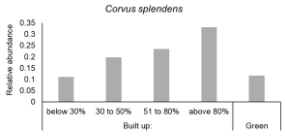
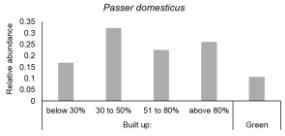
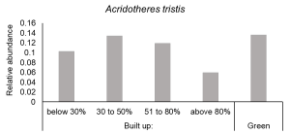
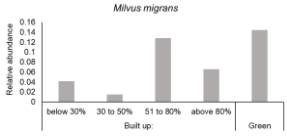
Appendix 3

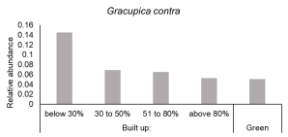
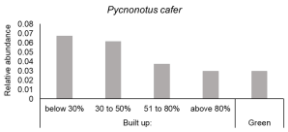
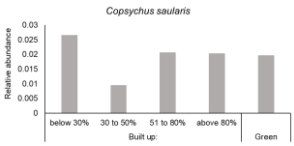
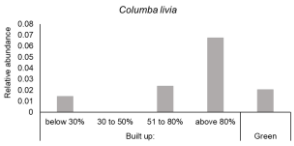
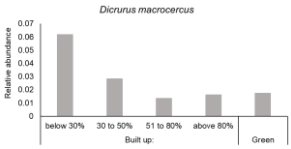
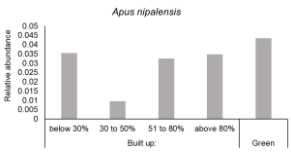
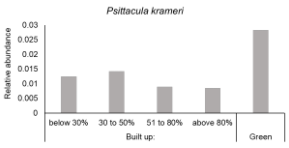
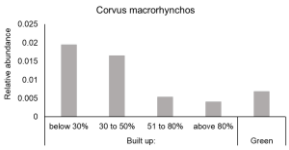
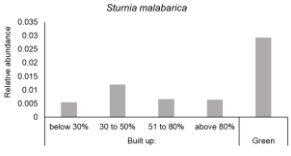
RESULTS

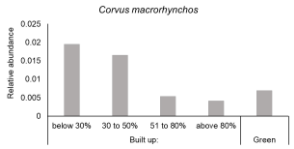
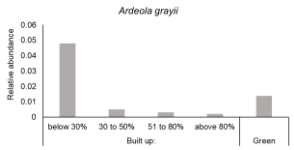
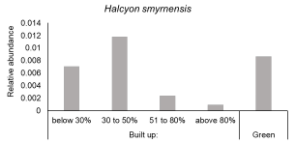
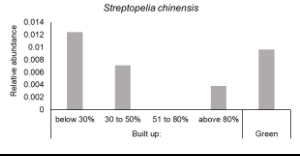
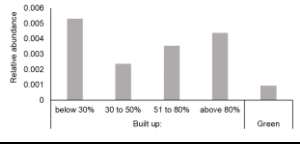
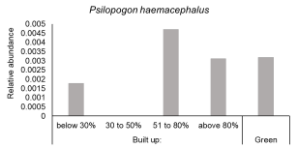
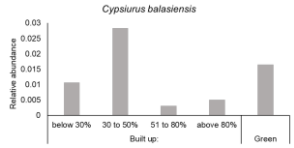
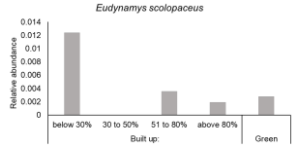
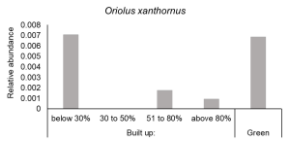
Bird diversity

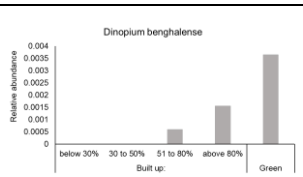
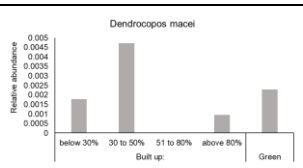
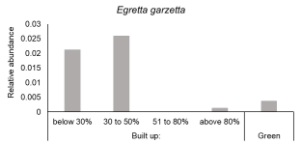
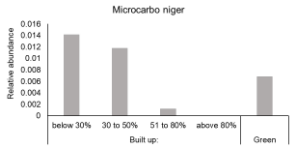
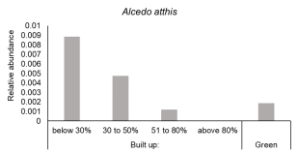
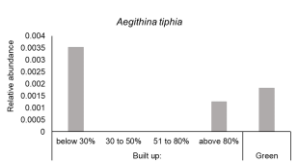
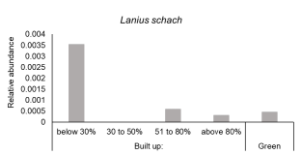
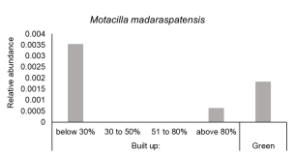
Bird distribution in urban settings varied among species (Table A3.1). The relative abundance of *Corvus splendens,* and *Columba livia* peaked in highly urbanized areas (i.e., locations containing impervious surface >80%), matching the pattern for urban dependent birds. These two birds made up 17.8% of the total bird occurrence in the city. We classified 14 species (i.e., abundant/common) as urban exploiters. Among these, *Passer domesticus, Copsychus saularis* and *Apus nipalensis* were widespread throughout. *Acridotheres tristis, Cypsiurus balasiensis, Dendrocopos macei, Dinopium benghalense, Egretta garzetta, Halcyon smyrnensis, Haliastur indus, Milvus migrans, Psittacula krameria, Sturnia malabarica, Psilopogon haemacephalus* were relatively abundant in intermediate/suburban areas (i.e., locations containing impervious surface between >30%and <80%) and urban green areas. These birds accounted for 48.8% of the total bird occurrences. The remaining 32 species were classified as urban tolerant, mostly observed in lightly urbanized areas/ urban green areas, and they accounted for 33.4% of the total bird records in the city.

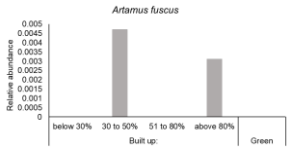
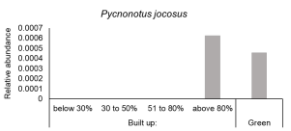
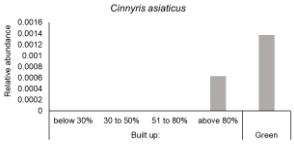
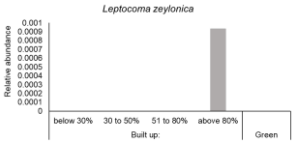
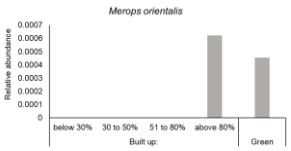
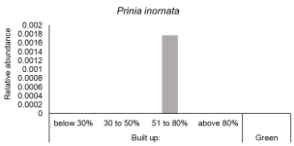
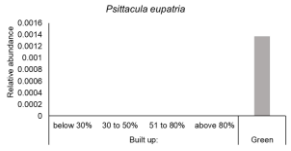
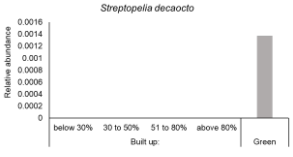
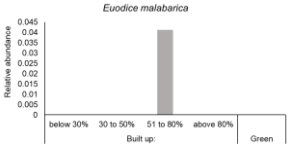
Table A3.1 List of observed bird species and their pattern across urban areas in Dhaka city.

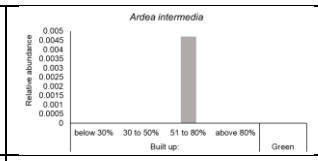
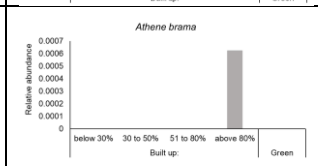
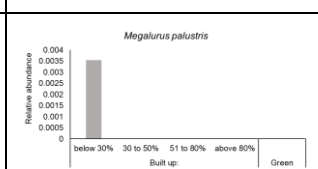
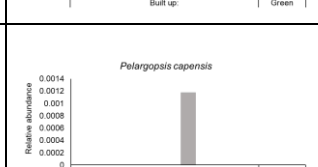
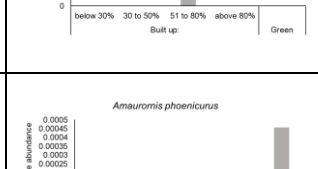
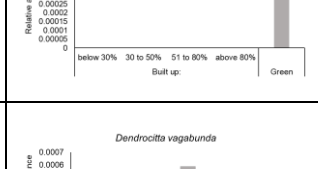
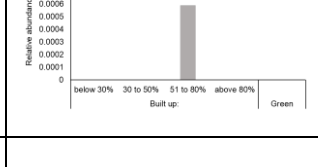
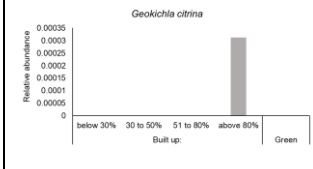
Scientific name	Frequency of occurrence	Relative abundance	Pattern across urban areas	Urban affinity
Corvus splendens	161	0.1997		Urban dependend
Passer domesticus	159	0.1808		Urban exploiter
Acridotheres tristis	98	0.0867		Urban exploiter
Milvus migrans	90	0.0829		Urban exploiter

Gracupica contra	82	0.0533		Urban tolerant
Pycnonotus cafer	79	0.0308		Urban tolerant
Copsychus saularis	67	0.0174		Urban tolerant
Columba livia	57	0.0332		Urban tolerant
Dicrurus macrocercus	57	0.0172		Urban tolerant
Apus nipalensis	42	0.0306		Urban tolerant
Psittacula krameri	32	0.0126		Urban tolerant
Acridotheres fuscus	26	0.0440		Urban tolerant
Sturnia malabarica	24	0.0111		Urban tolerant

Corvus macrorhynchos	23	0.0059		Urban tolerant
Ardeola grayii	20	0.0075		Urban tolerant
Halcyon smyrnensis	19	0.0038		Urban exploiter
Streptopelia chinensis	18	0.0046		Urban tolerant
Orthotomus sutorius	16	0.0028		Urban tolerant
Psilopogon haemacephalus	16	0.0028		Urban exploiter
Cypsiurus balasiensis	15	0.0081		Urban exploiter
Eudynamys scolopaceus	15	0.0027		Urban tolerant
Oriolus xanthornus	14	0.0027		Urban tolerant

Dinopium benghalense	10	0.0015		Urban exploiter
Dendrocopos macei	9	0.0012		Urban exploiter
Egretta garzetta	8	0.0038		Urban exploiter
Microcarbo niger	8	0.0032		Urban tolerant
Alcedo atthis	8	0.0014		Urban tolerant
Haliastur indus	7	0.0012		Urban exploiter
Aegithina tiphia	6	0.0011		Urban tolerant
Lanius schach	5	0.0005		Urban tolerant
Motacilla madaraspatensis	4	0.0009		Urban tolerant

Artamus fuscus	3	0.0013		Urban tolerant
Pycnonotus jocosus	3	0.0003		Urban tolerant
Cinnyris asiaticus	2	0.0005		Urban tolerant
Leptocoma zeylonica	2	0.0003		Urban tolerant
Merops orientalis	2	0.0003		Urban tolerant
Prinia inornata	2	0.0003		Urban tolerant
Psittacula eupatria	2	0.0003		Urban tolerant
Streptopelia decaocto	2	0.0003		Urban tolerant
Euodice malabarica	1	0.0075		Urban tolerant

Ardea intermedia	1	0.0009		Urban tolerant
Athene brama	1	0.0002		Urban tolerant
Megalurus palustris	1	0.0002		Urban tolerant
Pelargopsis capensis	1	0.0002		Urban tolerant
Amaurornis phoenicurus	1	0.0001		Urban tolerant
Dendrocitta vagabunda	1	0.0001		Urban tolerant
Geokichla citrina	1	0.0001		Urban tolerant
Upupa epops	1	0.0001		Urban tolerant

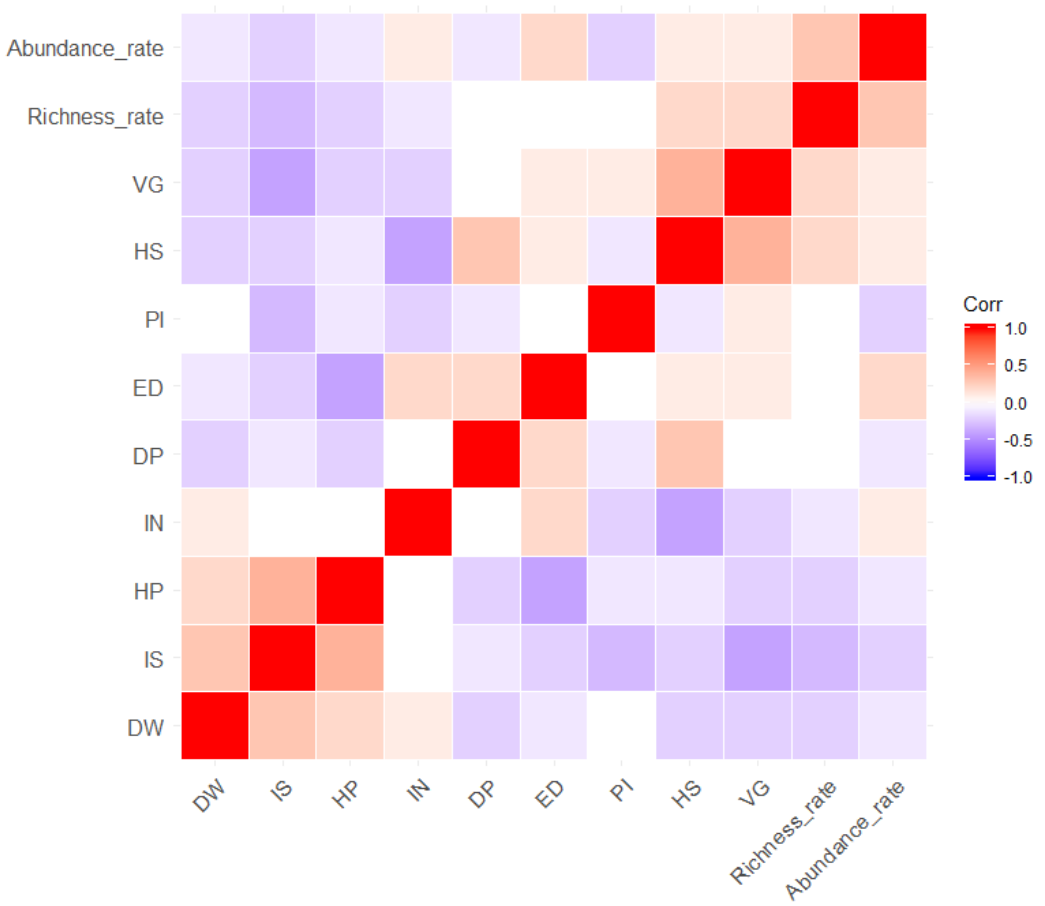


Figure A3.1. Visualisation of correlation matrix among the variables using hierarchical clustering. Here, IS = percentage of impervious surface, HS = habitat Shannon metric representing habitat heterogeneity, DP = distance to nearest parks DW = distance to nearest waterbody, VG = percentage of vegetation, HP = human population (number per hectare), PI = poverty index ratio, IN= household income (in USD), ED = Percentage of people with higher education.

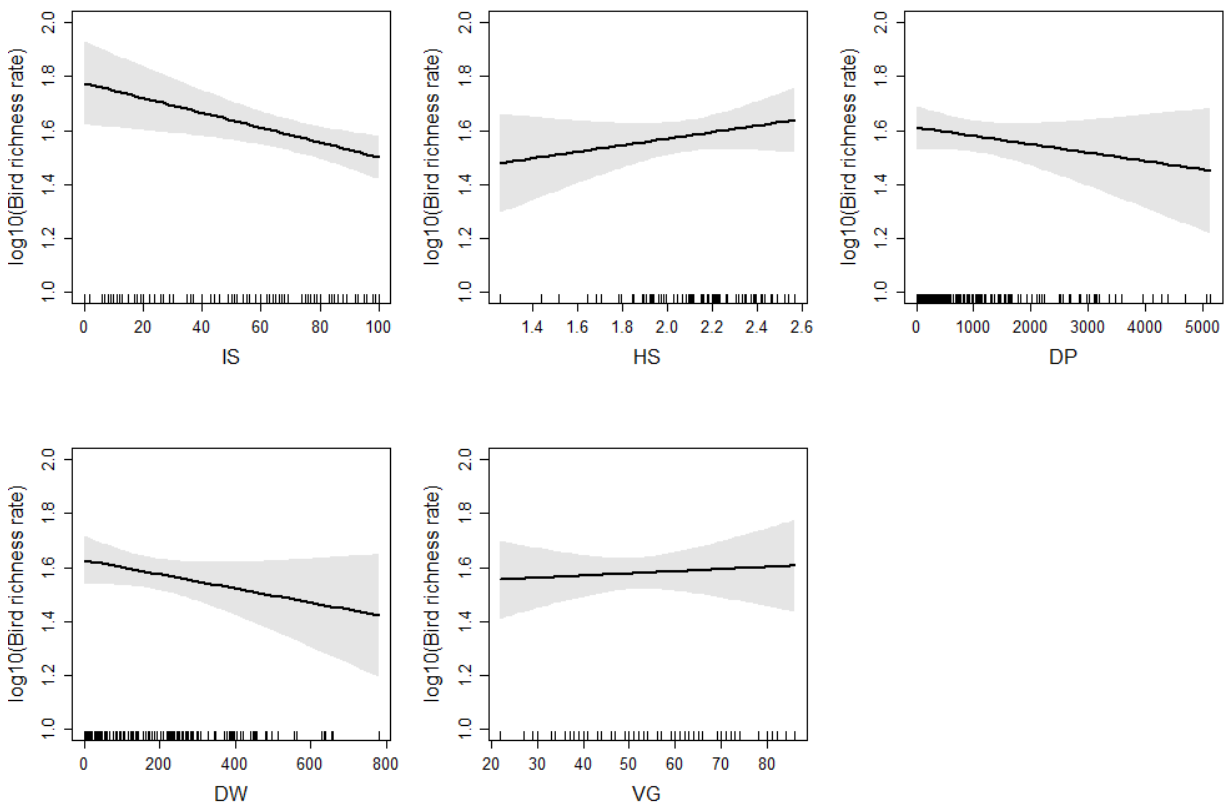


Figure A3.2 Fitted relationship of bird richness rate with different urban land cover variable in the top ranked model. Here, IS = percentage of impervious surface, HS = habitat Shannon metric representing habitat heterogeneity, DP = distance to nearest parks (in meter), DW = distance to nearest waterbody sites (in meter), VG = percentage of vegetation.

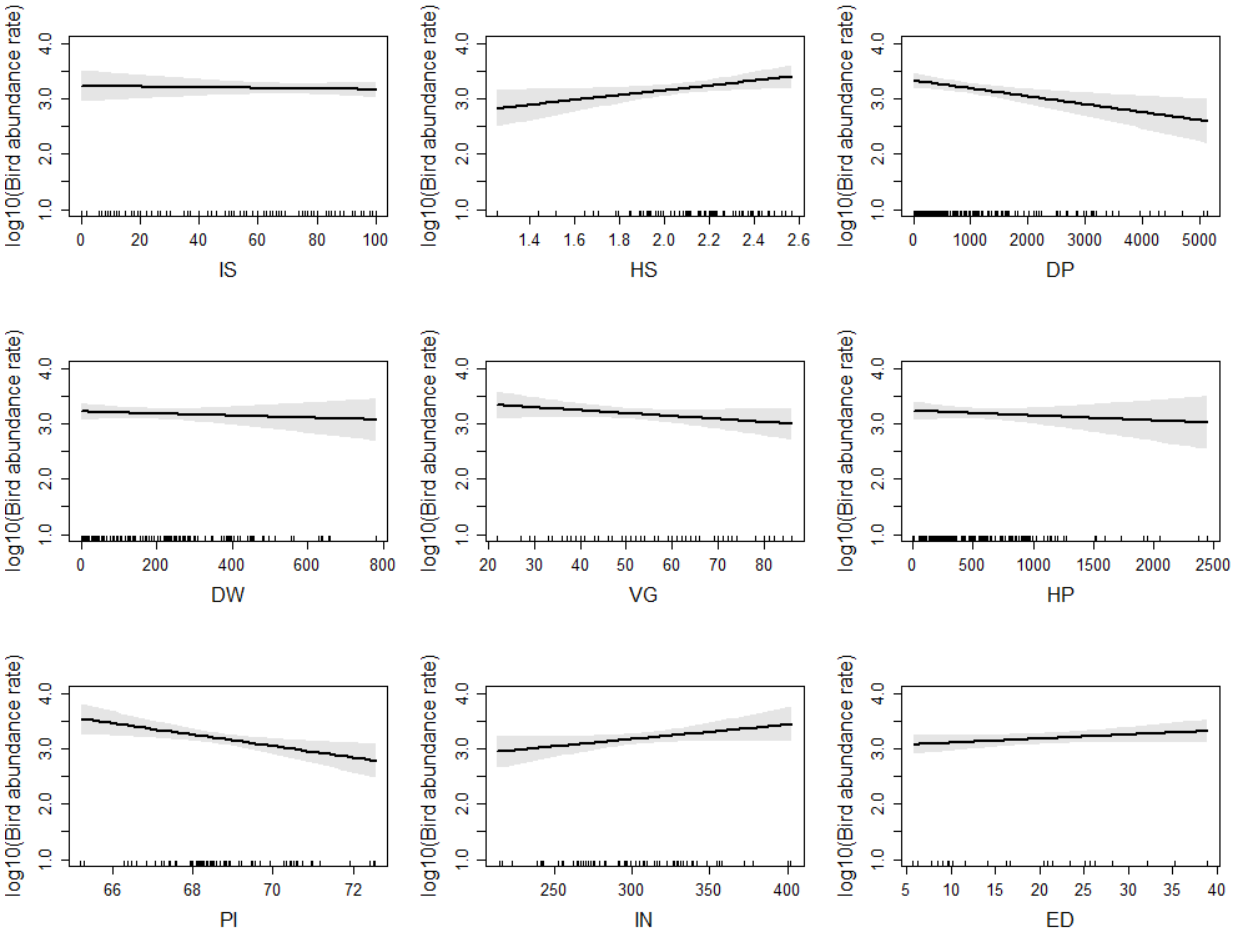


Figure A3.3 Fitted relationship of bird abundance rate with different variables related to land cover and socioeconomic status in the top ranked model. Here, IS = percentage of impervious surface, HS = habitat Shannon metric representing habitat heterogeneity, DP = distance to nearest parks DW = distance to nearest waterbody, VG = percentage of vegetation, HP = human population (number per hectare), PI = poverty index ratio, IN= household income (in USD), ED = Percentage of people with higher education.