

Table A: Prediction comparison among Linear, RNN, Transformer, and CNN-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	
	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		
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>	

Table B: Prediction comparison among 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
Graph-based	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)	0.7478 (± 0.0051)	0.8001 (± 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
	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
<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