Unpacking Household Budgeting Strategies through a Transportation Lens

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Abstract

This is where we will put our abstract.

Plain Language Summary

This is a plain language summary

1 Introduction

Households juggle how to allocate their budgets: whether to invest in a reliable car, pay for quality childcare, secure housing in a good school district, or set money aside for leisure. These everyday choices shape how families live and move, reflecting the trade-offs they make to balance competing priorities. Transportation often sits at the center of these decisions, not only because it can be a significant expense, but also because choosing to buy and maintain a car versus relying on public transit represents a long-term commitment and a broader lifestyle choice. Its relative weight compared to housing, childcare, and other spending varies widely across families. The relationship between household budgeting and mobility is shaped not only by causal direction but also by how families prioritize and weight different needs. On one hand, mobility resources such as car ownership can structure the household budget: households with no or only one vehicle may spend far less on transportation, freeing up income for other essential or discretionary categories. On the other hand, underlying family structures and preferences can drive budget allocation choices that, in turn, shape transportation behavior. Larger families may prioritize childcare or invest in higher-quality housing in areas with better schools, limiting what remains for transportation. Others may emphasize frugality across all categories or deliberately substitute toward lower-cost transit options. Understanding both the direction of influence and the weight assigned to different budget categories is critical for transportation planning and policy, as these dynamics reveal how families navigate competing priorities under varying demographic and mobility contexts.

The purpose of this research is to explore how household budgets are structured around transportation decisions and how this impacts other spending categories. Using the Consumer Expenditure Survey (CEX), we will perform a Latent Class Analysis (LCA) to find groupings based on a household's transportation expenses. Theses groupings can help us find groups of spenders with similar patterns to help us predict transportation expenses based on the household's characteristics.

2 Literature Review

Family Choices and Activity Patterns Family Transportation Choices Family Spending and Budgets Family Transportation Budgets

The literature that relates to our study can be

2.1 Family Choices and Activity Patterns

There have been many studies done on the choices and activities of families (Rachel B. Copperman & Bhat, 2007b; Leung et al., 2019; Sener et al., 2008; Sener & Bhat, 2007). Paleti et al. (2011) performed a study where….

Another study on family choices was done by Bernardo et al. (2015). They…

Paleti et al. (2011) - The results show that a wide variety of demographic, attitudinal, environmental, and others' activity-travel pattern characteristics impact children's after school activity engagement patterns.

Bernardo et al. (2015) - the presence of a child in dual-earner households not only leads to a reduction in in-home non-work activity participation (excluding child care activities) but also a substantially larger decrease in out-of-home non-work activity participation (excluding child care and shopping activities)

2.2 Family Transportation Choices

Many studies exploring household choices have focused on their connection to and effects on transportation (Amirnazmiafshar & Diana, 2022; Rachel B. Copperman & Bhat, 2007a; Lu et al., 2022; Souche, 2010).

McCarthy et al. (2017) talks about this…

Klein (2024) talks about this…

Bilgin et al. (2025) talks about this…

McCarthy et al. (2017) - many factores influence decisions about mode choice when traveling with young children.

Klein (2024) - Having a car gave people more opportunities than before, and they usually had more time to spend with the family. At the beginning and end of the day.

Bilgin et al. (2025) - Suggests that households are less likely to acquire a car in the presence of ridesourcing, but car disposal is mainly driven by household compositions and residential relocation factors.

2.3 Family Spending and Budgets

Another set of studies focuses on household budgets and household spending patterns (Fontes & Fan, 2006; Nayga, 1998; Sabelhaus et al., 2013; Skinner, 1985).

Hargunani et al. (2024) said this…

Hargunani et al. (2024) - The data analysis reveals distinct spending, saving, and investment patterns among married couples, with a clear prioritization towards ensuring the well-being and future security of their families."

- spending on kids

These four studies were focused on budget choices and spending related to children.

Lino et al. (2017) - Many observations on the expenditures of children

Osborne et al. (2021) - Regardless of the method of calculation, we find that it is nearly impossible for two minimum wage earners to meet the basic costs of raising children in Texas, especially when child care is included

Hastings (2022) - Both sociodemographic and economic factors play a substantial role in these differences, and the racial and ethnic gaps in parental investments of money are nearly eliminated when both are accounted for

Duncan et al. (2023) - The more income, the more spending on kids.

2.4 Family Transportation Budgets

Morris & Wigan (1979) - transport takes about 17 percent of expenditures, at least part of the consumption expenditure by low income families is financed from savings, loans or other sources besides "income".

Blumenberg (2003) - Cost comparisons fall short of finding if transportation costs are a barrier for economic opportunity among the poor

Thakuriah & Liao (2005) - For vehicle-owning households, of every additional dollar that households spend, 18 cents is spent on vehicles after controlling for socioeconomic, demographic, life cycle, and other factors relating to households.

Hong et al. (2005) - Marrieds without children are more likely to spend on leisure travel than singles, whereas single parents and solitary survivors are less likely to spend on leisure travel than singles.

Thakuriah (Vonu) & Liao (2006) - Transportation expenditures made by households are better explained by permanent income levels of households than by annual incomes.

Choo et al. (2007) - New tech doesn't substitue Personal Vehicle travel probably

Haas et al. (2008) - Their model can help in travel demand modeling

Ferdous et al. (2010) - Adjustments are made with increased fuel prices

Deka (2015) - More housing costs = more transportation costs, people the take transit spend less on transportation

Mattson & Peterson (2019) - denser areas are more likely to use transit to commute. People in single-family homes tend to spend more money on transportation

Mattson (2020) - single family homes spend more on transportation, higher income is correlated with higher tranportation costs.

Molloy et al. (2024) - "Captive Riders" have less spending allocated to transportation than captive drivers.

Bureau of Transportation Statistics (2024) - Lots of summaries

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