

Supplementary Material

The impact of COVID-19 lockdown measures on high-frequency seismic ambient noise in Greece: Utilizing strong-motion seismograph networks for human activity monitoring in urban environments

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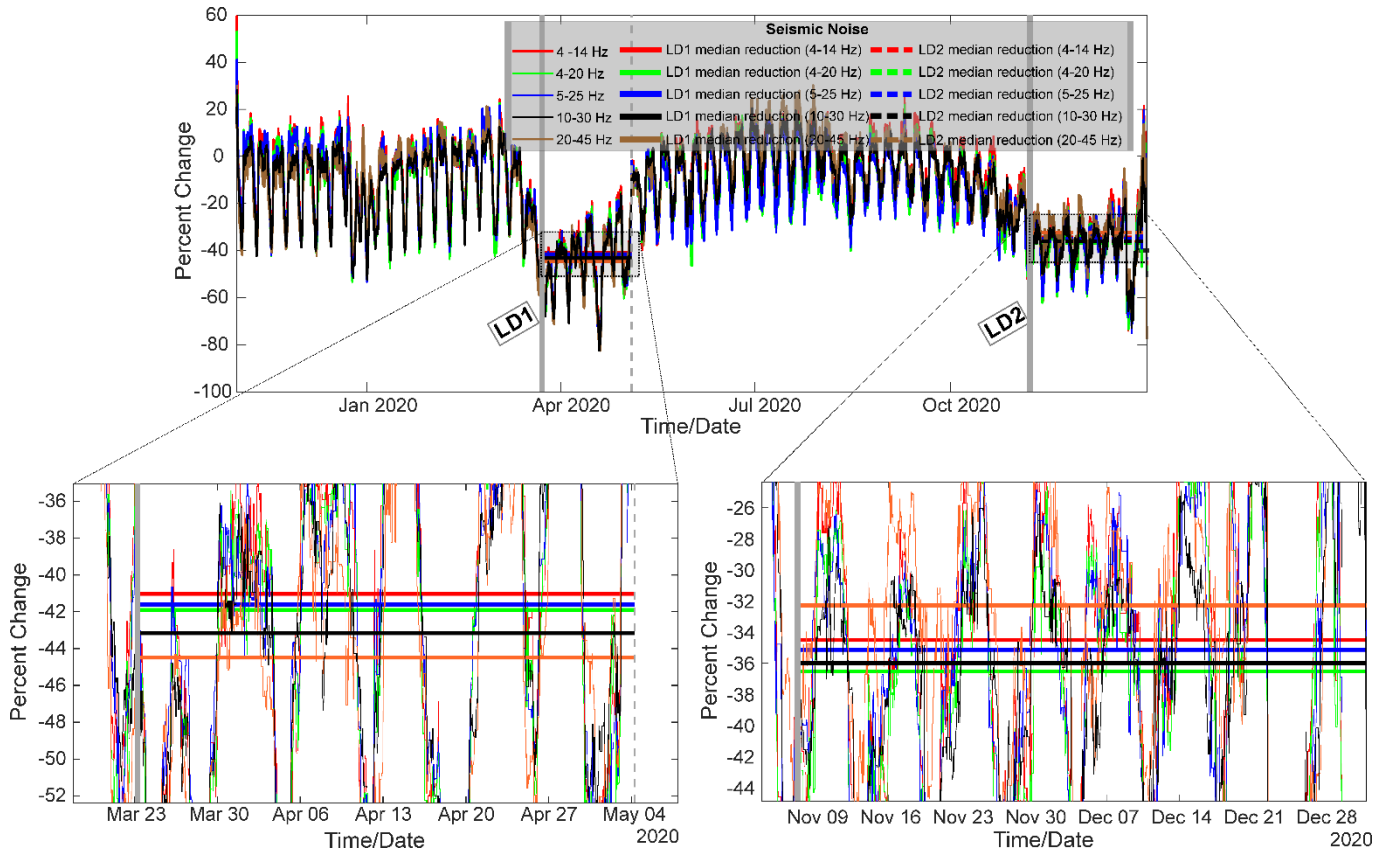


Figure S1: An overplot of the temporal percentage changes in the national-scale daily median observed across different frequency ranges. The percent changes of HiFSAN are expressed relative to a baseline before the first lockdown (February, 10 - March, 10, 2020). The initiation of the first (March 23, 2020, LD1) and the second national lockdown (November 4, 2020, LD2) are shown as solid grey lines. The vertical dashed grey line depicts the gradual lifting of the first lockdown measures on May 4, 2020.

Table S1: Percentage changes in the national-scale daily median of seismic noise across different frequency ranges observed during both lockdowns (LD1 and LD2).

	4-14 Hz		4-20 Hz		5-25 Hz		10-30 Hz		20-45 Hz	
	LD1	LD2	LD1	LD2	LD1	LD2	LD1	LD2	LD1	LD2
Percent Change	-41 %	-34.5 %	-41.9 %	-36.5 %	-41.6 %	-35.1 %	-43.2 %	-36 %	-44.5 %	-32.3 %

Table S2: List of seismic stations used in the present study. The type of building, the name, and the population of the town/city where the stations are located are presented.

Stations	Town/City	Building type	Population*
DRPA.HL	Drapetsona	Town Hall	13.815
LVRA.HL	Lavrio	Town Hall	10.046
YDRA.HL	Hydra Island	Monastery	2.070
NOAC.HL	Athens	Facilities of NOA	643.452
ATH5.HI	Athens	Greek Parliament	643.452
KLVI.HI'	Kalavrita	Town Hall	1.702
LCHA.HL	Lechaina	Town Hall	2.993
MSLI.HI	Messolonghi	Regional Administration Building	13.965
PATC.HL	Patras	Regional Administration Building	173.600
PATG.HL	Patras	Power Supply Company	173.600
RIOA.HL	Rio	Town Hall	5.430
ZARA.HL	Zacharo	Town Hall	3.172
ARS1.HI	Argos	Town Hall	21.891
KIAA.HL	Kiato	Town Hall	9.907
MNVA.HL	Monemvasia	Town Hall	1.626
MTHA.HL	Methoni	Town Hall	.587
NPLA.HL	Naflio	Town Hall	14.532
NPS1.HI	Neapoli	Local Health Center	2.787
PYL1.HI	Pylos	Town Hall	2.568
AIDA.HL	Aidipsos	Town Hall	4.123
DLFA.HL	Delfi	Town Hall	867
KYMI.HL	Kymi, Evia Island	Municipal Kiosk	2.888
LAM2.HI	Lamia	Regional Administration Building	47.529
ARG2.HI	Argostoli, Cephalonia Isl.	Regional Administration Building	10.982
KRK1.HI	Corfu, Corfu Island	Town Hall	30.737
SMHA.HL	Sami, Cephalonia Island	Town Hall	1.078
VAS2.HI	Vassiliki, Lefkada Island	Local Health Center	407
GINA.HL	Giannouli	Town Hall	8.165
SOFA.HL	Sofades	Town Hall	6.269
TRKA.HL	Trikala	Town Hall	62.064
VOL2.HI	Volos	Regional Administration Building	85.803
ARTB.HL	Arta	Town Hall	24.079
JAN.HL	Ioannina	Center for Social Welfare	64.896
MTVA.HL	Metsovo	Town Hall	2.337
PRGA.HL	Parga	Town Hall	2.489
AMYA.HL	Amyntaio	Town Hall	4.348
LMS2.HI	Laimos	Town Hall	176
DRA2.HI	Drama	Hospital	44.257
MMAA.EG	Thessaloniki	Museum	309.617
NASA.HL	Naoussa	Town Hall	18.049
OREA.HL	Oraiokastro	Town Hall	23.626
PLG.HL	Polygyros	Traffic Education Park	7.779
PLN1.HI	Chaniotis	Town Hall	938
SHTA.EG	Thessaloniki	School for the blinds	309.617
STC.EG	Stivos	Community Building	502
ALXA.HL	Alexandroupolis	Museum	59.723
KOMA.HL	Komotini	Regional Administration Building	54.165
SFL1.HI	Soufli	Local Health Center	3.770
THS1.HI	Prinos, Thasos Island	Local Health Center	1.330
TRGA.HL	Dikaia	Town Hall	557
XANC.HL	Xanthi	Town Hall	58.760
EFSA.HL	Agios Efstratios Island	Town Hall	257
KRL1.HI	Karlovasi, Samos Island	University	7.363
LMN1.HI	Myrina, Lemnos Island	Town Hall	6.190

PRK.HL	Agia Paraskevi, Lesvos Isl.	Municipality building	2.053
SKY1.HI	Skyros Island	Town Hall	3.052
ASTA.HL	Astypalaia Island	Town Hall	1.376
KLNA.HL	Kalymnos Island	Hospital	17.752
KSL.HL	Kastelorizo Island	Municipality building	584
KSS1.HI	Kasos Island	Citizen Service Center	1.223
MILA.HL	Milos Island	Town Hall	902
NAX1.HI	Naxos Island	Town Hall	8.897
NISR.HL	Nisyros Island	Monastery	1.048
RDI1.HI	Rhodes, Rhodes Island	Town Hall	56.440
RODB.HL	Rhodes, Rhodes Island	School of Tourism Education	56.440
THRA.HL	Thira Island	Town Hall	1.516
AGNA.HL	Agios Nikolaos, Crete	Telecommunication Company	13.605
CH01.HI	Chania, Crete	Regional Administration Building	54.559
CHNB.HL	Chania, Crete	Town Hall	54.559
HERG.HL	Heraklio, Crete	Town Hall	156.842
RTHF.HL	Rethymno, Crete	Municipality building	35.763
SIT2.HI	Siteia, Crete	Town Hall	11.166

*Population of the municipality where the seismic stations are located. Population data are derived the 2021 Population-Housing Census conducted by the Hellenic Statistical Authority

(https://www.statistics.gr/documents/20181/17286366/APOF_APOT_MON_DHM_KOIN.pdf/41ae8e6c-5860-b58e-84f7-b64f9bc53ec4).

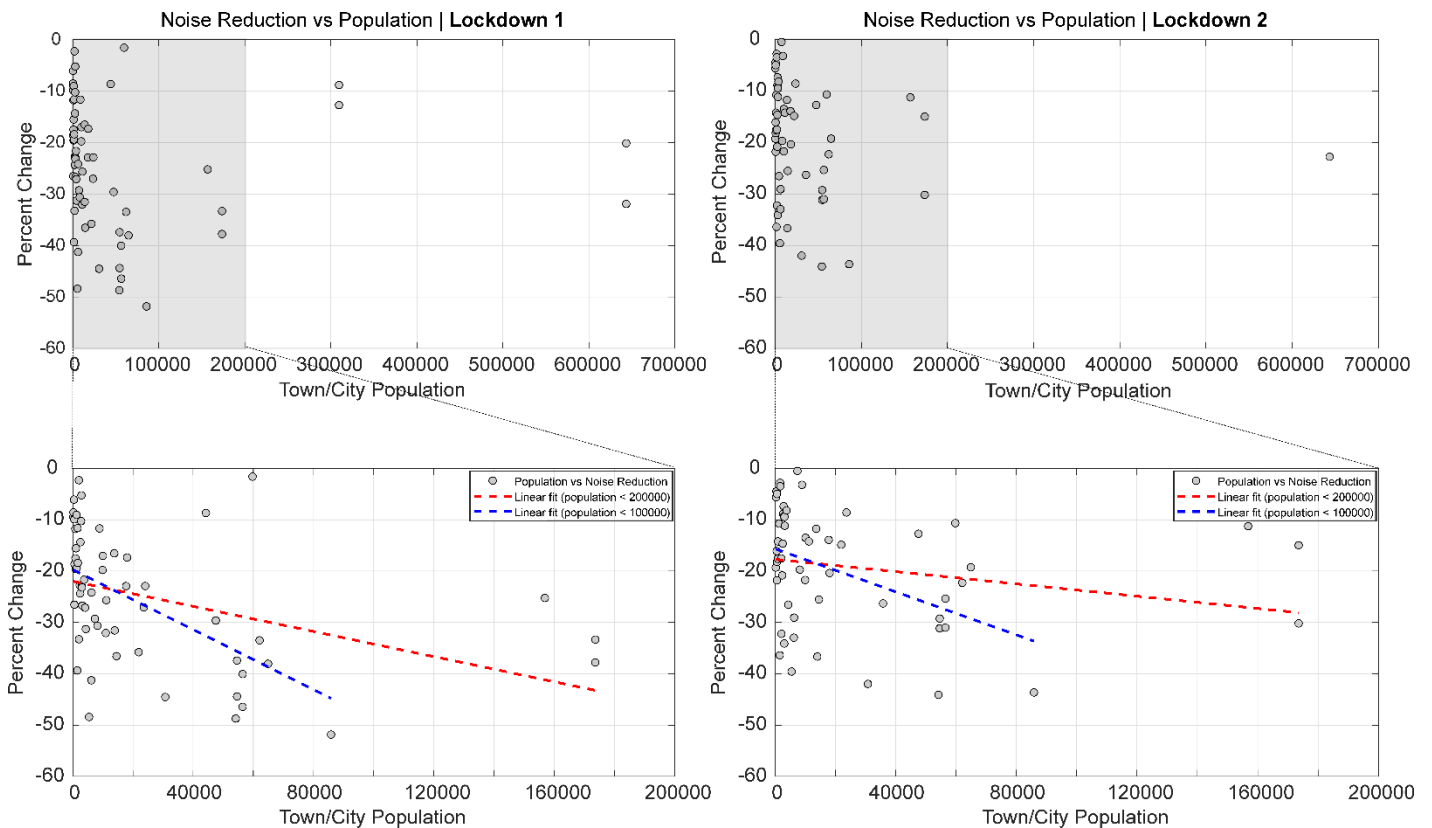


Figure S2: The percent changes in HiFSAN are plotted against the population of each respective city. The regression lines depict the linear relationship between the percent reductions and population size. The correlation coefficients (R) are -0.06 for LD1 and -0.13 for LD2, indicating a weak or negligible correlation between the two parameters.