

Research for Marketing Decisions

Vaibhav Chawla

Department of Management Studies

Indian Institute of Technology Madras

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Lecture - 26

Measurement and Scaling: Multi item Scales

Continuing this topic now coming to the multi-item scale. There were many questions and we will try to see multi-item scales. What do they mean? Although we I have elaborated on them. Let's quickly get going.

So let's say we Zaitoon is no longer there. Is it there? Anjappar has come. Okay. Then it's okay.

So let's say we want to measure the food quality of zaitoon restaurant, let's say we want to measure the food quality of zaitoon restaurant. One way is to measure is through this statement food in zaitoon restaurant is tasty from strongly agree to strongly disagree food quality right now one can have many so the score is let's say two, and food quality score out of two so you measure a concept called food quality using one statement you give a score of respondent gives a score of 2. The second way is you ask for 4 statements. Food in Zaitoon restaurant is tasty, has good smell, has attractive presentation, is healthy.

And you have these scores. And how do you measure food quality now for this particular respondent? You take the average and 2.5. The third way is you can directly ask the food in Zaitoon restaurant has good quality. Because you want to measure food quality, right?

which food quality measure was best and why. But the problem with the second one is we are imposing our theory on how the food quality can be measured. Different people have different theories. Okay, so when we are measuring... First of all, why the third one is not good? What is the reason?

We are measuring food quality. We have directly asked... Do we like food? What is the food quality? Or our food quality is good?

We are directly asking food quality. How do we rate the food quality? Or the food in Zaitoon restaurant has good quality from 5 to 1? We are measuring food quality. We will get the answer.

The answer is there. The concept is measured. So everything is subjective here. For instance, for me, taste is important and health is important. For me, both of those are there, it's good quality.

For somebody else, smell might be important. So, the items that make up the good quality might be different for each person. Right, but I am measuring food quality. Yeah, but you don't, see, if you are trying to improve something. Ah, right, right.

So, here, let's say if I measure food quality with this one statement, I get the answer. Food quality is bad, let's say. I do not know where to improve, which aspect is bad. So I should not use this. The second, let's go to the first one.

In this, if this is the concept of food quality, you are talking about only taste. What about other attributes? Presentation, smell, healthy what about these three attributes. So when you are measuring only taste and saying that it represents food quality it is incorrect. So when we use multi-item scale we try to capture the other aspects as well all the aspects. So with multi-item scale we we capture the other aspects as well so that the total scope of the concept is measured and the average score is like in this case, and then this has the benefit of we will also know which particular aspect is is not good is bad, right? so that is why multi item scales are good because they capture the entire scope of a concept and they would give us more information than a straight statement on food quality would give. Let's look at some other examples as well, there is another problem that when you are asking a concept through single question or multiple question sometimes single question if they do some error or

let's say they do not understand one particular statement, the other statements would reduce that particular error that would have come because they did not understand, and they marked something, and if somebody mark miss by mistake a single statement, something it cannot be corrected because we are measuring something with a single item but if multiple items are there when you take the average the if the error will be averaged out will or will reduce, that is why multi-item scales, they cover the scope, they tell you

what is going on in that entire scope of the concept, what is not going on well. The answers are more consistent, error-free. So these all things are there. Let's say one more example.

Let's say I want to measure the introversion, how introvert a person is. If I measure through one item, this is the one item, I blush easily. Versus if I measure through these items, five items, which one is more appropriate? Because eye blushing can be for entirely different reasons. Yes, blushing can be for entirely different reasons as well, right?

So that's what, so it is not only when you are using single item, you are capturing only one aspect, but sometimes that aspect would also not be representative. So that is the reason why we tend to use the multi-item scales because they are more correct. They capture the entire scope. They take multiple behavior indicative of that concept. Let's say job satisfaction.

This is one single item and this is multiple item. Again, you will see that when you are measuring using multi-item scale in the work, where is the problem? You will be able to get that. But whereas in the single, I am not satisfied with the work. So human resources manager, those who are going to offer human resources, jobs, multi-item scales.

If you need to measure job satisfaction someday, use the multi-item scale. This is for measuring physical activity. How physically active or physically fit a person is, physical function. So if you measure physical fitness, how physically fit a person is by asking one question. Let's say one question is, does your health now limit you in walking more than a mile?

Let's say somebody can walk for a mile but cannot do other stuff. Cannot lift any object. Cannot walk up the stairs. If you use a single question like this one, somebody walking more than a mile. You might say physically fit.

But what about other things? Vigorous activities, climbing one flight of stairs, lifting, carrying groceries, bending, kneeling and stooping. These are capturing different aspects of physical fitness. If you just measure one versus other, in this everything is measured. So that gives you true indicator.

So multiple item scales, they capture the entire scope. They represent the you know, true score for a concept. Yes, yes. So, if the survey is lengthy, it is likely to get people uninterested and bored.

So, we will have different ways to go around them. One has to see that the questionnaire should not be very lengthy, you measure three or four aspects, and which the questionnaire can be completed in five minutes. You give some incentive also to fill the questionnaire, so all those things are there. So how we represent the physical, how physically fit a person is, again, just by looking at a person, we cannot say. Just by looking at me or just by looking at any one of you, somebody who is very lean, slim, I cannot say he is physically fit. Likewise, somebody who is little healthy, I cannot say he is not physically fit.

He might do all these things better than anybody. So, the concepts that are unobservable, which we cannot see through our eye or any senses, like somebody who is happy, sad, attitude towards something, how they look at the quality of certain object, all these concepts are in the mind of the respondent. So, they are called latent concepts, latent constructs and when they are represented through certain statements, these are the statements they are item statements, multiple statement that capture that these are called observable item, observable statement, observable indicators, and this is called latent construct, and this is how we represent the relation the the mul the relationship between the underlying latent hidden black what is the concept in our black box? So, customer mind is a black box.

The concepts there are represented as oval shaped. They are called latent constructs and these the one in rectangular. Rectangle they are the observable indicators and this is how we show their relationship. We say if the person would be physically fit, he should be doing all these activities. So which means physical fitness would, if a person is physically fit, he, that would make him lift or carry groceries, climb one set.

So, it is a sort of very close sort of causal relationship. We do not say it is a, because every time a person is physically fit, these things should happen. It is so close. And we represent it like this. But it is not important for you

for scholars, it would be important. So latent constructs are the ones that we cannot see we cannot sense from our senses, but only we can measure them through the item statements multi-item scales, which are observable statements, so which means if I want to see the color of the what is the color of the eye? is it observable or latent construct. Observable, some constructs are observable, like height, weight color of the hair, whereas others are unobservable concepts. The unobservable constructs are measured through certain multi-item scales. We will not study the development how to develop this multi-

item scale that is out of the scope we should because we whatever concept we would want to measure we will get already developed scale from google scholar or from google search, when we write about you want to measure scale for many of most of the concepts that are there in the black box of the customer, you would be able to get the scales for them already developed. So, we will not look at how to develop that, but we will now look at some important example of a multi

item scales. So, one of the concept that is measured through multi item is attitude, attitude is what, and attitude is very important in marketing attitude towards the brand. Only if your attitude is what is attitude your opinion towards something view about something okay. So, attitude generally we say it is the general evaluation of a respondent towards a product and it is when we say evaluation you can do evaluation in terms of many times good, bad, and we say if a person has a positive attitude about something he is likely to engage in that activity or buy that particular brand, so attitude becomes very, very important, and many of the marketers they try to influence the attitude of customers so that it gets once the attitude is positive you think positive about a brand you are more likely to buy it, and attitude is generally measured through multiple item scales. What is an attitude? first of all, let's look at that now attitude is not only the evaluation, attitude has three parts, one is affective attitude is about your feelings or emotions towards an object knowledge and beliefs, and predisposition disposition to action intentions. There are multiple ways to measure attitude.

How we understand attitude is whether you positively or negatively evaluate an object. And if we look at what are the constituents of attitude, there are three. One is affective. Your feelings or emotions towards an object capture the affective attitude. Again, this you have to measure through multiple questions.

Cognitive knowledge and beliefs, this is cognitive attitude here, evaluation would also come in cognitive evaluation your positive that would also form a part here it is knowledge or beliefs is written. How much information knowledge you have about a particular brand? what is your belief? belief is a descriptive understanding about a particular characteristic of an object, so beliefs are very closely related to evaluation cognitive evaluation. If you have so beliefs are not evaluation but beliefs lead to are very closely tied with cognitive evaluation, which means cognitive attitude let's say about a particular phone brand, you say this brand has score camera, camera quality, your belief is that the camera would have on a scale of 1 to 10 on camera you give a score of 8. You believe so one, is that it could be based upon evidence, but another could be it is your

understanding, and more than and more than understanding it is your idea about particular brand having a score of 8 on 10 on camera and that could lead you let's say if camera is an important belief for buying that particular product it might lead a positive evaluation your positive feelings toward that particular brand. The third one is behavioral which means intentions, so the idea is attitude can be measured either three types, one is effective, cognitive and intention, and if your attitude if a customer's attitude is positive it is more likely to buy a particular product because attitude consists of affect, cognition and intention, and all three if you measure and all three are positive, which means the person is likely to buy your product now where the use comes for it let's say there are two brands in the same product category there is brand A and brand B

Let's say about brand. They are in toothpaste product category. And this is for brand A I have drawn. Let's say when we interview respondents about the product they buy in the toothpaste product category, 100% represent the total number of people we interview or ask about their usage. Let's say for brand A,

This is 100% is all the persons who were interviewed regarding the toothpaste product category. 85% are aware of brand A out of 100%. And out of 85%, 40% they like brand A. It means have positive feelings. Out of 40, 35% prefer brand A. They not only like but 35% prefer which means they have positive intentions and out of 30 from 35% 30% actually buy.

So you have here the affective attitude coming. Here it is behavioral disposition. And here it is actual purchase. Actual behavior. Now in the same product category when you looked at brand B.

Out of 100 people you interviewed, again 85% are aware of brand B. And out of 85%, 70% they like, they have positive feelings toward that particular brand B. But their intention, their preference is half of, only 35% they prefer. And the ones that buy are 20%. So it means for both of these brands, if you look at the attitude, so in this case, there is bigger jump here, which means between awareness and liking the ads should be the, the communication marketing communication should focus on increasing the liking for the brand because once it is liked, the effective attitude is there. The positive intentions are also positive.

The behavioral intentions are also positive, effective. So for the brand A, people who like the brand from them, most of them have positive behavioral intentions also towards them. And again, heavy number out of them, they end up buying. But where is the problem? So

attitude is actually, the problem is the affective attitude, liking a particular brand A is a problem out of those who are aware.

So one need to focus the communications on increasing the likability of brand A. Whereas in case of brand B, the affective attitude, emotions towards a particular brand B are good. But they don't, people don't prefer it. So which means the communication should focus on this increasing the behavioral intentions that part of the attitude and how do you measure, how do you get these bars when you measure the attitude different components of attitude through multi-item scale I have not drawn here after awareness, knowledge and belief I i have just merged the awareness and knowledge here, but you can capture all these three different aspects and get to know where is the problem in communications, so attitude because attitude is likely to lead to behavior, so you will know uh where are the problems in the attitude which you need to improve through marketing communications. So multi-item scales are the ones we use for measuring attitude, cognitive attitude can be measured through multi-items, effective attitude can be measured, and behavioral intention, all the three can be measured. So you know this hierarchy of effects model, AIDA model, awareness, interest, desire, action right? awareness if you

dissect it more awareness, knowledge, liking, preference, conviction, purchase, so in between knowledge, liking, preference all these is attitude, the better the attitude of the respondent towards your brand, the higher they are in the purchase process towards buying your brand. So one has to measure attitude in in in marketing as a brand manager, product manager, marketing manager you need to measure attitude. Attitude can be measured through multi-item scale, can also be measured through comparative scaling when we say what do you prefer we are saying measuring the preference comparative scaling, so attitude measurement becomes very, very important. How the attitude can be measured? attitude can be measured through ranking, through rating, this is for the when we measured through rating, we can measure for three different types of attitude and multi-item scale, but we can also measure is through ranking just. 10 brands of toothpaste we say what do you prefer, so that is again you are measuring one particular type of attitude. Behavioral intention, preference is very strong strongly aligned to behavioral disposition tendency to behave. Sorting also and choice so, there are various ways of measuring attitude. One is through the non-comparative scaling multi-item scale. So let's look at some of these scales. So this is effective attitude towards the product in this case

product is bike when you are measuring effective attitude towards a bike for a particular customer.

I love my bike. My bike is one of my favorite positions. My bike is fun to use. Cognitive attitude towards the ad the ad was believable interesting informative well-designed easy to follow attention getting clear. So, affective you will it is more emotional words are there in the statement, cognitive, it is more cognitive, attention based, focus based, quality based words are there.

So, that it. We will then meet in the next class and proceed with the conceptual definition, operational definition, and how to make a survey in the next class.