

An Examination of the Students Acuity towards Online Education during Lockdown Period in India

¹Dr VEERA SWAMY MARRI

Faculty, Department of Commerce, Loyola Academy, Secundrabad

²Dr. RAMAKRISHNA BANDARU

UGC-Post Doctoral Fellow, Department of Commerce, Osmania University, Hyderabad,
Telangana State- India

ABSTRACT

Purpose: - The purpose of this research paper is to examine the impact of lockdown on the students' perspectives.

Research Design: - Data was collected from 222 students through personal interviews with the help of structured questionnaires. This research looks at the student's perspective. We used statistical techniques like measures of central tendency, and ANOVA

Findings: - We find out that thirty-three percent of the students have not agreed that Syllabus covered through online classes, fifty-six percent of the students have agreed that Lockdown helped me to learn new things. The majority of students are opined that getting jobs after the lockdown will not be the same. 53 percent of the students opined that Lockdown will affect job opportunities. Most of the students have strongly agreed that Lockdown will impact salary packages in the future. More than ninety percent of the students agreed that lockdown gave me an opportunity to spend more time with family. Seventy percent of the students have agreed on that Following Physical distancing in the college even after lockdown.

Limitations: - The study was based on awareness of students and this may be influenced by the current scenario. Only students in and around Telangana were chosen for the study. This research is limited to the current setting of the present academic system.

Implications: - Effective Employer Branding strategy needs to contain and how the concept should be managed in order to increase the performance of employees and how it's useful to a high potential workforce.

Originality: This is the first study that proposes the impact of lockdown on the student's perspectives.

Keywords: *Lockdown, COVID-19 and Corona virus, Online education*

Introduction

The Government of India has announced several measures to reduce the spread and spread of corona virus in the country. Prime Minister Narendra Modi is constantly reviewing the country's readiness to deal with the COVID-19 pandemic in India, and state and central governments are continuing to announce new measures and responses to the current situation. While the corona virus continues to spread worldwide, many countries have decided to close schools as part of a social distance policy to slow the spread of the virus. However, the closure of the college has affected the education of more than 1.5 billion students and youth worldwide due to the corona virus (COVID-19) pandemic. The closure of schools is low-income and it should be noted that the learning gap between children from high income families is likely to widen. Basic Internet access for children is the biggest obstacle. Parents cannot afford recharges and / or the child will not have access to the device in urban areas. In most cases, the family may not even have a Smartphone.

Corona virus disease is a newly discovered corona virus disease. 2019-20 Corona virus Pandemic Corona virus Disease is an ongoing epidemic of 2019, causing severe acute respiratory syndrome corona virus 2. The outbreak was discovered in China in December 2019 and was declared a WHO epidemic on 11 March 2020. Colleges are not aware of corona and its consequences follow post COVID-19. Right now, students are full of ambiguity and syllabus about panic situations and their exams. As soon as the WHO recognized it as a pandemic, the Government of India began making preventive decisions on COVID-19. For most schools and colleges in Maharashtra, the academic year falls almost to March and April. Also, most colleges and schools have almost completed their academic syllabus and they should focus on scheduling their final exams. But due to the decisions taken by our governments to shut down academic institutions, schools and colleges across India have announced that they will have to cancel or re-schedule their exam dates in view of the measures taken to reduce the pandemic. Taking this into account, the study is undertaken to analyze the impact of COVID-19 on educational institutions and related stakeholders.

Review of Literature

Biavardi, N. G. (2020)¹ Explained that many students around the world have been wondering how their life will change since the very first outbreak of Covid-19. In my experience article, I have tried to give a flavor of how has the academic world changed in quarantine. Difficulties and opportunities have been analyzed. Questions regarding the validity of e-learning have been posed. **Cellini, N., Canale, N., Mioni, G., & Costa, S. (2020)²** Found that Italy is one of the major COVID-19 hotspots. To reduce the spread of the infections and the pressure on Italian healthcare systems, since March 10th, 2020, Italy is under a total lockdown, forcing people to home confinement. Here we present data from 1310 people living in the Italian territory (Mage=23.91±3.60 years, 880 females, 501 workers, 809 University students) , who completed an online survey from March 24th to March 28th, 2020. The increase in sleep difficulties was stronger for people with a higher level of depression, anxiety, and stress symptomatology, and associated with the feeling of time dilatation. **Burgess, S., & Sievertsen, H. H. (2020)³**discussed The COVID-19 pandemic is first and foremost a health crisis. Many countries have (rightly) decided to close schools, colleges, and universities. The crisis crystallizes the dilemma policymakers are facing between closing schools (reducing contact and saving lives) and keeping them open (allowing workers to work and maintaining the economy). The severe short-term disruption is felt by many families around the world: homeschooling is not only a massive shock to parents' productivity but also to children's social life and learning. Teaching is moving online, on an untested and unprecedented scale. Student assessments are also moving online, with a lot of trial and error and uncertainty for everyone. Many assessments have simply been canceled. Importantly, these interruptions will not just be a short-term issue, but can also have long-term consequences for the affected cohorts and are likely to increase inequality. **Odriozola-González, P., (2020)⁴** Emphasized that the aim of this study was to analyze the psychological impact of COVID-19 in the university community during the first weeks of confinement. A cross-sectional study was conducted. The Depression Anxiety Stress Scale (DASS-21) was employed to assess symptoms of depression, anxiety, and stress. The emotional impact of the situation was analyzed using the Impact of Event Scale. An online survey was fulfilled by 2530 members of the University of Valladolid, in Spain. Moderate to extremely severe scores of anxiety, depression, and stress were reported by 21.34%, 34.19%, and 28.14% of the respondents, respectively. A total of 50.43% of respondents presented moderate to the severe impact of the outbreak. Students

from Arts & Humanities and Social Sciences & Law showed higher scores related to anxiety, depression, stress, and impact of the event with respect to students from Engineering & Architecture. University staff presented lower scores in all measures compared to students, who seem to have suffered an important psychological impact during the first weeks of the COVID-19 lockdown. In order to provide timely crisis-oriented psychological services and to take preventive measures in future pandemic situations, mental health in university students should be carefully monitored. **Raj, U., & Fatima, A. (2020)**⁵ Analyzed that of the data we found that 34.4% of students have felt stressed sometime in the week 22.6% of students felt stressed Often in the week and 15.1% of students are always in stress due to the threat of corona virus. Overall, 51.4% of students are stressed in this condition of threat.69.8% of students are stressed about their studies.78.5% students are not comfortable with online classes. **Kant, R. (2020)**⁶ Stated that the entire world is facing an unprecedented Corona pandemic. No one was expected that due to this pandemic entire lifestyle of man will be changed. In the course of prevention of the spread of the Corona infection, all public institution is lock downed including educational institutions. Several weeks-long isolations (social distancing) creating some psychological and emotional problems among students. This research is a survey-based descriptive analysis to explore the effects of COVID-19 lockdown on the thinking pattern and emotional behavior of students of Central University of South Bihar, Gaya. Using snowball sampling a Google survey form was used to collect the data. This form consists of 21 items regarding the emotional, social, and psychological aspects of students during the COVID-19 lockdown. Maximum items are to be answered in Yes or No and some items are given. **Peters, M. A., Wang, H (2020)**⁷ this article presents 15 auto ethnographic texts detailing student experiences at Beijing Normal University in the midst of the Covid-19 pandemic. Contributions have been collected over 6 weeks between 15 February and 1 April 2020, edited by Hejia Wang (assisted by Moses Oladele Ogunniran and Yingying Huang), and supervised by Michael Peters. Through shared in-depth empirical feelings and representations from a wide variety of cultural, historical, and social contexts, the article outlines an answer to the question: How do students, connected virtually but separated physically in an internationalized university, deal with disruption brought about by the Covid-19 pandemic? Student testimonies offer reflections on Covid-19 and Chinese international education, experiences of online teaching and learning, reflections on university coping mechanisms, an account of realities and feelings related to changes in academic life, and discussions on coping

strategies in Chinese international higher education. Contributors expose their individual feelings, effects, benefits, challenges, and risk management strategies. **Sardar, T., Nadim, S. S., & Chattopadhyay, J. (2020)⁸**. This article considers a new mathematical model on COVID-19 transmission that incorporates lock-down effect and variability in transmission between symptomatic and asymptomatic populations with former being a fast spreader of the disease. Using daily COVID-19 notified cases from three states (Maharashtra, Delhi, and Telangana) and overall India, we assess the effect of current 21 days lock-down in terms of reduction cases and deaths. The lock-down effect is studied with different lock-down success rate. Our result suggests that 21 days lock-down will have no impact on Maharashtra and overall India. Furthermore, the presence of a higher percentage of COVID-19 super-spreaders will further deteriorate the situation in Maharashtra. However, for Tamil Nadu and Delhi there is some ray of hope as our prediction shows that lock-down will reduce a significant number of cases and deaths in these two locations. Further extension of lock-down may place Delhi and Tamil Nadu in a comfort zone. Comparing estimated parameter samples for the mentioned four locations, we find a correlation between the effect of lockdown and percentage of symptomatic infected in a region. Our result suggests that a higher percentage of symptomatic infected in a region leads to a large number of reductions in notified cases and deaths due to the different lock-down scenario. Finally, we suggest a policy for the Indian Govt to control the COVID-19 outbreak.

Need for the Study

A few types of research were done on basic concepts and understanding the COVID-19. Some of the researchers have identified what are the reasons to attract Corona and taking the precautions to protect ourselves and economic impact on India. It also reveals the gap in clarity about the study of the impact of lockdown on college students. The researcher has made an attempt to study the relationship between student opinions in online classes.

Objective

The study has a single objective as given below.

1. To examine the student's perception towards online education during lockdown period in India.

Hypothesis

H₀₁: There is no significant difference between age and student opinion on online classes.

H₀₂: There is no significant difference between studying and student opinion on online classes.

H₀₃: There is no significant difference between Living place and student opinion on online classes.

H₀₄: There is no significant difference between various students in order to learn new things during the lockdown the period

H₀₅: There is no significant difference between students Age in order to learn new things during the lockdown the period

Research Methodology

Selection of the Sample

The sample is a part of a larger population or the universe that is meant to represent the whole. The sample selection process for this research looks at the college students; there are similarities in all the colleges. Hence selected sample colleges which are located in the city of Hyderabad and Telangana. The samples are drawn from the State of Telangana in India.

Sample Size

The sample size is 222. The variability of the population is controlled the population is more homogeneous than heterogeneous.

Data Collection

1. **Primary source:** - The primary data has been collected directly from students of various colleges through personal Interviews with the help of structured questionnaires.
2. **Secondary Source:-**Data has been collected from the journals on Covid-19 reports, various Government official websites and magazines etc.

Statistical Tools

There are various statistical tools which are used in analyzing data. The following tools are used for representing and analyzing data.

→ Table, Percentage, and ANOVA

Data Analysis

Table, 1 reveals the Gender wise distribution of the sample of respondents, of them forty percent are male and sixty constitute the female students.

Table 1: Gender

Gender		Frequency	Percent
	Male	88	40
	Female	134	60
	Total	222	100

Source: Primary Data

An age- wise distribution (Table 2) shows that 14 percent of those surveyed are less than 18 years of age, 76 percent are between 18-21 age group, 8 percent are between age group of 21-23, and 1 percent are between 23-25 years and the remaining 1 percent of respondents are more than 28 years.

Table 2: Age of the respondents

Age		Frequency	Percent
	Less than 18	30	14
	18-21	169	76
	21-23	17	8
	23-25	3	1
	More than 28	3	1
	Total	222	100

Source: Primary Data

As seen in Table 3 that 95 percent of the respondents are undergraduates, 3 percent of the respondents Post-graduates and the remaining 2 percent of respondents are others.

Table 3: Education of the respondents

		Frequency	Percent
	Degree	211	95
	PG	7	3
	Others`	4	2
	Total	222	100

Source: Primary Data

Table 4 reveals that living place wise distribution 14 percent of the sample of the respondents is staying at village, 15 percent of the respondents are staying in Town and the remaining majority 77 percent of respondents are staying at City.

Table 4: Place of Living

	Frequency	Percent
Village	32	14
Town	33	15
City	157	77
Total	222	100

Source: Primary Data

Testing of Hypothesis

H₀₁ There is no significant difference between age and student opinion on online classes.

Table 5

Age	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
15-18	30	2.6000	1.24845	.22793	2.1338	3.0662	1.00	5.00
18-21	169	2.3195	1.23622	.09509	2.1318	2.5073	1.00	5.00
21-23	17	2.1176	.92752	.22496	1.6408	2.5945	1.00	4.00
23-25	3	2.0000	1.00000	.57735	-.4841	4.4841	1.00	3.00
25-28	3	1.6667	.57735	.33333	.2324	3.1009	1.00	2.00
Total	222	2.3288	1.20893	.08114	2.1689	2.4887	1.00	5.00

Source: Primary Data

Table 5 (a)

ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.619	4	1.155	.787	.535
Within Groups	318.377	217	1.467		
Total	322.995	221			

Source: Primary Data

In the above Table 5(a) clearly shows the output of the ANOVA and we have a statistically significant difference between group means. We can see that the significance level is .535 ($p = .535$), which is more than 0.05. Hence, we can accept the null hypothesis. It means that there is no significant difference between age and student opinion on online classes.

H₀₂ There is no significant difference between Studying and student opinion on online classes.

Table 6 (a)

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Degree	211	2.3412	1.21779	.08384	2.1760	2.5065	1.00	5.00
PG	7	2.0000	1.29099	.48795	.8060	3.1940	1.00	4.00
Others`	4	2.2500	.50000	.25000	1.4544	3.0456	2.00	3.00
Total	222	2.3288	1.20893	.08114	2.1689	2.4887	1.00	5.00

Source: Primary Data

Table 6 (a)

ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.814	2	.407	.277	.759
Within Groups	322.181	219	1.471		
Total	322.995	221			

Source: Primary Data

Table 6 (a) clearly shows the output of the ANOVA and we have a statistically significant difference between group means. We can see that the significance level is .759 ($p = .759$), which is more than 0.05. Hence, we can accept the null hypothesis. It means that there is no significant difference between *studying and student opinion on online classes*.

H₀₃ There is no significant difference between Living place and student opinion on online classes.

Table 7

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Village	32	2.1563	.88388	.15625	1.8376	2.4749	1.00	4.00
Town	33	2.0303	1.18545	.20636	1.6100	2.4506	1.00	5.00
City	157	2.4268	1.26189	.10071	2.2278	2.6257	1.00	5.00
Total	222	2.3288	1.20893	.08114	2.1689	2.4887	1.00	5.00

Source: Primary Data

Table 7 (a)

ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.399	2	2.700	1.862	.158
Within Groups	317.596	219	1.450		
Total	322.995	221			

Source: Primary Data

Table 7 (a) clearly shows the output of the ANOVA and we have a statistically significant difference between group means. We can see that the significance level is .158 ($p = .158$), which is more than 0.05. Hence, we can accept the null hypothesis. It means that there is no significant difference between living place and student opinion on online classes.

H₀₄ There is no significant difference between various students in order to learn new things during lock down the period

Table 8

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Degree	211	3.9810	1.21875	.08390	3.8156	4.1464	1.00	5.00
PG	7	3.4286	1.61835	.61168	1.9318	4.9253	1.00	5.00
Others`	4	3.2500	1.25831	.62915	1.2478	5.2522	2.00	5.00
Total	222	3.9505	1.23386	.08281	3.7872	4.1137	1.00	5.00

Source: Primary Data

Table 8 (a)

ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.066	2	2.033	1.340	.264
Within Groups	332.388	219	1.518		
Total	336.455	221			

Source: Primary Data

Table 8(a) clearly shows the output of the ANOVA and we have a statistically significant difference between group means. We can see that the significance level is .264 ($p = .264$), which is more than 0.05. Hence, we can accept the null hypothesis. It means that there is no significant

difference between various students in order to learn new things during lock down the period.

H₀₅ There is no significant difference between students Age in order to learn new things during lock down the period

Table 9

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
15-18	30	3.9333	1.25762	.22961	3.4637	4.4029	1.00	5.00
18-21	169	3.9704	1.22195	.09400	3.7848	4.1560	1.00	5.00
21-23	17	4.2353	1.09141	.26471	3.6741	4.7964	2.00	5.00
23-25	3	3.3333	1.52753	.88192	-.4612	7.1279	2.00	5.00
25-28	3	2.0000	1.00000	.57735	-.4841	4.4841	1.00	3.00
Total	222	3.9505	1.23386	.08281	3.7872	4.1137	1.00	5.00

Source: Primary Data

Table 9 (a)

ANOVA					
	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	14.011	4	3.503	2.357	.055
Within Groups	322.444	217	1.486		
Total	336.455	221			

Source: Primary Data

Table 9 (a) clearly shows the output of the ANOVA and we have a statistically significant difference between group means. We can see that the significance level is .055 ($p = .055$), which is more than 0.05. Hence, we can accept the null hypothesis. It means that there is no significant difference between students Age in order to learn new things during lock down period.

Summary of Findings

1. It is identified that thirty-three percent of the students have not agreed that Syllabus covered through online classes and thirty-three percent of the students only agreed.
2. It is found that 33 percent of students are opined that Lockdown is not giving me preparation for the exams and 23 percent, students are opined that Lockdown gave me preparation for the exams.
3. It is found that fifty-six percent of the students have agreed that Lockdown helped me to learn new things.
4. It is found that Forty-five percent of students are opined that getting jobs after the lockdown will be the same but the majority of students are opined that it is Neutral.
5. It is seen that about 53 percent of the students opined that Lockdown will affect our job opportunities.
6. The majority of students opined that Lockdown will ruin the student's future.
7. The study identified that most of the students have strongly agreed that Lockdown will impact salary packages in the future.
8. It is found that 89 percent of the students have strongly agreed that Lockdown made us learn healthy and hygienic habits.
9. It is seen that more than Ninety percent of the students agreed that lockdown gave me an opportunity to spend more time with family.
10. It is observed that 62 percent of the students have agreed that Lockdown made us lazy.
11. The study identified that 55 percent of the students have agreed that Lockdown improved my skills and abilities.
12. It is found that the majority of students agreed that Due to Lockdown I am worried about my exams.
13. The study identified that 55 percent of the students have agreed that Lockdown improved my skills and abilities.
14. It is seen that about seventy percent of the students have agreed that Following Physical distancing in the college even after lockdown.
15. It is found that 60 students are opined that an online class is not the same as in classroom teaching.
16. As seen in the ANOVA table it shows that significant values are .535, .759, .158 and .264.

Hence, we can accept that null hypothesis. It means that there is no significant difference between age, studying, living and place, and student opinion on online classes and various students to learn new things during the lockdown period.

Suggestions

1. Colleges must take steps to launch high-quality technology applications for their students, and the college must educate their faculty on how to conduct online classes.
2. Government should provide e-learning solutions to colleges.
3. Teachers conduct classes through Internet platforms and send SMS and voice recordings when absent.
4. Online catalogs are available for free access, and college students can take the opportunity to study next year's syllabus using e-books and other e-subjects. So when those students reopen for the next session and prepare well for college.
5. Here are some suggestions for colleges and students that do not have seminars, assembly meetings and meetings in college.
6. Even after the college reopens after the lockdown, every student and staff must maintain physical distance and wear a mask during college.
7. Educational institutions need to implement their curriculum to make students aware of pandemic diseases such as corona virus and swine flu.
8. Provide awareness of preventive interventions such as the use of a sanitizer to clean hands, the use of a mask, the handshake, the use of a napkin on the mouth during a cough / sneeze, and other relevant guidelines. In reducing the spread of disease from one person to another.
9. Keep the social distance to spread in others because an infected person can spread corona virus throughout society.
10. It is also advised not to go outside the house unless it is important to work, which helps us to feel safe and secure at home with your family.
11. Teachers are advised to stay in touch with their students and motivate them during this epidemic lockdown period.

Conclusions

The COVID-19 problem, which originated in China, has affected the world of nearly 200 countries, including India. Lockdown was imposed on almost everything due to COVID-19. The outbreak of the virus among residents is a result of the situation of affected residents. Governments of India make timely decisions to prevent pandemic disease COVID-19. Colleges are closed and it is up to the relevant governing body and government to control the situation. Corona virus is associated with a large number of known and unknown people among students, teachers and others who are at risk of spreading the disease. It can also be seen that the disease spreads easily with the carrier of such a disease.

When traveling, visiting malls / restaurants, playgrounds, attending lectures in schools or colleges, buying products and more, students, teachers and others can easily catch the virus. This is the main reason for our government to demand the stated restraint and compliance to prevent the nation from getting infected with such terrible diseases. Also note that the closure of the initial act of education is the welfare of people for good decision making, but the tests are the student's final performance. There is a lot of gap between them and the class now and they may not score so well due to too much delay in their final exams. Also, we may have a shortage of time in the next academic year. If they can solve such problems, teachers will be less concerned about their students and give them online revision lectures to get in touch with the syllabus covered a month ago. Also, students need to be actively involved in online lectures and practicing the same in their spare time. And last but not least, the government is offering rules and regulations to prevent the spread of the pandemic corona virus. Overall, the State and related institutional bodies have taken the right and the right to make the right decisions in relation to the requirements situation.

References

1. Biavardi, N. G. (2020). Being an Italian medical student during the Covid-19 outbreak. *International Journal of Medical Students*, 8(1), 49-50.
2. Cellini, N., Canale, N., Mioni, G., & Costa, S. (2020). Changes in sleep pattern, sense of time, and digital media use during COVID-19 lockdown in Italy.
3. Burgess, S., & Sievertsen, H. H. (2020). Schools, skills, and learning: The impact of

COVID-19 on education. *VoxEu. org*, 1.

4. Odriozola-González, P., Planchuelo-Gómez, Á., Iruña, M. J., & de Luis-García, R. (2020). Psychological effects of the COVID-19 outbreak and lockdown among students and workers of a Spanish university.
5. Raj, U., & Fatima, A. (2020). Stress in Students after Lockdown Due to COVID-19 Threat and the Effects of Attending Online Classes. *Available at SSRN 3584220*.
6. Kant, R. (2020). COVID-19 Pandemic: Looking in the mind of students during lockdown. *Purakala with ISSN 0971-2143 is an UGC CARE Journal*, 31(23), 508-522.
7. Peters, M. A., Wang, H., Ogunniran, M. O., Huang, Y., Green, B., Chunga, J. O., ... & Khomera, S. W. China's internationalized higher education during Covid-19: collective student autoethnography. *Postdigital Science and Education*, 1.
8. Sardar, T., Nadim, S. S., & Chattopadhyay, J. (2020). Assessment of 21 days lockdown effect in some states and overall India: a predictive mathematical study on COVID-19 outbreak. *arXiv preprint arXiv:2004.03487*.
9. Elmer, T., Mepham, K., & Stadtfeld, C. (2020). Students under lockdown: Assessing change in students' social networks and mental health during the COVID-19 crisis.
10. Gupta, A., & Goplani, M. (2020). IMPACT OF COVID-19 ON EDUCATIONAL INSTITUTIONS IN INDIA. *Purakala with ISSN 0971-2143 is an UGC CARE Journal*, 31(21), 661-671.
11. Ganguly, D., Misra, S., & Goli, S. (2020). India's COVID-19 Episode: Resilience, Response, Impact and Lessons.
12. Favale, T., Soro, F., Trevisan, M., Drago, I., & Mellia, M. (2020). Campus Traffic and e-Learning during COVID-19 Pandemic. *Computer Networks*, 107290.
13. Meo, S. A., Abukhalaf, A. A., Alomar, A. A., Sattar, K., & Klonoff, D. C. (2020). COVID-19 Pandemic: Impact of Quarantine on Medical Students' Mental Wellbeing and Learning Behaviors. *Pakistan Journal of Medical Sciences*, 36(COVID19-S4).