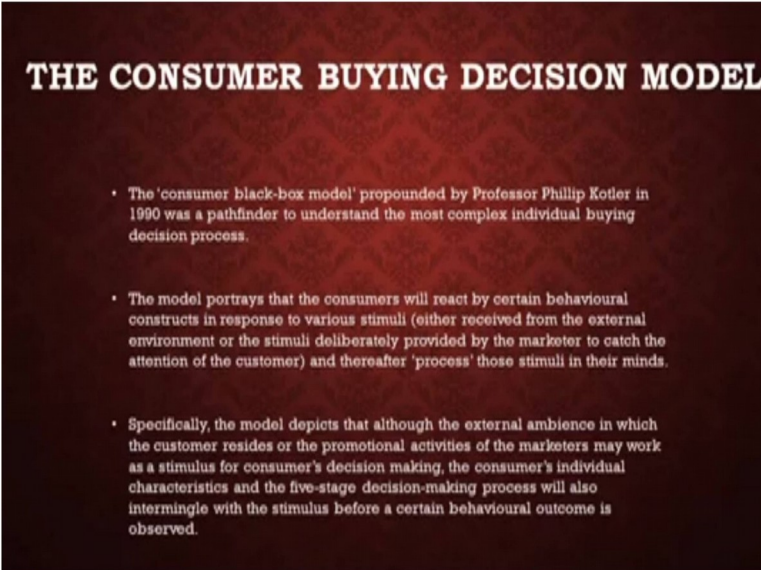


Consumer Behaviour
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Lecture - 33
Consumer Black Box Model

Welcome. In the previous session we have discussed about different buying situations and in this session we are going to discuss about the consumer decision making process.

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THE CONSUMER BUYING DECISION MODEL

- The 'consumer black-box model' propounded by Professor Phillip Kotler in 1990 was a pathfinder to understand the most complex individual buying decision process.
- The model portrays that the consumers will react by certain behavioural constructs in response to various stimuli (either received from the external environment or the stimuli deliberately provided by the marketer to catch the attention of the customer) and thereafter 'process' those stimuli in their minds.
- Specifically, the model depicts that although the external ambience in which the customer resides or the promotional activities of the marketers may work as a stimulus for consumer's decision making, the consumer's individual characteristics and the five-stage decision-making process will also intermingle with the stimulus before a certain behavioural outcome is observed.

In consumer decision making process, we will resort to Philip Kotler's black box model to explain the consumer decision making model.

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THE CONSUMER BUYING DECISION MODEL

- However, the existence of an interface and/or exchange between the external stimuli and human mind can only be assumed because we are yet to know how really the human mind works. Therefore, processing of the stimuli in the human mind has been referred in this model as the 'black box'. As far as consumer behaviour is concerned, it is not that difficult to make out the major internal influences and the main stages in the consumer decision-making process, but how consumers convert all these data into their relevant information and how they interpret that information to generate particular responses are yet to be understood by the consumer psychologists.
- As of now, it is clear that there are three major constructs of the consumer black-box model—stimuli, transformer, and response. Schiffman and Kanuk (2004) have elaborated the buying decision-making model as input-process-output model.

And this is a particular model, which the unique part, this is a three stage model that is an input process and output model, where input refers to the stimuli which the customer is exposed to. It may come deliberately from the marketer's side or it may be the environmental factor of the customer. But after receiving the stimuli, the way the customer processes in his mind to take a decision in favor of any product or any brand.

So that part is the information processing part and the third part is the output, where the customer is going to select any particular product or brands or he may (()) (01:27) or whatever. So I mean which is the final outcome, there is a behavioral outcome. Now the most interesting part of this particular model is precisely the middle part that is the Black Box Part, so here I will show you what that black box is.

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THE CONSUMER DECISION-MAKING MODEL (THE CONSUMER BLACK BOX MODEL; KOTLER, 1990)

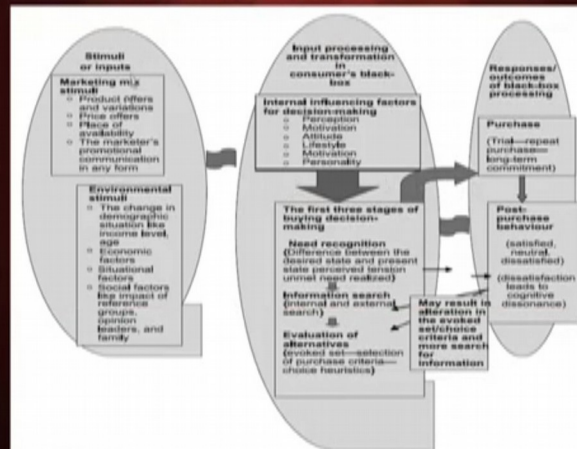


Figure 13-3 Consumer decision-making process (the figure is drawn on the basis of the ideas of Schiffman and Kanuk, *Consumer Behaviour*, sixth edition, Figure 13-3, Simple decision-making model, page 565, PHI Pvt. Ltd.)

Black box is this middle part of this model that is the information processing part. This Information processing part closely relates to the internal influencing factors, which we see here and the rest of the things are all psychological things. So we can predict it from the behavioral pattern of the customer. We can make some research on customer particular psychological aspects but this is still an area of a research by the consumer psychologists.

Because we cannot see the mind of the customer, all we are trying to do is predicting how he will process the information based on some psychological research or survey. So I will go in details with this model. So as I told this is the three stage model. So the first stage model, first age of this model is when the customer is first receiving the stimuli. So we start with this part that what are the different kind of stimuli we are talking about first is the marketing mix stimuli.

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THE STIMULI INFLUENCING BUYER BEHAVIOUR

- *Marketing Mix Factors (Product, Price, Place, Promotion)*
- *Demographic Factors*
- *Economic factors,*
- *Situational factors*
- *Social Parameters*

Marketing mix stimuli or basically this factors like the product offerings, whenever Godrej is offering Chotukool which is a low cost refrigerator, so that may attract the customer to buy the product. When Tata is coming up with the low cost car, low priced car like Nano that may attract the customer to first time feel that we can also buy a car. So that is the first it may be because of the product offer, it may be because of or maybe dove is coming up with a pouch pack.

So that, that may be the reason that I am interested to buy dove because it does not cost too much to me. Second is regarding the price offers as you can see this model, price offers may be like ((03:50)) sale going on 25% discount on the gold jewelry prices, 15% discount on the Diamond jewelry making charges, so all these things are there, so that can attract the customer to buy that diamond.

Place of availability sometimes, I can see that, ok, usually maybe I was not thinking of buying a car because I did not have any service station of any car near to my house, now I am seeing there suddenly Maruti has opened a showroom very close to my house, so therefore I know that there is a service center, so that may give me and first clue in my mind that I can also own a car because servicing is no more a problem.

So this could be, this kind of, some kind of place convenience could be created or maybe marketer's promotion anyway can create the need, for example Horlicks earlier we used to think

either it is everyone's drink or it's a kids drink but when it came with a women's Horlicks caseal, working women like us we felt the need of buying the product, because it is particularly talking about our particular problem that after 30, 35.

How the bones get weaker particularly for the Indian ladies and we need support, additional support of calcium. So that is the promotional message which was there not only they have designed a product like that but it was positioned and promoted as working women's product and it worked well. Similarly, when we talk about environmental stimuli, there is another part that is here we can see the demographic factor or the economic factor, situational factors, social factors all these things.

So first we talk about the demographic factor like age, say when I am talking about a kid, it may like a tricycle when it grows up and goes to school, he may need a bicycle and when he is again growing up and he is going to his office, he may need a motorcycle and grows up projected in his career then he buys a car. So his need differs as he grows older. Similarly, income level can change.

So earlier, maybe I was using a motorcycle but now my income level has drastically increased so I am thinking of buying a car or I was using a basic handset mobile, but now my income has suddenly increased so I am going to buy a good Smartphone. So like this it can be the normal economic factors of the country as a whole. As a whole there is a recession, there is lack of job, so therefore I am in uncertainty that tomorrow what will happen to my job.

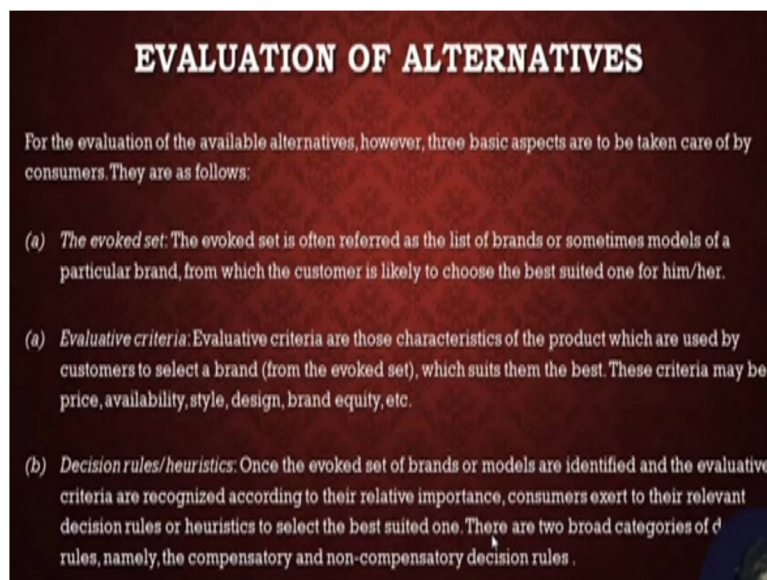
And I can reduce my entire purchase expenditure as such and so many of the marketing stimuli actually, I may overlook at this time. And there are other situational factors for example, I have just got transferred from one location to another location and therefore a first stimuli for me is to find out a Movers and Packers. Right? And to buy an accident, you know goods insurance during the transit whatever the insurance policies I need to buy I may actually interested in buying those kind of things at that moment.

So that is the stimuli that my situation is the stimuli and again the selection will also matter because of situational factors. I may have a common cut and wound I am going to the local dispensary and getting some ointments and all and I get cured but when say my any of my family members was having heart attack, I will not get the risk to go to dispensary, I will go to a super specialty expensive Hospital maybe.

So my choice of product or my stimulus that too which kind of product I am actually inclined to may depend on the situation or the emergency, I mean. Then the social factors how much my reference group is impacting me, maybe I am very beauty conscious so whatever soaps Kareena Kapoor is promoting that may attract my attention. Then who is my opinion leader, what kind of family I belong to, so these are the different kind of environmental stimuli.

Now we look at this second part of the box, where the information which ever I have received from my environment maybe my family, maybe because of my situation I may incline to buy something or maybe from the marketers stimuli. But, now I am going to process it. So here this is the first 3 stage this buying decision process which you can see first three stage, one is the need recognition.

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EVALUATION OF ALTERNATIVES

For the evaluation of the available alternatives, however, three basic aspects are to be taken care of by consumers. They are as follows:

- (a) *The evoked set:* The evoked set is often referred as the list of brands or sometimes models of a particular brand, from which the customer is likely to choose the best suited one for him/her.
- (a) *Evaluative criteria:* Evaluative criteria are those characteristics of the product which are used by customers to select a brand (from the evoked set), which suits them the best. These criteria may be price, availability, style, design, brand equity, etc.
- (b) *Decision rules/heuristics:* Once the evoked set of brands or models are identified and the evaluative criteria are recognized according to their relative importance, consumers exert to their relevant decision rules or heuristics to select the best suited one. There are two broad categories of rules, namely, the compensatory and non-compensatory decision rules.

So need recognition is actually, looking like this you can see that either my stock is depleted or I am not satisfied with my prior purchase and maybe the marketer has given me a stimuli that

there is a better, I am not happy with my Samsung mobile, maybe when I am seeing Apple iPhone 7 that may catch my attention or conversely I am using a Nokia handset, now I am thinking no no or maybe I am using a Samsung headset, Samsung Note 7 is having some problem.

So I think I will switch over to some other phone. So it may be like that or it may be that just because of my income has increased or maybe I have got a new job so I need a, I am going to a distant location for my family to stay so I may need of a smartphone to keep on constant communication with my family members through email, through WhatsApp or all other things. So, therefore this is one of the feelings of need.

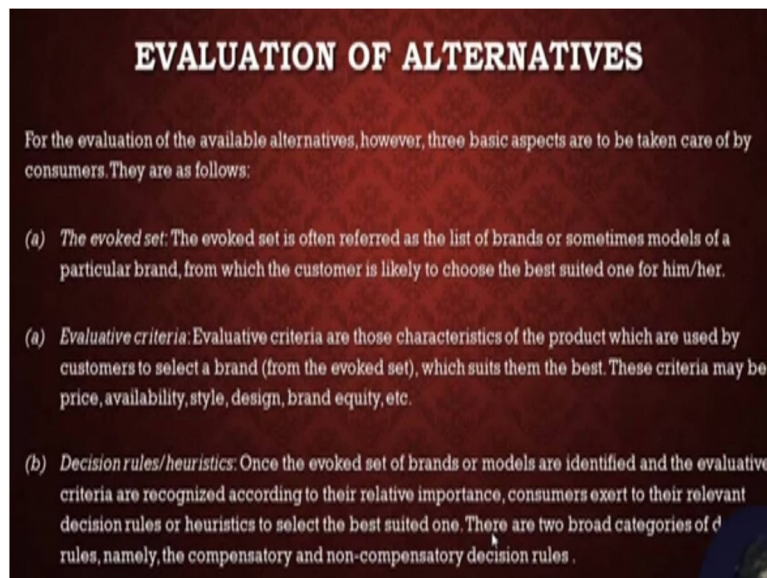
And this is the marketer may provide some queue like they may design up kind of product, they may come up with some particular promotional part, so all this thing would be there, so that is why my desired state of mind maybe I will buy an iPhone 7 and my existing state is I am having maybe a very basic phone. Then the gap, perceived gap is actually in the desired state of mind and this starts a tension if the gap is within threshold level.

Now, if we know the unmet need is recognized, then what happens I feel disturbed and then there is a, if this gap which means the present state of mind and the desired state of mind, if there is a huge gap when I feel the need to buy the product. Second part, here is the search for information. Search for information is maybe I want to buy a Smartphone but then I will try to find out the information now because it is an expensive choice, so I will try to find an information from several sources that which brand is better.

I may reserve to informal sources of information, I may ask my peer group my opinion which is about it or I may reserve to the website, I may go to Flipkart and compare different brands there and to see which brand suits me the best. That either I will go by an internal search, which means searching for my own memory or I may go for an external search, where I am actually searching from the outer world, which means I am searching from the (()) (11:24) or maybe from personal sales people, who has come to me to discuss about it.

Then comes the evaluation of alternatives. Now evaluation of alternatives is a very crucial stage and I will discuss it in details now.

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EVALUATION OF ALTERNATIVES

For the evaluation of the available alternatives, however, three basic aspects are to be taken care of by consumers. They are as follows:

- (a) *The evoked set:* The evoked set is often referred as the list of brands or sometimes models of a particular brand, from which the customer is likely to choose the best suited one for him/her.
- (a) *Evaluative criteria:* Evaluative criteria are those characteristics of the product which are used by customers to select a brand (from the evoked set), which suits them the best. These criteria may be price, availability, style, design, brand equity, etc.
- (b) *Decision rules/heuristics:* Once the evoked set of brands or models are identified and the evaluative criteria are recognized according to their relative importance, consumers exert to their relevant decision rules or heuristics to select the best suited one. There are two broad categories of decision rules, namely, the compensatory and non-compensatory decision rules.


In evaluation of alternatives there are some terms which has been used. 'a' is the evoked set, say after information search I may end up in selecting three or four brands of mobile or maybe when I am thinking of a car I may end up with selecting 3 or 4 brands of car, which I can afford. And these 4 types of car, which I can afford is actually in my evoke set.

Because I have searched lot of information, which I can afford for which I may have a showroom in and around or several other first cut factors or elimination factors by which I have zeroed down to 4 models within which I will take my final decision which brand to purchase. So this 4 brands are there in my evoked set. Then comes my evaluative criteria, now within my evoked set on the basis of what should I evaluate these four brands.

It may be because of price, I may evaluate the best on the availability and my nearest location, I may evaluate based on the style of the product, design of the product, the brand value of the product so on and so forth. And then the next part is another important part that is the decision rules or choice heuristics. Now what is this decision rule and choice heuristics, once the evoked set of brands or models are identified.

And the evaluative criteria are recognized according to their relative importance, consumers exert to their relevant decision rules or heuristics to select the best suited one. And there are two broad categories of decision rules, namely the compensatory and non-compensatory decision rules.

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COMPENSATORY DECISION RULES						
Criteria	Weights of criteria	Maruti 800 Std BSIII	Tata Nano Std BSIII	Maruti Alto Std	Tata Indica V2 Xeta GL	Hyundai Santro Xing (non-AC)
Price of the car (C_1)	.32	4	5	3	2	2
Fuel efficiency	.28	3	4	3	4	3
Warranty period	.18	3	4	3	3	3
Dealer's Proximity	.12	5	2	5	4	3
Bank loan	.06	4	4	4	5	5
Wife's choice	.04	1	2	3	3	5
Preference for brands	$\sum W_i = 1$	3.54		3.26	3.20	2.88

In the compensatory decision rule, first consumers assign weight to several evaluative criteria. Then they evaluate a brand or model in terms of the relevant evaluative criteria, and a weighted sum for each alternative is, thereafter, calculated.

Now here the compensatory decision rules. In compensatory decision rule first the consumers assign weightage to several evaluative criteria. This is almost similar like attitude toward object which we have studied in the chapter, module of attitude. First the consumer assign way to several evaluated criteria then they evaluate a brand or a model in terms of the relevant evaluative criteria and a weighted sum of each alternative is there after calculated.

I will explain this, these are the five criteria, price of the car, say this is the car choice, where the person is left with Maruti 800, Tata Nano, Maruti Alto, Tata Indica, Hyundai Santro. Now these are almost very close in their price range, so now therefore price of the car, fuel efficiency, warranty, dealer's proximity, bank loan and wife's choice which means the availability of the bank loan, so all these are the choice criteria for this particular person say, Ravi.

Now what Ravi is doing, Ravi is assigning some weightage to this criteria, which criteria is most important to him. Now Criterion 1 that is the price of the car. He is assigning maximum weightage to that that is .32, fuel efficiency .28 that is 28%, warranty 18% maybe, like this the

weighted sum maybe 1. Now he wants to find out the preference for the brand, so now maybe in a five-point scale, where five is excellent and one is worst, 5 is excellent, 4 is better, 3 is neutral so so, 2 is unsatisfactory and 1 is worst.

So if it is like this, then the person Ravi has assigned weightage is different cars based on the criteria, which means he has assigned Maruti 800, 4 in terms of price whereas Tata Nano being a cheap best car he has assigned in terms of price as 5, Maruti standard alto this is 3, Tata Indica 2 and Hyundai Santro is 2. So likewise he has assigned the weightage to all these points. So now what is happened if you just see the weighted score like from Maruti 800.

If I want to find out I will multiply .32 into this four, plus .28 into 3, plus .18 into 3, plus .12 into 5, plus .06 into 4, plus .04 into 1, that results the summation results in 3.54. Similarly, I will find out for Tata Nano standard BSIII and it is like .32 into 5, .28 into 4, .18 into 4, .12 into 2, .06 into 4, .04 into 2 and the score is 4. Likewise, I got scores for Maruti 800 as 3.54, Tata Nano standard BSIII as 4, Maruti Alto as 3.26, Tata Indica 3.20, Hyundai Santro 2.88.

So clearly the high score is for Tata Nano and therefore my preference for the brand is for Tata Nano.

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NON-COMPENSATORY DECISION RULES

Sometimes, the consumers cannot balance the negative features of a brand with some positive aspects in case of non-compensatory decision rules.

There are three major non-compensatory rules:

- Conjunctive rule
- Disjunctive rule
- Lexicographic rule.

Now there are several non compensatory decision rules and what are these non compensatory decision rules? Sometimes the customers cannot balance the negative features of the brand with some positive aspect. So there, he selects anyone rule or any cutoff rule to select a brand and there are three major non compensatory rules Conjunctive, disjunctive and Lexicographic I will discuss.

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NON-COMPENSATORY DECISION RULES						
Conjunctive Decision Rule						
Criteria	Weights of criteria	Maruti 800 Std BSIII	Tata Nano Std BSIII	Maruti Alto Std	Tata Indica V2 Xeta GL	Hyundai Santro Xing (non-AC)
Price of the car (C_1)	.32	4	5	3	2	2
Fuel efficiency	.28	3	4	3	4	3
Warranty period	.18	3	4	3	3	3
Dealer's proximity	.12	5	2	5	4	3
Bank loan	.06	4	4	4	5	5
Wife's choice	.04	1	2	3	3	5

In the conjunctive decision rule, consumers establish a minimum point of cutoff for each attribute. If any brand falls below the cutoff point in terms of the selected attributes, it is eliminated from the choice set. In case of Mr. Umesh Nair, if he sets a cutoff point of 3 for all the choice attributes, then we find, except *Maruti Alto Std*, all other cars have scores below 3 in some attributes. Hence, *Maruti Alto* would be chosen by Mr. Nair, if he follow the conjunctive decision rule.

First is conjunctive rule, in the conjunctive decision rule the customers establish a minimum point of cutoff for each attribute. So I am selecting 2 for price, 3 for full efficiency, 4 is cutoff for warranty, so any brand which falls below the cutoff in terms of the selected attributes, it is eliminated from the choice set. So for example, if I am selecting 3 as my cutoff point for price, so in that case whichever Brand is scoring less than 3 in price would be eliminated.

So that wise if I select 3 as the cut off point for all these criteria, so then in that case how my choice is defined. Let me just show you that from the price of the car I am seeing that Tata Indica and Hyundai Santro in price it is scoring 2 which is less than 3, so these two brands are eliminated, so I am left with this 3. Moving to the next criteria, all these three brands is still retained. Moving to warranty all these three brand is still retained, moving to next dealer's proximity.

Now in dealer's proximity Tata Nano standard BSIII is eliminated because it is having 2 and my cutoff for dealers proximity was 3. So I am left with these two brands Maruti 800 and Maruti Alto. So in the next step also I cannot take a decision, so I am moving here and here I am saying my wife's choice is towards Maruti Alto because here it is 1, so it is eliminated below the cutoff point.

So given all these things I am saying that Maruti Alto standard is actually passing the cutoffs of all these criteria and hence would be selected.

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NON-COMPENSATORY DECISION RULES						
The Disjunctive Rule						
Criteria	Weights of criteria	Maruti 800 Std BSIII	Tata Nano Std BSIII	Maruti Alto Std	Tata Indica V2 Xeta G6	Hyundai Santro Xing (non-AC)
Price of the car (C_1)	.32	4	5	3	2	3
Fuel efficiency	.28	3	4	3	4	3
Warranty period	.18	3	4	3	3	3
Dealer's proximity	.12	5	2	5	4	3
Bank loan	.06	4	4	4	5	5
Wife's choice	.04	1	2	3	3	5

The disjunctive rule, is just the reverse of the conjunctive rule. Similar to the conjunctive decision-making rule, here also a minimum cutoff level for each attribute is set. According to this rule, Mr. Nair will choose the alternative which may satisfy his minimum cutoff in terms of any choice criteria. Usually, this cutoff is set little above the cutoff value set in conjunctive rule. In this case, let us assume the cut-off is 4.

The mirror opposite of conjunctive decision rule is the disjunctive decision rule, what is that? The distinctive decision rule is just the reverse of the conjunctive rule, I said it is a mirror opposite, similar to the Conjunctive decision making rule here also a minimum cutoff level for each attribute but here actually the alternative, which may satisfy his minimum cutoff in terms of any choice criteria would be selected.

So Mr. Ravi Nair if he selects, say for example price, the cutoff is and in this case usually the cutoff value is little high, say I am putting a cut off of 4 for price, now whichever brand score more than 4 for price would be returned in my choice set. So therefore here I am seeing and rest would be eliminated. So this thing conjunctive is a process of elimination whereas disjunctive is the process of selection.

So based on the price, this criteria I am selecting Maruti 800 and Tata Nano because rest are scoring less than 4, so not selected. Fuel efficiency wise, I am saying 4 and 4, so again Tata Nano at this so which I am seeing is actually based on some criteria or the other. Most of the brands are still retained in my choice set in most of the cases in distinctive choice, so the problem is many of the brands still remain in the choice set.

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THE SOLUTION- LEXICOGRAPHIC HEURISTICS

In case of *lexicographic heuristics*, consumers first order the attributes according to their perceived importance.

For example, in the said example of Mr. Nair, according to his relative importance, the evaluative criteria can be ranked as price (1st), fuel efficiency (2nd), warranty period (3rd), dealer's proximity (4th), bank loan (5th), and wife's choice (6th).

Now, consumers compare all the brands' score in terms of the most important criteria set by them in single/multiple iterations till the most preferred alternative is identified.

Here, Mr. Nair has selected price as the most important attribute. Now *Tata Nano Std BSIII* scores the highest (5) as compared to the other brands in terms of price criteria and hence would be considered as the best-suited alternative for Mr. Nair.

To solve this problem usually another, you know even conjunctive suffers from this kind of problem, another kind of choice you restricts is used and that is known as Lexicographic choice heuristics. Now in lexicographic, what Mr. Ravi Nair does is he ranks his evaluative criteria and rank has already earlier done that price as first, fuel second, third, fourth, fifth and 6th as different criteria. Now the customers compare all the brand scores in terms of the most important criteria set by them in a single or multiple iterations, till the most preferred alternative is identified.

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THE SOLUTION- LEXICOGRAPHIC HEURISTICS

Criteria	Weights of criteria	Maruti 800 Std BSIII	Tata Nano Std BSIII	Maruti Alto Std	Tata Indica V2 Xeta GL	Hyundai Santro Xing (non-AC)
Price of the car (C_1)	.32	4	5	3	2	2
Fuel efficiency	.28	3	4	3	4	3
Warranty period	.18	3	4	3	3	3
Dealer's proximity	.12	5	2	5	4	3
Bank loan	.06	4	4	4	5	5
Wife's choice	.04	1	2	3	3	5

I just show here say in this case my most preferred Brand, most important criteria of Mr. Ravi Nair is price of the car which is the highest weighted criteria and Tata Nano scores highest here so it is chosen. Now its maybe the case, where two brands can score highest here so then Ravi Nair may move to the next criteria and see very next criteria which of this two brands, out of these two brands, which is scoring more and then he may select that and likewise we can go to criteria 3, 4, 5, 6 if required.

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AFTER REFERRAL DECISION RULES

- In many cases, these basic rules are mixed to derive a new choice rule, like if there are too many brands in the evoked set, then conjunctive-compensatory or disjunctive-lexicographic may appear to be appropriate.
- This type of combined choice heuristics is called the after-referral decision rule and this is perhaps the most popular choice heuristics.

And this is known as after referral decision rules, where you mix up conjunctive with compensatory or similarly conjunctive. You can also apply compulsorily decision rule after you are left with, say two brands in your evoked set in disjunctive or compensatory or conjunctive

decision making rules. So this is how the evaluation of alternative, I will just go back to the model's picture.

So where you see that we have actually developed a choice for some particular brand and after that this is the response part where there would be the purchase, but before response I just tell that all this decision making parameters will be influenced by the internal influencing factors, what these are the customer's own perception about different brands or even different products like about car.

I may need a car or car is a luxury product, I don't want a luxury product, is it like that or is it a necessity product. So this is my perception. I have discussed all these individual decision making parameters in previous modules. So I am not going in much details in this session. I will just mention then what is the motivation of buying a car is it for my single consumption or it is for my family is a large family so accordingly I have to choose.

So therefore choice of size of the car would also be different. What is my attitude towards different brands, what kind of lifestyle do I have then what kind of personality do I have. But finally what I mean to say is the last stage that last box that is the responses of the outcome box where you can see that either it will actually result in purchase maybe through trial - repeat purchase and then long - term commitment.

Sometimes you may not be able to purchase also because at your purchase point maybe the brand which was in the, as the second preferred brand in your choice set is giving some kind of discount, so you may choose that brand at the purchase point and so on. And finally is the post purchase behavior that is either you are satisfied or dissatisfied or as I said if you are dissatisfied that may leave to a cognitive dissonance of the customer.

So this is how the entire decision making model will follow in the black box. So this much for now and we meet in the next session with further elaborations of consumer decision making models. Thank you.