



# **Social norms measurement in action:** ***Contraceptive use***

Douglas Storey, PhD  
Director for Communication Science & Research

Consultation on Norms Interventions  
29 February 2016



**JOHNS HOPKINS**  
BLOOMBERG SCHOOL  
of PUBLIC HEALTH

# Introduction

## Key role of norms analysis and normative change in

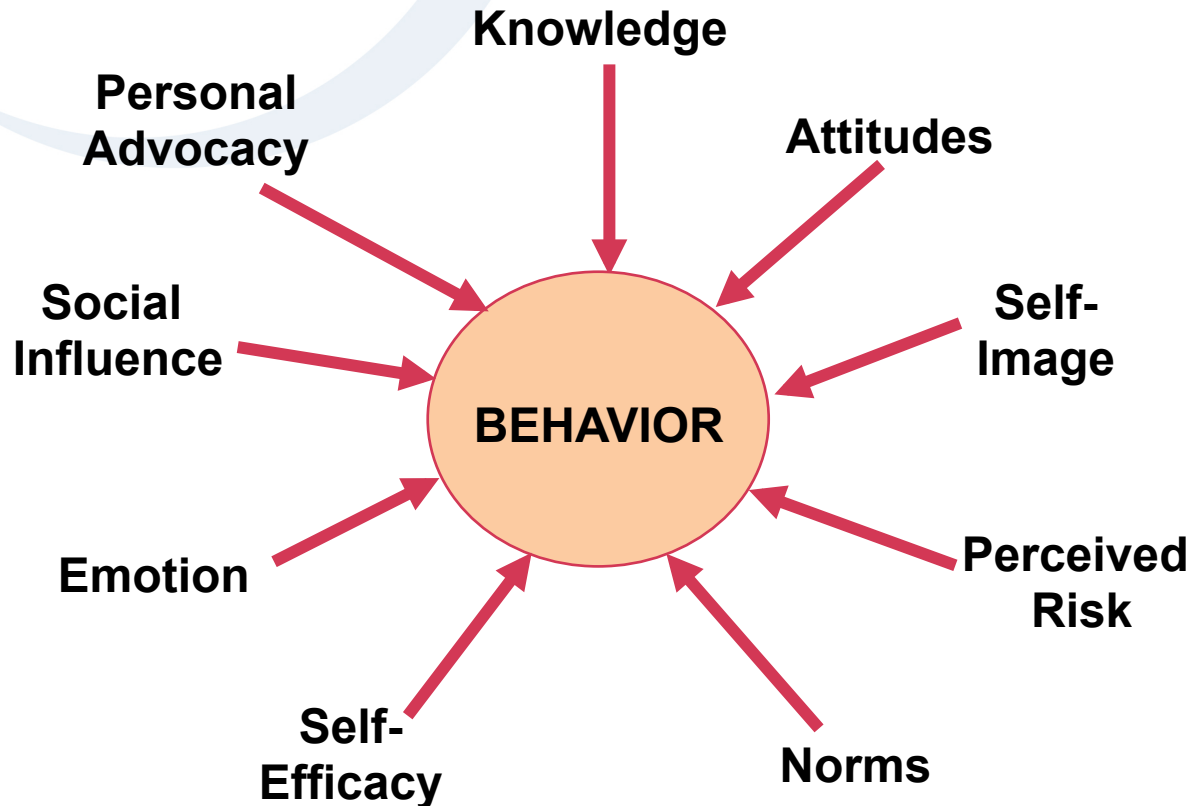
- HIV prevention
- HIV testing
- Antenatal care
- Child and adult immunization
- WASH
- Avian influenza prevention & response
- Emergency preparedness
- Women's empowerment (AWSO, African Transformations)
- **Contraceptive behavior**

# Theoretical perspectives

- Ideation
- Spiral of silence
- Bounded normative influence

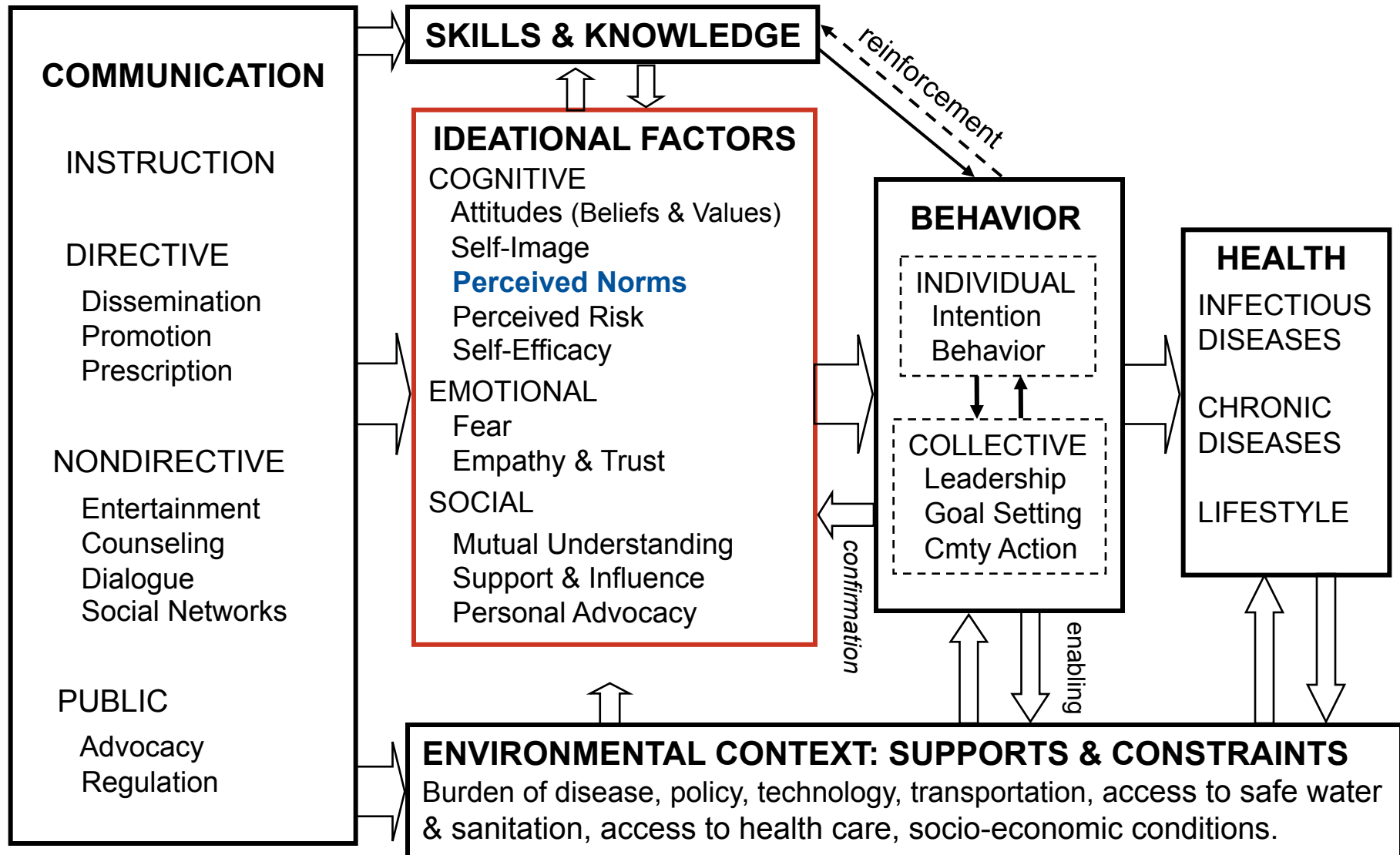
# IDEATION:

**Behavior is influenced simultaneously by multiple psychosocial factors and communication affects them all**



**Sources:** Cleland & Wilson, 1987; Kincaid et al., 2013

# IDEATIONAL METATHEORY OF HEALTH COMMUNICATION



# SPIRAL OF SILENCE



Elizabeth  
Noelle – Neuman

People tend to remain silent when they feel that their views are in the minority.

People have a fear of isolation and know what behaviors will increase their likelihood of being isolated.

# BOUNDED NORMATIVE INFLUENCE



Lawrence Kincaid, 2004

A minority position can become the social norm by means of the process of bounded normative influence.

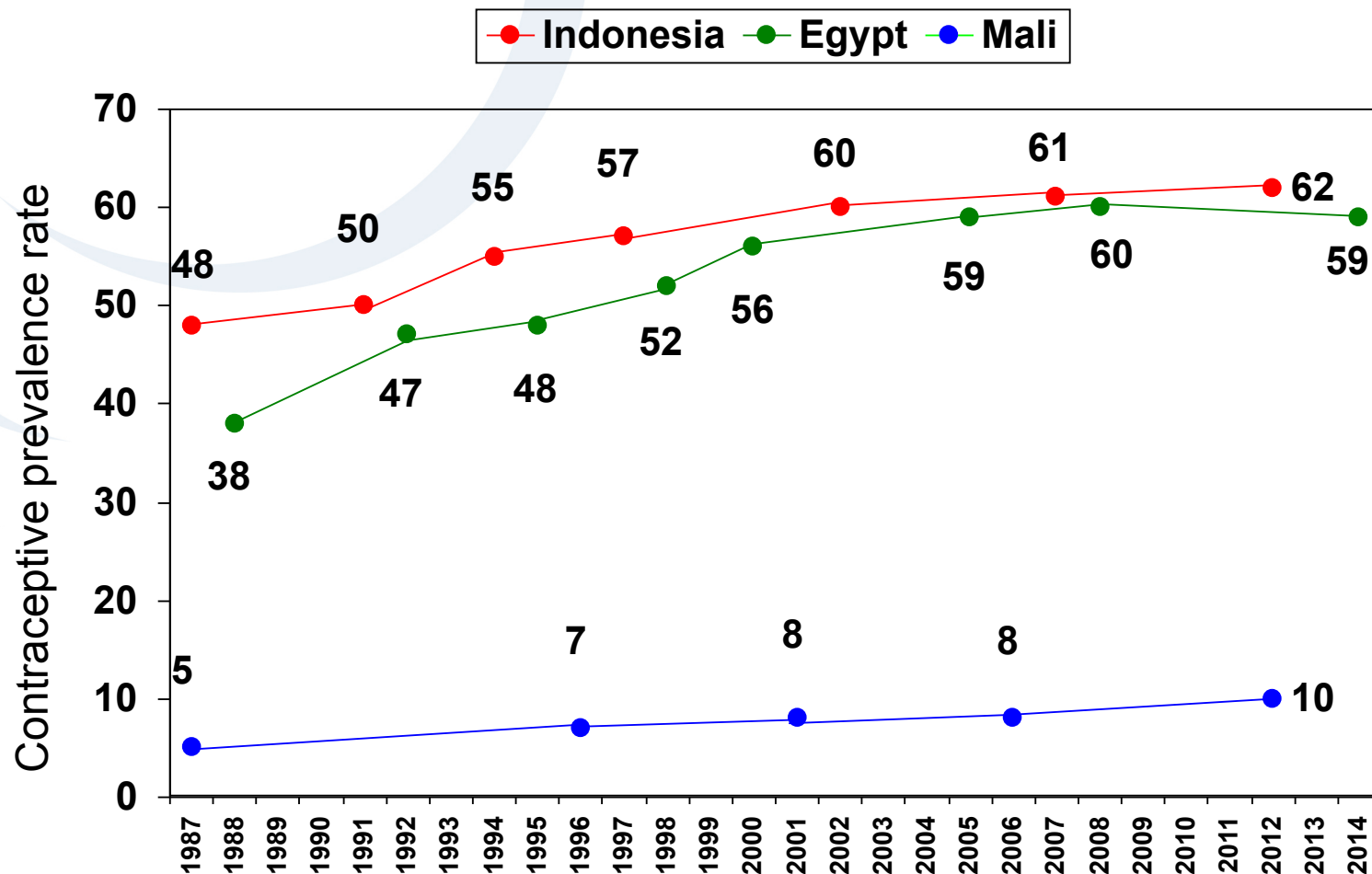
As long as a minority maintains its majority status within its own, locally bounded portion of the network, then it can survive, recruit converts in the near surround, and establish its behavior as the norm for the network as a whole.

# Change and Stability of Norms Related to Family Planning and Fertility in Indonesia, Egypt and Mali

## ORIGINS

- Analysis of DHS data from 52 countries reported nearly universal linear increases in CPR with occasional brief plateaus (Ross, Abel & Abel, 2004)
- What explains stability?

# Trends in contraceptive prevalence



Sources: IDHS 2007, EDHS 2007, MDHS 2006

# **Indonesian context: Economic & political crises 1997-2002**

- **Political turmoil**
- **Rising cost of commodities**
- **Reduced availability of subsidized contraceptives**
- **Decentralization**
- **Disruption in service delivery & program management**

# Sources of data

## Demographic & Health Surveys

- Nationally representative large sample surveys
- 82 countries, many with multiple waves every 3-5 years
- Mostly married women of reproductive age (15-49)
- Cover wide range of population, maternal & child health, reproductive health topics, general media use, IPC by topic
- Sample sizes:
  - Mali (2001 n=7,671)
  - Egypt (1995 n=14,779; 2000 n=15,573; 2005 n=19,474)
  - Indonesia (1997 n=28,810, 2003 n=29,483)

<http://www.measuredhs.com/>

# Context

	Indonesia	Egypt	Mali
<b>First national campaign</b>	1970	1980	1990
<b>Program conditions</b>	<ul style="list-style-type: none"> <li>• Intensive national campaigns since 1970s, but none 1997-2003</li> <li>• Economic &amp; political crisis 1997-2003</li> </ul>	<ul style="list-style-type: none"> <li>• Intensive coordinated campaigns since 1980</li> <li>• Shift from limiting to spacing focus in 2000</li> </ul>	<ul style="list-style-type: none"> <li>• Largely urban focus</li> <li>• Strong pronatalist attitudes</li> </ul>
<b>Key indicators (DHS data)</b>			
<b>Percent exposed to FP messages past 6 months</b>	52%	99%	53%
<b>Percent female literacy</b>	92%	66%	22%
<b>Ideal number of children</b>	2.9	2.9	6.3
<b>Percent knowledge of modern methods</b>	99%	99%	75%

# **Indonesia 1997-2003**

## **Negative effects varied by district**

Of 258 kabupatens (districts) selected in 1997 and 2002/03 IDHS surveys:

- 57% experienced an increase in CPR
- 43% had no increase or experienced a decline in CPR

→ What explains different trajectories?

# Two contextual factors examined

1. Normative factors at the district level
2. Supportive symbolic environment

# Operationalizing the concepts

## Social norms

- Descriptive norm—cluster level CPR, parity
- Normative preferences—cluster level proportion who say their ideal family size is  $\leq X$

## Symbolic environment

- Cluster level proportion who report discussion with spouse/others about FP
- Cluster level proportion who report exposure to FP messages

→ Use of “non-self” means (cluster means calculated for each case after removing the reference case)

# Effect of individual and normative factors on FP use: INDONESIA 1997-2003

## VARIABLES Individual level

	Beta	t
Wealth index	.019	2.34*
Age	-.040	-15.74***
Education	-.020	-4.18***
Urban/Rural	.100	2.05*
Parity	.269	17.51***
Ideal family size	.354	14.33***
FP message exposure	.090	4.15***
Spouse approval	2.67	22.79***
Discussed FP with spouse	.842	22.53***

## Cluster level<sup>1</sup>

Prior cluster CPR (1997)	2.07	10.69***
% whose ideal family size $\leq 2$	.826	5.27***
% ever discussed FP with spouse	.577	3.33**
% exposed to FP messages	.329	2.52*

<sup>1</sup> Non-self means calculated in selected clusters

Source: Storey & Schoemaker (2006), IDHS 1997 & 2003

# Effect of individual and normative factors on FP use: EGYPT 1995-2005

*National program shifted emphasis in 1999-2000 from small family to low parity use*

## Variables

### Individual level

	Odds Ratios	
	1995-2000	2000-2005
Parity	1.14	1.13
Desire large family	0.73	0.79
Visited health facility past 6 months	0.68	0.78
Age	ns	ns
Governorate	ns	ns
Literacy	0.14	ns
N of FP message sources	1.26	1.15

### Cluster level<sup>1, 2</sup>

% supporting small family ideal of $\leq 3$	2.56	ns
% approving of FP use after 1 <sup>st</sup> child	ns	3.39

<sup>1</sup> Non-self means calculated in selected clusters

<sup>2</sup> Cluster level exposure to FP messages non-significant because exposure to FP messages was nearly universal

Sources: Storey & Kaggwa (in press); EDHS 1995, 2000, 2005

# Effect of individual and normative factors on FP use: MALI 2001

Variables	Odds Ratios		
	Model 1 Individual	Model 2 Cluster	Model 3 Multilevel
<b>Individual level</b>			
Education, Region, Residence	ns	ns	ns
Partner's educ, working, age, income	*	*	*
Personal approval of FP	2.2	--	2.2
Partner approval of FP	2.1	--	2.1
Discussed FP with partner past 6 year	2.2	--	2.3
Discussed FP with others past 6 mo	1.4	--	1.4
Exposed to FP messages past 6 mo	1.6	--	1.5
<b>Cluster level<sup>1</sup></b>			
% prefer small family $\leq 4$	--	ns	ns
Mean parity	--	0.7	ns
% approving FP use	--	5.5	ns
% exposed to FP messages past 6 mo	--	ns	ns

<sup>1</sup> Non-self means in selected clusters

Sources: Storey & Kaggwa (2009); MDHS 2001

# The Fundamental Paradox of Social Change

- Every innovation begins as a deviation from existing norms. Given the strong effect of social norms and influence, how can any innovation ever diffuse to the point where it becomes the social norm?
- The seeming paradox of how a few can influence many has not been explained well by prevailing theories in the social and behavioral sciences.

# BOUNDED NORMATIVE INFLUENCE

- Computer simulations have demonstrated the important, overlooked role played by ***boundaries*** that form within communication networks and how these boundaries affect the establishment of a new social norm.
- The results revealed a solution to the paradox of how a minority position can become the social norm:

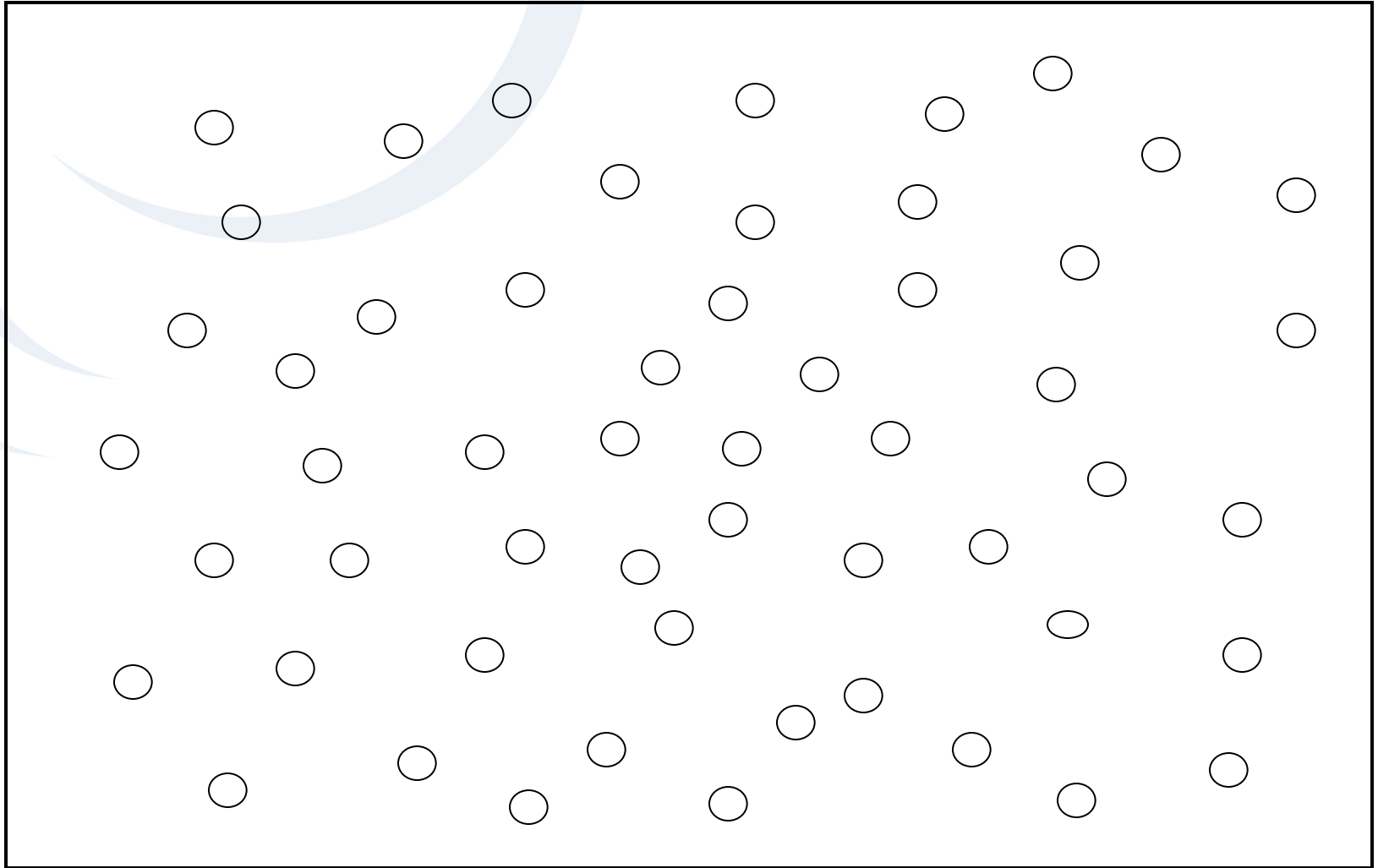
## ***The principle of bounded normative influence***

- **Bounded normative influence is the tendency of social norms to influence behavior within relatively bounded, local subgroups of a social system rather than the system as a whole.**

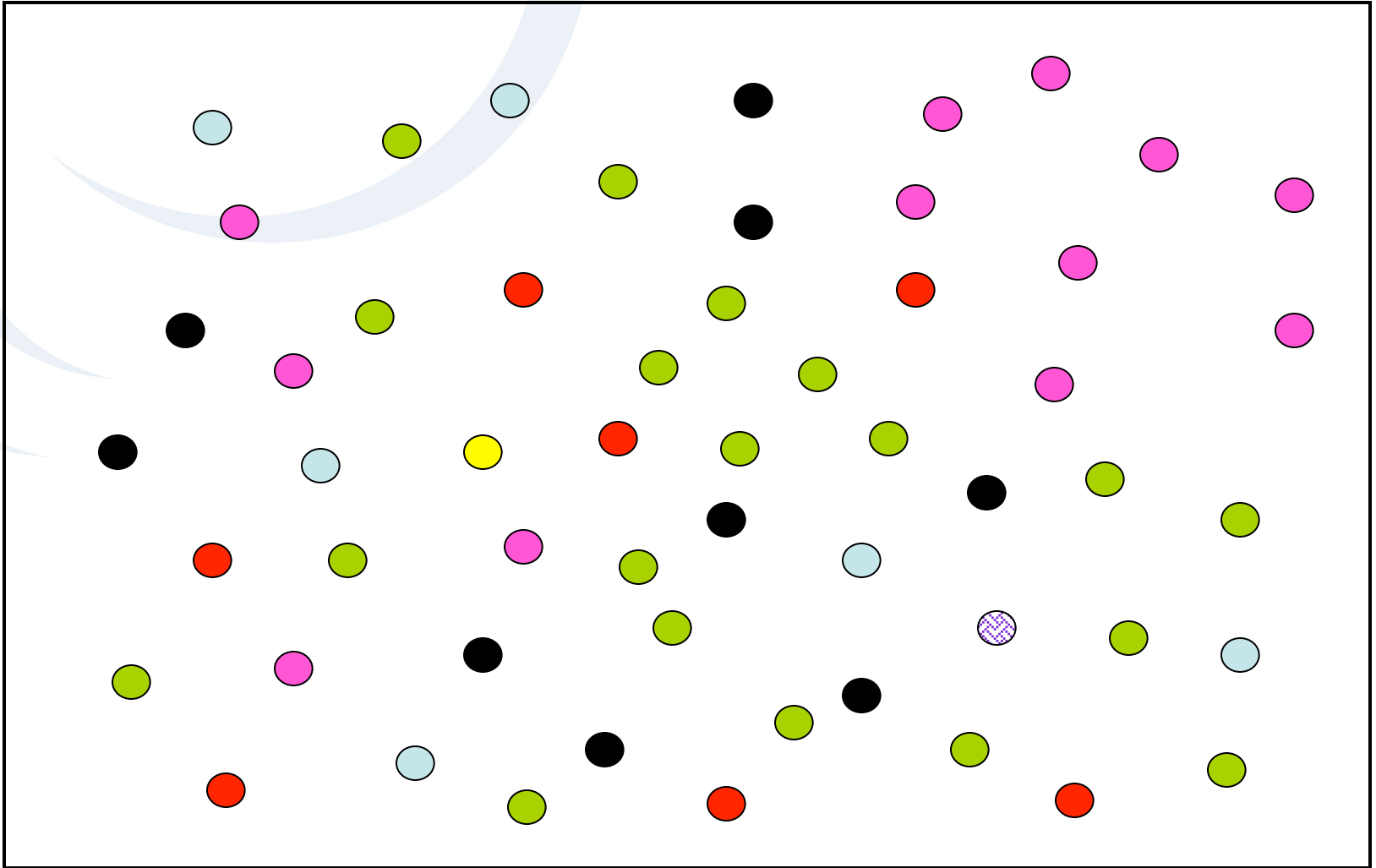
**Kincaid, D. L. (2000).** Social networks, ideation, and contraceptive behavior in Bangladesh: A longitudinal analysis. *Social Science and Medicine*, 50(2), 215–231.

**Kincaid, D. L., & Foreman, R. (1993).** NETSIM: Network simulation. [Computer Program]. Baltimore: Center for Communication Programs, Bloomberg School of Public Health, The Johns Hopkins University.

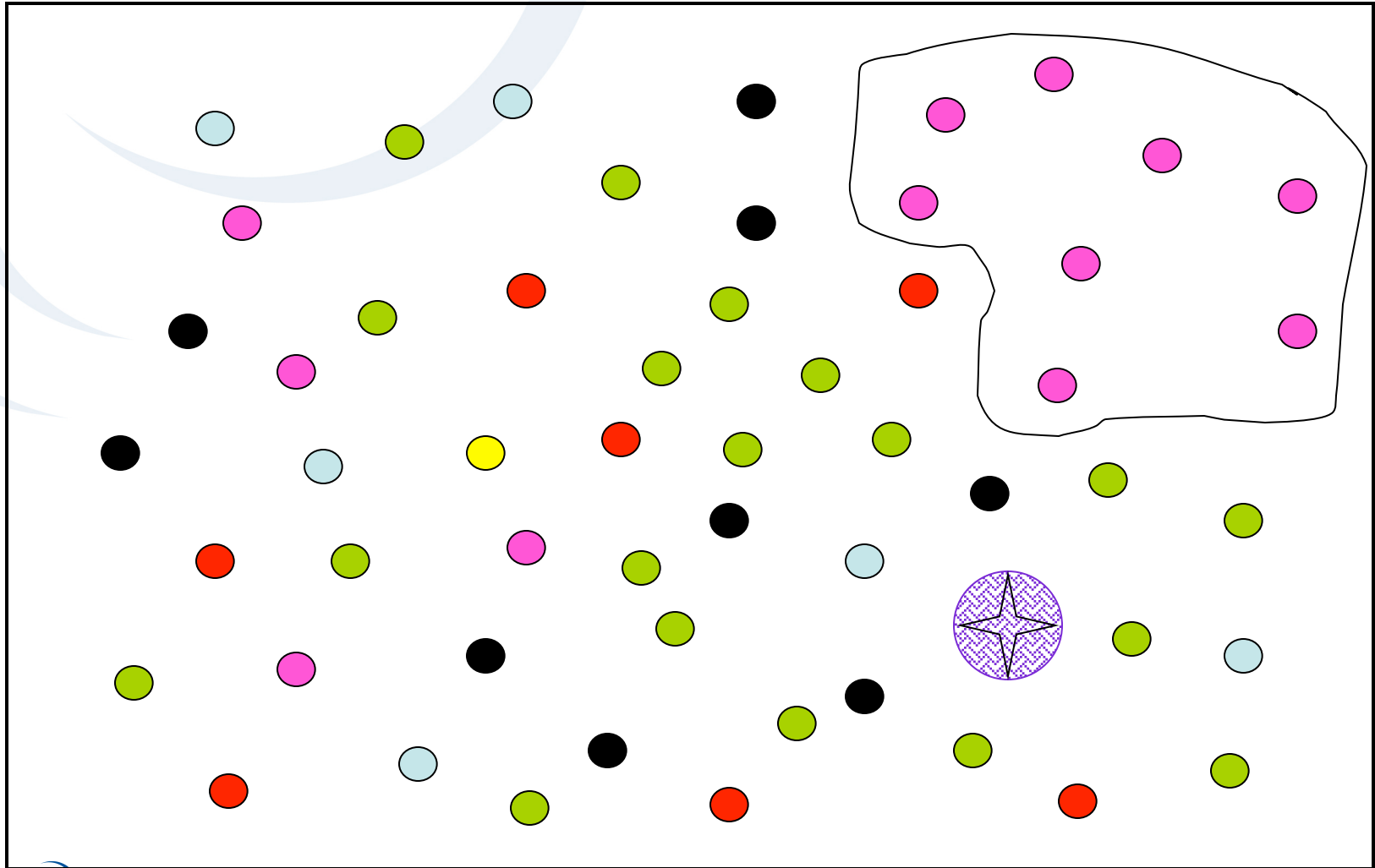
# Implicit Image of the Structure of Local Communities



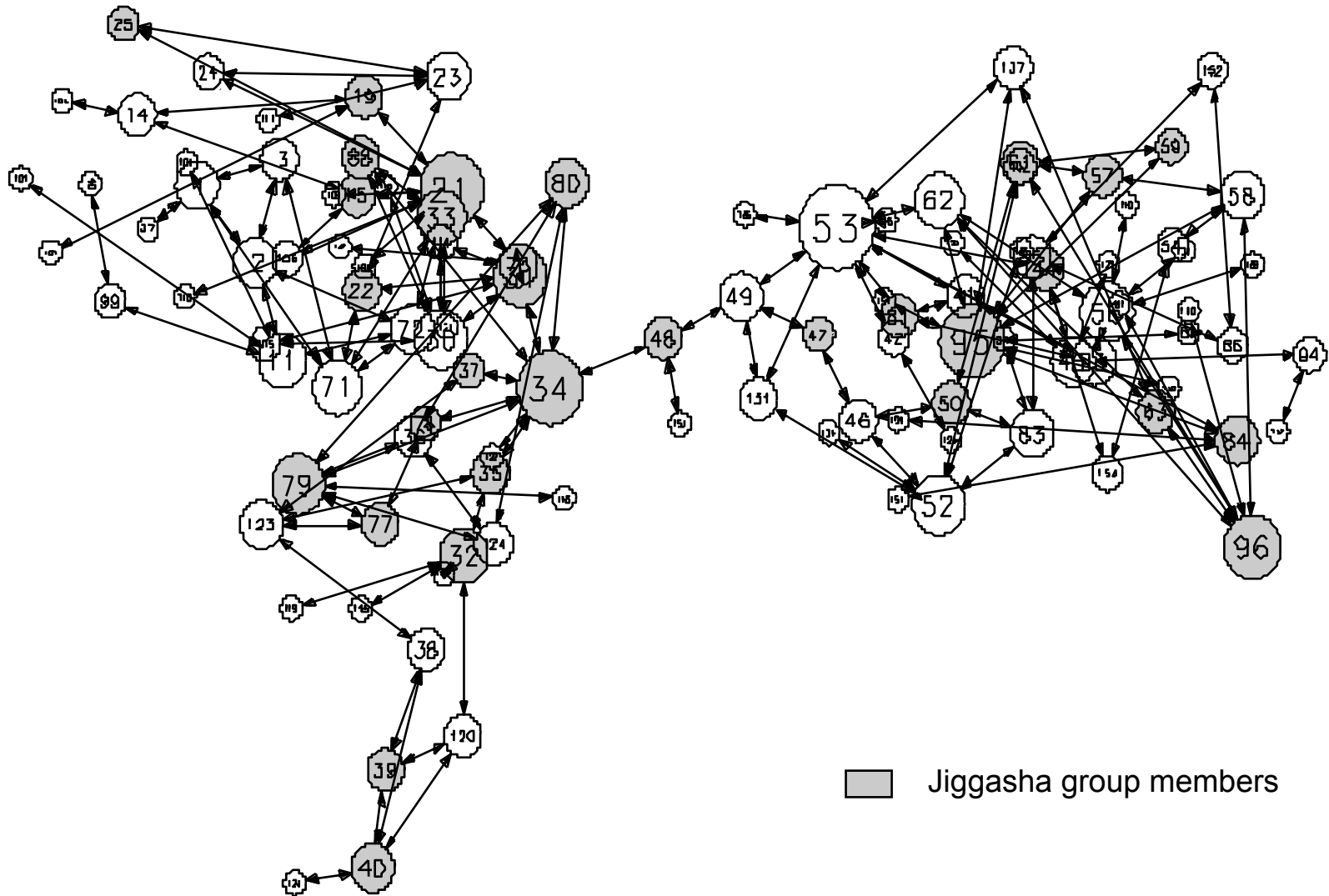
# Psychosocial Differentiation of Local Communities



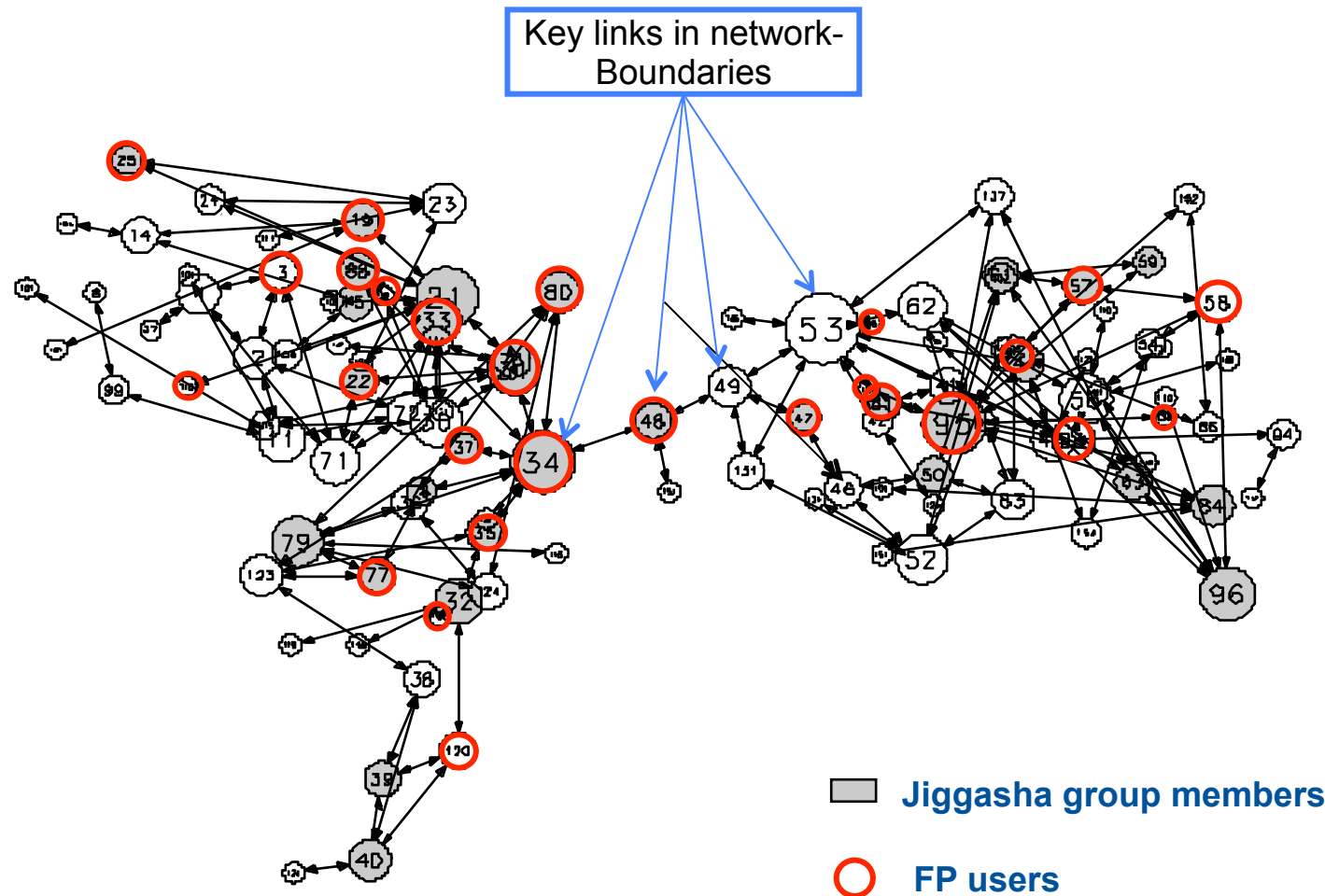
# Emergence of a culturally homogeneous subgroup and leadership

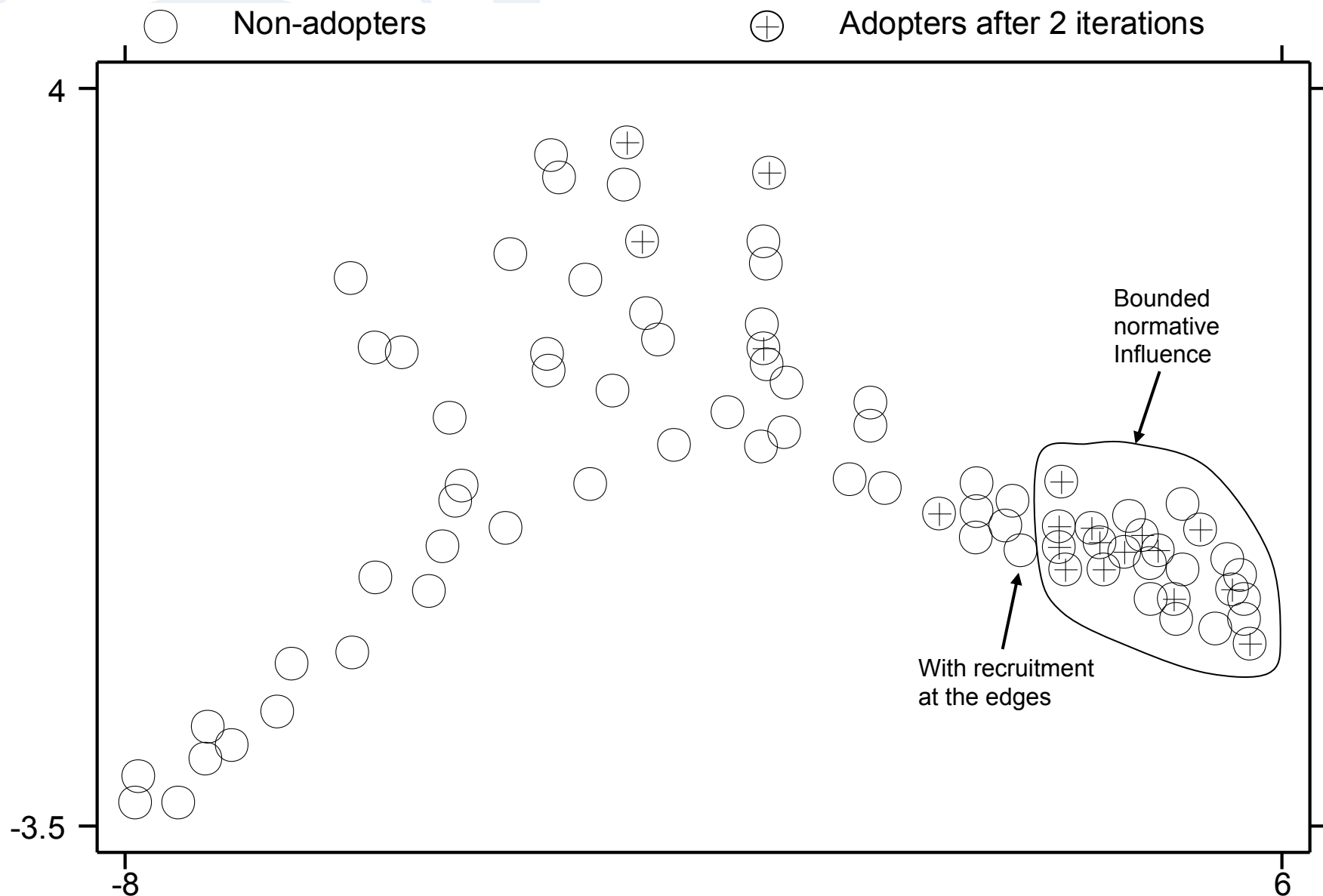


# Communication Network Among Women in a Bangladesh Village with Jiggasha Group Membership Indicated

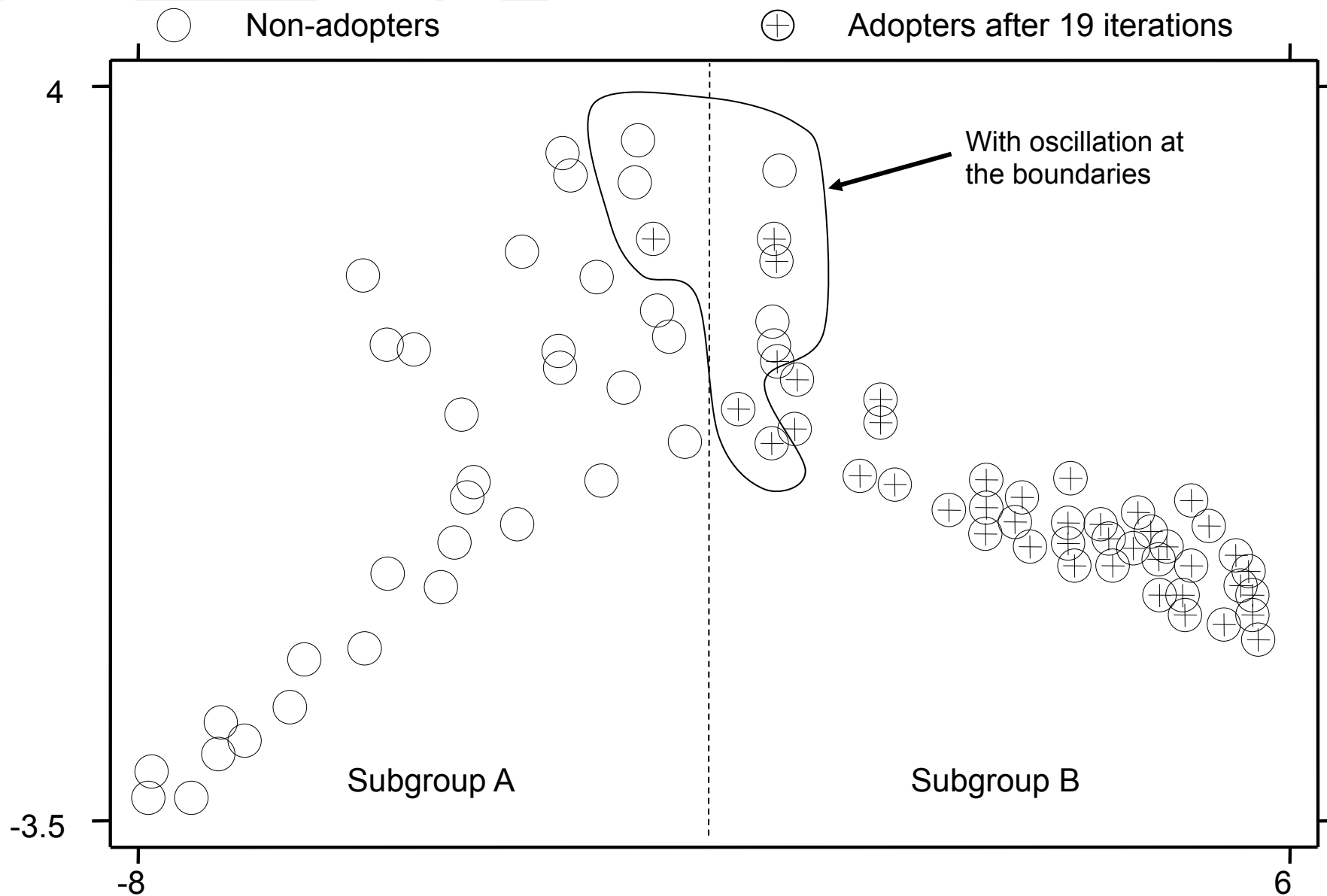


# Network diagram showing the MDS distance, communication links, FP use and Jiggasha group membership among the women of a Shahidpur Village, Trishal, Bangladesh

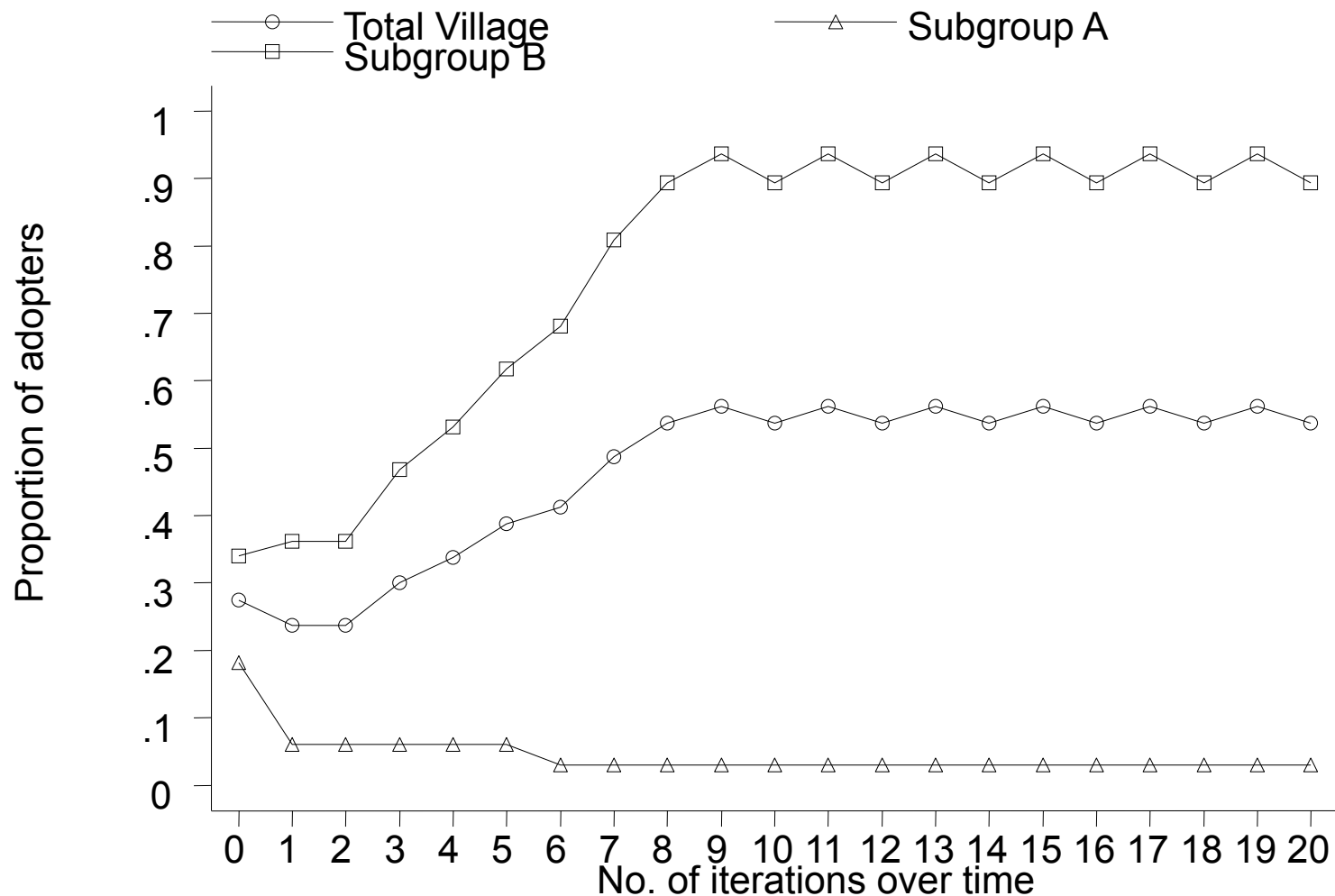




**Fig. 2. Distance and contraceptive status among women after 2 iterations of the simulation showing the emergence of a locally bounded, self-sustaining subgroup**



**Fig. 3. Distance and contraceptive status among women after 19 iterations of the simulation showing the final division into 2 subgroups with behavior oscillation at the boundary**



**Figure 4. Change in contraceptive status over 20 iterations of the simulation by the total village and within the boundaries of its two subgroups**

# Strategies for Community Health Interventions

1. Begin with favorably **predisposed opinion leaders** who are dispersed throughout the community, but centrally located within their locally bounded communication networks.
2. Have each one **develop groups within their own local network** that support the change and are willing to adopt the new behavior.
3. **Maintain a high level of mutual support** for the change within the locally bounded subgroup, and then **recruit new members from the near surround**.
4. Develop more persuasive messages in favor of the change than the opposition, and **communicate more frequently** than they do with those who are undecided.