

Relevant Costs in Decision Making

(Relevant to Paper II – PBE Management Accounting and Finance)

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In management accounting, you often hear the term relevant cost. Relevant cost is closely linked to incremental analysis, and refers to costs which differ across decision or situation alternatives.

In this article we use several examples to illustrate the concept of relevant costs. This first example covers the decision to extend the opening hours of a café, called Café PBE. We need to decide whether to extend the café's opening times by one hour. There are two situations. One is the original opening hours: the other is the new opening hours.

In the original opening hours situation the daily revenue is \$110,000 and the daily costs \$80,000. If the opening hours are extended, the daily revenue becomes \$113,000. Of the daily costs 40% are for food, 30% other variable costs and the remainder fixed. If the café extends its opening time by one hour, the additional labour cost is \$400 and the additional electricity cost is \$300. Determine whether it is feasible to extend the operating hours.

If the additional revenue is able to cover the additional costs, it is worth extending the opening hours. The situations can be represented as follows:

	<u>Original</u>	<u>New</u>
Revenue	\$110,000	\$113,000
Cost		
Food	\$44,000	\$45,200
Labour		
Other variable	\$33,000	\$33,900
Electricity		
Total cost	\$77,000	\$79,100
Profit		

How it is possible to complete the above without knowing the present levels of labour cost and electricity cost? The answer is that it is the **difference** which is relevant. The increase in revenue is \$3,000. Food costs constitute 40% of revenue: these increase from \$44,000 to \$45,200, an increase of \$1,200. Other variable costs constitute 30% of revenue and these increase from \$33,000 to \$33,900, an increase of \$900. We know that the labour cost increases by \$400 and electricity by \$300. Therefore the total increase in costs = \$1,200 + \$900 + \$400 + \$300 = \$2,800, which is lower than the increase in revenue of \$3,000. This shows is worth extending the opening hours.

From this short analysis, we see that the existing level of labour cost and electricity cost are irrelevant. It is because these are sunk costs. No matter what operating hours are, these costs are still incurred and will not be changed by any future decision: the company still needs to pay them. . Sunk costs are not relevant costs in the decision-making process.

Normally fixed costs are not relevant and variable costs are relevant to the decision-making process since fixed costs do not change while variable costs change with the level of activity.

However, it is not always right to determine whether a cost is relevant or not simply based on this definition. Sometimes it is just the opposite.

Let's return to the above example. The café staff receive fixed monthly salaries of \$x. This is a fixed cost and is irrelevant in any decision on extending opening hours since they will be paid the same, whether there is business or not. However, they will receive overtime pay of \$400 when the opening times are extended by one hour. This additional cost is relevant.

Let's use another example to illustrate. Suppose Café PBE wants to replace its stove. The existing stove has annual operating cost of \$16,000 and has a useful life of 4 years. It has a current book value of \$4,000. It would be replaced by a new stove with purchase price of \$12,000, annual operating costs of \$12,500 and the same useful life with zero salvage value.

Since both the old and new stove have the same useful life, we can compare them by noting the difference in operating costs and the purchase price. The new stove costs \$3,500 less in operating costs each year and total saved over four years is \$14,000. This cost saving (\$14,000) is more than the cost of purchase (\$12,000). This means it is worth replace the existing stove with a new one.

The book value of \$4,000 is not relevant here as book value is the difference between historical purchase cost and historical accumulated depreciation. It is a sunk cost and is irrelevant to the decision.

Another good example is the costs in moving a shop. Due to accelerating rent, the Causeway Bay branch of Café PBE is moving from location A to location B. The existing rent in location A is \$150,000 per month. Location B offers higher rent of \$180,000 per month but smaller area. The renovation cost for the new shop is \$200,000 and the term of the lease is 3 years. The existing renovation, which took place 3 years ago, cost \$150,000. It is expected that by moving to the new location the café will be able to increase monthly revenue by \$60,000, of which 40% is food costs.

Let's assess the feasibility of the move. The increase in monthly rent is \$30,000 compared with an increase in monthly revenue of \$60,000. Since 40% of the revenue is food costs, only \$36,000 is used to absorb the increase in rent.

	<u>Original</u>	<u>New</u>	<u>Change</u>
Revenue			\$60,000
Rent	\$150,000	\$180,000	\$30,000

Over the whole three-year period, the increase in revenue after absorbing food costs is \$1,296,000. The increase in rent is \$1,080,000, which is lower than the increase in revenue. The difference is \$216,000. However, this branch needs to pay for the renovation of \$200,000. After deducting this part, the "profit" is \$16,000, which is feasible. Again the historical renovation cost is irrelevant as it has been paid.

In all three examples, we need to pay attention to whether the projected figures are reasonable or not, as this has an impact on the final decision. Also, there are qualitative factors to consider. We need to replace the stove if there is safety issue. In the first example,

even if the café makes a loss by extending the opening hours in one branch, if the café as a whole makes profit, the move it is still regarded as acceptable.