

THE AFFORDANCES OF BIG DATA FOR POVERTY REDUCTION: EVIDENCE FROM INDIA

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PROBLEM AREA

What role(s) for new technologies
in strengthening/reforming existing
anti-poverty programmes?

- Anti-poverty programmes: social safety nets aimed at achieving poverty reduction (multiple domains)
 - Increasingly **computerised** on a global scale

BIG DATA & POVERTY REDUCTION

- Computerisation – antecedent of big data
 - “we can learn from a large body of information things that we could not comprehend when we used only smaller amounts” (Cukier & Mayer-Schoenberger, 2013)
- Approaching “**n = all**”:
 - Using “all” rather than “some” data, the problem of sample determination disappears
 - What does this imply for the management of anti-poverty programmes?

DATAFICATION

- Rendering existing processes into data (Newell, 2013)
 - Modifying processes rather than building new ones
- Acquires a specific meaning when placed in context of anti-poverty programme computerisation
 - Digitises the critical phases of **recognition** of beneficiaries and **assignation** of entitlements
 - Converts lived experience of poverty and vulnerability into machine-readable data – transforms state-citizen relation

RESEARCH QUESTIONS

- How does datafication affect the **architecture** of existing anti-poverty programmes?
- How does this affect programme **beneficiaries**, and their entitlements under social safety nets?

AFFORDANCES

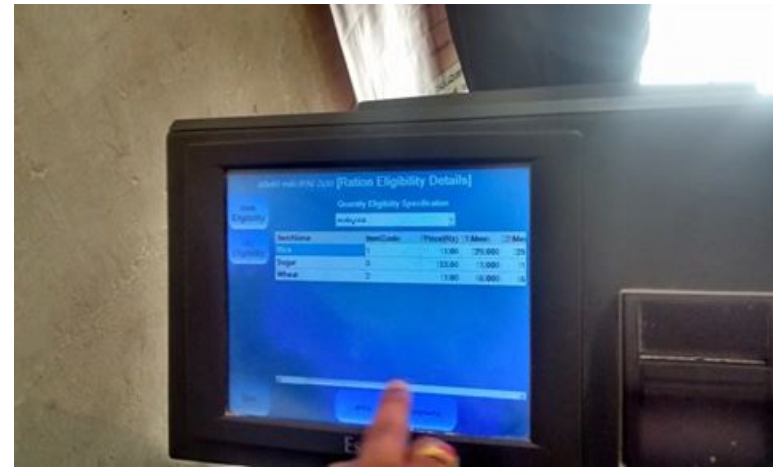
- Action possibilities in relation to a certain context (Gibson, 1977)
 - Original definition in psychology – **all actions** that are physically possible, depending on agents' capabilities
 - Functional affordances vs. **affordances-for-practice** in information systems (Zheng & Yu, 2016)
- A single, longitudinal case study conducted to explore the affordances of big data for poverty reduction

THE INDIAN PUBLIC DISTRIBUTION SYSTEM



- Public Distribution System (PDS): main Indian food security net
 - Centralised procurement, distribution through **ration shops**
 - Formerly universal, became targeted to below-poverty-line in 1997
- States after targeting: collapse of PDS
 - Drop in users' base - ration shops forced to shut down
 - Problem of leakage – **rice mafia** diverting goods to the market

UID/AADHAAR: DATAFICATION OF PDS



India's Unique Identification project – UID/**Aadhaar** (“foundation”)

Assigns to all those enrolled – on a free and voluntary basis – a 12-digit unique ID number plus biometric details

Economic Survey (2014-15): main purpose of Aadhaar is that of simplifying delivery of social benefits, eliminating existing leakages

UID/AADHAAR: DATAFICATION OF PDS



To be integrated with PDS: users recognised at ration shops on the basis of Aadhaar system

Recognition on the basis of biometric data:
Aadhaar as **datafier** of India's anti-poverty agenda

PERSPECTIVES ON AFFORDANCES - 1: TECHNICAL RATIONALITY

- Affordances of datafication for architecture of PDS:
 - Tackles **exclusion error** – entitled users that were not recognised by paper registers can be served
 - Tackles **inclusion error** – makes it impossible for non-entitled users to access the system
 - Allows to fight rice mafia through monitoring of the supply chain – prevents **misappropriation** of goods by ration dealers
- Potential issues: technical feasibility, data security, adaptation
 - Technical rather than politically embedded: benefits seem deeper and more enduring than potential risks

PERSPECTIVES ON AFFORDANCES - 2: POLITICAL EMBEDDEDNESS



ವಿವರ	ಪ್ರಮಾಣ	ಕುಡುಮೆ	ಫೋನ್ ನಂ
AAY ಲಂ	1kg	1-00	1800-42
AAY ಗುಣಿ	1kg	1-00	
ಸಕ್ಕರೆ	1kg	13-50	
B.P.L ಲಂ	1kg	1-00	
B.P.L ಗುಣಿ	1kg	1-00	
B.P.L ತಗಿ			
A.P.L ಲಂ			
A.P.L ಗುಣಿ			

- Datafication implies **deep transformation** of the PDS
 - Aadhaar: integrated with bank accounts and mobile technologies – JAM trinity (Jan Dhan Yojana, Aadhaar, mobile phones)
- Sets stage to substitute PDS with a cash transfers system
 - Beneficiary narratives: anxiety and fear for transformation (feasibility, outsourcing of main food security system to the market)

DATAFICATION AS POLITICALLY EMBEDDED



- Embedded in a specific **reform** of social protection
 - “Technology carries policy”: datafication as means to transform the existing anti-poverty system into a cash transfers programme
- Vision reinforced by present-day monetary policy
 - Demonetisation: Aadhaar as central to the new cashless economy

CONCLUSION

- Datafication affects the **making** of anti-poverty policy, and may lead to radical reform of anti-poverty systems
- But: risk of “disappearance” of political embeddedness
 - Need focus on the policy agendas around datafication
 - Need to conceptualise their effects on the **entitlements** received by beneficiaries of poverty reduction schemes.

THANK YOU!



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