t-test at Time 1, $t(116)$= -2.49, p = .014 and Time 2, $t(115)$= -2.02, p = .046, also showed significant differences. LIR had a lower sense of community at Time 1 (m= 2.95, SD= 0.61) and Time 2 (m= 3.00, SD= 0.59), than Non-LIR at Time 1 (m= 3.32, SD= 0.62) and Time 2 (m= 3.30, SD= 0.59). Approximately 4.8% of the variance was accounted for by rider group (η^2= .048).

Psychological ill-being scores differed significantly between rider groups, $F(1,115)$= 8.92, p = .003. Results from a follow-up two sample t-test at Time 1, $t(116)$= 3.39, p < .001 and Time 2, $t(115)$= 2.23, p = .023, also showed significant differences. LIR reported higher psychological ill-being at Time 1 (m= 3.06, SD= 0.73) and Time 2 (m= 2.89, SD= 0.71), than Non-LIR at Time 1 (m= 2.43, SD= 0.89) and Time 2 (m= 2.50, SD= 0.75). Approximately 7.2% of the variance was accounted for by rider group (η^2= .072). Additionally results from the 2x2 mixed ANOVA demonstrated a significant interaction between timepoints and groups, $F(1,115)$= 3.12, p = .080. LIR reported lower levels of psychological ill-being at Time 2, whereas Non-LIR reported higher levels of psychological ill-being at Time 2. Approximately 2.6% of the variance was accounted for by the interaction between timepoints and group (η^2= .026).

3.4 QUALITATIVE DATA

In addition to surveys, 20 LIR volunteered to be interviewed to provide further context for the quantitative results.

For example, participants shared reasons for <u>why they may choose a certain mode of transportation</u> such as weather, energy levels, or situational needs:

- *"I work a mile away from home. So, if it's a nice day and I'm not feeling particularly lazy…So after work, it just depends on the day, I'll walk home. But I do walk to the bus stops…"*
- *"If it's less than a mile or if it's just easier to walk than to take a bus."*
- *"If I need to do a big grocery trip, I normally will drive to WinCo because it's a little bit more difficult to get there on the bus."*

- *"I feel more comfortable taking a Lyft ride if something is more urgent or there's more room in my transportation budget for doing something along those lines."*

This section includes <u>reasons for preferring public transit</u>, especially instead of driving:

- *"Even if someone offered me a new car tomorrow, I would still take the MAX and the bus just because I don't have the stress of the traffic."*
- *"I've had a couple jobs where honestly, it made sense to take the bus because one of them had very limited parking."*
- *"Everywhere I have to go. I do not drive. Even if I wanted to drive, I don't think physically I could drive because of my issues with my back and my hips and my knees. I would go numb. All my doctor's appointments…Anything and everything, I take the bus and MAX and I also take a streetcar."*

The financial relief from the Honored Citizens program allowed LIR to <u>choose TriMet more often and with less worry</u>.

- *"I'd say I've probably increased the amount of bus rides for errands by being on the low-income pass."*
- *"Yeah, I like public transportation because it's more sustainable and more accessible for a lot of people, especially because cars are expensive. Also, I did not want to bring my car to Portland because I didn't want it to get broken into or stolen. I like that they are trying to make it more accessible for low-income people with the program."*
- *"I would do the mental math about how much percentage of my pay I was spending to get to and from work and that would be really stressful. And then also, so I would avoid using it on the weekends or days when I didn't have to work to cut down the amount of money I was spending on transit or I maybe would choose something that was closer by."*
- *"…it was easier for me to buy groceries, and not worry as much. And travel not being as much of a factor was a pretty big deal for me at the time."*
- *"Well, I mean, there's a big difference between paying $28 a month and paying a $100. So, I can use that money for other things. My dog has all sorts of financial needs and stuff, so that helps or go toward rent. And with bills going up all the time, it's like, I'm very careful about my budget."*
- *"Well it's put me more at peace of mind just knowing that the fare is cheaper and being able to delegate my money to other things or have more spending money."*

Public transit's <u>direct and indirect impact on physical and mental health</u> also became apparent during the interviews:

- *"I saved up to get a gym membership, 24-Hour Fitness…I would take TriMet there because the streetcar was super close for me, because I like to stay active and exercise. So, I would just walk about 20 minutes to get there to take the*

streetcar/MAX there, and it would take me all the way there. It was just a five-minute walk, and I would go there several times a week just to work out and to swim. It was fun."

- *"I would say I probably lost about eight pounds just from walking and climbing up the stairs at the MAX or wherever. I try not to use the elevators, just keep active. So, it's definitely helped me health wise, weight wise and helped with my exercise routine, I guess."*
- *"I take [the bus] to get to a mental health group."*
- *"I'm not just stuck at home all day. I have this pass that's super cheap, so I can go out and do something that is going to lift my spirits."*
- *"I used to take TriMet a lot more to go to natural areas, which is maybe a mental health need."*
- *"The thing I tend to spend money on with my budget which isn't as tight is better quality food."*

Additionally, sense of community is important for everyone, and LIR shared ways that public transit has <u>helped them connect with others</u>.

- *"Yes, I do utilize TriMet to get to Portland and meet up with the group to do a group ride rather than riding all the way there because it's seven miles one way."*
- *"I've started a queer book club and so it's been really nice just being able to take public transport and then some of the people who are also in the book club, they take public transport, so it's been nice for us to meet up [and] have a couple drinks..."*
- *"I have more of a sense of involvement in my community or presence in my community rather because you just kind of observe people on the bus when you're just sitting there getting from one place to another. You kind of notice the people that come and go, different people that use transit."*
- *"It has made getting to farther social activities easier. I am a member of the queer community and sometimes the best stuff is always happening in Killingsworth, which can be so far. And so being able to take transit with my friends into those spaces has been helpful in the past."*
- *"With my existing community, I have easier means of being in connection with them."*
- *"I've met a lot of people on the bus, just had some pleasant conversations in the past that I wouldn't have if I was sitting in a car."*

Riders also expressed convenience of such services <u>for work, school, and recreational activities</u>:

- *"I work downtown so I would take the bus, which was one of the useful things about having the bus pass."*
- *"I would take TriMet, the bus to my school. I think it was Cascadia campus, and it was really beneficial. The bus drivers were always on top of the schedule at the time, and it was really consistent."*

- *"I'm much more likely to do the events of Pioneer Courthouse Square, the events on the Square."*

Some expressed the convenience of public transit in relation to <u>helping them find a job</u>:

- *"I've had some job interviews where I've taken the MAX and bus, so it's helped with that."*
- *"...especially for an interview, it's like I'm having to make pretty frequent commutes without necessarily any promise of having any income returned down the line. So having the ability to make those commutes at a severely reduced cost I think allowed me to be more secure and focus the costs on other important things at the time when I had to be making a lot more decisions about where that money was going."*
- *"I've definitely used TriMet to commute to public libraries to print off resumes and documents along those lines. And I don't know, I imagine I probably still would've done it. But it would've been a lot more difficult. It's a bit of a walk for a library near me at the moment. But I think not having to worry about the additional costs in addition to the cost to print everything off as well, that's maybe one area that it was helpful during the unemployment."*
- *"It [TriMet] made it so I didn't have to just stick to a mile radius around here. It made it easier so I could look outside of just being able to walk somewhere [referring to job opportunities]."*

Similarly, LIR expressed the value of TriMet for helping them <u>manage their housing difficulties</u>:

- *"I would say that I took TriMet a lot when I was unhoused. I think it was really helpful to get access when I was houseless while taking TriMet, because TriMet was able to get me to use my social service agencies that I needed… TriMet was able to help me get to my care and stuff."*
- *"Most of the housing opportunities that I will have with my lack of income or even if I got my Social Security, are pretty much out in Portland and farther out… It was a 45-minute bus ride. If I didn't have those [bus lines] then, it would definitely impact my housing because again, I'd have to try to find somebody that could give me a ride. I was homeless 23 months ago. I don't really know people. I don't have a whole bunch of people I could say, "Hey, give me a ride." TriMet is all I have."*
- *"I use TriMet, I use HCP program, and I use TriMet to get to a job, and that job gets me money that I can use to afford housing."*

Finally, riders expressed <u>the impact of COVID-19</u> on their use and perceptions of public transit:

- *"...pre COVID, I would very rarely use the car, actually. I even did a lot of my shopping downtown, like at the Safeway downtown, and I'd take the streetcar to do it. But post COVID, I didn't really feel comfortable taking TriMet, just because it's such close quarters, so I would always use my car."*
- *"We're still in a pandemic, not sure how long it's going to be, but a lot of people in my life have gotten COVID, and there's a lot of immunocompromised people that ride TriMet, and I just don't like the fact that a lot of drivers don't wear masks at all anymore. I feel like it's not great for our community. A lot of my friends are immunocompromised and have actually had to stop taking TriMet and have had to drive instead because they don't want to get sick, because something bad could happen to them or their physical health. So, I think if TriMet enforced their mask mandate on their buses and stuff, it would make things a lot safer for our community."*
- *"Well, I think in the beginning of the pandemic, I had a lot of fear using the bus system because of public health. And I remember a couple times when I rode it and people weren't masking, but I was working downtown and that was causing me a lot of anxiety. And I had a housemate who was using transit and then was using TriMet and then even stopped and just took cabs for a little while, I think out of some anxiety."*
- *"I usually just use biking because TriMet has become really unreliable during the pandemic, and I wasn't a fan of when TriMet removed their mask mandate because I actually got sick from COVID after riding TriMet."*
- *"I felt during the pandemic I was pretty concerned in regard to the health [and] safety of riding public transit because it felt like bus drivers didn't have the resources to enforce masks very much at the time and that sort of thing. And that was my concern then."*

4.0 DISCUSSION

This report investigates the effectiveness of the HCP expansion and its effect on travel behavior, well-being, and access to opportunities among the LIRs (a disadvantaged population) before and after their enrollment in the program. Using a mixed-methods, quasi-experimental design with one pre-test and one post-test, we found significant differences between LIR and Non-LIR for walking, carpooling and ridesharing, sense of community, frequency of use of public transit and psychological ill-being.

In our sample, almost half (48%) of LIR compared to the majority of Non-LIR (65%) reported having access to a car. Moreover, a little over half (59%) of LIR compared to the vast majority of Non-LIR (80%) reported having a driver's license. In line with these findings, we found that LIR used carpooling or ridesharing more frequently than Non-LIR when comparing both Time 1 and Time 2. The increase of carpooling and ridesharing may be, in part, attributed to the service reductions associated with transit operator shortages experienced during the pandemic. Notably, in January 2022, 20 TriMet bus lines experienced temporary service reductions, and the majority of those

bus lines also experienced reduced hours of operation (i.e., buses start later or end earlier; York, 2022). Temporary service reductions such as these may have limited the accessibility of public transit use for LIR and, therefore, LIR may have experienced an increased reliance on carpooling and ridesharing during this time. Further, during the interviews with LIR many riders provided suggested improvements relating to increasing TriMet services, such as expanding both bus and MAX routes to increase accessibility, increasing the frequency of buses across routes, as well as increasing the hours of operations (such as 24/7 access).

We found that public transit use significantly differed when comparing LIR and Non-LIR. Specifically, Non-LIR experienced a significant reduction in public transit use across timepoints, such that Non-LIR reported using public transit a few times a week (T1 mean or m= 4.79, standard deviation or SD = 1.32) and reduced their use to once a week (T2 m= 4.00, SD = 1.56), on average. Notably, there was no significant change in public transit use for LIR and this group continued to use public transit several times a week (T1 m= 4.88, T2 m= 4.76). These findings are in line with recent research examining the impact of the COVID-19 pandemic on public transit usage (Qi et al., 2021). Research has shown an overall decrease in transit ridership across the United States during the pandemic (Brough et al., 2021; Hu & Chen, 2021; Washington Metropolitan Area Transit Authority, n.d.). Further, additional research has indicated that the level of reduction in transit use may vary by a variety of different factors (e.g., demographic factors). For instance, research on ridership levels during COVID-19 has shown that the reduction in public transit use was considerably smaller for less educated and lower-income riders (Brough et al., 2021; Hu & Chen, 2021; Qi et al., 2022). Conversely, areas with higher median household incomes and employment rates were associated with greater reductions in public transit use (Qi et al., 2022). In line with these findings, results also showed that public transit use was significantly different between groups at Time 2, but not at Time 1. This may, in part, be explained by the increased reliance on private vehicles (Brough et al., 2021) for individuals from higher socioeconomic backgrounds as well as the increased reliance on remote work. Therefore, while non-LIR may have the means to adapt their public transit reliance, LIR riders may have less resources and flexibility to do so.

We found that walking decreased for both LIR and Non-LIR across timepoints; however, results indicated that, overall, LIR walked more frequently for both timepoints when compared to Non-LIR. The reduction of Non-LIR's frequency of overall transit use may help explain the decreased rates in walking. Past research has shown that walking rates in the U.S. are low in general (Agrawal & Schimek, 2007). However, when individual's do walk, the majority of time spent walking was for traveling to and from transit trips. This may help explain the lower rates of walking for Non-LIR considering the significant decrease in public transit use across timepoints.

Results also indicated that Non-LIR reported a higher sense of community compared to LIR at both timepoints. Sense of community, conceptualized as a sense of belonging within the community, is a factor that can protect vulnerable populations' health and social functioning (Talò, Mannarini & Rochira, 2014; Walton, 2018). Although there was a lack of significant findings between timepoints, qualitative data demonstrated that

public transit could enhance sense of community by enabling connections to others. In some cases, it allowed riders to connect with existing networks such as attending social events with friends or participating in community-oriented groups (e.g., bike riding groups, queer club meetups). Some riders who were interviewed mentioned how taking TriMet has allowed them to become acquainted with other riders through observation and conversation. Additionally, the ability to go to places more frequently and further away indirectly enables riders to engage with their surrounding community more often and in new ways. Thus, in the longer term, we imagine public programs like this low-income-fare program of TriMet's (i.e., HCP low-Income expansion) can facilitate more usage of public transit—as supported by our findings, which could subsequently enhance the sense of community (and broader well-being outcomes) among vulnerable populations like LIR.

Much research has also highlighted the importance of socioeconomic status (SES) on health. In our study, we found that LIR experienced higher psychological ill-being, on average, compared to Non-LIR across both timepoints. This finding supports past meta-analytical evidence that has shown that SES, when measured both subjectively and objectively, is positively associated with subjective well-being (Tan et al., 2020). Our findings also demonstrated that LIR, but not Non-LIR, had significantly lower psychological ill-being scores later on in comparison to scores from the first survey. During interviews, riders mentioned the direct and indirect influence of public transportation on their health. Things like walking or taking stairs to get to transit stops, accessibility to physical activity areas (e.g., gyms, natural areas), and less worry or concern about finances demonstrated reasons that directly relate to physical and mental health. Additionally, participants mentioned the accessibility of TriMet services expanded their professional and recreational opportunities, such as commuting to work and attending social events, which can indirectly influence physical and mental health. Public transit provides psychological and physical benefits and access to opportunities, especially for LIR. Importantly, this adds to the findings that LIR did not report changes in public transit use, unlike Non-LIR who reported lower levels of use over time. All riders may experience benefits from public transit use, but those benefits may matter more to riders who are consistent in their use and have a higher reliance on TriMet.

In our study, riders reported using public transit for a variety of purposes, including to help with job seeking and commuting to work. While we found that one-third of LIR and three-fifths of Non-LIR responded that the job seeking questions did not apply to them, a total of 18% of LIR and 15% of Non-LIR reported they spent a great deal of effort looking for a job in the previous two months. In line with these findings, some LIR expressed that public transit had helped them with their job search by enabling them to travel to job interviews, access resources when job seeking, as well as expand their job search due to the use of transit. Public transit access was also helpful for LIR who were employed such that a total of 35% of LIR reported that they used public transit to commute to work very frequently (at least 10 times). Overall, access to public transit was useful for both employed and job-seeking individuals in our study.

While the findings of this research study are informative, it is important to note that this study has limitations. First, the LIR group included both new and renewed low-income

riders due to a low sample size. The inclusion of renewed low-income riders may have limited the ability to detect meaningful differences before and after enrollment in the study since renewed low-income riders are less likely to report large changes in behavior and well-being compared to new low-income riders. Similarly, the inclusion of both new and renewed LIR may have limited detection in changes in public transit use frequency for the experimental group. It is likely that changes in public transit use frequency for new LIR would subsequently also impact changes in other outcomes of interest before and after enrollment. Results indicated that Non-LIR used TriMet services less frequently over time, while LIR riding behavior remained consistent. Subsequently, a lack of variability in public transit use for LIR may have made it more difficult to detect significant differences over time in other behaviors or well-being outcomes. Overall, this implies a possible range restriction as a result of including renewed LIR in the experimental group, which consequently reduces statistical power in detecting significant changes in outcomes. Therefore, future research should aim to examine the effectiveness of the HCP expansion by including only new low-income riders to increase the ability to observe larger variability in outcomes. It should also be noted that this data collection occurred during the COVID-19 pandemic (November 2021 to October 2022). Public transit ridership significantly decreased during the pandemic making it difficult to detect meaningful changes in rider experiences before and after enrollment in the Honored Citizens Program. Future research would benefit from replicating this study during a time when ridership levels are similar to pre-COVID levels and, thus, can detect significant changes in ridership behaviors.

5.0 CONCLUSION

In conclusion, this research study aimed to assess the effectiveness of the HCP low-income expansion and its effect on riders' access to transit, well-being, and schooling and job-related opportunities. Overall, walking decreased across both timepoints for both groups, however, LIR walked more frequently at both timepoints. We also found that LIR participated in carpooling and ridesharing more frequently than Non-LIR. Results also indicated that Non-LIR experienced a significant decrease in public transit use and experienced a higher sense of community overall. Finally, we found that LIR reported higher psychological ill-being compared to Non-LIR. Qualitative interviews supported these findings and added insight to ways that access to public transit fosters professional and personal opportunities and stability as well as direct and indirect physical and mental health benefits.

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7.0 APPENDICES

APPENDIX A

REASONS FOR TRANSIT USE

7.1 REASONS FOR TRANSIT USE

Riders were asked to rate how frequently they used TriMet for 10 different purposes: commuting to work; commuting to school; household errands; personal business; eating meals outside of home; healthcare; civic religious activities; socialization; recreation/entertainment; and job-related activities. Riders used a 6-point Likert scale ranging from "do not have transit" for, never (zero times); rarely (one or two times); occasionally (three to five times); frequently (six to nine times); and very frequently (at least 10 times). Higher scores represent higher frequency of use for the specific purpose. The graphs below compare the frequency of use for low-income riders (LIR) versus Non-low-income (Non-LIR) riders *for Time 2 only*.
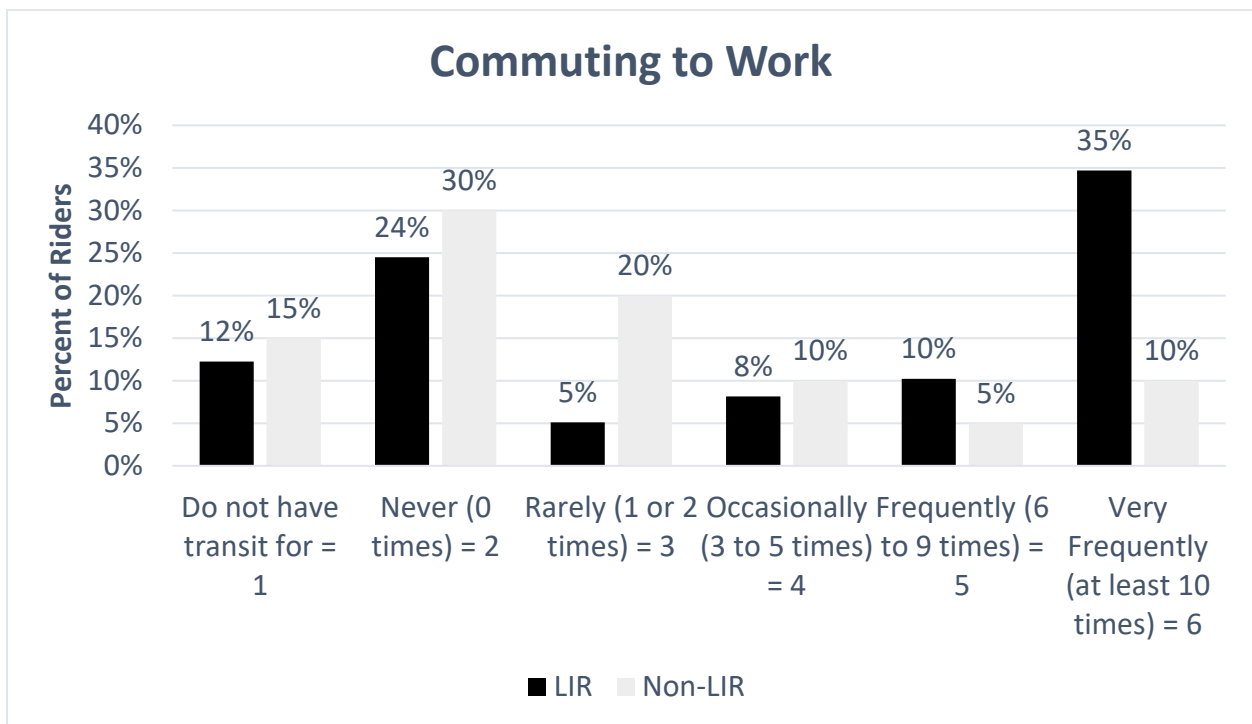
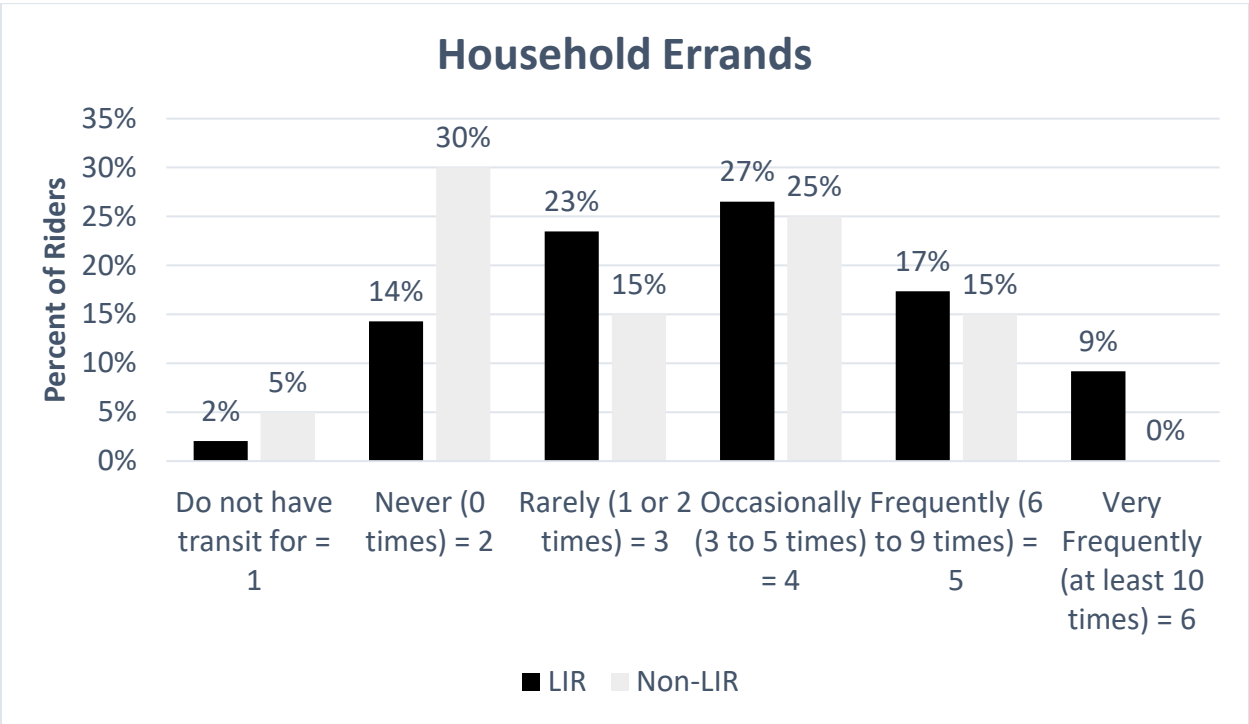

Figure 7.1.1 Commuting to Work

Commuting to School
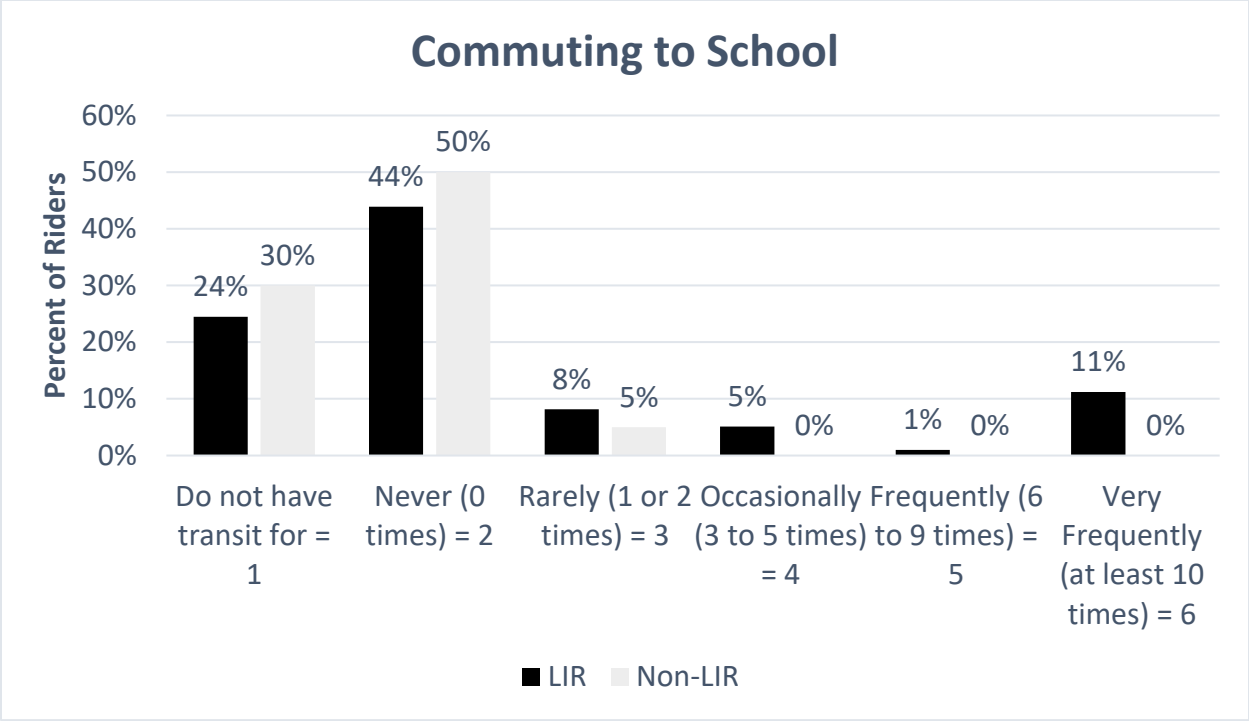
Figure 7.1.2 Commuting to School

Household Errands

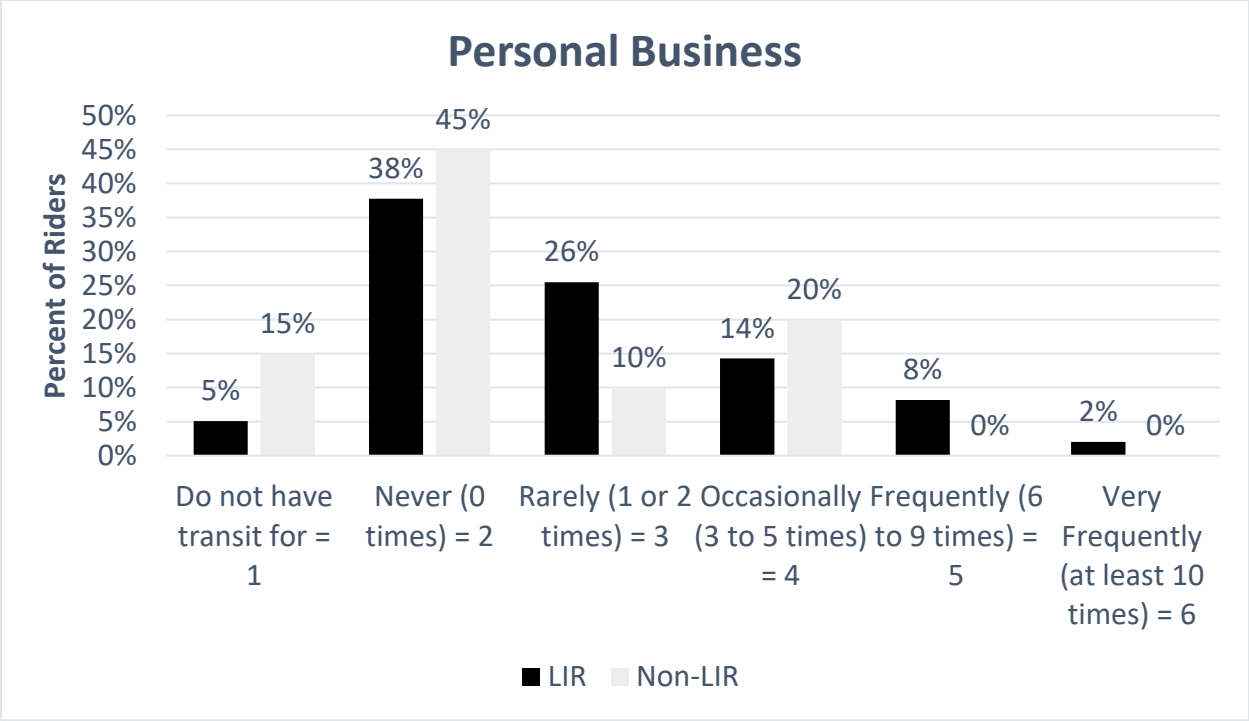Figure 7.1.3 Household Errands

Personal Business

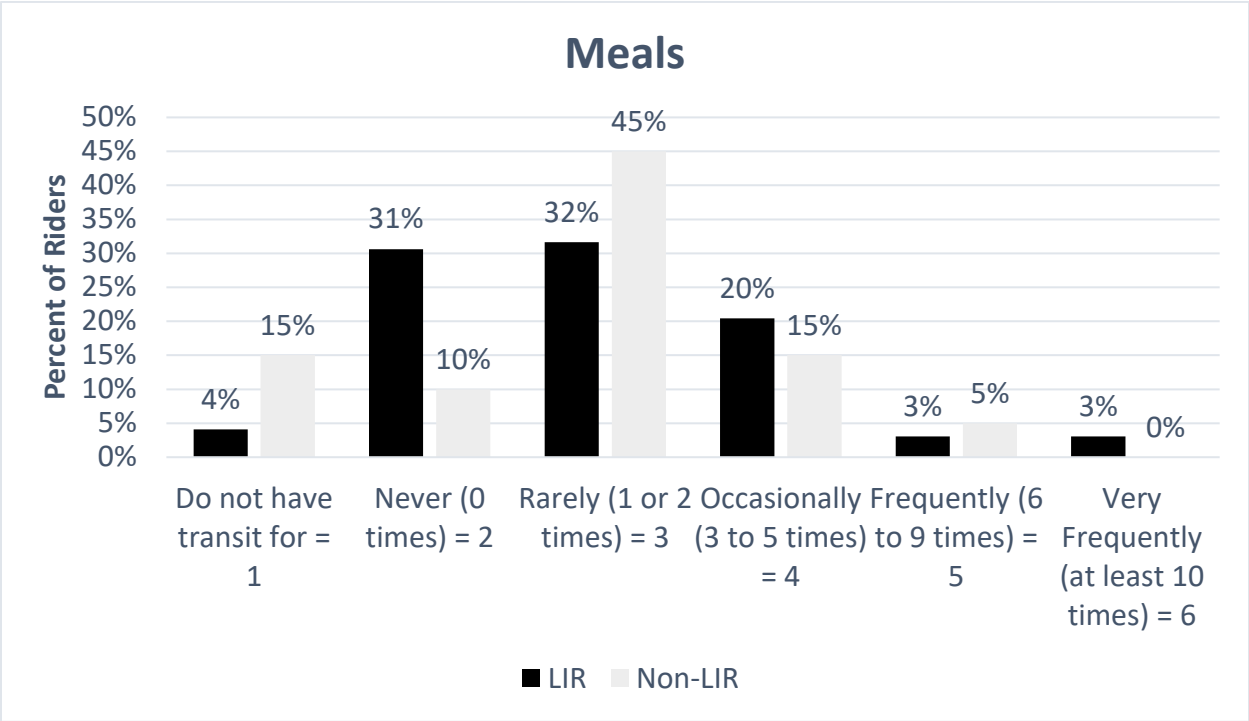Figure 7.1.4 Personal Business

Meals

Figure 7.1.5 Eating Meals Outside of Home
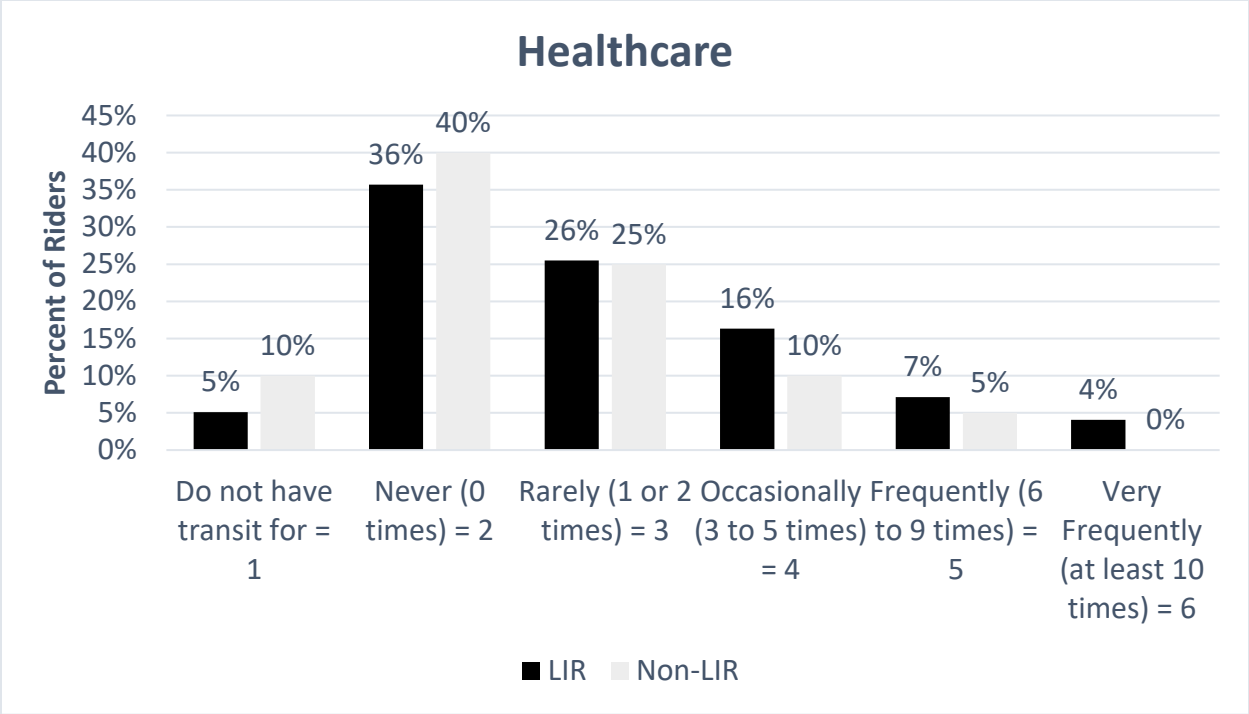
Figure 7.1.6 Healthcare
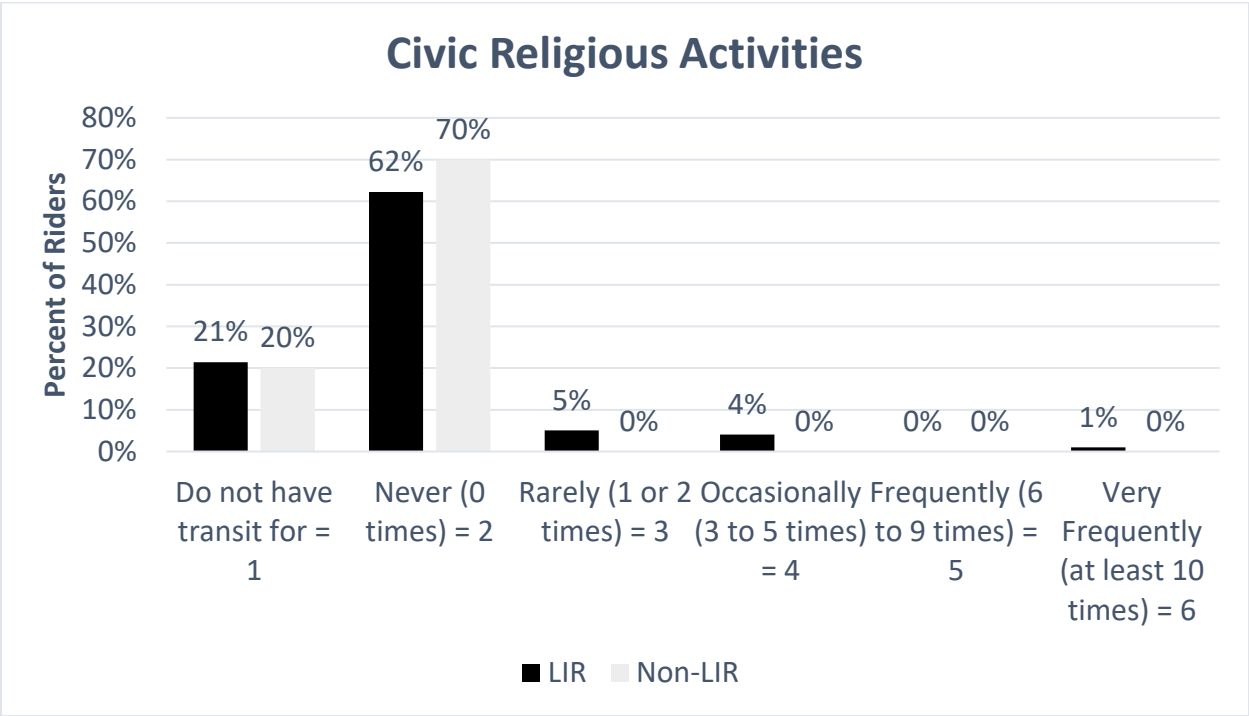
Figure 7.1.7. Civic Religious Activities

Socializing

Percent of Riders

	Do not have transit for = 1	Never (0 times) = 2	Rarely (1 or 2 times) = 3	Occasionally (3 to 5 times) = 4	Frequently (6 to 9 times) = 5	Very Frequently (at least 10 times) = 6
LIR	3%	18%	34%	27%	9%	3%
Non-LIR	10%	30%	35%	10%	5%	0%

Figure 7.1.8 Socializing

Recreational/Entertainment

Percent of Riders

	Do not have transit for = 1	Never (0 times) = 2	Rarely (1 or 2 times) = 3	Occasionally (3 to 5 times) = 4	Frequently (6 to 9 times) = 5	Very Frequently (at least 10 times) = 6
LIR	2%	23%	27%	30%	11%	1%
Non-LIR	10%	20%	35%	10%	15%	0%

Figure 7.1.9 Recreational/Entertainment

Job-Related Activities

Percent of Riders

	Do not have transit for = 1	Never (0 times) = 2	Rarely (1 or 2 times) = 3	Occasionally (3 to 5 times) = 4	Frequently (6 to 9 times) = 5	Very Frequently (at least 10 times) = 6
LIR	10%	38%	10%	17%	10%	7%
Non-LIR	15%	55%	15%	0%	5%	0%
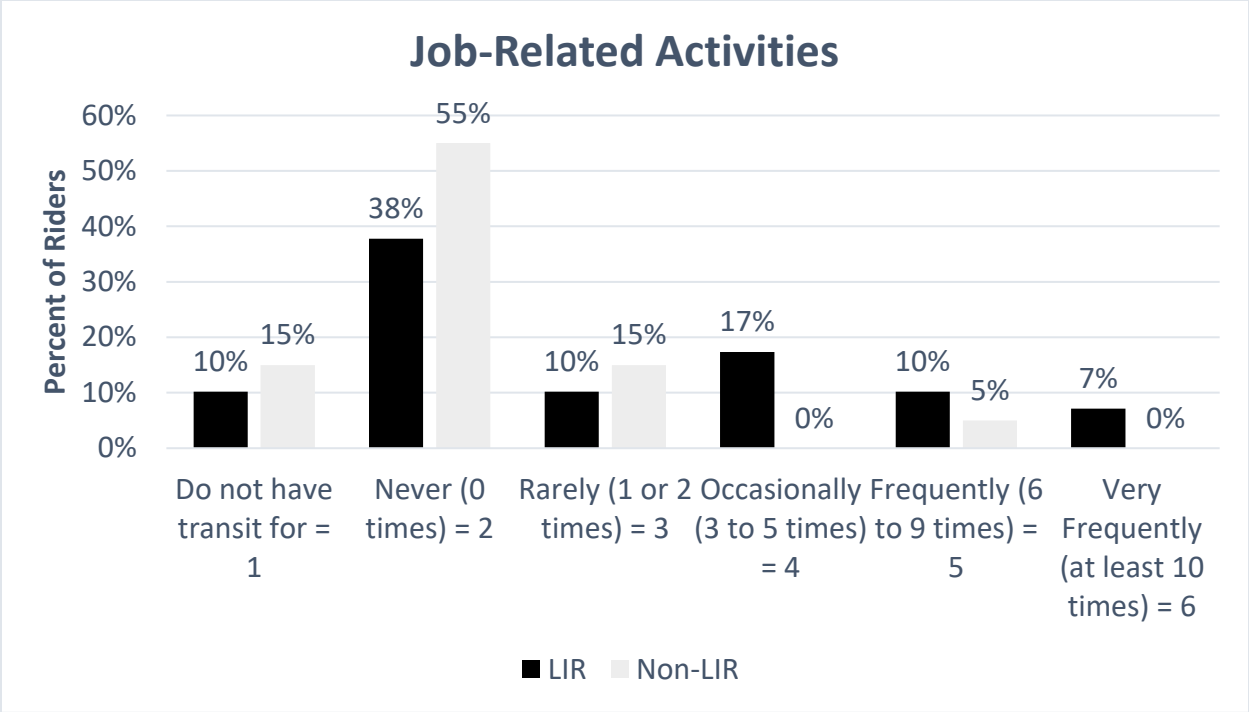
Figure 7.1.10 Job-Related Activities

APPENDIX B

JOB-SEEKING BEHAVIORS

7.2 JOB-SEARCH EFFORT

Riders were asked to indicate the level of effort put into their job search, on average, per week over the last two months (or until they found a new job). Riders used a 6-point Likert scale ranging from "no effort," "a little effort," "some effort," "much effort," "a great deal of effort," and "does not apply to me."
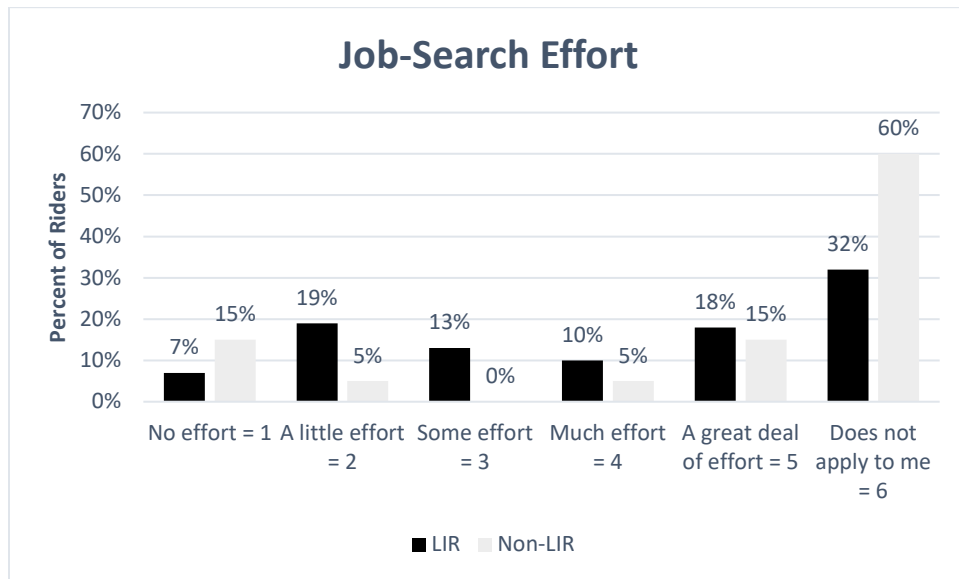
Figure 7.2.1 Job-Search Effort

7.3 HOURS SPENT JOB SEARCHING

Riders were asked how many hours they spent job seeking, on average, per week in the last two months (or until they found a new job). Riders used a 6-point Likert scale ranging from zero to one hour, one to five hours, five to 10 hours, 10 to 20 hours, 20 hours or more, and "does not apply to me."
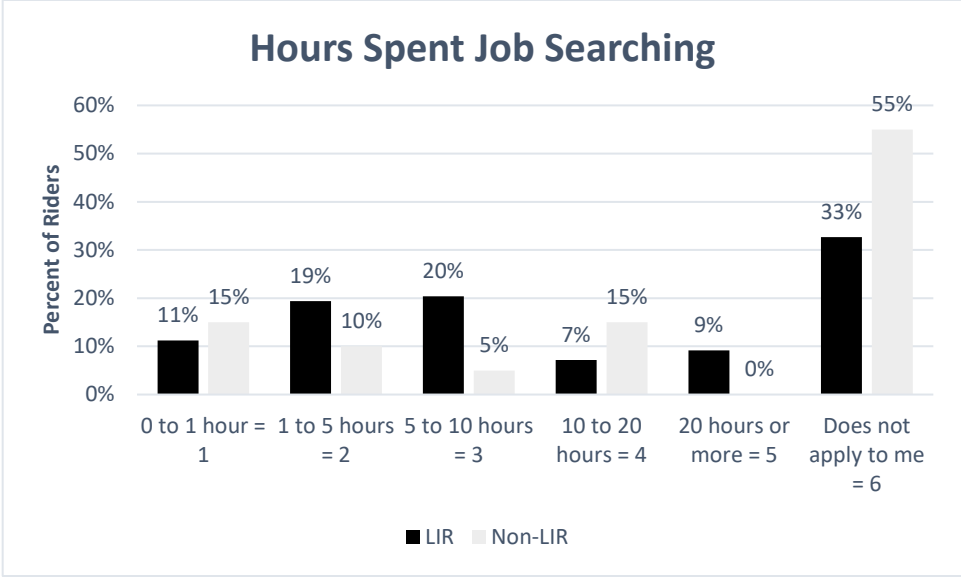
Hours Spent Job Searching

Figure 7.3.1 Hours Spent Job Searching

APPENDIX C

IMPACT of COVID-19 ON TRANSIT USE

7.4 DECREASE IN PUBLIC TRANSIT USE DUE TO COVID-19

Riders were asked to indicate how much their use of public transportation had been reduced because of the COVID-19 pandemic. Riders used an 8-point Likert scale ranging from no changes in public transit use; one fewer day a week; two fewer days a week; three fewer days a week; four fewer days a week; five fewer days a week; six fewer days a week; and "I no longer use public transit."
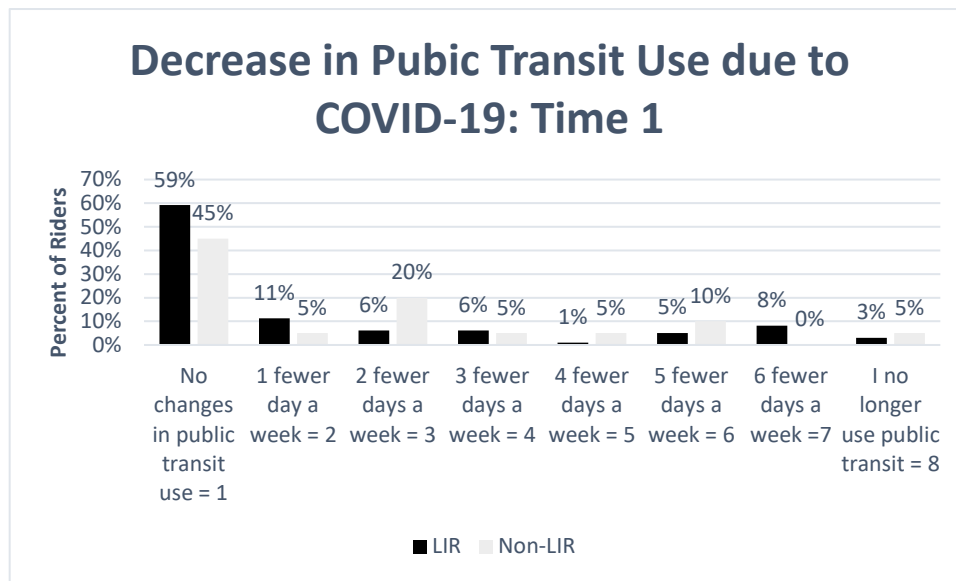
Figure 7.4.1 Decrease in Public Transit Use Due To COVD-19: Time 1
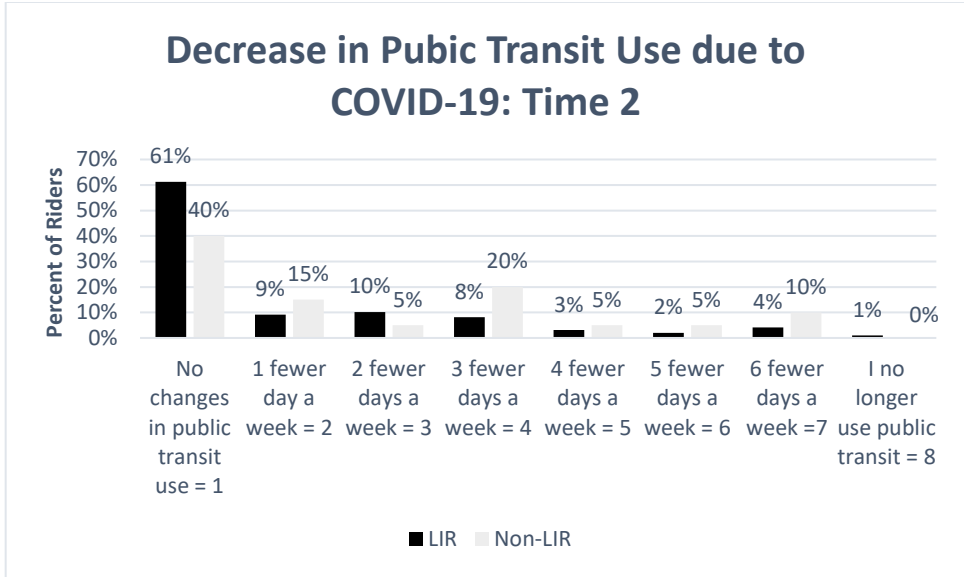
Figure 7.4.2 Decrease in Public Transit Use Due To COVD-19: Time 2

7.5 PERCEPTION OF CATCHING COVID-19 FROM TRANSIT USE

Riders were asked to report their perception of how likely it was for them to catch COVID-19 from taking public transit. Riders used a 5-point Likert scale ranging from not likely at all, slightly likely, somewhat likely, very likely, and extremely likely.
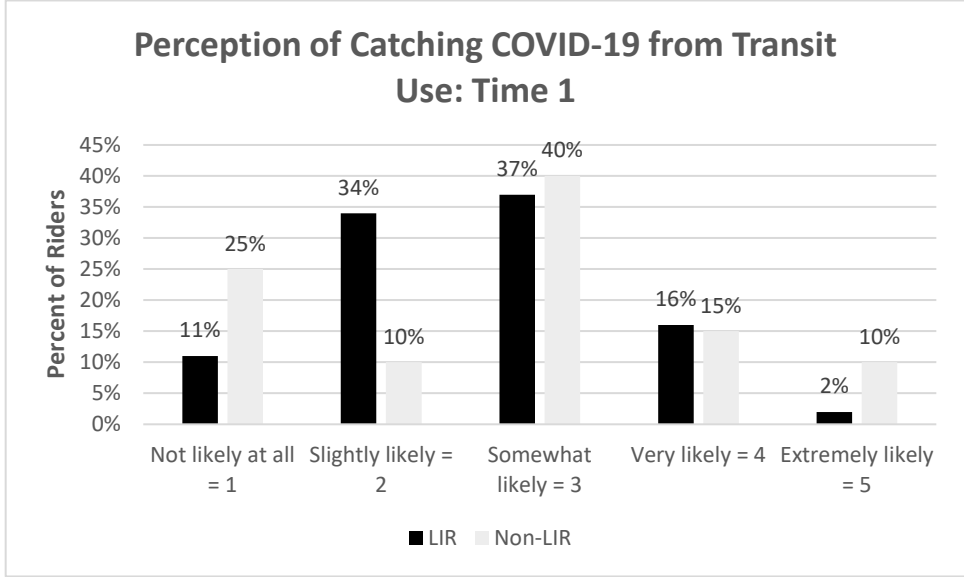

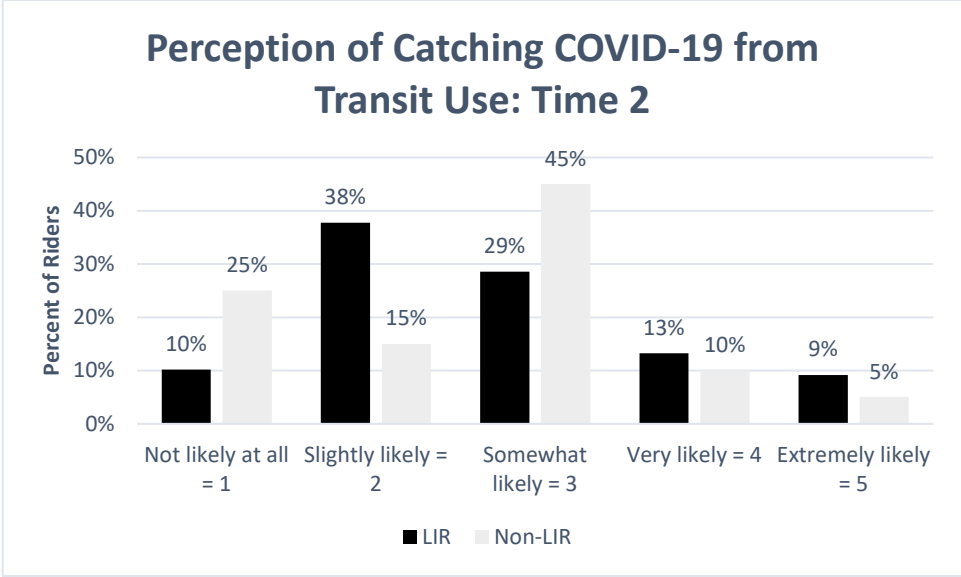Figure 7.5.1 Perception of Catching COVID-19 from Transit Use: Time 1

Figure 7.5.2 Perception of Catching COVID-19 from Transit Use: Time 2