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Total Productivity Management in Small Industries

Ghassem FARAJPOUR-KHANAPOSHTANI[1,*], Seyyed Iman HAYATI[2]

[1]*Professor assistant in Department of Industrial Engineering, Islamic Azad University, Parand Branch, Tehran,iran*

[2]*Department of Industrial Engineering graduate student jumping Tehran*

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Abstract. The importance of small businesses and SME's has been well established in the literature of the world economy. Thus, both industrialized and developing countries, development, support of small businesses as part and parcel of their productivity strategies have. Small industries are a major driver of employment, economic growth and productivity. About 80% of all companies in the world are less than 10 cases of human resources, so 95% of industries in the UK, Spain and Finland and 94 %, in America 79 % component industries are small and micro enterprises. In Iran, about 92 percent of small businesses have formed companies which are now 4 1% of the labor force to employment. In this article, after mentioning the definition of small industries, productivity management and PD CTPM role, the importance of productivity in small industries with comprehensive modeling viewpoint of productivity in small industries of Japan paid And the expression of programs to improve the productivity of small industries and comprehensive strategy for the management of their productivity.

Keywords: Small business, SME, productivity, TPM, comprehensive management,CTPM, small industrial

1. INTRODUCTION

200-year history of the industry into a new era, industrial era, the era of information and communication, and enhance productivity growth is the result of contemporary transnational The most prominent example of the use of automation and use of robots in production alongside the new system of management. Over the past 15 years to increase productivity in the world is 45 times This increase was mainly the result of a miraculous improvement in management systems and scientific research and economic policies in industrialized countries is correct. Economic growth depends on the rate of productivity growth of their communities. Experimental studies in developed countries show The importance of productivity as a result of the development of software for the management of the partnership and increase the quantity of labor and capital in the production process has been. Low level of productivity that is characteristic of most of the less developed Of factors affecting the productivity of the Some of these factors are beyond the control of communities and some outs and control. Precisely why today, all countries are trying to achieve improvements in productivity This means that they consume less resources to achieve greater levels of national production Because the country's per capita income and productivity index is a direct relationship.

Over the past two decades, the need for comprehensive management of the development of productivity and efficiency in organizations is of great importance. Broad-based productivity management programs and strategic mindset, proper attention to the motivation of human resources, improve their skills, retraining and education for them Creating the opportunity for creativity and talent in the organization, increase in research and development, the use of science in governance and improve product quality, small industries, In order to establish a

*Corresponding author. *Email address: ghfarajpour44@gmail.com*

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system for measuring, evaluating, planning and productivity improvement is the inclusion of small industries The manager can detect problems and solve complex problems the industry based on the information you need.

2. DEFINITION OF SMALL INDUSTRIES

Small industries definition of small industries or among countries and regions of the world is very different, In fact, economic and industrial conditions prevailing in each country, which represents a small industry of the country. Some of the criteria commonly used Drtryf small industries, including Number of employees, assets, sales volume and production capacity The most common criteria for the definition of small industries, the number of people employed in this sector of the industry.

Small industries in the industrial units refers That workers under 50 are employed directly. In Iran, about 92 percent of firms and small industries to manufacturing firms The share of industrial employment and 41% of small businesses in the country And 25% of investments in this sector are included in industry. By definition in Iran About 80% of all firms in the world, small industries and enterprises, micro component industry.

Table 1.

Row	Name of country	The share of small industries in the manufacturing industry (percent)	The share of exports in total exports of small industries (percent)	Share of employment in small industries in total employment (percent)	Small businesses in the industrial sector (percent)
1	Japan	89	52	95	33
2	Taiwan	97	67	98	45
3	India	79	55	82	40
4	Turkey	90	63	79	37
5	**Iran**	**92**	**25**	**41**	**25**
6	Singapore	94	90	71	59
7	Malaysia	93	44	59	52
8	South Korea	73	48	58	48

Looking at Table 1, we find Given that 92% of the country's industrial sector and manufacturing industry are small But in comparison to industrialized and developing countries in terms of employment, value added and exports of small industries and competitors from other countries is One of the main reasons for this lack of productivity for small industrial units.

3. JAPANESE 'PRODUCTIVITY

Among the countries mentioned above are selected Japan The model was implemented in the country in the field of comprehensive productivity management in small industries Refresh Topics for the industry, especially small industries in Iran and Japan during a period of 40 years (1970 onwards) was started And two Asian countries and a population of approximately the same But Japan's policies and decisions it makes overtaking other competitors catch. Productivity in Japan, national and global issues, especially in small industries is And productivity has become pervasive in the cultur, Issue in Iran for allegedly being small traditional management and industry have been neglected And time management techniques in each direction But in Japan as a historical approach, Strategies for improving productivity, as well as the TQC and TQM. According to Professor Sasaki of Japan Soke professor in management, Regardless of quality and waste reduction, productivity does not increase. It can

improve the quality and competitiveness in the market can be raised. Thus reducing losses in productivity formula is entered. The Japanese attitude to increase the productivity of small industries to the quality of labor, management and other factors of production, which are components of the cost, according to This approach leads to a historical approach kaizen and total quality control.

4. THE NEED FOR TOTAL PRODUCTIVITY MANAGEMENT IN SMALL INDUSTRIES

Today's world is very different from the world in the last 5 years or even 5 minutes ago. Development of electronic communications and satellite based thinking, Attitude, how to do things, negotiation techniques, games, shopping, investment and overall lifestyle of the past Many developments have made it That these changes are still ongoing. Technology in general And information technology in particular are growing This has led, Significantly change the lives of people around the world. The high-speed global communications, Benefits and risks to communities have followed.

Some of the important factors affecting the firms and small industries That existed not in the past decade Today, the most effective and the fate of small firms and industries affected These include:

1. Integration and communication in the world
2. High-speed global communications
3. The change in the balance of economic power
4. Increasing importance of small firms and industries in the global market
5. Environmental issues and sustainable development

5. PRODUCTIVITY INDEXES INCLUSIVE

Productivity index is inclusive Multiplying the total productivity index The index of non-palpable. This indicator measures the productivity of the most complex The concept of productivity relative to what is most prevalent, Broadens And qualitative factors appropriate to the needs of the consumer Or in connection with the Company's view Product quality, production scheduling and quality of the company's contribution covers.

Research shows that about 80% of the indicators as Productivity index for evaluating the performance of companies in Iran are used, Substandard and not related to any of the above indicators of productivity.

6. PRODUCTIVITY COMPREHENSIVE PERSPECTIVE ON SMALL INDUSTRIES

Backed by a comprehensive productivity management, Productivity is inclusive perspective Which relies on the efficiency. This model is an imitation of Japan To explain the productivity of small industries in Iran.

Productivity is the ongoing process Four stages are related to each other:

1. Measure
2. Assessment
3. Planning

4. Improvement

The next round of productivity can seem In fact, according to a later time, Is three-dimensional That it can be called circuit efficiency The incorporation of the important issues of small industries.

6.1. The measure

The first round of productivity is measured. Firms and small industries to improve the efficiency of each unit shall be measured from the start. No measure performance And without a centralized, systematic and analytical Improving the efficiency of small industries are not reached.

Vision Surround productivity in small industries, After all improvements on the overall productivity measurement system, will be known.

6.2. The Assessment

One of the unique characteristics of pervasive productivity, Its ability to provide total and partial productivity indicators at the level of the firm, and is operating at low levels. For example, in a small part-making factory, Productivity index can be in the product, Administrative level, line level or workshop discussed. The operating unit Product, workshops and industrial units is level.

In fact, overall productivity can Usable in any firm or industry is small. Industrial units of manpower or equipment, Equipment, raw materials and energy use, Dimensions can be local, national and international multi-million dollar investment, or even become a member.

6.2.1. Assessment indices

To measure and evaluate the performance of each organization(Including manufacturers of goods or services) Various different criteria and indicators are used. Some of the more common performance evaluation criteria are as follows:

Effectiveness, efficiency, innovation, flexibility and quality of work life.

Test the effectiveness of the response to such questions is clear that: To achieve the objective of the activity is done right? Do you have correctly diagnosed the problems we try to solve them come on; The deadline to achieve the organization's goals? O Access to predetermined targets in each organization, The efficacy of each of the shows.

Efficiency in performing the work of the organization concerned. The decisions to reduce costs, increase productivity and improve product quality are made. Efficiency is the ratio of output to standard output.

Innovation of products and production processes of an organization to adapt to the changing needs and new customer demand, technological changes and new construction called Mhsvalat. Innovation in order to meet the evolving needs of customers or creating new demand and gain more market share compared to its competitors is done.

Flexibility is the ability to react and adapt to changes in the production system of the needed type, composition and quantity of the product is said.

Quality of work life that is related to this topic The extent to safety in the workplace, job security, nurturing talented employees and enhance their skills in various ways In other words, their job satisfaction and work environment is capable of.

Another indicator used to measure performance is profit organizations, The rate of profit on capital and sales While the administrators of non-profit organizations based on the quantity and value of production is measured against the cost of their production. Profitability is a function of income and expenses. Depends on the price and quantity of product sales revenues. While cost is a function of the inputs used in the production of their resources.

Two major factors that management decisions are right to consider include: productivity and quality.

Productivity is the organization responsible for a certain amount of product to what proportion of the resources you use the Lydians. The degree of compliance with customers' needs and design the product according to the product. Decisions that managers in the use of inputs and production processes are associated with On the productivity, quality and degree of influence the amount of profit.

6.3. Planning stage

Mechanization or automation of a way to increase productivity. The new equipment in the industry, we see that Hundreds of people are doing the work, This means that the workforce is reduced And what it might mean a large or a small industrial sector and wisdom become The scarce human resources are freed for use in other tasks. Computerization of archived data, process and methods of work, the source of significant improvement in this respect are All of which are very effective in improving productivity. Japan plans based on inputs or resources. That is, in the first instance to see what resources and data And then specify the expected outputs and targets.

6.4. The improvement

Countries to attend the international scene can find a strong presence The use of factors of production and service in the state is competitive with other countries. Looking at the world's most successful small industries we find that These countries need to manpower costs as the most important factor of production that Raise productivity, creates a system that are used in all social classes.

Productivity at the time realized that All manufacturing sectors, community and service to the use of an appropriate system productivity haveUsually, the legislator could pave the way for the rise of productivity And human factors in the evolution of their efforts.

Low productivity in organizations, companies and institutions are different due to various factors. Corresponding to these different ways are there to solve problems. All systematic and structured efforts to eliminate or reduce the toll of materials, equipment, human or incorrect interaction between them, System is said to improve productivity. Improving system is classified into three groups:

-Systems That focuses on eliminating or reducing the losses due to machine materials.

-Systems That focuses on eliminating or reducing the toll of human performance.

-Systems That the elimination or reduction of losses due to poor interaction between man, machine and material focus.

The first hardware-based systems, The second group of software systems, human-centered And the third group called axis system software.

To improve productivity and foremost have a good understanding of the factors affecting productivity. Japanese Nakaymay believes, factors affecting the efficiency of two types:

1. The short-term factors.
2. Long-term factors.

Short-term changes in productivity are often the motivation for working personnel And improve current systems and workflows And changes in the work force and business fluctuations depends.

Types of long-term factors affecting productivity include:

1. The creation and development of new products
2. The introduction of new production methods
3. discovery of new resources
4. Find new marketing channels
5. rational the economic structure and efficiency

In one of the reports reviewed by the ministry of labor productivity has been released in Japan, Factors affecting productivity is classified into three categories:

1. The distribution of equipment and personnel, considering the climate, the geographical distribution of raw materials
2. Human resources and workforce skills such as management and employee relations, social and psychological conditions of work, trade union activity
3. Quality materials such as raw material quality, location of industrial units and transport, erosion and loss of machinery and tools

7. PRODUCTIVITY IMPROVEMENT PROGRAMS

When the conditions for implementation of the productivity of the staff came to the knowledge, The firm will examine the implementation of improvement programs. Small industries due to its high flexibility and adapt to external conditions and environment Can quickly convert threats into opportunities Thus efficiency programs simultaneously at all levels of small industries Including product quality, administrative and sales department and the workshop forward.

In the early stages, careful monitoring is necessary to identify and overcome some of the problems. Productivity improvement program must regularly step by step to determine a timeframe for implementation. If the aim of raising productivity through quality control, Programs will require the following:

1. Announced support for high-level managers
2. Formed a steering committee
3. Started a program to demonstrate the importance and the need for staff training.
4. Invite volunteers for committees

5. And still the all-round education
6. Providing opportunities for knowledge management
7. And known members of the public

8. UNIQUE CHARACTERISTICS OF TOTAL PRODUCTIVITY MANAGEMENT (TPM)

8.1. Can be used in small industries

Total productivity management, systematic approach that Need to measure and monitor changes in overall productivity and operational parts and small industries used. This unique advantage systems, Total productivity management Which can also be an indicator of the efficiency of the whole and the part of the firm measured. Because productivity is pervasive in nature as well as large and small can be used Can help to identify the strengths and weaknesses of the firm And the futuristic aspect. This means that you can determine what specific resources or of certain areas of the board will not work effectively and efficiently In which case it can have an adverse impact on the efficiency of industrial units in the future.

8.2. Recall

TPM, whether for-profit or non-profit organizations can be used. Included in the manufacturing and service industries and small firms Including insurance companies, retailers, food manufacturers, consulting firms and industrial In each of the firm's resources are available. The concept of functional and operational TPM of its use possible.

9. USE STRATEGY TPM OF SMALL INDUSTRIES

Comprehensive strategy for the TPM as an instrument to measure productivity measure used, In four of the following must be done:

9.1. The first level

In this situation, the productivity of the firm's breakeven review. If the total productivity in specific periods exceed the breakeven, The second level of analysis to do.

9.2. The second level

The curve of the total productivity of the head to head for each unit are operational. For the operating unit to the total productivity is below breakeven, The third step is to do the analysis.

9.3. The third level

The partial productivity indicators for all operational units to the total productivity is below breakeven analysis we do. In practice, one or more partial productivity index is declining.

9.4. The fourth level

Resources and inputs in relation to their productivity through the use of our industrial engineering analysis. This strategy is based on the principle of management by exception that in itself will affect the overall efficiency used.

10.SUPER POWER TPM

Comprehensive measure of TPM in small industries could be improved. TPM has advantages over the use of CTPM. CTPM model is very complex, comprehensive, practical and affordable for organizations of any type or size of any mission.

11.CTPM USE IN SMALL INDUSTRIES

CTPM both in industry and in small service organizations should be used .Every company can start first with TPM And when assessing the efficiency of the company's system for 1 to 2 years to reach maturity Then the CTPM progress. Another method is the use of CTPM the beginning. Both methods work well. Fortunately, because CTPM is nothing but spread TPM, It's very easy to move from TPM to the CTPM. CTPM major advantages over other systems is the efficiency as follows:

1. CTPM its integrity. All inputs and outputs are tangible and intangibles to consider.
2. CTPM, the TPM specification are considered together Which includes all of the inputs and outputs of the tangible ways to measure and calculate the quality. So that internal and external factors affecting the firm directly or indirectly, are considered.
3. For the measurement of intangibles, CTPM factors associated with the industry in addition to the firm's product quality and customer satisfaction are considered.
4. CTPM show how a firm's profitability is affected by administrative measures are in addition to other activities. The CTPM impact of certain decisions on strategic planning in the past and had to be taken to the productivity of the organization considers. The CTPM can be used as the main tool used for planning and strategic management.
5. CTPM-based management tool for improvement as regards the exceptions to some sources. Some time management can pay more attention to some issues And obtain certain tactical decisions. CTPM helps to process such decisions. CTPM powerful tool for the design and adoption of appropriate tactics of the organization.
6. Decisions relating to the management of technology, especially the technology is expensive, CTPM can select and transfer of appropriate technology to be used. So that the movement of high-tech technology in a gentle process for the organization possible.
7. The target of interest can be done using CTPM even short periods. PM, as part of CTPM means for connection to overall productivity gains are.
8. Because the results can be CTPM strategies and decisions of all managers at all levels to reflect the good, Therefore a valuable tool for coordination and teamwork between different levels of managers.
9. The results and information from Total Quality Management, Reengineering and comparative index and guide enterprises and other concepts, as well as their impact on profitability, through CTPM model is used for long-term planning. In particular, the activities of international organizations.
10. The allocation of resources and funding agencies Can be achieved through CTPM model according to the analysis of performance, products of non-palpable, tangible factors, as appropriate.

So CTPM very powerful tool for management industry.

11.EIGHT PROPOSALS FOR COMPREHENSIVE UTILIZATION OF SMALL INDUSTRIES

The debate about the eight basic point Improve the productivity of small industries in the world. Managers who want to increase your company's productivity These points should be carefully considered And to pursue this matter further. These points are addressed to managers of industrial units because they are the main lever of productivity.

1. to-five-year long-term planning, not for months or years
2. Be satisfied with the quality of their goods
3. A system for the production process to make a statistical quality control And suppliers of raw materials also ask this, Even if you'll incur more expenses in the short term
4. Keep a few supplies related materials
5. Always ask yourself this question: Are the problems in the production of a specific part or all of the production process?
6. Dealing with the problem: Always try to deal with issues close to their production because thinking about it will be better and easier.
7. Sense question: Director of dealing with the question of how serious is close to that feeling. Because the feeling is that the manager realizes Where a serious risk that the system has occurred.
8. Understanding the Problem: After the stage manager can now understand the problem arisen in the way of productivity And know what parts of the production system may harm her. The principal point to the experience of analyzing and understanding the problem and the impact it has on other parts of the system. The idea is to open the minds of current solutions lists After evaluating the rational and logical, A better option is chosen to suit the conditions.

12.CONCLUSION

Productivity is not a new concept. Dates back to the birth of the human. But it is known today is about two centuries before the industrial revolution. Productivity is subject to comprehensive In every society there are different levels. Improving productivity is something that should be included in all levels of individuals, families, organizations and countries considered. Productivity, technical, economic and cultural In partnership with the community, employees, management and organizations with their environment is made. Today, those in developed countries as the progress is not seen nothing but increase productivity. If the productivity and maintain consistency with environmental and ethical foundations of the family and the community, Will cause the prosperity of nations. Developed countries with 24 percent of the world's population, 85% of world wealth at their disposal.

Increasing productivity in the country through the efforts of all people, of all organizations, especially families and all members of a nation will be possible. Productivity growth is limited by the high command. Governments, the media and the public to provide appropriate policy has largely been active in the movement to increase productivity, however.

Due to limited resources, population growth, Needs and wants of human growth and intense competition in the global economy, Regardless of the strategy can not improve productivity, Long-term economic growth and survival of continually enjoyed internationally competitive economy.

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