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# The impacts of limited transportation access on persons with disabilities' social participation

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## ABSTRACT

The purpose of this study is to examine individuals with disabilities' social and community participation in relation to their access to transportation. A self-administered online questionnaire was disseminated to individuals with disabilities throughout the United States. Individuals were found to use private vehicles less often and public transportation more often than previous studies have shown. Individuals with increasingly significant disabilities were more likely to face transportation-related exclusion. Almost half of the participants had to cancel an appointment because of a transportation-related conflict. The majority of participants felt that the level of access to transportation hindered their social life.

## 1. Introduction

In order for individuals to obtain employment, goods and services, healthcare, education, and interact socially, access to transportation is critical (Cassas, 2007; Preston and Raje, 2008). For example, a lack of access to transportation not only limits access to employment opportunities, but can also make it more difficult to find employment by limiting access to employment center and interview locations (Kenyon et al., 2002; Department of Environment Transport and the Regions, 2000). Similarly, healthcare and education are often not equally distributed in a community, making access difficult for individuals who do not live near these services (Martens, 2012).

Individuals encountering social, financial, psychological, or physical barriers in accessing transportation are considered 'transportation disadvantaged' (Delbosc and Currie, 2011; Raje, 2003; Wasfi et al., 2006; Yigitcanlar et al., 2005). Transportation disadvantaged populations experience lower rates of access to employment opportunities, education services, health services, and other community resources that are associated with daily activities (U.S. Department of Transportation, 2003). Further, transportation disadvantaged individuals are often socially excluded, facing greater limitations that keep them from participating within their community (Mackett and Thoreau, 2015; Dodson et al., 2004; Cass et al., 2005; Cassas, 2007). "Households without a car, in a society in which household car ownership is the norm (peri-urban and rural areas), are 'socially excluded' within our definition of the term, since they cannot fully participate i.e. behave as the vast majority of society behaves" (Dodson et al., 2004). These individuals need greater consideration by communities when new transportation systems are planned and implemented or existing systems are expanded, yet they are often forgotten (Duvarci and Yigitcanlar, 2007).

Further compounding these issues, individuals experiencing social exclusion are often not involved in political and institutional structures and as a result are less likely to be involved in transportation or community planning (National Planning Commission, 2012; Kenyon et al., 2002). These populations may feel disconnected from the decision-making processes affecting where they find housing, the kind of job opportunities and services which are available to them, the quality of the services they receive, and their own

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ability to affect changes in these aspects of their lives (Lucas and Currie, 2012).

Individuals with disabilities are often not full participants within their community, are politically marginalized (Preston and Raje, 2007), and are less likely to have full access to transportation (Lucas, 2012; Louis Harris & Associates, 2000). Individuals with disabilities who are better able to participate socially in their community have increased dependence on alternate forms of transportation, which may include ridesharing through their social network (Schmöcker et al., 2008), compared to individuals with disabilities with less community participation. The increased demand for alternative transportation forms relying on individuals with disabilities' already impacted social networks may further negatively impact their social networks and/or opportunities for social interaction.

Increasing transportation access is seen as a primary way to improve individuals with disabilities' independence and self-determination (Christensen and Byrne, 2014; Wasfi et al., 2006; Wehmeyer et al., 1996; Schalock and Alonso, 2002; National Council on Disability, 2005). Understanding the role transportation access plays in the social exclusion of individuals with disabilities is necessary in order to make changes that facilitate their increased participation in all aspects of society (Yigitcanlar et al., 2005; Lucas and Currie, 2012).

### 1.1. Research questions and hypotheses

The purpose of this study is to examine individuals with disabilities' social participation in their community in relation to their access to transportation. To address this purpose four research questions were investigated:

- 1) What modes of transportation are individuals with disabilities using to meet their transportation needs?
- 2) Are the modes by which individuals with disabilities meet their transportation needs associated with demographic factors, such as age, gender, ethnicity, type of disability, education, employment, income, etc.?
- 3) Are the modes by which individuals with disabilities meet their transportation needs associated with the strength or diversity of their social network?
- 4) Are individuals with disabilities' social opportunities hindered by a lack of transportation access?

We hypothesized that individuals with disabilities are less likely to have access to personal transportation options than those without disabilities; individuals with disabilities who are employed are more likely to have access to personal transportation opportunities than those who are unemployed; and that individuals with disabilities who have stronger or more diverse social networks are better able to meet their transportation needs through other transportation options.

## 2. Methods

This study is an expansion of a previous study by Jansuwan et al. (2013). A small sample population of 171 individuals, of whom 76 reported possessing disabilities, limited that previous study and required the use of simulated data that can give unwarranted credibility to smaller samples. This study makes use of a larger sample population of individuals with disabilities to address the limitations of the previous study. This study employed a self-administered online questionnaire disseminated electronically through disability service providers' communication networks to individuals with disabilities 18 years of age or older. The survey was conducted in the fall of 2013.

The survey, available in both English and Spanish, comprised 11 questions regarding respondents' demographic characteristics, six questions regarding their community participation and social networks, and between 10 and 14 questions regarding their transportation use patterns (the number of questions was response dependent). The demographic factors include age, gender, race/ethnicity, type of disability, education level, employment, and income level. Education level was reported according to five categories: less than high school, high school, junior college/technical school, 4-year college/university, and post graduate. Employment was reported according to six categories: unemployed, part-time employment, self-employed, retired, full-time employment, and volunteer but was coded as either employed for wages (part-time, self-employed, retired, and full-time) or not employed for wages (unemployed and volunteer) for this analysis. Retired was assumed to have been previously employed for wages and therefore receiving commensurate benefits and coded as such. Income level was coded into eight consecutive income groups based on the poverty threshold (\$15,000/year): less than \$15,000, \$15–24,999, \$25–34,999, \$35–49,999, \$50–74,999, \$75–99,999, \$100–149,999, and \$150,000 or more.

Examples of the transportation and social network questions include:

- 1) During a typical day, what means of transportation do you use most? (drive your personal vehicle, ride with others, bus, walk, taxi or hired driver, bicycle, paratransit, social or volunteer service, or other; the response to which would reveal related follow up questions to gather additional information about the selected transportation mode choice such as waiting time, riding time, number of transfers, etc.)
- 2) How often do you get together to socialize with your family/friends/close friends? (daily, every few days, weekly, monthly, other)
- 3) Do you feel that your social life is hindered by your transportation needs? (yes or no)
- 4) During a typical month, how often do the following help you meet your transportation needs? (family, friends, close friends, service provider, public transportation; daily, every few days, weekly, monthly, none)

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