CONSUMER BEHAVIOUR

□ THE ECONOMIC PROBLEM:

All consumers are faced with the problem of **unlimited** wants and **limited** resources.

- **QUESTION**

  How do consumers allocate their incomes across goods and services?

□ 3 STEPS IN UNDERSTANDING CONSUMER BEHAVIOUR

- (1) Consumer preference

  * Required a practical way to describe consumer preference of good A over good B.

- (2) Budget Constraints

  * Consumers consider prices especially because of their limited incomes.

* Consumer preferences and budget constraints must be brought together.

- (3) Consumer Choices

  * Given consumer preference and limited resources, consumers buy combinations of goods that maximize satisfaction.

- **QUESTION**

  Are consumers always rational decision-makers as economists assume about consumer demand.

- **ANSWER**

  No, but BEHAVIOURAL ECONOMICS has been developed and draws on psychology and related fields.

CONSUMER PREFERENCES

- Question

    How can consumer's preferences be described in a coherent way?

- A market basket

    Refers to a list of specific quantities of one or more goods.

    A market basket could contain various quantities of goods – food, clothing and housing.

- Table 3.1 shows a number of baskets of goods.

- Question

    Do consumers prefer one basket to another?

- The theory of consumer behaviour.

    * Three (3) BASIC ASSUMPTIONS

(1) COMPLETENESS

- Preferences are assumed to be complete and rank all possible baskets.

- Thus given baskets A and B, a consumer may prefer A to B or B to A or equally satisfied with both.

- Indifference = being equally satisfied with basket A or B.

(2) TRANSIVITY

- If a consumer prefers basket A to basket B and basket B to basket C.
- Thus the consumer prefers basket A to C.

(3) MORE IS BETTER THAN LESS

- Assumption: Goods are desirable
- Thus consumers will prefer more of any good rather than less of a good.

INDIFFERENCE CURVES

☐ An indifference curve represents all combinations of market baskets that provide a consumer with the same level of satisfaction.

☐ The consumer is thus indifferent among consumer baskets represented by the points graphed on the curve.

☐ A consumer's preferences could be plotted as in Fig 3.1.

☐ The preferences of the consumer's baskets may be plotted as an indifference curve from left to right.

➤ INDIFFERENCE ▬▬ MAPS

- A set of indifference curves showing the market baskets among which a consumer is indifferent.
- Indifference curve U_3 generates the highest level of satisfaction.
- The indifference curves are always downward sloping and shows the trade-off between food and clothing.
- Indifference curves do not intersect.

- NOTE
  As more food is gained the sacrifice of clothing decreases.

➤ THE MARGINAL RATE OF SUBSTITUTUION (MRS)

- The maximum amount of a good that a consumer is willing to give up in order to obtain one additional unit of another good.
- If the MRS is 3 – a consumer is willing to give up 3 units of clothing to obtain 1 additional unit of food.
- The MRS measures the amount of a good on the vertical axis that he/she is willing to give up in order to obtain 1 extra unit of food on the horizontal axis.
- MRS could be written as $-\Delta C/\Delta F$.
- The $-ve$ sign shows that the consumer is sacrificing thus has reduced the amount of clothing.
- The reduction in the MRS creates an indifference curve that is CONVEX.

➢ THE DIMINISHING RATE OF MRS

- The convex shape of the indifference curve means that the slope of the curve increases – becomes less negative as there is movement downward along the curve.
- An indifference curve is thus convex as the MRS diminishes along the curve.
- It shows diminishing marginal utility – thus the consumer gives up less and less clothing to gain more food.

➢ PERFECT SUBSTITUTES AND PERFECT COMPLEMENTS

- The shape of an indifference curve describes the willingness of a consumer to substitute one good for another.
- If an indifference curve is not convex it shows a different willingness to substitute.
- Two goods are substitutes when an increase in the price of one (Good A) leads to an increase in the quantity demanded of another (Good B).
- Perfect substitutes – two goods for which the MRS is 1:1 – one glass of orange juice for one glass of apple juice.

- Such indifference curves will be straight lines, i.e. the rate of substitution is constant (1:1).
- Complements = two goods for which an increase in price of Good A leads to a decrease in the quantity demanded of Good B.
- Perfect complements = two goods for which the MRS is infinite rand the indifference curves will be right angles.

➤ UTILTIY

- To date preference of consumers has been referred to but no numerical values given.
- Utility attaches numerical scores representing the satisfaction a consumer gets from a given market basket Food (F) and Clothing (C).
- If the utility function of Pat for food and clothing is $u(F, C) = F + 2C$.
- If there is a market basket of 8 units of food and 3 units of clothing – it will generate a utility of $8 + 2(3) = 14$.
- Pat is indifferent between this basket and a market basket containing 6 units of food and 4 units of clothing $[6 + (2)(4) = 14]$.

- But either basket is preferred to a 3rd basket containing 4 units of food and 3 units of clothing.
- Basket C has a utility level of only 4 + (4) (2) = 12.
- The utility function u (F, C) = FC states that the level of satisfaction obtained from consuming F units of food and C units of clothing is the product of F and C.
- If there is a market basket with F = 5 and C = 5 at point A. Utility level U_1 of 25 would be generated.
- The indifference curve known as an ISO UTILITY CURVE was drawn by finding all market baskets for which FC = 25
- Examples of such combinations could be: F = 10, C = 2 – 5 or F = 2.5 and C = 10
- Another indifference curve, U_2, constains all baskets for which FC is 50.
- U_3 is an indifference curve for which FC = 100.

> ORDINAL VS CARDINAL UTILITY

- Indifference curve that provide for ranking of market baskets (like Fig 3.3) is known as ORDINAL.

- ORDINAL UTILITY FUNCTION = a utility function that generates a ranking of market baskets in order of most to least preferred.
- Ordinal utility does not indicate by how much one basket is preferred to another.
- If one consumer gets twice the satisfaction another consumer gets from the consumption of Good A.
- If numerical values are assigned to market baskets, the numbers provide a cardinal ranking.
- CARDINAL UTILITY FUNCTION = a utility function describing by how much one market basket is preferred to another.
- There is no way of measuring whether one consumer gets twice the satisfaction from the consumption of a good than another consumer.

➤ BUDGET CONSTRAINTS

- All consumers have constraints on the consumption of goods because of limited income.
- If a consumer has a fixed income, I that could be allocated to food and clothing.
- Let F be the amount of food bought.
- Let C be the amount of clothing bought.

- Let the price of food be P_f and the price of clothing P_c.
- The amount of money spent on food will be $P_f F$ (price x quantity of food).
- The expenditure on clothing is $P_c C$.
- The consumer allocates all income, I, to 2 goods only – food and clothing.
- If income is R80.00 and the price of food R1.00 per unit whilst the price of clothing is R2.00 per unit.
- If all income is allocated to food 80 units of food and no units of clothing could be bought.
- The other extreme is 40 units of clothing and no units of food.
- A budget line showing the extremes and other possible combinations of food and clothing can be drawn.
- A BUDGET LINE = all combinations of goods for which the total spent equals total income.
- The combination of food and clothing bought

$$P_f F + P_c C = I$$

- The intercept of the budget line is represented by A.
- As the combinations move from A to G less and less is spent on clothing and more on food.

- The extra clothing which must be given up to consume an additional unit of food is in the ratio of the price of food to the price of clothing.

$$R1.00 / R2.00 = \frac{1}{2}$$

- The slope of the line is $\Delta C / \Delta F = \frac{1}{2}$
- Using equation $P_f F + P_c C = I$ it is possible to calculate how much of C must be given up to consume more of F.
- Dividing both sides of the equation by P_c and solving for C.

$$C = (I/P_c) - (P_f/P_c) F$$

- This equation is the equation for a straight line and a vertical intercept of I/P_c and a slope of $- P_f / P_c$).

INCOME CHANGES

☐ QUESTION:

What happens to the consumer's consumption of goods when income changes?

☐ ANSWER:

The budget line will shift onwards

☐ The new budget line will be U_2 and the optimal (best) point of consumption will be at B.

☐ At point consumption will be:

10 units of food
5 units of clothing

- ❑ Point B on the budget line will translate into point G on the demand curve in Fig 4.2 (b).

- ❑ INCOME – CONSUMPTION CURVE = a curve tracing the utility – maximizing combinations of two goods as the income of consumer changes.

- ❑ A change in the price of a good corresponds to a MOVEMENT ALONG a demand curve.

- ❑ A change in INCOME leads to a SHIFT IN THE DEMAND CURVE.

NORMAL VS INFERIOR GOODS

- ❑ When an income – consumption curve has a positive slope, the quantity demanded increases with income.

- ❑ Thus the income elasticity of demand is positive.

- ❑ The greater the shifts to the right of the demand curve, the larger the income elasticity.

- ❑ Such a good is a NORMAL GOOD = a good of which a consumer wants to buy more as income increases.

- For some goods as income increases, the demand will decrease.

- Such a good is an INFERIOR GOOD – the income elasticity of demand is negative.

- Example: Sausage = inferior goods

  Steak = normal good

- The income – consumption curve for an inferior good will be backward bending.

ENGEL CURVES

- Engel curve = a curve relating the quantity of a good consumed to income of a consumer.

- Income – consumption curves can be used to construct Engel curves.

- Suppose a consumers income increases from R10 to R20 to R30.

- The consumption of food (as in Fig 4.2 (a) will increase from 4 to 10 to 16 units as income increases.

- Food is a normal good because as income increases more is consumed.

□ For an inferior good a different trend emerges as income decreases.

□ As income increases from R10 to R20 to R30, consumption of the good will initially increase from 5 to 10 units but a further increase in income causes consumption to decrease from 10 to 8 units.

□ The portion of the Engel curve that slopes downwards is the income range within which the good is regarded as an inferior good.

INCOME AND SUBSTITUTION EFFECTS

□ A decrease in the price of good has TWO EFFECTS:

* (1) Consumers will tend to buy more of a good that has become cheaper and less of a good that when it is more expensive.

This response to a change in relative prices is known as the SUBSTITUTION EFFECT.

* (2) Because one of the goods is now cheaper, consumers will enjoy an increase in real purchasing power = they are better off because they can buy the same amount of a good for less money.

The change in demand resulting from this change in real purchasing power is known as the INCOME EFFECT.

SUBSTITUTION EFFECT

❑ A decrease in price has both an income and substitution effect.

❑ The substitution effect = the change in consumption of a good associated with a change in price, with the level of utility held constant.

❑ The substitution effect captures the change in food consumption that occurs as a result of a price change in food relative to clothing.

❑ The substitution effect can be derived by drawing a budget line parallel to the new budget line R T but tangent to the original indifference curve U_1

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- Fig 4.6 shows clearly that when the price of food decreases, the substitution effect always leads to an increase in quantity of a good (food) demanded.

THE INCOME EFFECT

- The income effect is the change in consumption of a good resulting from an increase in purchasing power, with relative price held constant.

- Fig 4.6 shows that by moving from an imaginary budget line that passes through point D to the parallel budget line RT, which passes through B.

- This consumer chooses basket B on the indifference curve U_2.

- The increase in the consumption of food from OE to OF_2 is income effect.

- Food is a normal good — as income increases more is consumed.

- For inferior goods as income increases, less will be consumed.

- The total effect of a change in price can be given theoretically as the sum of the substitution and the income effect:

$$F_1 F_2 = F_1 E + EF_2$$

GIFFEN GOODS

- Theoretically the income effect may be large enough to cause the demand curve for a good to slope upward.

- Where this happens it is a Giffen good.

- Fig 4.8 – initially the consumer is at A.

- Consumption of clothing is much less than the lot of food consumed.

- When the price of food declines enough income is freed for the consumer to buy more clothing and fewer units of food.

- Point B illustrates this.

- The consumer will be better off at point B than at point A even though less food is consumed.

- Giffen goods are of little practical interest because a large negative income effect is necessary, but this seldom happens.

UTILITY

- Utility deals with the level of satisfaction (=benefit) that a consumer derives from the consumption of a good or service.
- Assumption: Consumers want to maximise their satisfaction of wants.
- Utility is an abstract or subjective concept since it can not be measured.
- Consumers have different preferences thus their satisfaction (utility) from the consumption of goods differ.
- Comparing satisfaction (=utility) for consumers will be difficult.
- Total amount of satisfaction is Total Utility (T_u)
- Total utility increases but at a lesser amount as more of a good is consumed.
- Extra utility as more of a good is consumed is known as Marginal Utility.
- Marginal Utility (M_u) decreases as more of a good is consumed.
- M_u declines until it is zero and eventually becomes negative.
- Negative utility is known as DISUTILITY.
- The LAW OF DIMINISHING MARGINAL UTILITY states that the marginal utility of a good eventually declines as more of that good is consumed during a given period.
- Weighted M_u is Marginal Utility (M_u) divided by Price

$$\frac{M_u \text{ of Good A}}{\text{Price of Good A}}$$

- **Consumers Equilibrium**
  - Where the consumer derives maximum satisfaction considering
    - The consumer's budget
    - The prices of goods
    - The different marginal utilities derived from each good

- To obtain consumer equilibrium use weighted marginal utility.
- Weighted Marginal Utility

  - $\dfrac{M_u \text{ of Good A}}{\text{Price of Good A}}$

  - $\dfrac{M_u \text{ of Good B}}{\text{Price of Good B}}$

- Consumer Equilibrium where:

$$\frac{Mu \text{ of A}}{P. \text{ of A}} = \frac{Mu \text{ of B}}{P. \text{ of B}}$$