

Table A: Prediction comparison among Linear, RNN, and Transformer-based baselines in terms of MAE and MSE in all datasets. The lowest errors are in bold, and the second lowest errors are underlined.

| Datasets | | | Daegu | | Busan | | Seoul | | NYC Taxi | | COVID | | NYC COVID | |
|-----------------------|--------------|---------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Model | | | MAE | MSE | MAE | MSE | MAE | MSE | MAE | MSE | MAE | MSE | MAE | MSE |
| Linear -based | DLinear | 7 days | 0.4229 (±0.0007) | 0.5982 (±0.0009) | 0.4153 (±0.0007) | 0.5304 (±0.0017) | 0.4203 (±0.0011) | 0.6353 (±0.0033) | 0.3874 (±0.0012) | 0.4182 (±0.0011) | 0.5774 (±0.0021) | 0.6473 (±0.0035) | 0.4828 (±0.0010) | 0.6250 (±0.0003) |
| | | 14 days | 0.4244 (±0.0006) | 0.6019 (±0.0017) | 0.4171 (±0.0007) | 0.5318 (±0.0005) | 0.4270 (±0.0008) | 0.6535 (±0.0015) | 0.3935 (±0.0009) | 0.4292 (±0.0009) | 0.6250 (±0.0034) | 0.7430 (±0.0058) | 0.5018 (±0.0005) | 0.6478 (±0.0007) |
| | | 30 days | 0.4300 (±0.0005) | 0.6094 (±0.0010) | 0.4230 (±0.0004) | 0.5354 (±0.0019) | 0.4350 (±0.0007) | 0.6801 (±0.0012) | 0.4006 (±0.0009) | 0.4338 (±0.0005) | 0.7078 (±0.0021) | 0.9211 (±0.0047) | 0.5302 (±0.0004) | 0.6843 (±0.0007) |
| | | Avg. | <u>0.4258</u> | <u>0.6032</u> | 0.4185 | <u>0.5325</u> | <u>0.4274</u> | 0.6563 | <u>0.3938</u> | <u>0.4271</u> | 0.6367 | 0.7705 | 0.5049 | 0.6524 |
| | NLinear | 7 days | 0.4845 (±0.0002) | 0.6794 (±0.0004) | 0.4726 (±0.0004) | 0.5952 (±0.0004) | 0.4617 (±0.0083) | 0.6886 (±0.0082) | 0.3950 (±0.0062) | 0.4394 (±0.0156) | 0.5837 (±0.0020) | 0.6810 (±0.0045) | 0.4705 (±0.0020) | 0.6834 (±0.0026) |
| | | 14 days | 0.4877 (±0.0002) | 0.6824 (±0.0003) | 0.4755 (±0.0002) | 0.5963 (±0.0004) | 0.5346 (±0.0002) | 1.0716 (±0.0006) | 0.4020 (±0.0058) | 0.4539 (±0.0156) | 0.6091 (±0.0011) | 0.7330 (±0.0023) | 0.4800 (±0.0014) | 0.7078 (±0.0041) |
| | | 30 days | 0.4976 (±0.0003) | 0.6973 (±0.0003) | 0.4862 (±0.0003) | 0.6066 (±0.0004) | 0.5405 (±0.0001) | 1.0907 (±0.0002) | 0.4069 (±0.0069) | 0.4577 (±0.0178) | 0.6479 (±0.0005) | 0.8055 (±0.0013) | 0.4879 (±0.0009) | 0.7184 (±0.0011) |
| | | Avg. | 0.4899 | 0.6864 | 0.4781 | 0.5994 | 0.5123 | 0.9503 | 0.4013 | 0.4503 | 0.6136 | 0.7398 | 0.4795 | 0.7032 |
| | TimeMixer | 7 days | 0.4866 (±0.0025) | 0.8607 (±0.0021) | 0.5680 (±0.0016) | 1.4521 (±0.0093) | 0.4531 (±0.0077) | 0.5648 (±0.0101) | 0.3800 (±0.0010) | 0.4025 (±0.0021) | 0.4705 (±0.0026) | 0.4582 (±0.0008) | 0.4083 (±0.0009) | 0.5857 (±0.0040) |
| | | 14 days | 0.4902 (±0.0032) | 0.8694 (±0.0046) | 0.5709 (±0.0019) | 1.4642 (±0.0115) | 0.4514 (±0.0018) | 0.5653 (±0.0033) | 0.3816 (±0.0011) | 0.4108 (±0.0013) | 0.5233 (±0.0122) | 0.5483 (±0.0219) | 0.4209 (±0.0024) | 0.6169 (±0.0047) |
| | | 30 days | 0.4928 (±0.0033) | 0.8758 (±0.0031) | 0.5824 (±0.0018) | 1.5837 (±0.0024) | 0.4511 (±0.0037) | 0.5758 (±0.0029) | 0.3890 (±0.0021) | 0.4183 (±0.0022) | 0.5494 (±0.0211) | 0.6010 (±0.0421) | 0.4325 (±0.0016) | 0.6355 (±0.0007) |
| | | Avg. | 0.4899 | 0.8686 | 0.5738 | 1.5000 | 0.4519 | 0.5686 | 0.3835 | 0.4105 | 0.5144 | 0.5358 | 0.4206 | 0.6127 |
| RNN -based | SegRNN | 7 days | 0.7828 (±0.0331) | 1.2025 (±0.0269) | 0.8631 (±0.0048) | 1.3693 (±0.0345) | 0.7200 (±0.0293) | 1.2600 (±0.0573) | 0.8825 (±0.0418) | 1.5928 (±0.2423) | 0.6173 (±0.0029) | 0.7434 (±0.0128) | 0.4855 (±0.0129) | 0.6379 (±0.0035) |
| | | 14 days | 0.7974 (±0.0045) | 1.2273 (±0.0087) | 0.8677 (±0.0036) | 1.4029 (±0.0049) | 0.7402 (±0.0047) | 1.2878 (±0.0330) | 0.9401 (±0.0608) | 1.8318 (±0.2853) | 0.6413 (±0.0088) | 0.8030 (±0.0170) | 0.5037 (±0.0067) | 0.6602 (±0.0050) |
| | | 30 days | 0.7988 (±0.0027) | 1.2310 (±0.0006) | 0.8641 (±0.0087) | 1.3665 (±0.0281) | 0.7448 (±0.0050) | 1.3051 (±0.0292) | 0.9366 (±0.0215) | 1.9442 (±0.1574) | 0.6823 (±0.0104) | 0.8798 (±0.0268) | 0.5169 (±0.0169) | 0.6743 (±0.0053) |
| | | Avg. | 0.7930 | 1.2203 | 0.8650 | 1.3796 | 0.7350 | 1.2843 | 0.9197 | 1.7896 | 0.6470 | 0.8087 | 0.5020 | 0.6575 |
| Transformer -based | Informer | 7 days | 0.7171 (±0.0004) | 1.1088 (±0.0020) | 0.7949 (±0.0037) | 1.2132 (±0.0028) | 0.6535 (±0.0060) | 1.0920 (±0.0052) | 0.6880 (±0.0163) | 0.8729 (±0.0166) | 0.7542 (±0.0214) | 1.0050 (±0.0498) | 0.6301 (±0.0129) | 0.7791 (±0.0085) |
| | | 14 days | 0.7194 (±0.0013) | 1.1104 (±0.0015) | 0.7954 (±0.0029) | 1.2138 (±0.0036) | 0.6654 (±0.0102) | 1.1136 (±0.0031) | 0.6924 (±0.0097) | 0.8849 (±0.0076) | 0.8303 (±0.0313) | 1.1915 (±0.0875) | 0.6333 (±0.0109) | 0.7842 (±0.0094) |
| | | 30 days | 0.7198 (±0.0012) | 1.1126 (±0.0005) | 0.7973 (±0.0036) | 1.2095 (±0.0045) | 0.6743 (±0.0073) | 1.1466 (±0.0157) | 0.6984 (±0.0079) | 0.8903 (±0.0046) | 0.9414 (±0.0131) | 1.5015 (±0.0574) | 0.6408 (±0.0137) | 0.7919 (±0.0138) |
| | | Avg. | 0.7188 | 1.1106 | 0.7959 | 1.2122 | 0.6644 | 1.1174 | 0.6929 | 0.8827 | 0.8420 | 1.2327 | 0.6347 | 0.7851 |
| | Reformer | 7 days | 0.7164 (±0.0030) | 1.1060 (±0.0033) | 0.7932 (±0.0018) | 1.2050 (±0.0056) | 0.6626 (±0.0076) | 1.1152 (±0.0012) | 0.4754 (±0.0049) | 0.5293 (±0.0045) | 1.2258 (±0.0398) | 2.4200 (±0.1349) | 0.6320 (±0.0055) | 0.7897 (±0.0134) |
| | | 14 days | 0.6435 (±0.0154) | 0.9968 (±0.0262) | 0.7235 (±0.0286) | 1.0766 (±0.0311) | 0.6525 (±0.0033) | 1.1001 (±0.0024) | 0.4766 (±0.0028) | 0.5284 (±0.0079) | 0.8000 (±0.0486) | 1.1006 (±0.0960) | 0.6014 (±0.0090) | 0.7539 (±0.0093) |
| | | 30 days | 0.7164 (±0.0030) | 1.1060 (±0.0033) | 0.7932 (±0.0018) | 1.2050 (±0.0056) | 0.6626 (±0.0076) | 1.1152 (±0.0012) | 0.4754 (±0.0049) | 0.5293 (±0.0045) | 1.2258 (±0.0398) | 2.4200 (±0.1349) | 0.6320 (±0.0055) | 0.7897 (±0.0134) |
| | | Avg. | 0.6921 | 1.0696 | 0.7700 | 1.1622 | 0.6592 | 1.1102 | 0.4758 | 0.5290 | 1.0839 | 1.9802 | 0.6218 | 0.7778 |
| | PatchTST | 7 days | 0.4460 (±0.0012) | 0.6441 (±0.0016) | 0.4408 (±0.0023) | 0.5762 (±0.0040) | 0.4360 (±0.0013) | 0.6676 (±0.0047) | 0.4053 (±0.0041) | 0.4334 (±0.0011) | 0.5941 (±0.0138) | 0.6948 (±0.0287) | 0.4957 (±0.0118) | 0.6151 (±0.0035) |
| | | 14 days | 0.4492 (±0.0019) | 0.6444 (±0.0033) | 0.4402 (±0.0018) | 0.5735 (±0.0045) | 0.4405 (±0.0014) | 0.6797 (±0.0055) | 0.4072 (±0.0002) | 0.4434 (±0.0012) | 0.6334 (±0.0142) | 0.7771 (±0.0228) | 0.5159 (±0.0050) | 0.6367 (±0.0049) |
| | | 30 days | 0.4516 (±0.0012) | 0.6510 (±0.0027) | 0.4456 (±0.0017) | 0.5718 (±0.0027) | 0.4410 (±0.0009) | 0.6965 (±0.0034) | 0.4147 (±0.0042) | 0.4484 (±0.0015) | 0.7333 (±0.0149) | 1.0034 (±0.0349) | 0.5504 (±0.0077) | 0.6763 (±0.0113) |
| | | Avg. | 0.4489 | 0.6465 | 0.4422 | 0.5738 | 0.4392 | 0.6813 | 0.4091 | 0.4417 | 0.6536 | 0.8251 | 0.5207 | 0.6427 |
| | iTransformer | 7 days | 0.6454 (±0.0021) | 1.1241 (±0.0041) | 0.7259 (±0.0003) | 1.8498 (±0.0006) | 0.5527 (±0.0322) | 0.7486 (±0.0387) | 0.5487 (±0.0116) | 0.6601 (±0.0164) | 0.7048 (±0.0127) | 0.9045 (±0.0270) | 0.4559 (±0.0031) | 0.6722 (±0.0046) |
| | | 14 days | 0.6401 (±0.0032) | 1.1175 (±0.0040) | 0.7272 (±0.0008) | 1.8645 (±0.0006) | 0.5371 (±0.0381) | 0.7290 (±0.0582) | 0.5556 (±0.0098) | 0.6737 (±0.0139) | 0.6881 (±0.0303) | 0.8884 (±0.0573) | 0.4617 (±0.0005) | 0.6974 (±0.0006) |
| | | 30 days | 0.6446 (±0.0019) | 1.1266 (±0.0020) | 0.7289 (±0.0009) | 1.9262 (±0.0053) | 0.5298 (±0.0329) | 0.7140 (±0.0428) | 0.5512 (±0.0106) | 0.6666 (±0.0148) | 0.6999 (±0.0117) | 0.9170 (±0.0190) | 0.4618 (±0.0002) | 0.7085 (±0.0003) |
| | | Avg. | 0.6434 | 1.1227 | 0.7273 | 1.8802 | 0.5399 | 0.7305 | 0.5518 | 0.6668 | 0.6976 | 0.9033 | 0.4598 | 0.6927 |

Table B: Prediction comparison among CNN and Graph-based baselines in terms of MAE and MSE in all datasets. The lowest errors are in bold, and the second lowest errors are underlined.

| Datasets | | | Daegu | | Busan | | Seoul | | NYC Taxi | | COVID | | NYC COVID | |
|-------------|----------|---------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Model | | | MAE | MSE | MAE | MSE | MAE | MSE | MAE | MSE | MAE | MSE | MAE | MSE |
| CNN-based | TimesNet | 7 days | 0.4528 (± 0.0044) | 0.6126 (± 0.0032) | 0.4386 (± 0.0006) | 0.5388 (± 0.0030) | 0.4546 (± 0.0167) | 0.6697 (± 0.0125) | 0.3593 (± 0.0006) | 0.3797 (± 0.0025) | 0.4078 (± 0.0075) | 0.3798 (± 0.0120) | 0.3924 (± 0.0035) | 0.5626 (± 0.0078) |
| | | 14 days | 0.4484 (± 0.0032) | 0.6176 (± 0.0057) | 0.4659 (± 0.0226) | 0.5987 (± 0.0484) | 0.4600 (± 0.0129) | 0.7030 (± 0.0362) | 0.3698 (± 0.0051) | 0.3976 (± 0.0025) | 0.4512 (± 0.0075) | 0.4487 (± 0.0137) | 0.4010 (± 0.0058) | 0.5828 (± 0.0080) |
| | | 30 days | 0.4590 (± 0.0121) | 0.6440 (± 0.0299) | 0.4872 (± 0.0081) | 0.6288 (± 0.0126) | 0.4670 (± 0.0083) | 0.7393 (± 0.0194) | 0.3733 (± 0.0063) | 0.4010 (± 0.0020) | 0.5076 (± 0.0156) | 0.5443 (± 0.0287) | 0.4127 (± 0.0039) | 0.6017 (± 0.0074) |
| | | Avg. | 0.4534 | 0.6247 | 0.4639 | 0.5888 | 0.4605 | 0.7040 | 0.3675 | 0.3928 | <u>0.4555</u> | 0.4576 | 0.4020 | <u>0.5824</u> |
| | STGCN | 7 days | 0.4815 (± 0.0019) | 0.8388 (± 0.0051) | 0.7300 (± 0.0024) | 3.2822 (± 0.0337) | 0.4278 (± 0.0032) | 0.5885 (± 0.0047) | 0.5541 (± 0.0422) | 0.5971 (± 0.0782) | 0.7427 (± 0.0199) | 0.9667 (± 0.0472) | 0.5794 (± 0.0038) | 0.7250 (± 0.0155) |
| | | 14 days | 0.4827 (± 0.0008) | 0.8355 (± 0.0017) | 0.7215 (± 0.0019) | 3.1996 (± 0.0290) | 0.4422 (± 0.0153) | 0.5936 (± 0.0131) | 0.5940 (± 0.1037) | 0.6734 (± 0.1912) | 0.7726 (± 0.0269) | 1.0317 (± 0.0591) | 0.5855 (± 0.0069) | 0.7307 (± 0.0089) |
| | | 30 days | 0.4840 (± 0.0014) | 0.8439 (± 0.0035) | 0.7076 (± 0.0012) | 3.0375 (± 0.0092) | 0.4377 (± 0.0089) | 0.5933 (± 0.0104) | 0.6495 (± 0.1774) | 0.8200 (± 0.3981) | 0.8537 (± 0.0500) | 1.2454 (± 0.1215) | 0.6154 (± 0.0189) | 0.7990 (± 0.0470) |
| | | Avg. | 0.4827 | 0.8394 | 0.7197 | 3.1731 | 0.4359 | <u>0.5918</u> | 0.5992 | 0.6968 | 0.7897 | 1.0813 | 0.5934 | 0.7516 |
| | MPNNLSTM | 7 days | 0.7514 (± 0.0010) | 1.3009 (± 0.0161) | 1.0370 (± 0.0079) | 4.1965 (± 0.0625) | 0.6772 (± 0.0015) | 1.1933 (± 0.0191) | 0.7432 (± 0.0097) | 0.7955 (± 0.0183) | 0.7827 (± 0.0062) | 1.0456 (± 0.0244) | 0.6934 (± 0.0062) | 0.8578 (± 0.0148) |
| | | 14 days | 0.7539 (± 0.0011) | 1.3285 (± 0.0078) | 1.0272 (± 0.0030) | 4.1181 (± 0.0386) | 0.6770 (± 0.0007) | 1.2036 (± 0.0047) | 0.8001 (± 0.0051) | 1.1092 (± 0.0090) | 0.8003 (± 0.0075) | 1.1092 (± 0.0226) | 0.6970 (± 0.0095) | 0.8832 (± 0.0167) |
| | | 30 days | 0.7590 (± 0.0001) | 1.3795 (± 0.0001) | 1.0092 (± 0.0002) | 3.9379 (± 0.0004) | 0.6775 (± 0.0000) | 1.2073 (± 0.0001) | 0.8476 (± 0.0189) | 0.9839 (± 0.0493) | 0.8247 (± 0.0172) | 1.1744 (± 0.0614) | 0.6932 (± 0.0104) | 0.8943 (± 0.0330) |
| | | Avg. | 0.7548 | 1.3363 | 1.0245 | 4.0842 | 0.6772 | 1.2014 | 0.7795 | 0.8598 | 0.8026 | 1.1097 | 0.6945 | 0.8784 |
| | ST-SSL | 7 days | 1.2279 (± 0.0484) | 1.9899 (± 0.8189) | 1.0394 (± 0.0978) | 3.5600 (± 0.6605) | 1.3351 (± 0.0158) | 1.6926 (± 0.2329) | 1.2111 (± 0.0063) | 1.1814 (± 0.0124) | 1.2315 (± 0.0141) | 1.4096 (± 0.0155) | 1.0327 (± 0.0082) | 1.0599 (± 0.0165) |
| | | 14 days | 1.5321 (± 0.0590) | 1.7900 (± 0.0563) | 1.4760 (± 0.0964) | 3.5680 (± 0.0231) | 1.4993 (± 0.0124) | 1.7747 (± 0.0513) | 1.3999 (± 0.0034) | 1.4475 (± 0.0622) | 1.3263 (± 0.0136) | 1.4847 (± 0.0365) | 1.1603 (± 0.0541) | 1.3161 (± 0.0246) |
| | | 30 days | 1.5323 (± 0.0855) | 1.7938 (± 0.0688) | 1.4779 (± 0.0317) | 3.5705 (± 0.0019) | 1.7970 (± 0.0143) | 1.9160 (± 0.0636) | 0.5278 (± 0.0477) | 1.5514 (± 0.0516) | 1.3137 (± 0.0774) | 1.5710 (± 0.0252) | 1.2501 (± 0.0089) | 1.3256 (± 0.0076) |
| | | Avg. | 1.4308 | 1.8579 | 1.3311 | 3.5662 | 1.5438 | 1.7944 | 1.0463 | 1.3934 | 1.2905 | 1.4884 | 1.1477 | 1.2339 |
| Graph-based | GWNet | 7 days | 0.4530 (± 0.0033) | 0.6363 (± 0.0041) | 0.4548 (± 0.0050) | 0.5841 (± 0.0120) | 0.4589 (± 0.0098) | 0.6395 (± 0.0204) | 0.4138 (± 0.0062) | 0.4376 (± 0.0015) | 0.6975 (± 0.0193) | 0.8616 (± 0.0394) | 0.5564 (± 0.0187) | 0.6961 (± 0.0278) |
| | | 14 days | 0.4517 (± 0.0008) | 0.6373 (± 0.0008) | 0.4542 (± 0.0032) | 0.5757 (± 0.0040) | 0.4394 (± 0.0040) | 0.6316 (± 0.0154) | 0.4133 (± 0.0110) | 0.4410 (± 0.0086) | 0.7224 (± 0.0206) | 0.9163 (± 0.0462) | 0.5491 (± 0.0052) | 0.6774 (± 0.0077) |
| | | 30 days | 0.4545 (± 0.0009) | 0.6394 (± 0.0034) | 0.4570 (± 0.0026) | 0.5750 (± 0.0026) | 0.4448 (± 0.0052) | 0.6310 (± 0.0102) | 0.4209 (± 0.0029) | 0.4539 (± 0.0057) | 0.7521 (± 0.0386) | 0.9936 (± 0.0950) | 0.5747 (± 0.0170) | 0.7186 (± 0.0393) |
| | | Avg. | 0.4531 | 0.6377 | 0.4553 | 0.5783 | 0.4477 | 0.6340 | 0.4160 | 0.4442 | 0.7240 | 0.9238 | 0.5601 | 0.6974 |
| | DSTAGNN | 7 days | 0.4538 (± 0.0045) | 0.6257 (± 0.0085) | 0.4464 (± 0.0036) | 0.5552 (± 0.0027) | 0.4762 (± 0.0002) | 0.6814 (± 0.0010) | 0.4460 (± 0.0093) | 0.4739 (± 0.0139) | 0.8813 (± 0.0128) | 1.3304 (± 0.0279) | 0.6910 (± 0.0072) | 0.9439 (± 0.0660) |
| | | 14 days | 0.4631 (± 0.0144) | 0.6374 (± 0.0226) | 0.4379 (± 0.0016) | 0.5395 (± 0.0053) | 0.4690 (± 0.0008) | 0.6762 (± 0.0121) | 0.4482 (± 0.0073) | 0.4794 (± 0.0112) | 0.8882 (± 0.0346) | 1.3594 (± 0.0990) | 0.6969 (± 0.0049) | 0.9626 (± 0.0069) |
| | | 30 days | 0.4467 (± 0.0016) | 0.6139 (± 0.0053) | 0.4384 (± 0.0018) | 0.5368 (± 0.0033) | 0.4909 (± 0.0137) | 0.7246 (± 0.0260) | 0.4521 (± 0.0084) | 0.4825 (± 0.0065) | 0.9055 (± 0.0261) | 1.4111 (± 0.0738) | 0.7066 (± 0.0168) | 0.9600 (± 0.0452) |
| | | Avg. | 0.4545 | 0.6257 | 0.4409 | 0.5438 | 0.4787 | 0.6941 | 0.4488 | 0.4786 | 0.8917 | 1.3670 | 0.6982 | 0.9555 |
| | AutoST | 7 days | 0.4263 (± 0.0906) | 0.6979 (± 0.3084) | 0.5679 (± 0.1789) | 1.9284 (± 1.1792) | 0.4509 (± 0.0564) | 0.5528 (± 0.1077) | 0.3994 (± 0.1313) | 0.4662 (± 0.2369) | 0.6743 (± 0.1063) | 0.7902 (± 0.2658) | 0.5177 (± 0.1506) | 0.5825 (± 0.2950) |
| | | 14 days | 0.4268 (± 0.0934) | 0.6947 (± 0.3095) | 0.5720 (± 0.1743) | 1.8798 (± 1.1348) | 0.4494 (± 0.0558) | 0.5573 (± 0.1098) | 0.3966 (± 0.1277) | 0.4602 (± 0.2338) | 0.6723 (± 0.1450) | 0.8052 (± 0.3241) | 0.5010 (± 0.1625) | 0.5745 (± 0.3038) |
| | | 30 days | 0.4311 (± 0.0915) | 0.7006 (± 0.3070) | 0.5642 (± 0.1663) | 1.7868 (± 1.0646) | 0.4487 (± 0.0564) | 0.5578 (± 0.1089) | 0.3983 (± 0.1249) | 0.4564 (± 0.2254) | 0.7828 (± 0.2200) | 1.0930 (± 0.5288) | 0.5629 (± 0.1040) | 0.6648 (± 0.2145) |
| | | Avg. | 0.4281 | 0.6977 | 0.5680 | 1.8650 | 0.4497 | 0.5560 | 0.3981 | 0.4609 | 0.7098 | 0.8961 | 0.5272 | 0.6073 |
| | TopoGCL | 7 days | 0.7170 (± 0.0099) | 1.1421 (± 0.0705) | 0.7949 (± 0.0078) | 1.3189 (± 0.0967) | 0.6572 (± 0.0039) | 1.1286 (± 0.0722) | 0.7158 (± 0.0155) | 0.7808 (± 0.0506) | 0.8797 (± 0.0028) | 1.3818 (± 0.0577) | 0.6981 (± 0.0162) | 0.9280 (± 0.0201) |
| | | 14 days | 0.7069 (± 0.0013) | 1.0714 (± 0.0109) | 0.7864 (± 0.0150) | 1.2371 (± 0.1418) | 0.6549 (± 0.0035) | 1.1089 (± 0.0247) | 0.7192 (± 0.0015) | 0.9779 (± 0.0312) | 0.6994 (± 0.0260) | 0.9483 (± 0.0764) | 0.6994 (± 0.0260) | 0.9483 (± 0.0764) |
| | | 30 days | 0.7080 (± 0.0018) | 1.1429 (± 0.0741) | 0.7746 (± 0.0035) | 1.1425 (± 0.0164) | 0.6706 (± 0.0146) | 1.4271 (± 0.4653) | 0.7175 (± 0.0036) | 1.0777 (± 0.2169) | 0.7559 (± 0.0062) | 1.1755 (± 0.0757) | 0.7559 (± 0.0062) | 1.1755 (± 0.0757) |
| | | Avg. | 0.7106 | 1.1188 | 0.7853 | 1.2328 | 0.6609 | 1.2215 | 0.7175 | 0.9455 | 0.7783 | 1.1685 | 0.7178 | 1.0173 |

Table C: Full prediction results of *BINTS* in terms of MAE and MSE in all datasets. The lowest errors are in bold, and the second lowest errors are underlined.

| Datasets | | Daegu | | Busan | | Seoul | | NYC Taxi | | COVID | | NYC COVID | |
|--------------|---------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Model | | MAE | MSE | MAE | MSE | MAE | MSE | MAE | MSE | MAE | MSE | MAE | MSE |
| <i>BINTS</i> | 7 days | 0.4106 (± 0.0059) | 0.4295 (± 0.0080) | 0.4130 (± 0.0038) | 0.4011 (± 0.0047) | 0.3912 (± 0.0035) | 0.4434 (± 0.0034) | 0.4049 (± 0.0015) | 0.4431 (± 0.0015) | 0.3278 (± 0.0273) | 0.4877 (± 0.0592) | 0.3981 (± 0.0128) | 0.4258 (± 0.0179) |
| | 14 days | 0.4171 (± 0.0088) | 0.4355 (± 0.0141) | 0.4169 (± 0.0029) | 0.4041 (± 0.0042) | 0.3962 (± 0.0025) | 0.4570 (± 0.0031) | 0.4121 (± 0.0008) | 0.4576 (± 0.0008) | 0.3394 (± 0.0216) | 0.5183 (± 0.0445) | 0.4069 (± 0.0243) | 0.4381 (± 0.0249) |
| | 30 days | 0.4233 (± 0.0077) | 0.4444 (± 0.0113) | 0.4260 (± 0.0029) | 0.4120 (± 0.0043) | 0.4078 (± 0.0043) | 0.4800 (± 0.0044) | 0.4172 (± 0.0007) | 0.4643 (± 0.0006) | 0.3559 (± 0.0209) | 0.5616 (± 0.0417) | 0.4045 (± 0.0081) | 0.4393 (± 0.0089) |
| | Avg. | 0.4170 | 0.4365 | <u>0.4186</u> | 0.4057 | 0.3984 | 0.4601 | 0.4114 | 0.4550 | 0.3410 | <u>0.5225</u> | <u>0.4032</u> | 0.4344 |