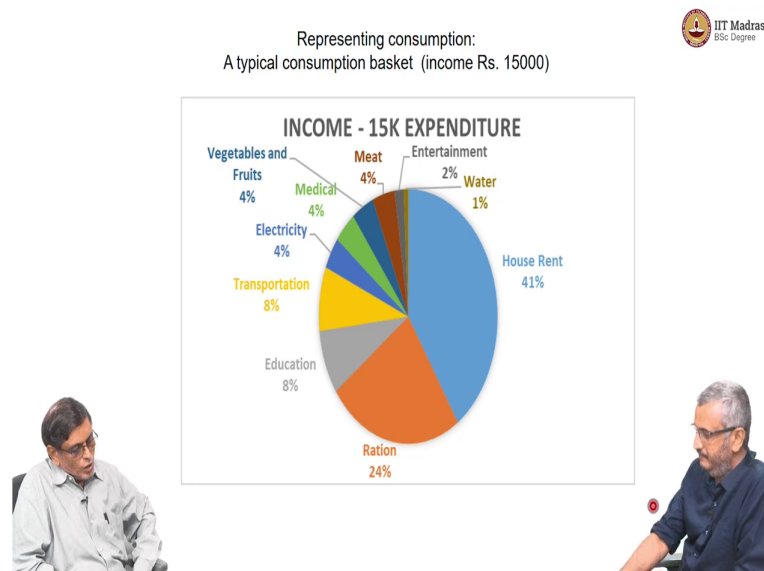**Business Data Management**
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Consumption baskets

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Professor. M Suresh Babu: Now, when we look at consumption, we generally look at consumption in terms of consumption baskets because one person, be it an individual or an individual household, consumes a number of things and in a particular day of our life, we consume so many things. In the morning we have tea, then we have breakfast, then in between snacks, then we are consuming power, and then we are consuming data on our mobile. There are so many things we are consuming everyday.

So, consumption is generally visualized in terms of a consumption basket. So, all that I consume in a particular day or particular week or particular month, we call it a consumption basket. So, what I consume in a day might not be the same thing that I consume in a, the next day sometimes.

Professor. G Venkatesh: Correct.

Professor. M Suresh Babu: Some of the things will be the same. For morning tea, I am having it everyday, but there could be other things that might come and go. So, typically, we use a monthly consumption for a household to assess consumption. So, a consumption basket for a household for one month, for example, is useful information in terms of assessing the demand.

Professor. G Venkatesh: Demand.

Professor. M Suresh Babu: And that is where our data analysis becomes very important.

Professor. G Venkatesh: So here, I think there is some simple thing that we did. We got one of our TAs to go out. Riaz, our TA, was kind enough to go and talk to 3 households. One household is let us say a poor 15,000 rupees a month. Would you call it a poor 15,000 rupees a month?

Professor. M Suresh Babu: Not exactly poor.

Professor. G Venkatesh: So, lower middle income or whatever. The second household is 30,000 rupees per month. And the third household is 50,000 or 60,000 rupees per month. I do not recall 50,000 or 60,000 rupees per month income. So, we have 3 strata of household?

Professor. M Suresh Babu: Yes.

Professor. G Venkatesh: There are of course, very rich people who earn much more than 60,000 rupees and there are people who are earning only a few thousand rupees per month also. 5000-6000 rupees a month are the people who are really poor. But this case kind of represents the middle somewhere. It represents three kinds of households. So, he went to talk to the households and ask them what they spend and get their monthly expenditures. We have it actually as data.

Professor. M Suresh Babu: Fantastic. So, I just wanted you to look at this and observe what this is for the first chart here is for the house, which has a 15,000 rupees income.

Professor. M Suresh Babu: So, the first important thing to understand is that this is the income limit of a household budget.

Professor. G Venkatesh: Total money available monthly.

Professor. M Suresh Babu: So, all consumption decisions of this household have to be within this 15,000 or otherwise you can borrow?

Professor. G Venkatesh: Of course.

Professor. M Suresh Babu: You know how long and then repay all those decisions.

Professor. G Venkatesh: So, it will not be something that can be sustained.

Professor. M Suresh Babu: Firstly, this is the upper limit in terms of the resources that are available. Secondly, this is a very good example of a typical survey. We talked about surveys in terms of assessing demand and this is exactly what a survey does. There is a questionnaire which asks questions like what is your income and how are you spending your income across various items that you consume, etc.

Now, look at household rent. This person with this income, just does not have the resources to purchase his own house. So, basically in terms of a rental house close to 50 %- 41 % of the entire income is paid on rent. That is perfectly possible because there is an urban household and the household is staying in a prime location in an urban region.

Professor. G Venkatesh: Maybe the income might be coming because of that.

Professor. M Suresh Babu: Income might be coming for the job or for some other activity, or some other reason that person will have. For this his household will have to stay in this part of the city. So, 41 % is very high on rent. But at the same time, this household has a substantial expenditure in terms of monthly rations.

And when we talk of rations, basically it is in terms of food grains and so on.

Professor. G Venkatesh: Subsidized.

Professor. M Suresh Babu: Subsidized food grains and other things are very important because that forms a huge portion of the daily consumption. The commodities that are needed for your daily consumption.

Professor. G Venkatesh: Because he wants to be alive, actually.

Professor. M Suresh Babu: And to be active enough to work to earn this 15,000 rupees is another important factor. So, rations then consume quite a bit. But for the children going to school, you will have to spend a fraction of your budget on that. And there is transportation in urban settings. Now what we find is workers actually commute either with their own transport or using some other means of transport.

Professor. G Venkatesh: This person does not seem to have his own transport because.

Professor. M Suresh Babu: 8 %, maybe.

Professor. G Venkatesh: And also, you would have seen other expenses, if he had his own.

Professor. M Suresh Babu: So, maybe I think they are using it for public and private use or a combination of transport. A very important thing is that entertainment is very less. There is very little water. Yes, that is the question that we started off, there is a trade-off. Now, the trade-off for this person is whether he should really spend 8 % on his child's education and spend only 2 % for entertainment? Or should he reduce it to 4 % and then increase this to 6 %?

Professor. G Venkatesh: Nobody will do that.so

Professor. M Suresh Babu: It is prioritization.

Professor. G Venkatesh: Correct.

Professor. M Suresh Babu: So, that is a trade-off. So the important question comes in terms of entertainment. I would like to eat meat but given the prices of commodities. Well, I am consuming more and I am having my activities or work done with the energies that I am getting from that. Electricity is 4 % mandatory, but still, I am very prudent in terms of using electricity. Perhaps a kind of an outlier thing is medical because there is somebody who is not well.

Professor. G Venkatesh: Sick.

Professor. M Suresh Babu: So, that is why every month you have to spend so much on medicine. But at the same time, that is also correlated with the other expenditure that is on vegetables and fruits. Because somebody is not well, there is also a conscious decision to consume more vegetables and fruits. So, that you do not want to increase the medical expenses into 8 % and then cut down this into 2 %. So, there is also a conscious decision in terms of that.

So, this gives a typical consumption basket and this is exactly what we were referring to in our earlier discussion, and it also gives us the kind of trade off that a person with this limited income actually faces living in an urban location. Now this is one individual's data. If you have 100 individuals or 1000 individuals surveyed like this…

Professor. G Venkatesh: All have the same similar income 15,000 rupees range.

Professor. M Suresh Babu: Within the same income bracket, we can draw certain patterns out of that. And that is where it becomes very useful in terms of well if everyone is basically spending only 2 % on entertainment, then there is no point in producing entertainment for this kind of consumer, because the market itself is very small.

Professor. G Venkatesh: It is also possible that they are consuming entertainment that is free? For example, they could be watching Dhoordharshan. I am not sure about the quality or content. But the fact that they have no other choice so they watch cable TV, which is free or some other free content.

Professor. M Suresh Babu: Could very well be.

Professor. G Venkatesh: But on a mobile phone nowadays everything is free?

Professor. M Suresh Babu: But then the kind of producer decision, as a producer.
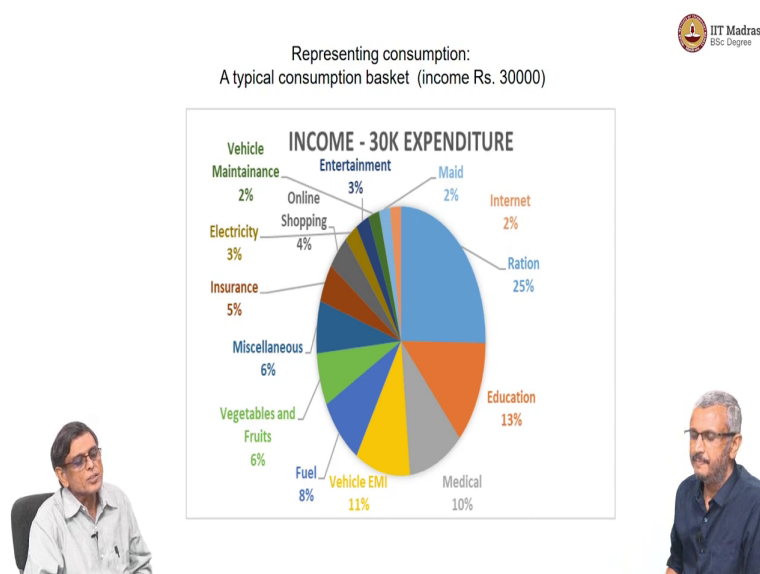
Professor. G Venkatesh: You do not get money for it.

Professor. M Suresh Babu: I will not be very keen to enter into this market because people are spending less.

Professor. G Venkatesh: Correct.

Professor. G Venkatesh: That is the kind of an inference that we draw from this analysis then.

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Professor. G Venkatesh: So, shall we now look at the house with 30,000 rupees?

Professor. M Suresh Babu: This gives another very interesting kind of a picture. Here we are not seeing rent as a major kind of expense.

Professor. G Venkatesh: It is gone. The previous guy had a big rent, in fact, 41 %, this one has no rent at all.

Professor. M Suresh Babu: This person has no rent, which means that they are staying in their own house. And in contrast, we find that education is a little more.

Professor. G Venkatesh: So, are they able to spend more on education?

Professor. M Suresh Babu: But we can assume a medical is also slightly more. And they have purchased a vehicle on loan. So, EMI is taking 10 % of the total income. And we find that there is also the consumption of the internet.

Professor. G Venkatesh: That is also entertainment or we do not know about that.

Professor. M Suresh Babu: Maybe for work or with the online school might be, entertainment has increased from the last from 2 % to 3 % but there is also another category that has come up that is online shopping. And insurance also.

Professor. G Venkatesh: That is for vehicles, I think?

Professor. M Suresh Babu: Vehicle or health or given this person's medical condition could well be there is a possibility. So, we find that the consumption basket is broader. But there is a kind of a slight anomaly which I can see here because the rations are still very high here.

Professor. G Venkatesh: It is 20. The earlier was 24 I think, this is 25 here.

Professor. M Suresh Babu: Here it has increased.

Professor. G Venkatesh: They are consuming more food? Or they are not necessarily buying from a PDS could be another reason.

Professor. M Suresh Babu: The other possibility is that we have no idea of the family size here.

Professor. G Venkatesh: It could be a bigger family.

Professor. M Suresh Babu: If the family size is big, then with this income, they will have to spend more on food more on food. So, we now have two different kinds of consumption baskets. In the earlier consumption basket, house rent was very high, ration was the next highest thing here. Here the ratio is predominantly the bigger one but education is very important.

So, perhaps it could be a bigger family where more than one or two children are studying. Some in higher institutions or some in schools and things of that sort, but they also have a vehicle. So, instead of other transport, they have vehicle maintenance that is coming. So, the consumption basket then is entirely different.

Professor. G Venkatesh: So, the question that comes up naturally is when the income goes up, would we naturally see such a consumption basket change?

Professor. M Suresh Babu: We can safely draw one inference that consumption basket actually varies.

Professor. G Venkatesh: It will change, we know that. But how it will change, we do not know.

Professor. M Suresh Babu: We do not know.

Professor. G Venkatesh: For that we have to look at some aggregate data.

Professor. M Suresh Babu: Aggregate data and large-scale data.

Professor. G Venkatesh: Like this national sample survey data.

Professor. M Suresh Babu: And that gives us an idea as to what is happening in terms of educational expenses in the country or what is happening in terms of medical expenses in the country and things of that sort.
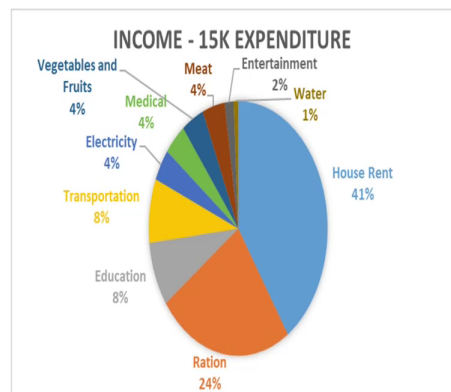
Professor. G Venkatesh: Should we look at the next one?
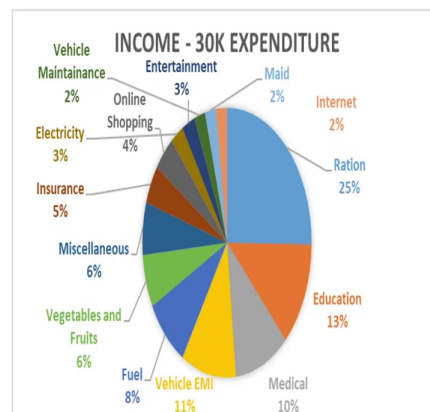
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Representing consumption:
A typical consumption basket (income Rs. 50000)
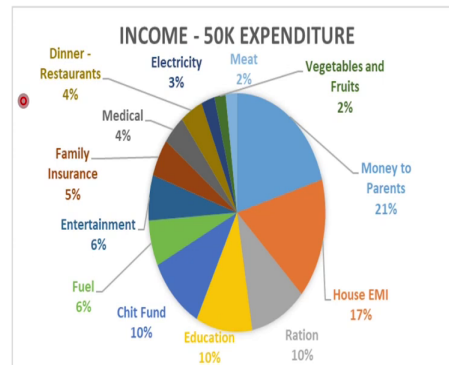
Representing consumption:
A typical consumption basket (income Rs. 15000)

Representing consumption:
A typical consumption basket (income Rs. 30000)

Professor. G Venkatesh: Here this is a 50,000 rupees income household.

Professor. M Suresh Babu: This seems to be another very interesting case, because they have purchased a flat also or a house now and that is the loan expense of 17 %. There is also a commitment to the family. There is some money being sent to parents now.

So, we call it something like a kind of dependent population.

Professor. G Venkatesh: It is not consumption really?

Professor. M Suresh Babu: It is not consumption, but it is the breakup of the expenditure.

Professor. G Venkatesh: Let us say, in the sense of a consumptional parent, parents will be consuming.

Professor. M Suresh Babu: Will be consuming that. So, you have to ideally net out this 21 % and see the basket to see this individual's consumption. But there is a very interesting entry here compared to the earlier kind of family. There is something called a chit fund or something, which is a savings thing.

Professor. G Venkatesh: Correct.

Professor. M Suresh Babu: This is again not consumption, but manually there is an outflow here from this 50000 rupees.

Professor. G Venkatesh: In a way it is a consumption because they put some money in and then after 10 months, they get something.

Professor. G Venkatesh: And they will consume it for something bigger.

Professor. G Venkatesh: Some bigger items.

Professor. M Suresh Babu: Instead of the smaller item. And then entertainment is there. Insurance is there. This is a very interesting kind of thing.

Professor. G Venkatesh: Dinner.

Professor. M Suresh Babu: Dinner is going out. So, you find that the consumer's behavior has changed drastically as compared to earlier cases. A very meger expenditure on meat and fruits and things of that sort 3 to 4 %. Here dinner in restaurants itself is very high.

Professor. G Venkatesh: Yes sir.

Professor. M Suresh Babu: And electricity is also higher here whereas in previous cases electricity is slightly less. And education is slightly less.

Professor. G Venkatesh: But as a % of 50,000 rupees.

Professor. M Suresh Babu: In absolute numbers, this should be very high and the ratio is only 10 %.

Professor. G Venkatesh: You cannot just keep eating.

Professor. M Suresh Babu: Beyond a point you are. So, now we have a very interesting kind of set of consumers. A consumer living in a rented house trying to manage with that 15,000 rupees a month with a slightly narrow consumption basket. Second consumer, higher income 30,000 rupees . But I think the family size is slightly bigger. So that again, ration expenses are more, education is more, and we need to really spend something in terms of children's education and other things. So, he has bought a vehicle as well as there is maintenance for the vehicle and the consumption basket is different.

Professor. G Venkatesh: And they are doing online shopping.

Professor. M Suresh Babu: Online shopping because I think that is because there are children in this family.

Professor. G Venkatesh: That is possible.

Professor. M Suresh Babu: So, there is a demand.

Professor. G Venkatesh: They are going out to eat.

Professor. M Suresh Babu: Going out to eat, I think this is basically a slightly younger couple perhaps and with the aged parents living quite away.

Professor. G Venkatesh: Very likely correct.

Professor. M Suresh Babu: They have to send money, at the same time, there is a child or two ways to be sent to school. But at the same time, there is some kind of fund that is available for going out or whatever kind of. So, the point that we really want to emphasize here is that looking at this kind of consumption baskets, we can actually draw inferences in terms of what is the pattern of consumption across income groups.

Now, we have 3 income categories here which are 15000, 30000 and 50000 rupees. And we find that the consumption behavior is entirely different according to this. Now, once we have

such large-scale data, then we can draw a lot of inferences. For example, one straight inference that we see from this is that the % of money that is spent on food is actually not at the same level as the increase in income or let me put it differently.

If you find that there is a 10 % increase in income, the increase in the money spent on food is not 10 %, it is slightly less. Because, after you reach a saturation, your satisfaction and your utilities everything reaches a plateau in terms of food, food consumption, and that is why we find that large scale surveys give very interesting insights in terms of consumption in an economy.