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Uncovering Covid-19, distance learning, and educational inequality in rural areas of Pakistan and China: a situational analysis method

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Challenges to education in rural areas have been reported for a long time, and the respective governments are continuously making efforts to address them. However, the eruption of the Covid-19 pandemic resulted in the total closure of schools and a surge in internet and distance learning. Hence, there is a need to assess the situation periodically to gauge the effectiveness of government efforts in tackling these challenges and understand the impact of the virus outbreak on the education landscape. This study focuses on rural areas of Pakistan and China, utilizing the Situational Analysis Method (SAM). The study findings revealed several key points. Firstly, in both rural Pakistan and China, Covid-19 led to an increase in the number and scope of distance learning activities. However, there is a need for better experiences to effectively manage distance learning for students, parents, and teachers. Moreover, specific issues peculiar to rural China include shortages of relevant facilities such as computers, smartphones, and poor connectivity. In contrast, rural Pakistan faces challenges of unpreparedness and higher teacher workloads. Secondly, since internet connectivity is an essential component for distance learning, rural Pakistan shows higher internet penetration compared to rural areas in China. Nevertheless, internet connection speed in China remains higher and consistent, whether in urban or rural regions. However, both countries struggle with poor internet connection in rural areas due to the lack of enough potential customers. Thirdly, rural education in both countries is plagued by poverty, inadequate funding, and many students having to endure long and hazardous journeys to school. Specific issues in rural China include poor parental care due to migration and a shortage of teachers, while rural Pakistan grapples with limited educational opportunities for children and women, insufficient educational training for teachers, issues of social norms, and attacks on schools by extremist groups.

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Introduction

Prior to the outbreak of coronavirus, there has never been a pandemic whose impacts have severely and rapidly impacted people's lives and means of livelihood. (Sansa, 2020) The novel coronavirus identified as Covid-19 is also referred to as SARS-COV-2, which stands for severe acute respiratory syndrome coronavirus-2. Because of this, the researchers have a sneaking suspicion that the virus is connected to Covid-19. The virus was discovered for the first time at the end of 2019 in Wuhan, which is located in China (The World Bank Education Global Practise, 2020:1–2). The broad distribution of Covid-19 had a significant and negative impact on the lives of people. Due to mortality, the recession, lockdown restrictions, and interruptions in schools and higher education institutions as a result of their shutdown, the health systems in all impacted nations were under severe strain (Le Grange, 2020). Almost all countries in the world; China and Pakistan included, were compelled to develop plans to stop the virus's spread. As a result, public gatherings were outlawed and social distance policies were implemented (Dube, 2020), because scientific research and clinical studies suggested that one of the most effective ways to stop the spread of Covid-19 is to create social distance (Fowler et al., 2020; Pal et al., 2021). This implied that education would be interrupted, so switching to online learning was crucial. As a result of the move from traditional to online teaching and learning, students and teachers have to rely on technology to finish the school year and complete the curriculum (Mahaye, 2020; Mizani et al., 2022; Coşkun, Kara (2022)). The shift to online learning put the education of students and teachers in rural areas in danger. These students' exclusion from formal education is caused by a lack of infrastructure, electronic devices, and electricity in rural areas (Mamburu, 2022). Online education appears to favor wealthy and urban students (Dube, 2020; Hossain et al., 2021; Hosen et al., 2022; Mamburu, 2022). Investigating the difficulties that students in rural areas encounter in educational contexts with resources and addressing these problems is of utmost importance. So, many countries, including Pakistan and China, have turned to distance learning to continue the education process when schools are closed due to the Covid-19 pandemic.

In Pakistan, during the initial phase of the school closure that was prompted by the outbreak of the Covid-19 virus, the government developed the TeleSchool programme in collaboration with notable EdTech providers such as Knowledge Platform, Sabaq.pk, Sabaq Muse, and Taleemabad to broadcast free educational content. Despite this, classes resumed in November after being cancelled for a period of 6 weeks. In December, as a direct response to the closing of a second school, the government initiated the first Radioschool in an effort to broaden student access to educational opportunities. Rural populations in Pakistan are less equipped to deal with this scenario as the infection gradually spreads throughout the country. This is despite the fact that rural areas in Pakistan benefit from geographic distance, relative isolation, and lower population density, all of which are advantageous in terms of the immediate impact that Covid-19 will have. Eighty percent of the 734 million people who were living in poverty at the time of the Covid-19 crisis were residing in rural areas, and seventy-six percent of these individuals held jobs in the agricultural sector. People who live in rural areas have restricted access to a variety of essential public services and amenities, including sanitation, medical care, education, social security, internet and communications technologies, and public infrastructure. The majority of people who live in rural areas make their living in agriculture, while the rest of the population relies on subsistence farming. As a direct consequence of this, they are unable to afford to make additional educational opportunities available to their children. On the other hand, despite the fact that some people might be able to afford this charge, students who do not have enough internet connectivity are unable to attend online classes. Therefore, limited internet access will stymie efforts to make learning outside of the classroom possible, which will result in an education disruption in rural areas throughout the course of the Covid-19. According to the World Bank (2020b), the inability to receive an appropriate education is referred to as "learning poverty." According to the findings of research conducted by the World Bank, the rapid spread of the COVID-19 virus has resulted in the temporary closure of schools in >160 countries, which has resulted in the absence of 1.6 billion children and teens. In addition, the effects that Covid-19 has on schooling do not have the same magnitude of impact on all urban and rural locations. It is vital that systems for distance learning be developed that take into consideration these student variances as a result of the Covid-19 epidemic.

In China, on the other hand, after the Spring Festival break, the Ministry of Education (MoE) has decided to postpone the reopening of educational institutions indefinitely, which means that returning students will not be permitted. After its discovery in late March, the Covid-19 virus quickly spread throughout China during the first few months of 2020. As a result, the Chinese Ministry of Education implemented restrictions on emergency crisis relief, which caused educational disruptions. (tngkè bù tngxué) is working towards the goal of completely revamping the educational system and including online education (MoE, 2020a). However, the educational experiences of pupils throughout this time period differed widely based on the students' geographical location, the sort of school they attended, and their socioeconomic position (Gautam, 2020). These educational experiences are expected to increase existing educational inequities, notably between urban and rural areas in China (Basilaia and Kvavadze, 2020; Cahyadi et al. 2021). This is because of the long-term repercussions that these educational experiences will have on China's human capital development.

Various models have been used to deliver distance learning; where for early childhood, TV broadcast and Radio broadcast have been introduced; for primary, TV broadcast, radio broadcast, online videos have been introduced, and also, teachers can contact with students via SMS and social media to make up for lost time in continuing education programs; for secondary education, online videos predominate, though radio and television broadcasts have been introduced; and for higher education, online libraries, video lectures, guidelines, and online channels have been introduced (World Bank, 2020b, p.3). However, several nations add additional content and products to their websites but do not necessarily provide online courses. Infrastructure and tool familiarity drive the achievements (and challenges) of delivering learning. While nations with good connectivity can provide efficient distance education, those who need help to reach all students on an equal basis (World Bank, 2020a). Therefore, Covid-19 disrupted the teaching and learning process and the mode adopted to curb the distress effect of the virus that prevents face-to-face teaching and learning activities; thus, distance learning has been bewildered by the problem of internet connectivity, especially in rural areas of developing countries. Hence, what are the paradoxes of internet connectivity in rural areas; what is the situation of distance learning in rural areas, and what are the educational inequalities in rural areas amidst the Covid-19 pandemic? This study chooses to study the connections among Covid-19, distance learning, and educational inequality in rural areas of Pakistan and China as a comparative analysis because China is the origin of the Covid-19 pandemic, which is a new virus and no one is immune; also a highly contagious, which

means it spreads quickly; and because of its novelty, scientists are unsure on how it will behave because they have tiny history to go on though still in efforts. Second, China and Pakistan are developing countries, densely populated countries, and also with a high number of rural settlers. Third, Pakistan shares a border with China. The findings of such a study will be interesting for policymaking in boosting the rural education of the countries, especially in emergencies like the Covid-19 pandemic.

However, going from the review of the existing literature, studies that comparably studied the situation of distance learning amidst Covid-19 in rural Pakistan and China are scarce; if this study is not the first to conduct such comparative analysis. Second, to the best we can search, it could be the first study to investigate educational inequality either as a unilateral or comparative analysis amidst Covid-19 in the rural areas of Pakistan and China. Third, a check of the available literature reveals that this study is likely the first to compare and study the variables of Covid-19, distance learning, and educational inequality in the rural parts of Pakistan and China; hence, this is a novel topic to investigate. Consequently, the findings of this study are significant for rural education policymaking, given that the findings could aid governments and other national and international organizations in considering various dimensions to improve the effectiveness of distance learning and rural education in Pakistan and China during times of crisis, such as Covid-19. In addition, it will assist the government in "implementing initiatives to improve teacher working conditions and teaching in rural schools" In addition, it will aid students in rural Pakistan and China and, over time, "guarantee a better future for and the development of human capital coming from rural contexts." More so, it will illustrate the impact that Covid-19 has had on education, educational inequality, and the urgent need for tailored initiatives to address these concerns in rural areas of Pakistan and China. In addition, none of the research projects are required to make use of the Situational Analysis Method, despite the fact that it has the advantage of supplying essential information and is superior to other methods that may be employed in carrying out research projects of this nature. For instance, it may make it possible to use the author's professional experiences in relation to the issue as an integrated component of the critical study design and continuing analysis. This is something that may be accomplished through the use of citations. In addition, the author is able to address human and nonhuman aspects that influence the efficiency of distance learning during the Covid-19 epidemic by using the situational mapping method of this approach. Additionally, under this way of study, the social world map can be utilised to assist in the interpretation of the relationships between kids, parents, and instructors, hence supporting the efficient continuation of the disrupted school (Belay, 2020). Consequently, the conduct of this research is tailored to fulfil the following goals:

1. To investigate Covid-19 and the situation of distance learning in rural areas of Pakistan and China;
2. To analyze the paradoxes of internet connectivity amidst Covid-19 in rural areas of Pakistan and China; and
3. To examine the intersectionality and educational inequality in rural areas of Pakistan and China.

The study organized into five sections where section one is the introduction, section two deliberates on the review of related literature, section three is the designed methodology for achieving the objectives of the study, section four is the analysis of the study, while section five is the concluding remarks of the study.

Literature review

The literature review divides into the review of the existing studies related to this study, conceptual framework and theoretical framework, which deliberates the set of ideas to structure the study and the guiding theory of this study, respectively.

Review of the existing studies. Various scholars worked on Covid-19 and investigated it in previous studies on education. For example, Dube (2020) found that teachers and students in rural areas lack digital competency and computer skills. It is difficult for these teachers to support students and deliver well-structured lessons with adequate facilitation because they are unable to use learning apps effectively. It further asserts that "user system competencies [are] related to the effectiveness of the curriculum implementation. Therefore, if teachers' training has been compromised, the curriculum implementation will be ineffective. The inhabitation of learners' development is one of the obstacles that online learning carries, and when students can compete in a physical environment, which further stimulates their learning, fewer groups of learners can develop properly. According to Fergert et al. (2020), limited peer contact for kids during the lockdown period may have a "negative impact on children and adolescents given the importance of peer contact for well-being". According to one of the reviews, lockdowns and school closings frequently increase rates of substance abuse, anxiety, fear, depression, loneliness, child abuse, and domestic violence. According to a Hubei, China, survey by Van Der Berg (2020), children "are at higher risk of long-term psychological distress, including depression". After "children between the ages of eight and 12 years old" showed a quarter of depressive symptoms. Being exposed to domestic violence is another danger the kids face during lockdown times. Because of lockdown regulations put in place by governments, domestic violence typically increases with fewer opportunities for children to temporarily flee. Fegert et al. (2020), studies show that the lockdown "significantly affects children's mental health and has the potential to have long-term consequences". According to Mhlanga and Moloi (2020), it is necessary to implement new strategies to close the achievement gap between privileged and less privileged students. It should be highlighted that the government's strategy is feasible, but the primary issue that must be addressed is "targeting learners in remote regions, particularly those without internet access," in order to further entrench the concepts of inclusive education. Further, for online education to succeed in rural areas, challenges such as "low internet access and infrastructure in general" must be addressed. According to a Human Rights Watch (2020) study on the effect of Covid-19 on children's education in Africa, many children were unable to receive an education as schools across the continent were forced to close as a result of the Covid-19 eruption. In Pakistan, a study conducted by the Centre for Economic Research in Pakistan (CERP) (2020) found that the closure of schools due to Covid-19 has widened the educational divide between urban and rural areas. The study found that children in rural areas are less likely to have access to distance learning resources such as television and Internet, which has resulted in a significant drop in learning outcomes. The study also found that girls in rural areas are particularly disadvantaged, with many being forced to drop out of school due to the pandemic. Indrawati et al. (2020) studied the effect of the Covid-19 pandemic on children's schooling in rural and impoverished areas of Indonesia and discovered that one in three youngsters quit learning and studied less. In addition, children had limited access to widely supported internet-based education, and while the offline method was more suitable, it was not without drawbacks. In addition, youngsters' mental health was significantly impacted, and they suffered excessive fear and anxiety. In addition, many working parents were unwilling to assist their children with schoolwork. Some children were affected by domestic abuse. Parents lacked

the funds to provide distance learning facilities for their children; thus education had to take a back place to fundamental needs. The likelihood of dropping out of school rose. The consequences of COVID-19 have already contributed to a greater degree of educational imbalance, according to study that was undertaken by Liverpool University (2020). A report published by the United Nations in 2020 will emphasise the fact that the COVID-19 epidemic has brought to light the digital divide that exists between wealthy countries and developing countries, and that students who live in impoverished or rural regions are especially affected by this. The report also highlight the fact that the Covid-19 pandemic has brought to light the digital barrier that exists between wealthy countries and developing countries. The Covid-19 epidemic has, according to a report by NPR (2020), brought to light the difficulties that are associated with using distance learning in rural locations and adding that it is stressful everywhere now that many schools in the United States have resumed classes via distance learning; however, it is especially difficult in rural districts where internet connectivity is usually intermittent or nonexistent. A huge number of American schools have resumed classes via distance learning. In the episode of the Harvard EdCast (2023), rural education specialist Mara Tieken examines the particular difficulties that continue to be experienced by rural schools in the midst of the Covid19 pandemic. It is not very often that we hear about the 15% of pupils who attend rural schools, and it would appear that this community is frequently excluded from national conversations concerning the impact that Covid19 has on education. During the Covid-19 outbreak, when authorities advised students to enrol in online courses at the secondary and tertiary levels, Wajdi et al. (2020) used primary data to examine the government's position on the educational system. In addition, the administration made measures to cancel examination activities in 2020. Zahra et al. (2020) investigated the major benefits of Covid-19 on rural Pakistani students. In addition, it serves as a check on the function of policy moderation played by the Higher Education Commission and the availability of internet services in delivering educational amenities to remote areas. Using in-depth research methodologies, the study determined that the coronavirus had a negative impact on the education of rural students in Pakistan and an incompatible role for rural students in higher education. Atulkar (2021) explores the impact of Covid-19 on the rural Indian education system based on challenge and opportunity. It uncovered a number of obstacles, including high student-to-teacher ratios, poor infrastructure, and a lack of quality teacher training. Moreover, teacher training is also a concern in private schools. These issues, coupled with India's vast education market size (with 35 percent of its 1.3 billion people under the age of 15), give the tremendous financial potential for ed-tech products to scale up by filling gaps. Agrawal (2021) explores the lockdown's impact on rural undergraduate students' education in Umarban (Dhar), M.P., India, during the Covid-19 pandemic. He discovered that the Covid-19 epidemic had a stronger detrimental influence on classroom attendance in regions where education was already undervalued. These data may be useful for higher education institutions as they develop methods to aid students throughout the pandemic. Al-Hussein et al. (2021) examine the quality of the online education services that are provided for primary school students by using sample perceptions of early childhood parameters in Saudi Arabia and Jordan in conjunction with online questionnaires to collect responses from 157 teachers. This is done in accordance with the Servqual Model. Children in grades 3, 4, and 5 had learning increases of 10% after a year of regular schooling, according to research on teaching and learning in government schools in rural Pakistan conducted by Cambridge (2021). However, these gains could be lost due to the influence that COVID-19 has had on education in Pakistan and the closure of institutions. Pillay (2021) researches the influence of inequality and Covid-19 on schooling and career preparation for rural and low-socioeconomic South African children. According to the study's conclusions, eight primary topics emerged from the literature review, including access to education, difficulties experienced by girls, racism, infrastructure issues in poor and rural schools, and child-headed households. In China, a study conducted by the China Development Research Foundation (2021) found that the pandemic highlighted educational inequalities between urban and rural areas. The study found that many rural students in China lack access to digital devices and internet connectivity, which has hindered their ability to participate in distance learning. The study also found that the pandemic has exacerbated the already existing teacher shortage in rural areas, as many teachers have been unable to return to their schools due to travel restrictions. According to Nikkei Asia (2021), only half of rural children in China have undisrupted access to Internet classes. This has widened China's education gap. According to Nature Human Behaviour, as reported by Nikkei Asia (2021), the Covid-19 pandemic led to school closures and distance learning that are likely to exacerbate social class academic disparities. Tiwari (2021) investigates the situation of Covid-19 and online learning in rural China and discovers that, despite China's 2017 declaration that it would complete the task of basic infrastructure building and teacher capacity building, educational experiences in rural China during this time revealed numerous flaws in previous informatisation efforts. Jagadale (2022) expresses, with the use of quantitative analysis, several forms of obstacles to online learning faced by students in rural locations while focusing especially on obstacles to online learning and analysis in the midst of the Covid-19 pandemic. It uncovered a number of issues with online learning, including adaptability, technical errors, virtual engagement, communication problems, a lack of online learning skills, student feelings, demotivation during online learning, a lack of technical literacy, and the stressful conditions under which students learn online. Korkmaz et al. (2022) investigate the elements influencing Internet access and its impact on the educational disparity in OECD nations during the Covid-19 outbreak. In order to take into account the neighbourhood in the analysis of educational disparity, the spatial panel data model is utilised. The findings of the study indicate that educational inequality has arisen as a consequence of the pandemic response, despite the fact that Internet access has increased during the Covid-19 era.

Going from the body of the existing literature, there are very few studies that investigate the state of remote education in the context of Covid-19 in rural China and Pakistan. In addition, there has yet to be a study that has explored educational inequality in the rural parts of Pakistan and China, either as a unilateral or comparative comparison among Covid-19. Again, a check of the reviewed literature reveals a scarcity of a study that compares and studies the variables of Covid-19, distance learning, and educational inequality in the rural parts of Pakistan and China. Conducting such a study is important for rural education policymaking because it could assist governments, as well as other national and international organisations in considering various dimensions to improve the efficiency of distance learning and rural education. In addition, it will assist the respective governments in "implementing initiatives to improve teacher working conditions and teaching in rural schools." In addition to this, it will be of assistance to students in rural areas of China and Pakistan, and in the long run, it will "guarantee a better future for and the development of human capital coming from rural contexts." In addition to this, it will highlight the impact that Covid-19 has had on education, educational inequality, and the urgent need for focused initiatives to address these challenges in

rural parts of Pakistan and China. In addition, none of the research projects that needed to be done made use of the situational analysis method, despite the fact that this approach has the advantage of proving essential information and is superior to other ways that could be utilised in carrying out research projects like these.

Theoretical linkage of the variables

Linkage between Covid-19 and distance learning. The COVID-19 pandemic has had a significant impact on education systems worldwide, leading to the widespread adoption of distance learning as a means of continuing education while minimizing the risk of infection. The linkage between COVID-19 and distance learning is thus the result of the pandemic's impact on education. Furthermore, with the closure of schools and universities due to the pandemic, many educational institutions turned to distance learning as a way to continue teaching and learning remotely. This has led to a significant increase in the use of online platforms, video conferencing, and other digital tools for education. Moreover, distance learning has been both a challenge and an opportunity for students and educators alike. On the one hand, it has allowed many students to continue their education while staying safe at home. On the other hand, it has posed challenges for students who lack access to technology or who struggle with the social isolation that can come with remote learning. Educators have also had to adjust their teaching methods and find new ways to engage students in a virtual environment. Overall, the linkage between COVID-19 and distance learning highlights the importance of technology and digital literacy in education and the need for flexibility and adaptability in the face of unexpected challenges.

Linkage between Covid-19 and internet connectivity. The COVID-19 pandemic has highlighted the crucial role that Internet connectivity plays in our daily lives, including in areas such as education, work, healthcare, and social connection. The pandemic has led to an unprecedented increase in internet usage as people have relied more heavily on digital tools for communication, entertainment, and information. In addition, one of the most significant linkages between COVID-19 and internet connectivity is the increased demand for high-speed internet access as more people have shifted to remote work, online learning, and telemedicine. This has created challenges in areas where internet infrastructure is weak or unreliable, limiting access to these critical services for some individuals and communities. Further, the pandemic has also highlighted the digital divide, which refers to the gap between those who have access to reliable internet connectivity and those who do not. This divide has been particularly evident in low-income and rural communities, where internet access is often limited or non-existent. The pandemic has exposed the urgent need to bridge this divide and ensure that everyone has access to reliable and affordable internet connectivity. Moreover, the pandemic has also led to an increase in cyber threats and online scams, as more people have turned to the Internet for communication and commerce. This has highlighted the importance of cybersecurity and digital literacy in protecting individuals and organizations from online threats. Overall, the COVID-19 pandemic has emphasized the critical role of internet connectivity in our daily lives and has highlighted the need to address the digital divide and improve internet infrastructure to ensure that everyone has access to reliable and affordable internet connectivity.

Linkage between intersectionality and educational inequality. Intersectionality is a concept that recognizes that people's social identities, such as race, gender, class, and sexuality, are interconnected and mutually reinforcing. Educational inequality refers to disparities in academic achievement and access to education based on factors such as socioeconomic status, race, and ethnicity. Intersectionality plays a critical role in understanding and addressing educational inequality because it highlights the ways in which multiple forms of oppression can intersect and compound to create unique experiences of discrimination and disadvantage. For example, a student who is both Black and female may experience educational inequality differently than a student who is only Black or only female. The intersection of these identities may create unique challenges and barriers, such as experiencing gendered racism or being subject to stereotypes that assume Black girls are not interested in or capable of academic success. Furthermore, intersectionality can also help identify how educational policies and practices may perpetuate or exacerbate inequality. For example, standardized testing may disadvantage students who come from low-income backgrounds or who do not speak English as their first language, as these students may not have had the same educational opportunities or access to resources as their more privileged peers. Additionally, disciplinary policies that disproportionately affect students of colour may create a school-to-prison pipeline that perpetuates racial inequality. So, to address educational inequality through an intersectional lens, it is essential to recognize and understand the ways in which social identities intersect and impact educational experiences. This requires taking into account the unique experiences of students from different backgrounds and developing policies and practices that are inclusive and equitable. It also requires recognizing and addressing systemic barriers perpetuating inequality, such as inadequate funding for schools in low-income neighborhoods, and addressing bias and discrimination in educational settings.

Figure 1 shows the study's conceptual framework, which illustrates the relationship among the variables, namely Covid-19, distance learning, and educational inequality. From the figure, Covid-19 as a disruption is determining the central variables of the analysis, i.e., internet connectivity, distance learning, and educational inequality, which all of them grouped to determine the condition of rural education from their perspectives. Therefore, with this structure of the relationships, the study can examine the relationship between Covid-19 and distance learning, the paradoxes of internet connectivity amidst Covid-19, and the intersectionality and educational inequality in the rural areas of the countries under the study, i.e., Pakistan and China.

The theoretical framework applied as a lens couching this study is "Objectivism Theory". Carson (2004) contends that Objectivism Theory can be extremely useful in teaching students. "Humans are not theory-laden in the negative sense," according to Objectivist theory. This theory claims that new information is not necessarily dependent on prior knowledge. It asserts that prior information informs new knowledge, lending meaning to the new knowledge. Consequently, if prior knowledge is erroneous, learners can alter prior new knowledge to generate updated and organized new knowledge. Moreover, reason, the human mental power of interpreting the universe abstractly and rationally, is the source of all human knowledge, according to the view. The faculty of reason distinguishes humans from other animals; hence Aristotle referred to humans as "the reasoning animal." However, we do not automatically reason. We possess free will and are flawed. This is why we need epistemology, the study of knowledge, to instruct us on what knowledge is and how to acquire it. Nevertheless, our physical senses are the source of our knowledge. Touch enables us to see, hear, taste, smell, and experience reality. Babies learn about the world through their senses. We increase the ability to recall memories and generate

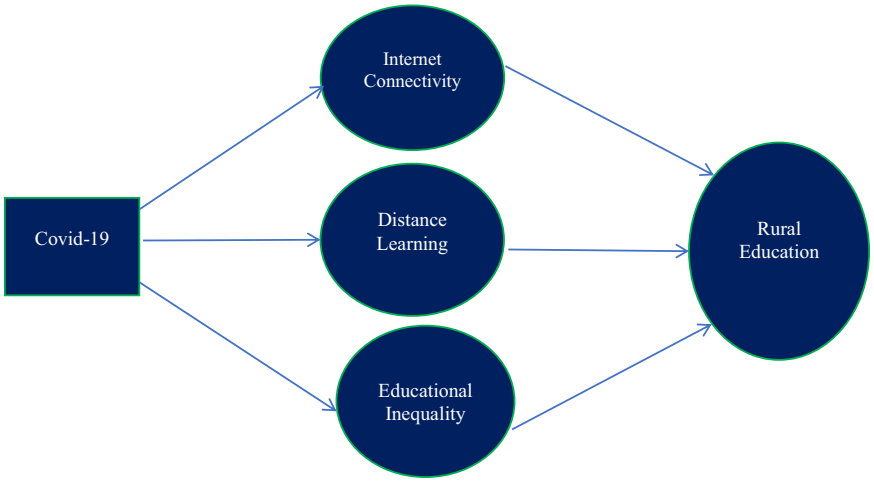

Fig. 1 Conceptual framework.

mental images as our cognitive capacities advance. So, this theory can be used to explain the links between online learning and the barriers to education for rural learners. In practice, if learners and teachers are exposed to computers and appropriate learning infrastructure for online learning, they will be able to develop and use technology for successful learning (Carson, 2004; Sifat et al., 2022).

Methodology

The data to use in achieving the objectives of this study are the information gathered from paradoxes of internet connectivity amidst Covid-19 in rural Pakistan and China, the situation of distance learning amidst Covid-19 in rural Pakistan and China; distance learning in rural Pakistan and China, and the intersectionality and educational disadvantage in rural Pakistan and China. However, the data will be sourced by consulting various literature, reports, government websites and other seminal sources to provide general contextual information on the objectives of this study. The study will also gather data (strictly based on the data/information that precisely relates to the objectives of this study) through informal discussions, email, and phone calls, which will also aid the study in making the situational analysis across the rural areas of Pakistan and China.

The method employed to achieve the objectives of this study is a qualitative research technique called Situational Analysis Method (SAM), which is a research methodology that uses the circumstance of the topic being studied as a unit of analysis, was utilised as the means by which the goals of this study were accomplished in order to reach the objectives of the study. The process of gathering, assessing, and organising information regarding the internal and external environments of an organisation or society is referred to as situational analysis. It involves determining the purpose of the analysis, collecting data from a variety of sources, conducting an analysis of the data to identify trends and patterns, determining the opportunities and threats, determining the strengths and weaknesses of the issue that is the subject of the study, and developing strategies to address the issues that have been identified. According to Clarke (2005), situational analysis can be utilized to examine discourses, texts, and "nonhuman symbolisms thoroughly." When used as a research method, the situational analysis aims to (a) illustrate the complexities found within and surrounding social situations as they change, become stable, and establish patterns and positions; (b) reveal knowledge that has been subjugated and perspectives that have been marginalised; and (c) empirically decenter "the knowing subject." Additionally, situational analysis improves and completes grounded theory in several ways. In contrast to grounded theory, which concentrates on behaviour, situational analysis investigates the overall context of an investigation in order to comprehend its components and the connections between them (Whisker, 2018). In addition, the situational analysis uses an experimental approach to build "the circumstance" by generating three distinct ecological-relational maps. These maps are referred to as positional maps, situational maps, and social worlds/arena maps.

The choice to make use of situational analysis in this study over others is that it can allow the use of the author's professional experiences in relation to the topic as an integrated part of the critical research design and ongoing analysis. Furthermore, through situational mapping, the author can address human and nonhuman factors that influence the efficiency of distance learning during the Covid-19 pandemic. Important human aspects of the situational map are educated parents, other family members, and educators, while important nonhuman aspects include internet access, television, radio, mobile phones, and other digital devices. Moreover, in this technique, the social world map can aid in interpreting the interactions between students, parents, and teachers, hence facilitating the effective continuation of the disrupted school. The positioning map demonstrates how different locations impact remote education. The important components of the positioning map include social stratification, such as gender, parental demands for child labour, and socio-economic standing (occupation, income, and educational achievement) (Belay, 2020).

Analysis

Covid-19 and the situation of distance learning in rural areas of Pakistan and China. The first objective of this study is to examine Covid-19 and the state of distance education in rural Pakistan and China. Before investigating the condition of Covid-19 and distance education in rural parts of Pakistan and China, it is necessary to comprehend specific facts. For instance, massive school closures have occurred worldwide as a result of the COVID-19 outbreak. It is projected that the closures in low- and middle-income countries (LMICs) will negatively impact education and broader development outcomes. A number of challenges must be overcome before nations can successfully deliver alternative forms of education. Obstacles include a lack of experience dealing with these issues, a teacher's limited digital and pedagogical capacity, and infrastructure limitations related to connectivity and power. The difficulty of establishing alternate modes of education in remote, rural, or underprivileged populations is

another reason why disparities in learning outcomes are projected to increase in LMICs. The most underprivileged children are projected to suffer the most severe scholastic repercussions. Furthermore, different countries use different titles for alternatives to conventional teaching and learning, such as 'flexible learning,' 'open learning, 'remote learning,' and 'distance learning.' This study then incorporates "remote learning" for the sake of uniformity. Due to substituting traditional face-to-face learning with online education, distance learning has become one of the most controversial and fiercely disputed topics (Liu et al., 2021; Shahzad et al., 2021). It has given people confidence that education will be allowed to pupils or instruction will be halted in the case of an emergency (Azzi-Huck and Shmis, 2020; Fauzi (2022)). In addition, the 'School's out' and 'Class's On' tactics arose as a result of Covid-19, originated in China, and eventually extended to the rest of the world in order to practice uninterrupted learning as a form of distance learning (Zhou et al., 2020). However, in countries such as Lebanon, the outbreak of the virus that causes school closure has prompted the assignment of homework, boosting autonomous distance learning with the help of parents and peers (World Bank, 2020a). Learners can be provided with options based on their needs (e.g., evening or weekend study) (Huang et al., 2020). In addition, learners can conduct learning activities and access learning materials from anywhere and at any time utilizing mobile devices, whether on campus, at home, on public transportation, at an airport, or even on an aircraft.

In China, in response to the rapid spread of the Covid-19 pandemic across China in the early months of 2020, schools across the country remained closed after the Spring Festival break. On 17th February 2020, 270 million students from rural and urban areas began the spring semester from the comfort of their homes using various online and distance education platforms as part of the Ministry of Education's emergency crisis mitigation response. In addition to technical arrangements, the Ministry of Education took a holistic approach to the education and well-being of kids throughout the school closure time. It provided tight standards about the maximum number of online/distance learning hours per day, the optimal design of online content, and the coupling of offline educational and recreational activities with online ones. It also recommended maintaining physical fitness, emphasising eye and mental health, and avoiding social isolation (Wang et al., 2020).

In rural China, with the outbreak of Covid-19, numerous challenges developed regarding the delivery of curriculum-based instruction at a distance and student participation. During the school closure time, most rural children received a substandard education due to challenges encountered by pupils, parents, and teachers, for instance. This has severe ramifications for students' educational achievement and earning potential during their lifetimes, as well as the buildup of human capital in rural China. During the pandemic, a number of cases using remote learning illustrate the nature of the problem. For example, students climbed to mountaintops for network coverage, sat in sub-zero temperatures in front of village committee offices for internet access, or shared a single mobile phone with many family members who also desired to use the device for classes or entertainment (Yang, 2019). Even though China produces the bulk of the cheapest and most costly smartphones in the world, many rural Chinese households cannot afford to purchase numerous devices. Moreover, in some regions with low Internet, schools broadcast daily lectures via public address systems. In extreme circumstances, a 58-year-old instructor travelled 30 kilometres daily to lecture and collected pupils' homework from their houses. More so, during the height of the pandemic, a teacher stranded in a town in Hubei live-streamed her lectures from the roof of her home, where internet access was superior. In addition, a 13-year-old student in Dengzhou attempted suicide because she was unable to attend live-streamed lectures because her family had only one smartphone, which her sister used to attend lessons (Xinjingbao, 2020). Moreover, 2000 students in a rural county in the Western United States were unable to attend classes due to a shortage of laptops, smartphones, and internet connectivity. In addition, according to a report published in April 2021 by the government-affiliated Development Research Center (DRC) of the State Council, 11.5% of rural children did not consistently and timely participate in online learning activities, compared to only 1.41 % of children in county-level cities, the country's least urban category (DRC, 2020). In addition, according to Stanford Rural Education Action Programme research, one in eight rural students received no remote education (i.e., <13%), and two in ten rural students had no engagement with their lecturers (i.e., <20%) (Alsubaie (2022)).

Following the arrival of COVID-19 in Pakistan, the government announced on March 13 that all educational institutions would be closing. Since that time, all classrooms—including those in rural areas—have been closed, causing a severe crisis in the entire education system. Through its potential to offer distance learning, educational technology (EdTech) has been identified as a potential solution to address the acute impact of school closures. In light of this, the DFID Pakistan team asked the EdTech Hub to create a topic brief that examines how EdTech is being used in Pakistan to support distance learning. The team specifically asked that the brief look into ways to offer distance education in impoverished urban slums and remote rural areas. Actually, there is a lot of optimism and enthusiasm for online education. For instance, Zahra-Malik (2020) pointed out that since schools let out, subscriptions to online apps and platforms in Pakistan have increased exponentially; additionally, the Taleemabad app has increased by 660%, and the Muse SABAQ app has increased by 200%. This highlights the viability of online education as a replacement for traditional schooling amid closures caused by the Covid-19 eruption. The Pakistani government developed programs to promote educational materials and content via radio, television, print, and mobile applications. The government has mandated that all educational institutions move their classes online to prevent the spread of the virus. Many public colleges, which enrol students from low- and middle-income households, have been unable to continue teaching, whereas private universities can afford to make a complete shift to digital learning. As a result, university students have begun expressing their thoughts through Twitter campaigns such as #ShameOnTelecomSector and #WeRejectOnlineEd. People assert that online education is not a realistic alternative due to its high cost and lack of high-quality internet access. Students in remote parts of provinces such as Baluchistan, Khyber Pakhtunkhwa (KPK), Interior Sindh, and Gilgit-Baltistan have reported Internet issues.

In rural Pakistan, with the eruption of Covid-19, the Pakistani government has implemented a number of measures to enable distance learning. Numerous plans and solutions have been put into practice to resolve this issue. For instance, on April 13, the government created "Teleschool," a channel specifically designed for distance education for younger children with access to television. This instructional platform was funded by a grant of $5 million from the World Bank. In addition, the Pakistan government is developing a radio school program, according to Shafqat Mehmood, the country's minister of education, so that students who live in rural areas can receive an education. Additionally, according to a rapid assessment of Pakistan's learning continuity conducted in August 2020 under the direction of UNICEF, through Viamo's Interactive Voice Response (IVR) calls. This evaluation, which included teachers and students from both public and private schools, looked at how easily accessible

and actively involved learners were in distance learning. It drew information from parents, students, and teachers. The information was weighted to ensure that it was representative of the population in terms of gender and location (rural-urban and province-level). Data have been broken down where it is possible and appropriate by gender, type of school, and geography. Furthermore, children and adolescents do not always use the devices to which they have access for learning; parents reported that printed packs and textbooks (19%), television programs (17%), parental/caregiver support (13%) and mobile phones (11%) were the most frequently used remote learning modalities by their children. Students of varying ages have access to various gadgets but utilise various remote, distance learning modes. The most popular learning techniques among adolescents were television programs (30%), written materials such as textbooks and packets (11%) and parental or caregiver assistance (10%). Also, when comparing rural and urban areas, there were considerable variations in youth's use of television shows for learning (32% rural, 25% urban), mobile phones (16% rural, 24% urban), and textbooks and printed materials (10% rural, 13% urban). There were no such disparities between rural and urban parents regarding their children's use of learning modalities. However, despite all the efforts made by the Pakistani government to ensure that the rural areas did not miss schools as distance learning was offered, the effort was shortened by a number of challenges. For instance, there needs to be stronger IT infrastructure to serve rural populations' needs. Additionally, the perception of this online learning mode among the academic community (university administration, faculty, students, and parents) is not very favorable (Gul and Khilji, 2021). More so, there is a lack of a dedicated learning space in their homes. Also, professors and students lack professional time management skills, personal motivation, and intellectual interaction (Shahid and Mughal, 2020). In addition, a lack of technology infrastructure, such as devices, learning management systems, and internet connectivity, contributes to unreadiness (Cavus et al., 2021; Marinoni et al., 2020). According to Brooks and Grajek (2020), Sharadgah and Sa'di (2020), and Waqar et al. (2022), it was also caused by a shortage of faculty and staff who were qualified to move course materials and assessments online, thus, online/virtual tests' inadequacies for evaluating learning outcomes. In addition, increased teacher workloads, privacy and confidentiality concerns with the use of internet technologies, such as social media, and difficulty in managing the study-life balance are also among the challenges faced.

Therefore, in both rural Pakistan and China, Covid-19 increased the number and scope of distance learning activities, but there needs to be a better experience to effectively handle distance learning by students, parents, and teachers. Moreover, issues peculiar to rural China include a need for more relevant facilities such as computers, smart phones, poor connectivity, while to rural Pakistan include unpreparedness, higher teacher workloads, and privacy and confidentiality concerns with the use of internet technologies. This finding is consistent with the findings of Dube (2020) in South Africa, who found that during the Covid-19 pandemic, teachers and students in rural areas lack digital competency and computer skills; the Centre for Economic Research in Pakistan (CERP) (2020) who found that children in rural areas are less likely to have access to distance learning resources such as television and Internet, which has resulted in a significant drop in learning outcomes; a report by NPR (2020) that due to Covid-19 pandemic, many American schools are back in class via distance learning and it is stressful everywhere but especially in rural districts where internet connectivity is often spotty or nonexistent.

Paradoxes of internet connectivity amidst Covid-19 in rural areas of Pakistan and China. The second objective of this study is to analyze the paradoxes of internet connectivity amidst Covid-19 in rural areas of Pakistan and China. Internet connectivity is the main tool for delivering distance learning through online classes, especially with the eruption of Covid-19 (Maatuk et al., 2021). In fact, without the Internet, online classes are absurd; hence the concern of checking the condition of Internet connectivity, particularly in the rural areas, which are the most likely vulnerable to poor Internet connectivity. To conduct such analysis, there is a need to first of all start by observing the rural-urban population distributions of the countries. So, as of the end of 2021, 63.4% of China's population resided in urban regions, while 36.6% resided in rural areas; 37.8% of Pakistan's population resided in urban areas, while 62.2% resided in rural areas. In addition, China's internet penetration rate was 70.9% of the total population, with 73.4% (of the country's 70.1% internet penetration) of internet users living in urban areas and 27.6% (of the country's 70.9% internet penetration) living in rural areas. However, issues relating to COVID-19 are the key factors that make these figures rise to that, both in rural and urban areas. Nonetheless, Covid-19 concerns will continue to influence Internet adoption research in the future, as the pandemic is far from over. According to Ookla, internet users in China could have expected the following connection speeds in early 2022. The median mobile internet connection speed via cellular network is 96.84 Mbps, and the median fixed internet connection speed is 146.62 Mbps; however, according to Ookla data, China's median mobile internet connection speed increased by 43.01 Mbps (+79.9%) in the year ending early 2022. Fixed internet connection speeds in China increased by 52.40 Mbps (+55.6%) over the same time period, according to Ookla data. This implies that Internet users in Pakistan may already be expecting the following Internet connection speeds by early 2022: The median mobile Internet connection speed in Pakistan increased by 3.43 Mbps (+26.5%) in the twelve months to the beginning of 2022 over the previous year. According to Ookla, fixed internet connection speeds in Pakistan increased by 1.96 Mbps (28.9%) during the same time period (Global Digital Insights, 2022). Nevertheless, according to Alwihda English News (2021), rural areas in China now have access to the same network and Internet connection speed as urban areas, including formerly impoverished regions, while formerly impoverished regions of the country are experiencing significant improvements in communications infrastructure. In Pakistan, rural areas experience slower Internet speeds, less reliability, and less consistency than urban areas (Internet Society, 2022). On the other hand, rural areas' lack of potential consumers discourages Internet Service Providers (ISPs) from investing in constructing their networks. Major ISPs are constantly seeking methods to boost their earnings, whereas such opportunities are uncommon in rural areas. Consequently, they overlook places with a lower population density.

Therefore, there is more internet penetration in rural Pakistan than in rural China compared to their respective size of populations, but internet connection speed in China is higher and unvarying whether in urban or rural areas; however, lack of enough potential customers is the cause of poor internet connection in the rural areas for both countries. However, rural areas in Pakistan experience slower Internet speeds, less reliability, and less consistency than urban areas. Moreover, rural areas in China have access to almost the same network and Internet connection speed as urban areas. This finding is consistent with that of the National Center for Biotechnology Information (NCBI) (2020) that the movement online of essential activities during Covid-19 took inadequate Internet service from inconvenient to an emergency/crisis for many households; and Pewresearch (2021) in India who found that India's government provided reliable internet infrastructure to more than half of those living in rural areas.

Intersectionality and educational inequality in rural areas of Pakistan and China. The last objective of this study is to explore intersectionality and educational inequality in rural Pakistan and China. Intersectionality is the study of many inequities that overlap one another. The theory of intersectionality postulates that different social divisions interact with one another in the process of developing social interactions as well as in the lives of individuals. According to Anthias (2012), many different characteristics can be used to categorise people into different social groups. Some of these characteristics include gender, sexual orientation, ethnicity, race, age, height, educational accomplishments, appearance, and eye colour. Since its inception, intersectionality has been preoccupied primarily with issues pertaining to power dynamics, social injustice, and politics (Collins, 2012). Anthias (2012) asserts that distinctions of this kind do not constitute enduring social features. Because of this, we need social policies that take into account the multiple inequities that are more likely to exist in the educational system of rural areas (Belay, 2020).

Education benefits everyone, whether they are learning new skills, competencies, or industries. It is always advantageous to have the opportunity to learn. In recent years, there has been a global emphasis on educating women, with the idea that girls should receive the same level of education as men. Still, we can consider educating communities, particularly rural communities. On the other side, a rural education system has the potential to expand people's knowledge and capacity, allowing them to make more educated choices regarding their farms and to innovate in agricultural affairs. Education provides access to information for the general public and reduces the likelihood that it will be misunderstood. However, in order for there to be learning communities, schools need to be built, and both students and leaders need to be educated at those schools. As a direct consequence of this, rural communities will be healthier and more sustainable. Education programmes in rural areas expand the capabilities and horizons of the people living there, giving them the ability to make educated choices regarding their farms and innovate in areas related to agriculture. Education provides access to information for the general public and reduces the likelihood of being misunderstood. A greater grasp of policies, procedures, rights, obligations, government programmes, legislation, available benefits, and protective laws can be one of the many potential advantages of receiving an education. It is of the utmost importance to emphasise the value of quality education in rural regions, as this assists in the preservation of rural population levels. Youth migrate to cities in search of better educational and career prospects; enhancing rural education is one technique for retaining youth in rural areas.

In China, every child who is >6 years old is eligible, according to the country's education policy, to receive free primary schooling (grades 1 through 6) and junior high schooling (grades 7 to 9) for a total of 9 years. The programme is made possible by funding provided by the government, and there is no cost associated with participation. The costs associated with attending school keep going up. College education and senior secondary school (grades 10 to 12) are not included in the cost of primary and secondary education in China. Literacy rates are expected to reach 99.83 percent in 2021, meaning that only a very small percentage of the population will be illiterate at that point. In light of China's largest educational system in the world, this is a promising finding. The National Higher Education Entrance Examination (Gao Kao) will be administered to 11.93 million Chinese students in the month of June 2022. Over one thousand schools and institutions in the United States accept international students. Approximately 4% of China's gross domestic product is committed to educational investments. Due to a rule implemented by the Chinese government in 1986, all Chinese youngsters are now expected to finish 9 years of education. The Ministry of Education believes that >99 percent of school-aged students have finished a 9-year basic education. China has made significant attempts to reform its educational system, including school curricula. China's Education Modernization 2035 plan aims to shift the sector's focus from "capacity" to "quality," with education modernization functioning as a catalyst for China's own modernization. In addition, the Ministry of Education in China has initiated a new pilot education programme. This programme will make it possible for 36 of China's most prestigious universities, such as Peking, Tsinghua, and Fudan, to choose outstanding high school graduates who are ready to satisfy the nation's most urgent strategic requirements. As part of the Strong Base Plan, universities will prioritise higher enrollment to fields of study, including mathematics, physics, chemistry, and biology, all of which have been less popular among students in recent years. According to the China Education Centre (2022), a significant number of students opt to study subjects that would prepare them for high-paying employment.

In rural China, there are numerous culturally significant procedures in education. Despite the fact that many academics and officials view the rural school as vital for conveying the cultural heritage of "country China," rural students continue to interpret their daily experiences imaginatively and develop diverse cultural forms. Others absorb the cultural characteristics cherished by their rural families and adapt them into a sort of cultural capital, which then plays a key role in the educational and social mobility of rural students. Some of them establish distinct forms of "counterschool" culture as a result of academic failure. However, the state of education is fraught with problems; for instance, students from China's impoverished rural areas frequently find themselves shut out of new educational opportunities and condemned to a life of continued poverty. In addition, although the Chinese government has mandated that all students in grades 1 through 9 receive a free and compulsory education, in reality the country's education system is underfunded, resulting in a serious lack of schools in rural areas. If they can attend school at all, many pupils must travel a hazardous distance to get there. Due to the high cost of education and the financial constraints of rural Chinese households, it is estimated that millions of youngsters are employed as child workers. In addition, according to studies by Yue et al. (2018), Loyalka et al. (2019), Bai et al. (2020), and Ru (2022), millions of children in rural China have unequal access to educational resources, poorer physical and mental health (for example, 25% to 34% of rural children in northwest China had anaemia), and receive less focus on their social-emotional and non-cognitive development than their urban counterparts. Due to insufficient political and financial backing from the government, there needs to be more numbers of teachers in China's rural areas, especially in the most impoverished regions. Moreover, because their parents go to the city in search of employment, country children are typically reared apart from their parents. China's "left behind" children are estimated to number sixty million. Due to reduced parental monitoring, these children are more prone to distractions such as mobile games and video streaming apps. When city inhabitants return home for the holidays, they sometimes find their children "carrying a phone while eating, strolling, or even sleeping." Some studies indicate that rural parents have lesser expectations for their children's education. They may invest less money in their children's education. Zhang Li, a researcher at the University of Oslo, surveyed groups of urban and rural pupils and their parents in Yunnan province in southwest China. She found that >95% of urban parents desired their children to seek higher education, compared to <60% of rural parents.

In Pakistan, four levels of education make up Pakistan's educational policy, i.e., elementary, secondary, higher secondary, and tertiary. Every province, with the exception of Balochistan, has made free primary education a constitutional requirement. From the age of five to sixteen, all children must attend school (in the mid-2000s, it was only 5 years). Twelve years are needed to complete the education system, with 5 years spent in primary school, three in middle school, and four in high school. Students who want to continue their education after 2 years of basic secondary school can enrol in a 2-year higher secondary program or a 2-year technical program. In Pakistan, public schools are attended by about 60% of enrolled students, while the remaining 40% attend private schools. While most students in private schools come from middle- and upper-class families, most students in public schools are from low socioeconomic backgrounds. Institutions in the public sector are required to follow the national curriculum. Different types of curriculums, such as the Oxford, Cambridge, and Singapore curricula, may be taught in private sector institutions. However, with regard to the educational disadvantages in Pakistan, let's begin with a well-known quotation from Quaid-e-Azam Muhammad Ali Jinnah: "In Pakistan, education is a matter of life and death. The world is undergoing such rapid change that if we do not develop in education, not only wills we fall behind others, but we may perish." The present literacy rate in this country is 62,3 percent, indicating that ~60 million people are illiterate. In light of this circumstance, the present administration has made raising national literacy a top goal. Pakistan aims to boost literacy rates within 4 years by enrolling roughly 22.8 million pupils in school and enhancing the education system for all age groups by utilizing new technological tools. In Pakistan, about 23 million children (44 percent of children aged 5 to 16) do not attend school. 70% of youngsters in Balochistan are not enrolled in school. However, the primary education enrollment is 22,650,00; while secondary education enrollment is 2,884,400; and post-secondary education enrollment is 1,949,000 (Ullah, 2022).

In rural Pakistan, the condition of education is surrounded by many issues; for instance, a 15-year-old from Haji Abdur Raheem Goth, a remote village in Balochistan's Lasbela District, says, "I had no concept what a school looked like." She is referring to the status of education, which is surrounded by numerous problems. "No one in my immediate family attended school, as there was none in or near my village." My distance relatives, who frequently visited us from Karachi, would tell me tales about their school and classmates. "I would listen to them with great interest and wish I could attend school with them," she says. In addition, as in the majority of conservative rural areas, parents and village elders are hesitant to send their girls to school if the institution is located too far from the village. The majority of males are farmers, and children and women often accompany them in the fields. Together with the absence of a nearby educational facility, this meant that youngsters in the community had no opportunity to learn to read and write. On the family farm, the young girl assisted her father daily in the cultivation of tomatoes and wheat. Moreover, many rural Pakistani instructors lack access to quality educational training for a variety of reasons, including expense, distance, and family duties. Although online distance learning may readily replace these educational gaps, inadequate Internet access has proven to be an obstacle for both educators and students. As well, due to a regrettable shortage of funding, not everyone can attend school, which restricts access to education in Pakistan; and in rural areas; this issue is especially important. Additionally, schools are scarcer and farther between in rural Pakistan. Given that private schools are more likely to be found in urban areas, this makes it much more difficult for students in rural areas to pursue an education. Yet, social norms are another impediment to education in rural Pakistan. Also, some people don't think girls should go to school, and female students may encounter opposition to continuing their education, particularly in more traditional communities. Girls are also more likely to get married earlier, which forces them to put their new families before their education, and this prevents girls from enrolling in school at a higher rate than boys. More than 55 million Pakistanis over the age of 10 are thought to be illiterate, and 7 million kids between the ages of 5 and 9 are believed to be not in school. The worst aspect is that >52% of girls in rural areas do not attend school. You already know that 67% of women are illiterate, so this is insufficient. Every year, these statistics rise, having an impact on every nation, whether it be on political instability or slower economic growth. Further, instability is another nature of education in rural Pakistan. Due to Pakistan's government's relative instability, extremist groups have been able to attack schools, particularly those that target girls. So, because of their fear for their lives, this discourages girls from attending school. Additionally, it fosters an unstable feedback loop in which acts of violence reduce economic output, reducing the government's capacity to support education (Gill, 2022).

Therefore, rural education in both countries is bedeviling by poverty, poor funding, and many students have to make a long and dangerous trek to school but issues peculiar to rural China include poor parental care due to migration and insufficient number of teachers; while to rural Pakistan, there is lack of educational opportunity by children and women, poor educational training to teachers, issues of social norms, and schools attacks by extremist groups. This finding is in line with that of the Centre for Economic Research in Pakistan (CERP) (2020), which found that the closure of schools due to Covid-19 has widened the educational divide between urban and rural areas; also, girls in rural areas are particularly disadvantaged, with many being forced to drop out of school due to the pandemic; a report by the United Nations in 2020 who highlighted that the Covid-19 pandemic had exposed the digital divide between developed and developing countries and that students living in poor or rural areas are particularly affected; a report by Liverpool University (2020) that the consequences of COVID-19 have already increased educational inequality.

Conclusion and policy recommendations

This study was conducted to uncover Covid-19, distance learning, and educational inequality in rural areas of Pakistan and China in which it specifically investigated the paradoxes of internet connectivity amidst Covid-19 being without Internet, online classes are absurd; Covid-19 and the situation of distance learning; and the intersectionality and educational disadvantage in rural areas of Pakistan and China using Situational Analysis Method (SAM). The findings of the study conclude that with respect to Covid-19 and the situation of distance learning in rural areas of Pakistan and China, it found that, through distance learning amidst Covid-19, both Chinese and Pakistani governments have done a lot to prevent school loss during the Covid-19 pandemic. For instance, in both rural China and Pakistan, Covid-19 increased the number and scope of distance learning activities as millions of students began distance learning, poor experience to handle distance learning by students-parents-teachers effectively but issues peculiar to China include shortage of relevant fertilities such as computers and smart phones, poor connectivity, some rural students received no distance education at all where only about 13% and about 20% interacted with teachers during the pandemic; while to rural Pakistan include, unpreparedness due to lack of technological infrastructure, higher teacher workloads, privacy and confidentiality concerns with the use of online tools

including social media, and difficulties in managing study-life balance. Moreover, with respect to the paradoxes of internet connectivity amidst Covid-19 in rural areas of Pakistan and China, it found that there is more internet penetration in China than in Pakistan, and the percentage proportion is higher in urban areas than rural areas; however, relative to their respective populations, there are more internet users in rural Pakistan than in rural China, but internet connection speed in China is higher and unvarying whether in urban or rural unlike in Pakistan. However, the cause of poor internet connection in rural areas in both countries is commonly a need for more potential customers to entice Internet Service Providers, been such service is profit oriented. Furthermore, with respect to the intersectionality and educational inequality in rural areas of Pakistan and China, it found that rural education in both China and Pakistan is bedevilling by poverty, poor funding, many students must make a long and dangerous trek to school, but issues peculiar to rural China include poor parental care due to migration and insufficient number of teachers; while to rural Pakistan include, children and women are lacking educational opportunity, poor educational training to teachers, issues of social norms, and schools attacks by extremist groups. The following recommendations were made:

First, with respect to the findings of the first objective of the study, the study recommended that, in an emergency situation like that of Covid-19, which increases the need for distance learning, authorities and other stakeholders in both Chinese and Pakistani need to give proper orientation to students, parents, and teachers on how to handle distance learning activities, particularly in rural areas effectively. Furthermore, in rural China, there is a need to aid the communities with relevant facilities that could ease and boost the distance learning process, such as computers, smart phones, and any other possible tool that could equip the distance learning activities. Moreover, in rural Pakistan, there is a need for general preparedness for distance learning with adequate facilities that could smooth the running of distance learning in rural areas.

Second, with respect to the findings of the second objective of the study, the study offers the need for both Chinese and Pakistani governments to improve the internet connectivity in rural areas, for instance, by offering a significant rate of tax weaving to the service providers and proper supervision all with the ultimate motive for making the internet connectivity available, stable, speedy, and affordable. More so, the authorities could aid the internet connectivity; for example, through satellite internet, which is a common option for getting broadband in rural areas; tethering which involves using your mobile phone as a modem to connect your computer to the Internet; using a USB dongle which is a small device that plugs into your computer's USB port and provides internet access; using a MIFI device which is a portable wireless router that allows you to connect multiple devices to the Internet; mobile wireless which can use a broadband card to get high-speed Internet in rural areas; and DSL (Digital Subscriber Line) internet which is a type of internet connection that uses existing phone lines to provide high-speed internet access.

Third, with respect to the findings of the third objective of the study, the study suggested that been educational inequality is related to the economic status of the communities in rural areas, for both the countries there is a need to encourage the economies of the communities in rural areas; specifically agriculture has been the major occupation in the rural areas; for instance, by aiding or subsidizing the farmers with fertilize, proper seeds, mechanized equipment, trainings/orientation on how to effectively improve, etc. Also, in both countries, there is need to significantly fund their rural education, for instance, by building more schools, providing qualified teachers, proper equipping of the schools, proper supervising, offering special scholarships especially to those coming from distance where school establishment cannot cover, offering bonuses and other incentive packages to rural teachers, and encouraging security situation of the rural areas. In addition, in rural China, parents need to be encouraged to move with their children when migrating or engaging them to be sending a mandatory percentage of their proceeds for schooling their left-behind children as well as making sure that those they left their children with are their immediate or very close relative. In rural Pakistan, there is a need to provide more teachers and with special incentive packages as well as more educational training to the existing teachers. Also, there is need to provide special scholarship to girls. More so, awareness and orientation are needed especially on the parents about the importance of girls' child education and religious leaders and district heads may execute this.

This study has certain limitations because it needs to properly investigate how students and their parents feel about their children's education. The students' and the parents' points of view are not considered. In addition, putting an emphasis on the differences between rural and urban settings does not necessarily mean that urban kids are intrinsically better off than rural children. As a direct consequence of this, the study is restricted in its ability to discover urban-rural context complexes and complexes between rural and urban settings. Therefore, incoming studies can concentrate on such deficiencies as potential areas for future research.

Data availability

The datasets generated during and/or analyzed for the current study are not publicly available due to privacy concerns of the interviewees. The information gathered is primarily in verbal form, and it has been summarized to present the relevant facts.

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Competing interests

The authors declare no competing interests.

Ethical approval

In this study a survey used to collect the data through informal discussions, mails, and phone calls asking the participants their perceptions and understanding on about the phenomena in question which deal with the situations of Covid-19, distance learning, educational inequalities in rural areas. As stated in the Declaration of Helsinki, our institution's relevant body deemed ethical approval unnecessary because the study was neither medical research nor human experimentation. In addition, all respondents were at least 18 years old and willing to complete our research questionnaire. The gathered information is strictly confidential and anonymous and is only used for research purposes.

Informed consent

Informed consent was obtained from the participants prior to the interview by giving them the information regarding their consent to participate in the survey, and understanding the purpose and benefit of the research as well as that the outcome of the research will be published. Only respondents who agreed to participate in the survey were involved and they might stop at any time for any reason.

Additional information

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