

## ASSIGNMENT – 1

<b>Course Code</b>	20CSC309A
<b>Course Name</b>	Cost Estimation and Economics in CS
<b>Programme</b>	B. Tech
<b>Department</b>	CSE
<b>Faculty</b>	FET

<b>Name of the Student</b>	K Srikanth
<b>Reg. No</b>	17ETCS002124
<b>Semester/Year</b>	5 <sup>th</sup> Semester / 3 <sup>rd</sup> Year
<b>Course Leader/s</b>	Ms. Sunita Chakraborty

Declaration Sheet			
Student Name	K Srikanth		
Reg. No	17ETCS002124		
Programme	B.Tech	Semester/Year	5 <sup>th</sup> Semester/ 3 <sup>rd</sup> Year
Course Code	20CSC309A		
Course Title	Cost Estimation and Economics in CS		
Course Date	14/09/2020	to	16/02/2021
Course Leader	Ms. Sunita Chakraborty		
<p><b>Declaration</b></p> <p>The assignment submitted herewith is a result of my own investigations and that I have conformed to the guidelines against plagiarism as laid out in the Student Handbook. All sections of the text and results, which have been obtained from other sources, are fully referenced. I understand that cheating and plagiarism constitute a breach of University regulations and will be dealt with accordingly.</p>			
Signature of the Student		Date	
Submission date stamp (by Examination & Assessment Section)			
Signature of the Course Leader and date		Signature of the Reviewer and date	

Marking Scheme		Max Marks	First Examiner Marks
A1.1	Identify the problems of the firms the Entrepreneur had to face during the crisis time period.	3	
A 1.2	Explain the ways an Entrepreneur has to balance the demand and supply of goods with the price changes in the crisis.	4	
A 1.3	Mention five challenges faced by the Entrepreneur to maintain the demand and supply of goods in the market.	5	
A 1.4	Recommend three appropriate ways to overcome the problems of demand and supply of goods in the market in the crisis of the economy.	3	
	<b>Part-A Max Marks</b>	<b>15 Marks</b>	
B 1.1	Mention 5 ways in which the modern customers are more satisfied with online shopping	5	
B 1.2	Explain the measures taken by the business people to make online shopping more attractive.	3	
B1.3	Discuss the problems faced by the customer on online shopping.	3	
B1.4	Explain any two measures taken by the business people to improve the transaction of goods through online.	4	
	<b>B.1 Max Marks</b>	<b>15 Marks</b>	
B 2.1	Differentiate between Fiscal Deficit and Primary Deficit. Calculate the Fiscal and Primary Deficit.	2	
B 2.2	Draw a graphical presentation between Basic, College, Parent, Homeowner and Senior Worksheets.	3	
B2.3	Compare the data analysis and give reasons which level of people are balanced.	3	
B2.4	Mention four measures to reduce the debt.	2	
	<b>B.2 Max Marks</b>	<b>10 Marks</b>	
B3.1	Introduction of the articles	2	
B3.2	Content of the article	4	
B3.3	Proficient to justify the articles	3	
B3.4	Conclusion	1	
	<b>B3 Max Marks 10</b>	<b>10 Marks</b>	
	<b>Total Marks</b>	<b>50</b>	

Please note:

1. Documental evidence for all the components/parts of the assessment such as the reports, photographs, laboratory exam / tool tests are required to be attached to the assignment report in a proper order.

1. The First Examiner is required to mark the comments in RED ink.
2. The marks for all the questions of the assignment have to be written only

### **Assignment**

#### **Instructions to students:**

1. The assignment consists of 4 questions: Part A – 1 Question, Part B -3 Questions
2. Maximum marks is 50
3. The assignment has to be neatly word processed as per the prescribed format.
4. The maximum number of pages should be restricted to **20**.
5. **Submission Date:11.01.2021**
6. **Submission after the due date is not permitted.**
7. **IMPORTANT:** It is essential that all the sources used in preparation of the assignment must be suitably referenced in the text.
8. Marks will be awarded only to the sections and subsections clearly indicated as per the problem statement/exercise/question

#### **Preamble**

This course is designed to expose the students to the basic principles of microeconomic theory. Students are given an introduction to supply and demand and the basic forces that determine equilibrium in a market economy. Further, it introduces a framework for learning about consumer behavior and analyzing consumer decisions. The students understand the behavior of the different market.

## Part A

In this section we were supposed to interview an entrepreneur and ask them what problems did they faced during this Pandemic.

This Question was interview by 5 Students from A-Section

- I. K Srikanth (17ETCS002124)
- II. Apoorva R (18ETCS002018)
- III. Lekha Raju (18ETCS002028)
- IV. Bhoomika JS (18ETCS002033)
- V. Chaitanya Kumar NR (18ETCS002037)

We have interviewed an **Mr. Ajay Achar from Federate Consulting**, who is Director of the company which helps provides **Security, Identity and Access Management, and PKI and Signing Solutions to companies**

### Video Link

#### **A1.1 Identify the problems of the firms the Entrepreneur had to face during the crisis time period.**

The entrepreneur had to face various problems during the crisis time period such as:

1. Closing the Company completely for months during this lockdown due to the COVID pandemic crisis, and the lockdown initiated by the government.
2. As there were no offices and employees couldn't use company's resources at their home like laptop, workstation etc. Company ended up providing all the resources to keep them going
3. Financial shortage resulting in loss for the entrepreneur.

#### **A1.2 Explain the ways an Entrepreneur has to balance the demand and supply of goods with the price changes in the crisis.**

There were several ways in which the entrepreneur decided to maintain a balance between these two factors with the price changes in the crisis:

1. Company had to use better methods of online advertisements to attract more new clients.
2. Providing more support to consumers and keeping up with them with all their requirements during this pandemic time.
3. Supply of goods with reduced income was balanced by reducing the salary of the staff by some percent to make up for new employee's and advertisements

#### **A1.3 Mention five challenges faced by the Entrepreneur to maintain the demand and supply of goods in the market.**

There were a lot of challenges faced by the entrepreneur during this period of time. A few of them are:

1. Company had to hire more employees during this pandemic time to keep up with all the support that was required with clients
2. Company had to pay the rent for the building which was not used and had to shift their budget for providing better equipment to their staff to be connected.
3. Wastage of resources used, such as ISP, Workstations and other resources
4. No financial aid to help run the company and continue their business.

**A1.4 Recommend three appropriate ways to overcome the problems of demand and supply of goods in the market in the crisis of the economy.**

A few appropriate ways to overcome this problem are:

1. The Stock of the good have be persistent so that in crisis of economy we shouldn't consume the whole stock so that for the future we can save some of the stock.
2. Keeping the minimum cost of the stock should help recover the economy step by step where every consumer should be able to afford.
3. Govt has to make the assurity that should lay off the all the debts of the farmers so that they could help build up the economy again to produce more food.

**Part B**

**B1.1)**

Motivations that lead consumer to buy online There are many reasons why people shop online. For examples, consumers can buy anything at any time without going to the store; they can find the same product at a lower price by comparing different websites at the same time; they sometime want to avoid pressure when having a face-to-face interaction with salespeople; they can avoid in store traffic jam, etc. These factors can be summarized into four categories—convenience, information, available products and services, and cost and time efficiency.

1. **Convenience:** Empirical research shows that convenient of the internet is one of the impacts on consumers' willingness to buy online. Online shopping is available for customers around the clock comparing to traditional store as it is open 24 hours a day, 7 days a week (Research shows that 58 percent chose to shop online because they could shop after-hours, when the traditional stores are closed and 61 percent of the respondents selected to shop online because they want to avoid crowds and wailing lines, especially in holiday shopping. Consumers not only look for products, but also for online services. Some companies have online customer services available 24 hours. Therefore, even after business hours, customers can ask questions, get necessary support or assistance, which has

provided convenience to consumers Some customers use online channels just to escape from face-to-face interaction with salesperson because they pressure or uncomfortable when dealing with salespeople and do not want to be manipulated and controlled in the marketplace. This is especially true for those customers who may have had negative experience with the salesperson, or they just want to be free and make decision by themselves without salespersons' presence.

2. **Information:** The internet has made the data accessing easier Given customers rarely have a chance to touch and feel product and service online before they make decision, online sellers normally provide more product information that customers can use when making a purchase Customers put the weight on the information that meets their information needs. In addition to get information from its website, consumers can also benefit from products' reviews by other customers. They can read those reviews before they make a decision.
3. **Available products and services:** E-commerce has made a transaction easier than it was and online stores offer consumers benefits by providing more variety of products and services that they can choose from Consumers can find all kinds of products which might be available only online from all over the world. Most companies have their own websites to offer products or services online, no matter whether they already have their front store or not. Many traditional retailers sell certain products only available online to reduce their retailing costs or to offer customers with more choices of sizes, colors, or features. Boccia Titanium, for instance, has stores in many states but not in Connecticut. The company offers website to reach and to fulfill the need of Connecticut customers to order online. Similarly, Yves Rocher, a French company, does not have the front store in the U.S. It offers the website so that U.S. customers can just add products they want into the online shopping cart and the product will be shipped to their house. Moreover, online shopping sometimes offer good payment plans and options for customers. Customers can decide their payment date and amount in their own preference and convenience.
4. **Cost and time efficiency:** Because online shopping customers are often offered a better deal, they can get the same product as they buy at store at a lower price Since online stores offer customers with variety of products and services. it gives customers more chances to compare price from different websites and find the products with lower prices than buying from local retailing stores Some websites, Ebay for example, offer customers auction or best offer option, so they can make a good deal for their product. It also makes shopping a real game of chance and treasure hunt and makes shopping a fun and Again, since online shopping can be anywhere and anytime, it make consumers' life easier because they do not have to stuck in the traffic, look for parking spot, wait in

checkout lines or be in crowd in store . As such, customers often find shop from the website that is offering convenience can reduce their psychological costs .

5. **More Bonuses and Discount Deals:** This is another advantage buyers get whenever they shop online. In a bid to attract more customers to buy their products, sellers tend to give out more discount deals and coupon codes, which buyers can use to make purchases online. More bonuses are also available online when compared with offline stores and supermarkets. Well, this is very reasonable because there are more products of the same type online than the ones being available offline, so for a seller to get more purchases, he or she has to make more discount offers and bonuses available. You do not usually get much of this if you are shopping offline because many of the prices are fixed and they can be sometimes on the high side.
6. **Easier to send goods to distant places:** This is one of the most important reasons you should pick the online option whenever you want to make any purchase. It is much easier to make an order and set the delivery to a particular location anywhere around the world. You can easily get a gift for a birthday, wedding or whatsoever and have it delivered to the doorstep of the recipient with just a few clicks. This is unlike going to a supermarket to get goods you want to send to another location, this will require more time, money and the goods can even get missing in transit. Final Words With all of these stated above, shopping online is fast expanding, and there everyone should find it easier to use because of its advantages and features that make it stand out
7. **Less Stressful:** Shopping online significantly saves one of a lot of stress. When you are online, there is no fear of bumping into a crowd or having to join a long queue before you purchase whatever you want to buy. This is so different from going to the supermarket to buy things, most times, you have to get on a queue just to make payment and this can be stressful. Some locations of some supermarkets are also in top cities where there are many people and each time someone goes out to get things to buy, the road can be very crowded and sometimes one can even be robbed if one is not careful

#### **B1.2)**

1. **Trustable and Securer website:** Consumer willingness to buy and patronize online store are affected by consumer's trust in giving personal information and security for payment through credit card transactions They also concern about transaction security and data safety when purchase online Getting approved certificate from an organization such as eTrust is one of the ways to make a website more trustable By doing so, a website will be more secure and it will increase customer confidence and lead to sale increase. For example, English language editing and proofreading services, bought SSL Certificate from VeriSign—the most trusted mark on the internet; by then site



visitors who saw the green address bar made the sale leapt by 27% When the companies have this certificate, the address bar of their website will change to green color and the Web address will begin with so customers know that the website is secure and trustable Another way seller can do to reduce customers' risk concern when purchasing online is to carry brand name product in the website or even have its own brand name such as Amazon Holding and selling brand name product can improve the trust of the website. Brand name is one of the most important issues which affect customer's buying decision It is imperative for online companies to ensure customer that they will never use customers' information to other purposes by clarifying customer privacy policy. This will at least ease consumer concern about their identify security. Online stores may use integrated mechanism in order to build the trust in safeguarding consumer's personal information and avoidance of misuse of credit card mode of payments.

2. **User Friendly Website:** Customers can be influenced by the image of the web site when they decide what website or buyer they should buy. Not only should companies create their secured website, but also should create it to be more attractive and more useful. Online stores can change a shopper into a buyer if the stores provide variety and useful information of product, good customer service, and easy-to-access website Their websites should have enough information but should not be too overwhelming. Putting unstructured or useless information in the website can reduce internet usefulness and ease of use Also, companies and sellers should double-check any single words in their website to reduce mistakes and customers' misunderstanding. Information quality and visual design is important effect on repurchasing the willingness to purchase online will be low if the online store lacks of ease in searching and comparing shopping, and product updates. Online store should make their website to be easy for consumers to search product and service. Making web designs and portals novel and sophisticated and web atmospherics friendly is a key to attract visitors. Moreover, if online stores want to convert visitor into buyer, they should improve their website by offering customer a comfortable, logical, interesting and hassle-free process and easy language by creating fast website with functional design as smooth as possible (). Online payment process is another issue that should be taken care of because it affects the willingness to pay. Online stores should make their payment process to be as easy and secure 72 as possible. To sum, if online stores want to increase the customer, they should take care of their website design to be more user-friendly.
3. **Online Service:** Customer service is as important as quality of website .72 percent of online consumers revealed that customer service is a major factor in online shopping satisfaction. If the customer service is not available or reachable, customers will perceive that companies are trying to hide something or not intending to solve their problems. Online stores should provide the added-value of service to customers and have customer feedback channel in their website There should be

interactivity customer service in the website, so that customers can contact with the seller anywhere and anytime Software downloading, e-form inquiry, order status tracking, customer comment, and feedback are some of example that online sellers can use to fulfil their online service.

4. **Additional option:** Because customers are not able to touch or try products before they buy, online store should offer them some additional options.. For instance, a money-back guarantee is one of the means to reduce customers' concern. Sellers might consider to offer money-back guarantee policy including shipping expenses refund to reduce purchasing risk In addition, to avoid shipping delay and product lost,, online store may cooperate with other companies with expertise in logistic to improve their distribution channels Offering customers more flexible prices and promotions or offering a one-stop shopping service are some more examples that online stores can use to make their business succeed Online sellers may offer customers to use their bank account number, or stored-value card to complete their purchase. It is also suggested that online stores may offer customer an e-wallet which transfers balance from customer's online bank account to the store payment system This may help sellers to gain more sales from those who want to buy online products or services but do not have credit card or do not want to use their credit card online.

### **B1.3)**

1. **Security:** Since the payment modes in online shopping are most likely made with credit card, so customers sometime pay attention to seller's information in order to protect themselves Customers tend to buy product and service from the seller who they trust, or brand that they are familiar with Online trust is one of the most critical 70 issues that affect the success or failure of online retailers Security seems to be a big concern that prevent customers from shopping online because they worried that the online store will cheat them or misuse their personal information, especially their credit card For instance, report indicated that 70 percent of US web users are seriously worried about their personal information, transaction security, and misuse of private consumer data
2. **Intangibility of online product:** Some products are less likely to be purchased online because of the intangible nature of the online products. For example, customers are less likely to buy clothes through online channel because they have no chance to try or examine actual product. Customers viewing a product on computer screen can show a different effect than actually seeing it in the store. In sum, customers cannot see, hear, feel, touch, smell, or try the product that they want when using online channel. In many cases, customers prefer to examine the product first and then decide whether or not they want to buy. Some people think the product information provided in website is not enough to make a decision. Online shoppers will be disappointed if the product information does not meet their expectation

3. **Social contact:** While some customers likely to be free from salesperson pressure, many online shopping would feel difficult to make a choice and thus get frustrated if there is no experienced salesperson's professional assistance. Moreover, some customers are highly socially connected and rely on other peoples' opinions when making purchase decision tend. There are also consumers who sometimes shop at traditional store because they want to fulfil their entertainment and social needs which are limited by online stores
4. **Dissatisfaction with online shopping:** customers' past online shopping experience often affect their future purchase decision. In online shopping, for example, they may get unwanted product or low-quality products, product does match what is described or expected. The product may be fragile, wrong, or not working.

#### **B1.4)**

1. **Trustable and Securer website:** Consumer willingness to buy and patronize online store are affected by consumer's trust in giving personal information and security for payment through credit card transactions. They also concern about transaction security and data safety when purchase online. Getting approved certificate from an organization such as eTrust is one of the ways to make a website more trustable. By doing so, a website will be more secure and it will increase customer confidence and lead to sale increase. For example, Scribendi, English language editing and proofreading services, bought SSL Certificate from VeriSign—the most trusted mark on the internet; by then site visitors who saw the green address bar made the sale leapt by 27%. When the companies have this certificate, the address bar of their website will change to green color and the Web address will begin with so customers know that the website is secure and trustable. Another way seller can do to reduce customers' risk concern when purchasing online is to carry brand name product in the website or even have its own brand name such as Amazon Holding and selling brand name product can improve the trust of the website. Brand name is one of the most important issues which affect customer's buying decision. It is imperative for online companies to ensure customer that they will never use customers' information to other purposes by clarifying customer privacy policy. This will at least ease consumer concern about their identify security. Online stores may use integrated mechanism in order to build the trust in safeguarding consumer's personal information and avoidance of misuse of credit card mode of payments.
- User Friendly Website:** Customers can be influenced by the image of the web site when they decide what website or buyer they should buy. Not only should companies create their secured website, but also should create it to be more attractive and more useful. Online stores can change a shopper into a buyer if the stores provide

variety and useful information of product, good customer service, and easy-to-access website. Their websites should have enough information but should not be too overwhelming. Putting unstructured or useless information in the website can reduce internet usefulness and ease of use. Also, companies and sellers should double-check any single words in their website to reduce mistakes and customers' misunderstanding. Information quality and visual design is an important effect on repurchasing (Koo et al., 2008). The willingness to purchase online will be low if the online store lacks of ease in searching and comparing shopping, and product updates. Online store should make their website to be easy for consumers to search product and service. Making web designs and portals novel and sophisticated and web atmospherics friendly is a key to attract visitors.

2. **User Friendly Website:** Customers can be influenced by the image of the web site when they decide what website or buyer they should buy from. Not only should companies create their secured website, but also should create it to be more attractive and more useful. Online stores can change a shopper into a buyer if the stores provide variety and useful information of product, good customer service, and easy-to-access website. Their websites should have enough information but should not be too overwhelming. Putting unstructured or useless information in the website can reduce internet usefulness.
3. The online shopping websites, provide various information and pictures about each product (this information should be error free), so though the user cannot physically touch the product, he/she can get a clear idea of the product before purchasing it.
4. The website can also offer a return/ exchange policy if the customer is not satisfied with the product. This builds confidence in the customer, and hence he/she will trust the website better. The website can also provide a very easy to use website, which is user-friendly so the customer can be satisfied with his/her experience. The website should make sure not to leak any information of any customer, so the privacy of the customer cannot be misused. The website should also make sure, that it is a safe place for the customers to do online shopping and make their payments.
5. The website should have a very good customer care service, and everything should be clear and transparent to the user. This builds confidence in the customer, and he/she will be satisfied at the end.

## Part B.2

### B2.1)

#### Introduction

Deficits occur when a government's expenditures exceed the revenue that it generates. The deficit can be measured with or without including the interest payments on the debt as expenditures. The primary deficit is defined as the difference between current government spending on goods and services and total current revenue from all types of taxes net of transfer payments. It excludes interest payments on debt. The fiscal deficit is defined as excess of total government expenditure (including loans net of recovery) over total government receipts (excluding borrowings). It measures the total borrowing requirements of the government. Fiscal deficit indicates total government borrowing requirements including interest whereas primary deficit indicates total government borrowing requirements excluding interest payments.

#### Given:

**Revenue Expenditure=70,000 crore**

**Borrowings = 15,000 crore**

**Revenue Receipt = 50,000 crore**

**Interest Payment= 25% of Revenue Deficit = 5000 crore**

W. K.T,

Revenue Deficit = Revenue Expenditure -Revenue Receipt

$$\text{Revenue Deficit} = 70,000 - 50,000 = 20,000 \text{ crore}$$

- Fiscal Deficit = Total Expenditure – Revenue Receipt

But here the Fiscal Deficit is equal to borrowings

$$\text{Fiscal Deficit} = 15,000 \text{ crore}$$

- Primary Deficit = Fiscal Deficit – Net Interest Payment

Primary Deficit = 15,000 crore – 5000 crores

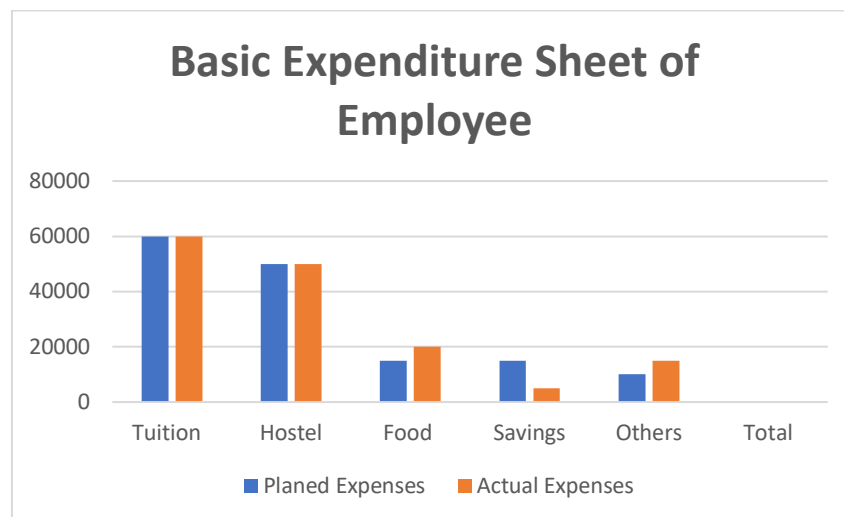
$$\text{Primary Deficit} = 10,000 \text{ crore}$$

B2.2)

**Basic Expenditure Sheet of Employee**

Income = 25,000

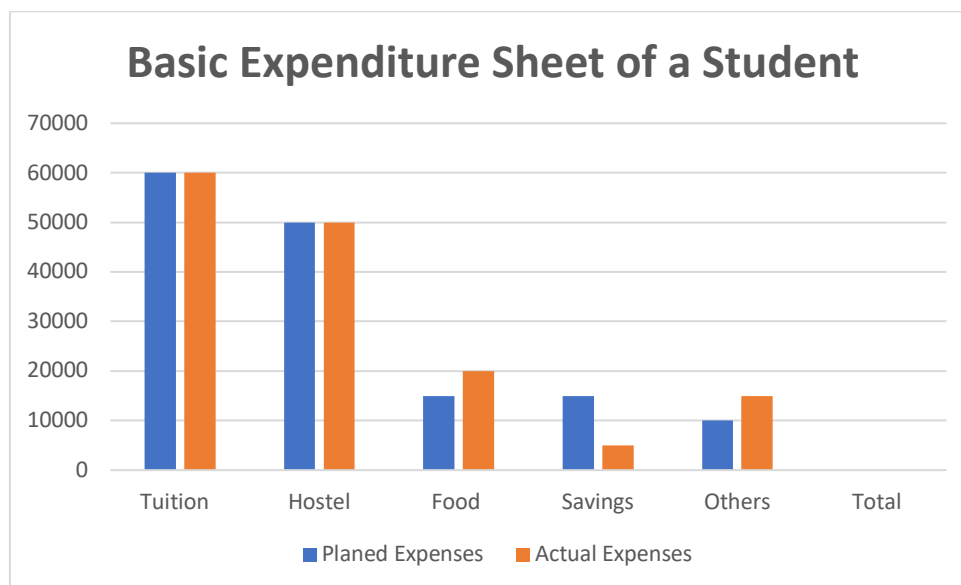
	Planed Expenses	Actual Expenses
Rent	5000	5000
Electricity	600	1000
Food	7000	6600
Savings	10000	12400
Total	2400	0



**Basic Expenditure Sheet of College**

Expenses Money = 1,50,000

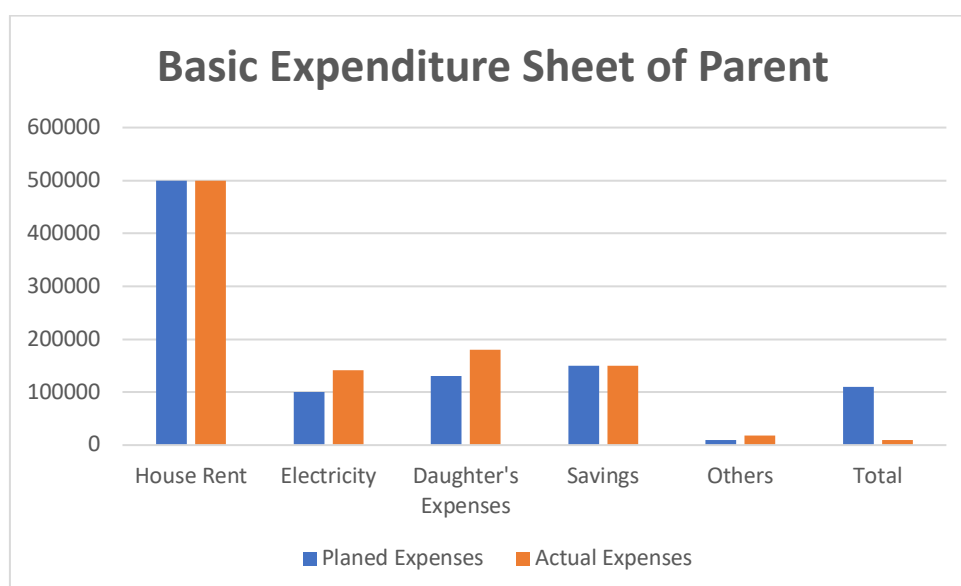
	Planed Expenses	Actual Expenses
Tuition	60000	60000
Hostel	50000	50000
Food	15000	20000
Savings	15000	5000
Others	10000	15000
Total	0	0



### Basic Expenditure Sheet of Parent

Income = 10,00,000

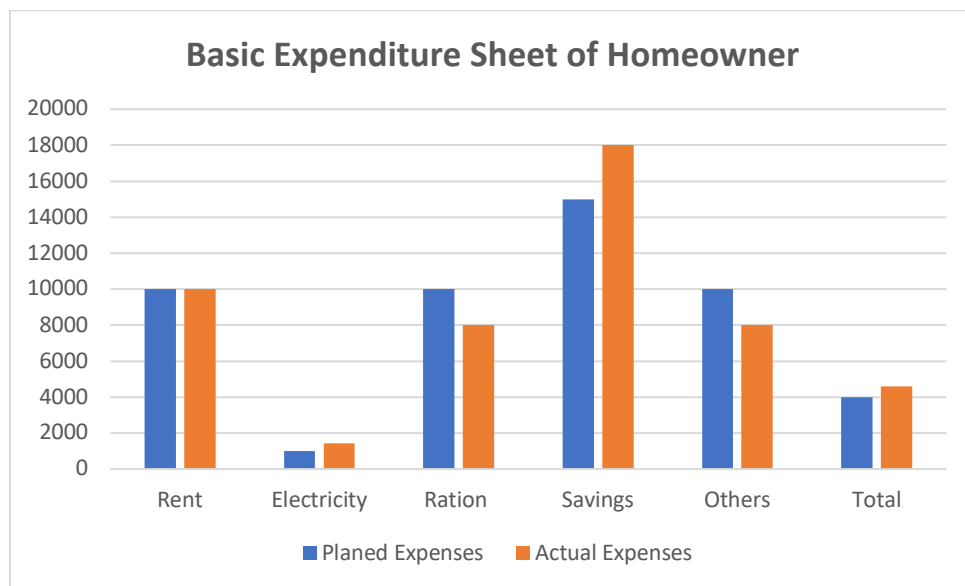
	Planned Expenses	Actual Expenses
House Rent	500000	500000
Electricity	100000	142000
Son's Expenses	130000	180000
Savings	150000	150000
Others	10000	18000
Total	1100000	1000000



### Basic Expenditure Sheet of Homeowner

Income = 50000

	Planed Expenses	Actual Expenses
Rent	10000	10000
Electricity	1000	1420
Ration	10000	8000
Savings	15000	18000
Others	10000	8000
Total	4000	4580



#### **B2.3)**

Looking at the above worksheets and the data from the graph we can say that Senior level of people is balanced. They know their income. The spend it properly on needs and wants and savings. In the end they have more remaining money among all the other categories. Students seems to spend a lot on wants than needs. Parents and house owners also tend to follow same pattern. Among all of the senior people are wise they have gained wisdom over years on how to manage their money nicely. They believe “People who save money report better overall well-being, including less psychological distress”.



## **B2.4)**

1. **Paying at least the minimum on each debt:** Each month, pay off as much of your debt as you can. At least pay the minimum you owe on each loan. This will protect your credit rating. If you can afford to pay more, pay down the loan with the highest interest rate first. As you pay off each loan, start paying more on the next debt in line.
2. **Asking for a lower interest rate:** Ask your lender for a lower rate. If the first person you talk to can't help you, ask to speak to their supervisor. If you have a good record of paying on time, they may be willing to reduce your interest rate to keep your business.
3. **Stop using your credit cards:** You don't have to cancel your credit cards or cut them up. But put them away somewhere safe and don't use them to make any more purchases until you've cleared your debt.
4. **Consider a consolidation loan:** You may be able to reduce your interest charges by grouping all your debts into 1 low-interest loan. This works best if you stop accumulating debt while you pay off the consolidation loan. Two common options are a home-equity, loan or line of credit. The interest rate will be lower, but keep in mind that you could lose your house if you don't make the payments.
5. **Trim your budget:** Could you cut back on things like eating out and other optional purchases? Trimming your budget will free up more money to pay down on your debt.

## **Question 3**

**Article:** Productive entrepreneurs can invigorate the economy by creating jobs and new technologies, and increasing productivity.

## **B3.1)**

Entrepreneurs are a rare species. Even in innovation-driven economies, only 1–2% of the work force starts a business in any given year. Yet entrepreneurs, particularly innovative entrepreneurs, are vital to the competitiveness of the economy. The gains of entrepreneurship are only realized, however, if the business environment is receptive to innovation. In addition, policymakers need to prepare for the potential job losses that can occur in the medium term through “creative destruction” as entrepreneurs strive for increased productivity. Entrepreneurship is important to economic development. The benefits

to society will be greater in economies where entrepreneurs can operate flexibly, develop their ideas, and reap the rewards. Entrepreneurs respond to high regulatory barriers by moving to more innovation-friendly countries or by turning from productive activities to non-wealth-creating activities. To attract productive entrepreneurs, governments need to cut red tape, streamline regulations, and prepare for the negative effects of layoffs in incumbent firms that fail because of the new competition.

### **B3.2 & B3.3)**

#### **Content of the article**

When an economy is doing well, there is less incentive to encourage new, entrepreneurial firms. When people and firms are making money, why take a risk on something new and untested? Entrepreneurs often challenge incumbent firms, and while this might seem undesirable, unchallenged, established firms tend to become complacent, content to take their profits without investing in research and development to improve their business. These stagnating firms are the first to suffer when imports arrive—withering rapidly, unable to respond to the competition. Thus, challenging incumbents to do better during good economic times is a benefit of entrepreneurship.

Entrepreneurs are equally, if not more, important when the economy is doing badly. When unemployment is high and the economy is contracting or stagnating, dynamic entrepreneurship could help turn the economy around. By developing novel products or increasing competition, new firms can boost demand, which could in turn create new job opportunities and reduce unemployment.

If entrepreneurs are consistently encouraged, in bad economic times as well as good, then all businesses are kept on their toes, motivated to work continuously to improve and adapt (see Different types of entrepreneurs). Entrepreneurs are the fresh blood that keeps economies healthy and flourishing even as some individual firms fail.

Capitalist economies are not alone in encouraging entrepreneurs. Managed economies, such as China's, are beginning to encourage and facilitate entrepreneurship. They have discovered that entrepreneurial activities, once viewed as a threat to the established system, are crucial for maintaining economic competitiveness and for achieving long-term success.

## Discussion of pros and cons

Entrepreneurs introduce innovations and induce economic growth

Entrepreneurs often create new technologies, develop new products or process innovations, and open up new markets. There are many examples of radical innovations introduced by entrepreneurs such as Bill Gates (Microsoft), Steve Jobs (Apple), and Stelios Haji-Ioannou (easyJet), to name just a few.

Radical innovations often lead to economic growth. Entrepreneurs who bring innovations to the market offer a key value-generating contribution to economic progress. Compared with incumbent firms, new firms invest more in searching for new opportunities. For inventors and innovators (who sometimes come from established firms) setting up their own business often appears to be the only way to commercialize their ideas.

Entrepreneurs increase competition

By establishing new businesses, entrepreneurs intensify competition for existing businesses. Consumers benefit from the resulting lower prices and greater product variety. Researchers have developed a measure of market mobility, which identifies the effects of new business formation on existing firms. A change in the ranking of established firms by number of employees indicates a transfer of market share and higher market mobility. This effect is particularly strong when considering entrepreneurial activity five years prior to the start-up, which points to a substantial time lag in the effect of start-ups on market mobility. Furthermore, new business formation has an indirect competition-enhancing effect by pushing established firms to improve their performance.

Entrepreneurs have positive employment effects in the short and long term, and negative effects in the medium term

Entrepreneurs stimulate employment growth by generating new jobs when they enter the market. Research has shown (after disentangling all the potential effects) that beyond this immediate effect there is a more complicated, S-shaped effect over time. There is a direct employment effect from new businesses that arises from the new jobs being created. Following this initial phase, there is usually a stagnation phase or even a downturn as new businesses gain market share from existing firms that are unable to compete and as some new entrants fail. After this interim phase of potential failure and displacement of existing firms, the increased competitiveness of suppliers leads to positive gains in employment once again. About ten years after start-up, the impact of new business formation on employment has finally faded away.

New businesses boost productivity

Competition between new and existing firms ideally leads to survival of the fittest. Even though overall employment may decline, new firms can foster productivity [6]. The productivity-enhancing effect of business formation occurs in the medium term, when the employment effect is dominated by the

displacement of existing firms (area II of the “wave” shown in Figure 1). This happens for two reasons. First, new firms increase competition in the market and thus diminish the market power of incumbent firms, forcing them to become more efficient or go out of business. Second, only firms with a competitive advantage or firms that are more efficient than incumbents will enter the market. The subsequent selection process forces less efficient firms (both entrants and incumbents) to drop out of the market. In the initial years following entry, the productivity effect can sometimes be negative, probably a result of adjustments to routines and strategies in response to the new entrants. The overall positive relationship is particularly strong for entrepreneurs with high-growth ambitions and a high degree of innovation; the effect on productivity is weaker for entrepreneurs with low-growth ambitions. This pattern indicates that entrepreneurs generally increase the productive use of scarce resources in an economy, with the strongest impact coming from innovative entrepreneurs. Entrepreneurship encourages structural change. Existing firms often struggle to adjust to new market conditions and permanent changes, getting locked into their old positions. They fail to make the necessary internal adjustments and lack the ability for “creative destruction,” famously described by Schumpeter in 1934. The entry of new businesses and the exit of worn-out firms can help to free firms from a locked-in position. Moreover, entrepreneurs may create entirely new markets and industries that become the engines of future growth processes.

Only a few people have the drive to become entrepreneurs

Entrepreneurs share certain traits, such as creativity and a high tolerance for the uncertainty that comes with developing new products. Four personality characteristics are particularly important for becoming an entrepreneur: willingness to bear risks, openness to experience, belief in their ability to control their own future (internal locus of control), and extraversion. Entrepreneurs are significantly more likely to have these traits for the following reasons:

- The success of each investment, particularly in innovative activities, is unpredictable. Every entrepreneurial decision is risky, and success is never assured. In contrast to ordinary managers, entrepreneurs often put their own funds on the line and risk losing money if the investment fails. They have to be willing to bear risks.
- People who are open to experience—who seek new experiences and are eager to explore novel ideas—are creative, innovative, and curious. These attributes are vital for starting a new venture.
- Locus of control measures generalized expectations about internal and external control. People with an external locus of control believe that their future is determined randomly or by the external environment, not by their own actions. People with an internal locus of control believe that they shape their future outcomes through their own actions. Entrepreneurs need to have an internal locus of control to propel them.

- People who are assertive, ambitious, energetic, and seek leadership roles (in the so-called “Big Five” approach this trait is called extraversion), tend to be sociable as well, enabling them to develop social networks more easily and to forge stronger partnerships with clients and suppliers. All of these traits—being assertive, seeking leadership, and developing networks—are important if an individual aims to become an entrepreneur.

While these personality traits affect a person’s decision to become an entrepreneur, different traits or parameter values of these traits affect the success of entrepreneurship and the decision to abandon or persevere in the new endeavour. Empirical research reveals that the most important personality characteristics influencing entrepreneurial success are lower levels of agreeableness, higher levels of need for achievement, higher levels of (internal) locus of control, and medium levels of risk acceptance:

- Agreeableness refers to having a forgiving and trusting nature and being altruistic and flexible. Lower scores on agreeableness might help entrepreneurs survive by enabling them to bargain more for their own interest with their partners.
- For entrepreneurs, a need for achievement is expressed in the search for new and better solutions and the ability to deliver these solutions through their own performance.
- The same holds for having higher levels of internal locus of control. Believing that one shapes one’s own future through one’s own actions is a very useful trait for entrepreneurial success.
- Entrepreneurs with a medium range of risk tolerance have the lowest exit probabilities. The relationship between risk tolerance and the probability of entrepreneurial success is not linear but an inverse U-shape [8]. Too low a risk tolerance leads to low-risk projects with low expected returns, which makes entrepreneurship an unattractive option to dependent employment, and excessive risk tolerance leads to projects that are very high risk with high failure rates.

### **A substantial risk of failure accompanies entrepreneurship**

Failure rates are high within the first five years of starting a business, typically around 40–50%, with the highest failure rate in the first year. Recent studies in Germany and in the UK have shown higher survival rates for new ventures in innovative industries .

There are several reasons why new businesses fail and close (see Failure versus closure). Not everyone who tries to start a business has the right character traits to become a successful entrepreneur. Other impediments to success are restricted access to capital, lack of customers, and discouraging regulatory hurdles, including unfriendly entry regulations and difficult and time-consuming requirements for registering property and obtaining or extending licenses or permits.

The level of self-employment is not necessarily an indicator of entrepreneurial activity

Self-employment is not synonymous with entrepreneurship. The level of entrepreneurial activity offers information about the dynamics of an economy, while the level of self-employment is not necessarily

correlated with economic development. In fact, most economies with high levels of self-employment are less developed. Less developed economies have fewer large firms (which deliver economies of scale and scope) and a greater number of small firms and self-employed individuals (delivering fewer economies of scale and scope). Thus, a high level of self-employment does not necessarily correspond with a high level of entrepreneurial activity.

High regulatory burdens and unsecured intellectual property rights are detrimental to innovative entrepreneurship

Regulatory obstacles to setting up a business, such as the need to buy permits or licenses and other entry barriers, may discourage entrepreneurship. Overregulation of commerce prevents entrepreneurship from flourishing because it increases the costs of starting a business and decreases flexibility and the ability to react quickly to opportunities as they arise, thus reducing experimentation. Similarly, frequently changing, complex, unclear, or opaque regulations make it difficult to understand the legal environment for entrepreneurial activity.

Sometimes, overregulation can even make entrepreneurship impossible by restricting or prohibiting entry into certain sectors of the economy through strict control of licenses. Permits and licenses can act as noncompetition agreements. Overregulated markets can turn potentially productive entrepreneurs toward unproductive non-wealth-creating activity. And because there are many potential markets for high-tech innovations all over the world, innovative businesses deterred by overregulation in one market can go elsewhere.

A high level of corruption can be a side effect of overregulation, with direct negative impacts on innovative activities [10]. Success in entrepreneurship and innovation—which are about new products or services—is uncertain. Thus if intellectual property rights are not adequately enforced, this adds to the uncertainty, which can build up to prohibitively high levels that discourage any potential innovators. Corruption may make entrepreneurs unwilling to trust the institutions that are necessary to protect intellectual property rights.

Limitations and gaps

Not enough is known about the differences in innovation between entrepreneurs and large (often multinational) firms. While entrepreneurs are hailed as the source of radical innovations, it may well be that large firms, which can make huge investments in research and development, are the real innovators. Both parties undoubtedly contribute to innovation, but whether they complement each other is still unknown.

Further empirical analysis is also needed of the relationship between entrepreneurial firms and economic growth rates. But while some truly innovative entrepreneurs create fast-growing businesses (so-called “gazelles”) that have an important impact on economic growth, whether replicative entrepreneurs (see Different types of entrepreneurs) have a measurable effect on economic growth seems less likely. Only further study can answer this question.

There is also inadequate understanding of the kind of economic environment that influences innovative entrepreneurs not only to start their businesses, but also to expand them. This is an important issue since the quality of start-ups— their persistence, growth rate, and innovation— influences their effect on the economy.

And we do not know enough about failure rates. About half of all businesses close in their first five years. Yet recent research finds that survival rates could be higher. It is not yet clear whether innovative entrepreneurs survive more often than noninnovative entrepreneurs. Research preceding that reported here found the opposite to be the case. It is also not clear whether the relationship between failure/closure and years of survival is linear. Some empirical analyses find a linear relationship, while others find a higher failure/closure rate in the first year.

### **B3.4)**

Entrepreneurship is considered crucial to a dynamic economy. Entrepreneurs create employment opportunities not only for themselves but for others as well. Entrepreneurial activities may influence a country’s economic performance by bringing new products, methods, and production processes to the market and by boosting productivity and competition more broadly. Realizing these advantages requires institutions that contribute to an environment that is friendly to entrepreneurs. In particular, it is important to protect intellectual and other property rights, streamline and enforce commercial laws, improve the business climate, reduce regulatory burdens, and create a culture of second chances for entrepreneurs who fail. More specifically, the following policy measures should be considered:

- Government policies and legislation on property rights are important in shaping a country’s innovativeness. Protecting material property rights ensures that any wealth creation stays with the entrepreneur, while protecting intellectual property rights fosters entrepreneurship and innovation.
- Administrative burdens for start-ups need to be low, including the time needed to register a business, the number of bureaucratic steps, and the number of regulations, fees, and reporting requirements.
- Conflicting legislation creates uncertainty, and uncertainty discourages business activity.