



## Supplementary 2: Results on linear regression

Following two tables presents the linear regression to sound quality, **Table S2**, and attributes, **Table S3**, using room acoustic parameters as explanatory variable.

**Table S2.** Equations for linear regression with degree of explanation,  $R^2$ , for sound quality using room acoustic parameters as explanatory parameter.

Room acoustic parameter	Frequency (Hz)	Regression	
		Equation	$R^2$ (%)
T <sub>20</sub>	125	$7.03 - 0.168 \times T20\_125$	0
T <sub>20</sub>	250	$12.56 - 7.17 \times T20\_250$	11
T <sub>20</sub>	500	$14.00 - 11.28 \times T20\_500$	44
T <sub>20</sub>	1000	$10.83 - 6.14 \times T20\_1000$	35
T <sub>20</sub>	2000	$9.50 - 4.16 \times T20\_2000$	30
T <sub>20</sub>	4000	$9.75 - 4.82 \times T20\_4000$	34
C <sub>50</sub>	125	$6.38 + 0.32 \times C50\_125$	28
C <sub>50</sub>	250	$5.82 + 0.289 \times C50\_250$	30
C <sub>50</sub>	500	$3.65 + 0.659 \times C50\_500$	24
C <sub>50</sub>	1000	$3.89 + 0.486 \times C50\_1000$	68
C <sub>50</sub>	2000	$3.66 + 0.569 \times C50\_2000$	85
C <sub>50</sub>	4000	$3.49 + 0.492 \times C50\_4000$	67
G	125	$3.28 + 0.19 \times G\_125$	7
G	250	$41.27 - 1.69 \times G\_250$	28
G	500	$9.46 - 0.13 \times G\_500$	1
G	1000	$4.13 + 0.16 \times G\_1000$	3
G	2000	$2.83 + 0.27 \times G\_2000$	9
G	4000	$1.42 + 0.37 \times G\_4000$	11

**Table S3.** Equations for linear regression with degree of explanation,  $R^2$ , for attributes using room acoustic parameters as explanatory variable.

Room acoustic parameter	Frequency (Hz)	Regression	
		Equation	$R^2$
T <sub>20</sub>	125	$4.28 - 2.31 \times T_{20\_125}$	11
T <sub>20</sub>	250	$7.82 - 6.9 \times T_{20\_250}$	26
T <sub>20</sub>	500	$8.30 - 9.47 \times T_{20\_500}$	77
T <sub>20</sub>	1000	$6.22 - 6.06 \times T_{20\_1000}$	84
T <sub>20</sub>	2000	$5.10 - 4.41 \times T_{20\_2000}$	82
T <sub>20</sub>	4000	$5.10 - 4.67 \times T_{20\_4000}$	80
C <sub>50</sub>	125	$2.18 + 0.09 \times C_{50\_125}$	6
C <sub>50</sub>	250	$2.12 + 0.07 \times C_{50\_250}$	3
C <sub>50</sub>	500	$0.06 + 0.46 \times C_{50\_500}$	30
C <sub>50</sub>	1000	$0.46 + 0.30 \times C_{50\_1000}$	66
C <sub>50</sub>	2000	$0.76 + 0.288 \times C_{50\_2000}$	50
C <sub>50</sub>	4000	$0.31 + 0.29 \times C_{50\_4000}$	59
G	125	$-0.98 + 0.17 \times G\_125$	14
G	250	$29.78 - 1.35 \times G\_250$	43
G	500	$11.21 - 0.46 \times G\_500$	16
G	1000	$2.78 - 0.03 \times G\_1000$	0
G	2000	$1.58 + 0.05 \times G\_2000$	1
G	4000	$1.57 + 0.05 \times G\_4000$	1