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Employer subsidized public transit pass: Assessing disparities in access, use, and latent demand

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ABSTRACT

In 1999, the U.S. *Transportation Equity Act* enabled employer subsidized public transit passes to be tax free benefits to employees and tax deductible to employers. Public transit agencies can use these to increase ridership, revenue or efficiency. Assessing disparities in access, use and willingness to use the incentive can help improve the policy's effectiveness and help promote equitable access to its benefits.

The analysis uses employed respondents from a travel survey in Atlanta, Georgia (2001–2002, $n = 3430$) categorized based on whether they were offered a subsidized transit pass by their employer, whether they used it or not, and whether they would be likely to use the pass if it was available to them. Socio-demographic characteristics, the presence of other incentives and built environment around home and work were compared across groups, and three logistic regressions were used to estimate parameters for each of the following questions: What socio-demographic and employer location characteristics are associated with working for an employer offering subsidized transit passes? What are the factors associated with using a pass if the incentive is offered? Finally, for those who were not offered a transit pass, what factors are associated with being likely to use a transit pass?

Results suggest an undersupply of employer subsidized public transit passes for lower income workers, who were however more likely to report being likely to use a subsidized pass when not receiving one. Interestingly, however, lower income individuals with access to a transit pass were less likely to use it than their wealthier counterparts. Employment in sales and services, a workplace with limited nearby destinations and low quality transit service between home and work may further exacerbate disparities in use of subsidized transit pass. Promoting transit pass programs to employers in sales and services, and other lower income jobs and coordinating transit service improvements in locations where these employers concentrate may increase subsidized transit pass program effectiveness and distributional benefits. The work also suggests that socioeconomic disparities exist not only in infrastructure development and congestion charging, but also in policies used to influence mode shifts to public transit.

1. Introduction

Travel Demand Management (TDM) can generally be described as the variety of action or set of actions targeting the travel behavior of individuals so as to foster the use of alternatives to the automobile or to reduce congestion (Meyer, 1999). Employer subsidized transit passes are a TDM strategy designed to promote commuting by transit, reduce single occupancy vehicle commuting, traffic congestion and associated air pollution (TCRP, 2005). Some TDM strategies, such as employer subsidized transit passes, provide an economic incentive to the commuter, and can contribute to tipping the balance towards transit use for a proportion of employees working for participating employers. Employers are important travel generators. By involving the employer in commute reduction programs, economies of scale can contribute to

regional growth management objectives (Meyer, 1999; TCRP, 2003).

In Metro Atlanta, Georgia (GA), state employers were first enabled to offer employer subsidized transit passes through tax benefits covered under the Energy policy Act of 1992 (Neiman, 1995). A number of large private employers such as BellSouth and Coca-Cola followed. By 1995, more than 60 larger companies were part of the Employer Transit Incentive Partnership (ETIP) (Neiman, 1995). By 2007, an estimated 15% of employers in Metro Atlanta offered subsidized transit passes (Zuehlke and Guensler, 2007).

Employer subsidized transit passes lower the relative cost of public transit travel with respect to automobile travel for those who decide to use it. Research has moved beyond the initial question of “does it work” to new research questions such as addressing the health benefits (Lachapelle and Frank, 2009), carbon impacts, the appropriate policy

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strategies for central governments and the reasonable expectations and determinants of their success (Cairns et al., 2010).

To this author's knowledge, there is little information and empirical analyses on the socio demographic profile of those receiving the incentive, and the commute- and location-related factors associated with using a subsidized transit pass when it is offered. Furthermore, understanding the characteristics associated with latent demand for employer subsidized transit pass could help decision-makers identify the most likely users of such program. This paper thus attempts to address these issues more directly. Results could help target marketing of program and improve coordination of employer pass program deployment with supporting land use interventions.

These questions are also important because there is considerable evidence suggesting that many transportation policies have contributed to disparities in access in the US, the UK and elsewhere (Bullard and Johnson, 2004; Lucas, 2006, 2012; Di Ciommo and Shifan, 2017; Bills and Walker, 2017). The issues of infrastructure development (Bills and Walker, 2017), cost-benefit analysis of infrastructure development which tend to favor wealthier individuals who travel more, uneven accessibility across space and social groups (Di Ciommo and Shifan, 2017) and road or congestion pricing (Peters and Kramer, 2012; Di Ciommo and Lucas, 2014) can all promote or reduce social exclusion and should thus be analyzed from an equity perspective.

An extensive review of literature on TDM issues (Ferguson, 1998) revealed that no published assessment of the distribution of access to and use of employer subsidized public transit passes across socio-economic groups and built environments existed by the time of publishing. None have been identified since. It is this gap in the literature on the distribution of transit pass programs that the paper seeks to fill. Cost-effectiveness of employer-based incentives, ability to meet specific TDM objectives such as mode shift and congestion reduction, and implementation issues are still the focus of a large part of the research (Litman, 1997; TCRP, 2005, 2010).

There is active interest in improving effectiveness of employer pass programs (TCRP, 2003, 2005, 2010; OECD/ITF, 2010). Program effectiveness is often defined by its success in harnessing employer participation and in producing travel behavior changes amongst employees. Research seeks to understand under what circumstances programs are most effective at achieving these objectives (TCRP, 2005; Cairns et al., 2010). Assessing transit pass programs from a distributional perspective, it is posited, can provide important additional guidance on program effectiveness.

This study introduces a three-pronged analytical framework to assess program disparities from a distributional perspective. The analysis provides an assessment of the profile of employees wanting to receive, receiving, and using employer subsidized transit passes by asking: What are the factors associated with being offered an employer subsidized transit pass, using it when it is available, and wanting to use one when it is not offered by employers? These factors are grouped into four sets of variable: 1) socio-demographics, 2) home and workplace built environment and transit access, 3) commute characteristics and 4) availability of other TDM programs.

The results suggest potential improvements to the effectiveness of programs such as striving to reach the appropriate audience most likely to use it, providing successful conditions for the adoption of programs by employers, and providing successful conditions attracting employees to shift modes when a subsidized transit pass program is provided.

Background on TDM and a description of the mechanisms guiding the provision of employer subsidized transit passes is provided first. Details on the objectives, analytical framework and hypotheses are conveyed next. Methods and empirical results using the SMARTRAQ (Strategies for Metropolitan Atlanta's Regional Transportation and Air Quality) survey combined with land use measures for the Atlanta region (Chapman and Frank, 2004) are provided. Discussion of the results, limitations and implications of this study follow. The main findings are that lower income employees are associated with lower access to pass

programs, use it less when the program is offered, and are associated with a greater willingness to use programs when they are not offered to them. These findings should be considered to revise this policy so that it helps reduce social disparities in travel.

2. Travel demand management (TDM)

Transportation experts have increasingly relied on demand rather than supply side strategies to manage transportation system performance (Orski 1990; Litman, 1997). Ferguson (1998) describes Travel Demand Management as emerging around 1985 after periods dominated by the approaches of Transportation planning (1945–1975) and transportation systems management (1975–1985). While the former approaches were focused on development, maintenance and expansion of highways and other transportation infrastructure, TDM seeks to maximize the use of existing infrastructure capacity to reduce environmental externalities such as air pollution and greenhouse gas, and social externalities such as peak hour congestion and inability to travel due to prohibitive costs (Downs, 1992; Chapman and Frank, 2004; Lucas, 2012). Furthermore, increasing the mode share of public transit and increasing transit options are well supported strategies to achieve these goals that are promoted at a national level (TRB, 2001), and in the study region itself (ARC, 2007).

TDM's approach is to act on supply and demand, through the use of market-based or regulatory tools (Ferguson, 1998; Meyer, 1999). Marketing of choices, provision of information and “feebates” are used as strategies to reduce the overall amount of travel people engage in or to shift travel to an alternative, less polluting mode. Influencing the relative travel-time between automobiles and public transit, distributing employment along transit corridors, promoting awareness of potential options and providing mode specific financial incentives and disincentives are the nuts and bolts of TDM strategies (TCRP, 2005). Some of these are based on employers. A number of employer-specific TDM programs have been used to promote a shift from automobile to public transit use and non-motorized transportation. These include (Chapman and Frank, 2004; OECD/ITF, 2010; Cairns et al., 2010):

- Free or subsidized transit passes which modifies the relative cost of travel by different modes,
- Parking charges, for the same reasons,
- A flexible work schedule that enables a person to avoid peak hour travel,
- Telecommuting so as to reduce peak hour travel and commuting,
- Carpool/Vanpool to reduce single occupancy vehicle use and encourage non-motorized modes,
- Guaranteed ride home, that makes transit use more feasible by providing an alternative in case of an emergency,
- Provision of bicycle storage and related facilities such as showers to encourage non-motorized modes.

Such policies and programs enable and even encourage employees to travel off-peak hours and to more easily choose from a set of alternatives to driving alone. For example, studies have shown that increased costs for parking at the place of employment is associated with reduced likelihood of driving (Shoup, 2005; Bianco, 2000; Cairns et al., 2010) and increased likelihood of taking transit, biking or walking to work (Frank et al., 2008; Hamre and Buehler, 2014; Dong et al., 2016; Bueno et al., 2017). Through employer-based TDM programs, these alternatives are made increasingly attractive in comparison with automobile use. In these schemes, employers are mediating institutions in the implementation of a public policy that can play a role in business development, employee recruitment and retention, and possibly in regional growth management (Zuehlke and Guensler, 2007; Rye, 1999). Growth management objectives can be achieved by incentivizing employers to locate in more central areas where transit is available and where they can include transit incentives in employee benefit packages,

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