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Video Transcription: Cost Behaviour: Fixed and Variable Costs

Hi, my name is Jacqui and in today's video we'll be doing cost behaviour. Cost behaviour is one of the key cost classifications you learn about in management accounting. Cost behaviour involves understanding the way a particular cost behaves if there is a change in the level of activity within a business. In this video we will discuss two more common cost behaviours, fixed costs and variable costs.

- **Variable costs:** A cost that varies directly with the level of activity. In other words, the total cost increases as the level of activity increases.
- **Fixed costs:** The cost that remains unchanged regardless of the level of activity. In other words, the total cost remains the same at all levels of activity.

Let us look at a company that manufactures bread. During the production process the ingredients are mixed together in a large mixer to produce dough. The dough is baked and the final loaf is packaged.

The ingredients used to make bread are as follows:
- 500g plain flour
- 2 teaspoons dried yeast
- 1 teaspoon salt
- 375ml lukewarm water

I am sure you would agree with me that the more loaves of bread that are made, the more flour we will need. If we produce no loaves of bread we will not use any flour and therefore not incur this cost. This is an example of a variable cost.

The amount spent on flour for each loaf of bread produced should be exactly the same. So, if a kilogram of flour costs R16 then the 500 grams of flour, which is what is needed per loaf of bread as per the recipe, should cost R8. If we produce one loaf of bread we expect to spend R8 on flour. If we produce three loaves of bread we expect to spend 3 x R8, or R24, on flour. Can you see that there is a direct and linear relationship between the number of units produced and the total cost of flour? Knowing this allows us to predict the total cost of flour once we know how many units the company plans on producing.

So, if we produce more loaves of bread the total cost of flour will increase, however the cost of flour per unit is constant at R8 per unit and can graphically be illustrated in the following way.

Now, let us have a look at an example of a fixed cost. This production process is housed within a factory. Let us assume that the company rents the factory from another business. In this case the rental per month is R20 000. The rental of R20 000 will need to be paid, regardless of how many units are produced.

The business that the company is renting the factory from has no regard for whether anything is produced within a particular month. It is also difficult and time-consuming for the company to move premises and stop paying the rent. Cancelling contracts can also incur penalties. The graph for this fixed cost will look, as follows.

We can see that the fixed cost remains constant regardless of the level of activity, which in this case is the number of bread loaves produced.

We can calculate the rental cost per loaf produced by taking the total rental cost of R20 000 and dividing it by the number of units produced. If only one loaf is produced the rental cost per unit will be R20 000. The fixed cost per unit changes as the number of units produced changes. The total cost will stay constant, and the "per unit" cost changes. When we calculate a fixed cost per unit the term for this is to "unitise" fixed costs. It is important to notice this characteristic of fixed costs per unit, because if you are presented with information on costs, and fixed costs have been reported on a "per unit" basis, this amount is only valid at one specific level of activity.

Now, is there a possibility that this fixed rental cost will change? It is likely to increase every year, but this increase is linked to a general increase in prices and is not because of the change in the level of activity, the number of loaves of bread produced. So, will the fixed cost ever change with respect to the level of activity?

To answer this question one has to think practically about the scenario and the particular cost being examined. The rental cost of R20 000 will be incurred, regardless of how many loaves of bread is produced, but there is a limit as to the amount of loaves that can be produced in that one factory building. This is because there are constraints on time, space and production facilities.

Let us assume that 50 000 loaves of bread per month can be produced in one factory. If the company wanted to produce more than 50 000 loaves in a month, they would have to rent an additional factory. If they rent a similar factory in terms of space and costs this additional factory would allow them to produce another 50 000 loaves. The company can now produce 100,000 loaves of bread in total. What will the total rental cost be?

If the company produces more than 50 000 loaves of bread in a month, the cost of rental amounts to R40 000. It does not matter if the company produces one more loaf or 20,000 more, it will still need to rent the entire building and pay R40 000 in total for the rent or an additional R20 000.

For a production level up to 50 000 loaves the rental cost is R20 000 and for a production level between 50 000 and 100 000 loaves, the total rental cost is R40 000. This is what is known as the relevant range for a fixed cost. The change from R20 000 to R40 000 is known as a step.

In order to accurately forecast costs the relevant range needs to be identified. Having said this, increasing the factory space and consequently the rental cost is not a decision that is made quickly.

In this video we have discussed the two cost behaviours, variable and fixed. Understanding cost behaviour is crucial for accurate planning, forecasting and decision-making in a business.

Thank you so much for watching.