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## Chapter 9

# Machine Intelligence–Based Trend Analysis of COVID–19 for Total Daily Confirmed Cases in Asia and Africa

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### ABSTRACT

*COVID-19 is likely to pose a significant threat to healthcare, especially for disadvantaged populations due to the inadequate condition of public health services with people's lack of financial ways to obtain healthcare. The primary intention of such research was to investigate trend analysis for total daily confirmed cases with new corona virus (i.e., COVID-19) in the countries of Africa and Asia. The study utilized the daily recorded time series observed for two weeks (52 observations) in which the data is obtained from the world health organization (WHO) and world meter website. Univariate ARIMA models were employed. STATA 14.2 and Minitab 14 statistical software were used for the analysis at 5% significance level for testing hypothesis. Throughout time frame studied, because all four series are*

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## **Machine Intelligence-Based Trend Analysis of Novel Corona Virus (COVID-19)**

*non-stationary at level, they became static after the first variation. The result revealed the appropriate time series model (ARIMA) for Ethiopia, Pakistan, India, and Nigeria were Moving Average order 2, ARIMA(1, 1, 1), ARIMA(2, 1, 1), and ARIMA (1, 1, 2), respectively.*

## **INTRODUCTION**

COVID-19 is the class of corona (Crown) viruses. They are so-called because of the crown-like appearance under a microscope (Otom,R., 2020). Coronavirus disease 2019, cases endure to rise rapidly transversely the African continent (W, H, O., 2020). It has the potential to cause tremendous social disruptions, economic loss, and political and security (Pramanik, S. and Singh, R. P., 2017) crises and to reverse the health and socio-economic development gains (Pandey, D., et.al., 2020). A lack of state-run healthcare services and everyone's insufficient resources to access health-care systems, COVID-19 seems to be likely to pose a serious threat, particularly to vulnerable groups. Due to transportation but also immigration controls, the outbreak has an impact on the delivery and cost of humanitarian assistance. At the same time, if resources are sidetracked to sustenance national COVID-19 attempts, expenditures are likely to be cut(Parmeshwar, U. et. al., 2020). This might have serious ramifications for population groups that heavily trust on philanthropic help to live and/or defend their maintenances. Similarly, support approaches would consider major obstacles in coordinating face to face-based evaluations and post-delivery tracking (Emmanuel, S., et. al., 2020).

COVID-19's global collateral effects may include a rise in food costs due to agricultural manpower scarcity, as well as the detrimental influence of protectionist measures (Parmeshwar, U. et. al., 2020). Ethiopia is among the most vulnerable developing countries in the world, with COVID-19 spreading at an exponential rate. The scarcity of emergency care services, the extensive use of public transportation, the scarcity of hygiene resources, including water, the concealment of suspicious cases, the absence of necessary safety devices for healthcare professionals, and the presence of immune-compromised individuals all are significant motivators (Birhanu, A.et. al., 2020). Even if COVID-19 is contained in Africa, the disease's economic consequences will be unavoidable and irreversible (Yakubu, L., 2021). COVID-19 is perhaps the most recent humanitarian difficult task that Ethiopia's government and humanistic partner organizations have confronted (Mekonnen, H, Z. 2020).

The COVID-19 pandemic is wreaking havoc on global supply chains and disrupting manufacturing operations (Daniel B. et. al., 2021). Closing schools would then reduce food intake and nutrition, possibly increase school dropouts, and have a negative effect on social economic growth. Long-term consequences of interrupted education but also impoverished childhood development nutrition would then disproportionately affect poor families, limiting their human capital development and able to earn growth in the field (Lee, H. et. al., 2020).

Flight cancellations, hotel reservation cancellations, and cancelled local and international events totaling more than \$200 billion were all on the rise (Ozili,P, K., 2020). In Ethiopia, public transportation is highly vulnerable in boosting outbreaks such as COVID-19 pandemic. Heavy focus on hygiene, sanitation, temperature screening at entry sights, and a limited number of bus seats and onboard cameras to enforce these rules is the need of the hour (Birhanu, A.et. al., 2020). Beginning with biggest employers, flower and horticulture farms utilize 150,000 people in such a number of focused areas. Garment suppliers, other significantly impacted export group, hires between 50,000 and 70,000 people (Ababulgu, A, N. and Wana, F, H., 2021).

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