

No Going Back: COVID-19 disease threat perceptions and male migrants' willingness to return to work in India

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Overview

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Introduction

- Migration is a short-term coping strategy for livelihoods in developing countries, especially India.
- 139 million migrant workers in India lack a safety net and job security
- Two key welfare implications: (a) reverse migration can significantly affect flow of remittances (Karim et al., 2020) and (b) wage deflation and surplus labor in already un-remunerative low skilled occupations in small towns and the rural sector (Mahendra Dev & Sengupta, 2020; Dandekar & Ghai, 2020)

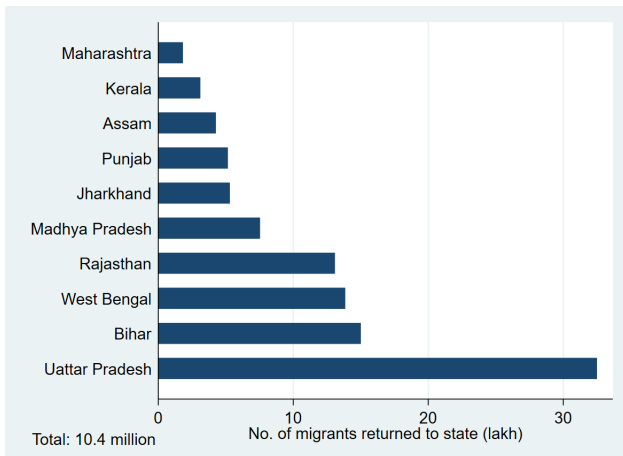
Introduction

COVID-19

- COVID-19 pandemic prompted nation-wide lockdown starting late March; Reverse migration of 40mn migrant workers
- Rural locations with high incidence of outmigration suffered disproportionately (Barker et al., 2020; Upadhyay et al., 2020)
- Large losses of employment suggested from survey findings (Ray and Subramanian, 2020; Abraham et al., 2020; CMIE, 2020)
- First-hand reports from Stranded Workers Action Network (SWAN) show that only 6% of migrants got paid, and more than 80% faced food insecurity

Data on Migrants affected by COVID-19

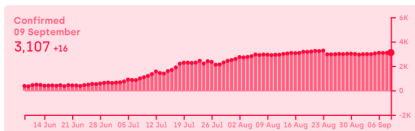
Ministry of Labour and Employment, Govt. of India, 2020



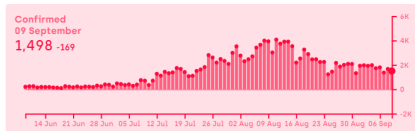
Spread in Sample States (June to Sept 2020)

Bihar, Uttar Pradesh, West Bengal

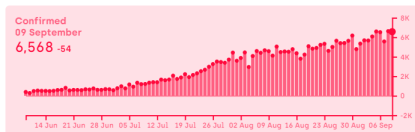
West Bengal



Bihar



Uttar Pradesh



Motivation

- More than 300,000 cases a day in second wave, particularly in urban centres, making return of migrants a potential public health hazard (Andrade, 2020; Pandey and Nazmi, 2021); typically reside in dense housing without adequate sanitation facilities.
- Thus, perceived disease threat (of COVID-19) will affect the decision to remigrate and return to work, and in turn centres of economic growth from urban centres
- Literature on health behaviours also suggests risk and time preference could affect disease threat (Galizzi and Wiesen, 2018; Campos-Mercade et al., 2020)
- Behavioural factors like risk, uncertainty, and loss-aversion can also contribute to migration decisions (Banerjee and Duflo, 2020; Goldbach and Schluter, 2018)

Our Study

- Using telephonic interviews (Maffioli, 2020) conducted with recent (male) reverse migrants, examine projected likelihood of return + perceived disease threat
- Recruitment agencies in villages in UP, Bihar, and WB identified migrants who had returned from cities; received ₹100 phone recharge vouchers for participation
- Pilot telephone surveys (local language) testing questions on COVID-19 in April
- Data collection in two phases through May 2020; more questions on disease threat added ($N = 495$) out of 1200 contacted cohort, average response rate across states: 40%)

Data

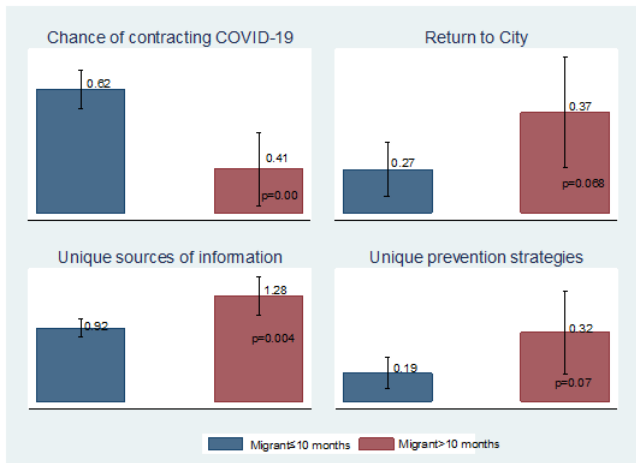
- 1 *Sociodemographics*: age, religion, caste, household composition, land ownership, education levels, social networks (Grootaert et al., 2004)
- 2 *Migration*: employment, duration of migration, whether migrants would return to their jobs in the city post-lockdown
- 3 *COVID-19*: threat perception, information sources (other people, television, social media, newspapers, or health workers), prevention strategies (social distancing, handwashing, following government guidelines, and staying at home)
- 4 *Behavioural Factors*: risk (lottery question), time preferences, loss aversion (Kahneman & Tversky, 1981), subjective well-being (Inglehart et al., 2014)

Data

Key variables

- 1 *Likelihood of return*: recoded binary variable (1 = Willing to return; 0 = Not willing to return); 29% on average willing to return in May 2020
- 2 *COVID-19 disease threat*: recoded binary variable (1 = Real significant or some chance; 0 = No chance); 57% on average perceive no chance of contracting COVID-19
- 3 *Duration of migration*: Categorical variable classified as temporary (\leq 5mon); semi-permanent (5-10mon); and permanent ($>$ 10mon).
- 4 *COVID-19 variables*: Unique number of COVID-19 information sources identified and Unique number of prevention strategies identified.

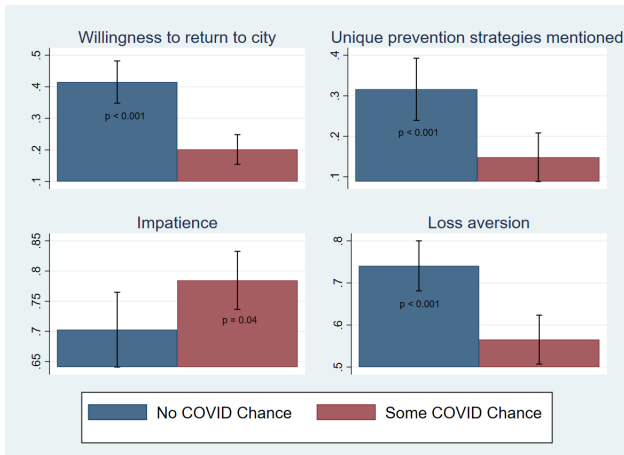
Difference between Migrants



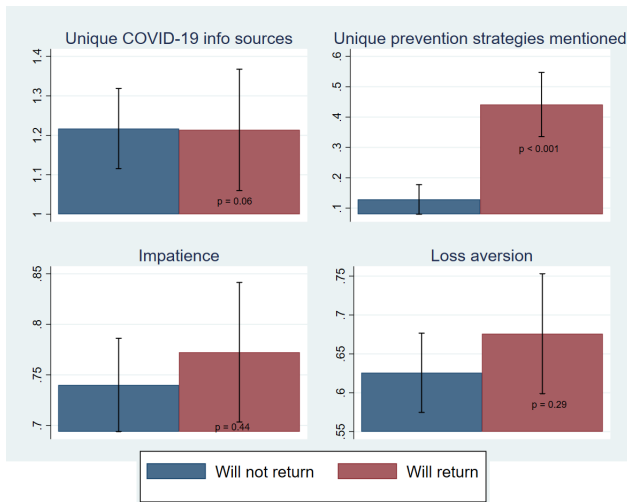
Summary Statistics by COVID-19 disease threat

	No chance	Positive chance	t-test
Unique prevention strategies mentioned	0.32	0.15	3.39***
Return to city post-lockdown	0.42	0.20	5.15***
Unique sources of information on COVID-19	1.04	0.96	0.76
Married	0.69	0.71	-0.52
Dependents	3.41	3.70	-3.51***
Land owned (acres)	1.26	1.59	-2.39**
Monthly income (INR)	13426.54	13479.36	-0.08
Bank account owned	0.80	0.87	-1.87*
Amount of loan taken (INR)	9273.59	13376.33	-0.92
Happiness scale	5.44	4.96	2.80**
Risk averse	0.86	0.77	2.54**
Impatient	0.70	0.78	-2.05**
Loss averse	0.74	0.57	4.15***
Social capital index	0.48	0.37	4.03***
Observations	212	283	

COVID-19 Perceived disease threat



Willingness to Return post-lockdown



Summary Statistics by Willingness to Return

	Will not return	Will return	t-test
Chance of contracting COVID-19	0.65	0.39	5.25***
Unique information sources on COVID-19	1.05	0.86	1.89*
Unique prevention strategies mentioned	0.13	0.44	-5.30***
Married	0.73	0.63	2.02**
Dependents	3.69	3.31	3.59***
Land owned (acres)	1.58	1.04	3.60***
Monthly income (INR)	13370.03	13664.14	-0.43
Bank account owned	0.87	0.77	2.60**
Amount of loan taken (INR)	15047.14	3344.83	3.48***
Happiness scale	5.13	5.27	-0.68
Risk aversion	0.82	0.79	0.77
Impatient	0.74	0.77	-0.77
Loss aversion	0.63	0.68	-1.07
Social capital index	0.39	0.47	-2.36**
Observations	350	145	

Methodology

- Explain likelihood of willingness to return to the city as a function of perceived disease threat of COVID-19

$$Return_{ihs} = \alpha + \beta_1 Duration_{ihs} \times COVID_{ihs} + \beta_2 \mathbf{Beh}_{ihs} + \beta_3 \mathbf{X}_{ihs} + \eta_{ihs} \quad (1)$$

$$COVID_{ihs} = \gamma + \delta_1 \mathbf{Cor}_{ihs} + \delta_2 \mathbf{Beh}'_{ihs} + \delta_3 \mathbf{X}'_{ihs} + \epsilon_{ihs} \quad (2)$$

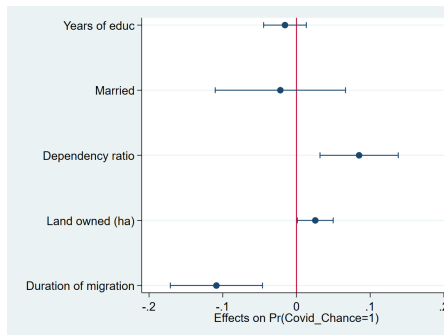
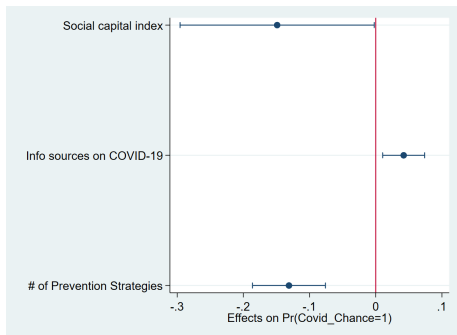
- Where, $Return_{ihs}$ takes a value of 1 if i^{th} respondent in h^{th} household residing in s^{th} state indicated willing to return and zero otherwise. $COVID_{ihs}$ is perceived disease threat (0=No chance; 1=Some chance).
- Covariates: Age, dependency ratios, monthly incomes, religion, literacy etc. Add in behavioural factors, duration of migration, and seven-day rolling average of new cases in state

Identification

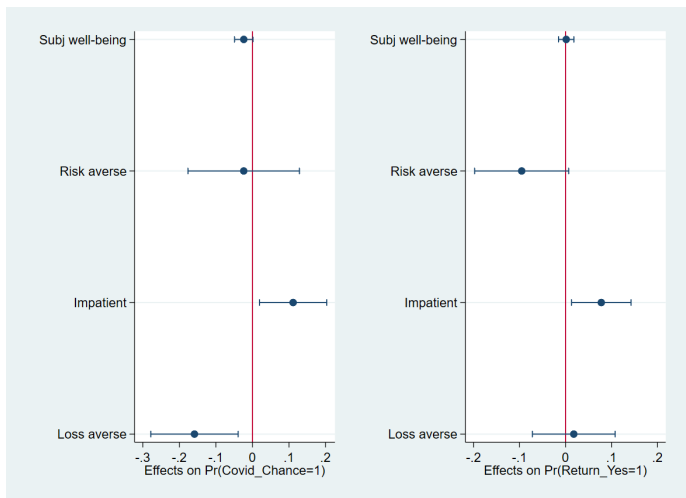
- Common unobservables that determine both disease threat as well as the willingness to return (e.g., unmeasured risk attitudes)
- Both the willingness to return and disease threat perception are jointly determined and potentially endogenous
- COVID-19 disease threat identified using COVID-19 related variables (Kuang et al., 2020)
- Average treatment effects (ATEs) using OLS and instrumental variables regression to account for potential endogeneity
- Robustness checks using bivariate probit estimation, alternate definitions of disease threat
- Heterogeneity: duration of migration, state of origin

Perceived likelihood of contracting COVID-19

Figure: Average Marginal Effects w/ 95% CIs

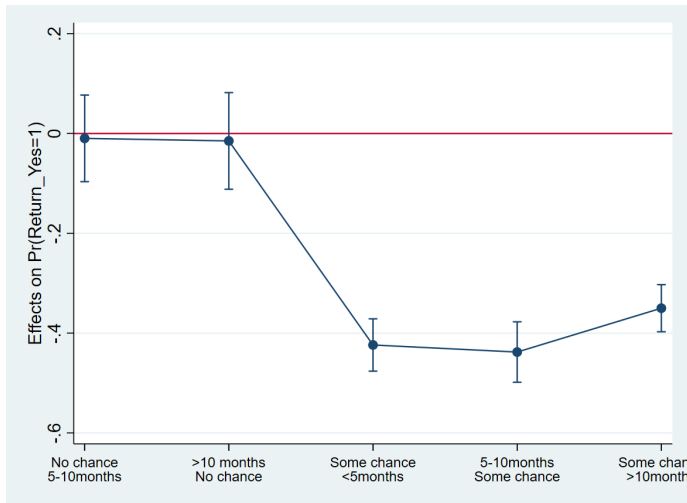


Behavioural factors affecting disease threat and return to city



COVID chance and return to city

Base outcome: No chance $X < 5$ months migrant



LPM Results: Key Variables

VARIABLES	Return to city post-lockdown	Likelihood of contracting COVID
<5 months		
Chance of contracting COVID	-1.289** (0.651)	
Unique sources of information on COVID		-0.00361 (0.0608)
Unique prevention strategies mentioned		-0.216** (0.0918)
Observations	123	
5–10 months		
Chance of contracting COVID	-1.434*** (0.416)	
Unique sources of information on COVID		-0.0164 (0.0413)
Unique prevention strategies mentioned		-0.246** (0.101)
Observations	188	
≥ 10 months		
Chance of contracting COVID	-0.712 (0.580)	
Unique sources of information on COVID		0.0832* (0.0495)
Unique prevention strategies mentioned		0.0325 (0.0866)
Observations	107	

LPM Results: Behavioural Variables

VARIABLES	<5 months		5 – 10 months		≥ 10 months	
	Return to city	COVID-19 disease threat	Return to city	COVID-19 disease threat	Return to city	COVID-19 disease threat
Subjective well-being	-0.102* (0.0597)	-0.0446 (0.0282)	0.0335 (0.0391)	-0.0255 (0.0204)	-0.0390 (0.0388)	-0.0481* (0.0276)
Risk averse	0.0235 (0.229)	-0.0305 (0.163)	-0.116 (0.152)	-0.0776 (0.110)	-0.305** (0.154)	0.0760 (0.180)
Impatient	0.0776 (0.108)	0.0134 (0.0923)	0.479*** (0.163)	0.247*** (0.0945)	-0.00734 (0.137)	0.0707 (0.114)
Loss averse	-0.144 (0.176)	-0.0711 (0.112)	-0.271 (0.180)	-0.217** (0.0921)	0.181 (0.206)	-0.279* (0.151)
Social capital index	0.0175 (0.202)	-0.0418 (0.181)	-0.162 (0.167)	-0.158 (0.135)	-0.152 (0.195)	-0.322* (0.178)
Constant	0.955** (0.452)	0.357 (0.358)	1.614*** (0.560)	0.973*** (0.226)	1.348** (0.638)	0.852** (0.382)
Observations	123		188		107	

Robustness Checks

- Alternate measurements of disease threat:
 - ① Can you stop the Coronavirus infection? (binary variable)
 - ② How sick can Coronavirus make you feel? (ordered response)
 - ③ How painful do you think the Coronavirus infection can be? (ordered response)
- Find general negative effects, strongest for migrants rating higher disease threat and between 5 and 10 months of migration a year

Discussion

- Longer-term migrants perceive lower risk of contracting COVID-19, potentially on account of changing risk perceptions or familiarity (Kahneman, 2003; Wang et al., 2011).
- Impatience associated with higher risk perception, similar to findings in China (Li et al., 2020).
- More information on COVID linked to higher anxiety (Malesza and Kaczmarek, 2021), in turn to higher risk perception
- Loss aversion is linked to preference for status quo (Reidemeier and Shafir, 2020), and therefore linked to support for lower restrictions (Hameleers et al., 2020).
- Return to city decisions are affected by perceived disease threat, heterogeneous by duration of migration, potentially linked to stronger urban place identity and attachment (Scannell and Gifford, 2010) for longer-term migrants (Hernandez et al., 2007; Bonaiuto et al., 2016).

Thank you!

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