Applied Economics

Socioeconomic Factors Affecting Business and Industry: Production Theory

ACCOUNTANCY, BUSINESS AND MANAGEMENT

Applied Economics
Quarter 4 – Self-Learning Module 11: Socioeconomic Factors Affecting Business and Industry: Production Theory
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Applied Economics
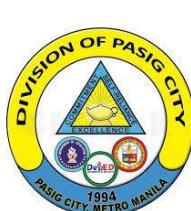
Socioeconomic Factors Affecting Business and Industry: Production Theory

Introductory Message
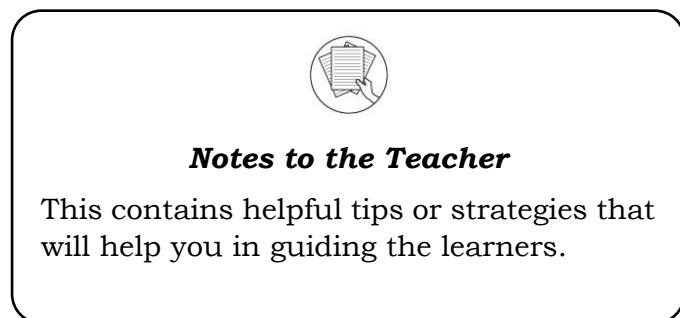
For the facilitator:

Welcome to the Senior High School – Applied Economics Self Learning Module on Socioeconomic Factors Affecting Business and Industry: Production Theory!
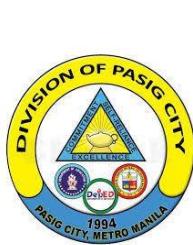
This Self-Learning Module was collaboratively designed, developed and reviewed by educators from the Schools Division Office of Pasig City headed by its Officer-in-Charge Schools Division Superintendent, Ma. Evalou Concepcion A. Agustin, in partnership with the City Government of Pasig through its mayor, Honorable Victor Ma. Regis N. Sotto. The writers utilized the standards set by the K to 12 Curriculum using the Most Essential Learning Competencies (MELC) in developing this instructional resource.

This learning material hopes to engage the learners in guided and independent learning activities at their own pace and time. Further, this also aims to help learners acquire the needed 21st century skills especially the 5 Cs, namely: Communication, Collaboration, Creativity, Critical Thinking, and Character while taking into consideration their needs and circumstances.

In addition to the material in the main text, you will also see this box in the body of the module:

Notes to the Teacher

This contains helpful tips or strategies that will help you in guiding the learners.

As a facilitator you are expected to orient the learners on how to use this module. You also need to keep track of the learners' progress while allowing them to manage their own learning. Moreover, you are expected to encourage and assist the learners as they do the tasks included in the module.

For the learner:

Welcome to the <u>Applied Economics Self Learning Module</u> on <u>Socioeconomic Factors Affecting Business and Industry: Production Theory</u>!

This module was designed to provide you with fun and meaningful opportunities for guided and independent learning at your own pace and time. You will be enabled to process the contents of the learning material while being an active learner.

This module has the following parts and corresponding icons:

Expectations - This points to the set of knowledge and skills that you will learn after completing the module.

Pretest - This measures your prior knowledge about the lesson at hand.

Recap - This part of the module provides a review of concepts and skills that you already know about a previous lesson.

Lesson - This section discusses the topic in the module.

Activities - This is a set of activities that you need to perform.
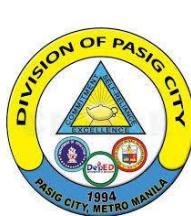
Wrap-Up - This section summarizes the concepts and application of the lesson.

Valuing - This part integrates a desirable moral value in the lesson.

Posttest - This measures how much you have learned from the entire module.

🎯 EXPECTATIONS

After going through this module, you are expected to:
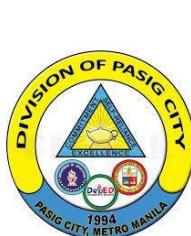
1. understand the production theory;
2. identify the various socioeconomic factors affecting business and industry in terms of production; and
3. explain the importance of production theory in business.
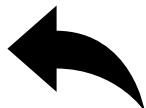
✅ PRETEST

Directions: Choose the letter of the best answer and write it on a separate sheet of paper.

1. It is a process of combining various inputs to produce an output for consumption.

    A. Production

    B. Consumption

    C. Product

    D. Consume

2. It refers to the product created as a result of the combination of input in the production process.

    A. input

    B. output

    C. material

    D. none of the above

3. It is an equation that shows the maximum output of a commodity that a firm can produce per time with each set of inputs.

    A. Production Schedule

    B. Production Function

    C. Production Utility

    D. Production Model
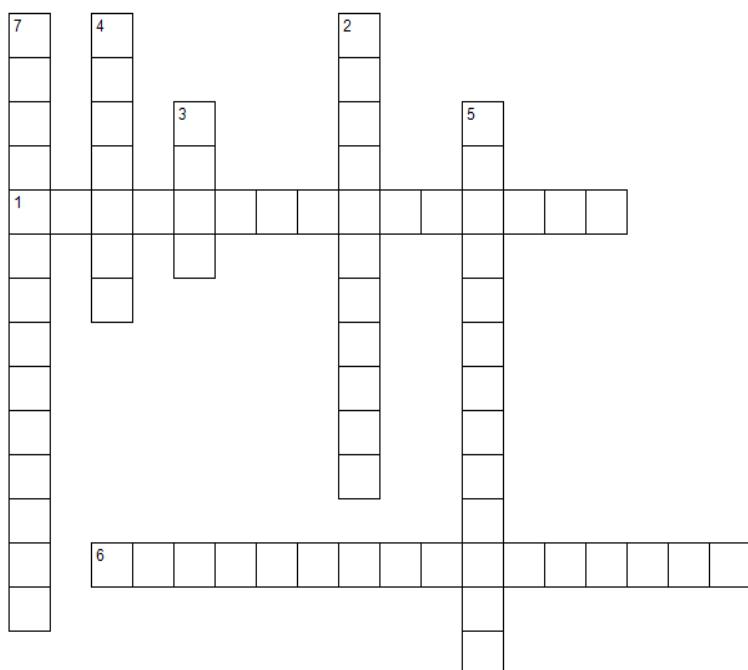
4. It is a period in which at least one factor of production is considered fixed.

    A. short-run

    B. medium-run

    C. long-run

    D. infinity-run

5. It is a theory in economics that predicts when the optimal level of capacity is reached, adding a factor of production will actually result a smaller increase in output.

    A. Law of Production

    B. Law of Diminishing Production

    C. Law of Diminishing Marginal Utility

    D. Law of Diminishing Marginal Returns

RECAP

Crossword Puzzle

Directions: Find the missing words in the puzzle below. Write your answer in the box.
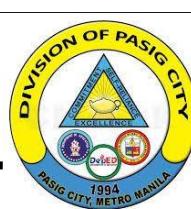
Across:

1. the relationship between utility and consumption

6. additional utility from consuming an additional unit

Down:

2. refers to the use of goods and services
3. measure of satistfaction
4. satisfaction received from consuming a product
5. combined utility from consuming an additional unit
7. study of how people decide to spend their money

LESSON

Production is a process of combining various inputs to produce an output for consumption. It is the act of creating output in the form of a commodity or a service that contributes to the utility of individuals. The term *input* refers to the resources used to produce goods and services. *Output* refers to the product created as a result of the combination of input in the production process.

Production Theory

In economics, *production theory* explains the principles in which the business has to take decisions on how much of each commodity it sells, how much it produces, and how much of raw material ie., fixed capital and labor it employs. It defines the relationships between the price of the commodities and productive factors on one hand, and the quantities of these commodities and productive factors that are produced on the other hand.

The *Production Function* is an equation showing the maximum output of a commodity that a firm can produce per time with each set of inputs.

$$Q = f(i)$$

Where: Q = output and i = input

To be more specific, output depends on the quantity of land, labor, and capital available. Thus, $Q = f(Ld, Lb, C)$.

Basically, *production analysis* is concerned with the analysis in which resources such as land, labor, and capital are employed to produce a firm's final product. To produce goods, the basic inputs are classified into two divisions: fixed inputs and variable inputs. *Fixed inputs* are resources that remain constant in the short-run. *Variable inputs* are resources which can be changed in the short-run or long-run.

The *short-run* is the period in which at least one factor of production is considered fixed. Usually, the capital is considered constant in the short-run. In the long-run, all factors of production are variable, while in the very long-run all factors of production are variable and research and development are possible. Economic models and theories are not dynamic, but they are fixed to a period. So, economists based their models on the short-run or long-run. The difference in these periods is the ability to change the factors of production given the time. For example, in the short run, it is impossible to set up a new factory, but more plausible to hire new workers. It shows that in a period, the current output can change with one factor, while in the long run, you can make any changes.

Law of Diminishing Marginal Returns
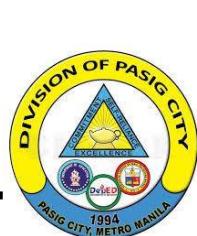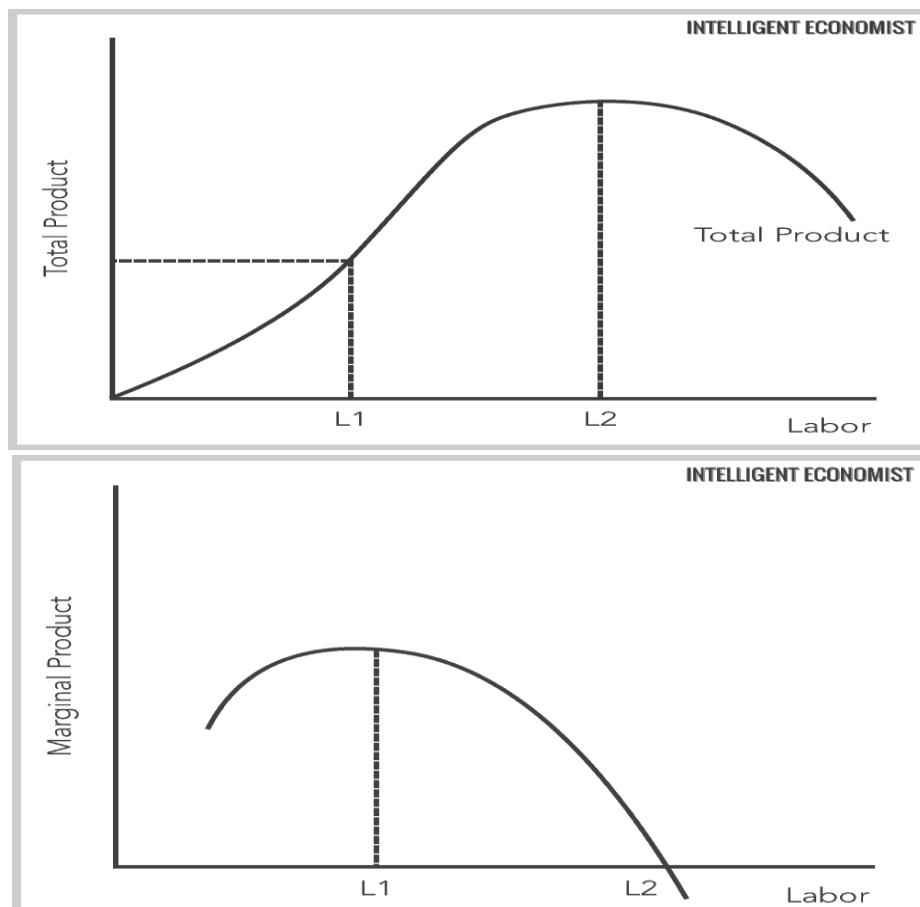
If more variable factors of production are used in a combination with a fixed factor of production, the marginal product, and then the average product will eventually decline. The law of diminishing marginal returns determines the behavior of output in the short-run.

The *law of diminishing marginal returns* is a theory in economics that predicts when the optimal level of capacity is reached, adding a factor of production will actually result in a smaller increase in output.

Output produced is measured in three forms:

1. Total Product (TP) - is the combined production of several units of a given input.
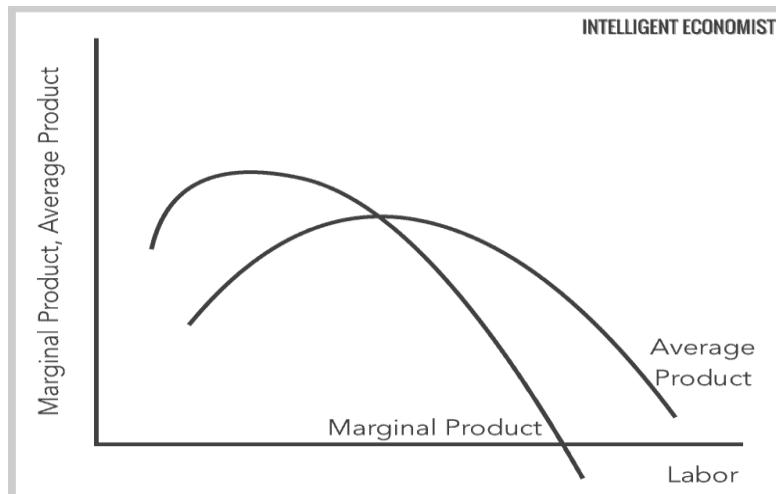
Think of a pizza restaurant, with tables, chairs, and ovens (fixed factor of production). With no workers, the output is zero, with one worker the output is 'x' units. The worker takes orders, makes pizzas, cleans tables, and serves the bill. If there are two workers, the second worker can do the same work as the first, and the output will be 2x units. They can specialize and further increase the outputs.

2. Marginal Product - is the additional output produced by an additional unit of the input and is equal to change in total product/change in input.

For example, when one more chef has added the production increases to x units, and when the second worker has hired the output increases by more than 2x units. In the above figure, the output will increase at an increasing rate till *L1*, hence the marginal product is rising till *L1*. Given a fixed input, as the manager of the pizza restaurant adds extra workers, the total output increases however at a decreasing rate. When the manager of the store hires more workers, each new worker adding less to the output, and the marginal product begins to fall from *L1 to L2*. After the *L2*, the contribution of newly hired workers is negative. If a fixed capital, which has a limited capacity, can cater up to 5 workers, hiring more than 5 workers will be useless. No firms will hire beyond *L2*, where there is too much of labor to a fixed capital.

3. Average Product – refers to the average contribution per unit of input and is equal to TP/i.
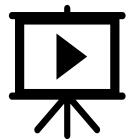
Take note take that if the marginal product is greater than the average product, then the average product will rise. If the marginal product is less than the average product, then the average product will drop. If the marginal product is equal to the average product, then the average product will be at its maximum.

Significance of Production Theory in Business

As we already learned, a business is engaged in providing goods and services to customers to make profits. Although some businesses are engaged in retailing goods that they bought from producers, many businesses produce the goods that they sell. It is therefore important for the business proprietors to be aware of the production behavior that will maximize output within limited quantities of inputs available. This in turn will help maximize profits for the enterprise.

▶ ACTIVITIES

Activity: My Production!

A. Production Function

Directions: Below is the production schedule for Output X with variable labor input. Compute the marginal product and average product in each labor input.

Production Schedule for Output X with Variable Labor Input			
Quantity of Labor Input	**Total Product**	**Marginal Product**	**Average Product**
1	10		
2	22		
3	37		
4	55		
5	69		
6	77		
7	80		
8	81		
9	81		
10	80		

B. Application of the Law of Diminishing Marginal Returns

Directions: Discuss the above production schedule using the concept of Law of Diminishing Marginal Returns. Use the space below for your answer.

☑ WRAP-UP

To summarize what you have learned in the lesson, answer the following questions:

1. What is production theory?

2. What are the factors affecting business and industry in terms of production?

3. What is the importance of production theory in business?

◆ VALUING

Reflect on this!

"Knowledge is our most powerful engine of production."
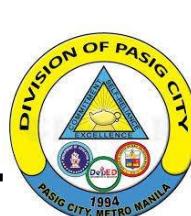
— Alfred Marshall

⚙ POSTTEST

Directions: Read each statement carefully. Write **T** if the statement is correct, otherwise write **F**.

_____1. Marginal Product is the change in the total product as a result of changing the variable factor of production by 1 unit.

_____2. If the marginal product is less than the average product, then the average product will rise.

_____3. In the long-run, all factors of production are fixed.

_____4. The theory of production explains the principles by which a business firm decides how much of each commodity that it will produce.

_____5. The average product refers to the average contribution per unit of input.

KEY TO CORRECTION

PRETEST
1. B
2. A
3. D
4. A
5. C

RECAP:

ACROSS:
1. UTILITY FUNCTION
6. MARGINAL UTILITY

DOWN:
2. CONSUMPTION
3. UTIL
4. UTILITY
5. TOTAL UTILITY
7. CONSUMER THEORY

ACTIVITY

A. MARGINAL PRODUCT:

1.	6	6.	8
2.	12	7.	3
3.	15	8.	1
4.	18	9.	0
5.	14	10.	-1

B. AVERAGE PRODUCT:

1.	10	6.	12.8
2.	11	7.	11.4
3.	12.3	8.	10.1
4.	13.8	9.	9
5.	13.8	10.	8

POSTTEST:
1. T
2. F
3. F
4. T
5. T

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