MARKETING PRODUCTIVITY: CONCEPTS, MEASUREMENTS, AND ITS APPLICATIONS IN JORDANIAN BUSINESS ORGANIZATIONS

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Abstract

The major purposes of this paper are to clarify the concept of marketing productivity, to provide an overview of its measurements, and to identify the measurement methods used in some Jordanian organizations.

The paper differentiates between productivity, profitability, and effectiveness which have been used interchangeably. Also it presents some productivity measurements by reviewing various measures of input and output. Some business organizations, in Jordan, were studied and found to be using traditional methods of productivity measurement.

1. Introduction

The concept of marketing productivity is often misused and misinterpreted. It means different things to different people. It has been used inerchangeably with such terms as profitability, efficiency, and effectiveness. For example, in Heaton's definition of productivity, such confusion was explicit, "... being productive means accomplishing or achieving. Productivity in service organizations involves both efficiency with which resources are used and the effectiveness of the services rendered." (Heaton, 1974). Also, Bucklin (1978) has mentioned Sevins (1965) definition of marketing productivity as an evidence of such confusion, "... in the present context, marketing productivity refers to the ratio of sales or net profits... to marketing costs... for a specific segment of the business."

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In spite of the great importance of the concept, little research has been done in the marketing context. Most of productivity studies can be found in other fields, such as production. This is due to the fact that the problems of concept clarification and adequacy of methods of marketing productivity measurements are not solved yet.

The purposes of this exploratory study are to shed light on the marketing productivity concept, to review various measures of it that has been suggested in the literature, and to investigate approaches to productivity measurement that are used by some Jordanian business organizations.

Productivity Defined

Several definitions of productivity are found in the literature. All of which, however, indicate that it is "... a ratio of outputs to inputs". The following definitions are examples:

- Productivity is measured "... in terms of the efficiency with which inputs are transformed into useful output within production process". (Cowling et al. 1981).
- It is "... an expression of the physical or real volume of goods and services related to the physical or real quantities of inputs" (Bucklin 1978).
- "... it refres to the output of sales (or profits) per input of marketing effort". (Dhalla 1977).
- "... it is a ratio of all outputs to all inputs." (Ingene 1982a).

Nature of Productivity

Productivity has been misused and misinterpreted by different groups of people. For example, in the poll that was managed by Louis Harris and Associates in 1972, the following results were found: "For modal respondent... the term was identified with production, which is only the numerator of the ratio", while " college - trained, professional, and executive respondents displayed similar degrees of ignorance" (National Commission on Productivity 1973). In order to understand the concept of productivity, it is useful to have a closer look at its characteristics. According to Beckman et al. (1973), these include:

1. Productivity is a ratio of output, amount of production, to the corresponding input of economic resources. This implies that there is a difference between productivity and production (output). Production is merely the numerator in this relationship. Therefore, the changes in GNP should not be attributed to changes in productivity. Rather, it is due to changes in production (or output).
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2. Productivity is basically a physical concept in that the units of output and units of input(s) are presumed to be expressed in physical terms. This does not mean, however, that productivity measures can be developed only for tangible products. Rather, productivity must be measured in terms of constant money value of goods and services (i.e., real product).

Productivity, Profitability, Efficiency, And Effectiveness

The terms productivity, profitability, efficiency, and effectiveness have been used to describe very similar phenomena and they have been used interchangeably. However, even these concepts are related, they are quite distinct. The following paragraphs are aimed at clarifying the differences between them.

Productivity and Profitability: Despite the fact that productivity and profitability concepts are different from each others, there is a strong relationship between them. Such a relationship, according to Bucklin (1978), can be derived from the productivity formula:

\[ \frac{O}{I} = \frac{S}{P_i} + \frac{C}{P_o} \]

Where,

\[ S = \text{measure of sales (in constant money value)} \]
\[ C = \text{measure of resource costs (in constant money value)} \]
\[ P_o = \text{price of output} \]
\[ P_i = \text{price of input} \]
\[ O = \text{desired measure of output} \]
\[ I = \text{desired measure of input} \]

From the above, it is clear that sales and costs of inputs are measured by using their prices. The reason for that, according to Bucklin (1978) is "because the outputs from tangible goods production typically include a mixed range of products, the counting of individual units is also not a feasible task except in unusual circumstances. Procedures are employed to derive arbitrary or proxy units of output, and use of this methodology is equally appropriate to marketing. It calls for the construction of properly weighted price indices of either the flow of products or marketing services and their use as deflators of pecuniary measures of output and inputs. Such price indicies, of course, measure the extent of change in prices from some arbitrarily selected base".

Now, to conclude the relationship between productivity and profitability, the above equation can be reorganized as follows (See, Bucklin, 1978)
\[ S/C = O/I \times P_i/P_o \]

Where \( S/C \) = level of profitability of the economic unit

\( O/I \) = Productivity

\( P_o/P_i \) = terms of trade (i.e., ratio of the prices at which an organization sells and buys).

From the above, it is clear that profitability and productivity are not the same thing, even there is a strong relationship between them.

**Productivity and Efficiency:** The concept of efficiency and its application to marketing have been of great interest to businessmen, economists, consumers, and government officials. Efficiency deals with the allocation of resources across alternative uses. It is achieved when the marginal productivity per unit of price is equated across all resources that contribute to the firm's output. (Achabal et al. 1984). This, of course, implies that efficiency only can be determined when all resources (inputs) are taken into consideration while productivity can be assessed by considering either one, or all, input(s). To explain, suppose that a certain organization is to assess the efficiency of salespeople and advertising. To do that, it must consider (and compare between) both variables and be sure that a high efficiency level is reached when an additional unit of money spent on salespeople brings about the same amount of output resulted from spending an additional unit of money on advertising. While productivity can be assessed by using either salespeople, or advertising separately (i.e., salespeople productivity or, advertising productivity), or collectively (i.e., promotional mix productivity).

**Productivity and Effectiveness:** The relation between effectiveness, productivity and efficiency can be readily recognized. However, being efficient does not mean effective. Efficiency refers to the organization's best use of its resources in order to achieve its strategy, but whether a given strategy is the "best" one is a different matter (Achabal et al. 1984).

Effectiveness refers to the selection of the best strategy (best alternative) from among many strategies (alternatives) that can lead to the achievement of the desired goal. For the sake of explanation, suppose that a certain organization is aiming at increasing its market share. To achieve that goal, many strategies may be available (e.g., pricing promotion, quality of product/service...). Selecting and using the strategy that maximizes the goal is referred to as "effectiveness". Achieving effectiveness needs best use of resources (i.e., efficiency). Therefore, efficiency is a precondition for effectiveness.
Maximizing the "market share" goal may require setting subgoals aimed at increasing productivity. These subgoals are such as increasing labor motivation, satisfaction, etc. that lead to higher productivity (Achable et al. 1984).

In conclusion, then, effectiveness may require higher productivity and efficiency.

**Productivity Measurement**

The earliest approach to productivity measurement was based on ratios of a measure or index of aggregate output divided by the observed quantity of single input, typically labor (Cowling and Stevenson 1981). These productivity ratios were usually normalized to some base year, resulting in a productivity index over time, and were used to measure aggregate productivity, that is, productivity for the entire economy.

Another, and a more recent, approach to the measurement of productivity is the cost-function model. This model represents a unique relationship between cost and given output and input prices. In other words, the model represents the relationship between total cost and output for a cost-minimizing firm facing competitive input markets.

The cost function can be used to relate such technological characteristics as scale economies, input substitution, and technical change to observed changes in total factor productivity.

Before getting into more details on productivity measures as existed in the marketing literature, it is useful to mention certain problems of measurement (Beckman et al. 1973):
1. A major problem arises from the intangible nature of output in marketing; such as services of buying, selling, financing, storage, and promoting.
2. A second major problem stems from the interrelationship of marketing activities with production. Since data are available on an institutional basis, distinction between market productivity and productivity of production is not clear.

**Productivity Measurement**

In measuring productivity, an attempt is made to relate output to some measure of input(s) that is (are) deemed primarily or partly responsible for the output.

The purpose of this section is to review, first, some output measures; then, input measures.
Output Measures

Six important concepts of marketing output are considered here. These include the following:

1. Quantity of goods marketed (physical units)
2. Functional units
3. Value added by marketing activities
4. Sales (in money value)
5. Customer satisfaction, and
6. Gross margin

Quantity of Products Marketed (Physical Units). This is a common approach for measuring marketing output. It can be used to identify maximum efficiency with minimum cost of marketing some physical products. It is clear that this approach does not take into consideration values created in the marketing process. It only considers the amount of marketing effort or cost expended per physical unit of product.

The physical output (various goods sold of a certain industry) are to be weighted (i.e., multiplied by the employee hours required to sell one unit of each good in some specified base period (Carey and Otto 1977). This is done to obtain an index for that industry. However, this is not a feasible option due to the lack of data on all goods of that industry and the difficulty of including services performed in selling the physical output.

Functional Units. This approach of measuring output is justified on the basis that marketing consists of various functions or services. For example the functions of selling and buying can be ascertained in terms of number of exchange transactions, storage, transportation in ton-miles, etc.

The limitations of this approach are clear, however. Transaction, for example, is not the same for all types of organizations. Besides, there are practical and conceptual difficulties when output is measured as the number of transactions performed (Ingene 1982b). Also, it would be difficult to develop specific units of measurement for some of the functions such as marketing information and research or risk taking.

This approach, however, is the most used basis for productivity studies within business firms (Beckman et al. 1973).
Value Added by Marketing. Value added, by itself, does not measure productivity. It merely measures true production, the creation of economic values within the marketing sector of the economy or within any enterprise in this sector, especially expressed in constant money value (Beckman et al. 1973).

Value added is measured by subtracting the cost of materials, supplies and containers, fuel, purchased energy and contract work from the total value of shipments.

The value added approach has its proponents and opponents. For example, Ofer (1973) has argued for using value added as the output measure; while Hall, et al. (1961) have argued against it.

Sales. An alternative approach is to use sales as the output measure. Sales is equivalent to physical units weighted by prices. These weights implicitly reflect different levels of service. In this respect, it has been argued that the use of money weights creates no great distortion in measuring labor productivity when labor costs are a high percentage of total costs (Ingene 1982 b). Sales can be measured in terms of sales per employee per hour, or time period (e.g., day, week).

Customer Satisfaction. Customer satisfaction, as a measure of the output of retailing activities has been suggested by some authors (e.g., Heaton 1997, Shaw 1978, and Ingene 1982 b). This measure has the problem of how accurately customer satisfaction can be assessed. For example, if an organization was a monopolist and the demand for its product was high: does that mean that customers are highly satisfied?

Gross Margin. More recently, work by Ingene (1984) contends that the best measure of output from the retail executive’s perspective is gross margin, since management is concerned with profit contribution.

Input Measures
Like output, input measures vary and selecting a method from among alternatives need some compromise. The two major approaches of measuring inputs include the following (Beckman et al. 1973):
1. Marketing costs, and
2. Traditional economic factors of production.

Marketing Cost. This is the most common approach to the measurement or evaluation of productivity in marketing costs, then are compared with some point of reference.
The marketing costs approach may be summarized by the following statement: "the lower the cost (input), the greater the productivity".

This approach is widely employed by businessmen for cost control (or efficiency control) purposes. Also, it has been used from a social point of view in regard to total marketing costs. For instance, high marketing productivity is socially viewed favorably as long as it enhances efficiency or creates maximum consumer satisfaction with minimum expenditures of time and resources. But, if achieving higher level of productivity leads to the occurrence of some social problems, such as unemployment (e.g., substituting capital for labor) or human dissatisfaction, then less productivity is more desirable.

**Economic Factors of Production.** The traditional economic factors of production include management, labor, land, and capital. Any or all of these can be used as the denominator (input) in the productivity formula. However, the most commonly used factor is labor (e.g., Steiner 1981; Ingene 1982a, b; Dubinsky 1984; and Ingene 1985). Management, also, has been suggested as a denominator of productivity formula by some authors (e.g., Peach and Oliver 1985; Ryan 1985). Land, as a factor of production, may be the major explanation for an increase in a given situation. For example, a change in the location of a retail store, or a relocation of a department within a department store may bring about substantial changes in sales per square foot of selling area (Beckman et al. 1973). A more recent research on this topic, however, focuses on floorspace productivity (e.g., Thurik 1986).

Capital, also, can be considered as denominator in the productivity formula. As a matter of fact, capital may enhance productivity.

According to Bucklin (1978), as technology improves, more output may be produced from a given set of resources. Ingene (1982 b) also believes that as the capital to labor ratio rises, labor productivity is generally enhanced because capital performs some of the work for labor. The introduction of technology in the retail sector, such as electronic cash registers and universal product codes, is a good example.

**The Study**

The present study is an exploratory one that aims at identifying the methods of measuring marketing productivity used by some Jordanian organizations. A judgement sample of six business organizations- (one service - organization and five production - organizations), who are believed to be interested in marketing, were selected for this study.
Interviews were conducted to identify the elements of both outputs and inputs used in measuring marketing productivity (see Appendix). Exhibit 1 summarizes the findings.

Discussion

Exhibit 1 represents the results of this exploratory study. None of the organizations interviewed seems to use the marketing productivity measurements. All of them use traditional (production) productivity measurement. For example, output items do not include marketing elements (e.g., functional units, value added by marketing, and customer satisfaction). Also, input items do not include any of the marketing activities, they only include labor or capital (i.e., factors of production).

Summary And Conclusion

The thrust of this paper has been to clarify the marketing productivity concept and to provide an overview of its measurements. The concept of productivity has been misused and misinterpreted by various groups. Productivity measurement techniques are still evolving and developing. There is no consensus as of what elements to be included in either output or input measures.

An attempt was made to identify the methods used in measuring marketing productivity in some business organizations in Jordan. All organizations interviewed were found to be using traditional, not marketing, measures of productivity. Traditional measures of productivity refer to production measures of productivity where concentration is on the factor (or factors) of production as an input measure rather than marketing activities (one or more of the 4Ps). This implies that we need to clarify and refine our techniques for marketing productivity measurement.
### Exhibit 1

**Elements Used in Measuring Marketing Productivity in Some Jordanian Business Organizations**

<table>
<thead>
<tr>
<th>Elements Used in Measurement</th>
<th>Type and Number of Organizations</th>
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<tr>
<td></td>
<td>Service</td>
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**A. Outputs**

- Quantity of goods (services) - 2
- Functional Units -
- Value added by marketing -
- Sales (in money value) 1 2
- Customer satisfaction -
- Gross margin - 1

**B. Inputs**

1. Marketing Costs (Activites)
   - Promotional activities -
   - warehousing -
   - buying and selling -

2. Economic factors (Factors of Production)
   - Number of labor 1 4
   - Floor Space -
   - Capital - 1
Appendix

Dear Sirs,

I am conducting a research on methods of measuring marketing productivity in Jordanian business organizations. And I will be grateful if you cooperate and answer all questions in the attached questionnaire. I assure you that all information you provide will be kept confidential and will be used for scientific purposes only.

Thank you very much.

Sincerely Yours,

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Questionnaire

As you know, productivity is measured by using the following formula:

Productivity = Outputs / inputs

Please Check (√), below, the items in both outputs and inputs you use when measuring marketing productivity.

First: Outputs
1. Quantity of goods/services
2. Sales volume (in money)
3. Customer satisfaction
4. Value added by marketing activities
5. Functional units
6. Gross margin
7. Other(s), (please specify)

Second: Inputs
1. Promotional activities
2. Warehousing and transportation
3. Buying and selling
4. Number of labor units
5. Floor space
6. Capital

Third: If you like to add other information or comments, please use the accompanied blank page.
References


______________, "Labor Productivity in Retailing: What Do we Know and How Do We Know It?", Journal of Marketing, Fall 1985: 99-106.


