



Changing Networks and Expectations of Grassroot Innovators in India

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Presentation Plan

- Grassroot Innovations
- Theoretical framework of Networks and Expectations
- Research Methodology
- Result Analysis
- Tentative Conclusion

Grassroot Innovations

- Grassroot innovations are individual innovation to solve daily routine personal or social problems or due to curiosity.
- Because either there is no solution by the market or the available options are costly for these people.
- The characteristics of grassroot innovations in India
 - Informal sector: Out side any formal organisation
 - It is often conceptualised by an individual and not assigned to innovators by others.
 - Educational profile: no or less education and no professional training.
 - Informal Learning and based on tacit or experiential learning.
 - R&D: Grassroot innovators choose their raw material for experimentation informally.
 - Treat nature as medium of livelihood and thus sustainable use, unlike formal sector where they use nature as resource.
 - Institutions: Primarily Informal institutions.
 - Informal support system in the society.

Conti...

- Grassroot innovation is a new term for such innovations but Gandhi, Tagore and other scholars have already discussed about such technologies in one or other forms. However, it is different from the “appropriate technology movement”.
- Grassroot innovations or informal sector innovations are not an exclusive concept, but one can find such innovations in different cultures.
- The name and characteristics may be different for example in Kenya it is ‘Jua Kali’, USA ‘Independent Innovations’ China ‘Folklore innovations and in UK and India ‘Grassroot Innovations’.
- Reiner (2008), in a study on independent innovators in USA, highlights informal innovations significance. They are individual innovators outside any formal R&D set up and constitute 26% of total innovations in USA and UK, 75% in Hungary, and 66% in Brazil.

Grassroot Innovations: Few examples

- Pochampalli Sari Making Machine
- Lakshmi Asu Sanitary Napkin Making Machine
- Kajal Pollution control Machine
- Tarun Gogoi an innovator from Assam, has become a change agent in the society.

Theoretical framework

- Innovation does not occur in isolation and the socio-economic, cultural, political, and individual related variables are important factors, which influences the innovation process.
- Therefore, the network of innovators with other heterogeneous actors as environmental factor and expectations as individual factor is discussed in this research.

Network

- Social Network Analysis (SNA) argues that structure affects function, therefore, it is important to analyse the anatomy of networks (Strogatz 2001).
- Grodal and Powell (2005) have discussed various form of ties within the innovation system and explained that they have substantial impact on the innovation process.
- They have discussed formal and informal ties and their role in shaping the innovation process.
- Grannovator (1984) discussed the ties in terms of strength i.e. strong and weak ties.
- So far scholar have looked into ties as source of knowledge exchange, trust, learning, access and restriction to resources etc.
- But, in this research we try to establish a link of ties with expectations.

Expectations

- Borup et al. (2006) argue that expectations are ‘constitutive’ or ‘performative’ and attract the interest of necessary allies (various actors in innovation networks, investors, regulatory actors, users, etc.).
- It also define the roles and binds mutually shared obligations and agendas (Berkhout 2006).
- One can argue that since expectations are intrinsic to social action, visions of the future are ubiquitous, but individual and specific.
- Agents will act in relation to their private version of what the future may hold.

Conti...

- As programmes of action unfold and practices are modified, so these private agendas for the future change, usually tacitly.
- However, private expectations are to a large extent shaped by socially-distributed rhetoric about the future, as well as by the inertias represented by material conditions.
- The mutuality of expectations may result 'promise and requirement', i.e. of promissory commitments that become part of a shared agenda and thus require action.
- However, expectations can create both hype and disappointment. Failed expectations can have more or less detrimental effects on an innovation process (Brown et al. 2003).

Grassroot Innovation System Model

Local environment (family and community)

Financial Environment

Propensity to innovate and entrepreneurship

Trust

Informal and Formal institutions

Collaboration and Linkages

- Innovation and Business Support Systems
- Standards and Norms (at later stage)

Business Systems

Private firms
Entrepreneurs
Innovators

Intermediate Organisation

NIF (Formal) Rural
Innovation Network (RIN),
Barefoot College etc.

Research System

- Local environment and resources
- Informal learning and Tacit Knowledge based
- Private firm
- Public R&D labs
- Educational institutes

Technological
Environment

Innovators Working
Environment

Formal and Informal
Institutions

Innovation Stages

Idea

Experimentation

Implementation

Social, Economic Cultural
and Political Environment

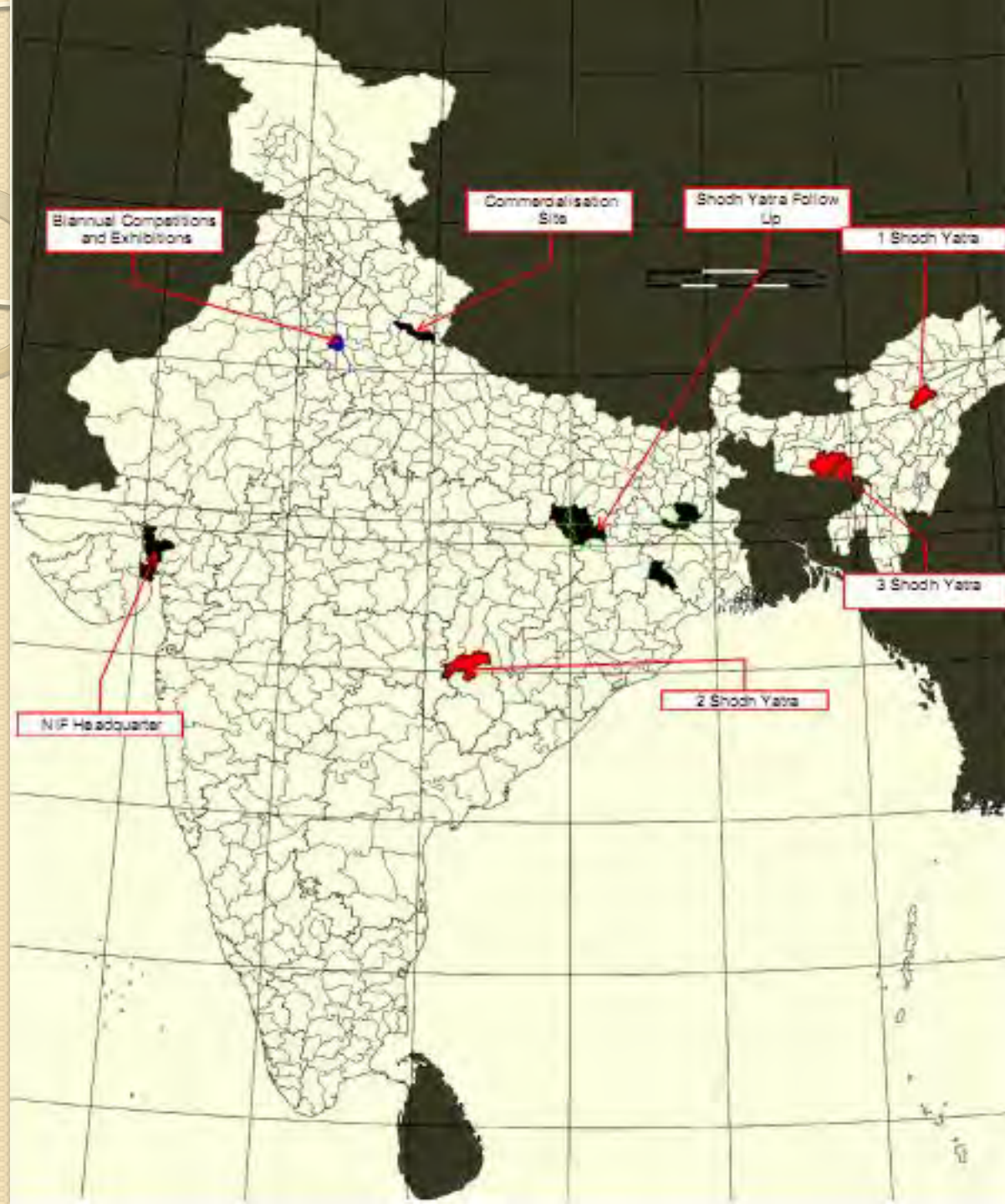
Individual
Neurocognitive,
Personality Traits,
motivation & behaviour

Family and
Community

User
s

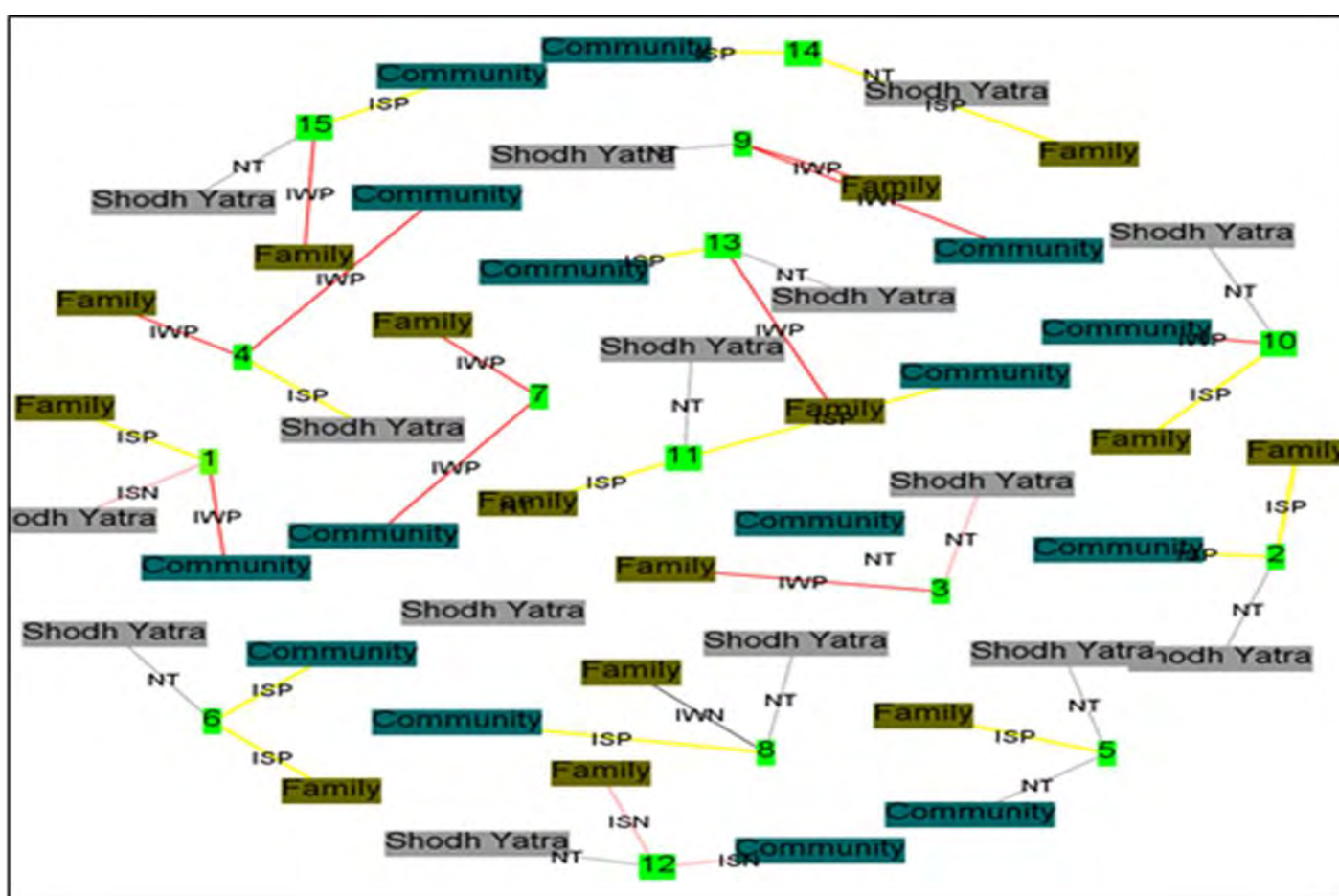
Research Methodology

- We conceptualise grassroots innovation process into three stages namely idea generation, experimentation, and implementation stage.
- Data is collected through questionnaire interview schedule. Innovators interviewed at on different occasions such “Shodh Yatra”, Award Function, Personal visit to innovators place.
- We plot diagram of networks for 15 innovators (substantiated by other cases) for these three stages.



Parameters to measure Networks

Sr. No.	Ties	Code	Colour Code
1	No ties	NT	Null
2	Informal, weak, and negative	IWN	Black
3	Informal, weak, and positive	IWP	Red
4	Informal, strong, and negative	ISN	Pink
5	Informal, strong, and positive	ISP	Yellow
6	Formal, weak, and negative	FWN	Green
7	Formal, weak, and positive	FWP	Magenta
8	Formal, strong, and negative	FSN	Cyan
9	Formal, strong, and positive	FSP	Blue



Sr. No.	Idea Generation		
	Family	Community	Shodh Yatra
1	IWN=1	NT=2	NT=13
2	IWP=6	IWP=5	ISN=1
3	ISN=1	ISN=1	ISP=1
4	ISP=7	ISP=7	

Expectation at the idea generation stage

- Expectations of innovators are mainly to serve the actors with informal ties, which are based on the values of trust and no extrinsic incentives. In return, they did not expect other than moral support from these actors.
- This enhances trust among the community members, learning, free flow of knowledge, less restriction over the local resources and individual feels motivated after conceptualisation of the idea or the problem.

Experimentation stage



Sr. No.	Experimentation Stage					
	Family	Community	NIF/Shodh Yatra	R&D	Funder	Private Firms
1	IWN=2	NT=1	NT=10	NT=11	IWP=4	NT=12
2	IWP=7	IWP=5	FWN=1	IWN=1	ISP=10	IWN=1
3	ISP=6	ISP=9	FWP=1	ISN=1	FWP=1	FSN=2
4			FSN=1	FWP=1		
5			FSP=2	FSN=1		

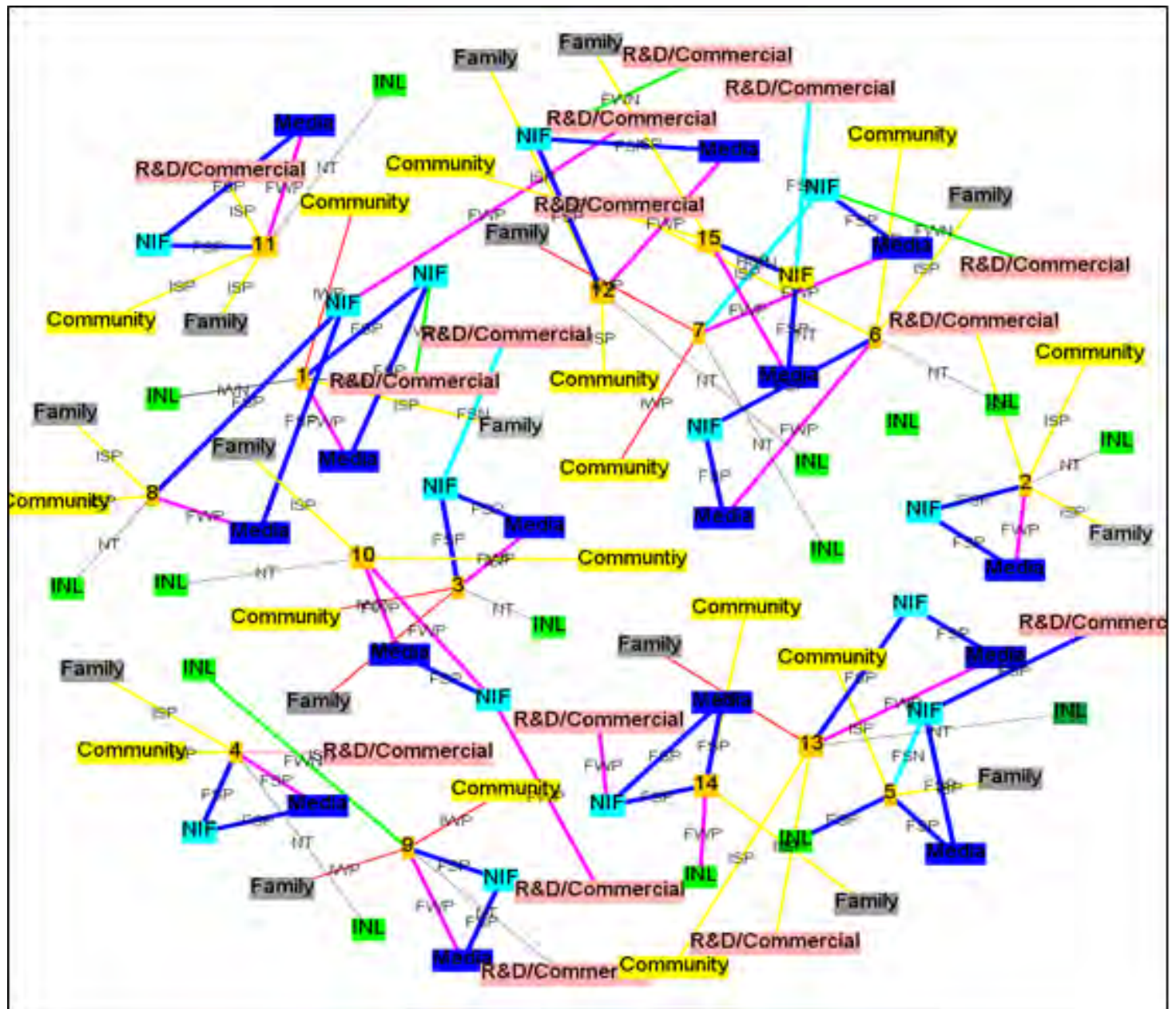
Expectations at experimentation stage

- An innovator who gets in contact with formal ties, which are mainly based on extrinsic incentives (such as monetary support, and R&D support), and come to know about the potential commercial value of their innovation, seems to be shift their expectation.
- Those who have no contact from outside agencies at this stage, their expectations are still to achieve the aim with which they have started.

Implementation stage

Table No.: Collaboration and Linkages at the Implementation Stage

Sr. No.	Implementation Stage					
	Family	Community	NIF/Shodh Yatra	Media	International Linkages	Commercialisation /R&D
1	IWP=4	IWP=4	FWP=1	FWP=13	NT=11	NT=1
2	ISP=11	ISP=11	FSN=2	FSP=2	IWN=1	ISN=1
3			FSP=12		FWN=1	ISP=4
4					FWP=1	FWN=3
5					FSP=1	FWP=3
6						FSN=2
7						FSP=1




Expectations at implementation stage

- We have observed an extensive formalisation procedure of the grassroots innovation at the stage of implementation, especially after intervention by NIF.
- Still the grassroots innovations function in an informal setup i.e. in terms of backward linkages they are informal, while on the forward linkages they are linked to various governmental, private, non-governmental organisations.
- These are mainly to provide them incentives for their innovations.
- However, their interactions with outside agencies, mainly formal in nature, raise their expectations in terms of commercialisation, popularity, patenting and earning from the innovation.

Conclusion

- If we compare all the three stages on expectations and networks:
 - We can observe shifts in expectation and evolution of more no. of heterogeneous actors with innovators.
 - Networks are shifting from informal to more of formal in nature of ties.
 - Informal networks are based on the values of trust, information sharing, informal support system.
 - On the other hand, formal networks are inherently based on the extrinsic incentives such as awards, funding, commercialisation, and patenting and they generate expectations which are more of commercial values.

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- However, expectation theories suggests that failed expectations can have more or less detrimental effects on an innovation process (Brown et al. 2003) and in the field we have found such effects of failed expectations.
 - This shows that the individual variable i.e. expectation is influenced by the environmental variables i.e. networks.
 - The policy implication of this research suggests that, one (in our case it is NIF) has to consider the various dimensions of ties in developing such networks.



Welcome questions and suggestions

Thank you all...