

TECHNICAL SUMMARY

Questions?

Contact research.dot@state.mn.us.

Technical Liaison:

Hally Turner, MnDOT
Hally.Turner@state.mn.us

Investigator:

Ying Song, University of Minnesota

PROJECT COST:

\$119,799



Including gender diversity in transportation research provides a more complete understanding of quality of life issues.

The Role of Gender and Identity in Travel Behavior

What Was the Need?

MnDOT's Advancing Transportation Equity Initiative focuses on ensuring the transportation network, services and decision-making meet the needs of Minnesota's underserved or underrepresented communities. Understanding the needs, challenges and overall experiences of these communities is crucial to advancing an equitable transportation system.

Published literature on gender and travel, while indicating that people of different genders have different travel behaviors, has largely defined gender as binary. When gender is viewed as a female–male binary, some travelers' needs are overlooked or misunderstood. MnDOT wanted to understand how gender identity and gender roles influence travel behaviors and experiences in Minnesota.

What Was Our Goal?

The goal of this project was to understand how gender and other social identities such as race, family type and employment impact travel behaviors and well-being outcomes. This information will allow MnDOT to effectively plan and maintain the state's multimodal transportation network for the benefit of all.

What Did We Do?

A literature review examined how gender has been defined in transportation studies. This included a review of how gender impacts travel behaviors such as commuting time and distance, purpose of the trip and travel experiences. Researchers also explored the intersection of gender with race, family role and other distinct categories that create unique needs and experiences.

Next, an app-based survey was used to collect travel-related behavior data that compared patterns among gender identities. With the help of local community partners, nonprofit organizations and research centers that focus on gender-related and urban issues, investigators recruited 278 participants who were well-distributed across gender, geography and other social characteristics. An intake survey allowed participants to identify gender and other demographics, attitudes toward gender roles and travel preferences. Then respondents used the Daynamica smartphone app to keep a 14-day travel diary that included trip purpose and details, experienced emotions during trips and participation in daily activities. Participants also recorded their time allotted to household tasks each day.

Supplementing the results from the 2021 Daynamica survey was data from the 2019 Travel Behavior Inventory (TBI) household travel survey, which is conducted every two years by the Metropolitan Council to understand activity–travel patterns. Combining and analyzing the two data sources demonstrated how gender and other social identities, including race, employment status and family role, impact time allocations and travel choices.

What Did We Learn?

The literature reinforced that gender is not binary, and gender identity involves an intersectional perspective that considers race, age, family role and other social or demographic characteristics. Data from TBI and the Daynamica app revealed the detailed gender differences in travel behavior and experienced emotions of the participants.

Ensuring the transportation system is accessible and welcoming to all demographics requires understanding how different genders interact with the transportation system. Insight into the impacts of gender and other identities on travel needs and experiences supports MnDOT in advancing transportation equity.

“This study clearly shows that gender roles influence transportation needs and experiences. We need to focus on inclusion in our planning and policy to avoid these disparities, which can lead to negative feelings of subjective well-being.”

—Hally Turner,
Director, Policy Planning,
MnDOT Office of Planning
and Programming

“Our statistical methods revealed the intersectionality of gender identity and other factors, such as employment or family status, in forming travel behaviors and preferences.”

—Ying Song,
Assistant Professor,
University of Minnesota
Department of
Geography, Environment
and Society

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Minnesota Department
of Transportation
Office of Research & Innovation
MS 330, First Floor
395 John Ireland Blvd.
St. Paul, MN 55155-1899
651-366-3780
www.mndot.gov/research



The study revealed that females and non-binary people were more likely than males to feel unsafe using public transit and traveling to and from transit stations.

Transportation needs varied across gender identity. Females, for example, were found to undertake more household tasks and relied more on household vehicles than males and non-binary people. Before the COVID-19 pandemic, females who were employed full time and living with kids were less likely to have time for weekday afternoon activities than males and non-binary people. Females continued to shoulder more household tasks during and since COVID, even if they were working from home.

The analysis illustrated the intersectional nature of gender and other demographic characteristics that create distinct travel behavior patterns. For example, although females relied more on household vehicles, Black females were more likely to use public transit.

Different travel experiences also varied by gender identity. Males, for example, reported low frequency, speed and lack of destination access as the top barriers to using public transit. Females and non-binary people identified safety as a barrier, along with difficulties using public transit because of multiple stops with strollers or carts.

Subjective well-being also varied across gender identity. Non-binary people had less positive and more negative experiences than females or males, resulting in the lowest subjective well-being outcomes.

Suggested actions MnDOT could take include adopting gender-inclusive language in project design and communication. Engaging with the community is important to better understand travelers' needs, experiences and the intersectional nature of gender. The agency can partner with community organizations to collect feedback and avoid marginalizing disproportionately impacted populations.

What's Next?

MnDOT will use the study results to advance inclusivity and equity in transportation policy and planning. For example, gender equity should be considered as connected and automated vehicles and infrastructure are designed and developed. Methods and findings from this study can provide reference and direction for future research.

This Technical Summary pertains to Report 2023-10, “Advancing Equity in Accessibility and Travel Experiences: The Role of Gender and Identity,” published March 2023. More information is available at mdl.mndot.gov.