

Systems Dynamics Approach to Identifying Intervention Levers & Enabling Analysis of Long-Term Unemployment in Ireland

Jane Morgan



A Systems Dynamics Approach to Identifying Intervention Levers & Enabling Analysis of Long-Term Unemployment in Ireland - NERI Abstract Submission

Why / Background

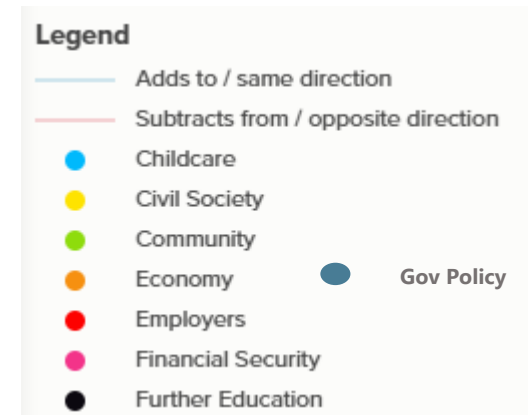
- Work as a Pathway to Economic Independence and Core To Meaningful Lives (My Worldview)
- Different Century, Same Vulnerable Groups Overrepresented in LTU (particularly Travellers)
- Out of LTU (12+ months unemployed), not prevention into.
- Inspiration for Greater Use of Interdisciplinary Approaches (Gemma / SD / New / Economists)

Methodology

- **Systems Thinking Concept**
 - Worldview ⇔ 5 Stakeholder Groups w/ (conflicting?) perspectives / values
 - Boundary Exploration – to centre the LTU person within Economics, Sociology of Work, Organisational Behaviour, Humanistic Psychology
 - Dynamic Interrelationships – Change
 - Levers for Interventions
- **Systems Dynamics Causal Loop Conceptual Model Diagramme**
- **Use of LLM AI for Stakeholder & Variable Collection & Analysis**
 - Claude ai Sonnet 3.7 free version
 - ChatGPT GPT-4o free version
 - NotebookLM (Google), May 2025, free version
 - Gemini 2.5 Flash Preview free version

Results

- **Causal Loop Diagram Analysis & Iteration**
 - Multi-stakeholder Integrated
 - LTU is not just about the LTU



WIP / WHAT'S NEXT

- From Employer to Sectoral Analysis
- Making Adult Learning Life-long - Systemic Thinking In Practice
- Towards Satisfying Work

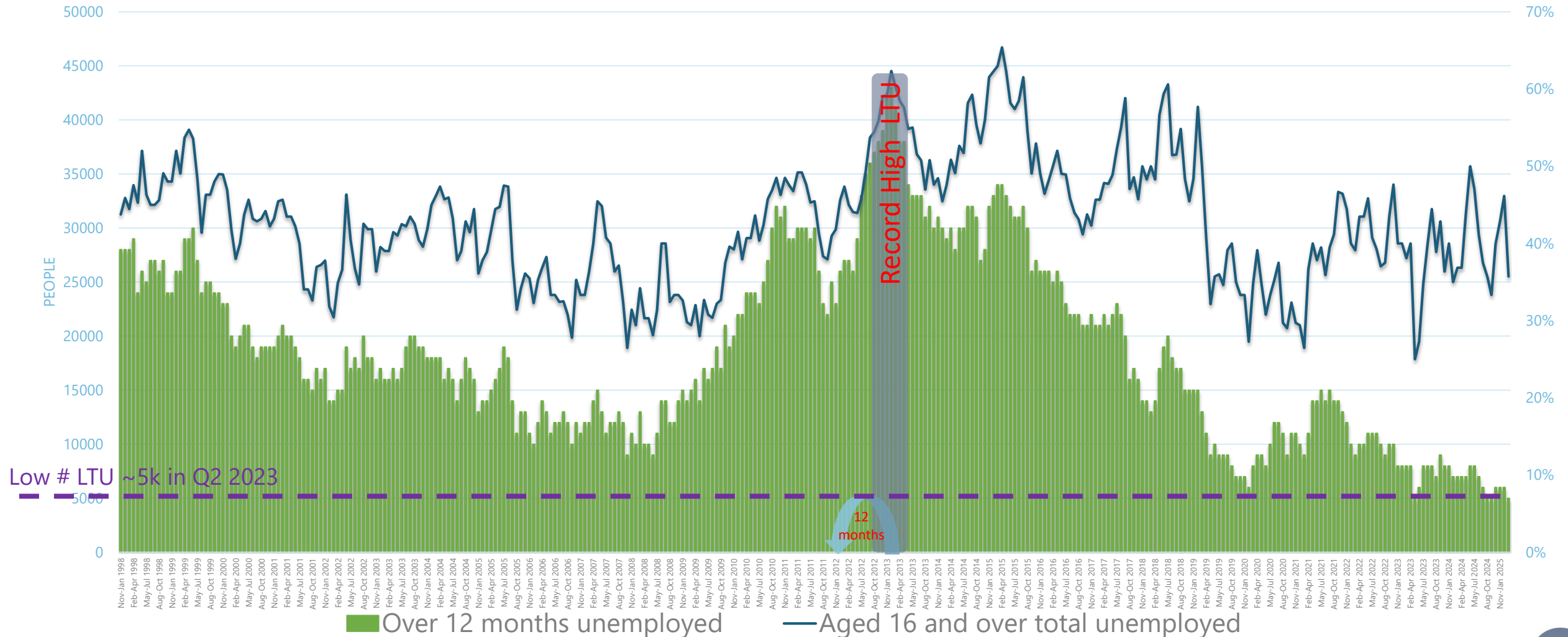


NI's LTU & LTU as % of All

NI's LTU & LTU as % of Total Unemployed

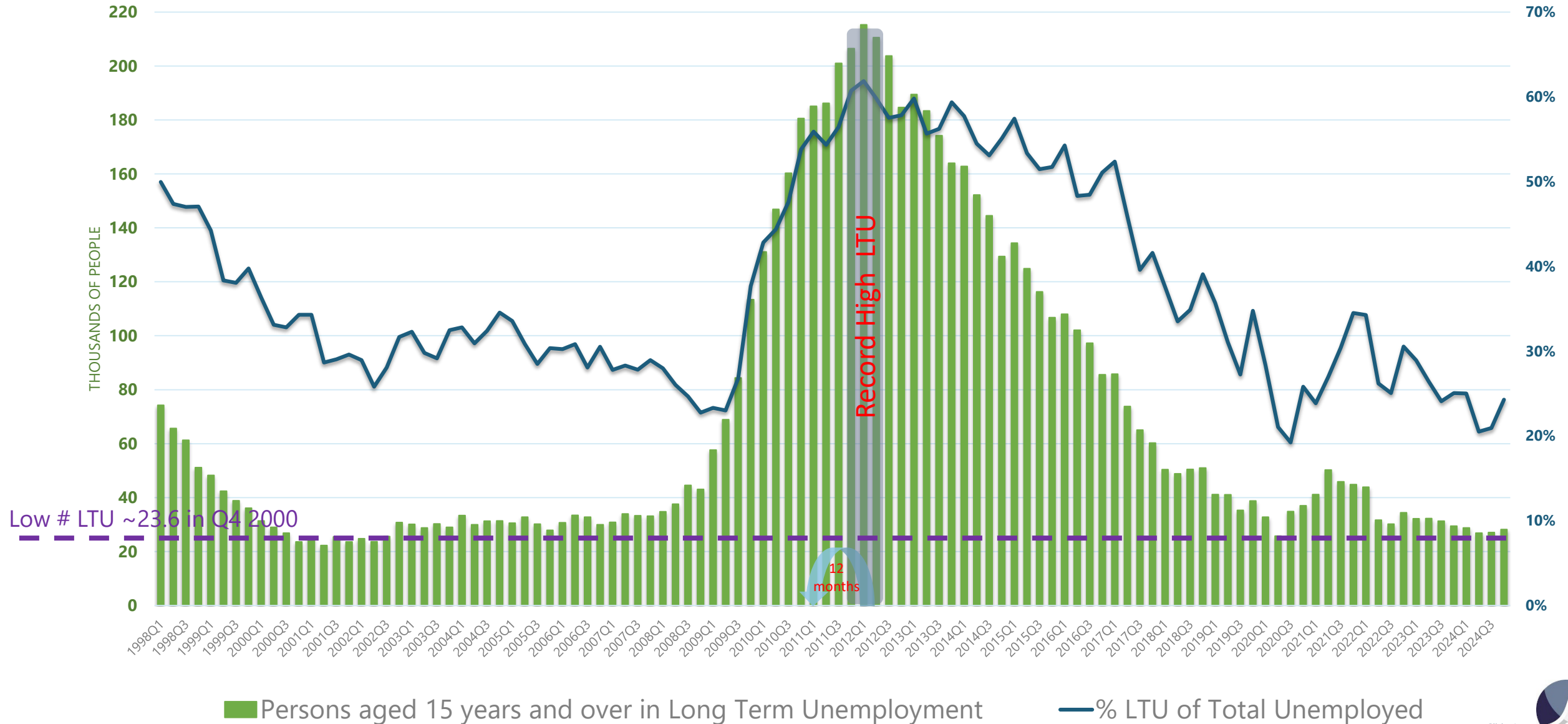
Source: NISRA Labour Force Survey Historical tables - May 2025 with small sample size cautions from 2022

LTU Q1 2025 = 5 thousand people



Rol's LTU & LTU as % of Total Unemployed

Rol's LTU & LTU as % of Total Unemployed
Source: CSO IE Unemploy & LTU Q QLF31 1998Q1 - 2024Q4 20250508
LTU 2024 Q2 = 26.9 thousand people



METHODOLOGY

Systems Thinking => Towards Integrated Interventions

- Worldview
- Actors / Stakeholders Interdependent
- The Problem-situation Definition <=> Boundaries
- Outcomes Serious

Interventions

- ☐ identify impactful,
- ☐ feasible and
- ☐ culturally-acceptable

Systems Dynamics



1. ~200 Variables = Noun Phrases

- Measurable (Numeric, Binary)
- Conceptual Scale / Index (e.g. Likert)
- Manual SD Creation – Researcher’s
- LLM AIs
 - Claude ai Sonnet 3.7
 - ChatGPT GPT-4o
 - NotebookLM (Google), May 2025, free
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3. Visual Model of Causal Links

Kumu

2. Connections = Influence Change

Default = relative to what would otherwise have been

more of



less of



WORLDVIEWS - MACRO TRANSFORMATION MODEL LONG-TERM UNEMPLOYED (LTU)

Labour Supply ->

-> **The LTU Person**

-> Labour Demand

ALTERNATIVE WORLDVIEWS

1. Eliminate / Reduce Extreme Poverty / Material Deprivation / In-Work Poverty
 2. Eliminate / Reduce Barriers to Employment
 3. Eliminate / Reduce Experiences of Discrimination
 4. Increase Social Integration
 5. Eliminate / Reduce Intergenerational Social Exclusion
 6. Access to 'Satisfying' (Decent?) Work as Part of Life Satisfaction / Personal Development
- 



STAKEHOLDERS MAP LONG-TERM UNEMPLOYED (LTU)

w / indicatives organisations

Labour Supply ->

Public Employment Services

- Intreo (Dept Soc Protection)
- Turas Nua
- Citizens Information / IHREC
- **WRC / Health Safety Auth.**
- **Courts / Injuries Resolution Board**
- An Pobal (CS / Tús / SICAP)

Adult & Further Education

- HEA, Solas
- QQI
- HCI + Springboard+

Policy

- Priorities ~ Values
- Resourcing (People + Funding)
- Seanad & Joint Committee - Traveller

-> The LTU Person

- Human Capital
- Experiential Capital
- Intellectual Capital
- Spiritual Capital (Values)
- Social Capital
- Cultural Capital
- Financial Capital

LTU Household Dependents

LTU Cohabiting Adult(s)

Community & Civil Society

- 9 Protected Grounds Rep Organisations
- Unions, FLAC, Professional Rep Bodies
- Local Area Partnerships (LDCs) & Other Service Delivery
- Research Institutes (Think Tank + Unis)

-> Labour Demand

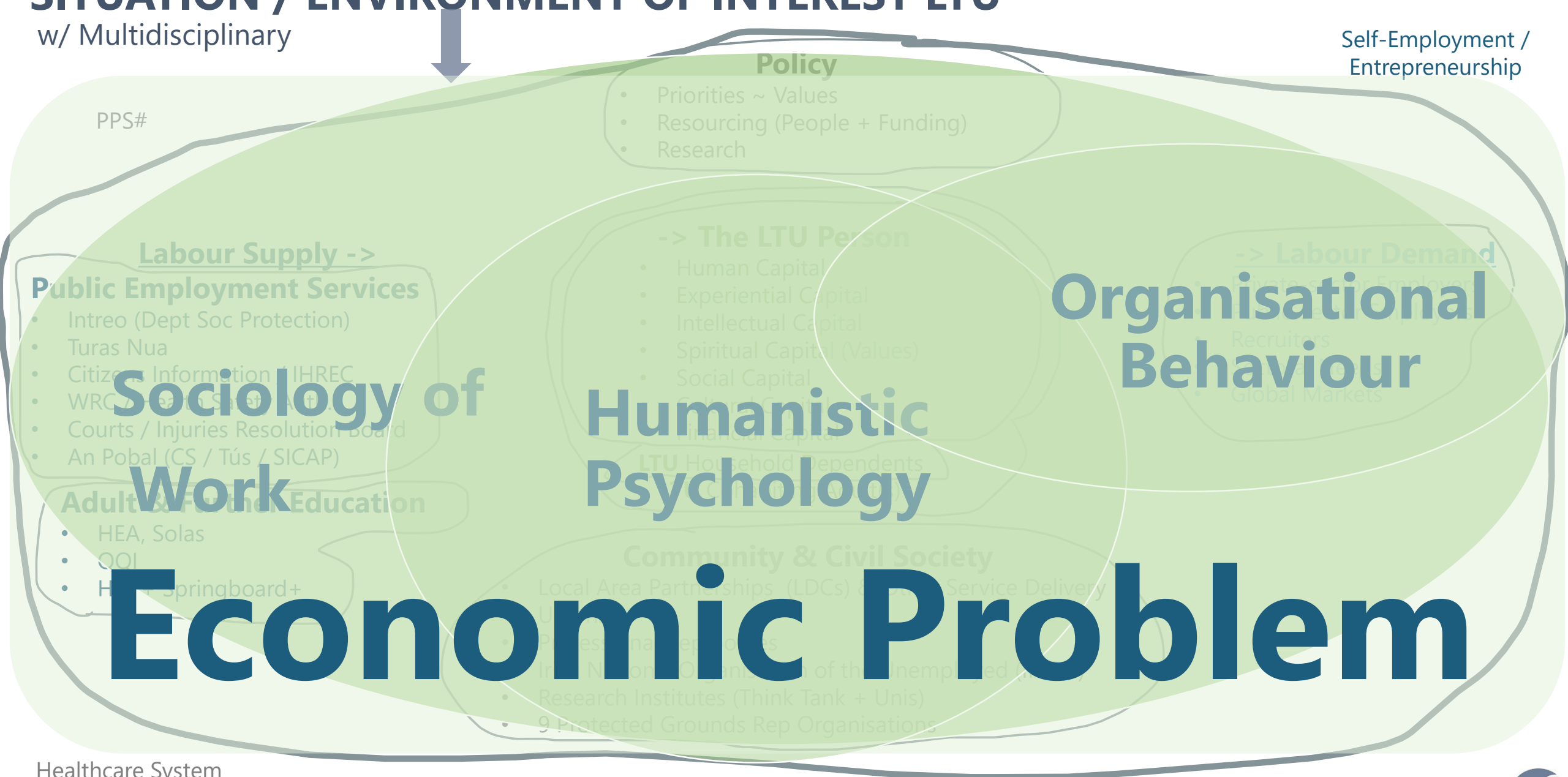
- Private-sector Employers
- Public-sector Employers
- Recruiters
- Sectoral Needs
- Labour Market Markets



SITUATION / ENVIRONMENT OF INTEREST LTU

w/ Multidisciplinary

Self-Employment /
Entrepreneurship



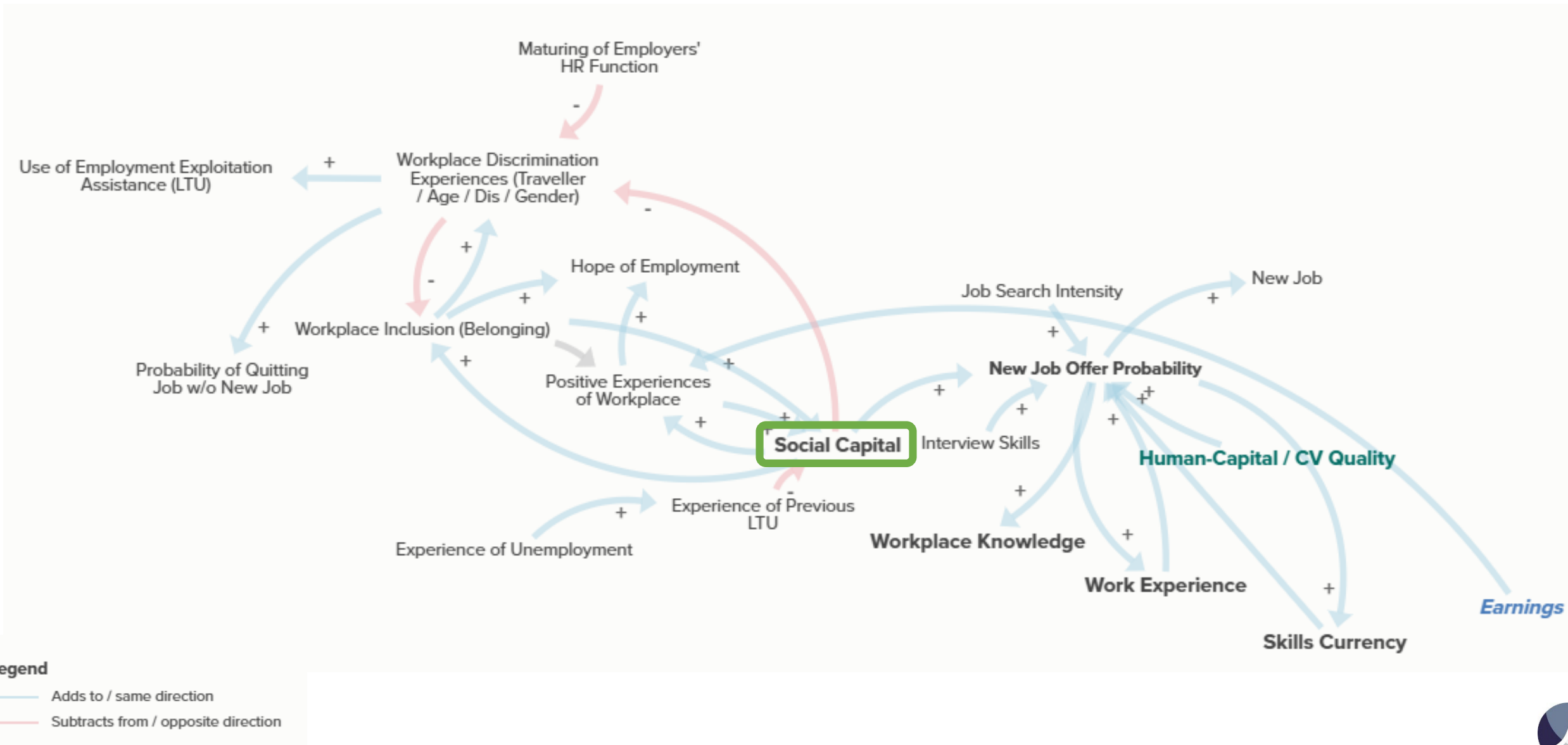
ENDING LTU – WHAT COUNTS?

What contributes to “new job offers”? Broadening the systems boundary



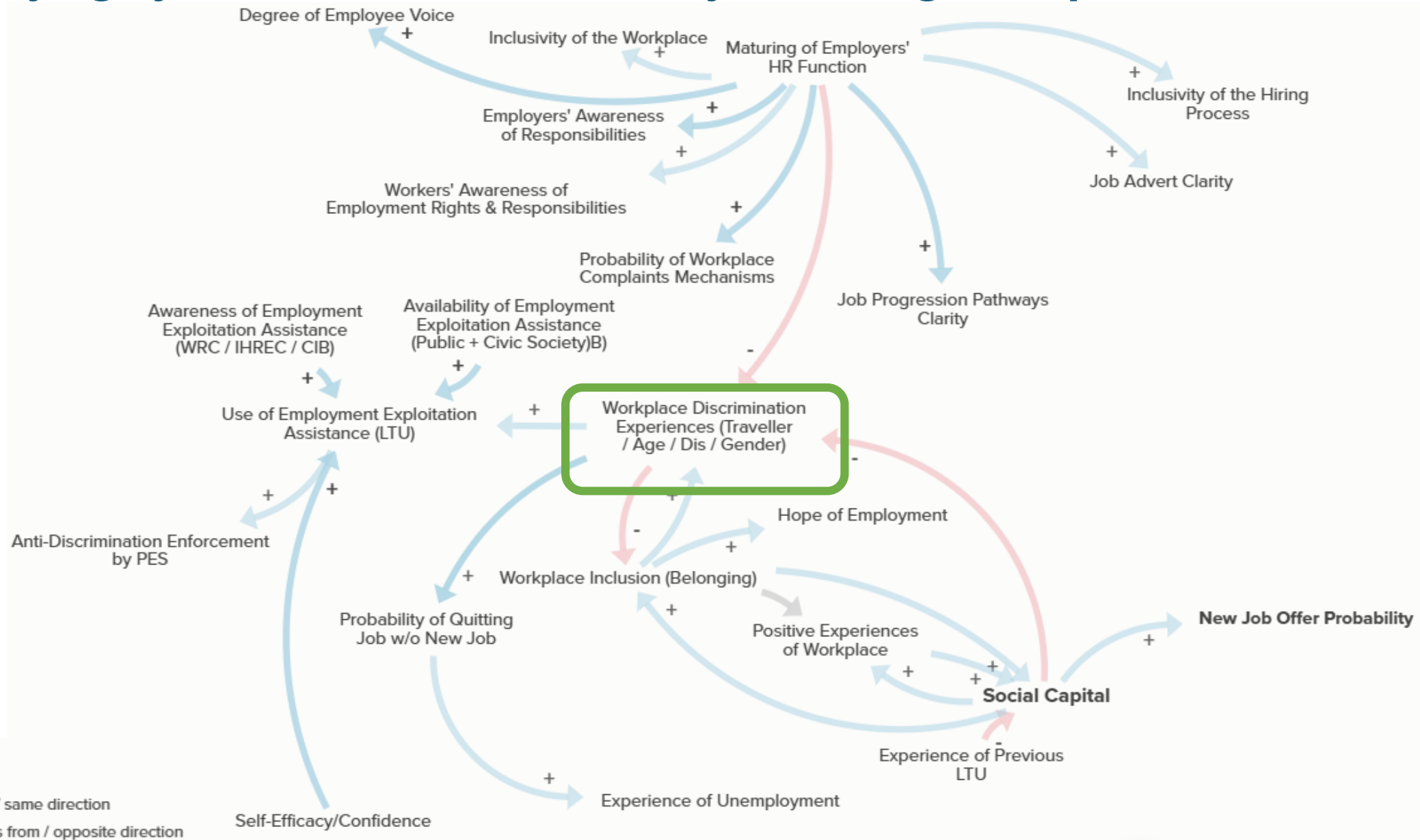
ENDING LTU – WHAT COUNTS?

What contributes to “new job offers”? Supply & Demand of Social Capital



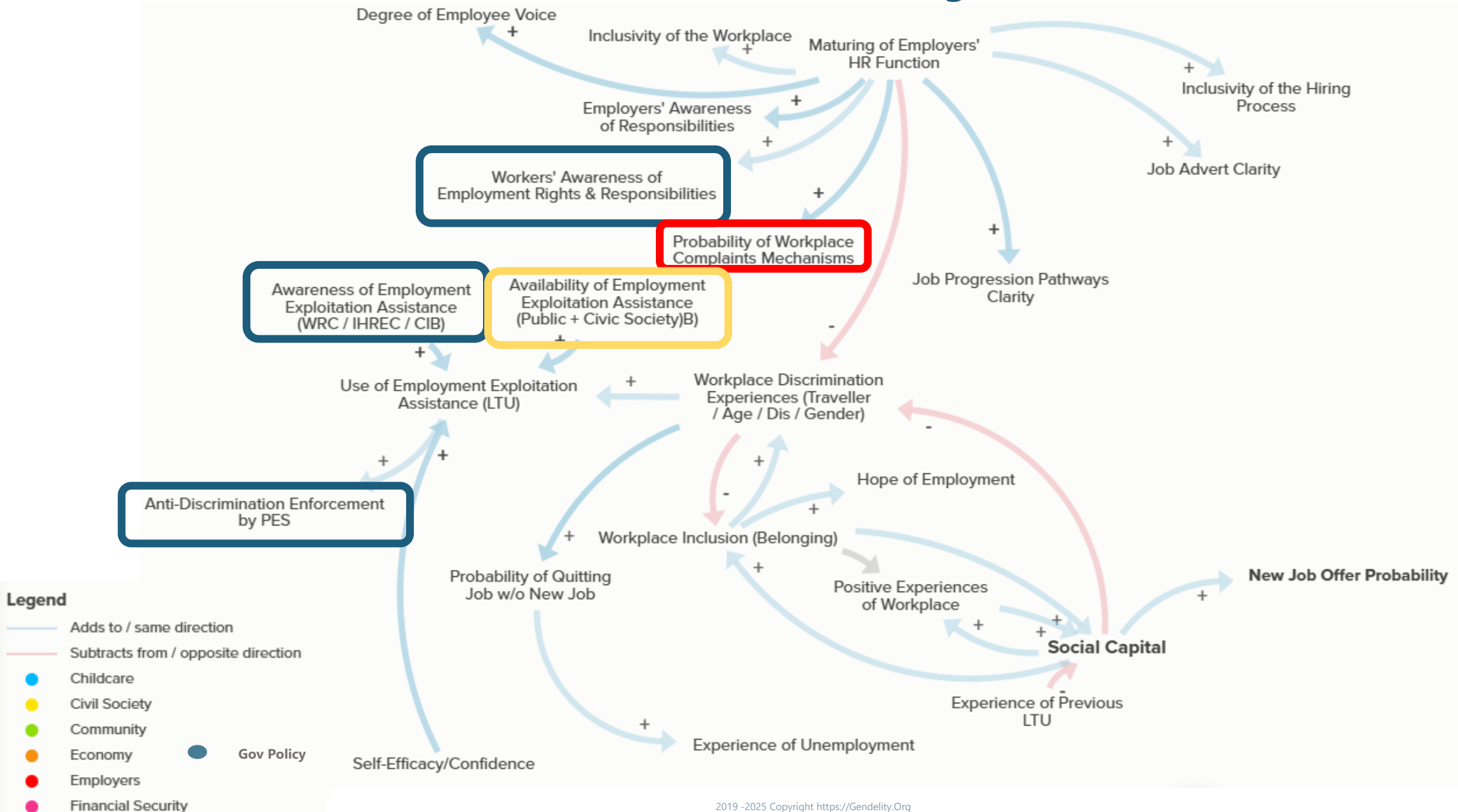
ENDING LTU – WHAT COUNTS?

Identifying Systemic Structural Forces by Centering Workplace Discrimination



ENDING LTU – WHAT COUNTS?

... multistakeholder interventions from centering discrimination



LTU – CAUSAL LOOP WIP

LTU PERSON

Legend

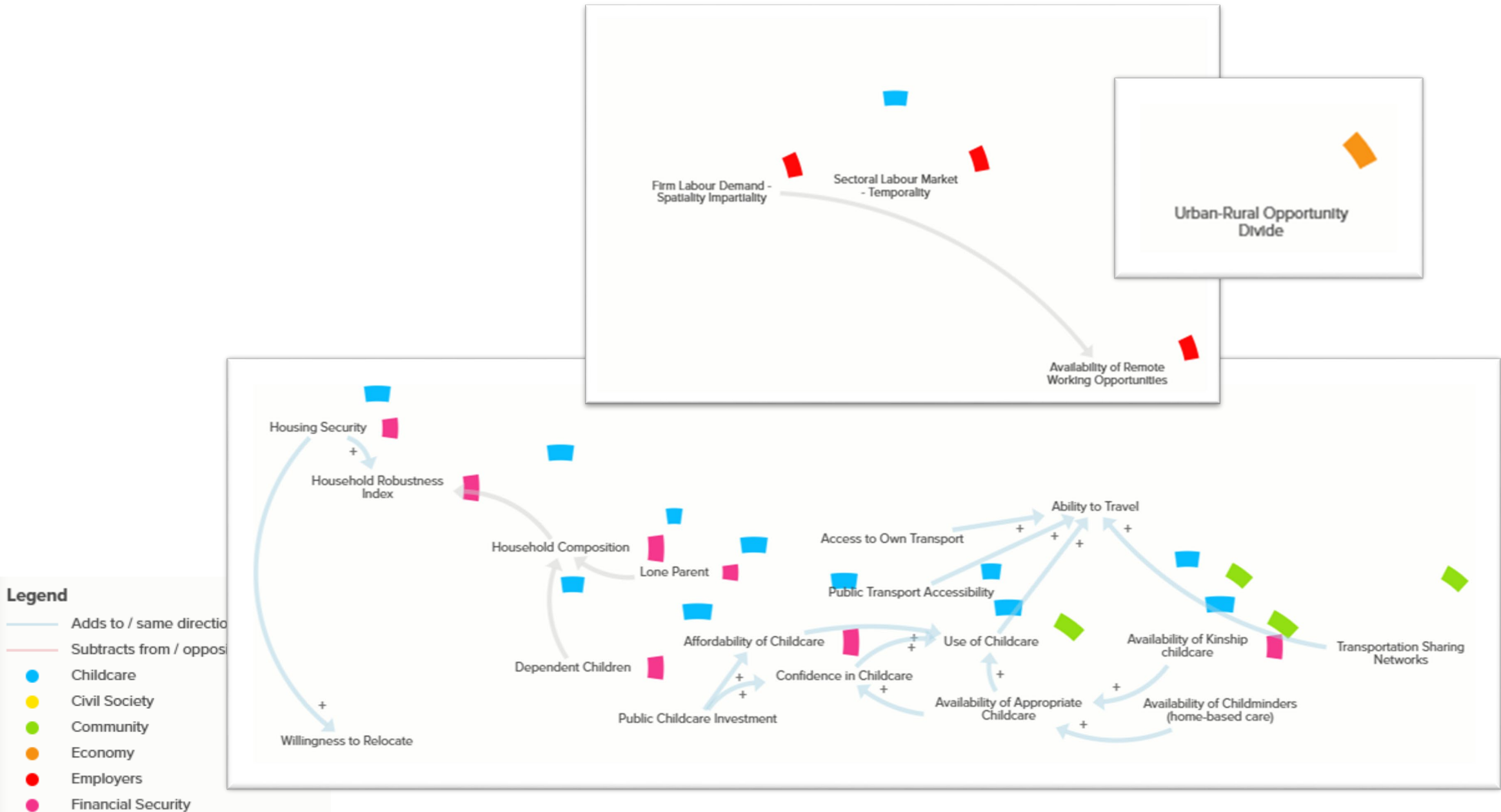
- Adds to / same direction
- Subtracts from / opposite direction
- Childcare
- Civil Society
- Community
- Economy
- Employers / Sectoral
- Financial Security
- Further Education

Legend

- Adds to / same direction
- Subtracts from / opposite direction

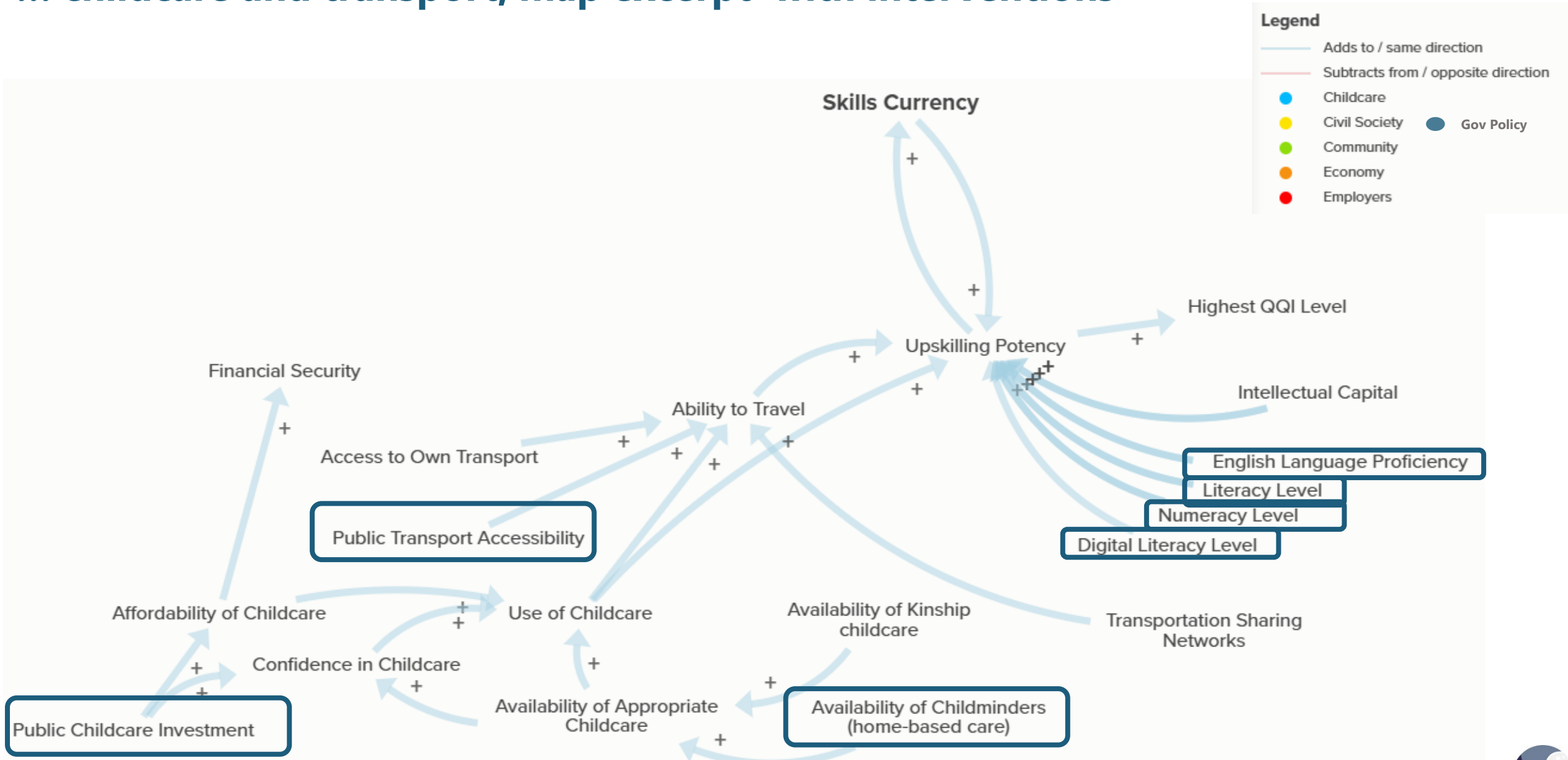
INTEGRATING DIFFERENT STAKEHOLDERS

- childcare and transport, map excerpt



LTU – HOW

... childcare and transport, map excerpt with interventions



“Even the desperate care about more....”

Rebecca Solnit

