



Capacity Utilisation Is A Magic Wand For Manufacturing PSU

Preeti Joshi Bhardwaj

Preeti Joshi Bhardwaj, Jaipur National University, Jaipur
preetijbhardwaj@gmail.com

DOI 10.5281/zenodo.1186162

ABSTRACT: Capacity Utilization is the extent to which an enterprise or a nation actually uses its installed capacity. It is the relationship between output that is actually produced with installed equipment and potential output which could be produced with it, if capacity was fully used. Capacity Utilization is a key factor for the public sector companies especially in manufacturing industry. It's linked to price variation branching from corresponding supply catering to the demand of the product/ services. It is one of their main objectives in support to providing important products/ services to the public and creating conditions for economic progress and cohesion.

On other hand profitability is the ability of a business to earn a profit. A profit is what is left of the revenue a business generates after it pays all expenses directly related to the generation of the revenue, such as producing a product, and other expenses related to the conduct of the business activities.

Capacity Utilisation acts as a Magic Wand for manufacturing Public Sector Undertaking/Enterprise as it is directly related to the profitability of the Enterprise. It creates Magic spell by way of being directly proportional to profitability. This paper aims to focus to measure the basic relation between Capacity Utilization and the profitability in a profit-making public sector companies specifically in manufacturing industry. The purpose is to tap the gap along with the measures of improving efficiency both technical & allocative.

KEYWORDS: Capacity Utilization; Manufacturing PSU; Profitability; Technical Efficiency; Allocative Efficiency

I. INTRODUCTION

In manufacturing Public Sector Undertakings Capacity Utilisation is a Buzz Word. It has become more important in view of the prevailing situation of the Energy Crisis, that the manufacturing Units in the Energy/ Power Sector focus on Capacity Utilisation and more so PSUs as the power demand is witnessing continuous upsurge with the growing population in India.

Conceptual Framework

2.1 The dictionary meaning of the word 'Capacity'

1: the maximum amount that something can contain;

2: the amount that something can produce;

Capacity can be referred to as the maximum revenue attainable for the given fixed inputs with certain outputs and output prices.

2.2 About Public Sector

In India, the Public Sector has since inception revered to as most responsible to provide for utility products/ services. Therefore, India being a socialistic pattern of Society, the public sector plays a pivotal role in the Indian Economy.

Public Sector Undertakings are those enterprises which are wholly or partially owned by the Central Government and a State Government and which is engaged in the industrial, agricultural, commercial or financial activities having self-management.

II. ROLE OF PUBLIC SECTOR IN MANUFACTURING INDUSTRY

In India, a predominant role has been played by Public Sector in Manufacturing Industry especially in strategic sector such as Power.

With Independence the public sector in India witnessed bright days of massive expansion. With Second Five Year Plan the Indian Economy welcomed the Nehruvian Model of development 'the adoption of socialistic pattern of society' with public sector assuming direct responsibility for the future development of industries over a wider area of product manufacturing and services.

After this there has been no looking back for the blessed destiny's child the 'Public Sector'. Though these have been road blocks like disinvestment, in the Map of Development of the Indian Economy. Nevertheless it's for the good of the Indian Economy that, form launch of 'NavRatna' scheme in 1997 to 'MahaRatna' scheme in 2010, the public sector enterprises to expand their operations and emerge as a global giants.

III. PROFITABILITY

Definition of Profitability

Profitability is the ability of a business to earn a profit. A profit is what is left of the revenue a business generates after it pays all expenses directly related to the generation of the revenue, such as producing a product, and other expenses related to the conduct of the business activities.

Types of Profits

There are three basic types of profits for a business concern; namely;

- (1) Gross Profit
- (2) Operating Profit
- (3) Net Profit

Profitability is the yardstick to measure the performance of Public Sector Enterprises; it has gained prominence when the governments all over the globe started to feel the burden of expenses incurred by PSEs on their exchequer. Government of India took the call to need by according importance to the financial performance ratios in Memorandum of Understanding (MoU). Functional Autonomies were granted to Managers of PSEs through signing of MoU. MoUs have helped management of PSEs to focus its efforts on improving the performance of the PSEs.

Profitability is measured with income and expenses. Income is money generated from the activities of the business. For example, if electricity is generated and sold, income is generated. However, money coming into the business from activities like borrowing money does not create income. This is simply a cash transaction between the business and the lender to generate cash for operating the business or buying assets.



Increasing profitability is one of the most important tasks of the managers. Managers constantly look for ways to change the business to improve profitability. These potential changes can be analyzed with a pro forma income statement or a Partial Budget. Partial budgeting allows you to assess the impact on profitability of a small or incremental change in the business before it is implemented.

A variety of Profitability Ratios can be used to assess the financial health of a business. These ratios, created from the income statement, can be compared with industry benchmarks. Also, Income Statement Trends can be tracked over a period of years to identify emerging problems. Profitability can be defined as either accounting profits or economic profits.

Accounting Profits (Net Income)

Accounting profits is an intermediate view of the viability of business. Although one year of losses may not permanently harm business, consecutive years of losses (or net income insufficient to cover living expenditures) may jeopardize the viability of the business.

Economic Profits

In addition to deducting business expenses, opportunity costs are also deducted when computing "economic profits". Opportunity costs relate to the money (net worth), labor and management ability. Opportunity cost is the investment returns given up by not having the money invested elsewhere and wages given up by not working elsewhere. These are deducted, along with ordinary business expenses, in calculating economic profit. Economic profits provide with a long-term perspective.

IV. LITERATURE REVIEW

Capacity Utilization and Profitability are the buzzwords in the Industrial Sector. S. Chandrasekhar gives the splendid analysis of evolution of policies which left their own impact on industrial capacity utilization through their planning decade and various plan formulations, strategies and industrial policy resolutions as well as the analysis of the nature and the extent of capacity under utilization in the Government financed medium, and major industry in Andhra Pradesh which have been doing its best to promote the industry within the framework of development, given the help and assistance of the financing institutions such as the affiliates of the Reserve Bank and other international financial institutions. The purpose is to reflect on the policy matters, given the experience. (2)

Vijay K. Seth has given an elaborate factorial analysis of the various attributes that contributes to building Capacity Utilization in the Industry. The author has not compromised to give details of the basics, by giving specification of the variables and the data base. It also describes the Inter-Temporal Trends in the rates of Capacity Utilization. And ultimately unveils the procedure for estimation of Capacity Utilization. (11)

Nitin Arora has laid down the theory about three benchmarking tools namely, Capacity Utilization (CU), Technical Efficiency (TE) and Total Factor Productivity (TFP) growth has been discussed along with the applications of these techniques to assess the performance of Indian Sugar industry. It is a complete package of the theory of advance mathematical and econometric techniques, and their applications in research using advance computer software. (1)

Thomas P. Klammer has propounded that a tool for measuring the effectiveness of capacity use allows operations and management employees to approach capacity from the same perspectives and presents a framework to utilize common measurements in the management of capacity. As budgets and time become increasingly tight, accurate capacity measurement and effective capacity usage become increasingly important. Capacity Measurement & Improvement identify appropriate capacity measurements, improve top-to-bottom communication of the company's capacity and make the most of your company's capacity utilization. (5)

C.J. MC Nair & Richard Vangermeersch says that capacity is the value creating ability of an organization, an ability that takes form in wide variety of resources. Capacity Utilization is always lying at the heart of the management process. The essence of the capacity utilization is that, everything that is not utilized to its fullest is a waste. Capacity is the core issue in cost system design and analysis; it defines the denominator of the cost equation. It gives detailed historic development Capacity Management. (7)

Upendra Kachru developed an understanding of the essential components of the planning and design process that will help in increasing the capacity of the organization. It describes how management can influence capacity designs using supply and demand management concepts. (4)

Howard G. Schaefer blends recent and historical economic data with economic theory to provide important benchmarks or rules of thumb that give both economists and non-economists enhanced understanding of unfolding economic data and their interrelationships. Through the matrix system, a disciplined approach is described for integrating readily available economic data into a comprehensive analysis without complex formulas. The extensive appendix of monthly key economic factors for 1978-1991 makes this an important reference source for economic and financial trend analysis. (10)

M. P. Srivastava describes that public sector undertakings have a pivotal role in bringing Economy of India in forefront in the global arena. It elaborates the pattern of growth of Investment in public sector under takings during first five-year plans. It also investigated the position, prospects, and problem of capacity utilization in India. It brings out that there have been limited studies in so far for the growth of investment, capacity utilization and profitability in public sector undertakings. (9)

Bishwa Nath Singh elaborates that large amount of public sector capital resources have been invested in the unproductive assets, which gives rise to more expenditure on maintenance and renewal, loss of interest on monies, locked up in unproductive assets, depreciation, obsolescence and security and what not. The problem of low capacity utilization is acute in capital intensive projects. (8)

V. RELATION BETWEEN CAPACITY UTILISATION AND PROFITABILITY

An enterprise measures the utilization of existing industrial capacity (i.e plant and equipment). This is measured as a percentage of total capacity. This research work propose to tap the aspect that can help in finding out how much over-capacity relative to profitable sales is building up in the enterprise.



It is assumed that the average rate of profit across the enterprise moves in a cycle with an up-phase of about ten years and similar down-phase. The main cause of this cycle is the cyclical movement of what Marx called the organic composition of capital, or the rise and fall in the value of constant capital (plant and equipment) relative to the value of labour power (wages and employee compensation). This is proposed to be the aspect of study under this research work.

VI. NEED/IMPORTANCE OF THE STUDY

This research comes against a background of a relatively robust developing economy, but continuing global political and economic energy crisis and instability in the market globally. Despite the general overall health of the Indian Economy, the public sector is under pressure for better capacity utilization from government level.

Stakeholders are therefore interested in issues such as:

(a) whether the planned outputs have been delivered and outcomes achieved, and

(b) whether this has been done in an efficient, economic, effective, and equitable manner.

Thus, the stakeholders will also be interested in maintaining the entity's capacity, as reflected, for example, in the entity's financial performance and financial position at year end. Public sector entities should, therefore, be highly transparent, and provide high quality information about all aspects of performance.

VII. STATEMENT OF THE RESEARCH

"Capacity Utilisation is a Magic Wand for Manufacturing PSU: with special reference to Power Sector PSU."

OBJECTIVES

It is during a decreased capacity utilisation, that a employees actually realizes the heartburn of being demotivated from his valued contribution of efforts towards the development and profitability of the company. But, that's what strategic anomalies, be it big or small, means – the act of swindling by some scheme or action.

The objectives of this proposed Research Work is:

1. To Study the Impact of Capacity Utilisation on profitability.
2. To sensitise the organisations and to create synergy for better Capacity Utilisation and increased profitability.
3. Aid the crusade for building up percentage of Capacity Utilisation in PSU .

VIII. HYPOTHESIS (ES)

Better Capacity Utilization prove to be important for gaining competitive edge in the market in terms of increasing profitability and maintain faith of the shareholders and also prove to be indispensable in reducing Legal hassles.

IX. RESEARCH METHODOLOGY

Ten years ago research on Capacity Utilisation was a small field. Currently, however, a large number of articles and

reports are published every month. This development partly reflects an increased public concern for the problem.

Furthermore, at least in the case of economics, it reflects internal changes in the analytical approaches and tools of the discipline combined with access to new data that has made such topic as a researchable topic.

In the Ministry, Regulatory Bodies and public sector organisations, such as NTPC, the records such as
Policy Documents, cabinet decisions etc.
Quarterly Reports,
Annual Progress/ feedback reports,
Management Information System (MIS) etc.
Project Monitoring Committee Reports
Compliance Reports etc.

are basically public document, the same would act as an important authentic source of information, in this research work. Therefore, the periodic data would be collected and analysed to study the trends.

Techniques of data collection –

For the collection of the required information, it sometimes becomes very necessary to use some especial techniques.

Here in the proposed techniques of data collection would be:

- 1: Public Documents.
- 2: Questionnaire
Sampling Method

Stratified Sampling would be most feasible for the proposed Research Work. Selected Departments would be the basis of the stratification in the proposed Research Work.

Scaling

For here the part of proposed data would be in the form of the Perception of Impact.

Scales based on Likert items are also commonly treated as interval scales in our field.

Analytical & Statistical Tools & Techniques

(i) Correlation and Regression Analysis:

Linear regressions analysis technique is useful to measuring the relationship between two characteristic or variables. As there is significant relationship between Capacity Utilisation and Profitability, same would be used here.

(ii) Here Mean would be the appropriate measure of central tendency.

(iii) Standard Deviation would be used as a measure of dispersion.

(iv) Hypothesis Testing: t- test, ANNOVA & SPSS would be used for statistical significance.

X. RESULTS & FINDINGS

Capacity utilisation plays an important role in the profitability of enterprise and vice-versa. Every enterprise needs to pay an extra attention on the improvement of capacity utilization. Proper planning, structured approach and strategic decision making can improve the capacity utilization.

A networked platform can be developed for improving the utilization of Industrial Capacities. It enables industrial



environment to revolutionize the way they have been deriving value from the Enterprise.

XI. RECOMMENDATIONS/ SUGGESTIONS/ CONCLUSIONS

Few methods which can improve the capacity utilization.

Boost Planned Manufacturing

It is always difficult to raise the capital to start the business. Raising capital from the market is always a time-consuming process and proper planning is essential. Planning aids Capacity Utilization. Enterprises struggle to adapt sudden changes in production, demand, manufacturing etc. If done from scratch, it always leads to efficiency at every stage. Planning and Scheduling are the two cornerstones for successful operations, including capacity utilization.

Sharing Capacity

Sharing capacity is emerging as a key way to maximize capacity utilization. It is a win-win situation for both the parties as they both get benefit out of it. It increases their chances to stay in the market with limited capital. One Enterprise can source desired industrial capacity from an owner, in which both owner and seekers are benefited. This not only improves utilization and avoids duplicity of investment, but also increase profitability and cash flow situations. Sharing capacity not only solves the problems of needful Enterprise but also helps to create an ecosystem where capacity owners and capacity seekers can seamlessly interact for better capacity utilization.

Maximizing utilization = Increasing profits

Enterprises should come up with innovative ideas to make the most of the available capacities. Enterprise need to study their capacity thoroughly to determine how it can be best utilized from a particular standpoint. As it is said for the full knowledge of the product is essential for starting the business, similarly tiny detail regarding the capacities of the Enterprises are sine quo non. Consideration of various situations and creation of innovative ideas to maximize the utilization and therefore, profits.

More importantly, the owner of the capacity is required to extend the reach of capacity of the enterprise in all possible ways. The context and capability of his or her industrial capacity may be relevant to business demand out there in a corner of the country or world. The capacity owner should take all possible efforts and deploy techniques to reach out to the demand.

Strategic Decision Making

Whenever an enterprise is planning to start anything new, strategic advancement is crucial for business development. Successful investors opt for businesses which has clear strategies in hand and strategic decisions have a really high influence on the future of the company. The strategy should focus on expanding business with low production rates for the maximum capital benefit, which in turn would make the business of enterprise consistent and provide more customer base.

Promotions Work Best

Capacity utilization goes hand in hand with product demand. An amateur enterprise or any established company should make constant efforts to improve the quality of their product and increase its public demand. Engaging in the promotional activities, introducing new ways by which product value can be increased, which in turn increases the production rate which leads to maximum capacity utilization.

Structured Approach

Initiation with small capacities should be done to balance the finances. Increase the capacity with an increase in product demand. Paying excessively for less production would hamper the profit rate of the organisation, as you always have a choice of increasing your space with an increase in demand. You should be flexible for fluctuations in demand.

Subcontracting

In subcontracting, the organisation take orders and produce for other businesses. In this way, there is maximum utilization of the capacity and an enterprise is making not just for its business but for other businesses as well. In a way subcontracting helps to maximize the capacity utilization and profit simultaneously.

XII. LIMITATIONS

For any kind of Research, it is necessary to obtain substantial and reliable data pertaining to the topic of research. The Research no doubt will suffer from certain limitations due to the nature of administrative and political structure of the country and its public sector companies.

Being a Developing country, India, tends to reflect certain embargos in the way of smooth, transparent and accountable economic, administrative & political structure. The policies and practices followed here still does not aid a free and fair research environment.

XIII. SCOPE FOR FURTHER RESEARCH

The focus of this study is to understand and draw up the Impact of Capacity Utilisation on the profitability of the leading corporate in the Energy Sector and bringing out the positive aspects of the Policy, Regulations & Recommended Practices.

However, there is no comprehensive & exhaustive study on the practical modalities for making 100% Capacity Utilisation in general, especially in the context of Public Companies. Such a study would require a very wide coverage of all public sector companies in India & their Capacity Utilisation & Profitability Initiatives over the years.

REFERENCES

- [1.] Arora Nitin, Capacity Utilization, Technical Efficiency and TFP Growth (2010), Pages. Nos.81, 110-16
- [2.] Chandrasekhar S., Capacity Utilization in Indian Industry (1990) Pg. No.14
- [3.] Jain P.K., Gupta Seema, Yadav Surendra, Public Sector Enterprises in India: The Impact of Disinvestment and Self Obligation on Financial Performance, (2014), Pages. Nos. 55, 61.



-
- [4.] Kachru Upendra, Production Operations Management (2007) Pg. No. 33,41.
- [5.] Klammer Thomas P., Capacity Measurement & Improvement (1996) Pg. No.32, 100.
- [6.] Nelson, Randy A, On the Measurement of Capacity Utilisation, Journal of Industrial Economics, Wiley Blackwell (1989), vol. 37 (3), Pages Nos. 273-86, March.
- [7.] Nair C.J. MC & Vangermeersch Richard, Total Capacity Management, Optimizing at the Operational, Tactical and Strategic Levels (1998) Pages. Nos.11, 14-20
- [8.] Singh Bishwa Nath, Public Enterprise in Theory and Practice (1991) Pg. No.6, 12.
- [9.] Srivastava M. P. Capacity Utilisation and Cost of Production (1992) Pg. No.45-48.
- [10.] Schaefer Howard G., Economic Trends Analysis for Executives and Investors (1993) Pg. No.17.
- [11.] Seth Vijay K., Capacity Utilisation in Industries (1999) Pg. No. 76.
- [12.] Sivanagaraju S, Reddy Balasubba M, Srilatha D, Generation & Utilization of Electrical Energy (2010) Pg. No. 79
- [13.] Singh A.B. , Public Sector Reforms in India (2010) Pg No. 31
- [14.] Public Enterprise Survey 2014-15 a publication of Department of Public Enterprise, Vol I
- [15.] Electricity Act 2003
- [16.] Economic Survey 2014-15 Vol II a publication of Department of Economic Affairs Pg. No. 103
- [17.] www.dpe.nic.in
- [18.] www.dpemou.nic.in
- [19.] www.ntpc.co.in
- [20.] www.powermin.nic.in
- [21.] www.finmin.nic.in
- [22.] www.indiabudget.nic.in
- [23.] www.ipeindia.org.in
- [24.] www.iimahd.ernet.in/library/
- [25.] www.capitaline.com