Labor Markets and Unemployment[1]

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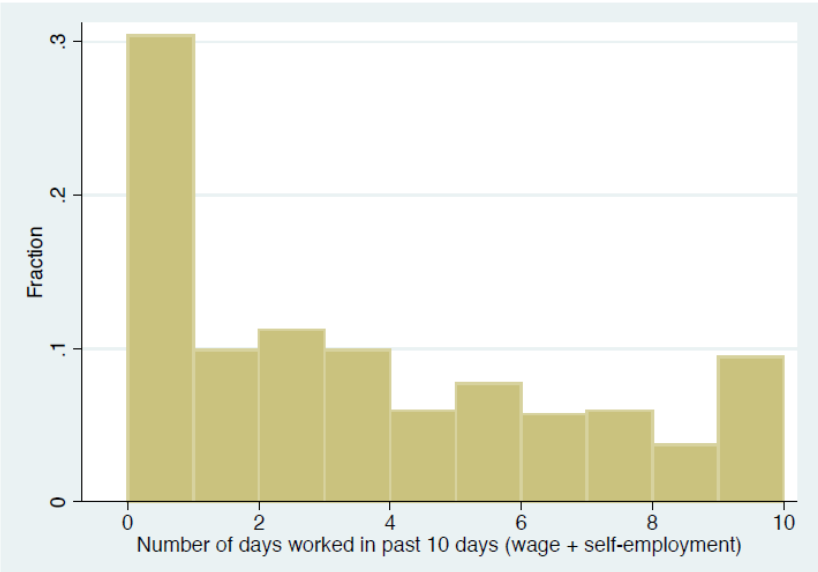
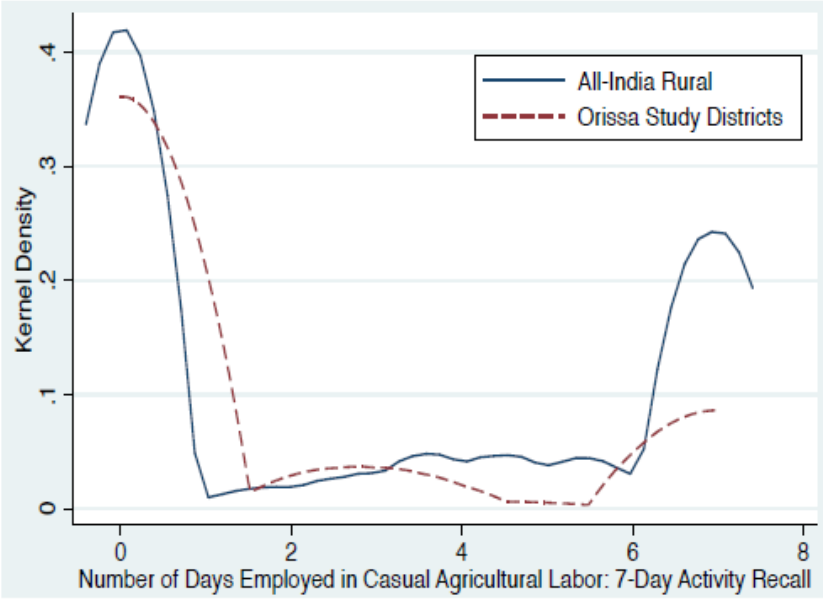
[1] Material from this lecture is drawn from Emily Breza and Supreet Kaur's AEA Continuing Education Development Economics course, and from the Urban Labor Markets VoxDevLit.

Outline

Is there a rural unemployment problem?

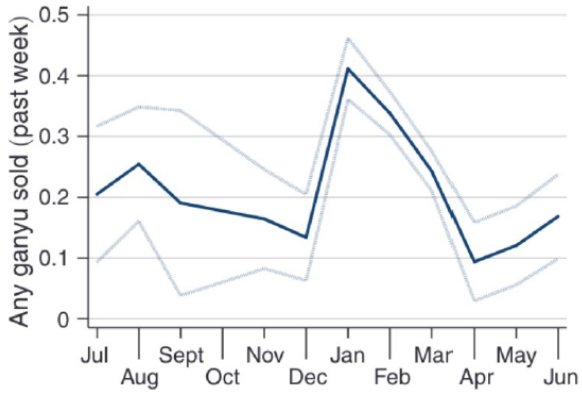




Source: Breza, Kaur, & Shamdasani (2021); Odisha, India

- Wage employment rates for Indian landless prime-age males, who rely on wage labor: 45.7% (National Sample Survey 2009)
- In Bangladesh: 55% in lean months (Akram, Chowdhury, & Mobarak 2017)
- In SSA: even lower (Beegle & Christiaensen 2019)

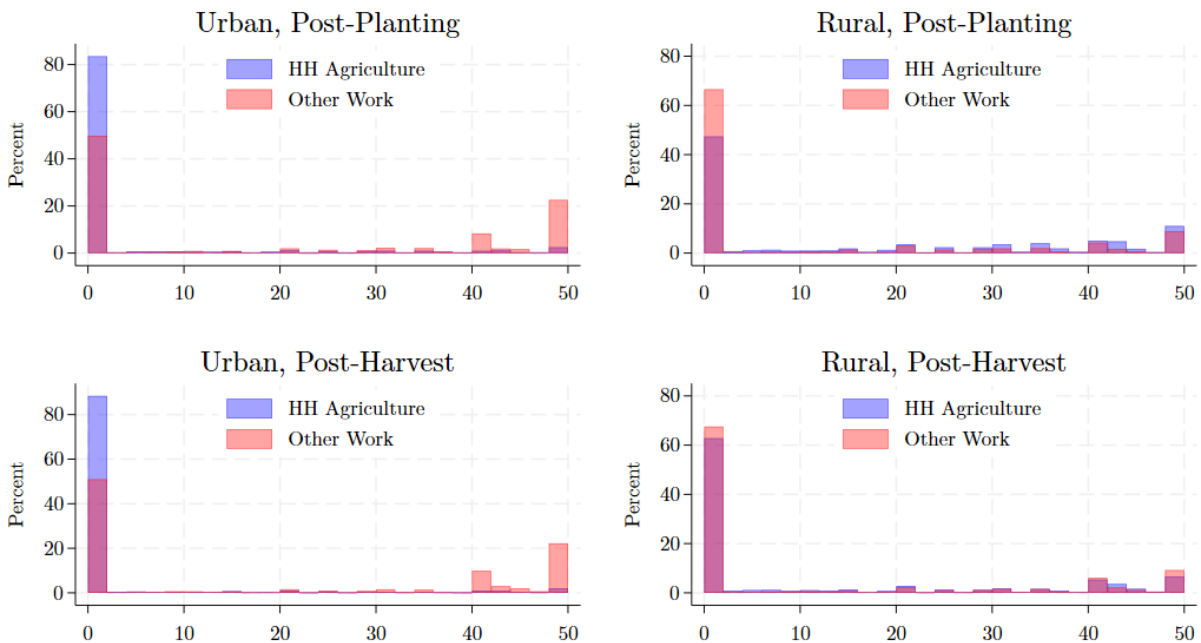
Important seasonality



Source: Fink, Jack, & Masiye (2020), Zambia (top)

Source: own analysis, Nigeria (bottom)

Hours of work in last 7 days by location and season



Migration

- Large sectoral productivity gaps between ag vs non-ag, rural vs urban
- Employment rate differences especially during ag off season
- Role of migration: smoothing income, potentially reducing misallocation across sectors/places
- Do people migrate too little? (Bryan et al 2014)
  - Small cash incentive to migrate from rural to urban during lean season in Bangladesh
  - 22% of HHs send a seasonal migrant
  - Large consumption increases for sending family in village
  - 8-10pp increase in probability of re-migration 3 years after incentive removed
- Why don't people out-migrate more?
  - Utility costs, risk, credit constraints
  - Many studies on this

Spatial frictions and infrastructure

- Local labor market: village
- Why not more geographic integration?
  - Transport costs extremely high
  - Means of transportation: walking, bicycle
  - 1 billion people live in rural areas without good road access
- Effects of rural road construction (Asher & Novosad 2020)
  - $40 billion rural road construction project in India
  - Workers move out of agriculture
  - Small expansion in village wage employment
  - No major impacts on ag outcomes, income, assets
  - Better connectivity not sufficient to expand economic activity?

Policy consensus

- There is a rural unemployment problem
- Especially in lean/off seasons for agriculture
- Justifies variety of government policies and programs
  - Workfare
  - Food redistribution
  - Cash transfers
  - Asset transfers
  - Support for irrigation, crop diversification, livelihood diversification
  - And more
- Question: Failure to label certain activities as 'work'?
  - Even so, certainly underemployment
- Motivation for Breza, Kaur, & Shamdasani (2021): does rural labor supply exceed labor demand in equilibrium?

Outline

Labor rationing

- Define a worker as 'rationed' if:
  1. She would prefer wage employment at current market wage rate over current activity (i.e., worker is not on her labor supply curve)
  2. She is employable at that wage (i.e., marginal product $\geq$ current wage)
- Rationed workers may be involuntarily unemployed or engaged in another activity
  - Results: labor supply exceeds labor demand
- Study design: experimental hiring shock
  - Random subset of local workers hired outside the village
  - Test effects on local wages and employment

Visualizing labor rationing

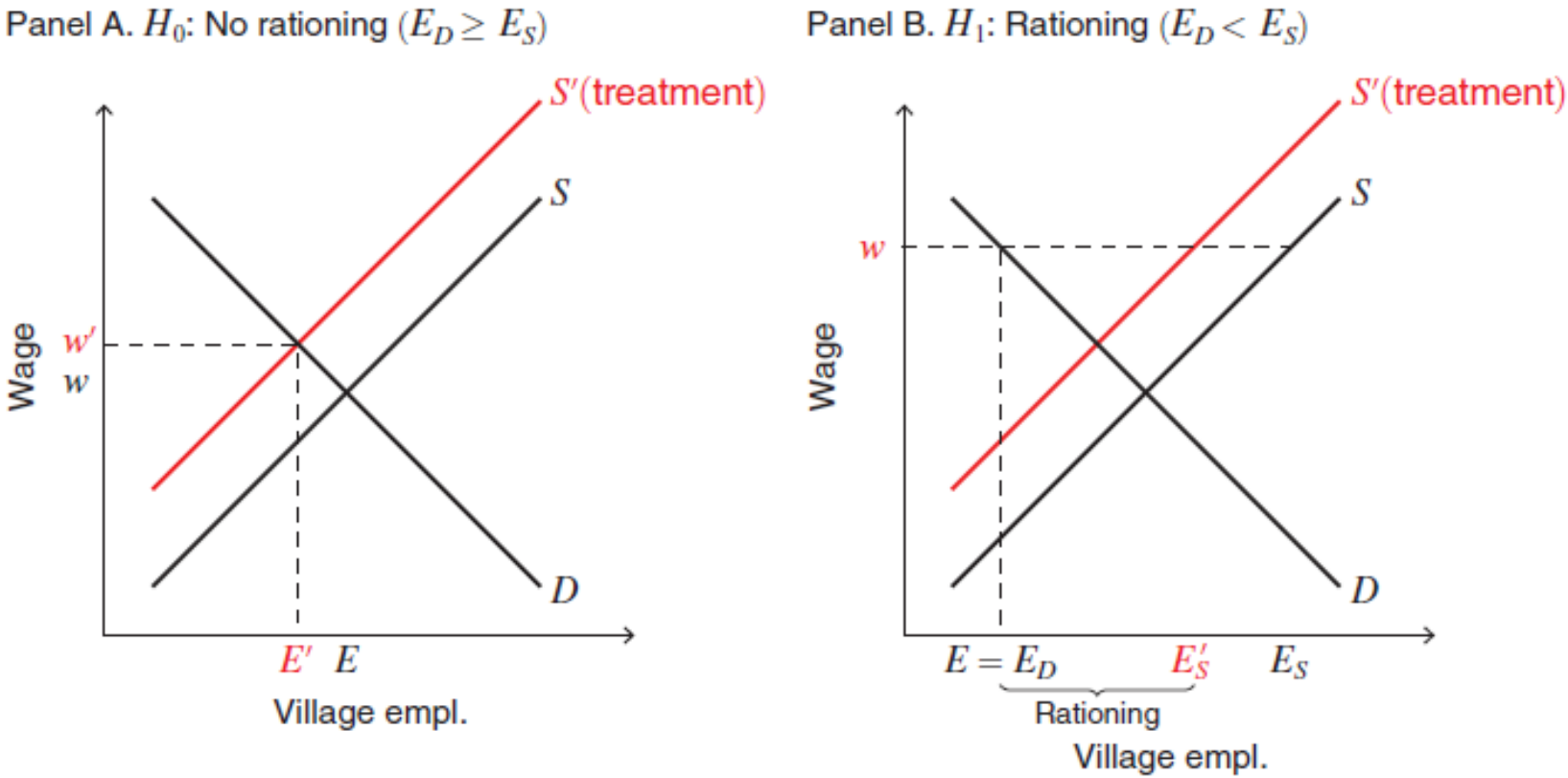
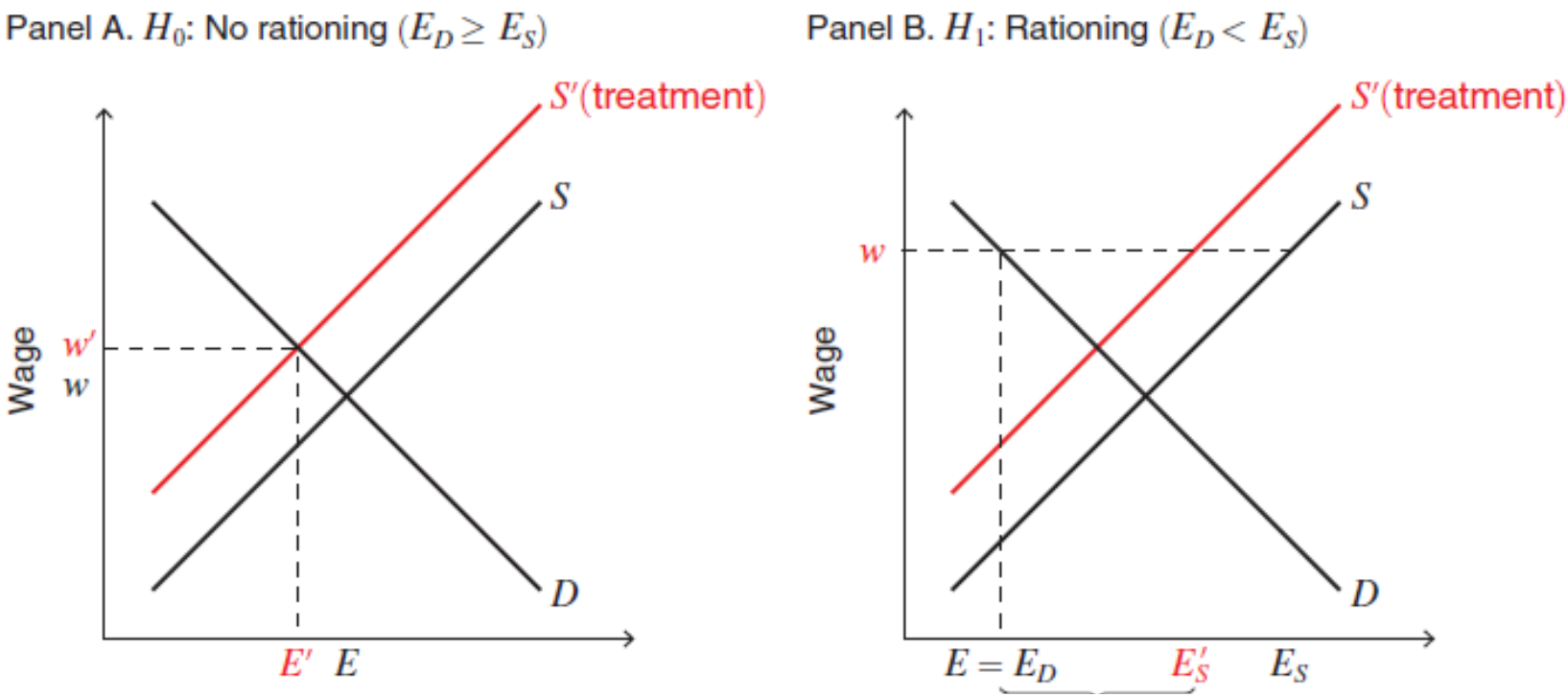


FIGURE 1. EFFECTS OF A NEGATIVE LABOR SUPPLY SHOCK

Note: Figure shows the effects of a negative supply shock on employment and wages under no rationing ($E_D \geq E_S$) in panel A, and under rationing ($E_D < E_S$) in panel B.

Visualizing labor rationing



- What should be effects of experimental 'removal' of some workers (supply shock)?
- No rationing: 1) wage goes up, 2) aggregate employment goes down
- Rationing: 1) no change in wage, 2) no change in aggregate employment, 3) potential employment spillovers

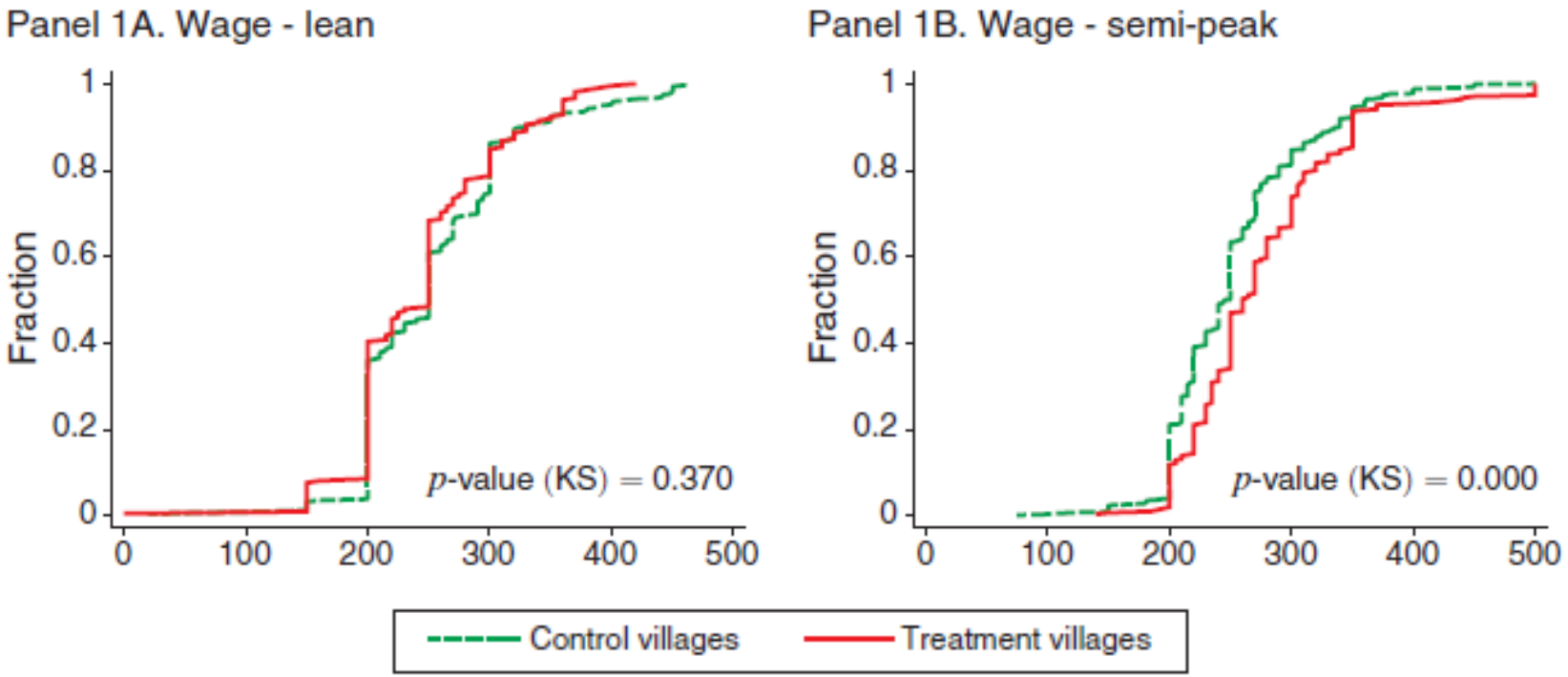
Study design

- Randomize transitory hiring shocks in study villages
  - Recruit casual male workers to full-time manufacturing jobs for 2-4 weeks at jobsites outside study villages
  - Wage $\geq w$ in local labor market, work is less demanding
  - Hire up to 60% of sign-ups in treatment villages, 1-5 workers in control villages
- Revealed preference test for excess labor supply
- If predictions under rationing hold, workers reveal they meet criteria for being rationed
  1. Prefer work at wage w to current activity
  2. Employers willing to hire workers at w
- Conduct experiment in different months of the year
  - Predict that peak season effects of hiring shock will be closer to no rationing scenario, lean season effects closer to rationing scenario
  - Why?

Wage effects

Prediction

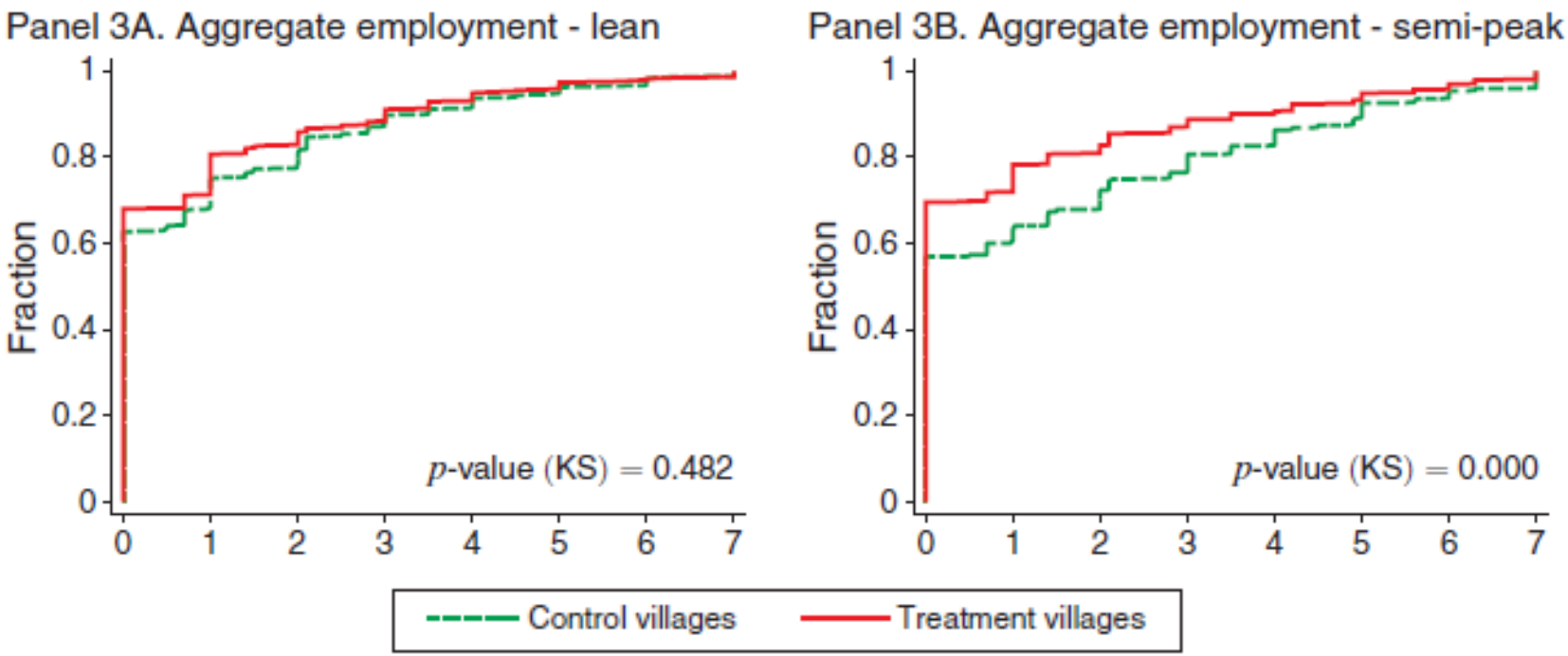
- No rationing: wages go up
- Rationing: no change in wages



Aggregate employment effects

Prediction

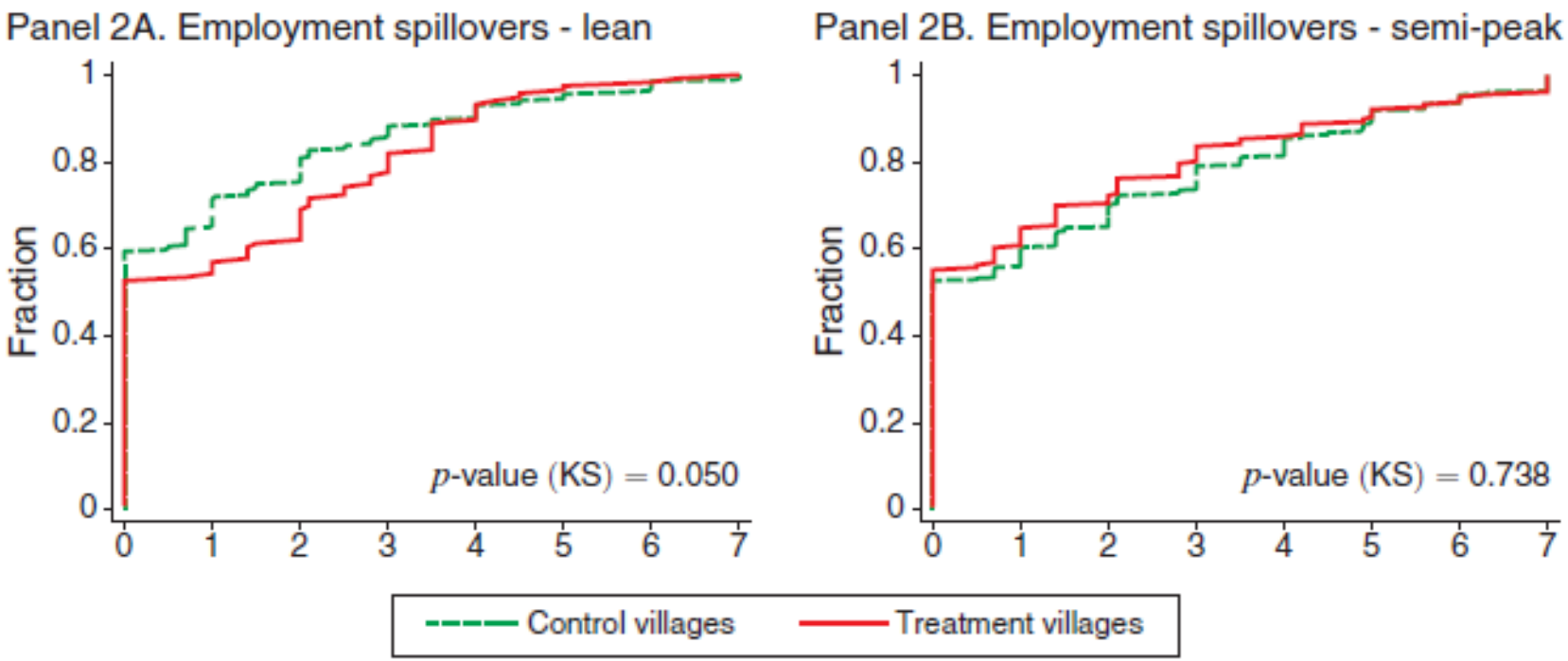
- No rationing: aggregate employment goes down
- Rationing: no change in aggregate employment



Employment spillover (taking over vacated job) effects

Prediction

- No rationing: ambiguous
- Rationing: employment spillovers



Labor supply shock was transitory, but peak season effects persist

TABLE 7—IMPACTS TWO WEEKS AFTER END OF HIRING SHOCK

	log total wage (1)	log total wage (2)	Hired wage employment (3)	Self-employment (4)
Hiring shock	−0.0241	0.00410	−0.00846	−0.0177
	(0.038)	(0.035)	(0.027)	(0.015)
Hiring shock × semi-peak	0.0673	0.0362	−0.0378	−0.0193
	(0.044)	(0.042)	(0.034)	(0.024)
Sample	Spillover	Spillover	Spillover	Spillover
Baseline controls	No	Yes	Yes	Yes
p-value: shock + shock × semi-peak	0.0537	0.109	0.0255	0.0531
SE: shock + shock × semi-peak	0.0219	0.0247	0.0201	0.0187
Control mean: lean	5.529	5.529	0.177	0.162
Control mean: semi-peak	5.532	5.532	0.211	0.134
Observations (worker-days)	1,328	1,328	7,623	7,623

- Consistent with 'ratcheting' effect from downward wage rigidity
- Suggests dynamic inefficiency in labor market adjustment

Switching activities?

- Worker rationed out of wage work may be involuntarily unemployed or have some self-employment activity (89% of workers at baseline)
  - Side business: 72% of workers with a HH business report casual labor as their primary occupation
- Hiring shock in treatment villages should open some local jobs
- If workers switch from self-employment to wage employment at w, a strong indication of rationing
- Find that in lean season, hiring shock decreases self-employment days among remaining local workers by 24%
  - Accounts for 62% of employment spillovers from treatment
  - Not offset by other members increasing HH business engagement
  - Some evidence this is concentrated among less profitable/capitalized businesses (e.g., small farms)
  - Consistent with separation failures

'Disguised' unemployment?

- Standard survey questions about work activities may understate unemployment status
  - Rationed workers can engaged in other work activities
  - Self-employment can 'mask' rationing
  - Find no effects of treatment on standard measures of unemployment
- Ask respondents if they would have accepted work at wage w rather than whatever other activity they were doing
  - Find large decreases in this measure in treatment villages driven by lean season, consistent with spillover employment effects
  - But this question may overstate involuntary employment (e.g., if can substitute self-employment across days)
  - Could explain low growth and productivity in self-employment activities if quickly abandon for wage work opportunities

Why does rationing exist?

- Ratcheting effect – persistent semi-peak wage increase after transitory hiring shock ends – not consistent with some plausible mechanisms:
  - Nutrition efficiency wages (Dasgupta & Ray 1986)
  - Dynamic contracting/implicit insurance (e.g., Azariadis 1975, Rosen 1985)
- Worker preferences and resistance to wage cuts (e.g., Keynes 1937; Akerloff & Yellen 1990; Fehr, Goette, & Zehnder 2009)
- Worker monopoly power (Breza, Kaura, & Krishnaswamy 2019)
- This paper cannot formally test mechanisms, but they are important for understanding welfare effects of rationing and potential responses

Implications for labor market analysis

- 'Under-utilized' labor
  - Disguised unemployment (low-productivity self-employment) an important coping mechanism $\Rightarrow$ often measured poorly in surveys
  - Misallocation of labor
- Different functioning of labor market across seasons
  - More employment volatility
  - Annual measures of labor supply will be misleading
- Rationing: wage does not play an allocative role
  - Wage does not reflect marginal product of labor
  - Further distorts employment

Policy implications

- Broad range of policy interventions
  - Lean season transfers (workfare, food, cash)
  - Complements to self-employed labor (assets, training, irrigation, etc.)
  - Incentives for temporary migration
- Various goals, e.g.
  - Fill gap when there is structural unemployment
  - Raise incomes
  - Reduce income volatility

Outline

Five stylized facts about urban job search in developing contexts

1. High levels of search, high rates of exit from employment, long job search spells
2. Cost of job search is substantial for typical job seeker
3. Employers often report lack of skilled workers or difficulty identifying good hires as key constraints to firm growth
4. Employers regularly hire through social networks
5. Online platforms to facilitate search are becoming increasingly popular but use is far from universal

What justifies policy intervention?

- Constraint/market failure that lowers total employment in economy
  - Interventions that redistribute jobs without increasing employment hard to justify
- Several broad classes of possibilities
  1. Low human capital (workers are unqualified)
  2. Regulatory obstacles (e.g., firing costs)
  3. Social and psychological constraints
  4. Financial market failures (cannot finance job search)
  5. Labor market frictions: 3 canonical sources
     - 5.1 Moral hazard
     - 5.2 Adverse selection
     - 5.3 Match quality
- Focus today on 3-5

Moral hazard

- Output depends on efficiency units of effort: $f(eL)$
- Moral hazard: worker can choose $e \leq 1$
- Reduces hiring: expected MPL low $\Rightarrow$ less profitable to hire
- What is the relevant form of moral hazard?
  - Shirking on effort, risk of theft
- Classic solutions (contract theory)
  - Worker posts a bond
  - Improved monitoring technologies

Adverse selection

- Suppose 2 types: θ_H (probability λ) and θ_L (probability $1-\lambda$)
- If hire from population, expected MPL $= \lambda\theta_H + (1-\lambda)\theta_L$
- Reduces hiring: expected MPL low $\Rightarrow$ less profitable to hire
- What is the relevant form of adverse selection?
  - Worker 'ability' (skills); reliability (will worker show up/not quit?)
- Solutions: grounded in what firms want
  - What skills and attributes are important?
  - Create screening and signaling tools for those traits

Match quality

- Aspects of firm-worker specific match quality:
  - Skills: can I do the specific thing important to the firm?
  - Preferences: do I like the amenities and tasks of the firm?
- What aspects of match quality are relevant?
  - Firm-specific skills/ability, will worker like job enough to stay
- Solutions: matching information
  - Workers learning about particular job characteristics and their own preferences
  - Firms learning about worker productivity-related traits

Outline

Policy focus: active labor market programs

- McKenzie (2021) review, Caria & Orkin (2024) VoxDevLit
- Three major types of programs
  - Wage subsidies (for job seekers or firms)
    - Possibly address financial market failures, adverse selection, match quality
  - Vocational training
    - Address human capital constraints
  - Search or matching assistance (information about vacancies, job fairs, skill certification, search subsidies, etc.)
    - Address adverse selection, match quality, financial market failures
- Fairly large literature on all of these
- Summary:
  - Most programs largely ineffective at increasing employment
  - Some notable exceptions, e.g., for training and certification
  - Big concern: just displacing some workers with others?
  - Particular challenges for women

Wage subsidies: de Mel et al (2019)

- Subsidize firms in Sri Lanka to hire a paid employee for 12 months ('labor drops')
- Test benefits to firms and persistent impacts on firm employment
- Track outcomes over four years
- Treated firms increased employment during subsidy period and were more likely to survive
- No persistent effect on employment, no effect on profits or sales in any period on average

Vocational training: Alfonsi et al (2020)

- Compare demand- and supply-side policies to tackle youth unemployment
- Tracks 1700 workers and 1500 firms over 4 years in Uganda
- Randomize offers of (paid) vocational training or firm-provided training (subsidized by study) for 6 months in setting with youth unemployment $>60\%$
- Both treatments increase sector-specific skills, employment rates, and index of labor market outcomes
- Differences: FT gains materialize quickly but fade, VT gains emerge slowly but persist
- Why? VT workers receive higher rates of job offers when unemployed $\Rightarrow$ role of skill certification as signal to potential employers

Matching assistance: information about jobseeker skills

- Job-seekers: Being able to convey credible information about skills is essential
- Firms: limited information can lead to costly hiring mistakes
- Challenges:
  - Credential and certification systems often underdeveloped in developing countries
  - Limited labor market experience $\Rightarrow$ references unavailable as signaling tool
  - Many productivity-relevant traits are hard for firms to observe
- Several studies looking at impacts of certification, job application workshops, references, apprenticeships
- Takeaways:
  - Strong evidence that limited information can limit hiring
  - Interventions likely a cheap and valuable policy intervention
  - Effects may be limited if interventions not combined with complementary treatments that address other constraints
  - More evidence needed on how to collect and share skills information, and long-run impacts on labor market trajectories

Matching assistance: Ndayikeza (2025)

- Context: low employment of university graduates in Burundi
- Question: is low-skill work experience (relative to unemployment) valued by high-skill employers?
  - Could signal traits such as perseverance, discipline, but could also signal lower ability or ambition
  - Could help workers update work preferences, but reduce time for high-skill job search
- RCT: incentivized resume rating
  - Randomize whether resumes for 1 year post-graduation include either no employment or low-skill employment
  - Resumes rated by potential employers
- Find low-skill employment significantly increases resume rating
- Interviews with employers: interpret low-skill experience as signal of hard-working, disciplined, persevering workers

Search assistance: search costs

- Finding a job is a long process that entails financial, time, and psychological costs
  - Search costs can represent a large share of overall expenditure
  - Concern in contexts with financial market failures
- High search costs can reduce search effort
- Interventions: conditional and unconditional search cost subsidies, and psychological interventions
- Takeaways:
  - Well-targeted subsidies can improve short-run labor market outcomes, but not always effective and limited evidence of persistence
  - Positive effects of unconditional cash on search suggests financial constraints to search
  - Limited evidence on interventions to reduce psychological costs of job search
  - Interventions to boost aspirations, self-efficacy, future orientation have large and persistent effects on labor supply

Search/matching assistance: Abebe et al (2021)

- Context: job seekers in Ethiopia
- RCT: evaluate different kinds of hiring frictions
- Treatment 1: transport subsidy for job search (job boards in city center)
  - Should increase search intensity
- Treatment 2: workshop to learn how to signal skills
  - Should increase search efficacy
- Short-run: both treatments have large positive effects on probability of formal employment
- After 4 years: no effect of transport subsidy, lasting effects of workshop on earnings, job satisfaction, and employment duration
- Takeaway: young people have valuable skills that are unobservable to employers
  - Signaling/certification problem
  - Complication: spread of low-quality training/higher education centers

Search/matching assistance: job/candidate search

- Jobseekers may lack information and skills for job search
- Firms may lack information about pool of potential candidates
- Studies on job search and matching platforms
  - Interventions: Encouraging registration, use, better use
  - Mixed evidence, registration alone likely insufficient
- Studies on role of networks: peers, mentors, potential competition effects
  - Takeaways: networks play an important role, policy interventions unclear
- Studies on labor market intermediaries: migration agencies, online gig work
  - Takeaways: promising evidence for enabling jobseekers to navigate job market, more research needed

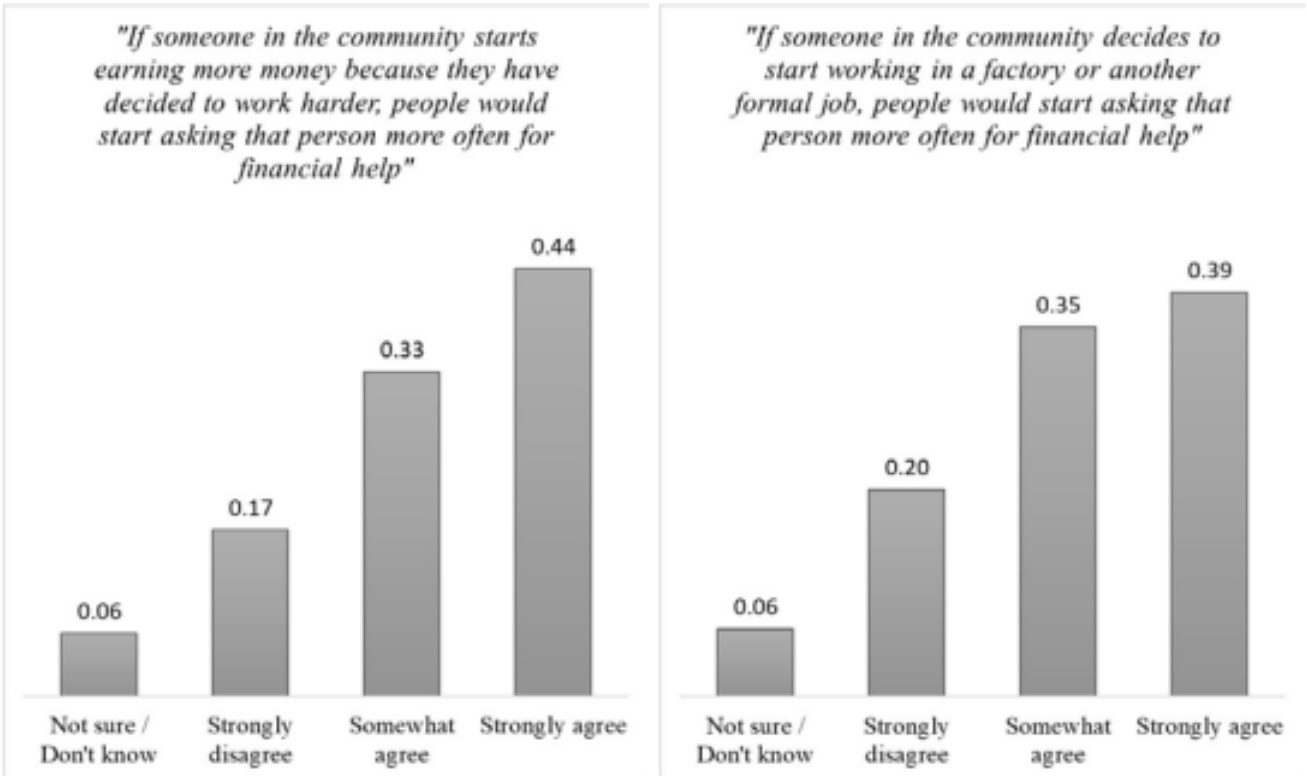
Outline

Is labor supply "too low"?

- Recent research studying possible roles of social and psychological constraints in job search
- Examples:
  - Social tax: redistribution norms
  - Self-control: distance between effort and benefit
  - Cognitive load and mental health: psychological constraints to exerting effort
  - Habit formation: preparation for formal work
  - Beliefs and preferences about labor market: gaps between perceptions and reality

Social taxation

Figure 3: Motivational Evidence: Redistributive Pressure



Source: Carranza et al (2022), Cote d'Ivoire

- Sharing norms imply tax on earnings/effort
- Implication: potentially large efficiency cost of informal insurance

Self-control

- Potential relevance of self-control for any intertemporal decision problem
- Particularly relevant in agriculture: costs borne today, benefits at harvest
- Example: weeding
  - High-return activity but highly labor-intensive
  - Some farmers (particularly poor) do not weed
  - Losses due to uncontrolled weed growth $> 25\%$
- Pay cycle effects: Kaur, Kremer, & Mullainathan (2015)
  - Lower production at greater temporal distance from payday: larger distance between effort and benefit
  - Workers with high payday effects more likely to agree to suboptimal (dominated) contracts
- Challenge in self-employment context: no 'boss' to solve effort allocation problem

Cognitive load

- Growing literature on labor market effects of cognitive load and mental health
- Kaur et al (2019): show a large share of Indian workers are very worried about their finances $\Rightarrow$ creates cognitive burden
- Experiment: vary whether a share of payday is disbursed early
- Find early payday increases output and decreases errors, but only among less wealthy: evidence of financial cognitive burden
- Implications
  - Productivity lower when money most needed
  - Self-reinforcing cycle
  - Decreasing volatility and promoting cognitive ease of money management could deliver benefits beyond consumption smoothing

Habit formation

- Is regular labor supply a general skill that can be acquired?
  - High school absenteeism $\Rightarrow$ little chance to develop skill
  - Frequent shocks to ability to work and work hours $\Rightarrow$ skill disruption
- Cefala et al (2024): RCT with 225 casual laborers at labor stands in Chennai, India
- Treatment: incentives to arrive by 8am every day over 7 weeks
- Results:
  - 23% $\uparrow$ in labor supply during treatment, 16% $\uparrow$ 2 months after
  - Shift in preferences for regular work
- Mechanisms: evidence for increased automaticity and stronger worker identity

Voluntary unemployment?

- Evidence of high job refusal and quit rates
  - Blattman & Dercon (2018) turnover in Ethiopia factories: large sign-up, but 1/3 quit in month 1 and 77% in year 1
  - Groh et al (2015): 83% refuse job offer or quit shortly
- Takeaway: workers want jobs, but not the jobs they can be hired for
- Role of outside options
  - In India, typical starting salary range Rs. 4,000-7,000/month; can earn same amount working 10-15 days of casual daily labor
  - In Ethiopia, a primary reason for quitting factory job is money
- Another possibility: lack of labor market information $\Rightarrow$ reservation wage above MPL
  - Alfonsi et al (2024): mentoring intervention reduced youth reservation wage, so they turned down fewer job offers

Perceptions about labor market

- Jobseekers' beliefs about probability of being employed and wages they would earn are often biased upward
- Ambiguous predictions of effect of this mismatch on search effort (Kiss et al 2023)
  - Search more as expect higher returns to search effort
  - Search less as expect it's easier to find employment
- Studies on information interventions
  - Direct information: wages and wage distributions, gender composition of workplace and supervisors, promotion and wage growth prospects
  - Indirect information: job fairs, transport subsidies for job search
- Policy takeaways
  - Information interventions change jobseekers beliefs, but little evidence on jobseekers' learning
  - Limited information on persistence of effects on labor market outcomes
  - Limited evidence testing whether incorrect beliefs 'cause' suboptimal search