**Subject: Operation Management.**

Instructor: Zeeshan Ibrahim

**Important Note.**

Paper should be done in MS word.

**Attempt all questions. In your own words.**

# Q.No.1: In this situation of COVID 19 how automobile industry increases its productivity to ensure its maximum profit. (20)

Answer: The [pandemic](https://www.counterpointresearch.com/coronavirus-weekly-update/) is affecting most sectors of the economy, especially shared and [smart mobility](https://report.counterpointresearch.com/posts/report_view/AutomotiveFutures/1570) operators. Public-transport usage in major cities has declined anywhere from 70 – 90% of normal loads, and operators are now required to follow strict protocols like requiring face coverings, temperature scans and limiting the number of riders in trains and buses to ensure social distancing.

Similarly, [ride-hailing](https://report.counterpointresearch.com/posts/report_view/AutomotiveFutures/1564) mobility usage has plummeted dramatically, with several players suspending services during lockdowns. In the [US](https://www.counterpointresearch.com/regulatory-gridlocks-slowing-ev-growth-us/), demand for Uber and Lyft fell by over 80% in April from pre-[COVID](https://www.counterpointresearch.com/covid-19-impact-scenarios-chinas-automotive-industry/) levels.

Over the long term, the outbreak will have lasting impacts on shared mobility as the [pandemic](https://www.counterpointresearch.com/covid-19-leading-global-automotive-industry-recession/) alters the economic, regulatory, and technology environment, as well as changing [consumer behaviour](https://report.counterpointresearch.com/posts/report_view/ConsumerLens/1139).

Mobility is an essential aspect of our lives, but how we get around in the future could be significantly different in the post-COVID world. Social distancing is the most significant driver of change in this new environment, with people rethinking their transport modes to avoid the risk of infection. Recent trends in [China’s](https://www.counterpointresearch.com/covid-19-impact-scenarios-chinas-automotive-industry/) major cities are demonstrating that as bus and subway ridership drops, private cars, walking, and [biking](https://www.counterpointresearch.com/india-automotive-industry-struggling-in-2020/) are gaining in popularity.

Personal vehicle use may be the winner in the short term, and app-based ride-hailing aggregators are seeing a dramatic decrease in consumers using their services as remote working becomes the norm.

Further demands are being made on share-car drivers and their companies to take responsibility for keeping vehicles clean and virus free. To adapt, mobility industry players are adjusting their tactics, with leading companies focusing on various strategies.

Lyft, which announced cuts and furloughs affecting hundreds in May, stated that rides on its platform in the US reached only 25% of pre-COVID levels during the month, with consumers slowly coming back in cities where lockdown restrictions were eased. Lyft drivers are now required to self-certify within their app of wearing a facemask before they are allowed to pick up passengers.

While the global number for June trip requests are picking up as several countries ease restrictions, rides are still significantly below last year’s levels. In an attempt to improve profitability, Uber has remained focused on its core businesses of ride-hailing and food delivery, and also announced cuts to its workforce. Uber also introduced a new feature requiring drivers to take a selfie of themselves wearing a facemask before logging onto the company’s network. Uber has also been providing disinfectant sprays to drivers, encouraging them to sanitize their cars regularly.

With cities in China now officially re-opened for business, Didi Chuxing, the country’s largest ride-hailing app, is seeing ride-sharing demand coming back to levels similar to last year.  Since May, Didi has been using AI technology to authenticate that its driver-partners are wearing face masks.

The current crisis is helping some regions move more quickly towards sustainable mobility, while others are looking to defer or relax regulatory mandates to support depressed automotive industries.

In some markets, incentives such as cash for turning in old cars is driving sustainability through replacement and also encouraging adoption of [electric vehicles (EV)](https://report.counterpointresearch.com/posts/report_view/AutomotiveFutures/1603).  In other regions, like the US and [China](https://www.counterpointresearch.com/definite-faultlines-chinas-2018-car-sales-reason-concern/) in particular, regulators have considered relaxing emission targets in support of automakers.

Chinese regulators are also relaxing, at least for now, policies limiting personal vehicle ownership in order to facilitate social distancing. Many governments are also showing interest in dedicating space for pedestrians and cyclists, while some cities like New York are looking to close some streets to vehicular traffic.

Over the short to medium term, the pandemic could delay the development of advanced technologies, such as autonomous driving, as automakers divert research budgets to fund immediate cash requirements. Similarly, investments in micro-mobility and shared-mobility start-ups are expected to fall and could drive market consolidation.

The impact of COVID-19 on EV development will differ across regions. In China, we expect post-COVID EV sales to rebound, with continued investment in development. In Europe, while ramp-up of [EVs](https://report.counterpointresearch.com/posts/report_view/AutomotiveFutures/850) may be delayed with historically low oil prices, stringent environmental regulatory pressures could remain a counter-balance. In the US, we could see EV demand stagnate should federal emissions regulations be eased and oil prices remain subdued.

Over the long term, however, autonomous vehicles, [micro-mobility solutions](https://report.counterpointresearch.com/posts/report_view/AutomotiveFutures/1546) and other technologies that support physical distancing will benefit. We believe that as the initial crisis subsides, customer demand for these solutions could soar.

Even before the pandemic, mobility and automotive start-ups were suffering from slowing growth in major economies. Battered by lockdowns and movement restrictions, ride-hailers around the world have had to resort to cutting jobs and slashing costs.

Looking ahead as the pandemic gradually comes under control, [mobility](https://report.counterpointresearch.com/posts/report_view/AutomotiveFutures/1570) companies will need to look at developing detailed plans to scale up operations, not only focusing on where, but how. A portfolio review aiming to rationalise services can help focus on profitable operations and decide on which technologies are to be prioritised, so to emerge from the crisis leaner and stronger.

Counterpoint believes recent consumer behaviour changes in the mobility space will be temporary, and shared-mobility solutions, including [public transit](https://report.counterpointresearch.com/posts/report_view/AutomotiveFutures/901), will rebound. Micro mobility and last-mile solutions, too, will eventually recover, as cleaning and disinfection protocols are practised, with status updated on ride-hailing apps.

Now more than ever, it has become imperative for automakers and mobility operators to review their long-term strategy.

Q.No.2: How Pakistani Hotel/ Fast Food sector operates its outlet before and after COVID 19.

(15)

Ans: The [COVID-19 pandemic](https://en.wikipedia.org/wiki/COVID-19_pandemic) affects the global food industry as governments close down restaurants and bars to slow the spread of the virus. Across the world, restaurants' daily traffic dropped precipitously compared to the same period in 2019.[[1]](https://en.wikipedia.org/wiki/Impact_of_the_COVID-19_pandemic_on_the_food_industry#cite_note-1) Closures of restaurants caused a ripple effect among related industries such as food production, liquor, wine, and beer production, food and beverage shipping, fishing, and farming.[[2]](https://en.wikipedia.org/wiki/Impact_of_the_COVID-19_pandemic_on_the_food_industry#cite_note-:6-2)[[3]](https://en.wikipedia.org/wiki/Impact_of_the_COVID-19_pandemic_on_the_food_industry#cite_note-:14-3)[[4]](https://en.wikipedia.org/wiki/Impact_of_the_COVID-19_pandemic_on_the_food_industry#cite_note-:19-4)

The issues were particularly disruptive in industrialized areas where large proportions of entire categories of food are typically imported using [just-in-time](https://en.wikipedia.org/wiki/Just-in-time_manufacturing) logistics.

In June 2020, the [United Nations](https://en.wikipedia.org/wiki/United_Nations) warned that the world was facing the worst food crisis in half a century due to the [recession caused by the pandemic](https://en.wikipedia.org/wiki/Coronavirus_recession).[[5]](https://en.wikipedia.org/wiki/Impact_of_the_COVID-19_pandemic_on_the_food_industry#cite_note-5)

Islamabad, May 23 (IANS) The All Pakistan Restaurants Association has warned the government that it will open eateries across the country if they were not allowed to resume work by May 30, it was reported on Saturday.

Members of the Joint Action Committee (JAC) of the association in a press conference on Friday said that around 100,000 restaurants across the country will reopen by June 1, reports Dawn news.

JAC members said five million workers, vendors and relevant stakeholders were jobless since the government shut hotel business in mid-March.

The association''s president and JAC chairman, Sheikh Abdul Waheed, said the government had allowed takeaway service but it benefitted only a handful of multinational fast food outlets as majority of the local restaurants did not have such clientele.

He said the restaurants had paid salaries to the employees for two months but it had become impossible to continue to pay them since there was no business at all because of the closure of eatries.

He further said the restaurants were more secure than travelling on train, plane and public transport as they had ample space to ensure social distancing.

JAC central leader Chaudhry Mohammad Farooq said since there was no dinning service available, labourers and low-paid workers could not find a decent place to eat.

Farooq said the government had been requested time and again to issue standard operating procedures (SOPs) for reopening restaurants but the authorities paid no heed to their request.

The restaurant owners have therefore decided to resume business even if the government fails to issue SOPs, Dawn news quoted the Chairman as saying said.

JAC member Sain Mohammad Ijaz said the restaurants were providing entry-level jobs to educated and semi-educated people.

He said the sudden closure of restaurants had put jobs of thousands of people at stake since the owners had themselves become jobless.

The government, in order to prevent the spread of coronavirus, had closed down markets, restaurants and public places in March.

The lockdown was however eased earlier this month and eateries were allowed to start takeaway and delivery services.

The government, however, has prohibited dine-in service in hotels and restaurants.

An increasing number of entrepreneurs are capitalising on the opportunities emerging in the food business following socio-economic improvement in the country with a rapidly growing middle class, but the national purse may have not benefited as tax dodging remains unchecked.

Changing society habits as more and more people opt to dine out, ease of giving orders online, improving income of the middle class and love for food, besides the markedly satisfactory law and order situation, are the factors that have turned the country into a great place for people desirous of venturing into food business.

At weekends, a huge crowd of food lovers are seen outside popular restaurants and food streets in many cities of the country, even small According to Islamabad-based think tank, the Jinnah Institute, after facing terrorism for more than a decade, the security situation in Pakistan is improving, encouraging more people to dine at hotels.

“The trend of food streets is developing in Pakistan which helps new restaurants to stand on their feet easier than before; when people see a new restaurant, they want to try its food,” said Muhammad Umer, owner of Charcoal Tea, situated in PECHS block 2.

More and more restaurants are opening with modern ideas as businessmen learn from foreign experience.

“Pakistan has almost two-thirds of its 207 million people which are aged below 30 years who love to dine out. This, along with other factors, sparks a huge demand for delicious food with no big barrier to setting up such businesses,” said Abdul Wali Khan, who has set up 4 Season Food, a fast-food and Pizza restaurant, in Landhi. “We have to bear only fixed cost of establishing a food business; it needs more knowledge and expertise than investment in terms of money.”

For him, it has become easier to produce fast food with the help of ingredients being produced by many companies like spice mixes and sauces.

A quality fast-food business can be set up for just around Rs600,000 whereas its operating cost stands very low since the restaurant does not need to keep a large stock of goods like many other businesses.

“If we set aside the fixed cost of a restaurant, the variable cost is only 30%, which means it can earn a gross profit of at least 70% ie a sandwich produced at a cost of Rs30 will be sold for Rs100,” said Sikander Mahmood, CEO of Movenpick Hotel. “Profit margins can rise to more than 100% once the business is settled.”

Though big restaurants along with some medium-sized outlets pay taxes to the Federal Board of Revenue (FBR), small restaurants are rarely caught.

The growing number of food outlets and restaurants should have helped the FBR widen the tax net. However, contrary to that, Pakistan’s tax base has shrunk 17% in the 2016 tax year, according to the FBR’s Active Taxpayer List.

“Though profit margins are high, the food business is one of the four sectors which constitute a huge chunk of Pakistan’s massive undocumented economy; educational institutions, private health facilities and real estate are the other three; all remain active even in times of recession,” commented a former FBR member inland revenue who asked not to be named.

“Even most of the restaurants which are registered with the sales tax department don’t deposit the tax collected from customers,” said a former FBR officer.

“I have noticed many a time that restaurants mention sales tax on the bill, but they don’t show the sales tax registration number, which a common man cannot catch, therefore, a major chunk of tax never reaches the government exchequer,” he said.

[**43% Pakistanis remain ‘food insecure’**](https://tribune.com.pk/story/1187846/despite-surplus-43-pakistanis-remain-food-insecure/)

He also hit out at big hotels, saying they mostly underreported their income and paid less-than-required sales and income taxes.

He suggested that a central tax collecting system should be introduced for restaurants like the electronic price tag system in large departmental stores, which showed how many things had got out of the inventory and sold. “Through this system, the FBR can get information every time a customer pays his bill,” he said.

FDA is sharing information about best practices to operate retail food stores, restaurants, and associated pick-up and delivery services during the COVID-19 pandemic to safeguard workers and consumers.

This addresses key considerations for how foods offered at retail can be safely handled and delivered to the public, as well as key best practices for employee health, cleaning and sanitizing, and personal protective equipment (PPE). This is not a comprehensive list. We encourage consulting the references and links provided below by CDC, FDA, EPA, and OSHA for more detailed information. This will be updated as FDA receives further information and inquiries.

* [Managing Employee Health (Including Contracted Workers)](https://www.fda.gov/food/food-safety-during-emergencies/best-practices-retail-food-stores-restaurants-and-food-pick-updelivery-services-during-covid-19#employeehealth)
* [Personal Hygiene for Employees](https://www.fda.gov/food/food-safety-during-emergencies/best-practices-retail-food-stores-restaurants-and-food-pick-updelivery-services-during-covid-19#employeehygiene)
* [Managing Operations in a Foodservice Establishment or Retail Food Store](https://www.fda.gov/food/food-safety-during-emergencies/best-practices-retail-food-stores-restaurants-and-food-pick-updelivery-services-during-covid-19#operations)
* [Managing Food Pick-Up and Delivery](https://www.fda.gov/food/food-safety-during-emergencies/best-practices-retail-food-stores-restaurants-and-food-pick-updelivery-services-during-covid-19#pickupdelivery)

On April 10, 2020, FDA held a call with industry members to discuss these best practices. Listen to a [**recording**](https://www.fda.gov/media/136924/download) of the call (5MB, MP3) or download the [**transcript**](https://www.fda.gov/media/136923/download) (66KB, PDF).

For additional resources, see [Food Safety and the Coronavirus Disease 2019 (COVID-19)](https://www.fda.gov/food/food-safety-during-emergencies/food-safety-and-coronavirus-disease-2019-covid-19).

**Managing Employee Health (Including Contracted Workers)**

* Instruct employees with symptoms associated with COVID-19 to report them to their supervisors. Instruct sick employees to stay home and to follow the CDC’s [What to do if you are sick with coronavirus disease 2019 (COVID-19)](https://www.cdc.gov/coronavirus/2019-ncov/if-you-are-sick/steps-when-sick.html). Consult with the local health department for additional guidance.
* If an employee is sick at work, send them home immediately. [Clean and disinfect](https://www.cdc.gov/coronavirus/2019-ncov/community/disinfecting-building-facility.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fprepare%2Fdisinfecting-building-facility.html) surfaces in their workspace. Others at the facility with close contact (i.e., within 6 feet) of the employee during this time should be considered exposed.
* Instruct employees who are well, but know they have been exposed to COVID-19, to notify their supervisor and follow CDC-recommended precautions (see below).
* Inform fellow employees of their possible exposure to COVID-19 in the workplace, if an employee is confirmed to have COVID-19, while maintaining confidentiality.
* Implement workplace controls to reduce transmission among employees, such as those described below that are included in [CDC's Interim Guidance for Implementing Safety Practices for Critical Infrastructure Workers Who May Have Had Exposure to a Person with Suspected or Confirmed COVID-19.](https://www.cdc.gov/coronavirus/2019-ncov/community/critical-workers/implementing-safety-practices.html)
	+ Employers - Pre-screen (e.g., take temperature and assess symptoms prior to starting work).
	+ Employers - Disinfect and clean work spaces and equipment, and consider more frequent cleaning of high touch surfaces.
	+ Employees - Regularly self-monitor (e.g., take temperature and assess [symptoms of coronavirus](https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html)).
	+ Employees - Wear a mask or face covering.
	+ Employees - Practice social distancing and stay at least 6 feet from other people whenever possible.
* For additional information when employees may have been exposed to COVID-19, refer to CDC’s [CDC's Interim Guidance for Implementing Safety Practices for Critical Infrastructure Workers Who May Have Had Exposure to a Person with Suspected or Confirmed COVID-19](https://www.cdc.gov/coronavirus/2019-ncov/community/critical-workers/implementing-safety-practices.html).
* For additional information on employee health and hygiene and recommendations to help prevent worker transmission of foodborne illness, refer to [FDA’s Employee Health and Personal Hygiene Handbook](https://www.fda.gov/food/retail-food-industryregulatory-assistance-training/retail-food-protection-employee-health-and-personal-hygiene-handbook).
	+ If FDA recommendations differ from CDC’s regarding employee health and COVID-19, follow CDC.
* For returning previously sick employees to work, refer to [CDC’s Guidance for Discontinuation of Home Isolation for Persons with COVID-19](https://www.cdc.gov/coronavirus/2019-ncov/hcp/disposition-in-home-patients.html).
* Follow [CDC](https://www.cdc.gov/coronavirus/2019-ncov/community/critical-workers/implementing-safety-practices.html) and [FDA](https://www.fda.gov/food/food-safety-during-emergencies/food-safety-and-coronavirus-disease-2019-covid-19) information on PPE (i.e., gloves, face masks/coverings, and protective gear).
* Frequently review CDC’s [CDC's Interim Guidance for Business and Employers to Plan and Respond to Coronavirus Disease 2019](https://www.cdc.gov/coronavirus/2019-ncov/community/guidance-business-response.html).
* Understand risk at the workplace — use [OSHA’s Guidance on Preparing Workplaces for COVID-19](https://www.osha.gov/Publications/OSHA3990.pdf).

**Personal Hygiene for Employees**

* Emphasize effective hand hygiene including washing hands for at least 20 seconds, especially after going to the bathroom, before eating, and after blowing your nose, coughing, or sneezing.
* Always wash hands with soap and water. If soap and water are not readily available, then use an alcohol-based hand sanitizer with at least 60% alcohol and avoid working with unwrapped or exposed foods.
* Avoid touching your eyes, nose, and mouth.
* Use gloves to avoid direct bare hand contact with ready-to-eat foods.
* Before preparing or eating food, always wash your hands with soap and water for 20 seconds for general food safety.
* Cover your cough or sneeze with a tissue, then throw the tissue in the trash and wash hands after.

**Managing Operations in a Foodservice Establishment or Retail Food Store**

Continue to follow established food safety protocols and best practices for retail food establishments and important COVID-19 recommendations, including the following:

* Follow the 4 key steps to food safety: Always — [Clean, Separate, Cook, and Chill](https://www.fda.gov/food/buy-store-serve-safe-food/safe-food-handling).
* Wash, rinse, and sanitize food contact surfaces dishware, utensils, food preparation surfaces, and beverage equipment after use.
* Frequently disinfect surfaces repeatedly touched by employees or customers such as door knobs, equipment handles, check-out counters, and grocery cart handles, etc.
* Frequently clean and disinfect floors, counters, and other facility access areas using [EPA-registered disinfectants](https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2).
* Prepare and use sanitizers according to label instructions.
* When changing your normal food preparation procedures, service, delivery functions, or making staffing changes, apply procedures that ensure:
	+ Cooked foods reach the proper internal temperatures prior to service or cooling.
	+ Hot foods are cooled rapidly for later use – check temperatures of foods being cooled in refrigerators or by rapid cooling techniques such as ice baths and cooling wands.
	+ The time foods being stored, displayed, or delivered are held in the danger zone (between 41°F and 135°F) is minimized.
	+ Proper training for food employees with new or altered duties and that they apply the training according to established procedures.
* Help customers maintain good infection control and social distancing by:
	+ Discontinuing operations, such as salad bars, buffets, and beverage service stations that require customers to use common utensils or dispensers.
	+ Finding ways to encourage spacing between customers while in line for service or check out in accordance with the applicable State or local requirements.
	+ Discouraging customers from bringing pets — *except*service animals — into stores or waiting areas.
* Continue to use sanitizers and disinfectants for their designed purposes.
* Verify that your ware-washing machines are operating at the required wash and rinse temperatures and with the appropriate detergents and sanitizers.
* Remember that hot water can be used in place of chemicals to sanitize equipment and utensils in manual ware-washing machines.
* If you donate food to food recovery or charitable organizations, check for State and local guidelines. You can also find further information at [Conference for Food Protection](http://www.foodprotect.org/guides-documents/comprehensive-guidance-for-food-recovery-programs/)[External Link Disclaimer](http://www.fda.gov/about-fda/website-policies/website-disclaimer).

**Managing Food Pick-Up and Delivery**

* Observe established food safety practices for time/temp control, preventing cross contamination, cleaning hands, no sick workers, and storage of food, etc.
* Have employees wash hands often with soap and water for at least 20 seconds, especially after going to the bathroom, before eating, after blowing their nose, coughing or sneezing, or after touching high touch surfaces, e.g., doorknobs, and doorbells.
	+ If soap and water are not readily available, use an alcohol-based hand sanitizer with at least 60% alcohol. Always wash hands with soap and water if hands are visibly dirty.  See, CDC’s [How to Protect Yourself & Others](https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/prevention.html).
* Increase the frequency of cleaning and disinfecting of high-touch surfaces such as counter tops and touch pads and within the vehicle, by wiping down surfaces using a regular household cleaning spray or wipe.
	+ Make sure to read the label and follow manufacturer’s instructions on use.
* Establish designated pick-up zones for customers to help maintain social distancing.
* Practice social distancing when delivering food, e.g., offering “no touch” deliveries and sending text alerts or calling when deliveries have arrived.
* Conduct an evaluation of your facility to identify and apply operational changes in order to maintain social distancing if offering take-out/carry-out option by maintaining a 6-foot distance from others, when possible.
* Keep hot foods hot and cold foods cold by storing in appropriate transport vessels.
	+ Keep cold foods cold by keeping enough coolant materials, e.g., gel packs.
	+ Keep hot foods hot by ensuring insulated cases are properly functioning.
* Keep foods separated to avoid cross contamination, e.g., keeping raw foods separated from cooked and ready-to-eat foods.
* Ensure that any wrapping and packaging used for food transport is done so that contamination of the food is prevented.
* Routinely clean and sanitize coolers and insulated bags used to deliver foods.

Q.No.3: Write a brief note on how Pakistani education sector deal with different level of students such as school, college and University in delivering of service. (15)

Ans: **Education in**[**Pakistan**](https://en.wikipedia.org/wiki/Pakistan) is overseen by the Federal Ministry of Education and the [provincial governments](https://en.wikipedia.org/wiki/Government_of_Pakistan#Provincial_governments), whereas the federal government mostly assists in curriculum development, accreditation and in the financing of research and development. Article 25-A of [Constitution of Pakistan](https://en.wikipedia.org/wiki/Constitution_of_Pakistan) obligates the state to provide free and compulsory quality education to children of the age group 5 to 16 years. "The State shall provide free and compulsory education to all children of the age of five to sixteen years in such a manner as may be determined by law".[[3]](https://en.wikipedia.org/wiki/Education_in_Pakistan#cite_note-3)

The education system in Pakistan[[4]](https://en.wikipedia.org/wiki/Education_in_Pakistan#cite_note-4) is generally divided into six levels: [preschool](https://en.wikipedia.org/wiki/Preschool) (for the age from 3 to 5 years), [primary](https://en.wikipedia.org/wiki/Primary_education) (grades one through five), [middle](https://en.wikipedia.org/wiki/Middle_school) (grades six through eight), [high](https://en.wikipedia.org/wiki/Secondary_education) (grades nine and ten, leading to the [Secondary School Certificate](https://en.wikipedia.org/wiki/Secondary_School_Certificate) or SSC), [intermediate](https://en.wikipedia.org/wiki/Secondary_education) (grades eleven and twelve, leading to a [Higher Secondary School Certificate](https://en.wikipedia.org/wiki/Higher_Secondary_School_Certificate) or HSSC), and [university](https://en.wikipedia.org/wiki/University) programs leading to [undergraduate](https://en.wikipedia.org/wiki/Undergraduate) and [graduate](https://en.wikipedia.org/wiki/Graduate_school) degrees.[[5]](https://en.wikipedia.org/wiki/Education_in_Pakistan#cite_note-5)

The literacy rate ranges from 85% in [Islamabad](https://en.wikipedia.org/wiki/Islamabad) to 23% in the [Torghar District](https://en.wikipedia.org/wiki/Torghar_District%22%20%5Co%20%22Torghar%20District).[[6]](https://en.wikipedia.org/wiki/Education_in_Pakistan#cite_note-pbs.gov.pk-6) Literacy rates vary regionally, particularly by sex. In tribal areas female literacy is 9.5%.[[7]](https://en.wikipedia.org/wiki/Education_in_Pakistan#cite_note-fata.gov.pk-7), while [Azad Jammu & Kashmir](https://en.wikipedia.org/wiki/Azad_Jammu_%26_Kashmir) has a literacy rate of 74%.[[8]](https://en.wikipedia.org/wiki/Education_in_Pakistan#cite_note-tribune.com.pk-8) Moreover, English is fast spreading in Pakistan, with more than 92 million Pakistanis (49% of the population) having a command over the English language. On top of that, Pakistan produces about 445,000 university graduates and 80,000 computer science graduates per year.[[9]](https://en.wikipedia.org/wiki/Education_in_Pakistan#cite_note-9) Despite these statistics, Pakistan still has one of the lowest literacy rates in the world[[10]](https://en.wikipedia.org/wiki/Education_in_Pakistan#cite_note-10) and the second largest out of school population (22.8 million children)[[11]](https://en.wikipedia.org/wiki/Education_in_Pakistan#cite_note-11) after [Nigeria](https://en.wikipedia.org/wiki/Education_in_Nigeria).

Only 68% of Pakistani children finish primary school education.[[12]](https://en.wikipedia.org/wiki/Education_in_Pakistan#cite_note-12) The standard national system of education is mainly inspired from the [English educational system](https://en.wikipedia.org/wiki/Education_in_England). [Pre-school](https://en.wikipedia.org/wiki/Pre-school) education is designed for 3–5 years old and usually consists of three stages: Play Group, [Nursery](https://en.wikipedia.org/wiki/Nursery_school) and [Kindergarten](https://en.wikipedia.org/wiki/Kindergarten) (also called 'KG' or 'Prep'). After pre-school education, students go through [junior school](https://en.wikipedia.org/wiki/Junior_school) from grades 1 to 5. This is followed by [middle school](https://en.wikipedia.org/wiki/Middle_school) from grades 6 to 8. At middle school, [single-sex education](https://en.wikipedia.org/wiki/Single-sex_education) is usually preferred by the community, but [co-education](https://en.wikipedia.org/wiki/Co-education) is also common in urban cities. The curriculum is usually subject to the institution. The eight commonly examined disciplines are:

* [Arts](https://en.wikipedia.org/wiki/Arts)
* [Computer Studies](https://en.wikipedia.org/wiki/Computer_science) and [ICT](https://en.wikipedia.org/wiki/Information_and_Communication_Technology)
* [General Science](https://en.wikipedia.org/wiki/General_Science) (including [Physics](https://en.wikipedia.org/wiki/Physics), [Chemistry](https://en.wikipedia.org/wiki/Chemistry) and [Biology](https://en.wikipedia.org/wiki/Biology))
* Modern languages with literature i.e. [Urdu](https://en.wikipedia.org/wiki/Urdu_language) and [English](https://en.wikipedia.org/wiki/English_language)
* [Mathematics](https://en.wikipedia.org/wiki/Mathematics)
* [Religious Education](https://en.wikipedia.org/wiki/Religious_Education) i.e. [Islamic Studies](https://en.wikipedia.org/wiki/Islamiyat)
* [Social Studies](https://en.wikipedia.org/wiki/Social_Studies) (including [Civics](https://en.wikipedia.org/wiki/Civics), [Geography](https://en.wikipedia.org/wiki/Geography), [History](https://en.wikipedia.org/wiki/History), [Economics](https://en.wikipedia.org/wiki/Economics), [Sociology](https://en.wikipedia.org/wiki/Sociology) and sometimes elements of [law](https://en.wikipedia.org/wiki/Law), [politics](https://en.wikipedia.org/wiki/Politics) and [PHSE](https://en.wikipedia.org/wiki/PHSE))

Most schools also offer [drama studies](https://en.wikipedia.org/wiki/Drama), [music](https://en.wikipedia.org/wiki/Music) and [physical education](https://en.wikipedia.org/wiki/Physical_education) but these are usually not examined or marked. [Home economics](https://en.wikipedia.org/wiki/Home_economics) is sometimes taught to female students, whereas topics related to [astronomy](https://en.wikipedia.org/wiki/Astronomy), [environmental management](https://en.wikipedia.org/wiki/Environmental_management) and [psychology](https://en.wikipedia.org/wiki/Psychology) are frequently included in textbooks of general science. Sometimes [archaeology](https://en.wikipedia.org/wiki/Archaeology) and [anthropology](https://en.wikipedia.org/wiki/Anthropology) are extensively taught in textbooks of social studies. [SRE](https://en.wikipedia.org/wiki/Sex_and_Relationships_Education) is not taught at most schools in Pakistan although this trend is being rebuked by some urban schools. Provincial and regional languages such as [Punjabi](https://en.wikipedia.org/wiki/Punjabi_language), [Sindhi](https://en.wikipedia.org/wiki/Sindhi_language), [Pashto](https://en.wikipedia.org/wiki/Pashto_language) and others may be taught in their respective provinces, particularly in language-medium schools. Some institutes give instruction in foreign languages such as [German](https://en.wikipedia.org/wiki/German_language), [Turkish](https://en.wikipedia.org/wiki/Turkish_language), [Arabic](https://en.wikipedia.org/wiki/Arabic_language), [Persian](https://en.wikipedia.org/wiki/Persian_language), [French](https://en.wikipedia.org/wiki/French_language) and [Chinese](https://en.wikipedia.org/wiki/Chinese_language). The language of instruction depends on the nature of the institution itself, whether it is an English-medium school or an Urdu-medium school.

As of 2009, Pakistan faces a net primary school attendance rate for both sexes of 66 percent: a figure below estimated world average of 90 percent.[[13]](https://en.wikipedia.org/wiki/Education_in_Pakistan#cite_note-UNESCO_Institute_for_Statistics-13)

Pakistan's poor performance in the education sector is mainly caused by the low level of public investment. As of 2007, public expenditure on education was 2.2 percent of GNPs, a marginal increase from 2 percent before 1984-85. In addition, the allocation of government funds is skewed towards higher education, allowing the upper income class to reap the majority of the benefits of public subsidy on education. Lower education institutions such as primary schools suffer under such conditions as the lower income classes are unable to enjoy subsidies and quality education. As a result, Pakistan has one of the lowest rates of literacy in the world and the lowest among countries of comparative resources and socio-economic situations.[[14]](https://en.wikipedia.org/wiki/Education_in_Pakistan#cite_note-Rasool_Memon_2007_47%E2%80%9355-14)

Secondary education in Pakistan begins from grade 9 and lasts for four years. After end of each of the school years, students are required to pass a national examination administered by a regional Board of Intermediate and Secondary Education (or BISE).

Upon completion of grade 9, students are expected to take a standardised test in each of the first parts of their academic subjects. They again give these tests of the second parts of the same courses at the end of grade 10. Upon successful completion of these examinations, they are awarded a [Secondary School Certificate](https://en.wikipedia.org/wiki/Secondary_School_Certificate) (or SSC). This is locally termed a '[matriculation certificate](https://en.wikipedia.org/wiki/Matriculation_in_Pakistan)' or 'matric' for short. The curriculum usually includes a combination of eight courses including electives (such as Biology, Chemistry, Computer and Physics) as well as compulsory subjects (such as Mathematics, English, Urdu, Islamic studies and Pakistan Studies).

Students then enter an [intermediate college](https://en.wikipedia.org/wiki/Junior_college) and complete grades 11 and 12. Upon completion of each of the two grades, they again take standardised tests in their academic subjects. Upon successful completion of these examinations, students are awarded the [Higher Secondary School Certificate](https://en.wikipedia.org/wiki/Higher_Secondary_School_Certificate) (or HSSC). This level of education is also called the FSc/FA/ICS or 'intermediate'. There are many streams students can choose for their 11 and 12 grades, such as pre-medical, pre-engineering, humanities (or social sciences), computer science and commerce. Each stream consists of three electives and as well as three compulsory subjects of English, Urdu, Islamiat (grade 11 only) and Pakistan Studies (grade 12 only).

Alternative qualifications in Pakistan are available but are maintained by other [examination boards](https://en.wikipedia.org/wiki/Examination_board) instead of BISE. Most common alternative is the [General Certificate of Education](https://en.wikipedia.org/wiki/General_Certificate_of_Education) (or GCE), where SSC and HSSC are replaced by [Ordinary Level](https://en.wikipedia.org/wiki/Ordinary_Level) (or O Level) and [Advanced Level](https://en.wikipedia.org/wiki/Advanced_Level) (or A Level) respectively. Other qualifications include [IGCSE](https://en.wikipedia.org/wiki/International_General_Certificate_of_Secondary_Education) which replaces SSC. GCE and GCSE O Level, IGCSE and GCE AS/A Level are managed by British examination boards of [CIE](https://en.wikipedia.org/wiki/University_of_Cambridge_International_Examinations) of the [Cambridge Assessment](https://en.wikipedia.org/wiki/Cambridge_Assessment) and/or Edexcel International of the [Pearson PLC](https://en.wikipedia.org/wiki/Pearson_PLC). Generally, 8-10 courses are selected by students at GCE O Levels and 3-5 at GCE A Levels.

[Advanced Placement](https://en.wikipedia.org/wiki/Advanced_Placement) (or AP) is an alternative option but much less common than GCE or IGCSE. This replaces the secondary school education as 'High School Education' instead. AP exams are monitored by a North American examination board, [College Board](https://en.wikipedia.org/wiki/College_Board), and can only be given under supervision of centers which are registered with the College Board, unlike GCE O/AS/A Level and IGCSE which can be given privately.

Another type of education in Pakistan is called "Technical Education" and combines technical and vocational education. The vocational curriculum starts at grade 5 and ends with grade 10.[[15]](https://en.wikipedia.org/wiki/Education_in_Pakistan#cite_note-UNEVOC-15) Three boards, the Punjab Board of Technical Education (PBTE), KPK Board of Technical Education (KPKBTE) and Sindh Board of Technical Education (SBTE) offering Matric Tech. course called [Technical School Certificate](https://en.wikipedia.org/wiki/Technical_School_Certificate) (TSC) (equivalent to 10th grade) and [Diploma of Associate Engineering](https://en.wikipedia.org/wiki/Diploma_of_Associate_Engineering) (DAE) in engineering disciplines like Civil, Chemical, Architecture, Mechanical, Electrical, Electronics, Computer etc. DAE is a three years program of instructions which is equivalent to 12th grade. Diploma holders are called associate engineers. They can either join their respective field or take admission in [B.Tech.](https://en.wikipedia.org/wiki/B.Tech.) and [BE](https://en.wikipedia.org/wiki/Bachelor_of_Engineering) in their related discipline after DAE.

Furthermore, the A level qualification, inherited by the British education system is widely gained in the private schools of Pakistan. Three to four subjects are selected, based on the interest of the student. It is usually divided into a combination of similar subjects within the same category, like Business, Arts and Sciences. This is a two-year program. A level institutions are different from high school. You must secure admission in such an institution, upon the completion of high school, i.e. the British system equivalent being O levels. O levels and A levels are usually not taught within the same school.

Over 5719 people have reportedly been infected in Pakistan during the global COVID-19 pandemic. Since the first two case detected in late February, some 96 people have lost their lives fighting the deadly disease, while the spread of the disease has reached over 105 out of 158 districts across Pakistan, the highest number of cases were reported in Punjab followed by Sindh. The least affected region with 35 reported cases and no recorded deaths so far, is Pakistan Administered Kashmir. The Government of the Islamic Republic of Pakistan, with support from international and national humanitarian and development partners, have responded to the pandemic by strengthening response coordination, case management, disease surveillance, testing services in laboratories, strengthening health systems, and community mobilization, sensitization and empowerment to cope with the negative impact of the COVID-19. To mitigate the impact of the disruption of daily life, it has taken a number of initiatives, including a cash disbursement of $80 - $82 per month to 12 million families through the Pakistan Social Protection programme (Ehsaas) Although early protective measures taken by the Government resulted in containing the spread of the infection in the early weeks of the pandemic, a steady increase has been recorded in the notified cases since Mid-March. As shown in figure 1, the highest number of cases reported in a single day is 577 people on 6 April 2020.

Achieving safe and quality health services during an outbreak depends on the availability of an adequate workforce, in terms of numbers, skills, and relevant medical supplies, equipment and material for infection prevention and control. These elements are essentially important in containing and responding to COVID19 and maintaining a continuum of care. Therefore, the biggest humanitarian needs in this pandemic are the protection of health workers. Front line staff (midwives, nurses, obstetricians and anaesthesiologists etc), need to be prioritized as critical and lifesaving and they should be provided with personal protective equipment if they are treating patients with COVID-19. The availability of medical supplies, testing kits and medicines is the second biggest humanitarian need in the country. With the limited medical facilities available, most cases are at risk of going without being detected, resulting in a higher number of infected cases in the country. A quarter of the population (around 53 million people) lives below the national poverty line and around twofifth (around 84 million people) are multi-dimensionally poor. Similarly, food insecurity is also very high and between 20-30% population (40 to 62 million people) is in some form of food insecurity in Pakistan. An estimated 36.43 million people are persistently and chronically vulnerable to food insecurity and also highly exposed to natural hazards and shocks which is also true for the ongoing COVID-19 pandemic. An additional 2.45 million people may become vulnerable to food insecurity as a result of any medium scale shock. However, given the scale of this emergency, while the situation is still evolving, one could anticipate a substantial increase in the number of extremely food insecure people in the country, requiring a scaled-up response by humanitarian partners through both in-kind and cash modalities.

The Government of Pakistan with support from partners has responded to COVID-19 pandemic through establishing coordination structures at all levels. For instance, the government has constituted a high-level National Coordination Committee chaired by the Prime Minister. The Committee comprises of all relevant Federal Ministers, Chief Ministers and Provincial Health Departments. The Committee is responsible for overall coordination of COVID-19 response in the country. A National Command and Control Centre has been established to ensure effective coordination between the federal and provincial government. At provincial levels, Task Force chaired by Chief Minister on COVID19 has been formed. The National Disaster Management Authority with Provincial Disaster Management Authorities are the leading operational agency for overall COVID-19 response. Ministry of Foreign is supporting in coordination of international support/assistance. During the early phase of the pandemic, the major threat was importation of cases of COVID-19. To that effect, on the 23 January 2020, the government of Pakistan started screening of people at Islamabad airport. Subsequently, through training of additional health and airport staff, provisions of equipment and other supplies and establishment of information desks at the airport for information and general awareness to travellers; the screening was expanded to include all types of points of entry (sea, land crossings and airports). Over one million (1,102,562) passengers were screened between 23 January and 20 March 2020 when all points of entry were closed. Further to that, the government has established 353 quarantine facilities with 139,558 beds to segregate people who had contacts with a confirmed COVID-19 case but are not yet ill. In addition, 566 hotels with 16,336 beds have also been identified for the same purpose. As the pandemic expands and more cases are being reported as a result of local transmission, the government has strengthened disease surveillance at health facility and community level using existing surveillance mechanisms, including Polio surveillance officers. Confirmed cases are being isolated in designated isolation facilities for confirmed cases. To that effect a total of 217 isolation facilities with 119,778 beds are already designated for case management in Pakistan. Awareness and information material on hand hygiene, standard and transmission precautions, correct and rational use of mask and PPEs, social distancing and environmental cleaning were developed and disseminated widely. Help lines have been established. The National Institute of Health, the national reference public health laboratories acquired the requisite technical capacity for COVID-19 diagnostics. Since then the government has established 41 centres across Pakistan, in all provinces and regions that can perform Real time PCR testing for COVID-19 with a daily capacity of up to 4000 tests/day. The predicative analysis of expected cases based on the attack rates from other countries indicates that there are likely to be approx. 196,421 total cases in Pakistan. Of these 157,137 (80%) will be mild, 29,463 will be moderate to severely ill (15%) and approximately 10,000 (5%) critical cases that will require ventilator/Highly Dependent Unit support. This projection is based on the present available epidemiological data on COVID-19 and will change depending on the response instituted. There is a need to regularly monitor the trend of the outbreak and revise the plan accordingly. At the current detection rate of 8%, this will require from 1.5 to 2 million laboratory diagnostic tests to be conducted. Challenges. There is a formal coordination structure within the government that has been established to provide coordination of the response at all levels however, the linkage between the central and provincial/regional level coordination is not well defined and needs to be streamlined. Additional support from the international system to support coordination is a priority. The isolation and quarantine facilities are inadequate in number and the infrastructure unsuitable for isolation and quarantine. The standard operating procedures (SoPs) are not being implemented at both the isolation and quarantine facilities; the facilities lack human resources, technical expertise, supplies, equipment and proper management. The people being quarantined or isolated are not properly briefed on the importance of social distancing and hygiene. This was partially responsible for the spread of COVID-19 at Taftan border and may continue to be the source of spread in the new quarantine sites being established. That aside, the current number of isolation facilities and beds are few (217 isolation facilities with 119,778 beds) whereas the estimated number of total beds required are 196,421 as per the current projection based on available data. There is urgent need to support the government through training of staff, support to provision of necessary female staff, provision of necessary medicines and other medical supplies for the facilities. Additional support may be required in terms of technical advice on WASH, food support and other humanitarian areas if the requirements for isolation facilities continues to increase. Community mobilization and sensitization activities are still weak, the crisis communication and community engagement strategy is still under development and needs finalization and dissemination. Technical awareness messages have been developed and need to be disseminated widely. Humanitarian agencies with strong background in risk communication and community engagement may be able to support the work of Government and civil society groups in this area. The disease surveillance system is weak and fragmented. For instance, the sentinel surveillance and eventbased surveillance is not functional. The Severe Acute Respiratory Illness/ Influenza Like Illness (SARI/ILI) sentinel surveillance which can be used as a proxy is not fully functional. That aside, over 70 Rapid Response Teams (RRTs) have been constituted and trained in many of the provinces however, that number is very small given the fact that we need at least one RRTs in each of the 154 districts in Pakistan. The response to call by the RRTs for case investigation is weak as they are few and lack infection prevention and control equipment and supplies. The data collection, analysis, reporting and dissemination of health data is weak and fragmented at all levels. There is an urgent need to strengthen all aspects of disease surveillance. Confirmation of COVID-19 is another challenge. There are limited number of laboratories with limited capacity to confirm COVID-19 cases. Currently, there are 41 laboratories in Pakistan with capacity to confirm COVID cases. The total PCR tests available in the country is approximately 45,000-50,000 in the public and private sectors with daily testing of up to 4,000 tests/day. There are inadequate supplies of viral RNA extraction kits and automated extractors in the country which effects the testing throughputs. Majority of the laboratories are in major cities. Case management facilities are few and lack trained staff, required equipment and supplies. Infection prevention and control is weak at all levels (community, facility, surveillance and laboratory) in terms of training human resources, supplies, availability of required structures, availability and implementation of protocols.