

## **Research for Marketing Decisions**

**Vaibhav Chawla**

**Department of Management Studies**

**Indian Institute of Technology Madras**

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### **Research Design: An Introduction**

Let us proceed further to step number three, which is the research design. So we have step number one as problem definition. Step number two as developing an approach to the problem. Step number three is formulating a research design. This is what we are going to discuss today.

What is the research design? Any idea? So she is saying research question and hypothesis comes under research design. We already have stated research question and hypothesis as a part of step number two. Step number two ended with our research questions hypothesis and specifying what all variables are part of our research questions and hypothesis because we have to collect data on all of those variables so we at the end of step number two we are not only mentioning research questions and hypothesis we should also be writing the variables on which we will be collecting the information so as to answer our research questions and

test our hypothesis. Now what is the research design you tell me ? What method we will use to... okay from this side so it is about collection of data it is about collection of data. Last research design... Formulating a structure for the entire research problem. Very good attempt. How are we going to test the data? How we are going to test the data?

Little bit problem happened towards the end. How we are going to test the hypothesis? How we are going to answer the research questions? What methods we choose? What methods we will use?

Can you elaborate what are the methods? Data collection methods. What sort of data we collect to answer the questions? How we collect them and after collecting, how we use the data to answer those questions? Okay.

So, he is saying what data to collect, how to collect and what we will do after The data collection. From where to collect? From whom to collect? But all of this, if you join, if you actually collect all of these statements, guess they all are part of research design.

It is correct. So, research design tells you. Make a blueprint of all the research. The blueprint right..

So, research design tells you on whom to collect the data, from where to collect the data, how to collect the data, when to collect the data, with what way we will collect the data, how we are going to analyze the data, that is all part of research design. So research design is the entire plan of your testing the hypothesis or getting the information which is required getting the information which is data information which is required to test the hypothesis or get answers to a research questions. So it is a detailed plan or outline about what information to collect that will come directly from you know we have specify the information needed in the step number two what variables so in the research design we decide about what information to collect ? How to collect ? Where to collect ? When to collect ? From whom to collect ? and why why to collect ? that is already we know right step number one two we are wanting to solve a management decision problem and we have framed marketing research problem components research questions and hypothesis and this is why we are collecting the data but research design is about is a detailed plan or outline about what information to collect to answer research questions or hypothesis ? From whom the information will be collected ? In what way the information will be collected ? which is how

where the information will be collected ? when the information will be collected ? In what manner it will be collected ? So all that is a part of research design there are ways for example why we plan that just a difference in the way the information is collected can also produce bias in your data. Just a small difference in the way you collect the data will introduce the bias. For example, as I said, if there is a questionnaire about the hygiene habits and one of the question I gave, I give you the survey. One of the question is, have you taken bath today? And I stand with you just watching you

versus this questionnaire is sent to your email saying that you need not write your email, you need not identify yourself, you will be anonymous, we would not know who has

filled the survey it is just for the IIT population then there are greater chances of getting the right answer even then some people will not because they will feel bad about themselves writing that right ? So there are ways to get over all that. So the idea is research design is the detailed plan to get the true information we do not want biased information... which means if you have to ask about how much for example how much a household spends on milk per month you would not ask generally the male member of the family about that, right? So here you have to plan about from whom to collect the data if your question is like that ?

Because the biases would come. You know, that particular, that famous statements are there, never ask a girl of her age and never ask a man for his salary. So that similarly we have to be careful in many different ways when we are collecting the data. So anyways, research design is the detailed plan about what information we are going to collect, how we are going to collect, where, when, from whom, from how many of the participants ? Once we collect the data, how we are going to analyze ? That is all part of the research design.

So research design, broadly are of two types one is the exploratory research design and then conclusive research design. Exploratory research design and conclusive exploratory means that design will plan for exploratory research, exploratory means that we have already done in the problem definition in the problem definition process it was exploratory research because the problem was not stated. The probable cause was not identified. So exploratory research is the one where we are getting to know more of this situation.

We do not know which variables are important and which are not important. Where we are exploring the issue, that is the exploratory research, where we are collecting the ideas insights but we do not have much idea about what is the or what could be the problem so exploratory research we already have done in problem definition when we were talking about problem audit, interview with experts, qualitative research, secondary data that was all part of exploratory research because we were doing all that to get to the that probable cause Once the probable cause is known, the kind of research design we use to confirm and solve. Focusing on that probable cause is called conclusive research design.

In conclusive, we have further descriptive and causal research design. We will discuss as we move on what are these. So uncertainty decides whether you are going to use exploratory or conclusive. If the problem is not known, only symptom is known, then you

have to use exploratory research. Once there is certainty that this is a probable cause, you are going to confirm and solve it, then you have to use the conclusive research.

Exploratory research we do generally with it is a research where the data will be in the form of in the exploratory research in the form of paragraph, statements, the stories, qualitative, there can be quantitative secondary data as well, but in the exploratory research the characteristic the problem is not known the issue is under investigation we are looking at different aspects of that particular situation at hand in order to arrive at a probable cause or the variables are not known on what we can do further research that is not known. Probable cause whether one or two what is there is no information about that. So once there is probable cause, the kind of research design that is used is called conclusive research design. Conclusive research design are of two types, descriptive and causal.

And the findings of the exploratory research, they are tentative. Findings of the exploratory research are tentative in nature. Because The qualitative research that you do with small number of customers. Your market has crores of customers.

For example, for FMCG products, let's say. Market has crores of customers. You have done qualitative research with selected 5 or 10. Focus groups, let's say with 12, 2, 3 focus groups, maximum 50 people. Likewide experts, you would have met 2 or 3.

So the sample is so small that it is not representative of your population. It is a small, very small sample from which you can get to the probable cause. Why we are not saying it is the actual cause? Why it is probable? Because it is coming from very small number.

The sample is very small number not representative because for a representative of for being a representative sample of a crore of population you require several thousands of population to be representative of the crore of population and this sample that you are using in exploratory research is very very small so that we can give you certain i certain the cause you are getting is probable tentative because it is coming the you cannot say it is conclude it is a conclusive evidence it is tentative but the findings from conclusive research design that is why we say conclusive research design are concluding findings you can rely on them you can give it back to the manager saying that this is what is happening, this is how you solve it, then it is the decision of the manager to take it forward. You can just give recommendations. Let us not talk about inductive or deductive.

They are yes two terminologies again which so inductive let us not inductive means from the data we go to the theory from inductive means from the data we make sense of what is happening. Deductive Is the opposite. In the inductive one

generally whenever the qualitative studies are done the from the data in the form of paragraph sentences

whatever that we try to make sense of or we try to understand what is happening by interpreting that data. That is

Inductive. deductive is let's say from a theory we try to explain a part of reality and then test it, we make a conceptual framework based up or we say based upon certain theory that this is how things are happening and when we test it that becomes more of deductive research let's not get there let's focus on this because that won't be required for you know MBA students inductive deductive thing. So the understanding is there at this point of time there are two types of research design not inductive, deductive the two types of research design exploratory, conclusive. Conclusive as further descriptive and causal. Now, you need not read at these differences because I have already told you the same things are written. Now, in conclusive, there are further two types of research design.

One is descriptive. Another one is causal. In conclusive, there are further two types of research designs. Descriptive and causal. So, descriptive is the research design that we use to describe what exists.

Now, what is this describe what exists? To describe the present situation. So, descriptive, but then how it would conclude help in concluding for a particular probable cause right. Descriptive and causal are two types of conclusive research design. In descriptive if you read here the objective is to describe market characteristics or functions.

Has anybody been able to make sense of this descriptive what happens in descriptive research design? This side. In descriptive research design the market characteristics are described and correlated to test the hypothesis for example what is your market ? Customers what is market characteristics ? Characteristics of your customers ? what can be the characteristics of customers, demographics, psychographics, their perceptions about brands, attitude about brands, feelings about of brands, where they buy particular brands, where they don't buy, what they read, what they don't read, what is their lifestyle ? All this is market characteristic So, in descriptive research design you collect the data

about the market and what they think of their your product and then find out solution to your research questions or that data can be used to test your hypothesis.

For example, one of your hypothesis is gender is or let me... income let's say income as the income of an adult increases, the spending on let's say fashion clothing increases. This is a hypothesis as the income as the individual income, let me be more precise, individual income of a person increases, the purchases of fashion clothing increases. So, this is the hypothesis, which means You will collect income data from everybody,

You will collect how much they spend on fashion clothing and try to see whether that is correct. There is a positive correlation. If the income is increasing, this expenditure on fashion clothing is increasing. So what you have collected is, you have collected data on market characteristic. What was the market characteristic in this case?

How much is your income? How much you spend on fashion clothing? So you are describing market characteristics related to their purchases, their income, demographics, are there psychographics, is there and likewise. You have many other market characteristics the perception of how they think how they feel about brands ? how they think about the brands ? what is their beliefs about particular brands ? how do they evaluate brands ? all this part of market characteristics so once you collect data on that you can use that data to test your hypothesis.

For example, in the case of service quality, tell me one of the hypotheses, let's say. Let's say responsiveness. More the responsiveness of employees. More the customer satisfaction, let's say right ? So you would have collected data on from the customers about how responsive were the employees and how satisfied they were ? So their hypothesis so you have data about both of them. You can use that data to test that hypothesis. So likewise whatever hypothesis still now we have discussed in the class one two three we can do we can test those using the

descriptive research design. Now once descriptive is over what is this causal? Why we have more and more of these research designs? In causal we have independent and dependent. In causal we have independent and dependent that we can also have in descriptive.

So descriptive is more about correlation. We cannot say that one is a cause other is an effect whereas in causal we try to infer the causality. Although even through causal we cannot truly determine the cause and effect relationships but yes we infer causality in

cause and effect so not going for you know in depth into whatever I said, causal designs they determine the cause and effect as it is written determine cause and effect relationships. How many of you have attended your chemistry classes in 9th, 10th, 8th, 7th, 8th classes? Everybody. You have done some experiments in your chemistry lab.

Give me an example what you did ? Can you recall? Salt analysis. Everybody does that, right? How many of you have by mistake broken test tubes or beakers?

Everybody, right? Not some of you. Okay, so we have some idea about experimentation because we have attended our physics lab also, right? And chemistry lab also. Physics lab, many a time, getting the idea of what is happening, how the readings are coming was, it used to become difficult because with the air flow itself, the readings used to change, right?

So in experiments, what we do is, we try to we try to see the effect of one independent variable on the dependent variable by keeping all the other factors constant, so manipulate independent variable to see whether there is a change in the dependent variable and one of the popular ways of doing this is through the experiments let's say we will see where how we use the causal design in marketing in the in solving the business issues marketing issues. Let's say there was a business issue management decision problem is our sales are declining and we don't know why conduct the exploratory research after exploratory research the probable cause was the package. Exploratory research done probable cause was package then to confirm and to solve. There is a descriptive research determine the customers perceptions about the color of our package it was package color not only the because the packaging would have so many things right ? So let's say when the management issue came to highlight the exploratory research was done and package color was the probable cause. Now descriptive research was done this is the marketing research problem that is stated determine the customer's perceptions about the color of our package and compare it with major competitors. You would get an answer here that the package the that the the appeal of the color of our the color of our package is low

or lower than the competitors the package of the competitors color right ? You will get this answer from this descriptive research if you do it right if you do not yawn and keep your eyes open throughout this marketing research course you will be able to hopefully do things right way and get to this particular answer or some answer that the color of the package the appeal of the color of the package is lower than the appeal of the color of the

competitors package you will get from the descriptive design right ? Now after that you design a new package because you know this current package the color appeal is low you have to do you have to now make two three samples Once you have those samples let's say you have made three or four different samples for your packages you want to know which one will appeal more to customers so you can conduct the causal research saying that will customers purchase more of our products in a new colored package ? So what you will do is you have three four samples you can either conduct a field experiment or a lab experiment. You have three, four new packages.

Your independent variable is the same packages, but the color is different. So you have independent variable as color, different color. Dependent is appeal or buying it. So you would conduct an causal research. How we will in real problem we will get to ? Yeah that we will discuss in descriptive research what to do later on but I am just saying what happens in causal research ? That means the cause we are causes here the new change in color and effect we are trying to measure is like what the customers are like appeal or behavior. I can give you one more example of causal research whenever we have to let's say for for

uh e-commerce based or e-companies let's say e-commerce uh companies let's say if you have to determine we have been discussing this problem determine the price elasticity of demand for this product right ? Let's say for a product we want to determine the price elasticity of demand which means whether changing the price will increase the demand how with the changes in the price how the demand will increase for many of the past situations we have framed this as a one of the marketing research problem or would be there in the components instead of doing descriptive research you can do causal research how ? So let's say you have the product page in that product page for a particular product for which you want to determine the price elasticity of demand instead of conducting descriptive research you can conduct causal research how you will do that ? In that product page for every 20th customer for that particular product keeping all the things same let's say for every 20th customer not for because let's say there are many products are there see the idea is let's say it is it is for it is for cameras Right ? And in a single page.

So once you log into that particular website, you would get to see many cameras. And once you click one particular camera, you will be able to see the specification and price. Let's say that for every 20th customer, you change the price, for every 20th customer you change the price, increase the price by 500 rupees for do it for a day or two days and then

find out the sales ratio of that 20 every 20th customers for which you increase the price versus when the price was not increased so what you will get to know that increase with the increase in price whether the same same ratio of people are buying or the ratio did the ratio decrease, if the ratio decrease you know that this price at this price the value perception of the product has decreased.

So, which means for price elasticity instead of doing descriptive you can straight away come do the causal research right? So, causal research can be straight away done after you frame the after you complete your developing an approach to the problem, but it depends upon the type of the problem at hand.