

Table 4 Pearson correlation coefficients of physical and chemical parameters, planktonic diatom abundance and community structure indices of Lower Ogun River at Abeokuta

Parameters	LogCN	LogFN	LogBN	LogTN	LogS	Hs	D	d	J	C
LogWT	0.125	0.101	0.303	0.305	0.419*	0.302	0.224	0.374*	-0.368*	-0.158
pH	0.371*	0.122	0.232	0.349	0.443*	0.347	0.208	0.404*	-0.226	-0.318
LogCOND	-0.123	-0.072	0.216	0.015	0.142	0.012	0.207	0.145	-0.187	-0.268
LogTDS	-0.123	-0.059	0.200	-0.002	0.137	-0.006	0.214	0.143	-0.196	-0.283
LogTRANS	0.391*	0.017	-0.100	0.257	0.205	0.257	0.008	0.178	0.020	0.180
LogFe	-0.232	0.138	0.189	0.003	0.087	0.003	0.063	0.042	-0.180	-0.157
LogNO ₂	0.288	-0.110	0.058	0.277	0.113	0.279	-0.170	0.000	-0.104	0.305
LogNO ₃	-0.053	0.150	0.213	0.152	0.164	0.153	0.020	0.149	-0.118	-0.140
LogMn	-0.327	0.015	-0.101	-0.171	-0.174	-0.168	-0.064	-0.053	0.220	0.073
LogNH ₄	-0.321	0.425*	0.236	0.118	0.196	0.114	0.152	0.135	-0.229	-0.183
LogSO ₃	-0.232	0.084	0.017	-0.084	-0.050	-0.083	-0.007	-0.059	-0.038	-0.039
LogSiO ₃	0.056	0.118	-0.145	0.003	0.007	0.003	-0.006	-0.010	-0.009	0.022
LogPO ₄	0.018	0.193	0.339	0.260	0.390*	0.258	0.190	0.328	-0.384*	-0.276
LogTA	-0.145	0.371*	0.197	-0.044	0.128	-0.047	0.210	0.123	-0.233	-0.431*
LogTOC	-0.028	0.100	0.090	0.049	0.108	0.046	0.138	0.110	-0.052	-0.173
LogTH	0.011	-0.238	-0.030	0.009	-0.144	0.013	-0.253	-0.250	0.038	0.328
LogCOD	-0.148	0.154	-0.125	-0.253	0.059	-0.258	0.338	0.070	-0.257	-0.320
LogTSS	-0.291	0.091	0.121	-0.323	-0.107	-0.325	0.159	-0.102	-0.200	-0.389*
LogDO	-0.326	0.211	0.185	-0.027	0.085	-0.030	0.189	0.066	-0.164	-0.263
LogCN	1.000	-0.077	0.090	0.655**	0.398*	0.657**	-0.161	0.297	-0.015	0.170
LogFN	-0.077	1.000	0.159	0.312	0.440*	0.308	0.262	0.439*	-0.220	-0.302
LogBN	0.090	0.159	1.000	0.580**	0.743**	0.573**	0.395*	0.646**	-0.780**	-0.501**
LogTN	0.655**	0.312	0.580**	1.000	0.732**	1.000**	-0.065	0.595**	-0.265	0.039
LogS	0.398*	0.440*	0.743**	0.732**	1.000	0.722**	0.619**	0.954**	-0.737**	-0.574**
Hs	0.657**	0.308	0.573**	1.000**	0.722**	1.000	-0.081	0.583**	-0.252	0.052
D	-0.161	0.262	0.395*	-0.065	0.619**	-0.081	1.000	0.728**	-0.730**	-0.849**
d	0.297	0.439*	0.646**	0.595**	0.954**	0.583**	0.728**	1.000	-0.661**	-0.636**
J	-0.015	-0.220	-0.780**	-0.265	-0.737**	-0.252	-0.730**	-0.661**	1.000	0.716**
C	0.170	-0.302	-0.501**	0.039	-0.574**	0.052	-0.849**	-0.636**	0.716**	1.000

Note: *: Correlation is significant at the 0.05 level (2-tailed); **: Correlation is significant at the 0.01 level (2-tailed). Where LogWT = Log Water temperature; pH = Hydrogen ion concentration; LogCOND = Log Electrical conductivity; LogTDS = Log Total dissolved solids; LogTRANS = Log Water transparency; LogFe = Log Iron; LogNO₂ = Log Nitrite; LogNO₃ = Log Nitrate; LogMn = Log Manganese; Log NH₄ = Log Ammonium; LogSO₃ = Log Sulphide; LogSiO₃ = Log Silicate; LogPO₄ = Log Phosphate; LogTA = Log Total alkalinity; LogTOC = Log Total organic carbon; LogTH = Log Total hardness; LogCOD = Log Chemical oxygen demand; LogTSS = Log Total suspended solids; LogDO = Log Dissolved oxygen; LogCN = Log Coscinodiscophyceae abundance; LogFN = Log Fragilariophyceae abundance; LogBN = Log Bacillariophyceae abundance; LogTN = Log Total abundance; LogS = Log Species diversity; Hs = Shannon-Weaver Index; D = Menhinick Index; d = Margalef Index; j = Pielou Equitability Index; C = Simpsons Dominance Index