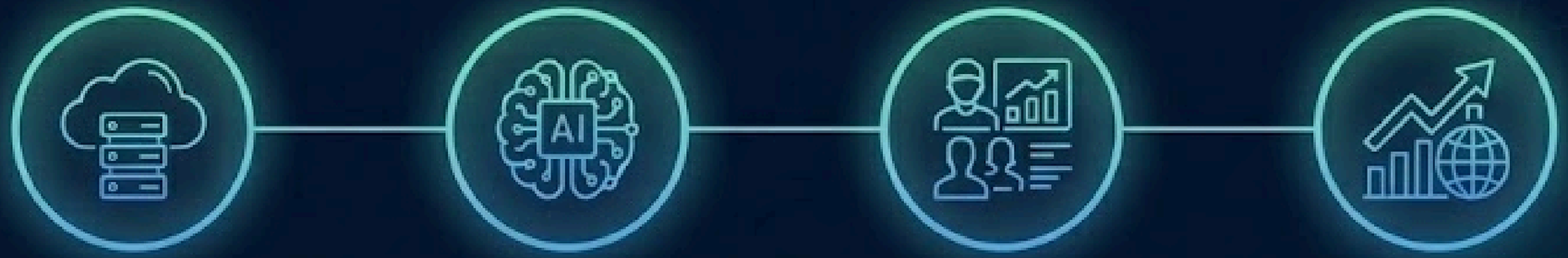
DIGITAL WORKPLACE, HUMAN CAPITAL, AND ECONOMIC DEVELOPMENT

A Systematic Literature Review



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DIGITAL WORKPLACES IN THE MODERN ECONOMY



REMOTE WORK

Spatial Mode
(Where Work Happens)



DIGITAL WORKPLACE

Operational Architecture
(How Work Is Executed)

SOCIO-TECHNICAL ARCHITECTURE



1. CLOUD INFRASTRUCTURE



2. ENTERPRISE SOFTWARE



3. ALGORITHMIC PROCESS



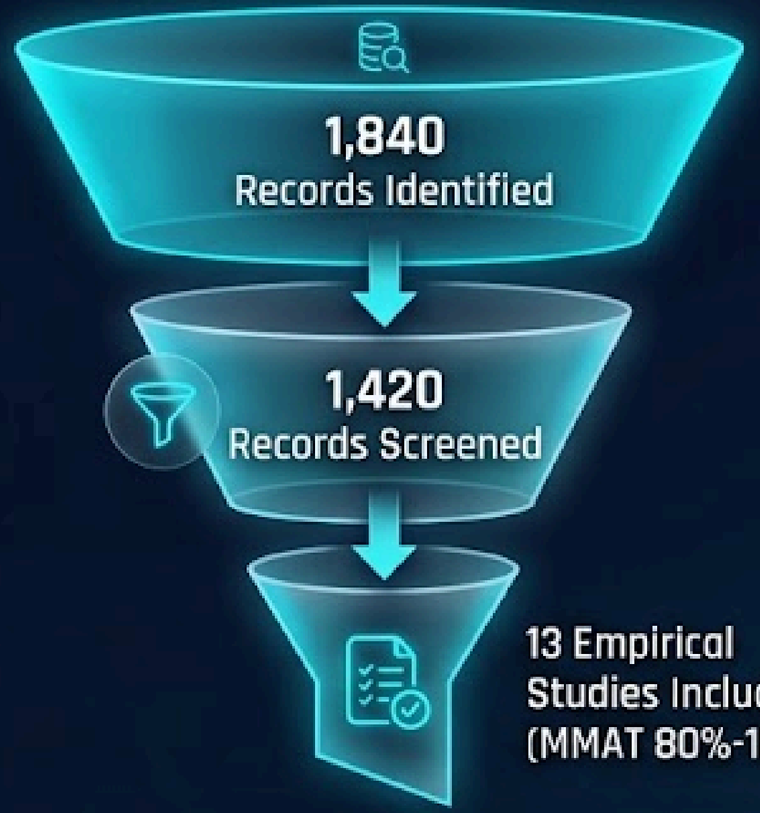
4. HUMAN CAPABILITIES

THEORETICAL FOUNDATION & PRISMA METHODOLOGY

THEORETICAL FRAMEWORKS

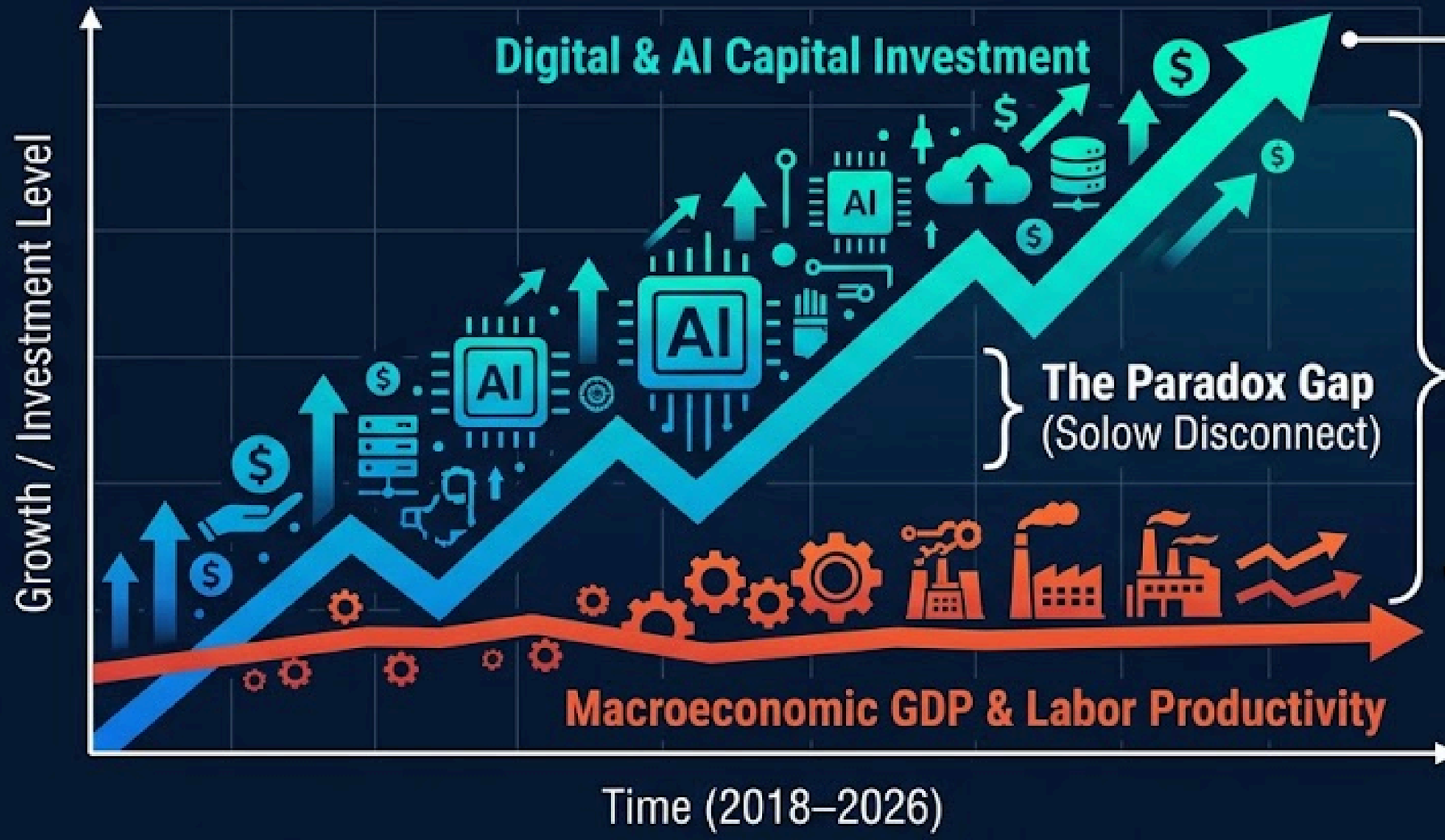
- Human Capital Theory
- Endogenous Growth
- Task-Based SBTC

PRISMA 2020 PROTOCOL



THE MODERN SOLOW PRODUCTIVITY PARADOX

Massive AI & Digital Investment vs. Flat Productivity Growth



Implementation & Adjustment Lags
(organizational restructuring and training take time)

Intangible Asset Measurement
(national accounts struggle to value data & software)

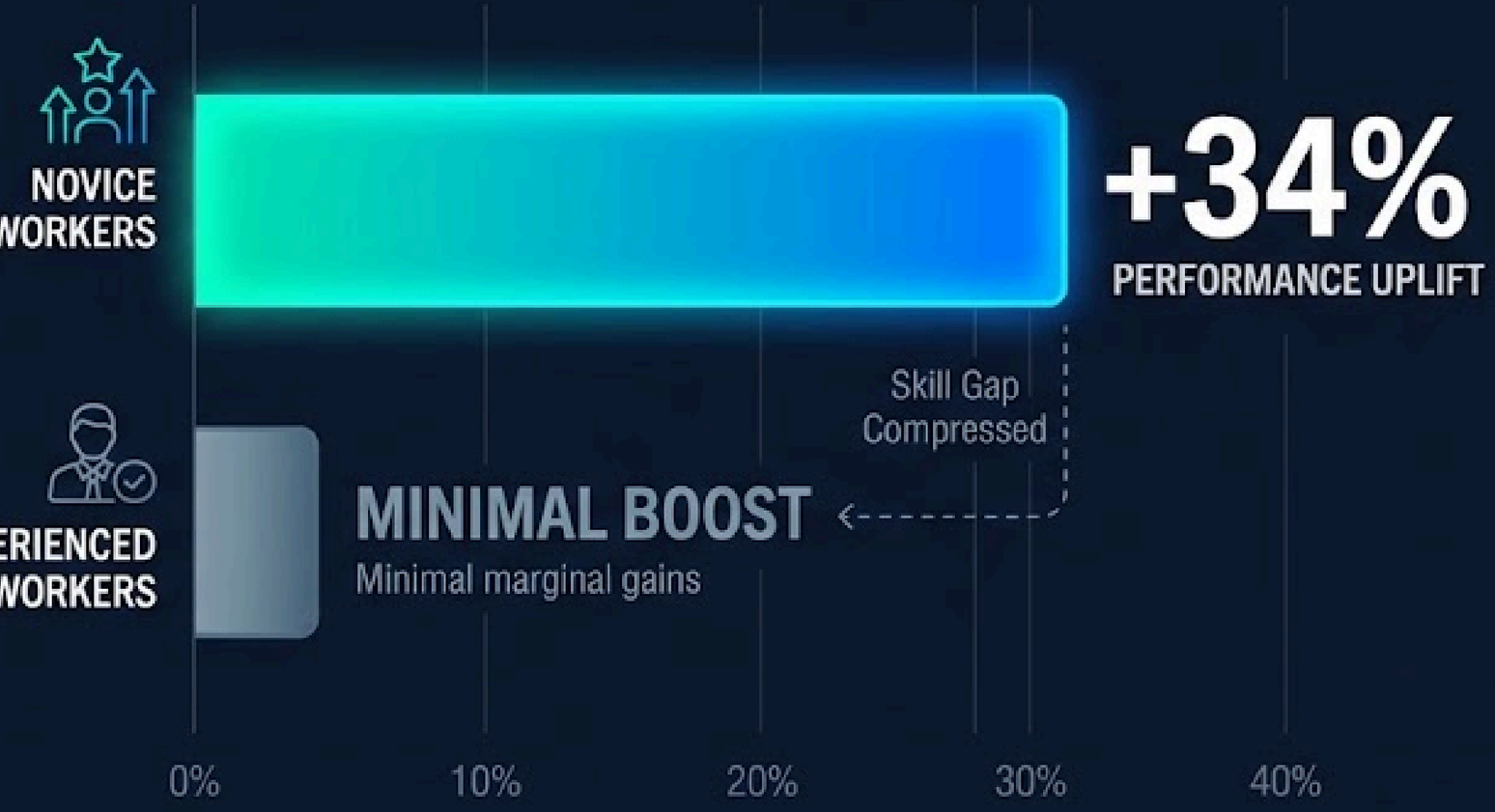
Diffusion Heterogeneity
(gains are heavily concentrated in frontier/ superstar firms)

GENERATIVE AI SKILL COMPRESSION

Impact on Task Performance: Novice vs. Experienced Workers

THE EQUALIZER EFFECT

Generative AI acts as a cognitive prosthetic, disproportionately boosting lower-skilled workers and rapidly closing the skill divide.



DIVERGENCE ACROSS ANALYTICAL LEVELS OF AGGREGATION

Analyzing the transmission of micro-level efficiency to macro-level impact

MICRO: TASK LEVEL

- +14% to +40% Speed & Quality Gains

MESO: FIRM LEVEL

- Heterogeneous & Delayed Returns
- Requires Management Modernization

MACRO: NATIONAL LEVEL

- Modest TFP Growth
- Diluted by Adjustment Costs & Communication Noise

⚠ **COMPOSITION FALLACY:** Task-level AI gains cannot be directly extrapolated to national GDP growth.

SPATIAL EQUILIBRIUM & THE DONUT EFFECT

Reconfiguring Metropolitan Economic Geography

SPATIAL DECOUPLING

- Fully remote work enables geographic freedom
- Severing the link between home and workplace
- Reduced reliance on central transit hubs



AGGLOMERATION PREMIUMS

- Hybrid work preserves face-to-face value
- Retention of collaborative & innovation advantages
- High-value face-to-face interaction clusters

POLICY IMPERATIVES FOR ECONOMIC DEVELOPMENT



INFRASTRUCTURE

Low-latency enterprise broadband & SME cybersecurity



HUMAN CAPITAL

Data verification & prompt engineering skills



NATIONAL ACCOUNTING

Capitalizing software & data in GDP



LABOR PROTECTION

Algorithmic transparency & right to disconnect



REGIONAL AMENITIES

Local schools, healthcare & transit

MULTI-STAGE INTEGRATED CONCEPTUAL FRAMEWORK

DIGITAL INPUTS
(Cloud & AI Platforms)

- High-speed cloud infrastructure
- Enterprise-grade software
- Algorithmic & AI assistants

MICRO TASK MECHANISMS
(Cognitive Augmentation)

- Cognitive augmentation
- Rapid knowledge circulation
- Individual skill compression

MESO TRANSFORMATION
(Process Redesign)

- Business process re-engineering
- Modern output-based management
- Workforce training & adaptation

MACRO ECONOMIC OUTCOMES
(TFP & Regional Growth)

- Aggregate productivity (TFP) growth
- Long-term labor productivity
- Spatial redistribution & decentralization

THANK YOU FOR YOUR ATTENTION!