

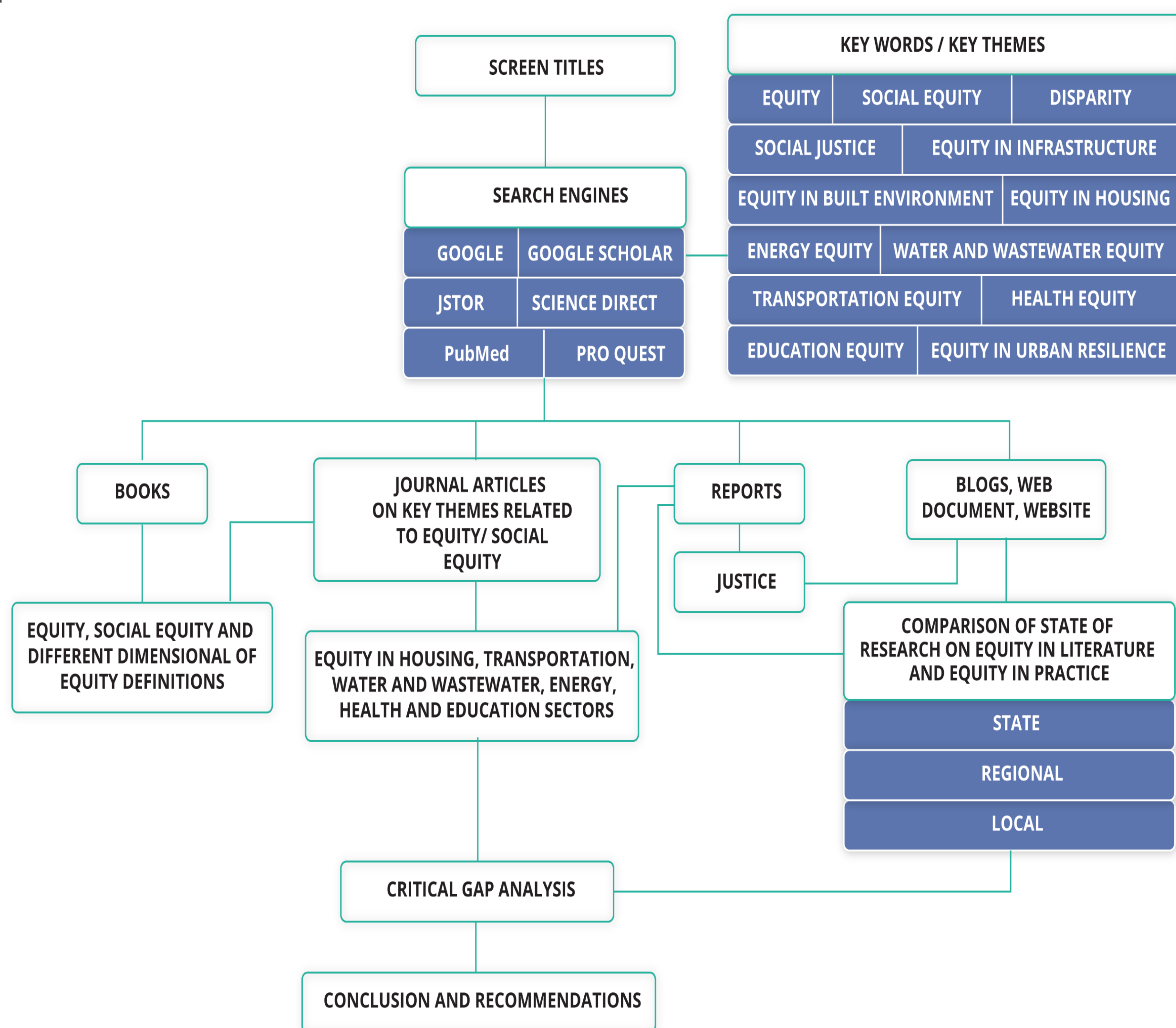
Motivation and Background

This research synthesizes more than 80 publications to establish the current state of research on social equity in infrastructure in the United States. The review assesses definitions, frameworks, equity action plans, metrics, and case studies related to energy, water and wastewater, transportation, health, housing, and education systems. National initiatives, like Justice40 that are integrating equity into infrastructure projects, are described and used as motivation to recommend new research needs. Identified metrics from the literature are tied back to the six dimensions of social equity, namely, (1) historical legacies, (2) awareness of populations, (3) inclusion of other voices, (4) access discrimination, (5) output differences, and (6) disparate impacts, and further used to identify gaps and future research needs.

Objectives

- 1 Review literature on social equity in power, water, and transportation infrastructure alongside housing, health and education systems.
- 2 Synthesize relevant definitions, frameworks, metrics, and case studies; evaluate gaps and future research needs.
- 3 Develop a new framework for integrating equity into infrastructure resilience planning, projects, and processes.

Methodology and Organizational Structure



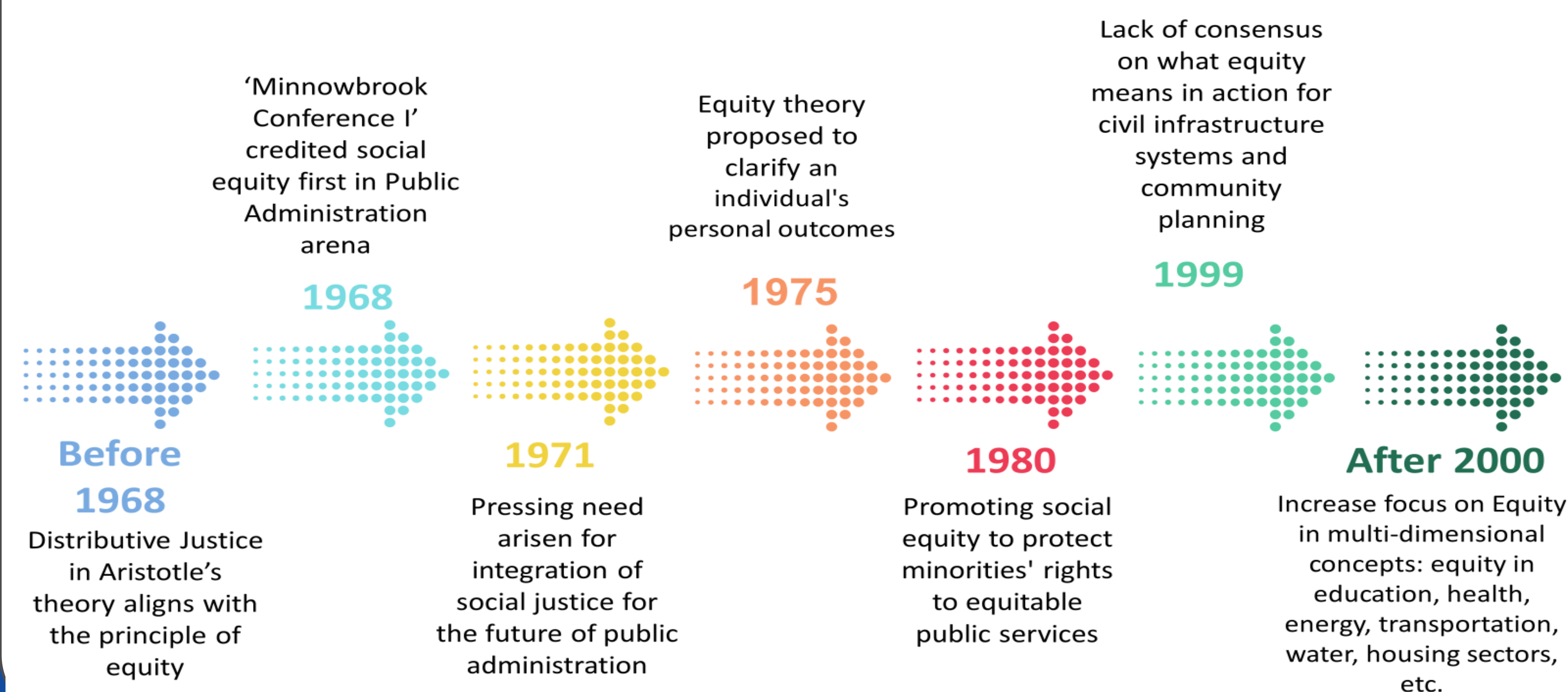
Equity Action Plans

- HUD**
 - Targeted primary domains are affordable housing initiatives, housing justice, homelessness support system, promote home ownership and sustainable communities
- DOT**
 - Providing affordable multidimensional modes of transportation nearby affordable housing as well as establishing measures to evaluate transportation cost burdens
 - Reducing significant disparities in traffic fatalities among Black people and Tribal communities
- DOE**
 - Advancing an equitable transition to renewable energy.
 - Constructing a Community Benefits Plan (CBP) framework aimed at building trust and improving outcomes for marginalized populations
- EPA**
 - Promoting equity and alleviating disparities in areas such as drinking water, clean water, lead reduction, brownfields, superfund sites, and diesel emissions reduction
- HHS**
 - Advocating for accessible and inclusive healthcare practices to reduce bias in healthcare
 - Enhancing maternal health outcomes within rural, racial, and ethnic minority communities
- ED**
 - Providing equitable access to a complete, academically demanding education for all students with safety and inclusivity in educational settings.
 - Providing resources, tools and assistances to support Achieve Academic Excellence, Boldly Improve Learning Conditions, Create Pathways for Global Engagement, and Increase College Affordability and Completion.

What WE Learned

- 01 The review reveals that the multifaceted notion of social equity in infrastructure has steadily evolved over decades, with the goal of redressing historical injustices and safeguarding benefits for all members of society from infrastructure projects and the services it provides.
- 02 Scholarly literature remains underdeveloped in delineating how infrastructure should be strategically located, designed, developed, and maintained in a way that supports equity, remain inclusive, and provide access for residents in a community throughout its useful life.

Timeline for Equity Evolution and Integration



Infrastructure Systems



Authors

Rumana Sharmin, University of Kansas, Email: r571s786@ku.edu
 Dr. Elaina J. Sutley, University of Kansas
 Dr. Jason Bergtold, Kansas State University

This material is based primarily on work funded by the National Science Foundation grant OIA-2148878. Any opinions, findings, conclusions, or recommendations expressed here are those of the author(s) for this project, & do not necessarily reflect the views of NSF.

