Indian Institute of Technology Kanpur
National Programme on Technology Enhanced Learning (NPTEL)
Course Title
Marketing Management – 1

Lecture: W4-L2
Capturing Marketing Insights

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Dr. Shashi Shekhar Mishra: Hello and welcome to another session of this course, marketing management part 1.

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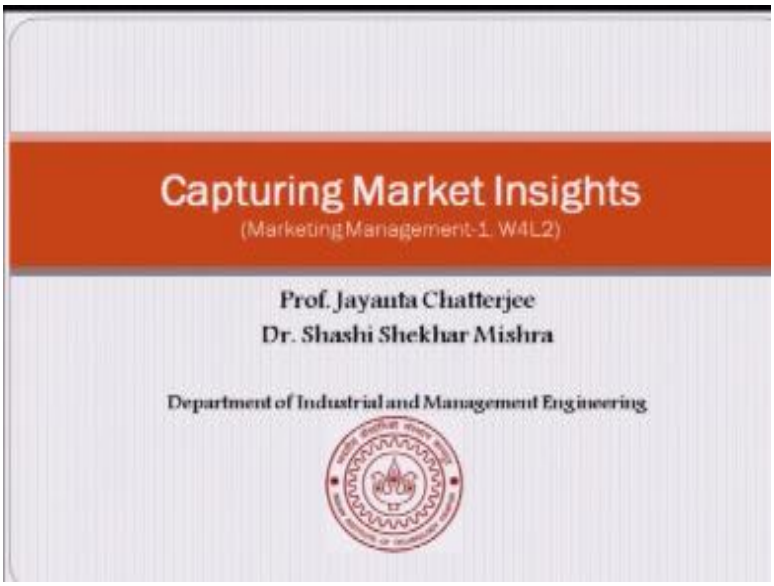

Dr. Shashi Shekhar Mishra: Third volume, third module of this course that is capturing market insights and we are in the second week of discussion into this capturing market insight. So in the last class we have started talking about causal research design.

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Dr. Shashi Shekhar Mishra: Before that we have looked into the different stages of the marketing research process.

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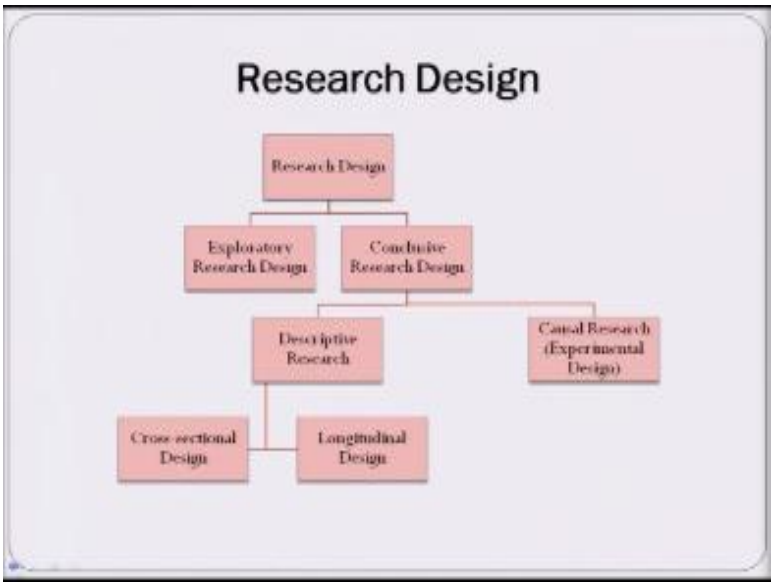

Dr. Shashi Shekhar Mishra: And then we started talking about the different types of research design. So yesterday we talked about the causal research design that is experimental design. And today I am going to talk about measurement and scaling which is part of to both of these conclusive research designs, that is descriptive as well as causal research design that how do you basically measure the variables.

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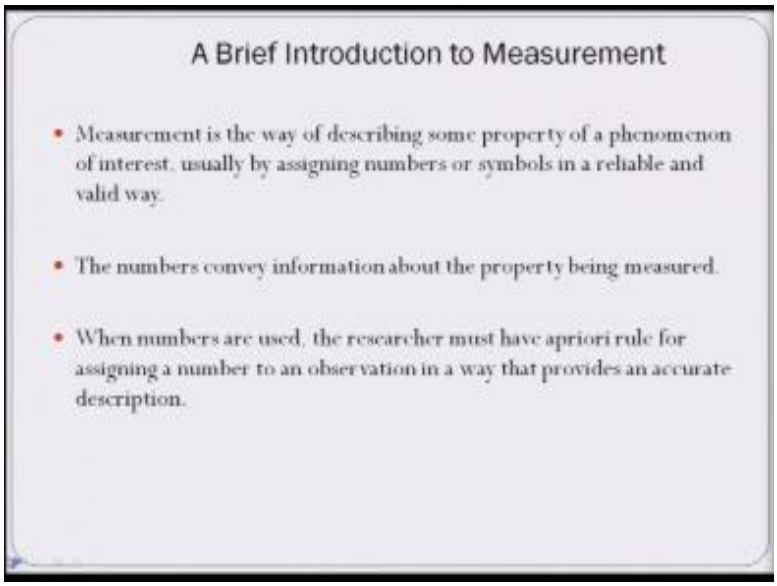

Dr. Shashi Shekhar Mishra: So a brief introduction to measurement, measurement is the way of describing some property of a phenomena of interest usually by assigning numbers or a symbol in a reliable and a valid way. So when what is measurement, measurement is a process wherein we try to assign an object or a entity, a symbol or number based on some pre decided, this should be done in a reliable and a valid way.

So now understand these numbers are the symbols which have been assigned to an object or entity, they basically convey the information about the property being measured, when numbers are used the researchers must have apriori rule for assigning the number to an observation in a way that provides an accurate description. So the idea is that you should have a pre decided rule for assigning the numbers or symbols to any object.

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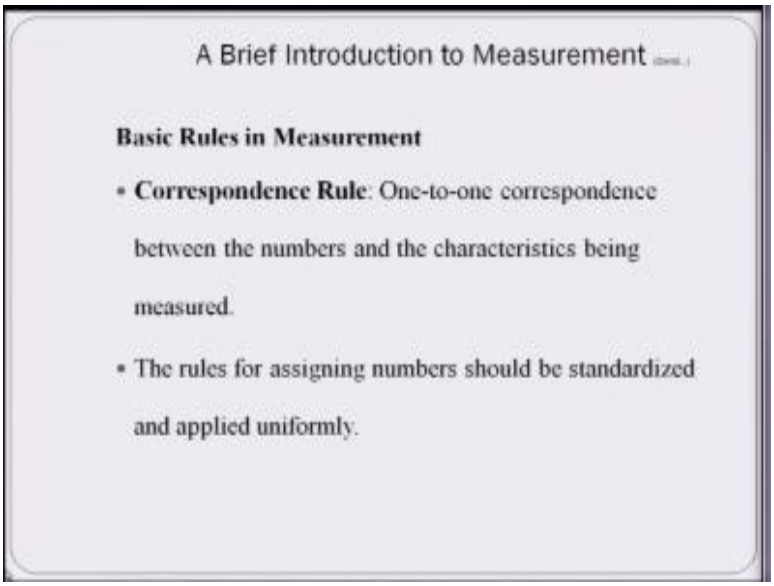

Dr. Shashi Shekhar Mishra: There are some basic rules in the measurement that is correspondents rule, that one-to-one correspondence between the number and the characteristics being measured that you cannot assign two levels of symbol, you cannot decide two numbers to one object and entities it will one object will have based on its property it will have a particular number and a particular object. So there has to be one-to-one correspondence and the rule for assigning number should be standardized and applied uniformly.

So the basic rule is that that the vein which you assign the numbers to an object based on its property, it should be standardized, it should be decided apriori and it should be applied uniformly.

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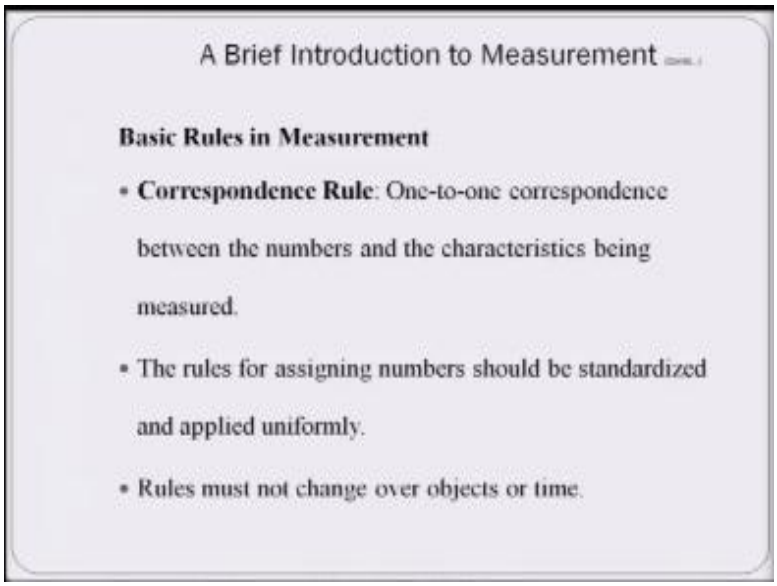

Dr. Shashi Shekhar Mishra: And one more thing which is very important is that these rules of assignment should not change over the time, over the period of time.

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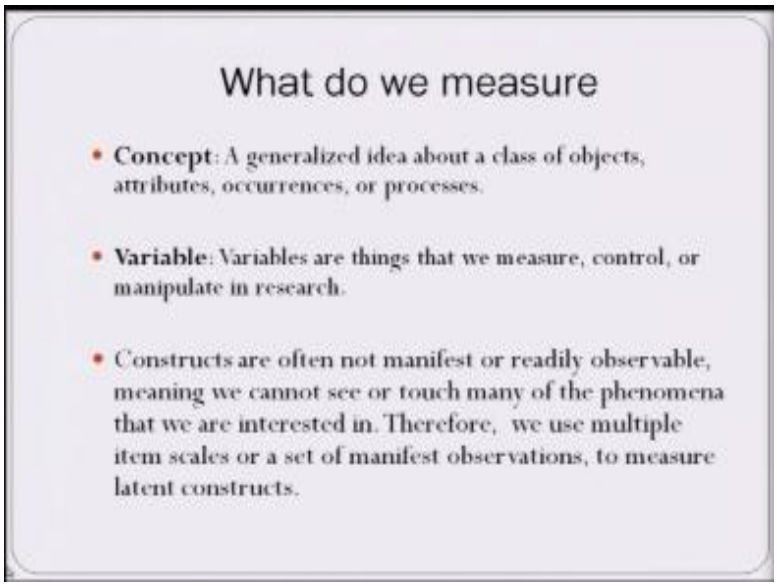

Dr. Shashi Shekhar Mishra: So what do we measure actually? In marketing we basically measure things which are called as constructs or -- and they are basically somewhat different from what we study in some other fields. So take the example like medical sector is variables like body weight or probably in some – in automobile, in the case of automobile we study the speed or the velocity. So all those things are something which is directly observable.

However the kind of concept that we study in the case of marketing research they are somewhat different, like we study concept like customer satisfaction. So how do you measure a customer satisfaction, you will see that customer satisfaction cannot be – it is not something a directly observable phenomena. However you can study or you can measure this concept of customer satisfaction by understanding the state of that customer satisfaction, and being in that state a customer will exhibit certain kind of property.

So by basically measuring those things you can understand the state of or the level of the customer satisfactions.

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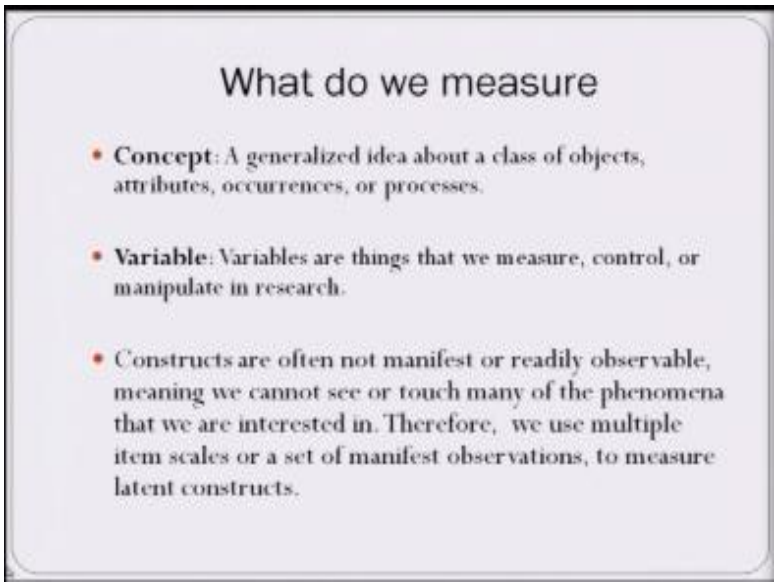

Dr. Shashi Shekhar Mishra: The thing which we call them this concept as that we study in the marketing is construction, these constructs are often not manifest or readily observable, meaning we cannot see or touch many of the phenomena that are interested in, therefore we use multiple item, scales are a set of manifest observation to measure latent construct. So the concept that we test in the marketing is or we measure in the marketing research is generally are latent construct.

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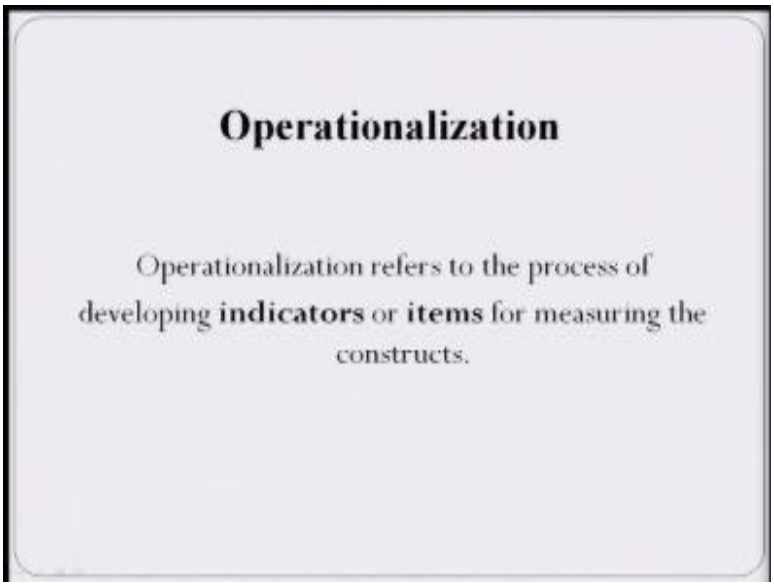

Dr. Shashi Shekhar Mishra: There is a thing called operationalization, you will see that you can have a certain definition of the customer satisfaction. But to measure that customer satisfaction you need to have its operational definition or you need to operationalize that construct, in the sense you have to develop indicators or items for measuring the construct. As I have already told that as in the concept of customer satisfaction when a customer is satisfied it will exhibit, it will indicate certain kind of properties.

There could be a variation depending on the level of the customer satisfaction among these indicators, but they will certainly exhibit certain kind of properties. So if you can basically measure or if you can understand those indicators and measure those indicators you can understand that construct or the concept.

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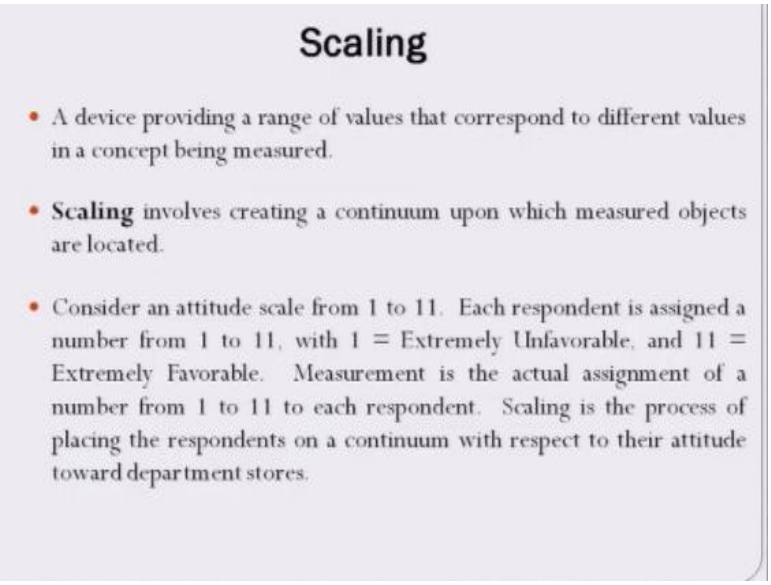

Dr. Shashi Shekhar Mishra: Now what is scaling actually? Scaling is a device providing a range of values that correspond to different values in a concept being measured, involves creating a continuum upon which measured, observed, or located and you will see that, I will tell you, you must have come across some kind of survey where you might have seen this kind of scales being used, that attitude scale or attitude towards a particular object and you have been asked to rate that or provide your attitude on a scale of 1 to 11 where one represent an extremely unfavorable attitude and 11 represent the extremely favorable.

Measurement is actual assignment of a number from 1 to 11 to each respondent so depending on basically what kind of a property or what level of that property object entails inside it, depending on that property you basically assign a number to that object.

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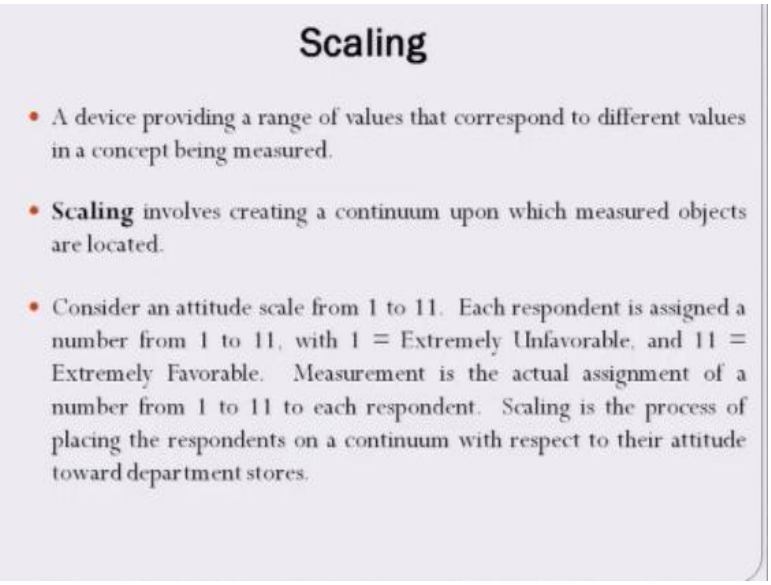

Dr. Shashi Shekhar Mishra: Scaling is a process of placing the respondent on a continuum with respect to their attitude towards department store as in this case this example, that you are measuring that attitude towards a department scale whether it is highly favorable or extremely unfavorable or extremely favorable, based on that you have to put that respondent on a scale of 1 to 11 and then you can assign a number to that respondent.

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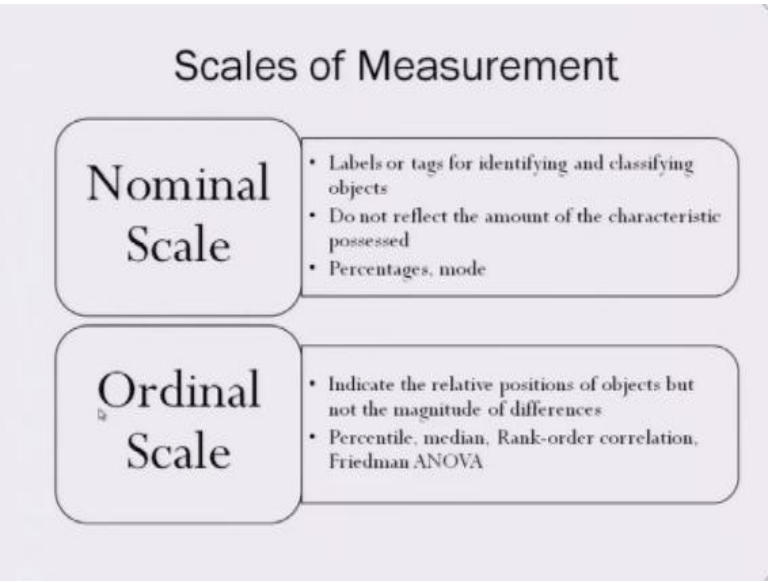

Dr. Shashi Shekhar Mishra: So there are basically four types of scales that are used in the marketing research, the first one is basically the nominal scale. I will explain each of these four types of scale through, through a one example which will tell you within one example the different type of scale and what is a difference among these scales you can understand from there. So nominal scale is the one which is the most basic type of scaling, here labels or tax for, are used for identifying and classifying objects.

So you just assign some symbols or numbers to objects to identify them, however they do not reflect the amount of characteristics possessed. So one example of this nominal scale is your registration number and the scores, so registration number 12345 or probably 5,625 people in this course who are registered for this course, so you will see that each one of you have a registration number, so that is a basically a nominal scale, however you will understand in this nominal scale the registration number one, student who have been assigned the registration number one does not exhibit or does not say anything beyond that he is a one of the participant of this course.

He is no better than a person who has been assigned a registration number of 5625 so you can understand based on these things there are a very limited option in terms of the statistical operations that can be applied and you, you can only basically perform percentage and analysis on this scales. The second type of scale is basically.

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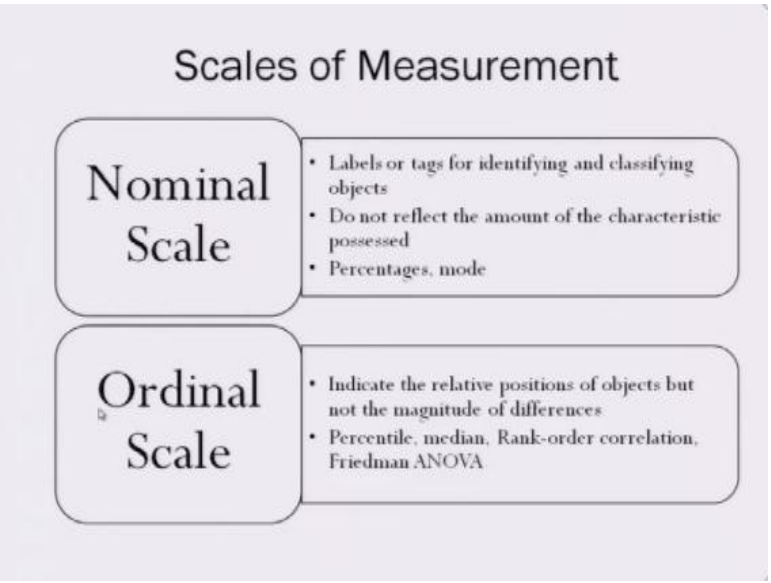

Dr. Shashi Shekhar Mishra: Ordinal scale, ordinal scale indicate the relative position of objects but not the magnitude of difference, so in this class, in this registration class of 5625 you will see that you got a rank in the, you got a grade on your assignment, you will see that all those who are basically have been graded A are better than those who have been assigned a grade B, but and those who have been assigned B are probably better than C but you cannot say how much better basically A is from the B it could be very marginal and it could be a probably on a higher side, the difference could be on the higher side. At the same time you can also, you can also cannot understand or you cannot infer that the difference between the category A and B.

Is same as a difference between B and C, so that kind of a difference is not possible, the comparison of the magnitude of difference is not possible. The commonly applied operations is that you can perform percentile, median, rank order, correlation, and now on this ordinal scales.

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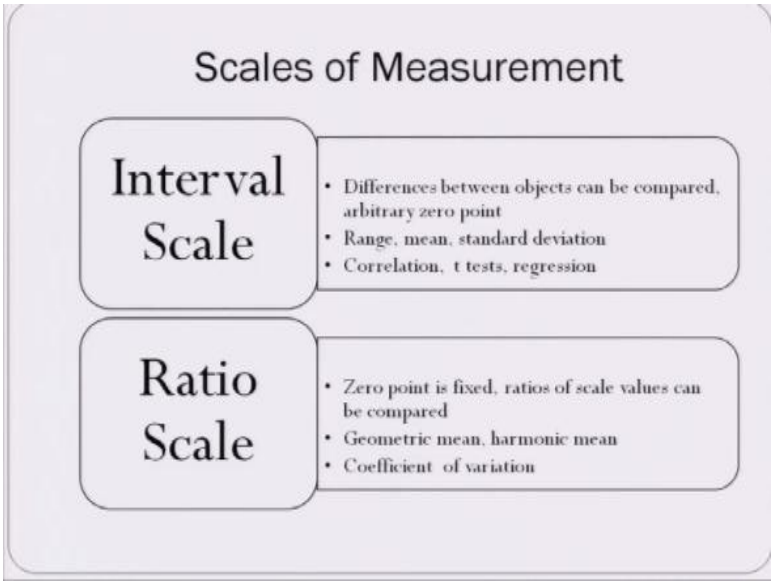

Dr. Shashi Shekhar Mishra: Then you have that the third type of scaling is that interval scale, these are the most commonly used type of his scales in the marketing. The difference is in the interval scale the differences between objects can be compared, that you can compare between two categories the difference between two objects however the zero is not, zero is arbitrarily assigned. So it is a just sort of a arbitrary assignment of zero and what you can perform on this interval scale is that you can perform a range of statistical operation like a range, mean, standard deviation.

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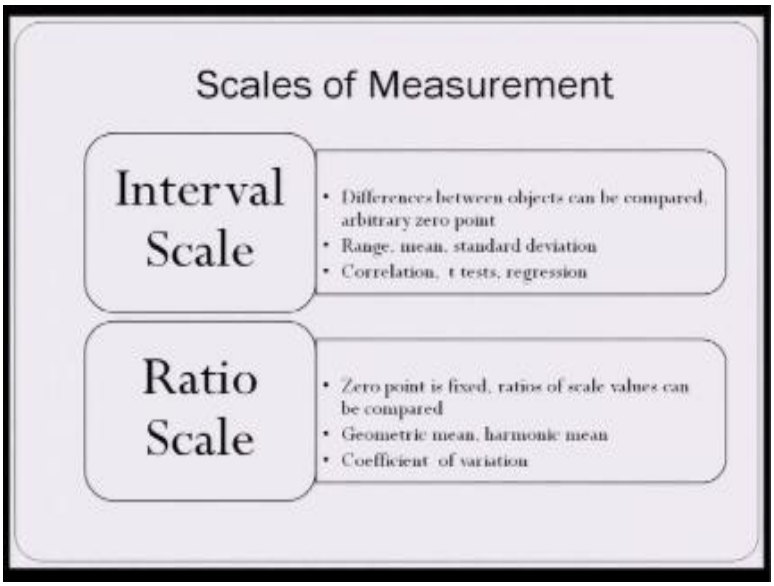

Dr. Shashi Shekhar Mishra: And you can do this correlation t-test and regression using these interval scales. The last type of scale is the ratio scale, compared to the interval scale even the 0 is fixed. So these are basically you can say that absolute values and ratios of scale values can be compared, I will explain to you this all these four different type of scales are through an example and that will give you a better clarity about it.

But you will see on the ratio scale you can also perform geometric mean or harmonic mean and you can perform this coefficient of variation kind of analysis using the ratio scale.

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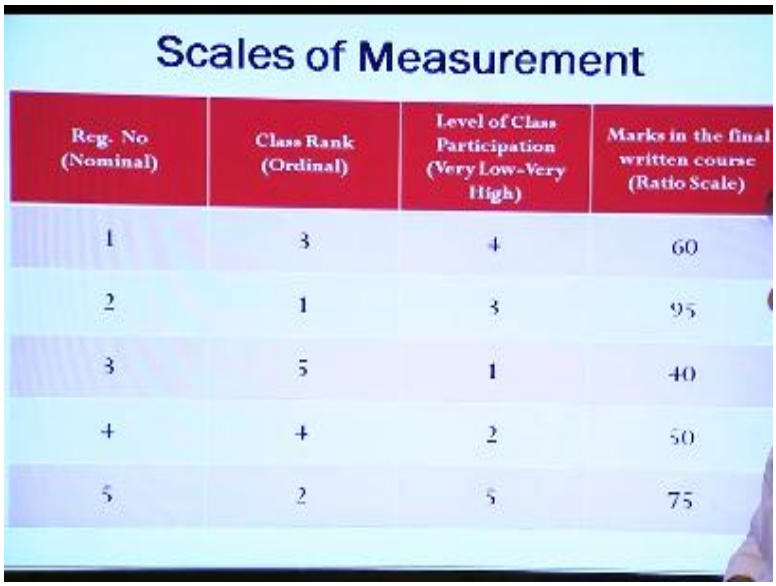

Dr. Shashi Shekhar Mishra: So here I have an example about a class where there are five students and through this class example I can explain to you all the, the four different types of scales. Now as I have already told that in this class supposedly there are five student so each one of them has been assigned a specific or a registration number, you will see that, that is what the correspondence rule was that one student cannot be assigned two registration number.

Each of these student has been assigned a unique registration number and this registration number 1 to 5 is a basically type of nominal scale where these are just symbols to understand who is, by calling the registration number I can understand who is the student. So it is a sort of identification however it does not tell anything about the student that the student A is, the student number with registration number one is better than the student with registration number five.

Now there is another basically data in this class is that, what is your class rank; your overall class rank with based on your overall evaluation in this class. So there might be multiple ways in this on which this I have I might have reached on this class ranking.

And in this class ranking one of the criteria is that your level of participation, your marks in the final written exam, and there could be some other evaluation critera and that constitute to your overall evaluation and based on that I have come across the rank. So student one had, has got the third rank in this class, a student with registration, a second student has got the class rank one. So he is the topper of the class.

The third student is having lowest rank in the class that is fifth, the fourth student has fourth rank in the class and the student fifth has having a class rank of second. Now you see that here you can say that a student one has a better academic potential or he has performed better than the others in the class, you can compare. Here you cannot say that this, this student with registration number two based on his class rank you can say that he is better than the rest of the student.

However based on his registration number you cannot say or you cannot make any such conclusions. The third basically data from this class is level of class participation. So this is a basically a data about you can assume it say a classroom setting kind of a evaluation of the class. So where probably unlike this, this kind of mode of discussion where, where I am delivering the lectures through this, this recording mode and you are watching on your convenient time and place. So where the one to one or face to face interaction is not possible.

However in the class discussion this is one of the important component of the evaluation where instructor basically assesses what is basically the level of participation of a particular student on a scale of 1 to 5, that is interval scale whether and now you will see that this level of class participation has five different categories starting from very low to low, to average, high, and very high.

So now you see that student with registration number one has a very high class participation or is having a high class participation and student 2 is having a average class participation, student 3 is very low class participation, student 4 is a basically having a low class participation, and then student 5 is having a very high class participation. So you can see that it is a basically a interval scale.

And then the last is basically the ratio scale, there this is a basically an objective type exam of hundred marks, where in this exam they have scored out of hundred, so you can see that a student 1 has got 60 marks, student 2 has got 95 marks, and these are basically the absolute marks. You can see that you can clearly understand what is zero, zero means in this case is that a student has not done, has not answered any questions correctly. From there you can understand that that this student 2 has done probably the best in the class and then you have this student 5 and you can understand that, you can clearly understand the difference among the student here.

So these are the four different types of the scales being used in the marketing research.

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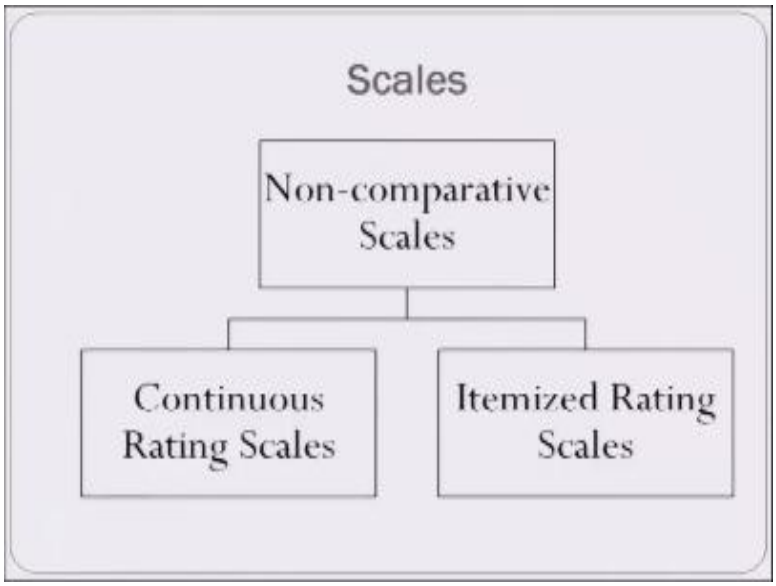

Dr. Shashi Shekhar Mishra: These scales are basically how do you measure so using these scales a particular concept or construct is of two types. The most common types of scale used in the market are non-comparative scale where each item or each properties being measured independently, each property of an object is measured independent of the other objects or other properties. Scales which are there in this non-comparative scale that is continuous rating scales and the itemized rating scale, most commonly we use itemized rating scales, in the continuous scale it is a continuous scale as I was showing that you have a continuum of particular lower point to the higher point and the respondent or the, the object being measured is placed on a particular point in this, this between two different extremes of this scales.

In the itemized rating scale you have different categories of.

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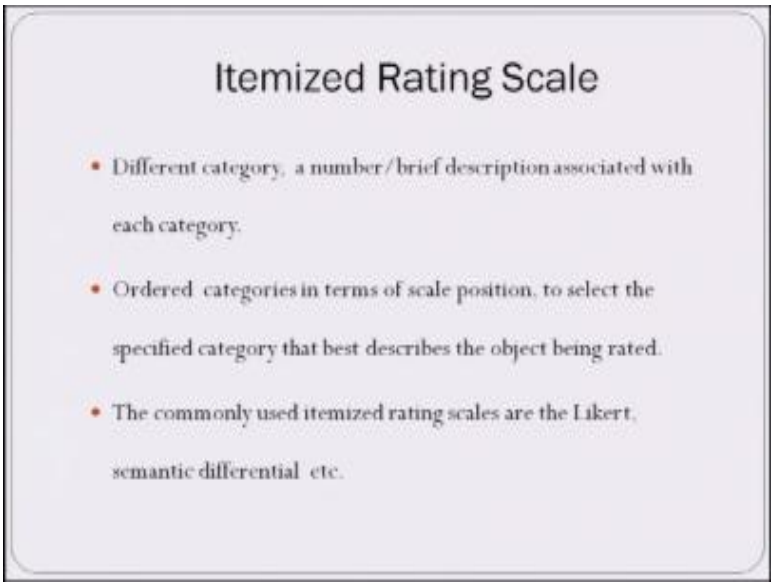

Dr. Shashi Shekhar Mishra: Of object where, what happens a number of, a number or a brief discussion is associated with each category. I will explain to you through an example what this itemizing scale is and ordered categories in terms of scale positions to select the specified categories that best describes the objects being rated, and the commonly used itemizing scales are generally the Likert type scale, semantic differential scale.

So you will see that, that to capture the, the property of an object the level of a property that is inherent in an object you, you create certain categories so you basically a sort of interval, intervals within which property lies. And across these different categories you compare or you basically assess as a respondent what is the level of that property in that object and depending on your assessment you place that, you put your rating on, on across this different categories or depending on which category he falls you say that he is part of this category.

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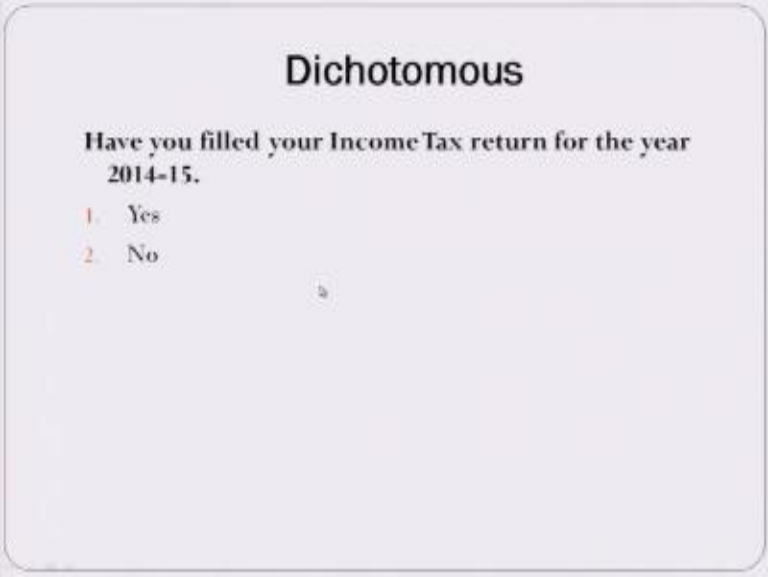

Dr. Shashi Shekhar Mishra: So there are different types of scaling which are possible, this is dichotomous scale like where you have two types of responses that yes or no could be any other thing, that have you filed your income tax return for the year 2014-15 and it can be answered in yes or no.

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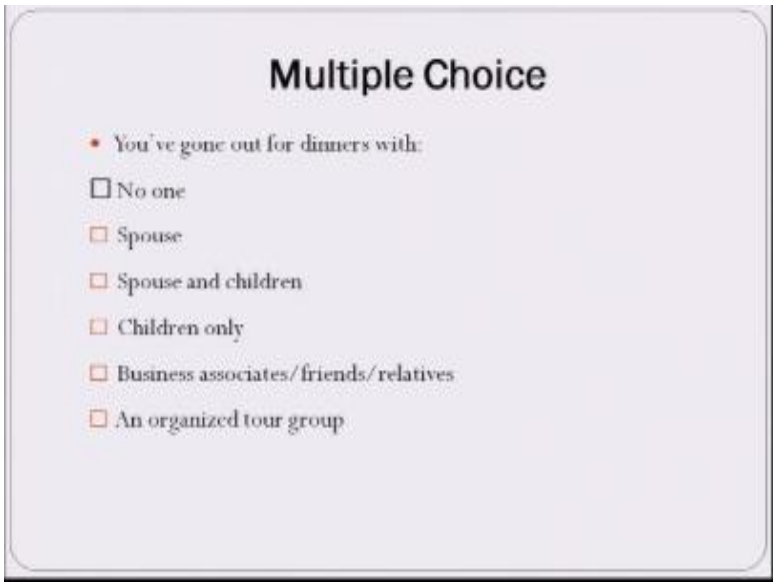

Dr. Shashi Shekhar Mishra: Then you have multiple choice type of questions like you have gone out for dinners with, here you can see you can answer more than one, you can check more than one box whether you have gone along with your spouse or your children, spouse and children and your friends, your business associates.

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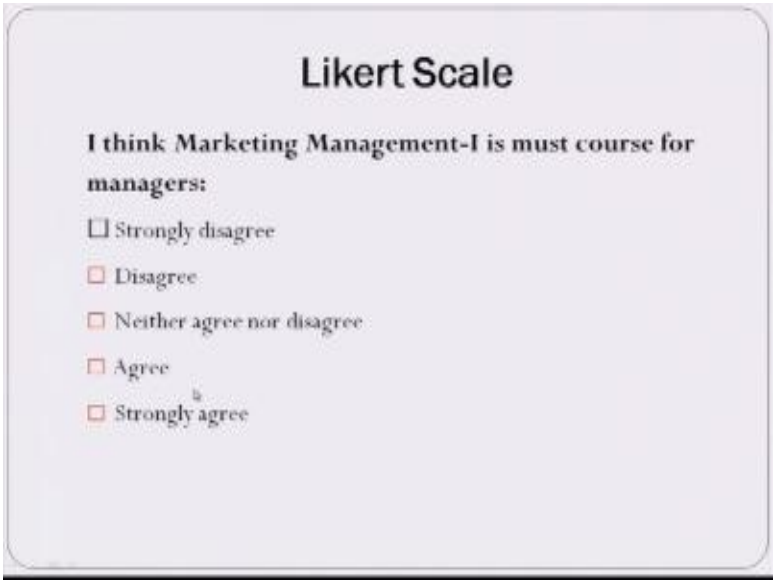

Dr. Shashi Shekhar Mishra: Now I am talk, I was talking about itemized ratings case, now you see one item of rating is a sort of this thing which is called as Likert scale that I ask you a question or you are being asked at the end of the course that I think marketing management 1 is a must course for managers. Now you have basically categories,l you try to focus here that you are asked the question that what extent do you believe that the marketing management is a course for all managers?

Basically the response that could be under different categories and these categories are likely, strongly disagree, disagree, neither agree nor disagree, agree, strongly agree. So that these are the different categories under which the responses can be captured. You see that here you do not have, you cannot assign an absolute value to this to your assessment of how much you recommend this course to a particular manager, but you can certainly basically assess what is probably the degree or what is the level of suitability of this course for the manager or

What is essential, what is probably the level or to what extent this course can be helpful to them. Then you have another type of scale which is semantic differential scale where you have extreme or opposite wordings on the scale that if I ask you how will you rate Indigo's in-flight service, or

if I ask you how much important probably to you is a particular kind of in-flight service, so your answer would be basically honest, this kind of scale that whether you rate Indigo service from worst to probably the best based on your experiences and your assessment, you will see that the endpoints or the extreme points are diametrically opposite in terms of their wordings.

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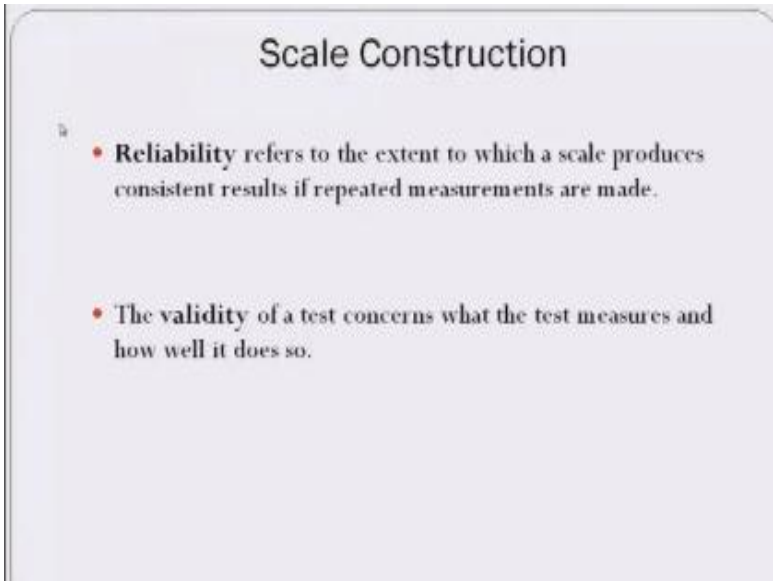

Dr. Shashi Shekhar Mishra: While we are making this scales, while we are constructing these scales to, for the measurement of a particular property what we need to understand is that we should ensure the reliability and the validity of the scale, and you will see that reliability refers to the extent to which a scale produces consistent results if repeated measurements are made. If a scale is reliable and if it is used repeatedly it will generate similar kind of same results and then validity is of a test concern what the test measures and how well it does so.

So validity it is about what you are trying to measure and you are measuring the same thing what you are trying to measure, I will explain to you this concept of reliability and validity through an example. Suppose there is a weighing scale and you are trying to measure your weight and from some other weighing scale which was working fine you know that you weigh 65 kg. Now when you measure it on this, this new weighing scale and you find that your weight comes out to be 67.5, however if your weight comes every time at 67.5 then you will understand that this is a basically a reliable measure, but it is not a valid measure.

Because it is not measuring what it is supposed to measure that is 65 kg, however it is reliable because it is measuring the same, it is giving you the same measurement every time. So there is

no render mirror basically involved in this measurement, however if the scale, the new scale also measures your weight as 65 kg then basically it is reliable as well as valid also because it is giving you the same reading every time when you are weighing, that is 65 and your actual weight is 65 and the measured weight is 65, that means it is valid also. So with this I finish off this topic of measurement and scaling today and we will talk about a new topic in the next class onwards, thank you very much.

Acknowledgement
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