

**Multimedia Appendix 14.** Group-averaged macro F1 scores: subgroup analysis of the apnea-hypopnea index and demographic characteristics in Seoul National University Bundang Hospital.

|                                  | AHI           |               |        | Sleep Efficiency |               |               | Body Mass Index |               |        | Gender        |               |        |
|----------------------------------|---------------|---------------|--------|------------------|---------------|---------------|-----------------|---------------|--------|---------------|---------------|--------|
|                                  | ≤ 15          | > 15          | P      | ≤ 85%            | > 85%         | P             | ≤ 25            | > 25          | P      | Male          | Female        | P      |
| <b>Airable</b>                   |               |               |        |                  |               |               |                 |               |        |               |               |        |
| SleepRoutine (29)                | 0.67±0.04(10) | 0.67±0.15(19) | 0.9381 | 0.66±0.09(16)    | 0.69±0.15(13) | 0.6385        | 0.68±0.09(14)   | 0.66±0.15(15) | 0.6846 | 0.66±0.14(22) | 0.71±0.05(7)  | 0.4452 |
| SleepScore (26)                  | 0.38±0.11(11) | 0.44±0.19(15) | 0.3637 | 0.41±0.19(14)    | 0.42±0.11(12) | 0.9381        | 0.4±0.19(16)    | 0.44±0.1(10)  | 0.6355 | 0.43±0.17(20) | 0.36±0.1(6)   | 0.3281 |
| Pillow (37)                      | 0.24±0.09(15) | 0.22±0.1(22)  | 0.5421 | 0.21±0.1(20)     | 0.25±0.08(17) | 0.2305        | 0.22±0.09(21)   | 0.25±0.09(16) | 0.3980 | 0.24±0.1(27)  | 0.21±0.09(10) | 0.5478 |
| <b>Nearable</b>                  |               |               |        |                  |               |               |                 |               |        |               |               |        |
| Withings Sleep Tracking Mat (37) | 0.38±0.16(15) | 0.37±0.18(22) | 0.8213 | 0.32±0.14(20)    | 0.44±0.18(17) | <b>0.0234</b> | 0.4±0.17(21)    | 0.34±0.17(16) | 0.3632 | 0.38±0.16(27) | 0.36±0.2(10)  | 0.7777 |
| Google Nest Hub 2 (14)           | 0.22±0.08(6)  | 0.23±0.07(8)  | 0.7547 | 0.24±0.1(7)      | 0.21±0.05(7)  | 0.5345        | 0.23±0.09(9)    | 0.21±0.04(5)  | 0.6945 | 0.22±0.09(10) | 0.22±0.05(4)  | 0.9790 |
| Amazon Halo Rise (12)            | 0.56±0.05(5)  | 0.56±0.17(7)  | 0.9850 | 0.56±0.06(7)     | 0.56±0.2(5)   | 0.9373        | 0.57±0.06(6)    | 0.54±0.18(6)  | 0.7295 | 0.55±0.15(9)  | 0.6±0.07(3)   | 0.6182 |
| <b>Wearable</b>                  |               |               |        |                  |               |               |                 |               |        |               |               |        |
| Google Pixel Watch (12)          | 0.52±0.11(5)  | 0.51±0.15(7)  | 0.9389 | 0.47±0.18(5)     | 0.55±0.07(7)  | 0.3246        | 0.49±0.16(8)    | 0.57±0.05(4)  | 0.3853 | 0.5±0.15(9)   | 0.57±0.06(3)  | 0.4443 |
| Galaxy Watch 5 (3)               | 0.63±0.0(1)   | 0.62±0.05(2)  | -      | 0.65±0.02(2)     | 0.57±0.0(1)   | -             | 0.63±0.0(1)     | 0.62±0.05(2)  | -      | 0.65±0.02(2)  | 0.57±0.0(1)   | -      |
| Fitbit Sense 2 (9)               | 0.48±0.01(3)  | 0.52±0.13(6)  | 0.7147 | 0.45±0.15(3)     | 0.53±0.05(6)  | 0.2957        | 0.48±0.13(5)    | 0.54±0.05(4)  | 0.5084 | 0.49±0.11(7)  | 0.57±0.04(2)  | 0.3545 |
| Apple Watch 8 (8)                | 0.53±0.14(4)  | 0.43±0.23(4)  | 0.5212 | 0.46±0.22(6)     | 0.55±0.09(2)  | 0.6473        | 0.51±0.1(4)     | 0.46±0.25(4)  | 0.7544 | 0.51±0.22(6)  | 0.41±0.05(2)  | 0.6228 |
| Oura Ring 3 (22)                 | 0.54±0.1(7)   | 0.41±0.14(15) | 0.0613 | 0.43±0.13(11)    | 0.48±0.14(11) | 0.4390        | 0.45±0.16(12)   | 0.45±0.12(10) | 0.9283 | 0.42±0.14(16) | 0.53±0.1(6)   | 0.1112 |

The number in the parenthesis indicates the number of participants tested with each device. Mean ± standard deviation of macro-averaged F1 scores across participants. The bold values represent statistical significance ( $p < 0.05$ ). Abbreviations: *SNUBH*, Seoul National Bundang Hospital; *AHI*, Apnea-Hypopnea Index.