

Information Technology and Protest Behavior/Collective Action – Is there a Link?

- ❑ “Arab Spring” and sudden regime change in Egypt, Tunisia, and Libya
 - ❑ Rise of insurgent groups globally (Al Qaeda, ISIS, Boko Haram)
 - ❑ Has info tech’ and social media in particular strengthened the ability of insurgent groups challenging state power?
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Outline



Theories of protest behavior: political grievances, social cleavages, rational choice, resource mobilization

Social media as a facilitator of protest movements; evidence from the Middle East

Cell phones and the efficiency of agricultural markets; evidence from India

Theories of Protest: Relative Deprivation

- ❑ Beliefs about individual and group well-being as principal motives
 - ❑ “Relative deprivation” = belief that one’s group is being treated worse than other groups
 - ❑ Deprivation can be perceived in material or symbolic terms
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Theories of Protest: Divided Societies

- ❑ Many states encompass multiple social, economic and cultural groupings
 - ❑ The divisions can be cross-cutting (language groups and religious cleavages intersect so that different languages are same religion) or reinforcing (different languages affiliate with different religions)
 - ❑ Reinforcing pattern intensifies group identity and demands for political autonomy; separatist movements in Belgium, Spain, Canada, and other divided nations
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Theories of Protest: Resource Mobilization

- ❑ Open societies with tradition of voluntary associations (“civil society”) provide necessary infrastructure for protest activity
 - ❑ Organizations can recruit members to engage in protest behavior
 - ❑ During times of political tension and unrest, these groups can coordinate their actions to form “cycles of action” that challenge regime (e.g. Islamic terrorists today)
 - ❑ I/T as a facilitator of group coordination
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The Role of Social Media in Galvanizing Protest

□ Multiple possibilities

- (1) solves free rider problem by giving protest leaders ability to monitor actions of followers and by giving people information on the “risk threshold”
 - (2) provides counter narrative to official media by publicizing grievances and reports of “atrocities” (e.g. shooting of unarmed civilians)
 - (3) lowers costs of recruiting group members, coordinating their actions to create a wave of protest activity
 - (4) strengthens feelings of collective identity and in-group solidarity
 - (5) allows protestors’ to attract global audience and sympathy
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Egypt: anti-Mubarak Protests

- ❑ Pres. Mubarak ruled continuously for 30 years
 - ❑ Following mass 2011 protests, on Feb 1 he announced he would not run for re-election
 - ❑ On Feb. 10, appeared on state TV and announced that he would remain as Pres., but was handing over power to the Vice President
 - ❑ On Feb. 11, the VP announces that Mubarak has stepped down and that a military council will rule until elections in June
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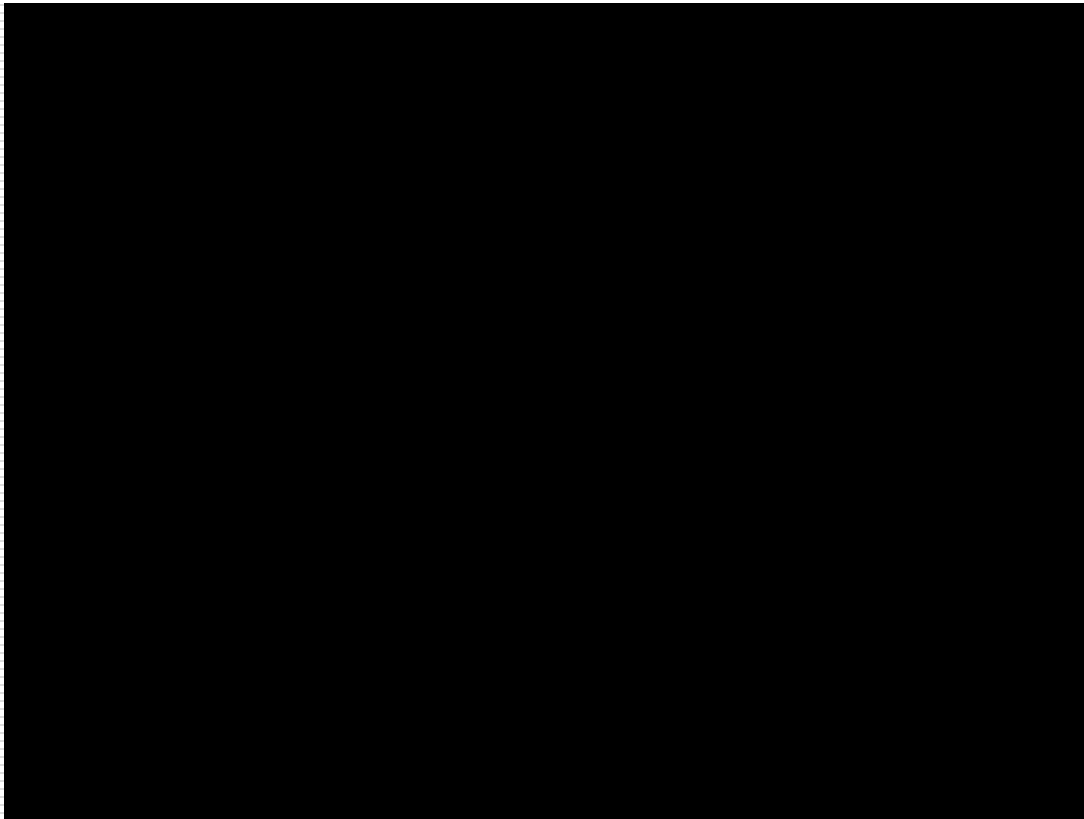
Tunisian Case

- Dec 17th, 2011 Fruit vendor Mohammed Bouazizi commits suicide (self-immolation) after police confiscate his wares
 - Local protests spread into nationwide anti-regime movement
 - 14th Jan, 2012 Pres. Ben Ali flees to Saudi Arabia
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Pre-IT: Greensboro Sit Ins



“Blackberry” Riots



“Technological Determinism” - Accounts of the London Riots

- David Cameron – ““everyone watching these horrific actions will be struck by how they were organized via social media“
 - “Destruction fuelled by the use of Twitter and other social media” (*Daily Express*)
 - “Twitter and BlackBerry brought hordes of teenagers together to attack neighborhoods throughout the weekend’ (*Daily Mail*)
 - “Thugs [...] used social media to organize and encourage the sickening scenes of violence” (*The Sun*)
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Fuchs' Dialectical Explanation

- In contrast with the deterministic view -- IT with either positive or negative effects -- Fuchs proposes a "dialectic" between IT and society
 - Equivalent to what economists would call "endogeneity"
 - "Technology is a medium (enabling and constraining) and outcome of society."
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- “.... communication technologies do not cause riots, revolutions, or rebellions; but rather discontented people will make use of all means necessary and available, including communication technologies, in order to achieve their goals. The antagonisms of society manifest themselves in the use of technologies that in an antagonistic society have antagonistic potential.”
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The “Arab Spring” as a Test Case

- Major upheavals sweep across the region, resulting in overthrow of authoritarian regimes in Tunisia, Libya and Egypt
 - Extensive use of social media (Arabic 2nd largest language group on Facebook), Twitter, and YouTube
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Tweeting as a Measure of Protest Intensity

Tweets
In Arabic
Surge following
Feb 1 Tahrir Sq.
demonstrations

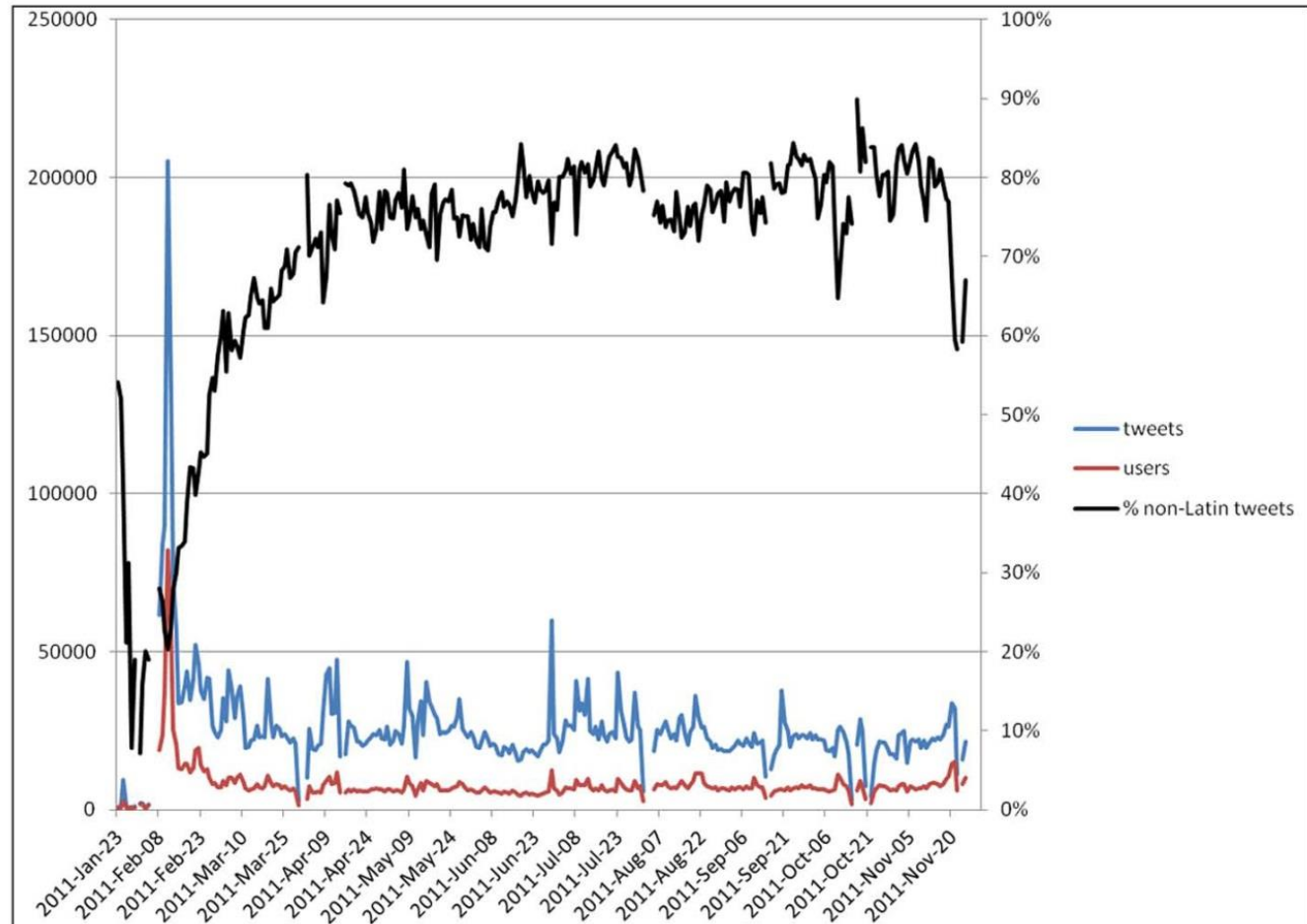
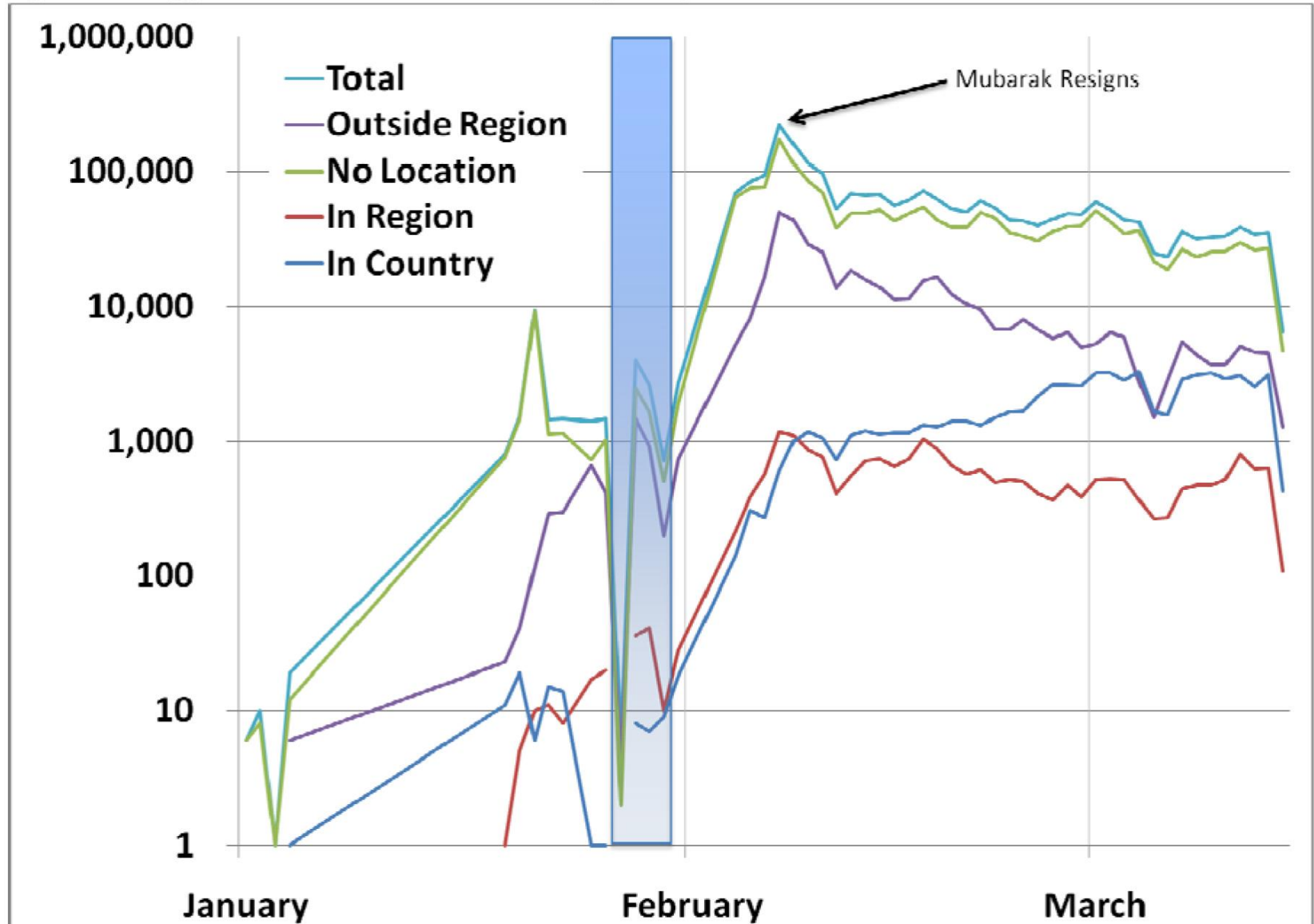


Figure 1. #egypt tweets and unique users per day, compared with daily percentage of non-Latin tweets.

The Protestors' Global Audience

Figure 4: Logged Number of Tweets on #egypt, by Location

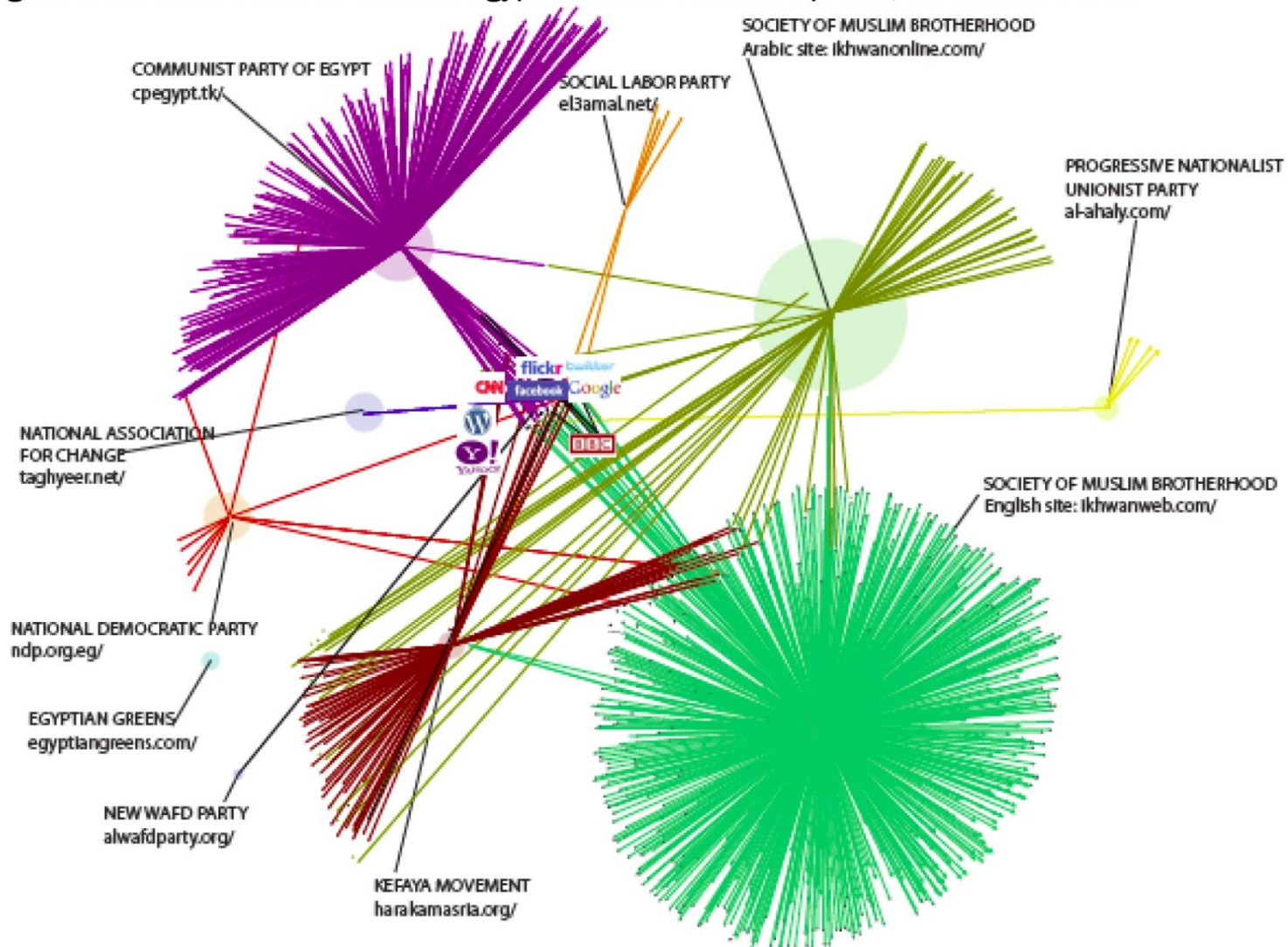


Protests Motivated by Political Grievances

- “deprivation” theory – either material suffering or moral indignation the basis for protest activity
 - IT merely a conduit for the expression of grievances
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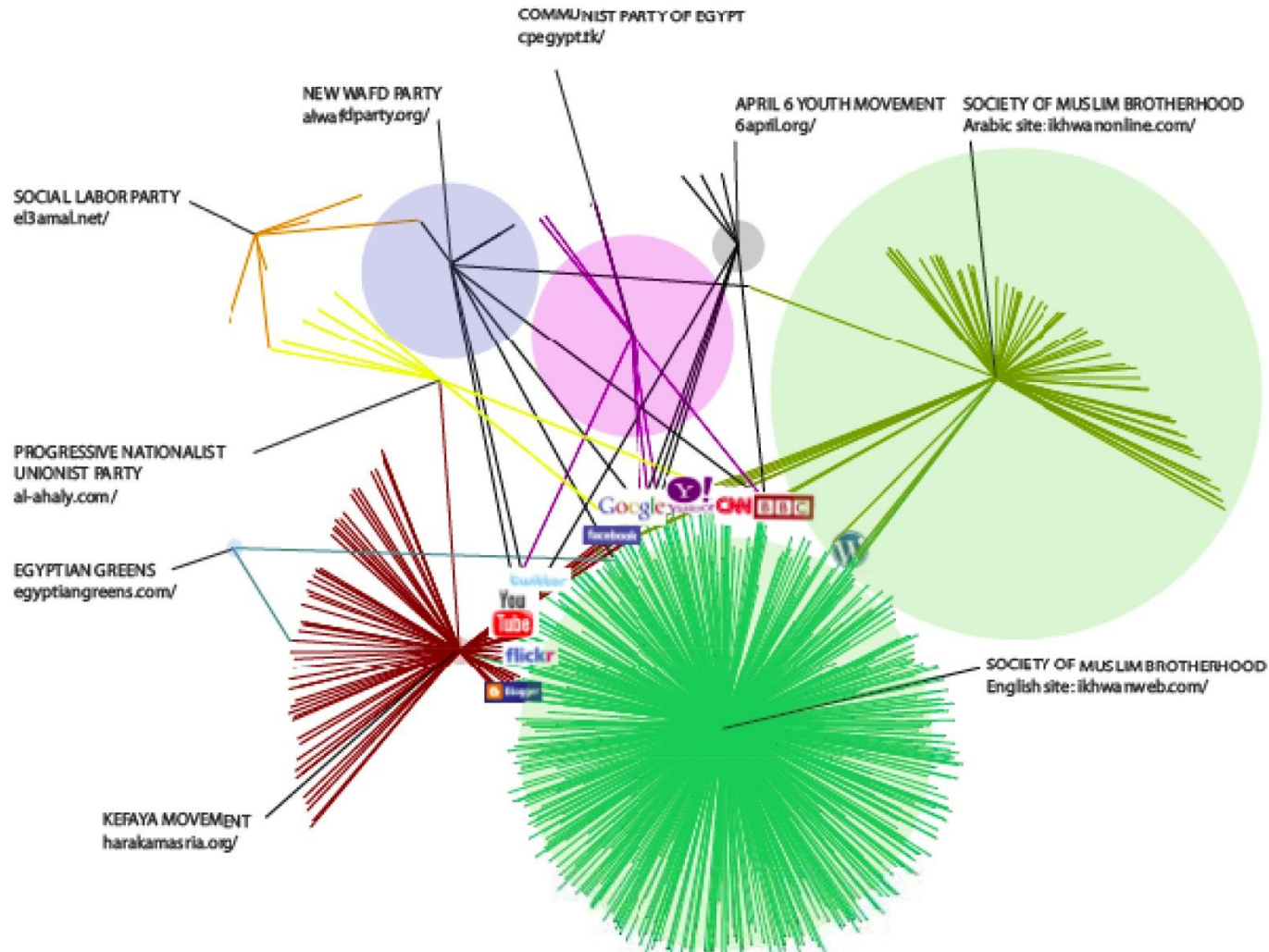
The Political Basis of Protest Activity - 2010

Figure 5: Structure and Content of Egypt's Online Political Sphere, November 2010



The Political Basis of Protest Activity - 2011

Figure 6: Structure and Content of Egypt's Online Political Sphere, May 2011

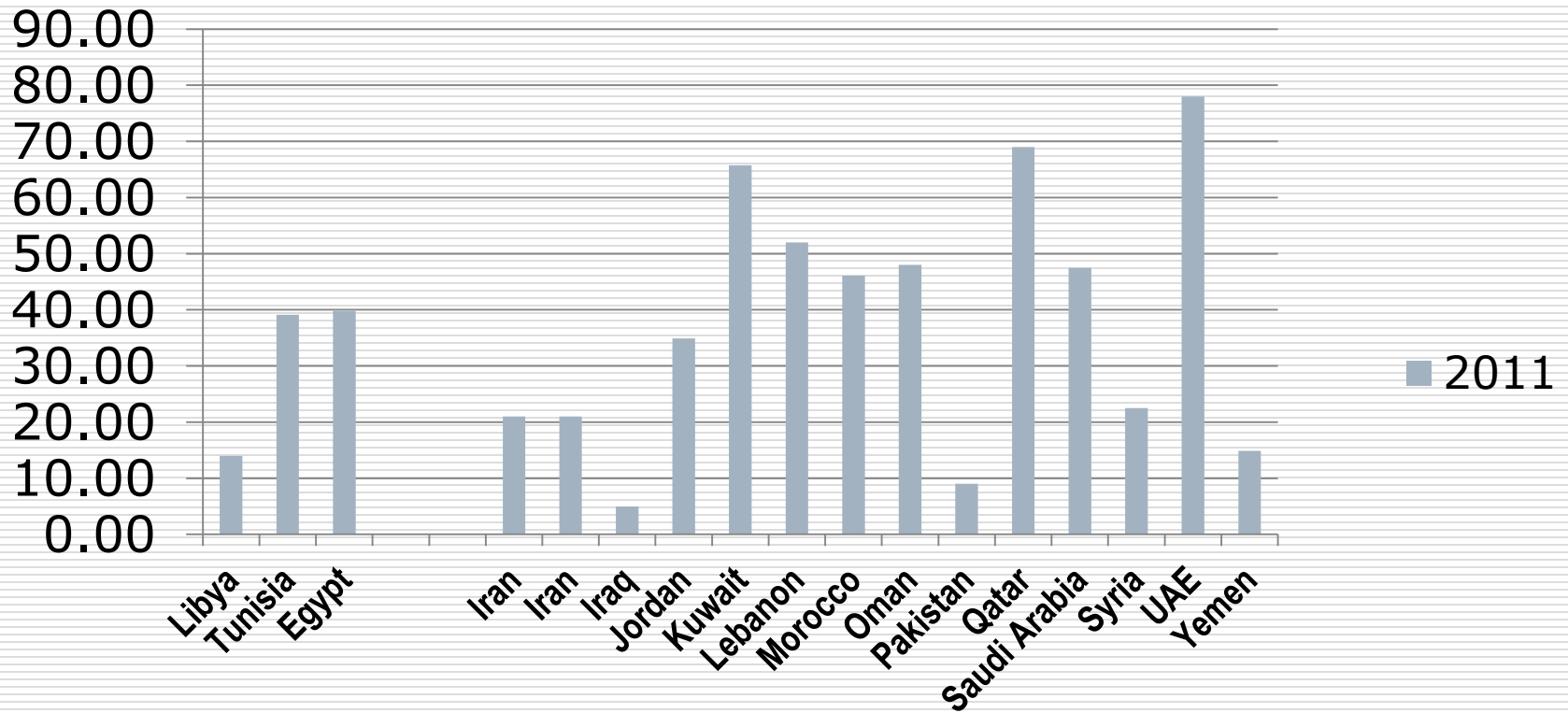


Data on Diffusion of IT

- Kuwait has the highest usage rate for Twitter in the Middle East – at 8.13% as compared with Egypt 0.26%, Tunisia 0.10%, Libya 0.07% and Yemen 0.02%
 - In Libya (where regime change succeeded), Twitter participation decreased by 9.37% during the revolution, as compared to Syria (where regime change has yet to occur), where Twitter participation has increased by 40.18% throughout
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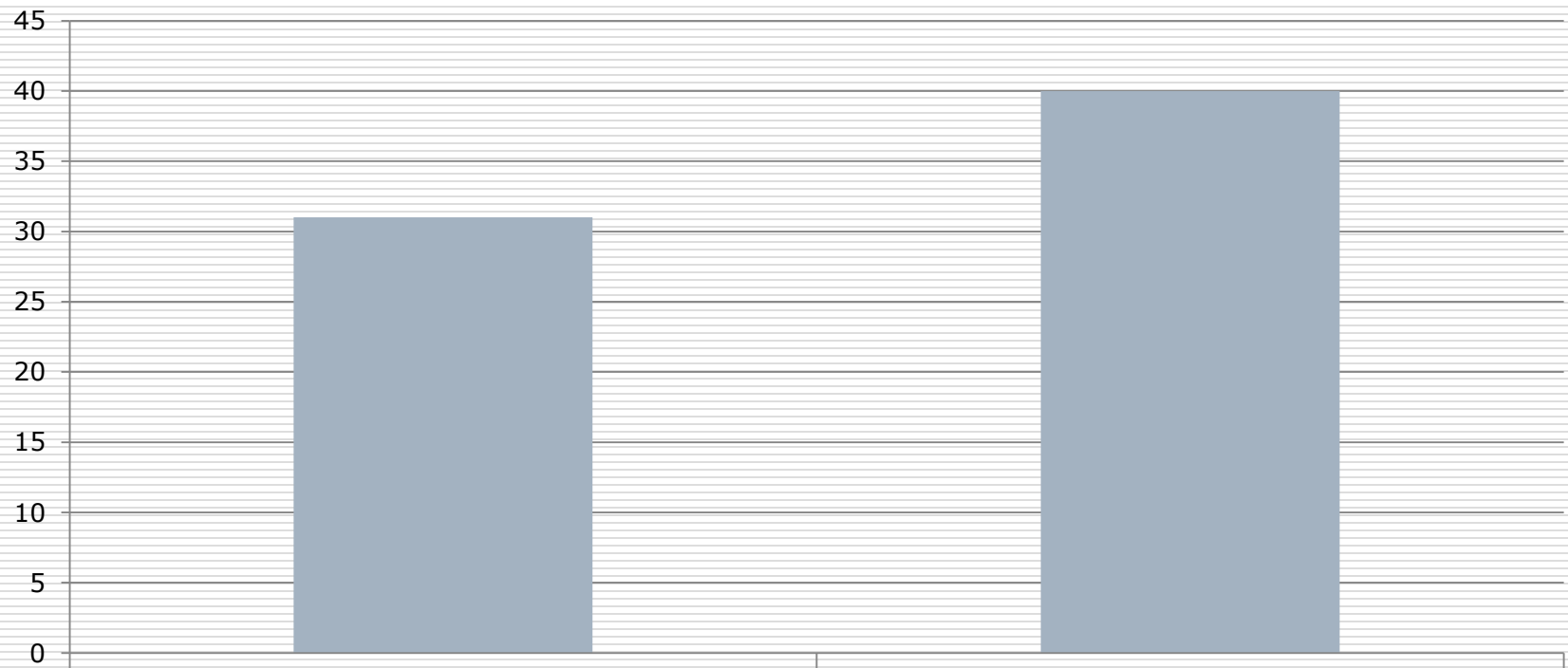
Internet Use/Middle East

2011



IT Use Causal to Regime Change?

2011



"Treated"

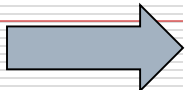
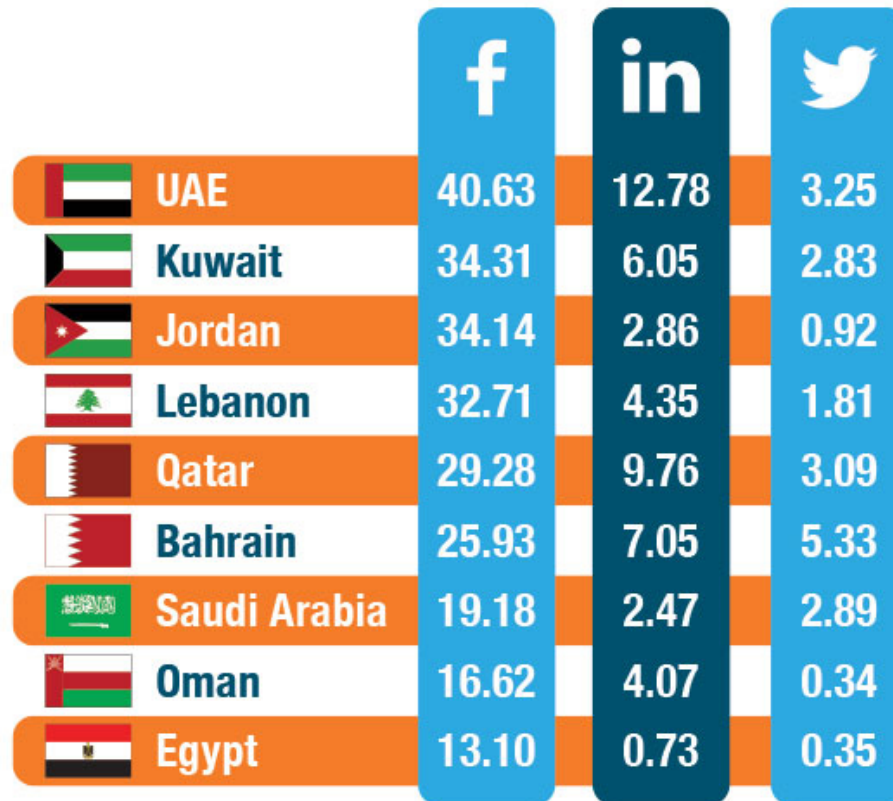
Egypt, Tunisia
Libya

"Control"

All Others

Social Media Usage

% Of Social Media User Penetration
In Middle East Countries By
Social Network



Problems of Causal Inference: “dueling” Case Studies

- Sameer Bhatia case – “With focus, efficiency, and hyper-utilization of social media, Team Sameer and Team Vinay used web 2.0 services like Facebook, Google Docs, and YouTube to mobilize and empower others to organize bone marrow drives all over the country. In 11 weeks, Sameer and Vinay's supporters registered 24,611 South Asians into the bone marrow registry and found a match for both”
 - But the Nalini Ambady case illustrates the opposite; extensive use of online tools failed to produce a donor, even though several potential matches were identified
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An Alternative Theory

- Shirky proposes an “environmental” account by which social media strengthen civil society and the public sphere which, in turn, creates avenues for discussion and dissent
 - Societies with relatively strong public spheres more likely to mount successful anti-regime protests
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Indirect Effects of IT

- Shirky's "environmental" versus "instrumental" distinction; all media innovations produce new spaces for political discussion and thereby expand civil society and the public sphere
 - Printing press eventually led to democratization, but the more immediate effect was to increase political debates and discussion among the intelligentsia and, through a "two step flow," these debates diffused to ordinary citizens
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Weak versus Strong Ties

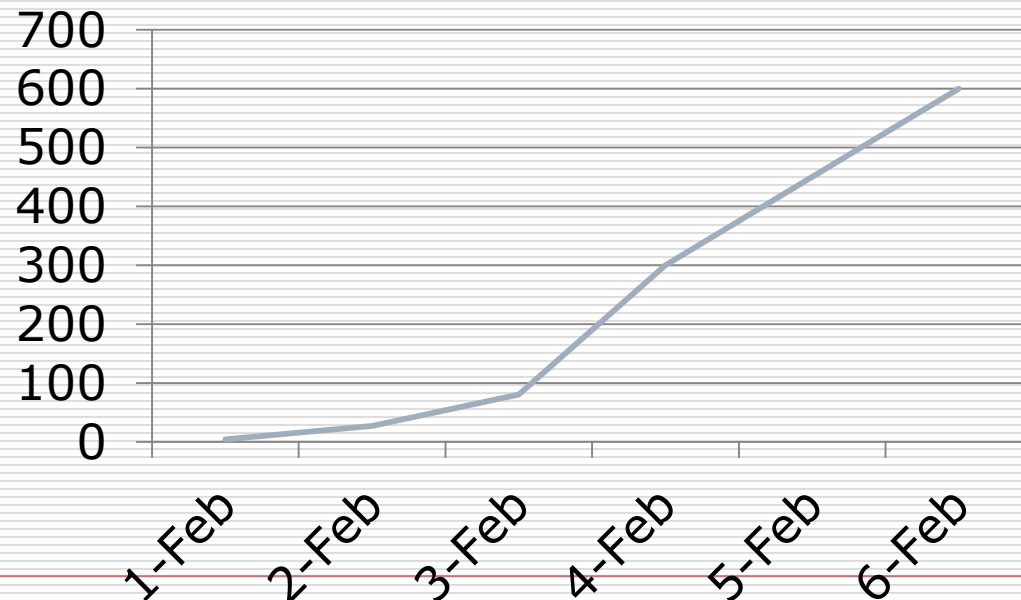
- ❑ Inter-personal, face to face communication characterized by relatively strong ties; online networks based on weaker ties
 - ❑ Strength of ties causes motivation to join movements, especially those that involve risk of physical harm – case of the civil rights movement in the 1960s (McAdam study)
 - ❑ Gladwell – “A networked weak-tie world is good at things like helping Wall Streeters get phones back from teenage girls.”
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What IT can Accomplish

(1) Information Cascades

- Rapid diffusion of information among group members:

Number of Participants/NC Sit Ins (1960)



“Smart Mobs”

- Instant transmission of instructions to potential protestors; case of the overthrow of Filipino President Estrada (2001) – “Go 2EDSA”



(2) Lowering the Cost of Coordination and Recruitment

- Lowering the costs of coordination and transforming undisciplined groups into military regiments
 - Importance of shared awareness – i.e. breaking the “wall of fear” by indicating presence of others
 - Recruitment becomes easier -
 - “It takes a special person to become an insurgent, to undertake the personal hardship and danger it entails... finding these rare people was difficult, but easier with the Internet.”
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Continued Importance of “Old” Media

- “In Egypt, the majority of participants joined the protest after the government had shut down access to the Internet, and only 13% of Tahrir Square protesters relied on Twitter, far less than television (92%) and word of mouth (93%). “The hundreds of thousands of people who made the Egyptian revolution by coming into the streets on January 25, 2011, did not learn about it through Twitter or Facebook. They saw it on Al-Jazeera, or out their windows” (Aday et al., 2012).
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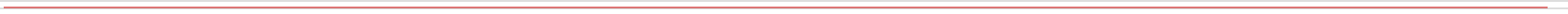
(3) Information as Power

- ❑ Availability of anti-regime information flow and frames – YouTube videos as explosive propaganda of regime “atrocities”
 - ❑ Online political discussion draws in apolitical strata; example of Korean pop group fans who became involved in protesting US beef imports
 - ❑ Youth culture tends to be anti-establishment and heavily invested in technology
 - ❑ Transparency weakens the regime’s ability to repress protest
 - ❑ Immediate transmission of information and images can influence foreign elites’ perceptions of the regime’s stability and normative worthiness (case of Obama Adm. and Mubarak)
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Collective Action in the Pre-IT Era

- ❑ Civil rights movement relied on churches and organizations with strong top-down hierarchy (example of bus boycott and availability of car pools; 98% of the African-American community could be reached every Sunday)
 - ❑ Collapse of communism in Europe not precipitated by VOA, or the copying machine, but by economic forces that crippled the Kremlin (drop in oil prices)
 - ❑ Public sphere more likely to develop in response to dissatisfaction with basic services than abstract appeals for action (corruption in Chinese construction industry and collapse of schools in 2008 Sichuan earthquake)
 - ❑ Presence of strong civil society organizations in Poland, and Czechoslovakia made it possible for groups to spread the message and made “bankruptcy of the state a public fact”
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END



IT and Development: the Case of Agricultural Markets

- ❑ Large numbers of people in the developing world work in the agricultural sector
 - ❑ Functioning of agricultural markets is the major determinant of household income
 - ❑ In Kerala, 1 million people employed in fisheries
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Information and Market Efficiency

- ❑ Fish markets open only for few hours; no storage capacity and unsold produce is waste
 - ❑ Pre IT, fisherman would guess which market had best price; prices varied significantly across markets
 - ❑ “if fishermen had price information for all locations, the market should achieve an outcome where price dispersion is reduced, fish are allocated across markets more efficiently, waste is reduced or eliminated, and total welfare is increased (though how those gains will be shared between consumers and producers is ambiguous).
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Research Design

- Capitalizes on staggered introduction of mobile phone service along the Kerala coast (1996-2001)
 - Weeks 1-21: no one with service
 - Weeks 22-97: Region 1 gets service
 - Weeks 97-194 Region 2 gets service
 - Weeks 195-248 Region 3 gets service
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Location of Study

Figure 1. Region of Study



Source: Reproduced from SIFFS (1999).

Three fishing regions

I. Small and medium scale. Sardines.

Lots of phone use.

II. Large, commercial.

Prawns, big fish.

Export. Two-way radios long ago.

III. Very small scale.

Mack/sard. Few phone.



Increased Information

Enables fishermen to check prices at several markets before selling.

Fish prices...can vary widely among the 17 landing spots around Cochin. Before mobile phones, deciding which would offer the best price was sheer guesswork.'

On a recent day, [we] turned down an offer of 3,000 Rs [our] catch in favor of a 12,000 Rs bid elsewhere.'

– Captain P.A. 'Joy' Clarence, captain of the St. Xavier, quoted in newspaper.

Data Sources

- ❑ Beach market survey (N=15) tracked every Tue between Sept. 1996 and May 2001
 - ❑ Survey of fisherman – markets visited, price received, waste, fuel costs
 - ❑ Consumer price survey (weekly)
 - ❑ Variable of interest: price spread across markets (max-min)
 - ❑ “efficient” markets = minimal price variability; with information, supply shifts from low to high price markets
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Large Changes in Fish Marketing

1996



2001



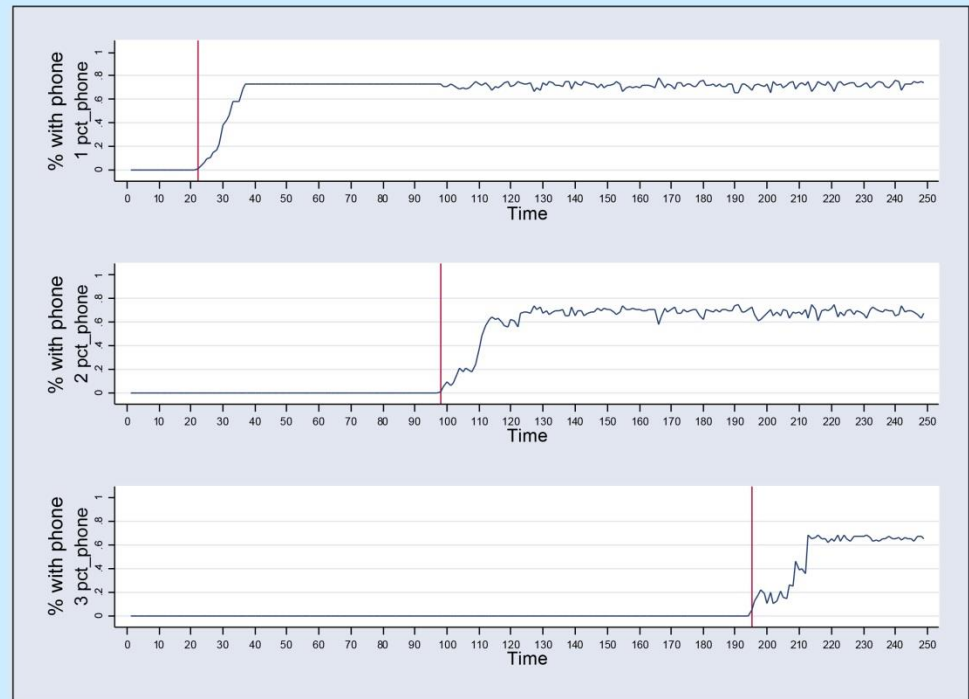
Table 1. Prices and Excess Supply and Demand in 15 Beach Sardine Markets

	Tuesday, January 14, 1997			Tuesday, January 21, 1997		
	Price	Excess Buyers	Excess Sellers	Price	Excess Buyers	Excess Sellers
<i>Kasaragod District</i>						
Hosabethe	6.2	0	0	4.3	0	0
Aarikkadi	4.0	0	0	5.9	0	0
Kasaba	0.0	0	4	5.9	0	0
Kanhangad	9.9	15	0	0.0	0	9
Thaikadappuram	0.0	0	11	6.1	0	0
<i>Kannur District</i>						
Puthiangadi	9.8	12	0	5.0	0	0
Neerkadavu	6.9	0	0	7.7	0	0
Ayikkara	8.4	1	0	0.0	0	13
Thalassery	4.3	0	0	5.7	0	0
New Mahe	6.2	0	0	0.0	0	5
<i>Kozhikode District</i>						
Chombala	8.7	2	0	1.9	0	0

Diffusion of Cell Phones

Despite high costs (price per phone >500 Rs, high penetration rates (70 percent) immediately after introduction

High Adoption Rates



Empirical Strategy

Compare Changes in Region 1

	Period 0	Period 1	Period 2	Period 3
Region 1	NO PHONE	HAS PHONE		
Region 2	NO PHONE	NO PHONE		
Region 3	NO PHONE	NO PHONE		

Empirical Strategy

And when region 3 adds the phone

	Period 0	Period 1	Period 2	Period 3
Region 1	NO PHONE	HAS PHONE	HAS PHONE	HAS PHONE
Region 2	NO PHONE	NO PHONE	HAS PHONE	HAS PHONE
Region 3	NO PHONE	NO PHONE	NO PHONE	HAS PHONE

Effects on Fishermen's Profit

- Introduction of phone increased quantity sold by 23kgs per day
 - Revenue increased by Rs 205 per day while costs increased by Rs 72 producing average increase in profit of Rs 133 (about a 9% effect)
 - Boats with phones had profit increase of Rs 184 per day versus Rs 97 for boats without
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Return on Investment

- ❑ Equipment cost = Rs 5000 + monthly service fee of Rs 500
 - ❑ Net increase in profit of Rs 184 per day means that costs would be recovered within 7 weeks
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Alternative Explanations

- Fishermen might call each other to inform where catches were plentiful, thus reducing supply dispersion
 - No effects on amount or variability of catch
 - Cell phones did not affect # of fishing units per district
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Effects on Consumers

- Slight reduction in price (4%)
 - “Thus, overall, the results confirm that the addition of mobile phones was associated with a large and dramatic reduction in price dispersion and waste.”
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Additional Evidence on Market Efficiency

- Niger -- Aker (2010) documented 10-15 percent reduction in price variation in grain markets following introduction of cell phones
 - Madhya Pradesh (India) – Goyal (2010) shows that introduction of Internet kiosks increased prices obtained by grain farmers by an average of 1.6 percent
 - Uganda -- Svensson and Yanagizawa (2009) found that when price information was transmitted through local FM radio (daily bulletins of 2–4 minutes); having access to a radio was associated with a 15 percent higher farm-gate price
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Additional Evidence (cont).

- Senegal -- Manobi's Time2Market (T2M) application provides real-time information on market prices (Annerose 2010). It offers access to the data for farmers through web, SMS, and voice. Farmers have obtained, on average, about 15 percent higher profits after having paid net costs
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Summary

- ❑ Social media make individuals more connected, lowering the costs of group coordination and mobilization
 - ❑ May increase dissident groups in efforts to overthrow authoritarian regimes, but reliable evidence is still lacking
 - ❑ I/T definitely a plus in the case of agricultural markets; “win-win” for producers and consumers
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