Lecture - 4
Marketing Research Process - II

Welcome friends to the lecture series of the course Marketing Research and Analysis. Today we are discussing about the research design process. So let us see what is the research design process and what are the types of research designs involved in any study.

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So in the last end of the last lecture, we were discussing about the different types of research designs, for example the exploratory research design which is also called as a non-conclusive research design, the exploratory is also called as the non-conclusive research design, followed by conclusive research design which is of two types, the causal research and the descriptive research. The descriptive research is done through a cross sectional way or a longitudinal approach. So let us go one by one throughout and explain.

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Exploratory

- Less understanding of the research project in hand
- Helps in discovering new ideas and insights — *apple* →
- Helps in formulation of hypothesis
- Projective techniques, case studies, focus group studies, in-depth interviews

Exploratory as the name suggests as you can understand is something to explore. So the researcher is trying to identify something new or bring in some new insights and understand something new. So there is a less understanding of the research project in hand right, obviously. So because there is a less understanding, the researcher is trying to develop a few questions and try to get an answer to those questions. It helps in discovering new ideas and insights. For example Newton's, you know the famous apple case.

So as the apple fell, Newton thought something is forcing the apple to fall down and that is the reason it is not going up and it is only falling down. So from there, he developed the gravitational theory. Helps in formulation of hypothesis. Now why I am saying helps in formulation of hypothesis is that generally what happens in exploratory study, the researcher is asking questions because he is not aware, what will happen if this new product comes to the market, what will happen if something the pricing, for example as I talked about the pay what you want pricing in the market.

Suppose the entire marketing, the pricing mechanism will be on a basis that there is no price at all and people will decide the price, only there is a base price may be and then you can pay whatever you like, you will be only informed that there is a base price of let us say X, but you may provide you may pay zero or you may pay anything. Suppose we come up with such kind of a mechanism, will it really work, so we do not know. So we can explore such ideas.
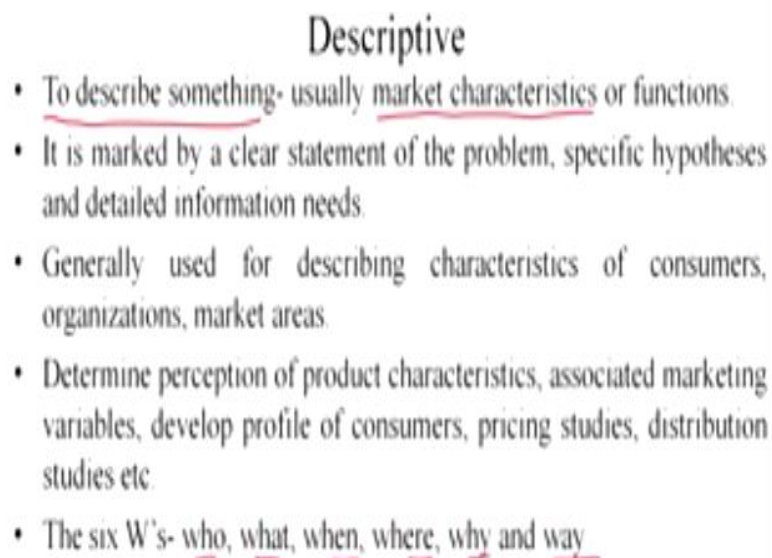
So once you have done some study, then it helps you to accumulate more knowledge on the subject and thus further in the future it helps you in the development or the formulation of

hypothesis. Techniques like projective techniques for example, case studies, focus group studies, in-depth interviews are a part of the exploratory research because when for example projective techniques you are shown a kind of a scenario and you are asked to say what you feel or what you like.

By doing that what happens is the person, the company, or the researcher can understand how do consumers, how do respondents think, what is important to them and what is less important to them, what factors may be affect them mentally. So such kind of things are very important and they generally do not come out through a simple may be survey mechanism. Similarly focus groups studies are very important because people talk and they discuss about certain topics and there many important things are an urge which are generally not known to the researchers.

So this is some important technique of exploratory. Then you are followed with descriptive research.

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Descriptive

- To describe something- usually market characteristics or functions.
- It is marked by a clear statement of the problem, specific hypotheses and detailed information needs.
- Generally used for describing characteristics of consumers, organizations, market areas.
- Determine perception of product characteristics, associated marketing variables, develop profile of consumers, pricing studies, distribution studies etc.
- The six W's- who, what, when, where, why and way

Descriptive research is as the name says to describe something. What is that description? Usually market characteristics or functions. So you may describe the consumer, you may describe the market, you may describe the behavior, anything. It is marked by a clear statement of the problem, specific hypothesis and detailed information needs, very clear. So that means what? Just imagine you can only describe something when you have certain knowledge about the subject.

If you have no knowledge, then you cannot, one can never ask, develop hypothesis, so one can only ask questions in that point, but when you have certain knowledge about the market for example or something to describe it better, you should have some kind of a clear statement and you can develop some hypothesis, but only thing is what you are doing in this descriptive research is you are testing those hypothesis in the market. Generally used for describing characteristics of consumers, organizations, market areas etc.

Determine the perception of product characteristics, some usage; associated marketing variables, what marketing variables are associated; develop profile of consumers, for example are they heavy users, light users, frequent users, volume buyers, discount buyers, what kind of, how would you develop a profile of the consumer; pricing studies, various pricing studies, at what price level do people break their loyalty for example; distribution studies, so what kind of distributions are helpful, how should you be distributing the product, is it only through chain of intermediaries or may be it is direct, what kind of thing you do.

The 6 W's that is answered in the descriptive search are who, what, when, where, why and the way to do that research. So these 6 things are very important.

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The third and this is also a part of the conclusive. The last one was also descriptive was also part of the conclusive research, and this one causal as you can understand causality is inferred when the occurrence of X increases the probability of the occurrence of Y or whatever, increases or decreases the relationship, but there is a relationship that means, so there is a

cause and effect relationship. So for example, generally in a liner equation Y and X, so Y and X are connected.

If X increases, Y may increase or if X decreases Y may increase or if X decreases Y may decrease, so whatever, there is a relationship, cause and effect relationship. Causal relationships are often determined by the use of experiments. So what you are doing? How is it different? Now you are experimenting, the experiment may not be in only a lab, it is a social science experiment also possible. So how do people behave in a certain situation? Many interesting experiments have been done to test how people would react during a particular condition.

So we can never prove causality the statement says. We can never prove causality, but we can infer a cause and effect relationship. There is a relationship between, you must have heard the term correlation and causation for example. Correlation are when two things are correlated. For example, let us say the GDP of the country and let us say spending of the people, for example may be correlated, but they are not cause and effect, might not be cause and effect.

Similarly experiments you are doing on the laboratory through some machine or something or field experiments, our social science experiments mostly are field experiments basically right, so this is causal research. So here also you are testing, may be hypothesis. Then we come to something in the research process, after the research design is important, then we come to something like in the research design for example what is the measurement and scaling, something very important, again connected in the process.

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Measurement & Scaling

Scale characteristics

- Description: unique labels or descriptors   *male, female,*
- Order: >, <, =
- Distance: absolute difference | |
- Origin: fixed begining

So when a researcher is doing the research, what kind of a measurement system is he using. So that we say what kind of scaling technique is he using. So the scale may be has 4 scale characteristics. Description which says unique labels or descriptors, for example male, female, heavy user, less user kind of things. It has an order, now it can be greater than, it can be less than, it can be equal to. Distance, what is the distance, the difference between two points, for example in an interval ratio scale, so what is the difference.

Origin, does it have a fixed beginning or not. So these are some of the characteristics of a scale that is frequently decided than thought of, taken into account.

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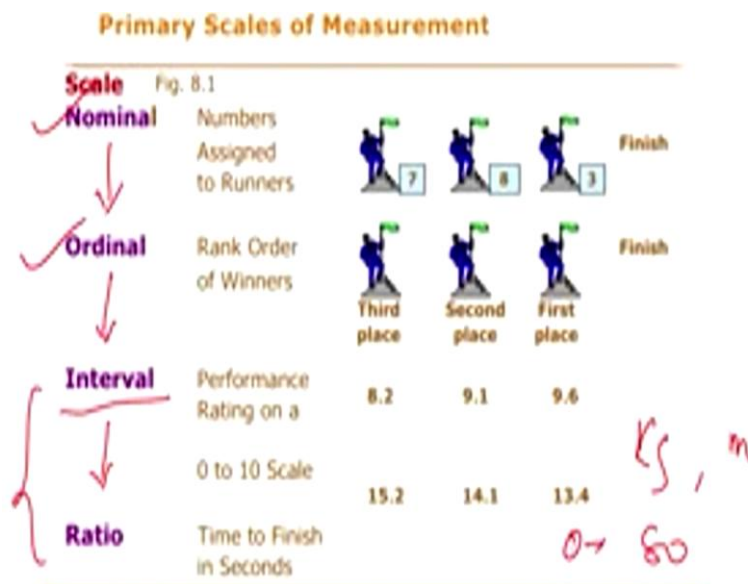
Look at this. There are some primary scales of measurement. So this primary scales are basically nominal so where the researcher is only assigning a number, this number do not

mean anything. So for example let us say this person is first, second, third but his number is 7th, that means he has a jersey number maybe 7. Your roll number in the class for example. So numbers assigned to runners for example. Ordinal, the second higher level, you can understand that the scales are graduating, as they go up they are graduating.

Rank orders, so this is for example the third place, second place, first place. So you can take the same thing here also. So first place, this person is first, so this person whatever, he is second and this is third. So here, we are saying, we are placing them in a particular order. So sometimes, the nominal is just to represent, now for example Messi, footballer. He has a jersey number, no, that jersey number does not mean that he is that kind of a player right, but it only represents that if he is wearing that jersey number it is Messi, similarly but ordinal says if there is a difference, there is an order right.

He is first in the class, he is second in the class, he is third in the class but what ordinal does not say is that whether the difference between first and second, second and third is equal or not equal. Interval scale comes the third scale. Here the performance, this scale and this scale these two are very similar except that one point is that the ratio scale is a scale where you have a 0 point that means there is an absolutely fixed point, a starting absolute point right. So that is why we say for example the interval scale the best example we can think of is that any interval, any psychological measurement for example.

In a scale of 1 to 5, how much do you place the person, where do you place the system, how good this is, how efficient is it for example, but ratio scale is a scale where it tells you for example the kilogram, the meter, distance for example. It starts from suppose somebody says I am 80 kg, then it is from 0 that I am 80 kg right. So this is what is the beauty of a ratio scale, but interval scale you might not have an absolute zero point. So the difference for example you can understand from the centigrade scale, centigrade versus the Fahrenheit.

Now when you look at it, so the one degree at one point makes another, although two different degrees they are similar but the values are actually different. So centigrade and Fahrenheit, they are different values make the same meaning right. So that is why interval scale does not have an absolute 0 point. Ratio scale has an absolute 0 point as I said weight and all.

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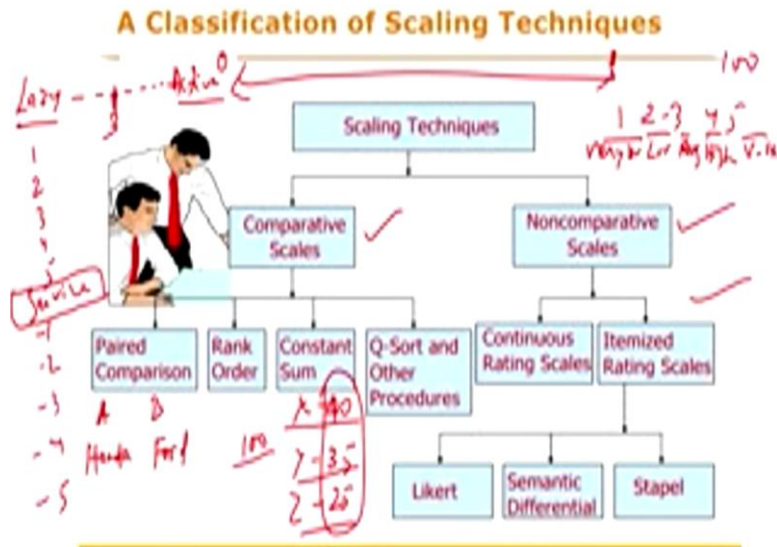
A classification. How do you define the classification techniques or the scaling techniques. So basically two techniques, comparative and noncomparative. So comparative means you are comparing. So paired comparison, maybe I am comparing between A and B, now which is better. Let us say, I am comparing between any two products let us say a Honda car versus a Ford car right, now which is better. For example, any particular model I can take or something. So when you do a paired comparison, it is a part of the comparative scale.

Similarly rank order, now rank order means which is first, which is second, which is third. The respondent is asked to rank the products in a particular format. Third is the constant sum scale where a sum of let us say 100 is given and let us say people are asked to divide the sum of 100 into several products. Now products could be for example what kind of let us say you are purchasing groceries for example.

Now these groceries how would you like to spent, how much would you like to spent where or particularly let us say I give you 100 points and I say there are several toothpaste for example and how would you put your money into that. So this 100 by allocating a certain amount of resource into the particular brand, one can infer that okay this is the value that is placed on the particular brand X. So let us say for example X, Y, Z and somebody places 40, 35, let us say 25. Now that means one can understand that X is 40, Y is 35, Z is 25.

So this constant sum 100 has been broken into X, Y, Z, so this is how you understand. Similarly Q-Sort is a technique where what happens is it is a piling technique where the respondent is asked to select the variables and they try to sort it out in a different heap. For

example as you can understand let us say I will ask you to form groups. For example, so how do I form groups. Now anything similar will be placed in one group.

So Q-Sort technique is a scaling technique where the respondent is asked to select a particular product and then group it up in certain ways so that the products in particular group are more similar to the other groups. So this is a Q-Sort technique. Then you have noncomparative scales. Noncomparative scales are for example the continuous rating scales, which is like, suppose let us take this line. Now this line, I would ask you how much do you like this particular class. Now suppose this is let us say 0 and this is let us say 100.

Let us say so somebody places here. So I can understand well this is to the positive side, much to the positive side. So by understanding this, continuous scale are very useful because sometimes people who do not understand the numbers well, for them it is easy. For example a person in the rural area or a child can be given a small scale and asked how much do you like this, now he might give you a distance, but that might not be exactly a point but that tells what exactly he feels or the person feels.

Similarly, you have itemized rating scales. Itemized rating scales are scales which where every variable is given a description. For example let us take the first case of Likert scale. So I am saying 1 to 5; 1, 2, 3, 4, 5. So 1 is let us say very low, 2 is low, average, high, very high. So when I am describing each character, so itemized rating scales says that you should be able to describe.

Now why it is important is that you would understand that if we do not describe ourselves what happens when the researcher puts in the respondent a question and he himself is not in a position to let us say describe the value that 1, 2, 3, 4, 5, 6, 7 whatever, then how do you expect the respondent to understand it. For example, suppose I ask you to give a name in description to every value for example there is 1 to 5 now, suppose I make 9. So what would I say to now 1, 2, 3, 4, 5, 6, 7, 8, 9. So it becomes very cumbersome and very difficult.

So when we are feeling the difficulty, how do we expect the respondent to understand it. So itemized rating scales are very important because this way it makes the life easier and data collection more simpler. Semantic differential is a similar technique where it is a bipolar technique where for example two cases lazy versus active, it is taken, so two bipolar words

are taken and there are 7 gaps. The person is asked to rate suppose a particular person or somebody, how would you place this person in this scale.

Now if he places here, then it is something like he gets a 3 towards the lazy. So this is how you understand the semantic differential. Stapel scale is also a similar scale where what happens is there is a middle point. For example, the service of a company. Now what I am doing is service is here, so what I will do 1, 2, 3, 4, 5 then -1, -2, -3, -4, -5. So what I am doing is if I ask you how do you explain the service of let us say Tata cars or Tata motors for example.

So when I am asking service, service is the middle point and there are 5 points up 5 points down. So this is nothing but a Stapel scale. Now once you are done with scale, then you come to sample. The researcher also needs to understand what kind of sample is he using, who are the samples, and how do you understand them.

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SAMPLING

- A sample is "a smaller (but hopefully representative) collection of units from a population used to determine truths about that population" (Field, 2005)
- Why sample?
  - Resources (time, money) and workload
  - Gives results with known accuracy that can be calculated mathematically
- The sampling frame is the list from which the potential respondents are drawn
  - Registrar's office ✔
  - Class rosters ✔
  - Must assess sampling frame errors

Yellow page

Telephone Directory.

A sample is a smaller collection of units which represents the population basically. So why sample because resources are less, time and money are less with us, we have a definite time period, we do not have infinite resources, and given results with known accuracy that can be calculated mathematically. If I can know the results with a smaller value, then what is the point of taking the universe because that has its own limitations. There is a sampling frame.

What is the sampling frame. It is a list from which the potential respondents are drawn, for example, let us see this class rosters, registrar's office. Now what is for example take a

yellow page or a telephone directory, so I can consider this as a sampling frame. From here, I can collect my sample. A researcher should always be very careful in taking the sample frame because there can be some errors associated with it and you should be able to assess what kind of sampling errors can the sampling frame have.

So when you are doing the sampling, you need to be very clear with these things. Errors in research are very important because if you conduct a research and you have done an error somewhere that effect of the error goes on till, it is like simple mathematics, if you have done a mistake at one point or one step, then that carry over effect will go on till the end and your results will be entirely different.

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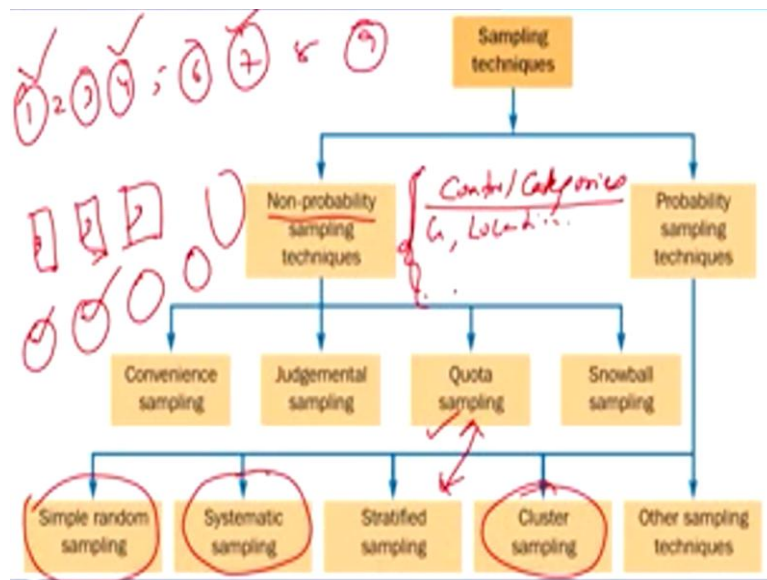
Now coming to the sampling techniques, so nonprobability sampling techniques and probability sampling techniques, 2 major areas. So in nonprobability, we have convenience. Convenience means something very convenient, easy. So I need to collect data, I am going to my friends in the class and I am collecting data from them, so they are my respondents but that does not make it a rational way of choosing your respondent, but that is easy for me right. Judgment, here I am not using convenience only, but I am saying judgment.

So, I am using my judgment, although it is convenient may be, but still I am using some judgment who should I be selecting in this class of mine. For example if I am doing a study on let us say health or let us say health indicator, is a student of physics much better or a student of biology much better to be a part of the process, so I am using my judgment

basically. Quota, quota is basically another method where what happens is the researcher develops the control categories.

Now what are the control categories? For example may be the gender, the location. So what I am doing is on what basis do I collect my respondent. So quota helps in the first step. There are 2-step process, basically you can understand it as a 2-step process. So like a judgmental, it is also called the 2-stage judgmental process. In the first stage, you develop the control categories okay. What are the control categories on which I will collect the data from. Second is how much from each will I collect the data.

So the only thing is why it is coming under the nonprobability sampling technique is, here you are using the judgment in selecting the number of respondent. So both ways, you have used your judgment so that is why it is a nonprobability sampling. The fourth one is snowball where it is a very simple but efficient technique in the sense that here the researcher selects one respondent and then he asks that respondent to select another respondent for him. So by doing this what happens, it is like a referral sampling

So you refer somebody and the person whom you have referred he then refers somebody. So by doing that, the company or the researcher at least knows that the respondents who are being chosen, they are following a certain characteristics or a pattern. The other is a probability sampling technique which again has several, for example, simple random. So simple, so what is randomness says, everybody has a chance to get selected. So simple random is I may pullout anybody from the class, I need 5 people in a class of 16, I can pull out any 5.

So this is a simple random. Systematic sampling is slightly different from simple random. In this, you can see what happens is let us say these are some houses. For example house number 1, 2, 3, 4, 5, 6, 7, 8, and 9. I need 3 houses for my study. Now I can randomly choose any one point from here, let us say I have randomly chosen the third house. So if I need 3 houses, so what should I do, who is my next. Now the third element from the beginning.

Now when I am doing this, there is a probability because I could have chosen the first one also, I could have chosen the second one, I could have chosen the third, and yes I have chosen the third one in my case, but had I chosen the first one suppose, then I would have

chosen systematically if I go first, then the fourth one, and then seventh one. So this is why it is called a systematic sampling. Next is stratified. Stratified and quota look very similar actually, but they are different. The reason is, what is a stratified sampling let me explain.

You divide the sample population into different stratas, now each strata has a different characteristics. Now these strata that you break up has different characteristics. Now in stratified sampling what did it said is first of all every strata you have to take sample from each strata and you cannot leave any strata, so the chances of selection of each strata is high. So what happens here, how is it different you see, now but the selection is again random.

Now suppose I have broken it up into several stratas, now from each strata how many samples and who are the samples that I am choosing is again a random process. So stratified sampling is also a 2-way sampling process. First divide the stratas and then pull out the data from the strata, but it was different from quota because the quota was having a nonprobability. The judgment was being used to select the respondent, here it is not judgment but it is a randomness that is the key. In this strata, I am selecting 3 people may be.

So out of 10, any 3 let us say here any 3 here any 3, but condition applied is every strata is involved, I am not missing a single strata, so we cannot say that I am missing any strata. Then is cluster sampling. Cluster sampling is little similar to stratified in the sense that what happens here is that I break the population into several clusters, now out of which I may select only 1 or may be 1 or 2 clusters and not all. So stratified was saying that every strata was the part of the study, but here in cluster, I am choosing only may be these 2 and not this rest.

So it is done but how do I choose, on a random basis, so there was no nothing into that, so I chose it randomly, but I chose only 1 or 2. So I am not selecting the entire thing, so that is how the cluster sampling is different from the stratified sampling, but it is easy because sometimes you have limited resources suppose and you want to see that you get a result fast, so in that sense you can take one cluster completely or may be two clusters partially you can take. So these are some of the sampling techniques.

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Step 4: Fieldwork or data collection

Then once you are done with the sampling techniques, then comes your field work or data collection. Just I will brief this much and then I will stop it here. So field work or data collection once you have done, you know who is your sample and you know how to collect the data, the scale you are aware of it, then the final job is the field work or data collection. So how do I collect the data, what measure should I follow.

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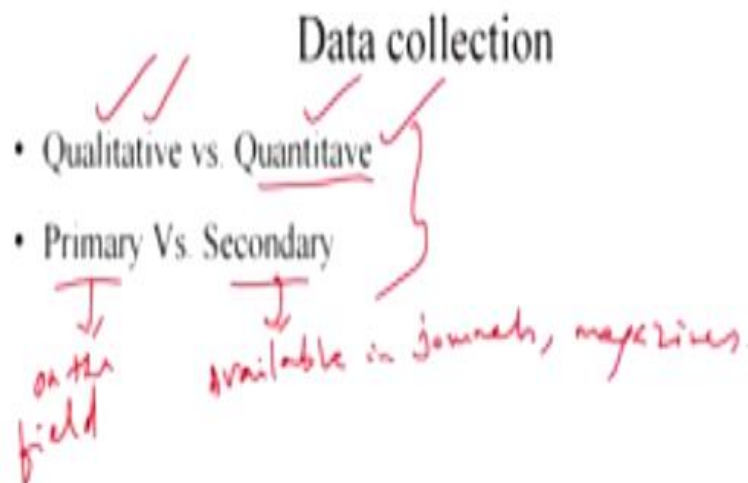
So basically if you see, data collection, we can divide into qualitative versus quantitative study. So if I am doing an in-depth interview is a qualitative study, a focus group study is a qualitative study, but suppose I am doing a primary data for example collecting the number of respondents through a survey form is a quantitative study. I may divide my study data collection process into primary or secondary. Primary means something on the field, so on the field, I am visiting the field and I am trying to collect the data.

Secondary is something already available. So in some may be in some journals or magazines, etc. So already this data is available may be with the census office or some office and you are collecting the data. So this is how you do the data collection process. So in the next session, we will go little deeper into what things do you need to consider or keep in mind while getting into the data collection and how data collection then becomes very important.

Because if you do a process, if you have a large element of errors, sampling or nonsampling errors in your study, then your job might become faulty and some errors might creep in your study and your results might not come as it should have been right. So you need to be careful how you are doing it. Once you understand them, and in the next lecture, I will talk about this data collection process in detail okay. Thank you for the day. Wish you all the luck.