Intro to Critical Multiplism

Now that we have spent some time laying some groundwork let's move to the next level of our data analytic Journey we are going to spend the next three lessons or so discussing measurement now this may seem like Overkill but measurement is absolutely essential when it comes to doing Den any data analytics in a principled way the discussion will kind of bleed across the next several weeks as we are discussing measurement its importance the theories underlying it its uses its misuse and some other issues that we need to consider along the way now I want to kick off our dive into measurement by unpacking a conceptual framework for thinking about measurement and really how we think about the research process as a whole to get there let's start with this scenario an organization has a growing concern that recent policy changes have led to dissatisfaction and anxiety among staff

they contract out your they contract out to your organization they contract out to your organization asking you to identify levels of dissatisfaction and factors that seem to make dissatisfaction greater what is our problem of practice or research question here okay this organization did a thing or some things right and then they perceived a change in employee satisfaction or employee dissatisfaction now they want to know how dissatisfied are the employees with the organization's policy changes and are there identifiable factors that will make some folks more dissatisfied they want to know why people don't like the policy changes and they want to know if there are

particular groups that seem to dislike the policy change more whether that be folks who work in sales folks who work in distribution maybe it's single parents maybe it's uh people who need to have Saturdays off whatever whatever the whatever the factors are that seem to be influencing these levels of dissatisfaction

so how can we go about addressing this problem well we could take a qualitative approach right focus groups employee interviews things like that but there are quantitative approaches as well uh we could find some way of ascertaining employee satisfaction or dissatisfaction and trying to get some of those factors preferably non-identifiable factors and run some descriptive statistics look for relationships that might describe interesting patterns right sort of descriptively diagnose um sort of or what happened

now is a qualitative approach or a quantitative approach better at addressing this prop this problem this question

will instruct through this is a class that focuses on data issues so I think I'm supposed to say quantitative is better than qualitative well hypothetical student the answer to my question is a qualitative approach or a quantitative approach better at addressing this problem um well the answer is yes probably neither approach is going to be inherently Superior across the board each method will have its pros and its cons if we consider for example surveys okay they can provide a wealth of information especially for larger organizations you can ask hundreds or even thousands of employees to answer a few

questions to gauge your satisfaction get the data fairly quickly okay but

you may end up also with it being too easy there being too much data uh when methods are quick and dirty like a survey what it can lead to folks asking too many questions if there are too many questions you may end up with a bunch of variables that are not particularly meaningful you might not know what to do with all of it

um surveys and Quant surveys uh they don't typically take a lot of time you can just ask a handful of questions and book can be on their way but they can also take too long again if too many questions are asked it'll take too long if management isn't prioritizing the survey it can lead to situations in which it's just another thing for someone to add on to their already busy day if time is not set aside to do these surveys they might not get done you might end up with a particularly low response rate this is why a lot of instructors build into their class a set of time for folks to give their end of the year surveys or end of the year questionnaires because without giving students that time to do these surveys response rates would be lower than they already are okay

the answers to a survey can be very quick can be very fast right the statistics themselves don't change a mean calculation is always a mean calculation a bar chart is always more or less going to be the same especially if the question is identical from iteration to iteration

but if it takes too long to get those responses back to the individuals who answered those questions it can seem like the organization doesn't really care about the feedback if I answer a questionnaire or survey in March and I don't see the results until August or September what have they been doing with all that date what have they been doing do they really care about what I said or did they just ask to give the illusion that they care um it can make it can make employees feel like they're just being sort of I don't want to say toyed with but that they uh the organization doesn't care as much as they appear to if we take focus groups um on the other hand a pro of the focus group is that the questions are more open-ended than in a tradition in a traditional survey in a survey you typically have a specific question with a set number of possible responses in a focus group you can ask a question that doesn't quite have a clear Bend answer it allows for a lot more Dynamic information gathering you can get a lot more than you necessarily would from a survey but a con of that is that because these are discussions and there are multiple individuals within the same group discussing these issues if you don't have a moderator with a high level of skill or sufficient training you can end up with discussions that end up going completely in the wrong direction talking about something that is unrelated to the initial purpose of the focus group

you can get a lot of really great high resolution uh information from a focus group if it's well constructed and well executed you get a lot more detail about things that you wouldn't be able to get from a survey but because of this less structured info because of the the information itself is less structured it puts a lot of uh it puts a lot

of the meaning and a lot of the the power and utility from the focus group on the person who's doing the interpretation of these discussions of this information right it's not a simple this is the average level of agreement or this is the average salary this is the average number of overtime hours works this is the average perception of whatever you have to be able to pull out those narratives in a meaningful way you have to be able to tie them together and you have to do so in a principled fashion that allows you to sort of have that

powerful narrative that you can get from these qualitative approaches

another Pro is that these focus groups in particular can actually bolster a sense of camaraderie among peers at an organization you have a bunch of individuals talking uh talking about similar experiences and similar issues that they're having and it allows them to sort of feel that bond with their co-workers in a way that can be very reaffirming and can be uh can lead to a better sense of organizational cohesion

but a downside of this is that if the group is not structured appropriately it can actually facilitate and by facilitate I mean aggravate interpersonal conflicts if you think for example two peers who don't maybe get along too well being in the same focus group it can turn into uh well I'm right no I'm right situation back and forth um adversarial uh sort of derailing the focus group in that sense um or if you end up in a situation which you don't have all peers but you have a peer and a supervisor and they're subordinate in the same group that may lead to a subordinate not wanting to bring

up particular issues in the presence of that supervisor for fear of repercussions um so we have to really be careful about the way that we do structure these because they can sort of change and bias the way that we are going to get the certain types of information

now for some organizations survey methods will be best for others it's going to be focus groups now ideally you're probably going to want both uh you want those broad quick sound bite summary informations that you can get from surveys right things like in a typical week how often do you feel stressed at work ranging on a likert scale and you also want those specific narratives that you can get from something like an interview or a focus group something that gives you detail more than you would get from that survey right something like our delivery schedule is loaded very heavily at the end of the week so this leads to a lot of stress for us to get orders out in time for the weekend that's an insight you're not necessarily going to be able to get from a survey unless you specifically ask a question about well what is leading to this stress or what uh what is leading to these delays so on and so forth

um alternatively what if the question was worded differently right now I asked how dissatisfied are the employees with the organization's policy changes and are there identifiable factors that make some folks more dissatisfied but what if instead the question was how did the policy changes affect employee satisfaction this latter question is asking about change now when we have changed change means a comparison between two points okay in this case it's two time points before the policy change and after the policy change if we

don't have employee satisfaction data from before the policy change then the only way that we can get that information from the employees is to have them ask retrospa to have them report retrospectively okay which carries with which carries with itself some other issues asking people to remember how they felt before a policy change versus now so we do need to uh we do need to sort of carefully think about how we are um we're using these qualitative and quantitative methods to approach these sorts of questions okay but again we're probably going to want some combination of the two and some of you are probably saying well duh right uh post survey focus groups they're a thing that are done in a lot of Industries right you run a survey after the survey you use the survey to guide a focus group to get and unpack more detailed information that's great love it I love that your organization does this would you ever stop to think about why why are we using both quantitative and qualitative methods our world is increasingly more obsessed with numeric answers with quantitizing everything right bringing everything into the language of numbers cold factual numbers why are we still relying on qualitative methods which have so much interpretation and subjectiveness to them

well I kind of already said the answer right and that's because each method has its own prose and its own cons or another way of saying it is that each method has its own biases okay when we take different methods together and we find consistencies between the stories that are being told or the stories that we're able to glean from that information from that data when we see that convergence we become more confident that the story that we have that the narrative that we have is probably

approximating what's actually going on a little bit better and we're more confident in that case with different methodologies converging then we are with the same methodology sort of repeating itself over and over again I'm less confident if I administer a survey I get a result and then I administer the same survey a week later and get a similar result that's really just telling me how well that particular survey is performing in terms of consistency it's not telling me whether or not I'm actually getting at the thing that I want to get at or another way of saying it is repeating the same test over and over again is really telling me more about the test for liability not its validity okay so I want to use quantitative and qualitative methods because these different biases associated with these different methodologies mean that they're going to be wrong in different ways so if I'm still getting the same story from methods that are wrong for different reasons then man I probably have a pretty I'm probably going in the right direction when I have that consistency

right now I want you to think about what's going on right now right now you're looking at me talking

if you saw just my lips move but no sound you would probably be less confident that I am talking okay there's uncertainty added there

if on the flip side you heard a voice but my lips didn't move that would also lead to you being less confident for a different reason right the visual input is telling you one thing and the auditory input is telling you something different okay but when you see

my lips moving and you hear my voice and you see that convergence you're pretty sure that it's me who's talking

this multi-modality of Senses using your eyes and your ears to to know that I'm talking right it's very similar to what we're using when we're talking about the multi-modality or these using of different methods right your vision and your vision and audition are they're really just two different ways of measuring right this is me measuring visual input this is me measuring auditory input when there is a consistency we're pretty sure we have a good idea what's going on we decrease our uncertainty by approaching the problem from different directions different modalities the logic that underlies this utilization of both qualitative and quantitative methodologies it's going to apply Beyond just those two okay we're going to take some time to show that this approach of using multiple different approaches of using multiple Avenues applies not just between qualitative and quantitative but also within quantitative that we can use this multiple method approach to get a better handle on what it is that we've actually measured right to be more confident in our ability to ultimately generalize our models okay and this General approach that we use we refer to as critical multiplism okay and the key to critical multiplism is again going to be this idea that we are we want to make sure that we have results that are going to generalize because for us generalization is going to be essential to make sure that we're making good predictions and we're building good models