MANAGEMENT FOR PRODUCTIVITY IN SMEs AND ENTREPRENEURSHIP ACTIVITY

Taucean, I.M.; Taroata, A. & Tamasila M.

Abstract: This paper proposes and emphasizes the need to analyze and benchmark the productivity for SMEs (Small and Medium Enterprises) and entrepreneurship activity, from the point of view of management functions/roles and from enterprise executive functions. Advances in productivity, that is the ability to produce more, in terms of volume and quality, with the same or less input, are a significant source of competitiveness for enterprises.

It is necessary to analyze productivity from these points of view and give some guiding lines for the right way of measuring and benchmarking the productivity for SMEs and entrepreneurship. These way enterprises can know and evaluate their level of competitiveness and can adopt decisions and strategies to perform better.

Key words: productivity, entrepreneurship, SME, benchmarking, IT.

1. DEFINITIONS. RESEARCH AREA

Productivity in economics is the ratio of what is produced to what is required to produce \[^1\]. Productivity is the measure on production efficiency.

While productivity is the amount of output produced relative to the amount of resources (time and money) that go into the production, efficiency is the value of output relative to the cost of inputs used. Productivity improves when the quantity of output increases relative to the quantity of inputs used. Efficiency improves, when the cost of inputs used is reduced relative the value of output. A change in the price of inputs might lead a firm to change the mix of inputs used, in order to reduce the cost of inputs used, and improve efficiency, without actually increasing the quantity of output relative the quantity of inputs. A change in technology, however, might allow a firm to increase output with a given quantity of inputs; such an increase in productivity would be more technically efficient, but might not reflect any change in efficiency.

Companies can increase productivity in a variety of ways. The most obvious methods involve automation and computerization which minimize the tasks that must be performed by employees. Recently, less obvious techniques are being employed that involve ergonomic design and worker comfort.

Labour productivity is generally speaking held to be the same as the “average product of labour” (average output per worker or per worker-hour, an output which could be measured in physical terms or in price terms).

However, some aspects of labour productivity may be very difficult to measure exactly, or in an unbiased way, such as:
- the intensity of labour-effort, and the quality of labour effort generally;
- the creative activity involved in producing technical innovations;
- the relative efficiency gains resulting from different systems of management, organization, co-ordination or engineering;
- the productive effects of some forms of labour on other forms of labour.

One important reason is that these aspects of productivity refer mainly to its qualitative, rather than quantitative,
dimensions. We might be able to observe definite increases in output, even though we do not know what those increases should be attributed to. This insight becomes particularly important when a large part of what is produced in an economy consists of services. Managers and entrepreneurs may be very preoccupied with the productivity of employees, but the productivity gains of management itself might be very difficult to prove.

2. PRODUCTIVITY MEASUREMENT

Productivity is the relationship between output of goods and services and the inputs of resources used in the production process, with the relationship usually expressed in ratio form. The ratios may relate to the national/UE/global economy, to an individual industry, or to a company (SMEs especially, BSU Business Strategic Unit and entrepreneurs, see figure 1).

Productivity measures are sub-divided into partial and total factor or multi-factor productivity measures [2]. The former are defined as the relationship between output and one input, such as labour or capital, while the latter represents the relationship between output and an index of two or more inputs.

Productivity is determined by a number of factors, including the quality and availability of natural resources, industrial structure and inter-sectors shifts, capital accumulation, the rate of technological progress, quality of human resources, the macroeconomic environment, and the microeconomic environment.

The production function depicts production performance and productivity is the measure of it.

By help of the production function, it is possible to describe simply the mechanism of economic growth. Economic growth is a production increase achieved by an economic community. It is usually expressed as an annual growth percentage depicting (real) growth of the national product. Economic growth is created by two factors: increase in production input and an increase in productivity.

Accordingly, an increase in productivity is characterized by a shift of the production function and a consequent change to the output/input relation [1]. The formula of total productivity is (1):

\[ \text{Productivity} = \frac{\text{Output}}{\text{Input}} \]  

where Q = Quantity.

According to this formula, changes in input and output have to be measured inclusive of both quantitative and qualitative changes. In practice, quantitative and qualitative changes take place when relative quantities and relative prices of different input and output factors alter. In order to accentuate qualitative changes in output and input, the formula of total productivity shall be written as follows (2):

\[ \text{Productivity} = \frac{\text{Output} \text{ and Quality}}{\text{Input} \text{ and Quality}} \]  

Managerial control ratio systems are composed of single measures which are interpreted in parallel with other measures related to the subject.

---

Fig. 1. Productivity models in a vertical integration
### Table 1. Basic measure types [1]

<table>
<thead>
<tr>
<th>Type of measure</th>
<th>Variables to be measured</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical</td>
<td>Quantity</td>
</tr>
<tr>
<td>Fixed price value</td>
<td>Quantity and quality</td>
</tr>
<tr>
<td>Nominal price value</td>
<td>Quantity and quality and distribution</td>
</tr>
</tbody>
</table>

Ratios may be related to any success factor of the area of responsibility, such as profitability, quality, position on the market, etc. Ratios may be combined to form one whole using simple rules, hence, creating a key figure system.

The measures of partial productivity are physical measures, nominal price value measures and fixed price value measures. These measures differ from one another by the variables they measure and by the variables excluded from measurements. By excluding variables from measurement makes it possible to better focus the measurement on a given variable, yet, this means a more narrow approach. The table 1 above was compiled to compare the basic types of measurement.

The total production is measured as the sum of value added whereas in business it is measured by the total output value. When the output is calculated by the value added, all purchase inputs and their productivity impacts are excluded from the examination (3).

\[
Output = f(Capital, Labour) \quad (3)
\]

In business, production is measured by the gross value of production, and in addition to the producer’s own inputs (capital and labour) productivity analysis comprises all purchase inputs such as raw-materials, outsourcing services, supplies, components, etc. Accordingly, it is possible to measure the total productivity in business which implies absolute consideration of all inputs. It is clear that productivity measurement in business gives a more accurate result because it analyses all the inputs used in production.

The method KLEMSI takes all production inputs into consideration (K = capital, L = labour, E = energy, M = materials, S = services and I = Information, see EU KLEMS).

The **problem of aggregating or combining** the output and inputs is purely measurement technical, and it is caused by the fixed grouping of the items. There is no fixed grouping of items in the business production model, neither for inputs nor for products, but both inputs and products are present in calculations.

### 3. COMPETITIVENESS VERSUS PRODUCTIVITY

The importance for a country of achieving international competitiveness is widely considered a goal of public policy. From the point of view of a firm or even a sector, international competitiveness may be a useful concept as the competitive struggle can represent a zero-sum game where the losses of one firm or sector are offset by the gains of another.

The concept of productivity is increasingly being recognized as more pertinent than competitiveness. Indeed, some economists argue that the whole notion of a "competitive nation" should be abandoned as a term having much meaning for economic prosperity. For example, Michael Porter [3] argues that the principal economic goal of a nation is to produce a high and rising standard of living for its citizens. The ability to do so depends not on the amorphous notion of "competitiveness" but on the productivity with which a nation's resources (labor and capital) are employed. Thus the only meaningful concept of competitiveness at the national level is national productivity.

### 4. ENTREPRENEURSHIP

Entrepreneurship is the practice of starting new organizations or revitalizing mature organizations, particularly new businesses generally in response to identified
opportunities. Entrepreneurship is often a difficult undertaking, as a vast majority of new businesses fail. Entrepreneurship ranges in scale from solo projects (even involving the entrepreneur only part-time) to major undertakings creating many job opportunities. Many kinds of organizations now exist to support would-be entrepreneurs, including specialized government agencies, business incubators, science parks etc.

For Peter Drucker, entrepreneurship is about taking risk. The behavior of the entrepreneur reflects a kind of person willing to put his or her career and financial security on the line and take risks in the name of an idea, spending much time as well as capital on an uncertain venture. The acts of entrepreneurship are often associated with true uncertainty, particularly when it involves bringing something really novel to the world, whose market never exists.

Entrepreneurs can create customers or buyers. This makes entrepreneurs different from ordinary businessmen who only perform traditional functions of management like planning, organization, and coordination.

Due to their innovative nature, they persist on discovering new sources of materials to improve their enterprises. In business, those who can develop new sources of materials enjoy a comparative advantage in terms of supply, cost and quality.

Every successful entrepreneur brings about benefits not only for himself/herself but for the municipality, region or country as a whole. The benefits that can be derived from entrepreneurial activities are as follows:

1. Encouragement of the processing of local materials into finished goods for domestic consumption as well as for export
2. Income generation and increased economic growth
3. More goods and services available
4. Development of new markets

An Internet entrepreneur is an entrepreneur that engages in business on the internet and helps to shape the future of business on the internet by being an innovator.

An entrepreneur is a breed of entrepreneur who focuses his entrepreneurial activity exclusively on the Internet.

On the other spectrum lies examples of small business owners who apply the tried and tested processes developed by the highest achievers, and shows how any one can apply these processes to create their own business opportunity.

5. MODELS

From the point of view of management functions there should be productivity of decision, planning, organizing, coordinating and controlling (figure 2). Also, from the management roles concept there should be productivity in ten roles for managers and entrepreneurs which should be adapted to small and medium enterprises.

From the point of view of executive function of the small and medium enterprises, productivity should be focusing mainly on production and commercial functions, because other functions may be at minimum level or externalized (such as personnel, financial and accountability, research and development).

Fig. 2. Managerial functions connections for productivity
Productivity models for measuring productivity have some characteristics that should be taken into account when analyzing SMEs and entrepreneurship: model variables can differ; the ability to describe the specific production function; interpretations of the productivity at different levels; adjustability of the model to include SME and entrepreneurship; relationship between productivity and computers (IT).

SMEs have some specific key performance indicators that represent and measure their activity and which can be used to determine and analyze productivity, globally and partially. For entrepreneur and entrepreneurship activity there are also some specific factors and characteristics that influence productivity, at individual and organizational level (education, abilities, competences, skills etc.). Leaders from new generation have good instinct, presence of mind to exploit the opportunities, great courage to risk [6]. In a top of important people there are decision-makers (people with functions considered powerful), influencers (people without functions but with great influence over decision-makers), symbols (people considered symbols in their activity/domain) and businessmen [7]. In evaluation criteria could be career and social responsibility, notoriety, financial situation and others [8]. Although some theory says that it comes a time when entrepreneurs should let the business to be run by professional managers, Romanian reality has many examples of entrepreneurs that are also executives in the business that they started, and with successes [9].

There are Romanians brand build by local entrepreneurs with very high success. They were forced to find continuous solutions to differentiate from multinationals and state firms. Those who had the inspiration to invest also in branding had a winning decision. Some brands were so powerful that international player in that field bought them and continued to use the brand.

Value of the brand can be measured the same way as a tangible asset using Net Present Value (actualized cash-flows generated by the power of the brand in the market) [10].

**Business models**

There are several different models available for measuring productivity. A characteristic of the productivity measurement models that surpasses all the others is the ability to describe the production function. If the model can describe the production function, it is applicable to total productivity measurements. The productivity models based on the production function form rather a coherent entity in which differences in models are small. Based on the variables used in the productivity model suggested for measuring business, such models can be grouped into: productivity index models, PPPV models and PPPR models.

In 1955, Davis presented a productivity index model [11]. Based on Davis’ model several versions have been developed, yet, the basic solution is always the same. The only variable is productivity, which implies that the model can not be used for describing the production function.

In the PPPR model, the variables of profitability are productivity and price recovery. Only the productivity is a variable of the production function.

PPPV model is the following (4):

\[
\text{Profit} = f(\text{Productivity, Price, Volume})
\] (4)

Productivity and volume are the variables of a production function, and using them makes it is possible to describe the real process. A change in unit prices describes a change of production income distribution.

**6. THE PRODUCTIVITY PARADOX**

The productivity paradox refers to the link between productivity and computers. The service industries with the highest
proportion of computer investment in total investment tended to experience the worst total factor productivity growth! The explosion of computer power supposed to increase productivity growth!? Economists have labelled the “productivity paradox”. Experts’ opinions are divided [12]. Three basic hypotheses were advanced. Some argued that the benefits of information technology (IT) are already here, but are just not being captured by the statistical system. Others said to have patience, pointing out that there are inevitable lags associated with the emergence of the benefits of IT and these benefits are just around the corner. Still other believed that IT has been vastly oversold as a source of productivity improvement. From this last perspective, there is no productivity paradox as IT should not have been expected to result in substantial productivity improvement in the first place. But for many other task and activities, computers have limited potential to raise productivity as they do not fundamentally affect the nature of the production process.

7. CONCLUSIONS

The importance for a country/sector/enterprise of achieving international competitiveness is widely considered a goal of public policy. As we have seen here, some aspects of productivity may be very difficult to measure exactly, or in an unbiased way. So it is necessary to analyze productivity also from the point of view of management functions/roles and from enterprise executive functions and give some guiding lines for the right way of measuring and benchmarking the productivity especially for enterprises like SMEs and entrepreneurs, for business strategic units, work teams and individuals. This way these types of enterprises, that we focus on, can know and evaluate their level of competitiveness and can adopt decisions and strategies to perform better.

8. REFERENCES


9. ADDITIONAL DATA ABOUT AUTHORS

ILIE / MIHAI / TAUCEAN
Institution: “Politehnica” University of Timisoara, Management Department
E-mail address: ilie.taucean@mpt.upt.ro
Phone: 0040.744.703.894
Address: Faculty of Management in Production and Transportation, Str. Remus, nr. 14, Timisoara, jud. Timis, cod: 300191, Romania.