Equity Analysis in Transport Planning: Ensuring Accessibility for Underserved Communities

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Introduction
Transportation equity has emerged as a central concern in contemporary urban planning, moving beyond traditional mobility-focused paradigms to embrace frameworks grounded in accessibility, social justice, and capability enhancement. Disparities in transportation access disproportionately affect marginalised groups, including low-income households, racial and ethnic minorities, the elderly, youth, women, and individuals with disabilities, thereby compounding existing social disadvantages. The study highlights how transport systems, through automobile dependence and limited multimodal options, exacerbate social exclusion and restrict access to vital services such as employment, education, and healthcare.

Methodology
The paper conducts a critical comparative analysis of four influential studies on transportation equity: Lucas (2012), Pereira *et al.* (2017), Jones & Lucas (2012), and Grengs (2015). These studies were selected based on their theoretical diversity and methodological robustness, including frameworks such as social exclusion, distributive justice, social impact assessment, and non-work accessibility analysis. An analytical framework was developed to examine the studies across five dimensions: theoretical foundation, methodological approach, social dimensions, key findings, and policy recommendations. Emphasis was placed on understanding how each study conceptualised and measured equity, the population groups considered, and the causal mechanisms of transport disadvantage.

Results and discussion
All studies converge on the centrality of accessibility in evaluating transportation equity and the inadequacy of traditional mobility-oriented planning. Automobile dependence emerged as a consistent barrier for underserved populations, especially for non-work travel, which accounts for the majority of daily trips but remains under-researched. While Jones & Jones (2012)and Lucas (2015) focus on the processes generating transport disadvantage, Pereira *et al.* (2017*)* and Grengs year (2015) evaluate outcome disparities. The findings underscore the multidimensional nature of equity, shaped by spatial, temporal, and socio-demographic factors. Methodological innovations, such as Grengs' gravity-based model for measuring nonwork accessibility, provide nuanced insights but face generalizability and implementation challenges. The studies collectively advocate for minimum accessibility standards, multimodal metrics, and cross-sector collaboration in policy formulation.

Conclusions
Transportation equity is a multidimensional construct that requires integrated theoretical and methodological approaches. Equity in transport planning should prioritize accessibility over mere mobility and focus on underserved communities' specific needs. Policymakers must move beyond conventional planning metrics to include comprehensive social impact assessments, while researchers should pursue longitudinal and context-sensitive studies to track evolving accessibility patterns. By aligning transport systems with principles of distributive justice and the capability approach, planners can better ensure that all individuals have equitable opportunities to participate in social and economic life.

Keywords: Transportation equity, accessibility, social exclusion, distributive justice, nonwork travel, underserved communities, transport disadvantage.