Examining Travel Choices of Low-Income Populations: Issues, Methods, and New Approaches

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Abstract

The study of the role that transportation plays in the well being of low-income populations is not new. However, the overwhelming research emphasis has been on the relationship between transportation and access to employment opportunities for low-wage workers. Much less attention has been placed upon the full array of activity and travel needs of this population segment and their ensuing travel decisions and behaviours. In addition, the methods that have been traditionally used may fall short in reaching these populations or in the type and degree of information provided.

This paper aims to fill a gap in the literature by assessing the state-of-the knowledge of the travel behaviour of low-income populations and offering directions for future research. It is organized into three sections and will discuss the numerous issues that arise when studying populations who are economically disadvantaged. First, this paper presents a brief analysis of previous work on poverty and transportation, with emphasis on those aspects pertaining to travel behaviour. Second, the paper evaluates the issues that emerge from this literature review and discusses the methodological challenges that confront travel behaviour researchers when studying this population. Finally, the paper will present new approaches that offer promise. As we seek to understand more about travel behaviours and their motivations, it becomes necessary to explore specific segments of the population in more detail. These approaches, while focused on the travel behaviours of the poor, may be extended to our studies of other groups and population segments.

Keywords

Poverty, Social Exclusion, International Conference on Travel Behaviour Research, IATBR

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1. Introduction

The study of the role that transportation plays in the well being of low-income populations is not a new endeavour. Over the last forty years, this body of work has contributed greatly to our understanding of the challenges that the poor face in searching, acquiring, and maintaining gainful employment. To this end, the research and policy emphasis in this area has been primarily upon the relationship between transportation and access to employment opportunities. Yet, there is much to learn about the travel choices of this population. Much less attention has been placed upon the full array of activity and travel needs of this population segment and their ensuing travel decisions and behaviours. In addition, the methods that have been traditionally used may fall short in reaching these populations or in the type and degree of information provided.

Why is the study of the travel choices of the poor important to travel behaviour researchers? Obviously, research along these lines directs public policies to meet the mobility needs of disadvantaged groups. But, this research rarely seeks to understand behaviour and is more commonly undertaken to reveal the extent of mobility barriers confronting the poor and their consequences. However, the study of this population has the potential to inform travel behaviour theory by revealing the underlying behavioural processes of decision making under constraint, the organization and scheduling of household activities, and the creation of choices where there appear to be none. These are often extreme cases, but as such they may offer promise in our understanding and theory development while at the same time informing public policy.

This paper aims to reconcile the various research efforts in this area by presenting a brief review of the state-of-the knowledge of the travel behaviour of low-income populations and offering directions for future research. It is organized into three sections and discusses the numerous issues that arise when studying populations who are economically disadvantaged. First, this paper presents a brief assessment of previous work on poverty and transportation, with emphasis on those aspects pertaining to travel behaviour. Second, the paper evaluates the issues that emerge from this literature review and discusses the methodological challenges that confront travel behaviour researchers when studying this population. Finally, the paper will present new approaches that have potential. As we seek to understand more about travel behaviours and their motivations, it becomes necessary to explore specific segments of the population in more detail. These approaches, while focused on the travel behaviours of the poor, may be extended to our studies of other groups and population segments.

2. Background Literature: What do we know about the mobility patterns & travel choices of the poor?

The study of poverty and its consequences has been driven by an interest in crafting social policy that meets social needs and enables self-sufficiency. Like with many topical areas, research has often been divided along disciplinary lines with mobility concerns assigned to the domain of planners and engineers and poverty issues considered the realm of public affairs, sociology, and urban studies. The body of literature on poverty and transportation reflects these divisions as well as the specific policy directives in place at the time of the studies. But, there is much to be gained by examining the various approaches and research findings from a variety of disciplines.

In the United States, the much-debated spatial mismatch between the residential locations of the low-income labour force and potential employers and the resulting transportation barriers facing these workers have been the focus of many investigations. In Britain, there has been a much broader emphasis in studies of travel needs on the relationship between transportation and the degree of social exclusion. However, our understanding of the travel behaviours, coping mechanisms, and consequences of inadequate access are deficient and our public policies suffer from these inadequacies in our knowledge base. As with most social phenomena, the transportation problems experienced by economically disadvantaged populations are borne of complex mechanisms, which can become intractable problems to examine empirically.

Presented below is a brief assessment of the literature that focuses on various aspects of the transport disadvantaged. Despite the fractured nature of the body of work in this area, certain themes emerge and are discussed below with an emphasis on their contribution to our understanding of the travel behaviour of low-income persons.

2.1 Spatial Mismatch Hypothesis: The Disadvantaged Commuter

The overwhelming emphasis in the transportation needs of the poor has been on the barriers to travelling to work locations. One key theme among these studies has been investigations about the extent to which the spatial separation between residential locations and employment opportunities results in a commuting challenge for the urban poor. This spatial mismatch problem, coined by Kain in 1965, is attributed to changes in the urban spatial structure and discrimination in the housing market, which prevents poor minorities from seeking housing near new suburban jobs, and a lack of viable transportation alternatives. The research on this topic has been voluminous (see reviews by Kain 1992 and Ihlandfeldt and Sjoquist 1998).

Within this body of research, the discussion of the "mode mismatch" emerges, which highlights temporal differences in commuting due to the poor's dependence upon slower modes (Shen 2000; Taylor and Ong 1995). This theory asserts that it is not the spatial separation per se that presents barriers to employment, particularly since many middle and upper income workers choose to live far from work. Rather, it is the means of mobility. The greater reliance upon public transit, which tends to take more time to traverse the same distance than travel by automobile, is the source of the disadvantage. These slower modes exacerbate time constraints and acts to limit the temporal-spatial range of employment opportunities. This suggests that policies to enhance mobility, through provision of personal transportation resources or through improving transit service and performance, may be more fruitful in the short term in mitigating this inequity, particularly in the United States where travel by automobile is the standard.

Over the years research in this area has moved beyond the spatial issue to include characteristics of low-income workers such as their race and ethnicity, sex, household responsibilities, education, and work histories. For example, the problem has been recast to incorporate the labour market characteristics such as the disparity between the job skills required by new jobs in the information and service economy and those possessed by inner city workers. This "urban skills mismatch" downplays transportation barriers as secondary when compared to the inadequate preparedness of workers for employment in a post-industrial economy.

The major contribution of this body of work is to emphasize why examination of the urban spatial structure is critical to understanding the travel patterns of low-income persons and the extent to which increased mobility can improve their employment prospects. It also highlights the limits to taking a strict mobility approach to solving these problems. Findings reveal how institutional barriers and practices can interact with mobility problems and confound the issues. It also suggests that a variety of policy solutions that address housing segregation, discrimination, zoning practices and access to educational opportunities can act to influence transportation outcomes and perhaps be more affective in addressing the transportation disadvantages.

The results in terms of travel behaviour are rather intuitive. It is no surprise that the poor are more dependent upon alternative modes, which impacts the amount of time spent in travel, the destinations accessed, and the activities engaged. For example, commuting by transport takes much longer than the same trip by car, sometimes two to three times longer (Shen 2000). The major contribution of this body of work is to document the degree to which urban spatial structure creates a disadvantage for poor workers and emphasizes how their personal mobility needs are exacerbated by the locational characteristics of place. These studies tend to examine the aggregate travel characteristics of the poor and do not have an explicit behavioural component. However, they do reveal patterns and outcomes, which are an important first step.

2.2 Access to Retail & Services: The Disadvantaged Consumer

Transportation researchers have given increasingly attention to non-work travel issues in order to address increasing congestion and declining air quality in urban areas. There is more variation in travel to non-work activities, which tend to be less anchored in space and time, and therefore, pose interesting questions for researchers. However, this general interest in studying non-work activities and travel has not been extended to the study of low-income populations. In contrast with the numerous studies of commuting characteristics and job accessibility, the non-work travel issues of the poor have been neglected by the academic and policy communities. A few studies do exist, although the bulk of research in this area comes from the consumer studies and retailing areas and not from transportation researchers.

The same mechanisms that create mobility barriers for the poor to access employment locations are also in effect for much of their non-work travels. Housing options available to the poor and working class are frequently located in neighbourhoods with fewer retail and service establishments (Alwitt and Donley 1996). Consequently, walking and biking to these destinations are sometimes not a viable alternative. The combination of poor local access to retail and services and lack of personal transportation resources has created obstacles for low-income households that must be overcome in order to acquire the goods and services needed in their daily lives.

These access and mobility constraints can contribute to increased costs for households already dealing with limited budgets. There tend to be fewer establishments that address household maintenance needs doing business in low-income neighbourhoods (Alwitt and Donley 1996), either due to higher costs of doing business in these areas or perceptions about profitability of pursing this lower-income market. Regardless of the reason for the dearth of retail and service establishments, the end result is less competition for those existing retailers in the local market area. Consequently, goods and services may be offered at higher prices due to the captive nature of the neighbourhood market and/or the higher costs of doing business. Poor consumers must pay more at these local businesses or expend more time searching for lower prices elsewhere. The increased monetary and time costs are apparent in the higher prices paid by low-income people for goods and services, often of lower quality (Caplovitz 1963; Chung and Myers 1999; Kunreuther 1973; MacDonald and Nelson 1991), and/or the increased time spent travelling to distant locations (Troutt 1993).

There have been recent attempts to evaluate the accessibility to particular retail outlets and document the extent of the problem for residents of low-income communities. For example, access to retail establishments has been examined in several British cities with emphasis on identifying “food deserts” (Clark et al. 2002; Whelan et al. 2002; Wrigley et al. 2002). Although the purpose of these and other studies is not rooted in understanding or explaining the

non-work travel behaviour of poor populations, there is much to be gained from documenting the locations of opportunities and the extent of the problem.

Little is known about the non-work travel behaviours of minority and low-income populations (Polzin et al. 1999). Many of the studies that shed light on non-work travel behaviour come from the marketing and retailing discipline but do not deal with poverty specifically. A number of studies has attempted to examine the relationship between shopping frequency and the demographic characteristics of shoppers. Blaylock (1989) found that the most important factors influencing a household's shopping frequency were the shopper's race and age, household size, factors influencing household food demands and time availability. Bawa and Ghosh (1999) found that households with large families, older heads of households and fewer employed members made more frequent grocery-shopping trips.

The relationship between the variations in shopping activities and shoppers' demographic characteristics was examined by Kim and Park (1997). The authors assume that shopping objectives and/or motivations drives shopping trip regularity. Specifically, they hypothesize that price-sensitive consumers will shop at more irregular intervals in order to take advantage of sales and promotions while time-pressed consumers will shop at fixed intervals on specific days of the week due to the high opportunity costs. Their findings show that price-sensitive shoppers tend to have less income, are less likely to be employed full-time, and have lower levels of education. Conversely, time-sensitive shoppers tend have higher income, are employed full-time, have more education, and are more likely to have pre-school children. They have longer grocery shopping intervals, plan ahead prior to shopping, and spend more dollars per trip. These findings raise questions about the shopping patterns of shoppers who face both the budgetary constraints due to their financial situation and time pressures from mobility, employment, and childcare constraints. The hypothesizing the frequency of shopping trips for low-income populations is not straightforward. The constraints on income, mobility, household responsibilities, and demand influence the demand for goods and the ability to access them in differing ways.

Low-income workers are less likely to chain non-work trips to the commute (Bhat 1997; Clifton 2001). Their mode of transport may contribute to this behaviour. Linking trips is more difficult to do when riding transit or as a passenger. The spatial distribution of establishments may make multiple stops by pedestrians impossible. Time pressures may also contribute. Low-wage workers are more likely to have a fixed work schedule, precluding stops along the way to work. Household responsibilities may pose temporal constraints. Limited finances may mean less participation in out-of-home activities. Current state of knowledge of non-work travel of low-income does not provide much insight beyond speculation.

Historically these disadvantaged populations have had lower levels of mobility than the more affluent. The lack of mobility combined with poor local access has had a negative impact on their quality of life and may contribute as negatively to their economic well-being as barriers to employment. For these reasons, understanding their non-work travel and their limitations to travel holds increasing interest for policy makers as well as transportation researchers.

2.3 Social Exclusion: The Disadvantaged Citizen

Recent policy initiatives have taken a more holistic approach to the travel needs of the poor, particularly among European communities. The term social exclusion has been applied to the inability for some individuals and households to participate fully in society. By this definition, those affected include the poor and other groups with disadvantages; however, poverty is only one factor that contributes to their social exclusion. The social exclusion concept makes a more direct link between transportation planning and social policy in that it is concerned with how mobility enables access and thus inclusion in society's institutions, activities, opportunities, and culture and is consistent with the derived nature of travel demand.

One thread of the social exclusion literature has suggested that social exclusion is exacerbated by "travel poverty" brought on by lack of mobility (Focas 2000; Huby and Burkitt 2000, Lucas et al. 2001). Concerns with social exclusion go beyond transportation and extend to labour markets, housing opportunities, income inequality, education, and health care. The progression here is stronger recognition of the role that mobility, or lack thereof, plays in meeting these ends. Much like the spatial mismatch research, social exclusion studies have focused on the travel patterns attitudes and needs of specific social groups such as the elderly, women, unemployed, or disabled; however, the work abroad has had less analysis of the spatial relationships between mobility, accessibility, and exclusion (Church et al. 2000).

The strength of the social exclusion concept is also its weakness. The comprehensive approach recognizes the complexity of the relationship between transport and social issues. We do not have a base understanding of how transport problems contribute to social exclusion or how social-excluded people deal with their limited mobility. Yet with the inclusion of various dimensions there is a loss of definition and the relationships become indeterminate. Church et al. (2000) has proposed a more clearly defined framework of exclusion across the following categories: physical exclusion, geographical exclusion, exclusion from facilities, economic exclusion, time-based exclusion, fear-based exclusion and space exclusion. This furthers the concept of social exclusion but the challenges remain for empirical research and a more consistent and clear definition is needed for as the line of question develops. In addition, the examination of social exclusion and mobility in an international setting will not be easy since

the definition of poverty, the urban context, and the transportation systems and what it means to be socially excluded will vary across contexts.

3. Issues, Data, and Methods

In summary, travels by the poor are generally fewer, take more time, traverse less distance, and rely on alternative modes more than the non-poor. The consequences of this deficit mean fewer out-of-home activities, less ability to search for and maintain employment, lower capacity to seek higher quality goods at a lower price, and the list goes on. These findings focused on travel outcomes and their consequences tell us little about the underlying decision-making and its motivations. There are significant gaps in our knowledge of the travel behaviour of this population that take us beyond documentation of their mobility disadvantage. Yet before we engage in further study of poverty and transportation, the dominant assumptions, methods, and purposes of these investigations should be questioned further. This section discusses some of the emerging issues in more depth.

Absent from the most studies is recognition of choice in activity or travel among those with financial constraints. The implicit assumptions in much of the transportation and poverty literature include: (1) that the poor have few to no choices due to their limited income, (2) the decisions that they make are transparent, and (3) no deliberation occurs. In light of this, research questions focus on the consequences of these limited choices such as the low wages or lack of employment opportunities or examine the characteristics of travel outcomes such as higher use of transit and longer travel times. Yet, the constrained situation poses interesting questions for travel behaviour. Like general population, the poor have to create alternatives for themselves and stretch their resources or make tradeoffs between competing needs. The underlying psychological processes of decision-making and the creation of choice sets is fertile ground for study.

For example, in the US automobile ownership and use among low-income groups is much higher than other countries (Giuliano et al. 2001) and more so than prevailing policy or research agendas reflect (Clifton 2002). Many poor families are making the decision to purchase and use a car despite the burden on already strained finances (Clifton 2001; Surface Transportation Policy Project and Center for Neighborhood Technology 2000). At times these transportation decisions come at the expense of rent, food, medical care, or other pressing needs. This is not entirely surprising given the increased access and flexibility that the automobile offers over transit and other alternatives; however, these decisions and their underlying motivations and rationales have not been fully explored by researchers.

Another assumption in the study of low-income populations is the use travel as an indicator of well being. Although the poor tend to make fewer trips and log fewer kilometres of travel than the non-poor, this does not speak directly to their ability to meet their needs. It does not indicate which needs are satisfied and which they do without. Nor does less travel explicitly mean that the poor are less satisfied. It may be that the poor are more efficient, accomplishing more with less travel, although this is doubtful. Researchers will have to dig deeper to understand how limited mobility manifests itself in consumer choices, activity participation, and deprivation.

As discussed previously, the dominant theme in poverty-transportation research has focused on identifying the mobility obstacles of the poor. This line of inquiry could be expanded to categorize the origins of these barriers, along the lines of the capacity, coupling, and authority constraints proposed by Hägerstrand (1970), and investigate how they interact in the decision process and travel outcomes. The choices of the poor are more financially constrained than the more affluent and perhaps along other dimensions as well. Study of these extreme cases may offer a valuable contribution to building travel behaviour theory, which may be applied to other populations.

Progress in understanding relationships between poverty and travel decisions is also confounded by the heterogeneous nature of this group. Because low-income groups tend to intersect a number of other often studied population segments such as women, the elderly, the disabled, and ethnic/racial minorities, we fail to have a clear understanding of the factors associated with particular behaviours and the resulting consequences of inadequate mobility. For example, there is often little recognition of the gendered and racial nature of this issue when discussing the transportation needs of the poor. But it is a mistake to assume that poverty affects all low-income groups in the same way or that they all have the same resources, constraints and access to information. The ways that culture and social context shape decision making and behavioural processes is the next step in unravelling the knotty problem of understanding more about travel behaviour of the poor.

In travel behaviour research generally, our understanding of the dynamics and interdependencies between household members is lacking (Pas 1996). This deficiency is even more pronounced when considering disadvantaged populations, whose resources are stretched. The study of household interactions can shed light on how options are created, needs are prioritised, activities scheduled, and tradeoffs are made. In addition, restricting the analysis to the household unit masks relationships between persons external to the household, who may play a vital role in the provision of mobility, particularly in immigrants and ethnic minorities where the concepts of family and household are more fluid. Exploring these interactions and the role of social networks would make a great contribution to the knowledge base.

The increased amounts of time and money expended in the acquisition of transportation and the ensuing organization and planning of activities that occurs around the availability of transportation is has not been fully examined empirically. The temporal and financial costs go beyond travel times and bus fare. As is often case of those with limited income, there is much planning, monitoring, arranging and information gathering that occurs in preparation for travel that cannot be readily observed but yet plays an important role in shaping activity and travel decisions (Clifton 2001). Examination of this "hidden work" (De Vault 1991) may prove more fruitful in predicting the travel behaviour of low-income populations and addressing their mobility needs than the study of travel outcomes alone.

The study of low-income populations poses methodological challenges for transportation researchers. A common complaint levied by researchers in any field, the lack of data is considered an impediment to progress. Those with low income are often under-represented in data collected from traditional means such as travel diary surveys (Dowling and Coleman 1995, Sen et al. 1995). Recruitment poses challenges resulting from limited telephone access, wariness of "public officials", unstable residential location, and language and literacy barriers. The development of web-based surveys and the use of other technology in data collection efforts present an opportunity to increase the general participation in studies but could also have the effect of further excluding this population from data sets. In those cases where low-income households are recruited, the data are often missing or not adequate to address the research or policy questions at hand. For these reasons, the use of secondary data sets is of questionable use for many quantitatively rigorous investigations and the collection of primary data can be a daunting task.

Qualitative methods may provide the means to fill the gaps in quantitative data and penetrate this hard-to-reach population. For example, personal interviews with household members are often conducted in lieu of completing household travel diaries (Cambridge Systematics 1996). This face-to-face contact provides the opportunity for explanation, clarification, and follow-up and can be conducted in the respondents' native language. These methods do have drawbacks. They have the disadvantage of asking participants to recall information, rather than recording it as it happens. Conducting ethnographic interviews are time consuming; it takes time to identify participants, build trust, and for complex processes to be revealed. Transportation researchers tend to lack the professional training, expertise, and skill in data collection and analysis Nonetheless, these qualitative approaches to research can shed light on these underlying behavioural processes in ways that tradition modes of inquiry cannot. They are well suited to answering the question "why", rather than merely recording outcomes. When combined with traditional survey methods, qualitative methods can inform the discussion of mobility and poverty in ways that the two alone cannot.

Studies of the travel patterns of the poor are not motivated by an interest in forecasting their behaviours into some future time as many traditional studies travel demand are. Instead, inquiries about these transportation issues are derived from an interest in crafting policies to address their mobility needs. As such, research questions are interested in description, causation, and consequences. The first addresses understanding of how, where, when, how often, and with whom travel is conducted. These descriptions enlighten the understanding of observed travel patterns and highlight transport disadvantages. However, it is the trips that are not made that are often the most crucial for policymakers to address and these missed trips are not captured in conventional methods of data collection. The second concerns identifying the factors that explain the travel choices made. Undoubtedly, the lacking income is a fundamental contributor but not the only one. How the poor respond to budget and time constraints depends upon the resources available to them and the responsibilities under their charge. Single mothers receiving public assistance, immigrant families, and homeless men can all be considered low-income but the similarities end there. Care needs to be taken to distinguish between the various activity needs, and the ensuing mobility needs, that persons living in poverty possess and recognize the heterogeneity that exists within this population. Finally, the consequences of transport disadvantage affect all facets of life. How transportation impacts household overall well-being is often neglected in favour of a focus on transportation's relationship to employment prospects.

4. New Approaches & Frameworks

Several new approaches offer promise in advancing our understanding of the travel behaviours of persons with low-income and expanding the frameworks and methods used in empirical research. Below are three ideas that apply existing frameworks to the study of the mobility needs of the poor or introduce new ways of thinking about the transportation challenges that may offer insight.

4.1 Time use – time poverty

The interest in activity-based analysis has inspired studies of how time is spent and its characteristics. Because time is finite, individuals and household must decide how to allocate time across the various activities of daily life. The distribution of these activities in space and time and the transportation resources that enable access to them affects how much time is devoted to particular activities. Those living in material poverty often find themselves also stricken by time poverty with less time to conduct their daily activities. Greater dependence upon slower modes such as public transport and walking contributes to more time spent in travel (Grieco,

1995). Time must also be devoted to arranging for transport, waiting on rides, and organizing activities. Many low-income families are headed by single females, which places the burden for employment and household maintenance on a single adult. Although the poor are not the only ones affected by increasing time pressures, the causes and effects are likely to be quite different between persons with low income and the more affluent.

The increased study of how low-income households spend their time can contribute to our understanding of travel behaviour in several ways. Little is known about how their activities are distributed across time. There is much to do in the identification of the sources of time constraints and how they relate to transportation choices. Focusing on the use of time relaxes the transportation focus and may give rise to new conceptions of both the problems at hand and the solutions offered in response. Time allocation studies for low-income persons similar to those conducted by Timmermans et al. (2002), where activity time allocation is assessed across a number of urban contexts for various demographic groups, can be useful in investigating the following questions:

- How does travel time compare to the time spent in activity participation?
- How much time is expended in planning, organizing, and arranging activities and the ensuing travel?
- How does the likely duration of travel affect travel choices, including the decision of whether or not a trip is made?
- How does travel time vary by spatial context?
- How should time poverty be defined? Do the poor, indeed, suffer from it more than others? Why?

Understanding how time pressures manifest themselves in daily choices is important both from a travel behaviour standpoint and from a public policy perspective. Time use studies can inform policies designed to reduce time pressures, such as the location of new activities, the development of new transport services, application of flexible work hours, and introduction of duplicity in the system to increase reliability. The dissemination of technology can assist in alleviation of time constraints (Turner and Grieco 1998) by removing the need for travel altogether and increasing the efficiency of time management through improved access to information. Before these policies can be implemented, a fundamental understanding about how time use interacts with travel decisions and poverty.

4.2 Mobility Strategies, Household Organization, & Activity Scheduling

In order for households of limited means to carry out their daily activities of work and household maintenance, they must find ways to gain mobility. This complex problem is tied to the resources at their disposal, the destinations they frequent, the nature of the activity at the destination and the time available. Because resources are limited, the choice of how, when, and where to travel affects the time and money available for other things and for other household members. For these reasons, the choice of mode is just one component of a mobility strategy. Also included are the various decisions about when, where, who and how often to travel and the underlying tradeoffs that must be made.

The ways in which persons from low-income households cope with their constraints can shape their participation in and scheduling of activities, and their ensuing travel decisions. These activity and travel decisions, in turn, are manifested in the observed travel behaviour of the household members including the timing of trips, choice of destination, travel route, mode of travel, and the activity duration. Although data on travel behaviour are more commonly available, information about the types of strategies that influence these travel outcomes are not.

The strategies devised by the poor to accomplish their household maintenance tasks have been previously examined through the lens of financial constraint. This set of prior research has sought to answer the question of how these households make the most of their limited budget and acquire food, clothing and other needed household goods (Alwitt and Donley 1996; Edin and Lein 1997; Stack 1974). The strategies devised to deal with the constraints imposed by access and transportation specific to their household needs have been investigated to a much lesser degree (Clifton 2001).

The concept of strategies and tactics has been placed in the context of activity scheduling. Gärling et al. (1999) discuss long and short term planning in the context of household activity scheduling. The authors hypothesize that increased time constraints will increase the propensity for planning activities in advance, both on the long and short term, to alleviate these pressures. Long-term strategies include changing the household demands and commitments to eliminate activities. Among the short-term strategies discusses used to respond to time constraints are daily adjustments to the sequence, duration, and relative priority of activities.

In the context of poverty, these everyday choices often take place within a larger context that is often out of the direct control of the decision maker, whether individual, household, or larger group, and are in many ways conditioned by the absence of power and resources. The choices of the poor are constrained by the social and structural characteristics of the cities in

which they live, by the quality of the social capital and access to monetary and non-cash resources. The legal, political, and economic positions can predetermine certain aspects of family strategies in important ways and act to shape and reshape strategies as well as rights and responsibilities (Folbre 1994). Because of these constraints, the poor cannot freely choose the strategies that they employ; their possibilities are bounded and finite (Edin and Lein 1997). On the other hand, these strategies are organized by individuals with some control over events and outcomes and are born out of a clever utilization of time and its opportunities (de Certeau 1984). Despite their relative lack of resources and power, the poor can and do craft alternatives within their constrained and finite bounds, taking advantage of fleeting situations, creating new opportunities and adding to resources when possible. Utilized over time, these short-term strategies can aid in the acquisition of resources and power and may eventually evolve into longer-term strategies (Gilbert 1998). It is precisely these short term and long term strategies that are deserving of further investigation from transportation researchers.

It is not just the dearth of material or financial resources that defines the condition of poverty. Also endemic to this state is the instability or fluctuation of resources. This variability often prevents habitual decision-making. These are level 1 decisions defined by Svenson (1998), which is characterized by quick, automatic, and unconscious decisions informed by previous experience. The inability to rely on transportation resources, for example, due to mechanical failures of automobiles, late bus transit, or uncertain rides home mean that travel decisions by the poor are more frequently the realm of higher order decision making, which require tradeoffs, problem solving, and the creation of alternatives. The evaluation of alternatives and tradeoffs that occurs in these higher order decisions have made them the focus of most modelling efforts. As such, the poor would seemingly be of interest to travel behaviour researchers because they have fewer habitual decisions. Below are a few questions about the planning and development of strategies relative to mobility that merit further investigation:

- Who is included in the decision making process? How are decisions made at the individual and household level about car purchases, residential location, daily activities, travel mode, etc.?

- How are transportation resources distributed across household members? Whose activities and travel needs have priority? What factors weigh into these decisions?

- How are daily activities scheduled and organized? What decision rules or criteria are employed?

- What types of travel decisions are habitual, if any? What patterns emerge in the use of certain tactics and strategies? How does uncertainty and variability factor into decision making?

4.3 Social Needs Framework[1]

The limited capacity of traditional modelling frameworks to address the complexity of transportation decision making and the derived nature of transportation demand have led to the development of innovative approaches such as activity and time use modelling frameworks. However, these frameworks are centred in a transportation-oriented paradigm that may not be adequate to address the issue that transportation needs are "in service to" other societal needs. One alternative framework that may offer promise in incorporating this social complexity while at the same time informs transportation policy is shifting the focus to the underlying social needs that drive transportation needs. In this approach, social issues are framed primarily around the inherent needs of people and their behaviours (actual and desired) and where transportation is a secondary benefit derived from the realization of these needs. This goes beyond the activity-based derived demand framework in that the entire array of social needs are considered alongside mobility needs and incorporates other values and motivations beyond travel-related utility. This social needs framework provides a conceptual view from which methods, policy, and evaluation can follow.

As a derived demand, transport serves as a means to some other primary end. Accordingly, it seems appropriate to consider transportation research and policy from non-transportation perspectives. For example, cycling and walking policies have often been initiated with the hope of alleviating congestion by shifting demand away from the automobile. However, these policies have fallen short in meeting these transportation goals. If these policies were framed using a social needs perspective, the goals would be articulated differently and might include increasing public health, creating more aesthetically pleasing environments, or increasing recreational outlets.

Shifting our interest to the mobility needs of the poor, elderly population, Table 1 outlines how a specific transportation policy issue is viewed using a transportation orientation and a social needs perspective. To date, the problem has been framed around in ability for older populations to drive due to financial or physical constraints. One of the approaches to this problem has been the development of transit or paratransit services to provide needed trips to health care, retail and services, and other destinations. These programs have been criticized because of their high cost per trip and the strain they cause on the limited budgets given to local transit providers. But if this problem were framed in the social needs perspective, the costs

[1] The Social Needs approach presented here is upon a focus group discussion and resulting briefing paper developed at the 2003 NextGen Stella Star Conference in Montreal, Canada, March 19-22, 2003. The briefing paper by Casas, Clifton, Litwin, and Schlossberg can be obtained on line at: http://www.stellaproject.org/NextGen/FG3NextGenBrief.doc.

of these programs could be viewed in the much broader policy arena of health care costs and might be less significant when compared to the high costs that would result from neglect of medical care.

Table 1: Example of Transportation Focus vs. Social Needs Focus

	Transportation Focus	***Social Needs Focus***
Constituency	Poor and auto-less	Auto-less: poor, youth, elderly, disabled
Policy	Spatial mismatch	Social equity
Focus	Systems (land-use, transportation, etc.)	People and local organizations
Institutions	Transit providers & social workers	Public/private providers, social workers, advocates,
Methods	Demand forecast	Needs analysis, demand forecast,
Outcome measure	Productivity	Coverage
Cost/Benefit	Paratransit Expensive	Paratransit Expensive?

Source: Casas et al. 2003

This framework provides a consistent way of reframing social problems and reorients the perspective to one that may shift the policies, institutions, methods, and evaluation tools away from transportation and place them in a more appropriate or comparative context. Although the example given suggests different ways of evaluating the costs and benefits of particular mobility solutions, this perspective can help in redefining mobility problems, introducing new research approaches that are common outside the transportation discipline, and include new actors in research teams and subjects of inquiry. This does not suggest that a transportation perspective be replaced by a social needs perspective, but that the two can be evaluated side by side, with suggestions for filling gaps in our knowledge base and questioning the assumptions on with our empirical and theoretical work is based.

Some questions for further inquiry include:

- To what extent are mobility problems experienced by the poor "transportation" problems? To what extent do they require a transportation solution?

- Conversely, are there problems confronting the poor, which are the domain of other disciplines but where transportation solutions may provide positive results (for exam-

ple poor health due to sedentary lifestyles may be addressed by pedestrian or cycling infrastructure)?

- How do professionals in medicine, social work, and public health think about transportation issues for their clientele, if at all? In what ways do increased dialogue with these actors enlighten our understanding of travel behaviour?

- What challenges to our underlying assumptions emerge when problems are framed using different perspectives?

5. Conclusions

This paper presents a few of the challenges facing those interested in the intersection between poverty and travel behaviour and introduces opportunities to explore low-income travel using some new approaches. Although the list is not exhaustive, it shows how advances in travel behaviour research may be applied to the specific contexts of poverty. At times, researchers must relinquish the strict transportation focus and yield to the perspectives and methods of other disciplines in order to further understanding in our own field. Transportation is only one dimension of the complex problem of poverty but understanding its role can help policy makers craft solutions that are more responsive given the context of daily life.

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