CHAPTER 7

Factors of Production

For a country like India, the largest contribution to growth and productivity will probably come about from more efficiently using land, labour and capital, thus they must be used more efficiently.

— Bibek Debroy,
Chairman, Economic Advisory Council
to the Prime Minister (2017-24)

Fig. 7.1.

The Big Questions?

1. *What are the factors of production?*
2. *How are these factors interconnected?*
3. *What is the role of human capital in production, and what are its facilitators?*

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Fig. 7.2. A glimpse at the production of some goods

Introduction

Have you ever wondered how your clothes, shoes, school bag, furniture, phone, computer, etc., are made? Every product around you goes through a production process before it finally reaches you. This production process involves using resources or inputs required to produce the final product. The resources or inputs used in producing goods and services are hence called ***factors of production.***

Meet Ratna, who runs a small restaurant named Pause Point, on the city outskirts. Popular among highway travellers for its tasty, high-quality food, Pause Point is growing with a team of seven people who assist Ratna in managing the business. When she started five years ago, she had to choose a location, organise money for rent and equipment, hire staff, buy ingredients, and plan how to make her dream a success.

Businesses combine various inputs or factors of production to create goods and services, which also generate opportunities for people to engage in economic activities.

Business: A firm, a shop, a factory, etc., which produces or sells goods or provides a service.

LET'S EXPLORE

→ In small groups, study the economic activities around your locality. What are the different types of goods and services being made or provided?

→ Here's a small report that Latha, Asha, Mohan, and Kiran made. You can make your own report for shops of your choice.

Types of shops	Number in the locality	Goods produced or services provided	Types of inputs required
Grocery shops	13	Food grains, milk, bread	Packaged goods, perishables, storage space
Restaurants/ food stalls	8	Cooked meals, snacks, beverages	Raw ingredients like vegetables and fruits, gas, utensils; cook/helper
Vegetable vendors	15	Fresh vegetables and fruits	Fresh produce, baskets, weighing scale, cart or stall
Mobile repair shops	4	Mobile repair, mobile accessories	Tools, spare parts, knowledge and skills of mobile components and functions
Salons/ parlours	3	Haircut, grooming, beauty services	Scissors, creams, beauty products, water, electricity

Looking at your group's report, think about the following:

→ Where do people get the money that they need for their business?

→ Where did the hairdresser get trained?

→ Who taught the food vendors to cook?

→ What motivated the business owners to start their business?

In economics, the inputs used in a production process or the **factors of production** are classified into four types — land, labour, capital and entrepreneurship. Technology is a facilitator and a crucial factor that enables businesses to produce more goods with the same or fewer inputs. Let's learn more about these inputs in the sections ahead!

Factors of Production

Land (natural resources)

The word 'land' in economics encompasses not only geographical land but also natural resources like soil, forests, water, air, sunlight, minerals, oil, and natural gas. Recollect the chapter on *Natural Resources and Their Use*, where we discussed different types of resources that nature gifts to us and how we use them. Businesses either purchase the required land or pay rent to use it for a period of time.

LET'S EXPLORE

Revisit the table in your report. Which of the items on your list can be labelled as 'land'?

Labour (human resources)

Labour is essential in production, involving physical and mental effort. Carpenters, farmers, construction workers, teachers, and doctors use varying levels of physical strength, knowledge, and **skill**. Everyone contributes differently through their work, helping create goods and services for society's needs.

Skill: The ability to do an activity or job well with practice and training.

People as a resource

Human beings play a key role in economic activities and production processes as they apply their knowledge, skills, and decision-making abilities to create goods and services. For example, a police officer maintains law and order, a scientist invents new technologies, a chef develops new recipes, etc. They all require a special set of knowledge and skills to perform well. Of course, they all must be dedicated to their work to do

Fig. 7.3. Worker at a tea plantation

Fig. 7.4. Chemical engineer

Fig. 7.5. Carpenter

Fig. 7.6. Software developer

a good job. The word **labour** refers to the physical and mental effort used in production. However, **human capital** refers to the specialised skills, knowledge, abilities and expertise required to perform that labour. Thus, human capital is not just the basic efforts of labour but also the quality and efficiency of that labour.

Facilitators of human capital

Education and training

Education helps individuals gain knowledge, starting with basic literacy and extending to expertise in specific fields. What you

Fig. 7.7. Education and training

Training: It is the process of learning the required skills to do a particular job or activity.

Cognitive: It refers to the process of learning, knowing and understanding.

learn in school enriches your knowledge and prepares you to solve real-world problems. For example, a civil engineering student learns principles of design and materials, which are applied to building infrastructure like roads and bridges. The challenge lies in creating durable, cost-efficient, and eco-friendly solutions. This is achieved through **training**, such as observing construction sites, testing materials, understanding safety procedures and hands-on application. With education and training, individuals are prepared to excel in their careers.

Healthcare

Good health supports **cognitive** development, allowing children to attend school regularly and learn better. Similarly, workers are able to give their best, physically and mentally, when they are of sound body. They are able to do more in shorter time periods, be creative, and do not have to be away from work due to ill health.

THINK ABOUT IT

How do infrastructure and healthcare systems like hospitals, primary healthcare centres, doctors, pharmacies, diagnostic labs, etc., contribute to developing human capital?

Social and cultural influences

A culture of hard work, continuous improvement, and endeavouring to do things well has helped countries to move forward. There is a Japanese concept called *kaizen*, which means 'continuous improvement'. This concept has been applied in Japan since the mid-1940s and has helped Japan achieve higher standards of living for its people. Another example could be that of the German work ethic, which is deeply rooted in their history. Germany is renowned for its high-quality industrial output. They place a high value on punctuality, attention to detail and quality. These qualities of their human capital contributed to their rise as a global leader in technology and manufacturing.

LET'S EXPLORE

- → Let's do a small experiment. Make a list of 10 working adults in your family and neighbourhood. Ask them to describe the culture at their workplace. Share notes with your classmates. What did you discover? What are some adjectives that occur more frequently?
- → In the Tapestry chapters, you have seen examples of the art and architecture in India across several centuries. What do you think are the factors that enabled their creators to achieve such high levels of excellence? Discuss in groups and share in class.

Challenges to human capital

Our nation has come a long way in various aspects of human capital since independence. Literacy is an important characteristic of the population and helps enhance the skills and **productivity** of human capital. The **Adult Literacy Rate** in India is 85 per cent for males and 70 per cent for females as of 2023, as per the World Bank estimates. Despite progress in many areas, India faces challenges in developing human capital.

Productivity: Ability to do more in a particular time period.

Adult literacy rate: Percentage of people aged 15 and above who can read and write with understanding a short, simple statement about their everyday life.

THINK ABOUT IT

- → Shivay, a student at Saraswati Vidyalaya in Grade 8, had to drop out of school two years back as his father lost his job. How do you think the loss of schooling years will affect Shivay when he grows up?
- → What problems could businesses face when they do not find workers with the required skills?

Fig. 7.8. Students writing an exam

According to the Economic Survey of India 2024, 65 per cent of people in India are below the age of 35 years. This means that India has a young, productive population, which may help the country reap the benefits of a demographic dividend. The demographic dividend refers to the benefit a country gets when it has a large number of young and working people. When more people are working and earning, and fewer people depend on them, the country can grow businesses and improve living standards. To take advantage of this potential, individuals must have access to quality education, health, training, and skilling, which would contribute to the nation's progress. You will learn more about this in the year ahead in the chapter on Demographics.

THINK ABOUT IT

Are some jobs more important than others? What would happen if nobody cleaned the streets, collected the trash, farmers stopped cultivating the crops, doctors were not available to treat patients, and so on?

Today, there is a vast variety of jobs requiring different kinds of skills. However, India has had a rich legacy of skill-based knowledge systems and workmanship.

India's ancient skill heritage

For ancient Indians, work was a form of expressing their nature and striving for perfection, an offering to the deity or the receiver, as the case may be. It had to be created or done with devotion. The tools (a type of technology) used were worshipped; this tradition continues as *Viśhwakarmā pūjā* or *Āyudha pūjā.* So, creating products involved a unique blend of *kalā* (art) and *vidyā* (knowledge). Knowledge was passed on from generation to generation, and also built on. The *śhilpa śhāstras* are ancient texts that contain detailed design guidelines on sculptures, paintings, buildings, wooden items, and jewellery. For example, texts on sculpture prescribe exact specifications regarding postures, colours, measurements, and proportions of figures.

DON'T MISS OUT

Generations of families of sculptors have worked on constructing India's temples over centuries. They used their skills without expecting to see the finished outcome. They pursued excellence, considering work as worship by practising regularly and learning new techniques.

Stitched shipbuilding

Indians used a unique stitching technique dating back over 2000 years to make ships and boats, which they used to conduct maritime trade and cultural exchanges across the Indian Ocean. The technique involved stitching wooden planks together using cords instead of nails, which made them flexible and helped the ships navigate the Indian Ocean with ease.

Fig. 7.9. Re-creation of a 5th-century stitched ship

LET'S EXPLORE

- → Many of the traditional techniques of production have either disappeared or are on a decline. For example, the stitching of ships saw a severe decline after the arrival of Europeans in the Indian Ocean in the 16th century. This technique is now used for small fishing boats.
- → Why do you think the use of indigenous techniques has declined? Discuss in the class.
- → Find out some techniques and products from your region that showcase human effort and skill. Explain briefly using drawings and text in the class.

Capital

Capital: In economics, any asset, whether physical or financial, used to produce goods and services.

Businesses also require **capital** that comprises monetary resources and durable assets like machinery, tools, equipment, vehicles, vending carts, computers, shops, factories, office buildings, etc., for their day-to-day operations. Just as Ratna would have required money to take the land on lease, buy the furniture and kitchen equipment, etc. These are all called 'capital' — money plus human-made resources that are used to produce goods and services.

Capital is essential to a manufacturing unit or a services sector enterprise. But where do businesses get the capital? Generally,

Fig. 7.10. Machinery

Fig. 7.11. Loans

personal savings, family, and friends are the first source of funds and support for individuals when they start a business, just as Ratna did when she started her business. However, the funds were insufficient for Ratna to start the business, so she took a loan from the bank to meet the shortfall. She paid **interest** along with a part of her loan amount over a period of time. Similarly, large companies require a lot of money to expand their business; hence, they raise money from the general public through the stock market. The **stock market** is a special type of market where shares are bought and sold. Large companies raise money from the public by offering them a share of the profits, called a **dividend**. In other words, big businesses can raise money or financial capital through such a market and can sell shares of their business. You will learn the exact mechanism of how this works in the higher grades.

Interest: The amount of money paid by the borrower of a loan to the lender for using their money for a specific time.

Dividend: An amount of money paid regularly by a company to its shareholders out of its profits.

LET'S EXPLORE

Identify a factory in your region. Find out how much capital may have been invested in the construction of the factory (you may provide an estimate). What kinds of equipment does the factory use to create its finished products?

Entrepreneurship

Entrepreneurship means starting your own business or creating something new to solve a problem. An entrepreneur is a person

Fig. 7.12. Bamboo and cane products, Arunachal Pradesh

Fig. 7.13. Food processing

Fig. 7.14. Pottery products, Delhi

Fig. 7.15. Petrochemical plant

Startup
A startup is an entrepreneurial venture with limited resources that aims at rapid growth and expansion while leveraging technology.

who comes up with an idea, takes risks, gathers other factors of production, and works hard to make their **startup** idea successful.

An entrepreneur's vision for solving a problem helps bring innovative products and services to the market that benefit society and the nation. At the same time, they also create job opportunities and support livelihoods. In return, they derive a deep sense of satisfaction from seeing their dreams become a reality and serving the people.

Thus, an entrepreneur is one who:

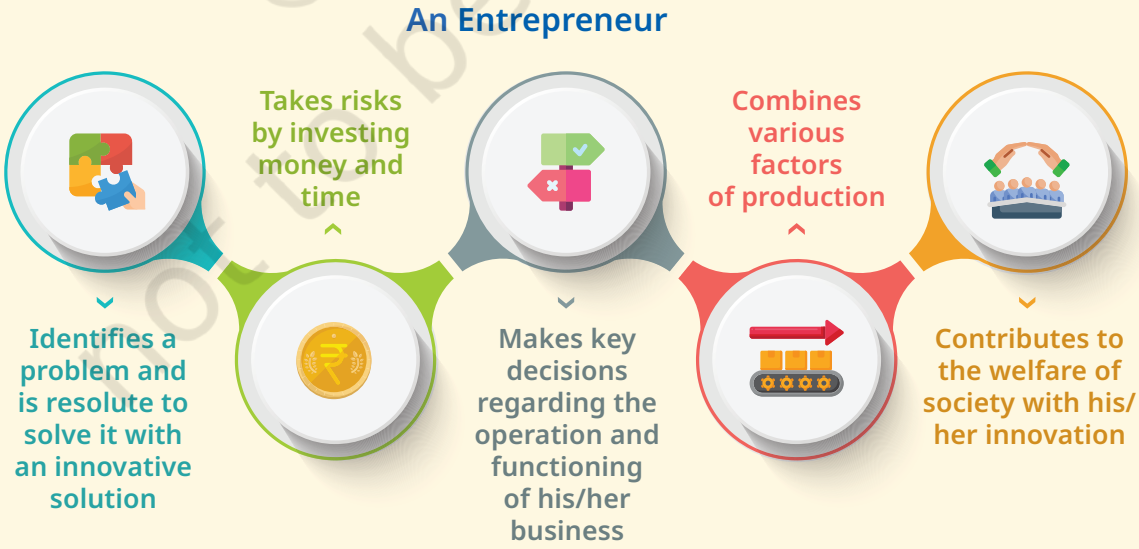

Fig. 7.16. Tasks performed by an entrepreneur

The man who dreamed big for India

J.R.D. Tata — entrepreneur, industrialist and philanthropist

Fig. 7.17. J.R.D. Tata

Jehangir Ratanji Dadabhoy (J.R.D.) Tata was one of India's greatest entrepreneurs and played a big role in building modern India. He was born in 1904 and became the head of the Tata Group, one of the largest business groups in the country. He believed that businesses should not only make money but also help society. He started India's first airline, Tata Airlines, in 1932, which later became Air India. Under his leadership, the Tata Group expanded into many areas like steel, cars, power, and chemicals. J.R.D. Tata was also known for caring about his workers and believed in providing them with good working conditions. He was a man of vision, hard work, and honesty. In 1992, he received the Bharat Ratna, India's highest civilian award, for his great service to the nation.

THINK ABOUT IT

- → What could be the lessons for young entrepreneurs that you can gather from the above case?
- → Does the existing knowledge of the entrepreneur help in finding solutions to the problem at hand? Or do they need to seek other sources?
- → Is profit the only motivation for an entrepreneur? Why or why not?
- → What are the other personality traits required to be a successful entrepreneur?

Technology: An Enabler of Production

Technology means the application of scientific knowledge. For example, a camera converts light into electrical signals to create a digital image. Any production-related activity uses some form of technology. Some early forms of technology that have existed since ancient times are still in use today.

Today, newer and advanced technological developments are applied in various areas, making our lives easier. For example, payments can be made at the click of a button through UPI (Unified Payments Interface); farmers can get advance weather updates; Global Positioning Systems (GPS) can discover the shortest routes for transporting goods, and so on.

Fig. 7.18. Drones spraying fertilisers to improve crop health

Fig. 7.19. Robots assisting in surgical processes

Have you noticed how old technology gets replaced by a new, better one?

This process makes it easier for people and businesses to get things done and improve how they work. For example, instead of sending letters by post, we now use email to communicate with people quickly and at a lower cost. However, remember that technological progress does not always mean replacing old technologies — some, like pulleys and wheelbarrows, are still in use.

Fig. 7.20. A wheelbarrow on a construction site

Fig. 7.21. Pulley used in boats

Now, let's look at examples of how technology is helping students learn, build new skills, and find jobs.

Technology paving the way for accessing knowledge, skills, and job opportunities

Fig. 7.22. Online learning

A variety of online courses are available to students through Government platforms like **SWAYAM** (Study Webs of Active Learning for Young Aspiring Minds), which offers courses for Grade 9 onwards and operates on Massive Open Online Courses (MOOCs) through which learners can explore subjects like robotics, aquaculture, textile printing, and so on that are free of cost. Students benefit from learning at their own pace, from anywhere, while pursuing other jobs or courses. Online portals, like the Government's **National Career Service**, help people find job opportunities across various sectors, from plumbing to accounting. This is how technology has eliminated geographical barriers, allowing people access to knowledge, skill development and jobs in India and abroad. The services to these online portals can be accessed through the following links:

- *https://swayam.gov.in/*
- *https://www.ncs.gov.in/*

LET'S EXPLORE

- → Can you think of some technological advancements that have impacted the lives of people and communities around you? Talk to elders at home and in the neighbourhood about it.
- → Think of an invention that you would like to make to solve a problem. Write its related information on a piece of paper, such as its name, what it does, and how it works, sketches or drawings of what it would look like, and so on. Discuss with your classmates.

How are the Factors Connected?

The factors — land, labour, capital, entrepreneurship and technology are combined to produce goods and services, and the proportion of each factor used depends on the product. For example, output from the agriculture, construction, and handicraft sectors relies more on labour and thus is labour-intensive, while semiconductor chips or satellites require more capital, specialised machinery, and are capital-intensive.

These factors complement each other and are interconnected; in case of some missing or misused factors, production can become inefficient or can be halted. However, in some cases, new techniques can change the proportion used and output. For instance, increased machine use in agriculture can lower dependence on labour. Similarly, 3-D printing can help revive the dying art forms in textiles by producing handloom products at a large scale to serve the market. The production inputs are available at different geographic locations. Businesses can procure them from these varied locations and combine the inputs to produce goods and services. Thus, the geographic interconnectedness provides businesses with access to varied inputs. However, production activities sometimes face severe supply chain challenges. The **supply chain** is a network of individuals, organisations, resources, activities and technology that are involved in the production and sale of goods.

When a disruption in the supply chain occurs due to relying on sources from far-off places, instead of local inputs, it results in a halt in the production process, as was the case during the COVID-19 pandemic.

DON'T MISS OUT

India is the world's second-largest mobile phone manufacturer after China in 2025! Let's understand these ideas through a flow chart depicting mobile phone manufacturing.

The process of mobile phone assembly

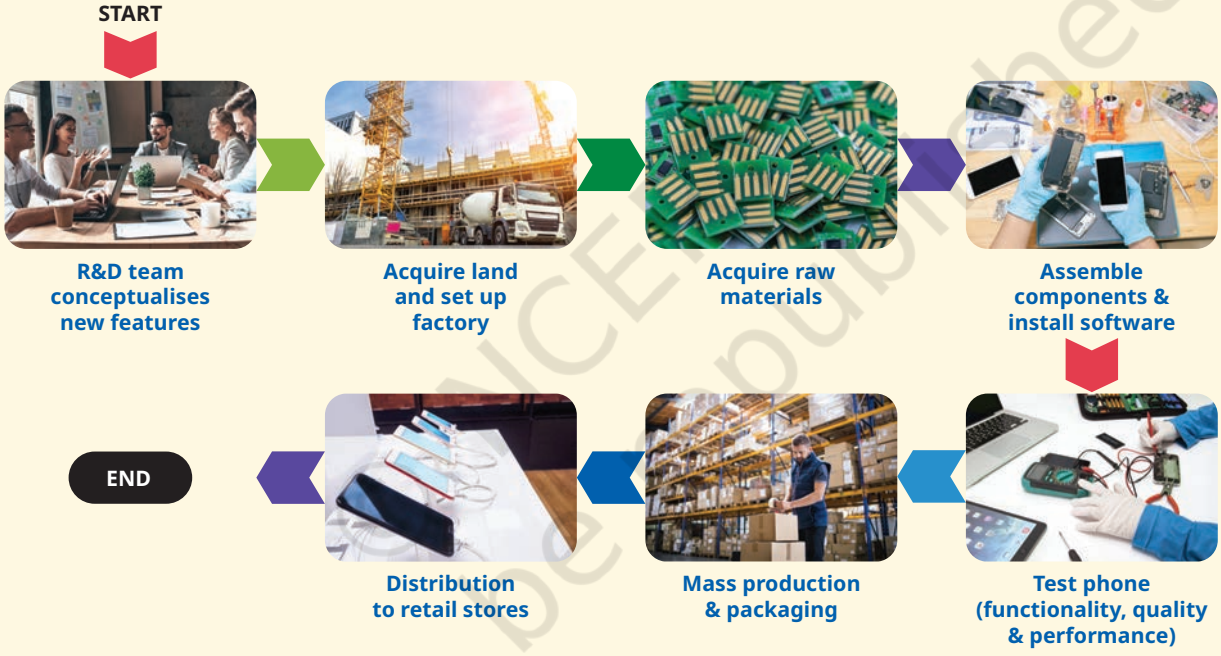

Fig. 7.23

Human effort is involved at every stage of production to design, supervise, and improve products and processes. For example, teams of software, electrical, and mechanical engineers, along with project managers, use their expertise to develop a product. The entrepreneur provides guidance on how resources should be used. Then, procuring resources like land, factory space, machinery, and skilled workers requires financial resources. Together, all these inputs are essential, working like puzzle pieces to create the goods and services we rely on!

Responsibilities towards Factors of Production

When we produce goods, we use natural resources like land, water, and minerals. However, these resources are limited and can be harmed if we are not careful. For example, in Tamil Nadu, many people earn money by working in leather factories. This helps the local economy, but the waste from these factories can pollute rivers and soil. In the same way, when old smartphones are not recycled properly, harmful substances like lead and mercury can leak into the ground and water. This pollution can be dangerous for people, animals, and plants. That is why it is important for producers to use natural resources responsibly — so that we can meet our needs today without making it harder for future generations to meet theirs. They should try to reduce waste, avoid pollution, and protect the environment while making products.

THINK ABOUT IT

How are local communities and biodiversity affected by such activities? Do you also know some places around you that have seen water and land degradation over time? Discuss in class.

So, it is important for producers to adopt sustainable practices to replenish natural resources for future use.

Fig. 7.24. Recycling industrial wastewater before releasing it into water bodies

Fig. 7.25. Use of recycled products as inputs

Apart from land and natural resources, businesses have responsibilities towards their workers and employees, which are summarised below.

- **Fair compensation and working conditions:** Employers need to ensure that workers are paid fairly for their labour and that they work in a safe environment.
- **Skill development and training:** There is a responsibility to invest in training and education to ensure that workers develop the skills necessary to remain competitive in the labour market.
- **Workplace rights and protections:** Laws and regulations for workers' rights relating to fair treatment, preventing discrimination, and providing benefits like health care or paid leave should be adhered to.

Businesses are motivated to address social and environmental concerns in their operations to benefit society and biodiversity through Corporate Social Responsibility (CSR). This includes reducing polluting activities, addressing the well-being of local communities, treating employees and customers with respect, and so on.

DON'T MISS OUT

India was the first nation in the world to bring a Corporate Social Responsibility law in 2014 that mandated companies to spend 2 per cent of their average profits of the last three years on CSR activities.

Before we move on ...

→ Land, labour, capital and entrepreneurship are factors of production that are used in a particular proportion to produce goods and services. These factors complement each other and are interconnected.

→ Human capital is the knowledge, skills, experience, and ability of individuals that contribute to their ability to perform work and create economic value. It is influenced

by education, training, health, use of technology, and social context that make people more productive in the workforce.

→ The resources help in the production of goods and services that serve society and need to be preserved and utilised judiciously.

Questions and activities

1. How are the factors of production different from each other? What are the difficulties you faced in classifying the factors of production in the exercise given in-text?
2. How does human capital differ from physical capital?
3. How do you think technology is changing how people develop their skills and knowledge?
4. A skill is something you learn and practice to get better. It helps you do things well, like playing a sport, creative writing, solving math problems, cooking, or even communicating well with people. If you could learn one skill today, what would it be and why?
5. Do you think entrepreneurship is the 'driving force' of production? Why or why not?
6. Can technology replace other factors like labour? Is this good or bad? Support your answer with the help of an example.
7. How do education and skill training affect human capital? Can they substitute for each other, or do they complement each other?
8. Imagine you want to start a business that produces steel water bottles. What kind of inputs are needed? How would you obtain them? Suppose one of the factors is missing; what happens to your business operations?
9. Interview an entrepreneur or founder to understand their motivation to start a business and the opportunities and

challenges they saw. You can work in pairs to create a questionnaire to collect the information and share what you have learned in a report.

10. Think like an economist. Let's explore what happens when things change. If you were Ratna, what would you do in the following situations? Discuss with your classmates.

    I. Suppose the rent for your space suddenly doubles.
    - Will you raise the price of the food served to cover the costs?
    - Will you look for a cheaper location?
    - How does this affect your business?

    II. Imagine one of your helpers quits suddenly.
    - Can the remaining workers manage the same amount of work?
    - Will you need to offer a higher salary to attract a new worker?

    III. You receive a small loan to invest in better technology for your restaurant.
    - Will this increase the production or improve quality?
    - Will it help you reach more customers?

    IV. Suppose another restaurant opens in the neighbourhood.
    - How will you attract and keep your customers?
    - Will you improve your service, reduce prices, or offer something new?

    V. What government laws or rules should be changed to improve the ease of doing business?