

Supplementary Materials

# Potential of ARIMA-MLP, ARIMA-SVM, DT, and CatBoost for PM<sub>2.5</sub> and PM<sub>10</sub> prediction in Bangladesh

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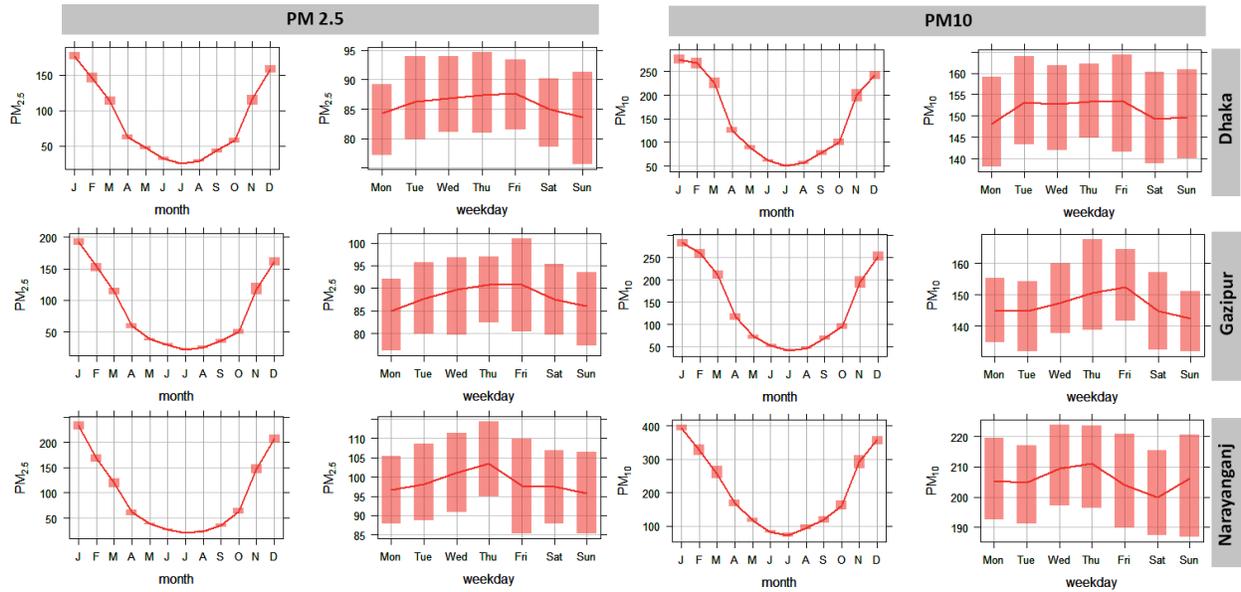
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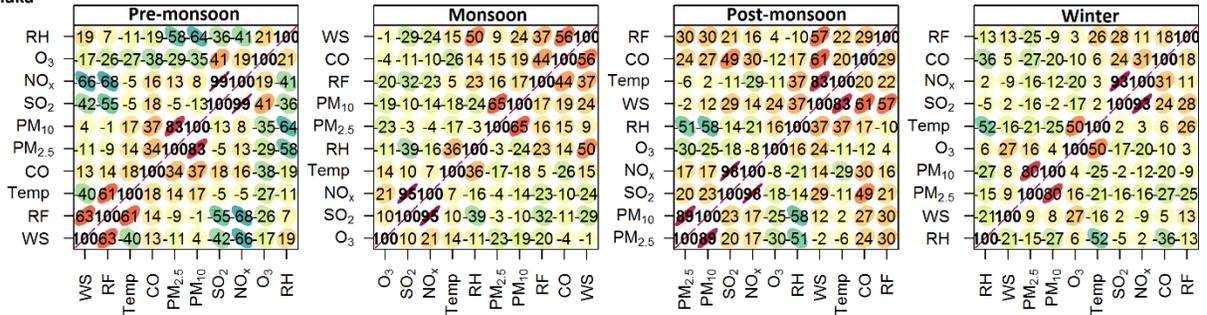
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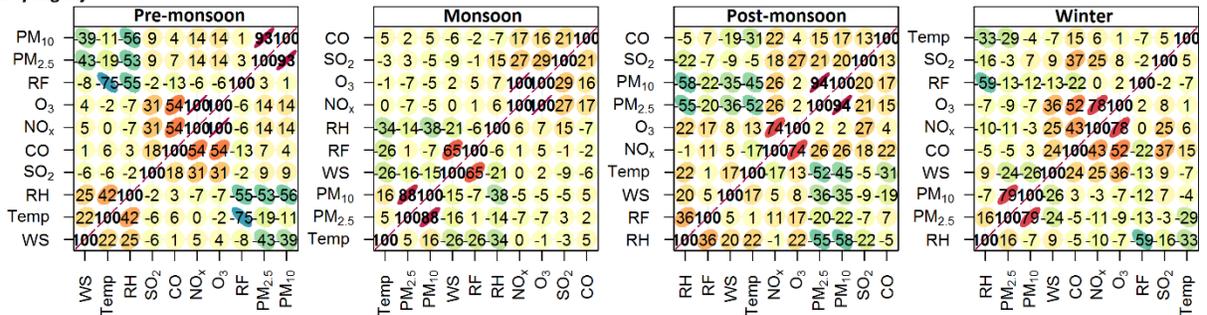
**Figure S1.** Monthly and daily pattern of particulate matters across the air monitoring stations from 2013-2019



Dhaka



Narayanganj



Gazipur

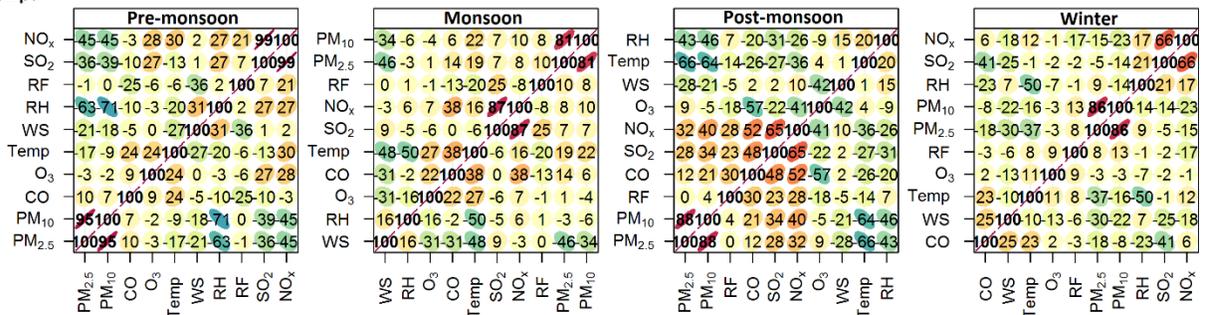
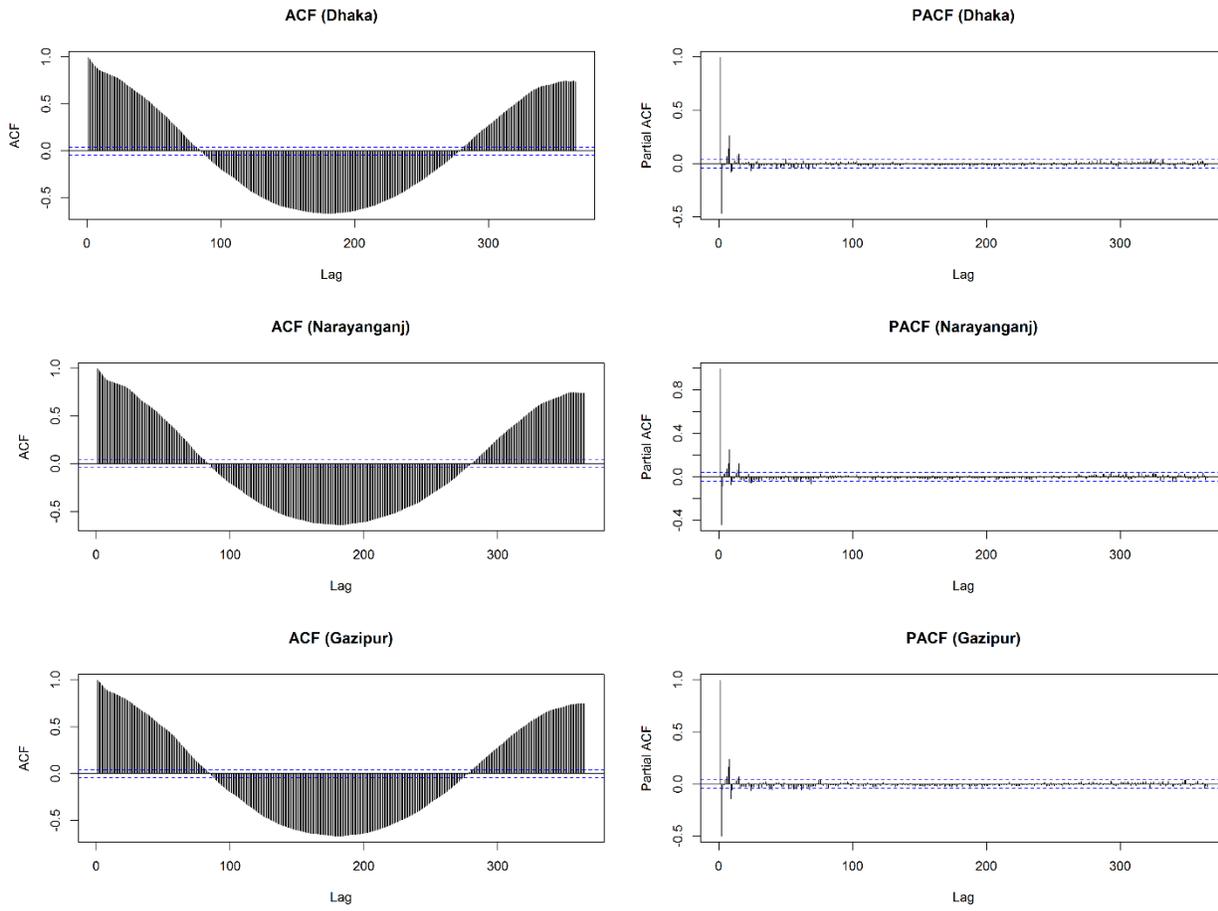


Figure S2. Season-wise correlation among the meteorological variables and atmospheric pollutants in Dhaka, Narayanganj, and Gazipur.



**Figure S3.** ACF and PACF plot of daily PM<sub>2.5</sub> concentration at the air monitoring stations

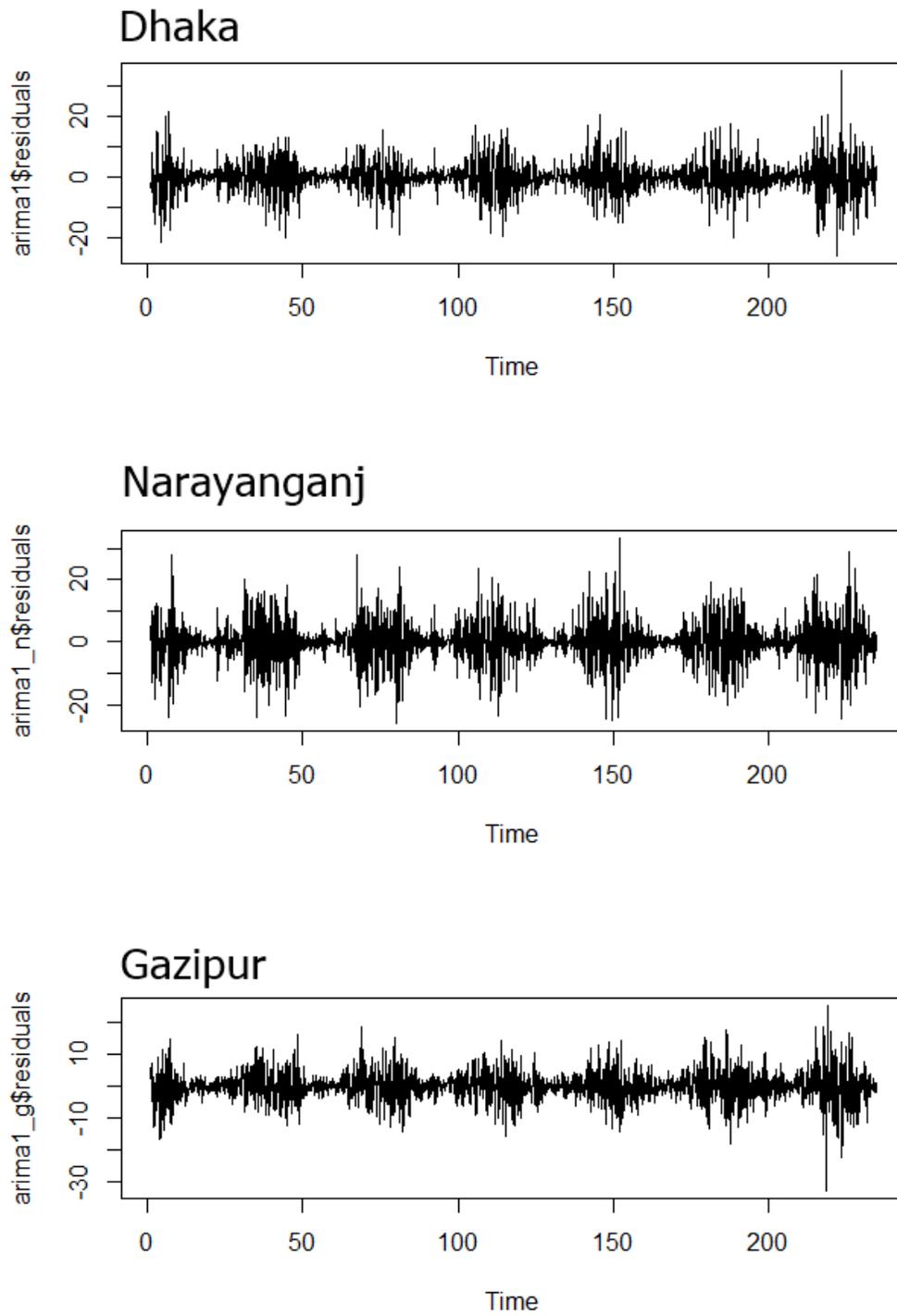
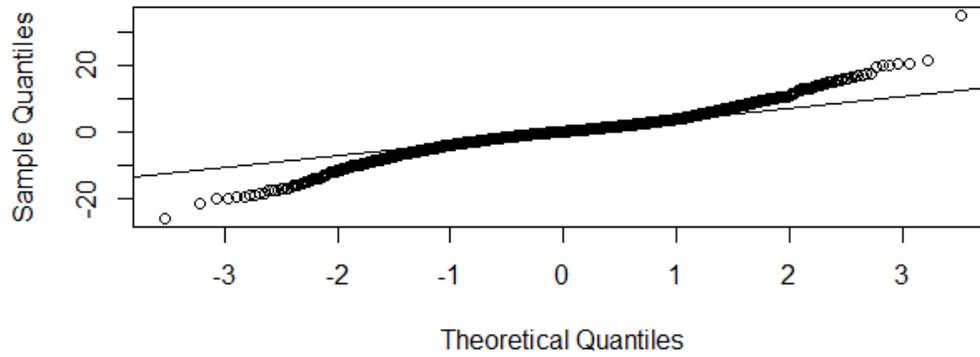


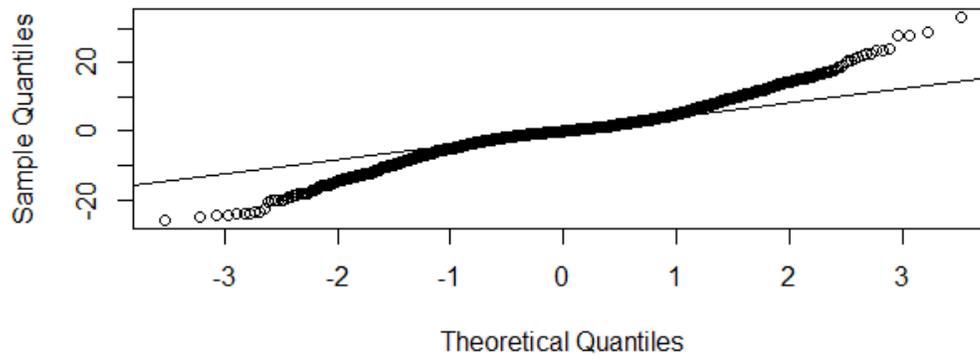
Figure S4. Residual plot of the models



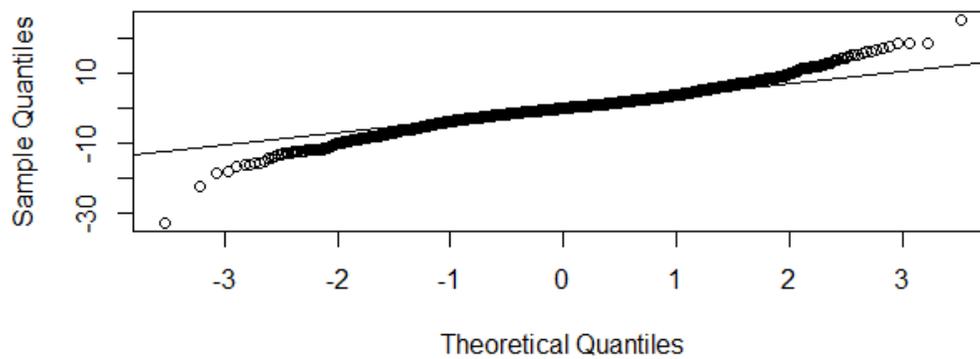
**Normal Q-Q Plot of residuals (Dhaka)**



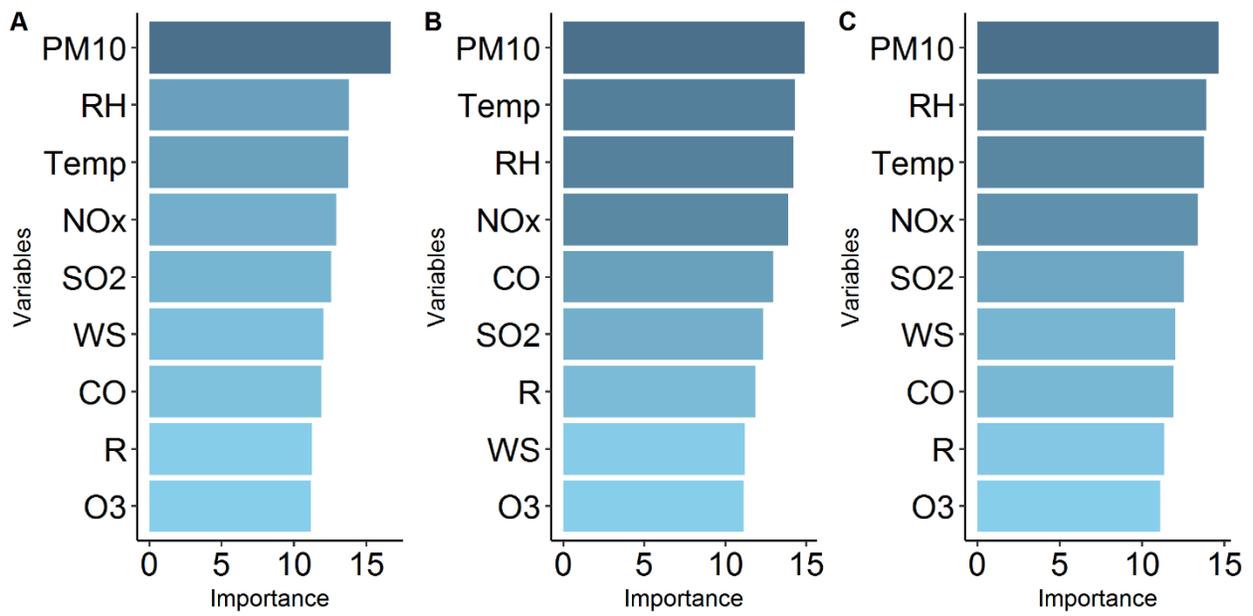
**Normal Q-Q Plot of residuals (Narayanganj)**



**Normal Q-Q Plot of residuals (Gazipur)**



**Figure S5.** Diagnostic test of residuals from the models (Normal Q-Q plot)



**Figure S6.** Variable importance for predicting PM<sub>2.5</sub> across A. Dhaka, B. Narayanganj, and C. Gazipur