Productivity Methodologies, Tools, and Techniques

Productivity assessment survey featuring value-added productivity measurement

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Concept of value added

When measuring productivity, a definition that is useful is: Productivity is equal to output divided by input. This ratio measures how well resources or inputs are utilized to create the desired outputs.

One measure of output is value added (VA). Using data from a company's financial statements (i.e., profit and loss statement, balance sheet), VA is computed as sales less purchases from outside (e.g., materials, energy, outsourced services) plus change in inventory of work-in-process and finished goods. This method of computation is called the subtraction method (or the VA creation method).

Another way of computing VA is by adding personnel cost (e.g., salaries and wages), management, cost of maintaining the business (e.g., interest from loans, depreciation), and profit. This is called the addition method (or the VA distribution method). It is derived from the definition of VA as the "wealth" created by the products and/or services generated by an organization through the collective effort of those who work in the organization (i.e., employees) and those who provide the capital (i.e., employers, investors), as shown in Figure 1.

Initially, both methods are used to validate the VA figures. Thereafter, either method can be used.

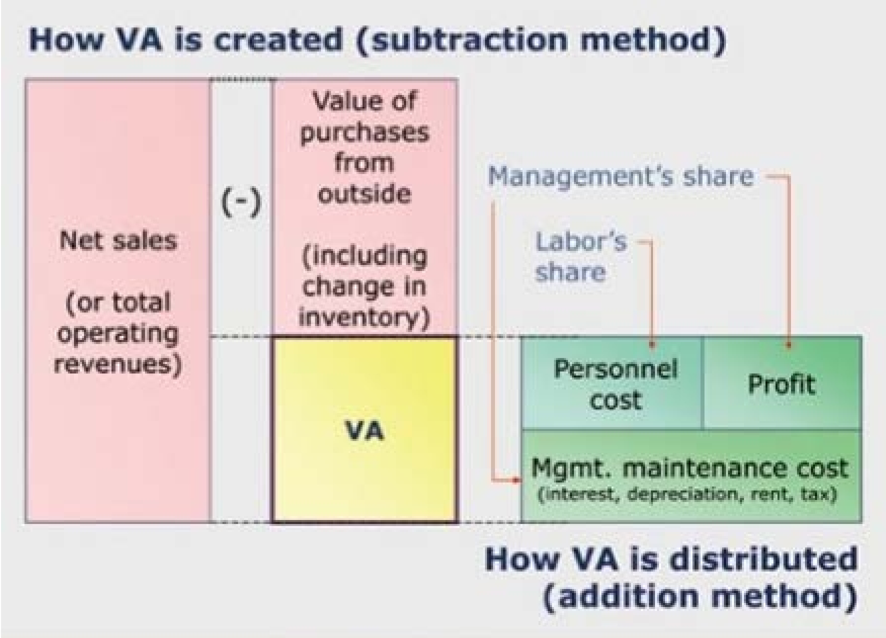

Figure 1. VA computation.

Value-added productivity measurement

Value-added productivity measurement (VAPM) is a measurement tool to determine the productivity performance of an organization. It enables the organization to identify priority areas for improvement and to establish organizationwide productivity indicators based on VA.

The VAPM ratios are a combination of five profitability and five productivity ratios, as illustrated in Figures 2 and 3, respectively. A vertical analysis of the five profitability ratios shows that an increase in profitability is attributable to the increase in profit and VA per dollar of sales or revenues generated (Figure 2). This is significant as it reflects the ability of the organization to increase the generation of VA to cover fixed costs and profits. This would mean effective, efficient management of variable and inventory costs and better utilization of fixed assets (e.g., machines and equipment) (Figure 1).

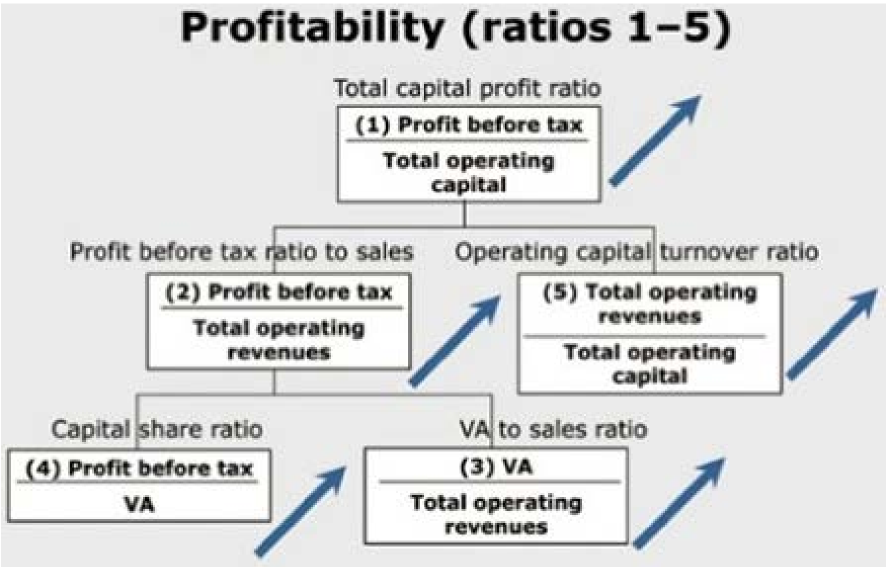

Figure 2. Profitability ratios.

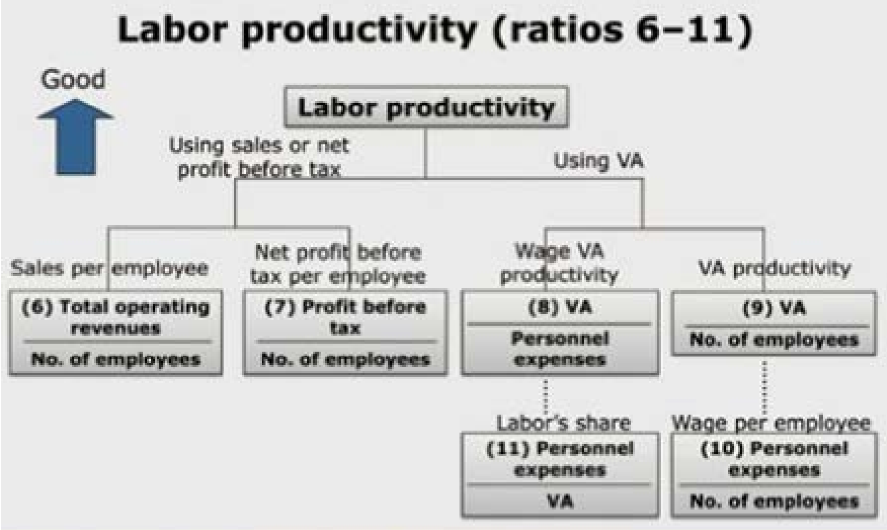

Figure 3. Productivity ratios.

The next set of five ratios is on productivity, specifically labor productivity. While the number of employees is a common denominator, the labor productivity ratios measure the contribution of employees to productivity in terms of increase in sales, VA, and profit (Figure 3).

Analysis of VAPM ratios

Results of the computation of VAPM ratios are used in evaluating an organization's performance. Among the analytical tools used are trend analysis, vertical analysis, regression analysis, and break-even point analysis. These are helpful in stratifying and determining the root causes or sources of low productivity.

Utilizing results of VAPM for productivity improvement

As a result of the analyses, management can use the productivity indicators to plan for sustained productivity improvement for the growth and development of the organization. VAPM results can be immediately utilized for determining the optimum number of employees and formulating a VA management plan to help the organization generate higher VA.

Back to list

To top of page