NO. 135
MAY
2020

ADB BRIEFS

KEY POINTS

- Job postings in the largest online job matching sites in Bangladesh and Sri Lanka have largely declined since the COVID-19 outbreak: in April 2020, the number of job postings was only 13% of the total jobs posted in April 2019 for Bangladesh and 30% for Sri Lanka. The trend in online job applications in Bangladesh also follows a similar trajectory. Continuous monitoring of online job market indicators is necessary in the coming months to understand the impacts of the lockdowns and possible resumption of economic activities.
- All industries reduced new job postings significantly. The decline has been rapid in the Bangladesh textile industry. After a catastrophic decline, Sri Lanka's tourism and hospitality industries have shown no sign of recovery with negligible job postings. In both countries, although the situation needs to be monitored continuously, the information and communication technology industry might show signs of recovery, the first among several industries.
- Online job portal data can fill the gap in the current labor market monitoring system by providing time series job posting information in real time. The portal data can reflect rapid labor demand changes, although the data are not representative of the entire labor market, and reflect very little of rural jobs and self-employment.

ISBN 978-92-9262-232-9 (print)
ISBN 978-92-9262-233-6 (electronic)
ISSN 2071-7202 (print)
ISSN 2218-2675 (electronic)
Publication Stock No. BRF200162-2
DOI: http://dx.doi.org/10.22617/BRF200162-2

COVID-19 Impact on Job Postings: Real-Time Assessment Using Bangladesh and Sri Lanka Online Job Portals[1]

Ryotaro Hayashi
Social Sector Economist
Human and Social Development Division
South Asia Department
Asian Development Bank

Norihiko Matsuda
Assistant Professor
Department of Economics
Florida International University

INTRODUCTION

The coronavirus disease (COVID-19) pandemic has become a significant threat to our society and has disrupted economic and labor market activities across the world on an unprecedented scale.[2] In Bangladesh and Sri Lanka, government started to implement strict measures for disease containment, such as lockdown, from the middle of March (Figure 1).

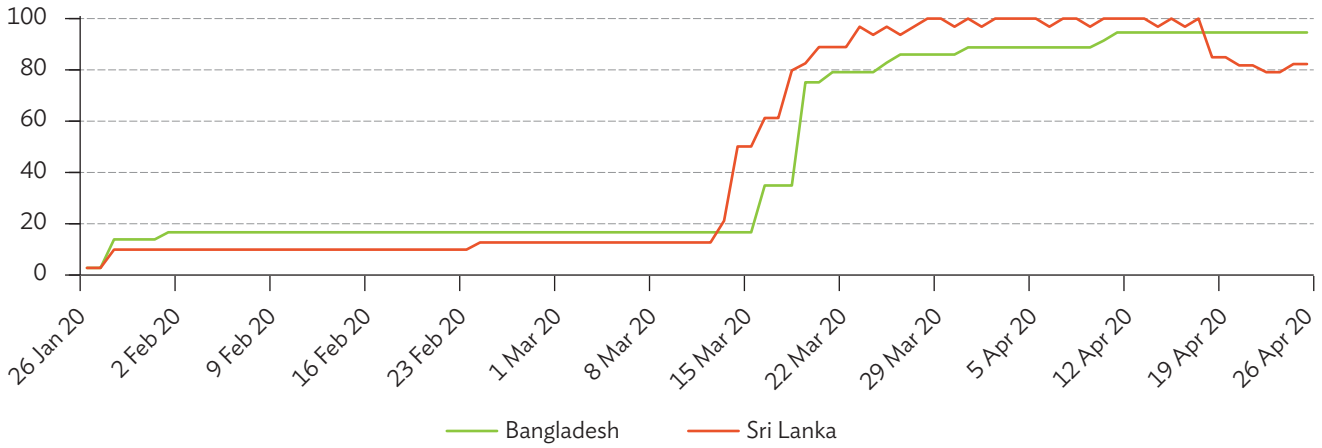
It is crucial to provide support for businesses and workers to minimize the economic consequences of the pandemic. In addition to public health and disease containment measures, necessary support may include credit provision, salary subsidies, tax cuts, unemployment benefits, and other social transfers (e.g., Baldwin and di Mauro 2020, ILO 2020, IMF 2020a and 2020b).

[1] This brief was peer reviewed by Dongdong Zhang, Principal Financial Sector Specialist, Bangladesh Resident Mission, Asian Development Bank (ADB); and Utsav Kumar, Senior Country Economist, Sri Lanka Resident Mission, ADB. The authors are grateful for review and inputs from Zhigang Li, Social Sector Specialist, Bangladesh Resident Mission, ADB. The authors are also grateful to Bdjobs.com and topjobs.lk for sharing their data; and Gary Gan of JobKred for the inspiring discussion and use of job matching site information for the skills demand analysis and others.

[2] According to early Asian Development Bank (ADB) estimates, the global economic impact of COVID-19 is $2.0 trillion–$4.1 trillion, or 2.3%–4.8% of global gross domestic product (ADB 2020a), and economies in the emerging and developing world are predicted to contract by 1.0% in 2020 (IMF 2020c). ADB (2020b) projections in May even suggest a $5.8 trillion economic impact (6.4% of global gross domestic product). Some 1.6 billion informal economy workers have been significantly affected by lockdowns and severe mobility restrictions, and total losses in working hours are estimated to be equivalent to 130 million jobs (ILO 2020).

ADB

Figure 1: COVID-19 Government Response Stringency Index



Notes: The stringency index is a composite measure based on nine types of responses, including school closures, workplace closures, and travel bans. The index simply records the number and strictness of government policies and should not be interpreted as indicating the appropriateness or effectiveness of response to the coronavirus disease (COVID-19).

Source: Blavatnik School of Government. Oxford COVID-19 Government Response Tracker. Oxford: University of Oxford. https://www.bsg.ox.ac.uk/research/research-projects/oxford-covid-19-government-response-tracker (accessed 9 May 2020).

Governments are aiming to target their COVID-19 support to the vulnerable. Given the limited fiscal space in developing countries, this targeting is important but challenging, especially with the disease evolving rapidly. While governments can extend their support through existing social protection measures, reaching out to the most vulnerable people and business requires additional policy analyses. The governments had already established telephone help lines for workers to identify and help vulnerable people, but real-time labor market data can be a valuable input into these policy-making processes.

Using online job portal data, this brief undertakes a rapid assessment of labor demand in Bangladesh and Sri Lanka to understand the impacts of COVID-19. This assessment builds on previous experience of the Asian Development Bank (ADB) in skills demand analysis using online job portal data. This exercise can fill a gap in the current labor market monitoring system. Online job portal data could provide information without a time lag, which is impossible in traditional large data collections, such as labor force surveys.[3] In addition, online job portal data do not require face-to-face interactions, which must be avoided in the current contagious pandemic.[4] Mobile phone data are used to analyze people's mobility,[5] but not much analysis has been done so far to look directly into the COVID-19 impact on labor demand.

ONLINE JOB PORTALS IN BANGLADESH AND SRI LANKA

The Bangladesh data come from Bdjobs.com, and the Sri Lanka data come from topjobs.lk, which are one of the leading online job portals in both countries in terms of number of job postings.[6] Other online job portals include Chakri.com, JOB.COM.BD, and alljobsbd.com in Bangladesh; and ikman.lk, Jobpal.lk, Observer JOBS, and XpressJobs in Sri Lanka; as well as several other online job portals in both countries.[7] In the job portals, registered jobseekers apply to online jobs posted by registered firms. Following a 7.9% annual economic growth by Bangladesh in 2018, the highest growth in Asia and the Pacific, over 60,000 jobs were posted on Bdjobs.com in 2019.[8] There were 200,000 visitors and over 1 million pageviews per day. In 2019, as Sri Lanka became an upper-middle-income country, topjobs.lk made more than 160,000 job postings.[9]

[3] The use of online job data in labor market analysis has been studied by Kureková, Beblavý, and Thum-Thysen (2015); and Hershbein and Macaluso (2018). Online job portal data are used by Nomura et al. (2017) in India; and by Matsuda, Ahmed, and Nomura (2019) in Pakistan to conduct labor market analysis.

[4] Phone surveys are another possible data source, e.g., Le Nestour et al. (2020) in Senegal; Malik et al. (forthcoming) in Pakistan; Rahman and Matin (2020) in Bangladesh.

[5] The COVID-19 Community Mobility Report prepared by Google LLC (https://www.google.com/covid19/mobility/) is one example; the report is available for each country.

[6] Job posting is defined as a job announced or placed at an online job portal by employers. The job posting includes, among others, job title and job description.

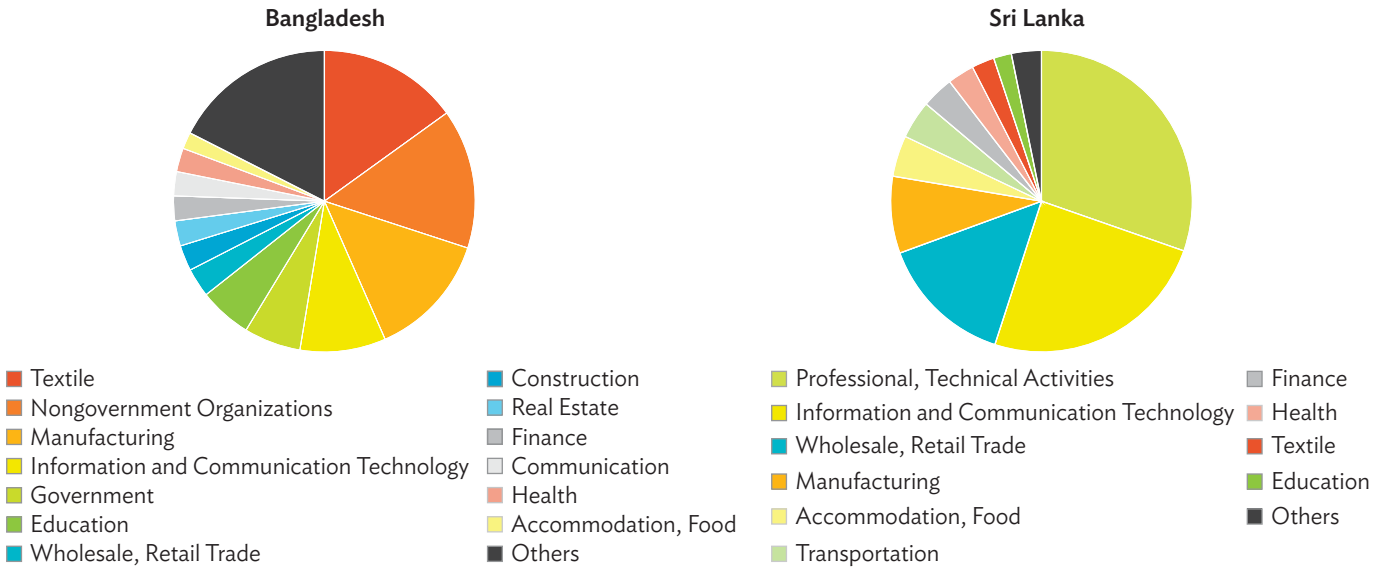
[7] Similar analysis could be done using this online job portal site information if the data are accessible.

[8] In Bangladesh, the unemployment rate was only 4.2% in fiscal year 2017, although informal employment was high, accounting for 85% of all employment (BBS 2018).

[9] In Sri Lanka, annual gross domestic product growth was 3.2%, unemployment was 4.4%, and the share of informal employment was 59% in 2018 (Sri Lanka Department of Census and Statistics 2019). However, the economy was undermined by the Easter Sunday terror attack of April 2019.

Figure 2 presents the industrial composition of job postings in 2019. In Bangladesh (Bdjobs.com), industries with the highest shares are textile (15%), nongovernment organizations (15%), manufacturing (13%), and information and communication technology or ICT (9%). In Sri Lanka (topjobs.lk), the largest four industries are professional, scientific, and technical activities (30%); ICT (25%); wholesale and retail trade (15%); and manufacturing (8%). These distributions are very different from those in the entire labor market, as can be seen in Table 1. Many potential reasons may explain this difference: for example, self-employment constitutes a large portion of the entire labor market, while wage jobs are dominant on online job portals. Regardless of the underlying reasons, it is important to keep in mind that the data may not reflect the entire labor market.

Figure 2: Share of Job Postings in Bangladesh and Sri Lanka, 2019



Note: Data for Bangladesh are from industries as defined by firms, while industry data for Sri Lanka are based on job categories.

Sources: Bdjobs.com (accessed 14 May 2020) and topjobs.lk (accessed 7 May 2020).

Table 1: Industrial Compositions of Employment in National Labor Force Surveys (%)

Industries	Bangladesh (Fiscal Year 2017)	Sri Lanka (2018)
Agriculture, forestry, fishing	40.6	25.5
Manufacturing	14.4	18.3
Utility, construction	5.8	8.9
Wholesale, retail trade	14.2	14.2
Transportation, storage	8.6	6.3
Accommodation, food services	1.9	3.0
Information and communication technology	0.3	0.7
Financial services	0.7	2.2
Professional, technical, administrative services	1.0	3.2
Public administration	1.6	5.4
Education	3.6	5.3
Health	0.8	1.8
Others	6.5	5.4

Notes: Employment includes self-employment. The fiscal year of Bangladesh ends on 30 June.

Sources: BBS (2018) and Department of Census and Statistics Sri Lanka (2019).

COVID-19 IMPACT ON JOB POSTINGS

Bangladesh

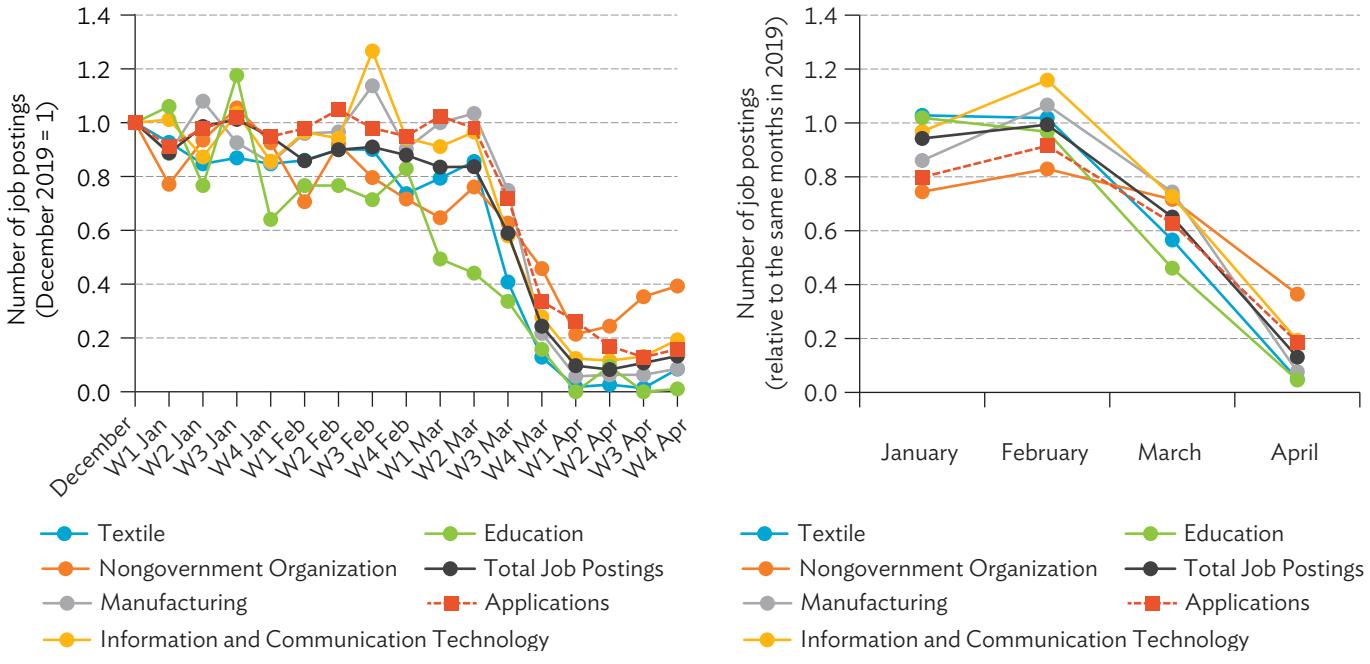
The number of job postings dropped sharply from the third week of March (Figure 3), 1 week after the first cases of COVID-19 were confirmed and nationwide lockdown was implemented (Figure 1). Relative to December 2019, the number of new job postings was approximately the same in January 2020, and 10%–17% fewer during February and the first and second weeks of March. In the third week of March, it fell to 59% of December 2019 and 24% in the fourth week of March.

Compared to the same months in the previous year, monthly job postings were 35% fewer in March, and 87% fewer in April 2020, although job postings in February 2020 were only 1% fewer (Table 2).

A sharp decrease in job postings has occurred across all industries with variations. For example, compared to April 2019, the number of job postings in April 2020 was down by 95% in textile and education industries, and by 92% in the manufacturing industry. The sharp decline in the textile industry may be related to the pandemic affecting key export markets such as Europe and the United States. The manufacturing industry is also affected by disruptions in intermediate imports. While significantly affected, the reduction in health sector job postings was 82%, and 81% in ICT. The nongovernment organization job postings declined by 64%, but this was much better than other industries, possibly due to the need for development assistance in the current emergency. These results clearly show that businesses stopped hiring workers because of the COVID-19 outbreak.

Job applications declined in tandem with the decreased job postings. Compared to December 2019, the number of job applications stayed around the same level until the second week of March 2020, but plunged to 72% in the third week, 34% in the fourth week, and to only 16% in the fourth week of April. Compared to the same months in 2019, job applications were 63% in March 2020 and 19% in April.

Figure 3: Job Postings and Applications in Bangladesh, January–April 2020



W = week.

Note: On the left panel, the number of weekly job postings is normalized relative to the number of job postings per week in December 2019. The right panel shows number of monthly job postings relative to the same month in the previous year. In both graphs, the dotted lines show the total number of job applications, not job postings.

Source: Bdjobs.com (accessed 14 May 2020).

Table 2: Online Job Market Statistics in Bangladesh, January–April 2020

Industries	No. of Job Postings in 2019	Weekly Time Series															
		January				February				March				April			
		W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4
Textile	9,500	0.93	0.85	0.87	0.85	0.86	0.90	0.90	0.74	0.79	0.86	0.41	0.13	0.02	0.03	0.01	0.08
Nongovernment organization	9,444	0.77	0.94	1.05	0.93	0.71	0.92	0.80	0.72	0.65	0.76	0.63	0.46	0.21	0.24	0.35	0.39
Manufacturing	8,438	0.89	1.08	0.93	0.85	0.96	0.97	1.14	0.90	1.00	1.03	0.75	0.22	0.06	0.06	0.06	0.09
Information and communication technology	5,804	1.01	0.87	1.03	0.86	0.97	0.94	1.27	0.94	0.91	0.97	0.58	0.28	0.12	0.12	0.13	0.19
Government	3,843	0.41	1.57	1.10	1.77	0.62	1.05	0.87	1.15	0.63	0.67	0.54	0.14	0.00	0.00	0.00	0.00
Education	3,573	1.06	0.77	1.18	0.64	0.77	0.77	0.71	0.83	0.49	0.44	0.34	0.16	0.00	0.09	0.00	0.01
Wholesale, retail trade	1,957	0.90	1.02	1.41	1.07	0.97	0.63	0.63	1.26	0.92	0.85	0.78	0.17	0.02	0.05	0.02	0.19
Construction	1,734	1.04	0.76	0.53	0.99	0.66	0.81	0.81	0.73	0.94	0.66	0.38	0.18	0.10	0.10	0.08	0.00
Real estate	1,703	1.14	0.86	1.24	1.17	1.08	0.60	0.92	1.56	0.79	1.30	0.57	0.38	0.10	0.19	0.06	0.13
Finance	1,676	0.73	1.09	0.60	1.20	1.03	0.90	1.09	0.82	1.01	0.68	0.68	0.22	0.11	0.00	0.03	0.05
Communication	1,635	0.70	0.76	1.46	0.76	0.78	0.76	0.81	1.24	1.14	0.51	0.49	0.32	0.03	0.00	0.24	0.05
Health	1,603	0.58	1.53	1.21	1.29	0.86	0.72	1.01	0.83	1.15	1.21	1.38	0.14	0.32	0.09	0.06	0.17
Accommodation, food	1,123	1.18	1.41	1.18	0.64	0.82	1.05	0.59	0.86	1.23	1.18	0.45	0.23	0.00	0.00	0.09	0.05
Others	11,053	0.98	1.00	1.00	0.95	0.94	0.95	0.82	0.86	0.89	0.83	0.64	0.25	0.15	0.04	0.11	0.09
Total	**63,086**	**0.89**	**0.99**	**1.01**	**0.95**	**0.86**	**0.90**	**0.91**	**0.88**	**0.83**	**0.84**	**0.59**	**0.24**	**0.10**	**0.08**	**0.11**	**0.13**

Industries	Year-over-Year Comparison				Rate of Change from Previous Month (%)			
	January	February	March	April	Dec–Jan	Jan–Feb	Feb–Mar	Mar–Apr
Textile	1.03	1.02	0.57	0.05	(7)	(6)	(37)	(93)
Nongovernment organization	0.74	0.83	0.72	0.36	0	(19)	(12)	(54)
Manufacturing	0.86	1.07	0.74	0.08	1	0	(22)	(91)
Information and communication technology	0.97	1.16	0.73	0.19	6	(1)	(34)	(76)
Government	1.57	1.09	0.36	0.01	46	(36)	(48)	(99)
Education	1.02	0.97	0.46	0.05	(2)	(21)	(54)	(90)
Wholesale, retail trade	1.06	0.84	0.72	0.09	25	(28)	(25)	(88)
Construction	0.73	0.87	0.56	0.07	(8)	(18)	(29)	(87)
Real estate	0.74	0.91	0.71	0.13	16	(7)	(19)	(85)
Finance	0.97	1.08	0.68	0.05	(1)	(1)	(34)	(93)
Communication	0.76	0.87	0.61	0.13	1	(9)	(33)	(85)
Health	1.09	1.30	0.97	0.18	18	(27)	18	(84)
Accommodation, food	0.69	0.74	0.70	0.06	20	(29)	(5)	(93)
Others	1.04	1.03	0.69	0.13	6	(13)	(28)	(83)
Total	**0.94**	**0.99**	**0.65**	**0.13**	**5**	**(13)**	**(28)**	**(82)**

( ) = negative, W = week.

Note: Weekly time series is relative to the weekly average in December 2019.

Source: tobjobs.lk (accessed 7 May 2020).

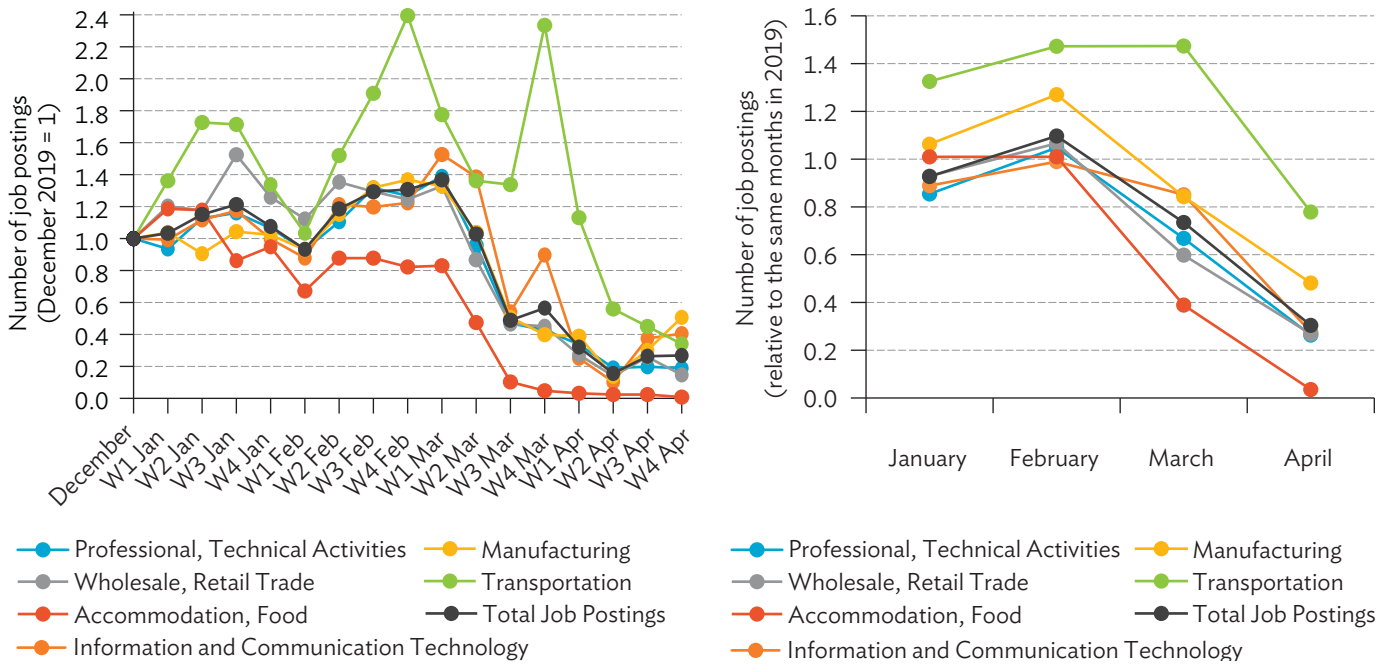
Sri Lanka

Online job postings in Sri Lanka declined by 70% in April 2020 compared to the same month in the previous year. This reduction is relatively smaller than that of Bangladesh, but the trend is similar to the Bangladesh data. In the middle of March 2020, confirmed cases of COVID-19 began to rise, and containment measures started to be adopted. Corresponding to these events, new job postings plunged in the middle of March 2020. Compared to December 2019, the number of new job postings was 3% higher in the second week of March, but 51% lower in the following week, and 70% lower in April (Figure 4). Compared to the same months in the previous year, job postings in 2020 were 10% more in February, but 27% fewer in March, and 70% fewer in April.

All industries have been cutting job postings. Compared to the same month in 2019, the number of job postings in April 2020 declined by 96% in accommodation and food service activities, implying serious consequences of social distancing and containment measures in the tourism and hospitality industry. A large reduction also occurred in professional, scientific, and technical activities (74%); wholesale and retail trade (73%); and ICT (72%). The decline in manufacturing is 52%, but relatively small compared to other industries. While the number of job postings is not necessarily large compared to Bangladesh, the textile industry showed the largest decline next to accommodation and food service industry (Table 3). Like other sectors, the health sector was also affected. While this may be a temporary hike, the health sector shows a small increase from the third week of April. Interestingly, job postings in the transportation industry remained high until March, but they dropped in April. To sum up, businesses across all industries in Sri Lanka have cut or frozen job postings.

The manufacturing and ICT sectors seem to be showing signs of improvement from the second week of April. While high-risk districts still remain in lockdown, Sri Lanka started partial lifting of the lockdown in late April. Key economic centers such as Colombo also started a phased lifting from 11 May, and employers may expect resumption of economic activities. However, the transition needs to be monitored closely to make sure this is not a temporary recovery.

Figure 4: Job Postings in Sri Lanka, January–April 2020



W = week.

Note: On the left panel, the number of weekly job postings is normalized relative to the number of job postings per week in December 2019. The right panel shows number of monthly job postings relative to the same month in the previous year.

Source: topjobs.lk (accessed 7 May 2020).

Table 3: Online Job Market Statistics in Sri Lanka, January–April 2020

Industries	No. of Job Postings in 2019	Weekly Time Series															
		January				February				March				April			
		W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4
Professional, technical activities	35,403	0.94	1.13	1.16	1.07	0.93	1.11	1.32	1.27	1.39	0.96	0.47	0.43	0.34	0.19	0.20	0.19
Information and communication technology	28,762	0.99	1.12	1.17	1.00	0.88	1.21	1.20	1.22	1.53	1.39	0.54	0.90	0.25	0.10	0.38	0.40
Wholesale, retail trade	16,815	1.20	1.17	1.52	1.26	1.12	1.35	1.29	1.24	1.33	0.87	0.47	0.45	0.27	0.14	0.26	0.15
Manufacturing	9,620	1.04	0.91	1.04	1.02	0.93	1.15	1.32	1.37	1.33	1.04	0.51	0.40	0.39	0.14	0.30	0.51
Accommodation, food	5,134	1.19	1.18	0.86	0.95	0.67	0.88	0.88	0.82	0.83	0.47	0.10	0.05	0.03	0.02	0.02	0.01
Transportation	4,763	1.36	1.73	1.71	1.34	1.03	1.52	1.91	2.40	1.78	1.36	1.34	2.33	1.13	0.56	0.45	0.34
Finance	4,001	0.77	0.97	0.97	0.96	0.85	0.97	0.99	1.21	0.92	0.79	0.54	0.37	0.40	0.28	0.36	0.38
Health	3,351	1.05	1.37	1.40	1.20	0.97	1.26	1.38	1.84	1.16	0.72	0.57	0.65	0.18	0.07	0.22	0.24
Textile	2,830	1.17	1.11	1.19	1.21	0.93	1.09	1.41	1.05	1.15	0.95	0.22	0.00	0.08	0.00	0.10	0.00
Education	2,235	0.94	1.36	1.45	0.99	1.13	1.52	1.13	1.45	1.59	1.08	0.14	0.09	0.14	0.02	0.14	0.07
Others	3,746	1.10	1.39	1.16	0.96	0.85	1.38	2.02	1.61	1.64	1.15	0.32	0.20	0.58	0.23	0.41	0.55
Total	**166,660**	**1.03**	**1.15**	**1.21**	**1.08**	**0.93**	**1.19**	**1.29**	**1.31**	**1.37**	**1.03**	**0.49**	**0.56**	**0.32**	**0.16**	**0.26**	**0.27**

Industries	Year-over-Year Comparison				Rate of Change from Previous Month			
	January	February	March	April	Dec–Jan	Jan–Feb	Feb–Mar	Mar–Apr
Professional, technical activities	0.85	1.05	0.67	0.26	7	8	(30)	(72)
Information and communication technology	0.89	0.99	0.85	0.28	7	5	(4)	(74)
Wholesale, retail trade	0.93	1.07	0.60	0.27	29	(3)	(38)	(74)
Manufacturing	1.06	1.27	0.84	0.48	0	19	(31)	(59)
Accommodation, food	1.01	1.01	0.39	0.04	4	(22)	(55)	(94)
Transportation	1.33	1.47	1.47	0.78	53	12	(1)	(64)
Finance	0.77	1.02	0.67	0.52	(8)	9	(35)	(46)
Health	1.10	1.30	0.83	0.27	26	9	(43)	(77)
Textile	1.14	1.11	0.57	0.06	17	(4)	(48)	(92)
Education	1.06	1.54	0.81	0.16	18	10	(44)	(87)
Others	0.80	1.33	0.59	0.55	15	27	(44)	(46)
Total	**0.93**	**1.10**	**0.73**	**0.30**	**12**	**5**	**(27)**	**(71)**

( ) = negative, W = week.

Note: Weekly time series is relative to the weekly average in December 2019.

Source: tobjobs.lk (accessed 7 May 2020).

CONCLUSION

This brief presents a rapid assessment of labor markets in Bangladesh and Sri Lanka during the COVID-19 crisis using data from the largest online job portals. Most citizens understand and even feel the impact of COVID-19 on the labor market personally, but policy makers, particularly in developing countries, have struggled to articulate the degree of COVID-19 impact on labor demand with reasonably large data. The online job postings are a proxy for labor demand and could fill the gap in the current labor market monitoring system by providing time series job posting information in real time.

In April 2020, total job postings in the largest online job matching sites declined by 87% in Bangladesh and 70% in Sri Lanka compared to the same month in 2019. All industries reduced new job postings significantly. The speed of decline has been rapid in the textile industries of both Bangladesh and Sri Lanka. After a catastrophic decline, Sri Lanka's tourism and hospitality industries show no sign of recovery, with negligible job postings. In both countries, the ICT industry seems to show signs of recovery ahead of other industries.

While online job portal data are not representative of the entire labor market, they can readily capture the impact on labor demand caused by COVID-19 lockdowns. There are several job matching sites, and these real-time data could guide social protection and labor policies for better targeting within a limited fiscal space. In addition, as economic activities are gradually resumed under the "new normal," online job portal data could be continuously monitored in the coming months to assess the progress of economic recovery.

REFERENCES

Asian Development Bank. 2020a. *Asian Development Outlook 2020*. Manila.

———. 2020b. *An Updated Assessment of the Economic Impact of COVID-19*. Manila.

Baldwin, R. E. and W. di Mauro. 2020. *Mitigating the COVID Economic Crisis*. London: Centre for Economic Policy Research.

Bangladesh Bureau of Statistics (BBS). 2018. *Report on Labour Force Survey (LFS) 2016–17*. Dhaka.

Blavatnik School of Government. Oxford COVID-19 Government Response Tracker. Oxford: University of Oxford. https://www.bsg.ox.ac.uk/research/research-projects/oxford-covid-19-government-response-tracker (accessed 9 May 2020).

Department of Census and Statistics Sri Lanka. 2019. *Sri Lanka Labour Force Survey: Annual Report—2018*. Colombo.

Hershbein, B. and C. Macaluso. 2018. The Economics of Job Search: New Insights from an Upjohn Institute-Federal Reserve Bank of Chicago Conference. *Employment Research*. 25 (3). pp. 4–5.

International Labour Organization (ILO). 2020. *ILO Monitor: COVID-19 and the World of Work*. 3rd ed. Geneva.

International Monetary Fund (IMF). 2020a. Expenditure Policies in Support of Firms and Households. Washington, DC.

———. 2020b. *Government Support to Businesses and Households*. Washington, DC.

———. 2020c. *World Economic Outlook, April 2020: The Great Lockdown*. Washington, DC.

Kureková, L. M., M. Beblavý, and A. Thum-Thysen. 2015. Using Online Vacancies and Web Surveys to Analyse the Labour Market: A Methodological Inquiry. *IZA Journal of Labor Economics*. 4 (18). pp. 1–20.

Le Nestour, A. et al. 2020. *Phone Survey on the Covid Crisis in Senegal*. Center for Global Development. https://www.cgdev.org/blog/five-findings-new-phone-survey-senegal.

Malik, K. et al. Forthcoming. COVID-19 and the Future of Microfinance: Evidence and Insights from Pakistan. *Oxford Review of Economic Policy*.

Matsuda, N., T. Ahmed, and S. Nomura. 2019. Labor Market Analysis Using Big Data: The Case of a Pakistani Online Job Portal. *World Bank Policy Research Working Paper*. No. 9063. Washington, DC.

Nomura, S. et al. 2017. Toward Labor Market Policy 2.0: The Potential for Using Online Job-Portal Big Data to Inform Labor Market Policies in India. *World Bank Policy Research Working Paper*. No. 7966. Washington, DC.

Rahman, H. Z. and I. Matin. 2020. *Livelihoods, Coping, and Support during Covid-19 Crisis*. BRAC Institute of Governance and Development. Dhaka.

Asian Development Bank
6 ADB Avenue, Mandaluyong City
1550 Metro Manila, Philippines
Tel +63 2 8632 4444
Fax +63 2 8636 2444

www.adb.org/publications/series/adb-briefs