

Privacy and Security in Online Social Networks
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Week - 5.2
Lecture - 17
Policing and Online Social Media

(Refer Slide Time: 00:30)

The slide is titled "Objective of Study" in a teal font. Below the title, a research question is presented in italics: "Whether OSN can support police to get actionable information about crime and residents' opinion about policing activities in urban cities of India." Below the text is a screenshot of the Bengaluru City Police Facebook page. The page header shows the police logo and name. The timeline section displays a post from a user named Siddhant Kumbhar and Pooja Jain, with 137k likes and 958 comments. The right side of the slide features a black rectangular area and a small video feed of a man in a white shirt.

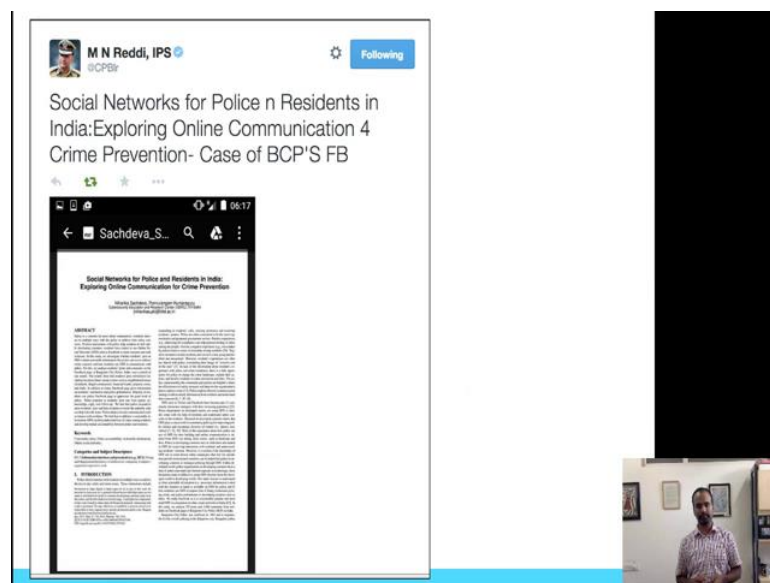
Welcome back. So, let me now talk a little bit about the specifics of how the **data** from police organizations can be collected, and what kind of analysis can be done to find out some interesting things.

Here is one research question; here is one question that you can think about - objectives of the study. And then I am going to be taking about whether online social media can support police to get actionable information about crime and residents' opinion about policing activities in urban cities yeah, so that is the goal. So, let us try and, see if you can actually teach this objective to study some data from Facebook **and Twitter** and make some useful inferences.

So, let me just break this objective into pieces, which is, can we use Facebook to support police to get actionable information? What is an actionable information, actionable

information is something like do this, can you actually get this done, I mean I am having a problem in the street that is traffic issues in the road there is a **pot** hole which is broken on this street, a car broken down. So, these are actionable information that police organizations can take from the post and **that is actually useful** for decision making. And residents' opinion, of course, what people think about police, what are they talking about police is also useful information for police organizations.

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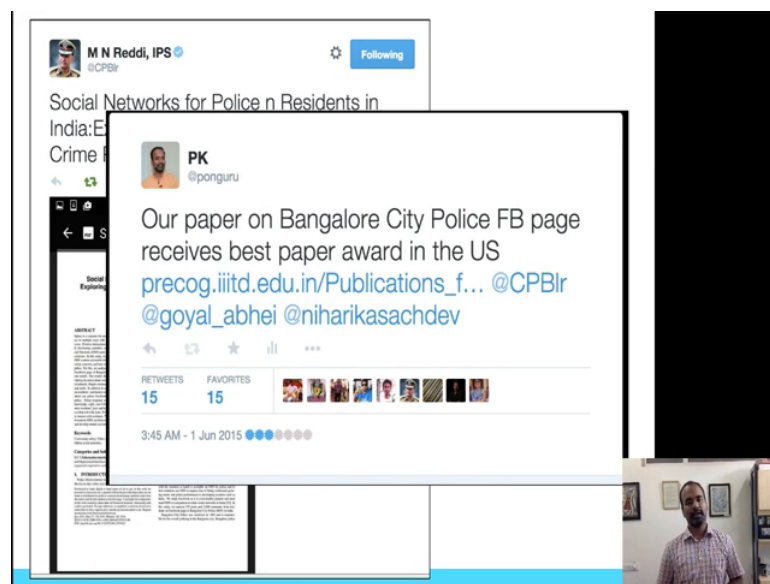
So, before I get into further I think there was a question in the forum asking about what is re-identification. I thought I will actually mention it here rather than actually packing it in the forum itself. So, re-identification is nothing but, take some information, you want to, actually, you got a information about **PK**, there is some publicly available information which has no reference to PK. For example, if you remember **the Latanya Sweeny** (Refer Time: 02:14) slide where we talked about **voters** record and medical record. Just in medical records they are actually identifiable. **Just in voter records** also they are **identifiable**. If we put together the identification actually becomes much stronger, you are able to uniquely identify more **people** with more data put together.

For example, again, let me go to my own example, you can take some publicly available information about me on some websites. Say oh faculty at IIIT and things like that. And

you go back to Facebook, and then you use the Facebook pictures that are publicly available about me, take those pictures **connect it with these posts** you can say it oh this is actually **PK**, this is how I will also I mean insides your faculty and IIIT, NPTEL.

So, re-identification of information of a particular individual, of a particular thing is actually the concept that we discussed last week. I hope that makes it clear which is unidentified datasets which in the class that we talked about max.com and identified data sets we stored which where there is if your time you know one can find out the this is here. So, taking some unidentified data and using some identified data putting them together and identifying the users actually is an (Refer Time: 03:26).

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So, we did this work on social networks for police and residents in India exploring online communications. So, this is the paper that with I am going to be talking about, but this actually more than a paper that the data that I will be talking about right now.

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So, in general, actually in the last two years or so social media has been used for crime prevention. It can be used effectively for finding out what people are saying, you can actually collect the information lot of things about what is going on in the society, because it is going to be a very hard to have police organization, police personnel at every given point in time, **at any given point in the society also**. So you can actually get a lot of information from public through the social networks, which can be used to prevent crime. So, essentially you can build societies which are safer if were to actually analyze use social media services.

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Study on City Police's Social Media Use Bags US Varsity Award

Bharath Joshi

Bengaluru

A paper presented by researchers with a Delhi institute shows how social media networks have forced the police become more accountable

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It was an international conference on digital government research, where technology researchers Niharika Sachdeva and Ponnurangam Kumaraguru from the Indraprastha Institute of Information Technology, Delhi (IIIT-Delhi), walked away with the award for producing the best research paper. The paper showed how social networks have forced the police in India to become more accountable.

This was also the first time the Bengaluru police experiment with the social media to promote community policing made its way into an academic institution.

The study found that if there was lack of information, police requested for more information and was provided in 29 follow-up posts. An analysis of the response of the BCP to the posts by residents reveals that cops have replied to 172 posts with an action-taken report on Facebook. The average response time was found to be over 30 hours.

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Karnataka IPS officers show way in smart policing

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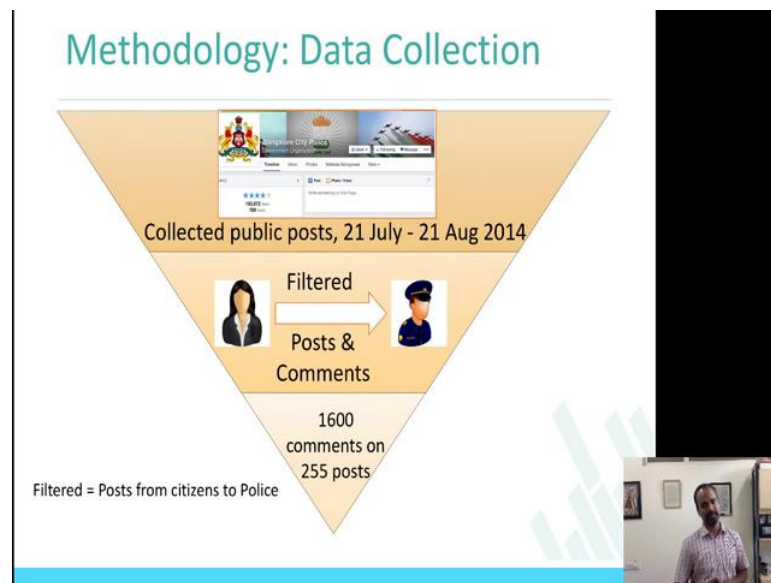
In September 2014, DCP with Bengaluru police launched a project to help restore 700 stolen and impounded vehicles rotting in various police stations to its rightful owners. Bureau got a special software designed for this from the local engineering college. This has already bagged an award for the best e-governance initiative.

Chaudhary (CP) SP Dhar-mendra Yadav's comprehensive programme to track missing children and restore them to their parents—called Operation Scale—has won a pat on the back from home minister Rajnath Singh, who has sought to turn it into a nationwide movement.

Further north, a national-level operation turned IPS officer is changing the face of Hindustan througherick. A 2008 batch IPS officer, Tejinder Singh is SP of Patna, a satellite district in south Karnataka by organizing various junior and senior-level programmes. Singh not only helped a maintenance team police and local residents.

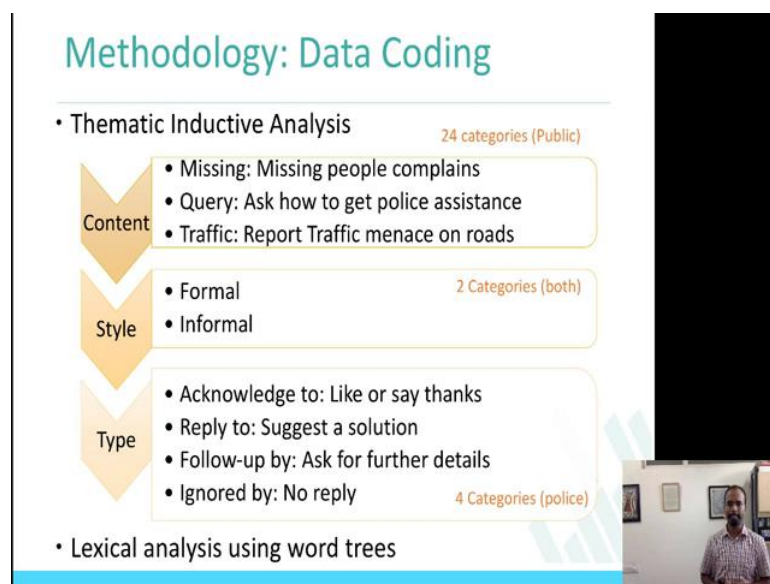
So, in terms of actually the theme itself the data that we looked at is actually from Bangalore, Karnataka.

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So, in terms of methodology, what kind of data did we collect? So, keeping the goal for studying whether we can actually collect **actionable** information from social media we started looking at this data, we collected the data from the Facebook page of Bangalore City Police in 2014. Looking at what are the posts that was done. And we filtered the posts and comments, because we wanted to study what public said to the police in terms of what post that they did, what comments that they say on the Facebook page. And about 1600 comments and 255 posts were actually collected.

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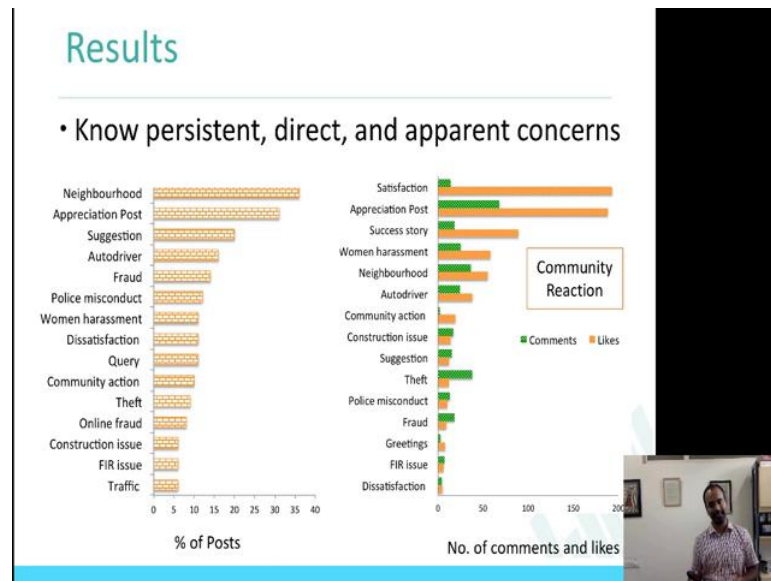


So, in terms of methodology, there are actually multiple ways the people actually look at this data type. We are looking at the post and we are looking at the comments we can analyze in different ways. So, one approach that we took was finding out what people are talking about which is **misinformation**, query, traffic details that is about the content. And then we looked at for the style of I think which is formal or informal.

And in terms of types of post that were showing up which is acknowledge to, like, or say thanks, reply to, such suggest a solution and the follow up by asking further details, ignored by no reply, because these are the **ones** that are coming from the police side. So, **citizens** post and what do police do about it.

So, if you look at in the right hand side, it is says twenty four categories for the public post and two categories for the style, and four categories of the police responses. So, again given that we are talking about content and injecting some analysis that you could do with the data yourself also in terms of lexical analysis in terms of **actually** (Refer Time: 06:27) the content itself that is from the post.

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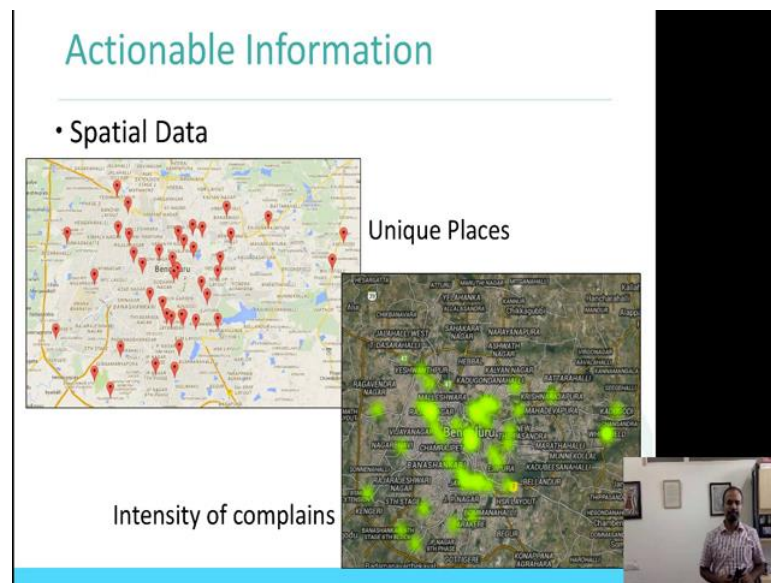
So, if you look at the results, some of the results are very interesting in terms of what kind of post were done by citizens for these on this page. Majority of the things were actually from the neighborhood concerns right. Then it is appreciation which is talking about thanks to police and appreciating the things that police does. And **it kind of goes down.** suggestions, auto driver related, fraud, till traffic issues.

And, if you look at the comments and the likes, the comments for **actions** like appreciation are actually higher than the comments for satisfaction; whereas, if you look at the likes, the likes for satisfaction, appreciation and success stories are actually **very high.** **It is probably very intuitive that** (Refer Time: 07:20) how the police post gets reactions from the society, the likes are actually pretty high for satisfaction, appreciation post and for success stories compared to some of the other ones.

So, this is gives you a sense of the analysis that you can do with any kind of data that you collect. You remember we talked about **Boston blasts and Hurricane Sandy** (Refer Time: 07:44) and those kind of events in the context of **credibility and trust** (Refer Time: 07:50). So here, we are doing these similar kinds of analysis, similar kinds of questions that we are asking, but we are actually using **different** sets of data and different kinds of graphs that we are producing. So, this will help you to get a sense of what are kind of

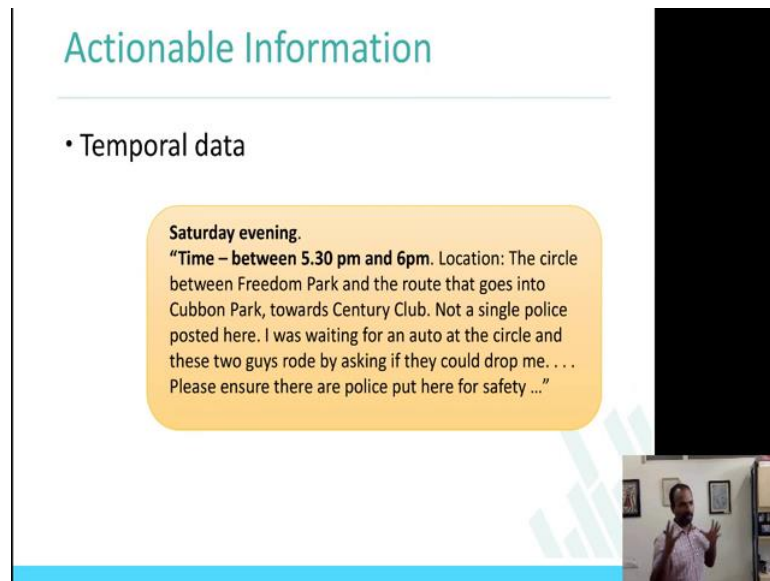
posts are actually showing up on these pages, and what kind of reactions are being seen on for these posts also.

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Similar to the analysis that we did in Boston and Hurricane Sandy, we can do the geospatial analysis also with this data here (Refer Time: 08:22). The one on the top is showing you the posts that are coming from the different parts of Bangalore for the posts that we saw in the page. And of course, one could do some heat map, one could find out where are the places from where majority of the posts are coming and you could use that for making some decisions.

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Actionable Information

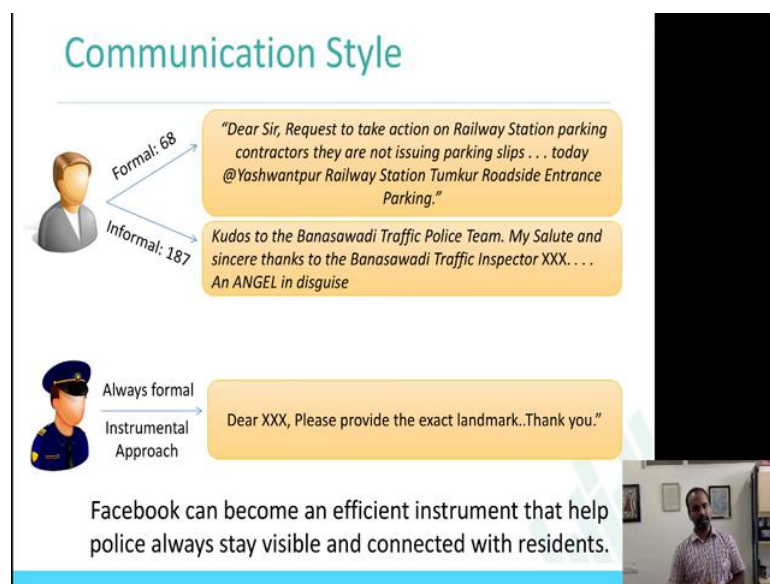
- Temporal data

Saturday evening.
"Time – between 5.30 pm and 6pm. Location: The circle between Freedom Park and the route that goes into Cubbon Park, towards Century Club. Not a single police posted here. I was waiting for an auto at the circle and these two guys rode by asking if they could drop me. . . . Please ensure there are police put here for safety ..."

The slide features a light blue header with the title 'Actionable Information'. Below it, a blue horizontal line separates the title from the content. A single bullet point, 'Temporal data', is listed. To the right of the bullet point is a large black rectangular redaction. Below the bullet point is an orange rounded rectangle containing a text box with a user report. The report describes a safety issue on a Saturday evening, mentioning a location between Freedom Park and Cubbon Park, and a lack of police presence. A small video inset in the bottom right corner shows a man gesturing while speaking.

So, given the goal was actionable information, **we were** actually focused on finding out from the content **what kind of** information can be drawn. So, here is one post which talks about temporal data **at least which can be drawn,** (Refer Time: 09:00) time between 5.30 and 6 pm. Location, blah, blah, blah, not a single police posted here, I was waiting for an auto at the circle blah, blah, blah right. So, this gives them, this gives the **police** organizations a good sense of **what** time is it, **what** location is it, what should be done, what is the problem, it is easy to actually collect this information. If it was not given in this form, if this information was not there, the police has to actually ask saying what location is it, **what time is it, and things like that.**

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So, if you look at the communication style, the style is also **interesting** (Refer Time: 09:37) that lot of discussions that happen on from the police side is actually very formal; formal versus in informal. Dear Sir, Request to take action on Railway Station this is from the citizens, parking contractors they are not issuing parking slips right. Kudos to the Banasawadi Traffic Police Team. My salute and this is post for appreciation.

So, **from the police if it comes, it is** (Refer Time: 10:07) almost going to be always formal. And stay visible of course, this is the point I have said earlier, which is Facebook and any social network for that matter can become the way by which police can actually connect with society most **strongly**.

And I am sure as you are going through the course you will also start looking at, I hope you will also start looking at the police pages of a local city from your location are actually start saying, what kind of post **they are** doing, what kind of things that they are looking for, what kind of interactions are they having. So, the whole body of knowledge, body of **research**, body of work is to actually look at increase the **community** policing right. So, you can actually increase the interactions with the society to get more information from **them**.

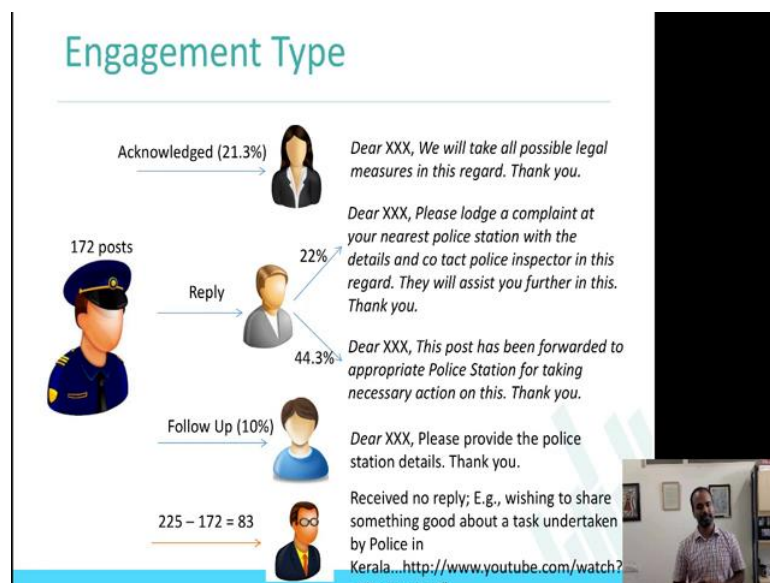
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Response Time

	Time Taken to Respond
Average time	30.53 hours
Maximum time	211.16 hours
Minimum time	4 minutes
Std. dev	41.26 hours

Of course, these are some details, I will go through them slightly **quickly**. Average time response 30 hours, maximum time was 211 hours, minimum time was about 4 minutes. Showing that there is large **variance** in terms of actually responses that they get 4 minutes to 211 hours, so that is a lot of difference in terms of the times response that they get.

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So, here are the different types of post that come from police and the kind of engagement that they have. So, acknowledged 21 percent of the post police actually acknowledged. Dear XXX, we will take all possible legal measures in this regard, thank you. And as a reply Dear XXX, Please lodge a complaint – 22 percent. And Dear XXX, This post has been forwarded to appropriate police station. And about follow up, Dear XXX, Please provide the police station details. Thank you.

So, this kind tells you what kind of interactions of police organizations having. And about anything posted not have getting response. So, the goal is to find out the one of the **interesting** questions that you could also think about is how to actually have a post which will have the response from police, that would be also an interesting question to look at.

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The slide is titled "Understanding Victimization". It features a table of words and their frequencies, and a mind map centered on the word "worried".

Word	#
Fear	7
Worried	6
Concerned	8
Notice of	13
Issue	22
Trouble	4

The mind map for "worried" branches into "that" and "about".

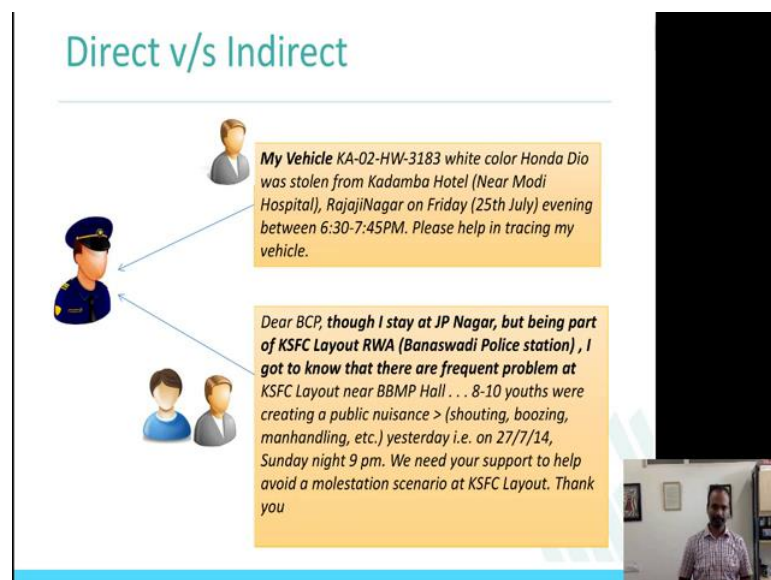
- that**
 - if somebody will miss use my bike , and because i do not have a
 - the person who has duplicated my Reg no will commit
 - once they realize that this girl (my daughter) has med
- about**
 - them coming back to attack me .
 - being traced .
 - to approach the local police as I have seen them take money from

So, if you look at the concept of finding out what citizens are worried about, what citizens are talking about, I will go through some tweets what we so to say in terms of actually looking at what posts the citizens are doing, how we can actually take out some useful information from these posts. So, in this case, we are talking about worried as the starting point which is from the post you can actually look at worried, if somebody will

misuse my bike, worried at the person who is duplicated my registration number will commit, blah, blah, blah, worried about they coming back to attack me.

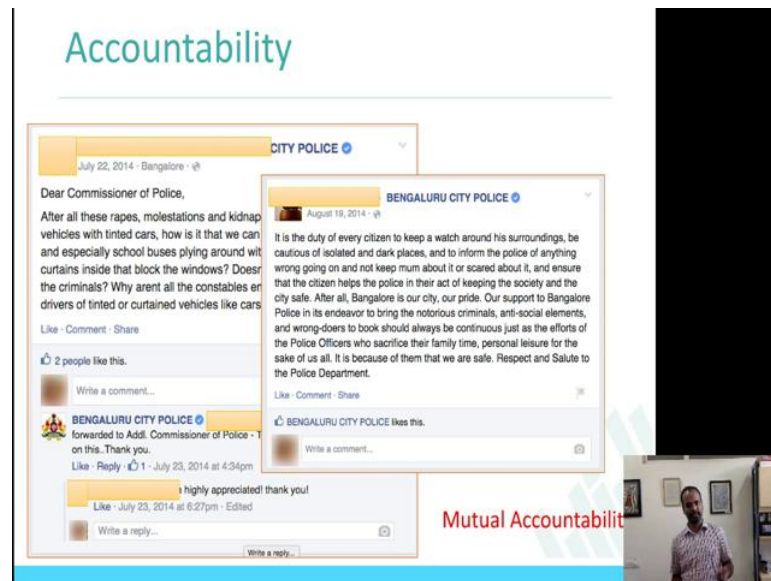
For instance, this concept of identifying the content, textual content and seeing what kind of posts that citizens are doing can be extremely useful. If only if one can generate these **trees** in real time it can be very useful for police to make some decisions. And if this can be done in real time to showing up, oh, **currently there is a post on Facebook which has actionable** information and the **actionable** information is the time, the details and this citizen's post is actually having about worried about few things can be very useful.

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Of course, the direct versus indirect information drawing from this post - Direct information, it going on with me, I am actually going through the problem or I am actually **part of** the situation that I am talking about. Sometimes it could be indirect which is 'Dear BCP, though I stay at JP Nagar, but being part of KSFC layout near blah, blah, blah. I am not **from** there, but I see a problem there, **so I'm letting you know** (Refer Time: 14:05) It could be that my friend says this, my friend **lives there** on the regardingly I post, post on Facebook, I do a post on Facebook about the friend that who lives in a different location not about myself.

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So, there are recent posts also which is directly about myself and indirectly about somebody else. And of course, being it is probably very intuitive or to realize that you could take the content from the social networks, and actually took for accountability of both sides for example, accountability of police **and accountability of citizens also**. How we can do that we could look at the post and see how fast they are responding, what kind of responses they are it is coming and how citizens are also responding to these queries that the **police is making**.

So, accountability can be good question to ask from the post that is collected from the social network. And of course, the little that we have seen little that is being looked at there is also mutual accountability that is going on citizens think that police should be doing and (Refer Time: 15:21) **police think that citizens should be doing it**, there is a accountability, in terms of, because this platforms publicly available.

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Accountability

- Police responds and allows itself to be held accountable
 - Maintains formal communication style even for frustrated people



Dear Commissioner of Police,
After all these rapes, molestations and kidnappings occurring in cars and vehicles with tinted cars, how is it that we can see so many cars and buses, and especially school buses playing around with their vehicles tinted? or curtains inside? ... encourage and embolden the criminals? Why aren't all the constables empowered to punish the drivers of tinted or curtained vehicles like cars and buses, on the spot?

Like · Comment · Share

2 people like this.

Write a comment...

Bangalore City Police · n,
This post has been forwarded to Addl. Commissioner of Police - Traffic for taking necessary action on this. Thank you.
Like · Reply · 1 · July 23, 2014 at 4:34pm


... highly appreciated! thank you!
Like · July 23, 2014 at 6:27pm · Edited

And of course, police organizations respond to this post, and request for information and follow up **on things** also making themselves accountable for the activity that is going on.

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Accountability

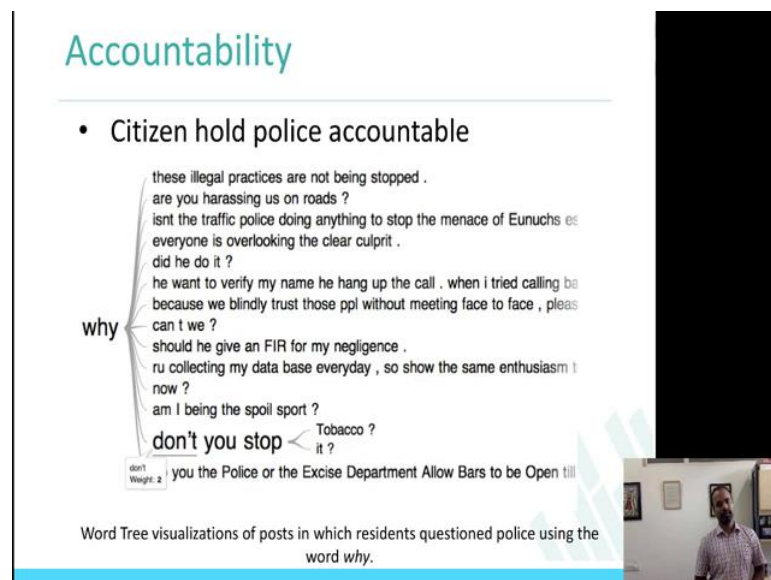
- Citizens accept that they are also accountable to make city safe



It is the duty of every citizen to keep a watch around his surroundings, be cautious of isolated and dark places, and to inform the police of anything wrong going on and not keep mum about it or scared about it, and ensure that the citizen helps the police in their act of keeping the society and the city safe. After all, Bangalore is our city, our pride. Our support to Bangalore Police in its endeavor to bring the notorious criminals, anti-social elements, and wrong-doers to book should always be continuous just as the efforts of the Police Officers who sacrifice their family time, personal leisure for the sake of us all. It is because of them that we are safe. Respect and Salute to the Police Department.

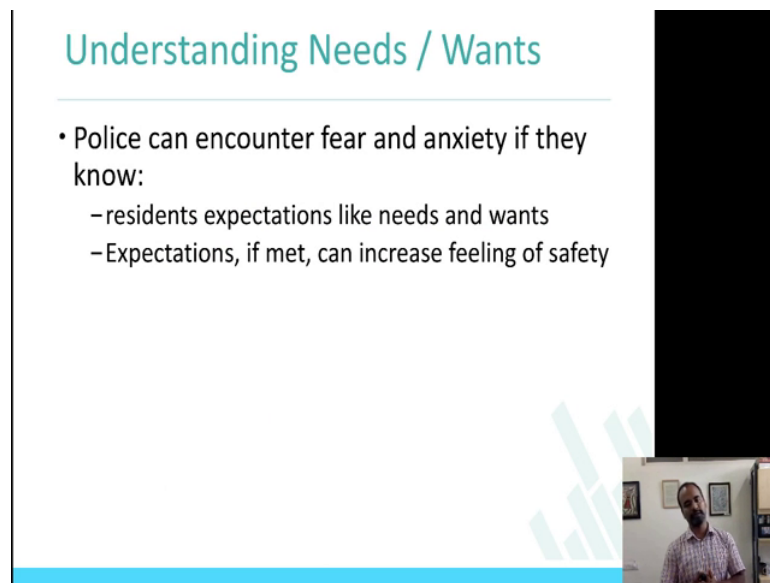
A citizen accepts that they are also accountable to make the city safe. Citizens also believe that they should be participating in these activities in terms of posting, interacting with police, giving information and making sure that the city is safe.

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So, if you look at **the tree** again earlier the example was worried now if you look at the other concept of why. So, why these illegal practices are not being stopped? Why do not you stop tobacco? Why this, why that, right. So, this could also be a good way to look at the content and **cull out** the actionable information from these posts right. So, these are things that you can do this is the types of analysis that you can do in terms of what citizens are talking about, what police organizations are actually posting.

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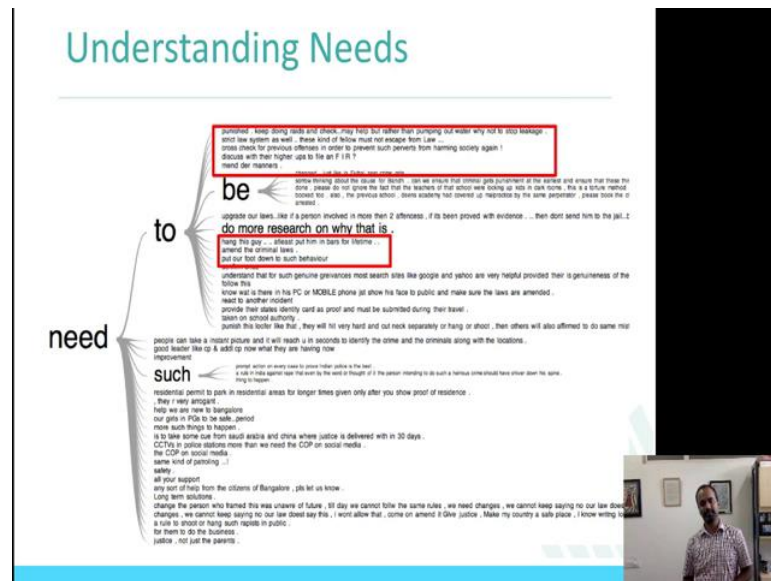
The slide features a title 'Understanding Needs / Wants' in teal. Below it, a bulleted list states: 'Police can encounter fear and anxiety if they know:' followed by two sub-points: '- residents expectations like needs and wants' and '- Expectations, if met, can increase feeling of safety'. A video inset in the bottom right shows a man speaking. A large black rectangle is positioned to the right of the slide content.

Understanding Needs / Wants

- Police can encounter fear and anxiety if they know:
 - residents expectations like needs and wants
 - Expectations, if met, can increase feeling of safety

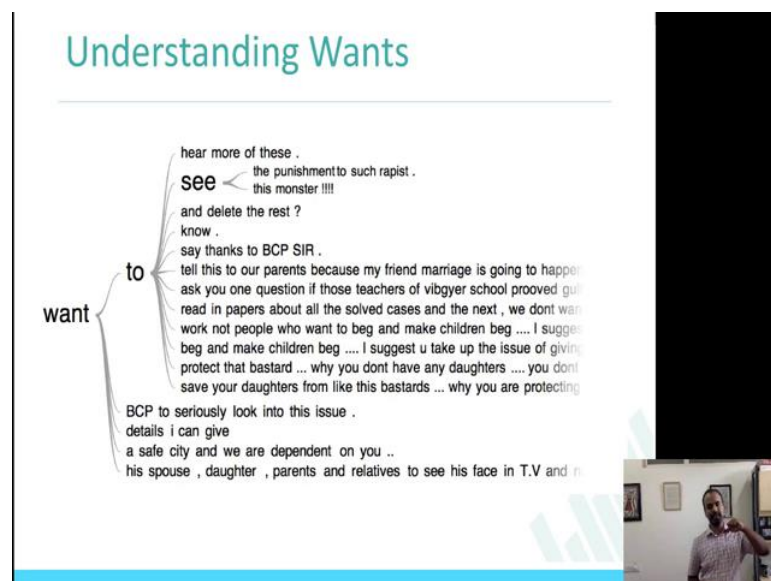
Of course, police can also understand needs and wants right police can encounter fear and anxiety if they know resident expectations like needs and wants I want something living in this place I want some specific safety, I know that this is happening, I'm complaining, please take care of it. If only all this can be done using the content, using the information that is coming on social media, it could be very helpful. Of course, it is not that only this is the only source for making all these judgements (Refer Time: 17:10).

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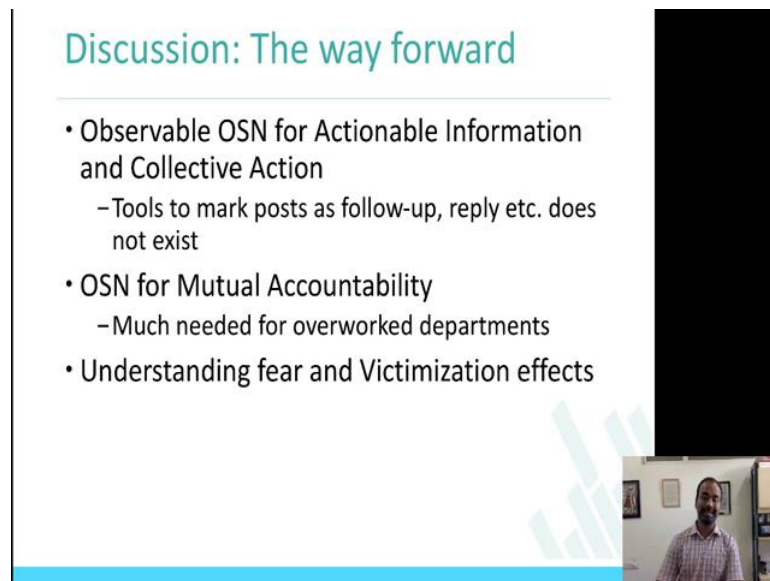
Looking at few more examples in terms of need to be punished blah, blah, blah, need to be so and so, need to hang this guy, need to do more research on why that is going on, need such information for doing this. So, this kind of **tree**(Refer Time: 17:28) information can be actually very **helpful**, I think I have **emphasised** enough about **this tree**, I'll go through.

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So, this is about needs which is what this needed by the citizens, and what did they want also. Want to hear more of these, want to see the punishment of xyz, want to and delete the rest (Refer Time: 17:46) want to say thanks to BCP SIR right. This kind of analysis in terms of wants and needs which is also connected to the actionable information that we talked about is very helpful.

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Discussion: The way forward

- Observable OSN for Actionable Information and Collective Action
 - Tools to mark posts as follow-up, reply etc. does not exist
- OSN for Mutual Accountability
 - Much needed for overworked departments
- Understanding fear and Victimization effects

So, now just keeping these things in mind the data that we have collected from the Facebook Bangalore City police what are the things that we can think about. Just a quick summary of what we looked at also, right, (Refer Time: 18:10) in terms of the data one could actually look at collecting all these information, and helping understand actionable information.

Actionable information, in the sense that I showed you it was just a tree, but how you actually take this and give it to police organizations to look at. It could be that the same tree could be shown, but I think highlighting some post saying that here is the post that you should look at more carefully. And probably when proposing what kind of post to be given and for a specific post here is a template for the reply that you should produce and things like that. Increasing the productivity of the police organizations looking at this

post can be very, very useful. Of course, we saw that both citizens and police are actually accountable because they are actually interacting on this public forum.

And of course, that is also understanding of fear; understanding of wants, understanding of needs from the citizens for police also. With that I will stop with this part of the lecture which is so to in this week, we looked at how initially we just started off with privacy, closing up the topic on privacy, then we look at different police organizations Facebook handles why they should do, what kind of post **show up on** these Facebook pages and Twitter **handles**, what kind of **handles** exist. And then we looked at specifically analyzing the post for identifying actionable information. With this, I will stop this lecture.