

Beau Mostyn Sullivan. B., George, A.M., & Rickwood, D.: **Construction and validation of the Motives For Smartphone Use Questionnaire**

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**SUPPLEMENTARY MATERIALS**

### Supplementary material 1.

*Round 1 and 2 representativeness ratings of smartphone use motives items*

| Item                                                               | Mean | Median | Min | Max | % $\geq 4$ | % $\leq 2$ |
|--------------------------------------------------------------------|------|--------|-----|-----|------------|------------|
| Round 1                                                            |      |        |     |     |            |            |
| Mood regulation                                                    |      |        |     |     |            |            |
| 1) I use my smartphone to distract from problems.*                 | 4.13 | 4.00   | 2   | 5   | 87%        | 4%         |
| 2) I use my smartphone to escape from reality.*                    | 4.00 | 4.00   | 1   | 5   | 74%        | 9%         |
| 3) I use my smartphone because I do not want to be alone.          | 3.04 | 3.00   | 1   | 5   | 44%        | 39%        |
| 4) I use my smartphone to feel less lonely.                        | 3.26 | 3.00   | 1   | 5   | 48%        | 22%        |
| 5) I use my smartphone to fill uncomfortable silence.              | 2.96 | 3.00   | 1   | 5   | 44%        | 39%        |
| 6) I use my smartphone because there is no one else to talk to.    | 2.43 | 2.00   | 1   | 4   | 22%        | 57%        |
| 7) I use my smartphone to make myself feel better when I am down.* | 4.09 | 4.00   | 1   | 5   | 78%        | 4%         |
| 8) I use my smartphone to forget about worries and concerns.*      | 4.13 | 4.00   | 1   | 5   | 78%        | 4%         |

| Item                                                                 | Mean | Median | Min | Max | % $\geq 4$ | % $\leq 2$ |
|----------------------------------------------------------------------|------|--------|-----|-----|------------|------------|
| 9) I use my smartphone in order to relax.                            | 3.70 | 4.00   | 1   | 5   | 61%        | 13%        |
| 10) I use my smartphone to make myself feel better when I am upset.* | 4.13 | 4.00   | 2   | 5   | 78%        | 4%         |
| 11) I use my smartphone to forget about my problems.*                | 4.17 | 4.00   | 2   | 5   | 83%        | 4%         |
| 12) I use my smartphone to forget about university work or work.     | 3.17 | 3.00   | 1   | 5   | 39%        | 30%        |
| 13) I use my smartphone to reduce stress.                            | 3.87 | 4.00   | 2   | 5   | 61%        | 9%         |
| Reduce boredom                                                       |      |        |     |     |            |            |
| 14) I use my smartphone to avoid annoying duties.                    | 3.09 | 3.00   | 1   | 5   | 39%        | 35%        |
| 15) I use my smartphone to kill time.*                               | 3.87 | 4.00   | 2   | 5   | 74%        | 4%         |
| 16) I use my smartphone to avoid boredom.*                           | 4.04 | 4.00   | 2   | 5   | 74%        | 4%         |
| 17) I use my smartphone when I need something to do.                 | 3.30 | 3.00   | 1   | 5   | 39%        | 22%        |
| 18) I use my smartphone when I have nothing better to do.            | 3.61 | 4.00   | 2   | 5   | 52%        | 13%        |
| 19) I use my smartphone when I'm feeling bored.*                     | 4.09 | 4.00   | 2   | 5   | 74%        | 4%         |
| 20) I use my smartphone because it helps me pass the time.           | 3.78 | 4.00   | 2   | 5   | 61%        | 9%         |
| 21) I use my smartphone to take a rest.                              | 2.74 | 3.00   | 1   | 5   | 26%        | 44%        |

| Item                                                                                              | Mean | Median | Min | Max | % $\geq 4$ | % $\leq 2$ |
|---------------------------------------------------------------------------------------------------|------|--------|-----|-----|------------|------------|
| 22) I use my smartphone because it is a pleasant break from my routines.                          | 3.22 | 3.00   | 1   | 5   | 39%        | 30%        |
| 23) I use the smartphone to get away from what I am doing.                                        | 3.00 | 3.00   | 1   | 5   | 44%        | 39%        |
| Avoid social awkwardness                                                                          |      |        |     |     |            |            |
| 24) I use my smartphone because I find it easier to communicate by smartphone than in real life.* | 3.96 | 4.00   | 1   | 5   | 74%        | 9%         |
| 25) I use my smartphone to get away from others.                                                  | 3.17 | 3.00   | 1   | 5   | 44%        | 26%        |
| 26) I use my smartphone to talk about things I find difficult to talk about face-to-face.         | 3.48 | 4.00   | 2   | 5   | 52%        | 26%        |
| 27) I use my smartphone to tell something to someone that I'd rather not say directly.            | 3.30 | 4.00   | 1   | 5   | 52%        | 35%        |
| 28) I use my smartphone to avoid feeling awkward when talking to people in person.                | 3.83 | 4.00   | 2   | 5   | 70%        | 22%        |
| 29) I use my smartphone to reduce feeling anxious when I am around other people.                  | 3.57 | 3.00   | 1   | 5   | 48%        | 17%        |

| Item                                                                                     | Mean | Median | Min | Max | % $\geq 4$ | % $\leq 2$ |
|------------------------------------------------------------------------------------------|------|--------|-----|-----|------------|------------|
| 30) I use my smartphone to reduce discomfort I experience when I am around other people. | 3.65 | 4.00   | 2   | 5   | 52%        | 13%        |
| 31) I use my smartphone to avoid awkward in person conversations with people.            | 3.61 | 4.00   | 2   | 5   | 52%        | 22%        |
| 32) I use my smartphone to feel less uncomfortable when talking to people.               | 3.35 | 3.00   | 1   | 5   | 39%        | 22%        |
| 33) I use my smartphone to avoid talking to people I do not know very well.              | 3.61 | 4.00   | 2   | 5   | 52%        | 17%        |
| Safety                                                                                   |      |        |     |     |            |            |
| 34) I bought a smartphone to help me in emergency situations.                            | 3.52 | 4.00   | 1   | 5   | 57%        | 22%        |
| 35) I use my smartphone to be able to contact someone if I am in danger.                 | 3.70 | 4.00   | 1   | 5   | 61%        | 17%        |
| 36) I use my smartphone to feel safer, for example, on the street at night.              | 3.78 | 4.00   | 2   | 5   | 61%        | 22%        |

| Item                                                                                | Mean | Median | Min | Max | % $\geq 4$ | % $\leq 2$ |
|-------------------------------------------------------------------------------------|------|--------|-----|-----|------------|------------|
| 37) I use my smartphone to be able to contact the emergency services if necessary.* | 3.91 | 4.00   | 1   | 5   | 70%        | 13%        |
| 38) I use my smartphone so that family can let me know if they are in danger.       | 3.70 | 4.00   | 1   | 5   | 57%        | 13%        |
| 39) I use my smartphone to have family members reassure me when they are abroad.    | 3.57 | 4.00   | 2   | 5   | 57%        | 22%        |
| 40) I carry my smartphone to reduce fear when I go out.                             | 3.26 | 3.00   | 1   | 5   | 48%        | 35%        |
| 41) I carry my smartphone to feel safer.                                            | 3.57 | 4.00   | 2   | 5   | 57%        | 30%        |
| 42) I carry my smartphone in case of emergency situations.                          | 3.91 | 4.00   | 2   | 5   | 65%        | 13%        |
| Conformity                                                                          |      |        |     |     |            |            |
| 43) I use my smartphone because my friends and/or colleagues use it.                | 3.13 | 3.00   | 1   | 5   | 35%        | 30%        |
| 44) I use my smartphone to be liked by my friends                                   | 3.00 | 3.00   | 1   | 5   | 39%        | 35%        |
| 45) I use my smartphone to make a good impression on others.                        | 3.13 | 3.00   | 1   | 5   | 39%        | 26%        |
| 46) I use my smartphone so I will not feel left out.                                | 3.35 | 3.00   | 2   | 5   | 44%        | 26%        |
| 47) I use my smartphone to follow the trends.                                       | 2.96 | 3.00   | 1   | 5   | 44%        | 39%        |

| Item                                                                                      | Mean | Median | Min | Max | % $\geq 4$ | % $\leq 2$ |
|-------------------------------------------------------------------------------------------|------|--------|-----|-----|------------|------------|
| 48) I use my smartphone because it is “in”.                                               | 2.91 | 3.00   | 1   | 5   | 26%        | 30%        |
| 49) I use my smartphone to gain identification with others.                               | 2.91 | 3.00   | 1   | 5   | 35%        | 35%        |
| 50) I use my smartphone because people expect me to respond quickly.                      | 2.83 | 2.00   | 1   | 5   | 39%        | 52%        |
| 51) I use my smartphone to respond quickly because people will be upset if I do not.      | 3.00 | 3.00   | 2   | 5   | 22%        | 26%        |
| 52) I use my smartphone because people expect me to be contactable at all times.          | 3.04 | 3.00   | 1   | 5   | 35%        | 26%        |
| 53) I use my smartphone because I feel pressure to respond when I receive a notification. | 3.09 | 3.00   | 1   | 5   | 48%        | 35%        |
| 54) I use my smartphone to fit in.                                                        | 3.09 | 3.00   | 1   | 5   | 39%        | 39%        |
| Validation                                                                                |      |        |     |     |            |            |
| 55) I use my smartphone to show off to others.                                            | 3.04 | 3.00   | 1   | 5   | 39%        | 35%        |
| 56) I use my smartphone to attract attention from others.                                 | 3.26 | 3.00   | 1   | 5   | 39%        | 22%        |
| 57) I use my smartphone to show my strengths.                                             | 2.52 | 3.00   | 1   | 5   | 9%         | 48%        |

| Item                                                                                     | Mean | Median | Min | Max | % $\geq 4$ | % $\leq 2$ |
|------------------------------------------------------------------------------------------|------|--------|-----|-----|------------|------------|
| 58) I use my smartphone to look cool.                                                    | 3.48 | 4.00   | 1   | 5   | 52%        | 22%        |
| 59) I use my smartphone to appear to others as if I am on the cutting edge.              | 3.17 | 4.00   | 1   | 5   | 52%        | 26%        |
| 60) I use my smartphone to look stylish.                                                 | 3.17 | 3.00   | 1   | 5   | 39%        | 22%        |
| 61) I use my smartphone because for me it is a status symbol.                            | 3.09 | 3.00   | 1   | 5   | 44%        | 35%        |
| 62) I change my smartphone constantly because it makes me feel special among my friends. | 3.17 | 3.00   | 1   | 5   | 48%        | 26%        |
| 63) I use my smartphone for self-expression.                                             | 2.91 | 3.00   | 1   | 5   | 35%        | 44%        |
| 64) I use my smartphone so as not to be out of date.                                     | 3.00 | 3.00   | 1   | 5   | 44%        | 48%        |
| 65) I use my smartphone to get validation from others.                                   | 3.13 | 3.00   | 1   | 5   | 39%        | 26%        |
| Pleasure                                                                                 |      |        |     |     |            |            |
| 66) I use my smartphone to experience pleasure.                                          | 3.74 | 4.00   | 1   | 5   | 61%        | 13%        |
| 67) I use my smartphone to have fun.*                                                    | 4.13 | 4.00   | 2   | 5   | 74%        | 4%         |
| 68) I use my smartphone to gain positive emotions.                                       | 3.57 | 4.00   | 2   | 5   | 52%        | 13%        |
| 69) I use my smartphone to feel good.                                                    | 3.83 | 4.00   | 2   | 5   | 65%        | 9%         |

| Item                                                                                       | Mean | Median | Min | Max | % $\geq 4$ | % $\leq 2$ |
|--------------------------------------------------------------------------------------------|------|--------|-----|-----|------------|------------|
| 70) I use my smartphone because it is enjoyable.*                                          | 4.00 | 4.00   | 2   | 5   | 74%        | 9%         |
| 71) I use my smartphone because it offers a pleasant experience.                           | 3.57 | 3.00   | 2   | 5   | 48%        | 9%         |
| 72) I use my smartphone for entertainment.*                                                | 4.13 | 4.00   | 2   | 5   | 78%        | 4%         |
| 73) I use my smartphone to obtain a sense of achievement.                                  | 2.39 | 2.00   | 1   | 5   | 13%        | 61%        |
| 74) I use my smartphone because it is interesting.                                         | 3.13 | 3.00   | 1   | 5   | 39%        | 30%        |
| 75) I use my smartphone because it makes me happy.                                         | 3.30 | 3.00   | 1   | 5   | 48%        | 30%        |
| 76) I use my smartphone because it is fascinating.                                         | 2.61 | 2.00   | 1   | 5   | 17%        | 52%        |
| Instrumental                                                                               |      |        |     |     |            |            |
| 77) I use my smartphone to be informed about what is going on in the world.*               | 4.30 | 4.00   | 3   | 5   | 91%        | 0%         |
| 78) I use my smartphone because it gives me the freedom to contact any person at any time. | 3.83 | 4.00   | 2   | 5   | 65%        | 4%         |
| 79) I use my smartphone because I can use it anywhere.                                     | 3.52 | 4.00   | 2   | 5   | 57%        | 13%        |
| 80) I use my smartphone because I can carry it anytime.                                    | 3.17 | 3.00   | 1   | 5   | 35%        | 17%        |

| Item                                                                                                         | Mean | Median | Min | Max | % $\geq 4$ | % $\leq 2$ |
|--------------------------------------------------------------------------------------------------------------|------|--------|-----|-----|------------|------------|
| 81) I use my smartphone because I can receive phone calls from others anytime.                               | 3.48 | 3.00   | 2   | 5   | 48%        | 17%        |
| 82) I use my smartphone to learn things I need to know.                                                      | 3.83 | 4.00   | 1   | 5   | 57%        | 13%        |
| 83) I use my smartphone to accomplish the work assigned to me.                                               | 3.52 | 3.00   | 2   | 5   | 44%        | 17%        |
| 84) I use my smartphone to obtain the information I need.*                                                   | 4.09 | 4.00   | 3   | 5   | 74%        | 0%         |
| 85) I use my smartphone to find information instantly.*                                                      | 4.17 | 4.00   | 2   | 5   | 78%        | 4%         |
| 86) I use my smartphone to use many services (e.g., TV viewing, talking, accessing internet) simultaneously. | 3.52 | 3.00   | 2   | 5   | 44%        | 17%        |
| 87) I use my smartphone in order to stay up to date on the latest news.*                                     | 4.09 | 4.00   | 3   | 5   | 74%        | 0%         |
| 88) I use my smartphone because it helps me organize my life.                                                | 3.65 | 4.00   | 2   | 5   | 61%        | 22%        |
| 89) I use my smartphone because I rely on it to get me where I need to go.*                                  | 3.91 | 4.00   | 1   | 5   | 70%        | 4%         |
| 90) I use my smartphone so I am always contactable and can contact others.                                   | 3.70 | 4.00   | 2   | 5   | 61%        | 13%        |

| Item                                                                                             | Mean | Median | Min | Max | % $\geq 4$ | % $\leq 2$ |
|--------------------------------------------------------------------------------------------------|------|--------|-----|-----|------------|------------|
| 91) I use my smartphone because of the convenience it affords.                                   | 3.52 | 3.00   | 1   | 5   | 44%        | 13%        |
| 92) I use my smartphone because it makes my life easier.                                         | 3.70 | 4.00   | 1   | 5   | 65%        | 22%        |
| Social                                                                                           |      |        |     |     |            |            |
| 93) I use my smartphone because it offers me the chance to meet new friends and exchange views.* | 4.00 | 4.00   | 2   | 5   | 74%        | 9%         |
| 94) I use my smartphone to socialize with others.*                                               | 4.39 | 5.00   | 3   | 5   | 87%        | 0%         |
| 95) I use my smartphone to make new friends.                                                     | 3.83 | 4.00   | 2   | 5   | 70%        | 17%        |
| 96) I use my smartphone to read about other people's lives.                                      | 3.17 | 3.00   | 1   | 5   | 48%        | 39%        |
| 97) I use my smartphone to feel closer to others.                                                | 3.70 | 4.00   | 2   | 5   | 61%        | 9%         |
| 98) I use my smartphone to improve my relationships with others.*                                | 3.91 | 4.00   | 2   | 5   | 70%        | 9%         |
| 99) I use my smartphone to let others know I care for them.                                      | 3.57 | 4.00   | 2   | 5   | 57%        | 22%        |
| 100)I use my smartphone to have good relationships with others.                                  | 3.57 | 4.00   | 2   | 5   | 57%        | 17%        |
| 101)I use my smartphone to maintain relationships with others.                                   | 4.13 | 4.00   | 2   | 5   | 83%        | 9%         |
| 102)I use my smartphone to keep up-to-date with the lives of others.                             | 3.52 | 3.00   | 2   | 5   | 48%        | 9%         |
| 103)I use my smartphone to express my love to someone.                                           | 3.04 | 3.00   | 2   | 5   | 30%        | 39%        |

| Item                                                                                                 | Mean | Median | Min | Max | % $\geq 4$ | % $\leq 2$ |
|------------------------------------------------------------------------------------------------------|------|--------|-----|-----|------------|------------|
| 104)I use my smartphone to chat with others.                                                         | 4.00 | 4.00   | 2   | 5   | 65%        | 4%         |
| 105)I use my smartphone to get advice from others.                                                   | 3.17 | 3.00   | 1   | 5   | 30%        | 26%        |
| 106)I use my smartphone to feel others take care of me.                                              | 2.61 | 3.00   | 1   | 5   | 17%        | 48%        |
| 107)I use my smartphone to feel a sense of belonging.                                                | 3.13 | 3.00   | 2   | 5   | 35%        | 30%        |
| 108)I use my smartphone to keep in touch with others.*                                               | 4.26 | 4.00   | 3   | 5   | 87%        | 0%         |
| 109)I use my smartphone to interact with people.*                                                    | 4.13 | 4.00   | 3   | 5   | 78%        | 0%         |
| 110)I use smartphone for making my ordinary visible to others.                                       | 2.52 | 2.00   | 1   | 5   | 17%        | 52%        |
| Round 2                                                                                              |      |        |     |     |            |            |
| Reduce loneliness                                                                                    |      |        |     |     |            |            |
| 1) I use my smartphone because I do not want to be alone. <sup>+</sup>                               | 3.75 | 4.00   | 2   | 5   | 65%        | 10%        |
| 2) I use my smartphone because it helps me to feel less lonely.*                                     | 4.10 | 4.00   | 2   | 5   | 85%        | 10%        |
| 3) I use my smartphone because there is no one to talk to.                                           | 3.25 | 3.00   | 1   | 5   | 40%        | 20%        |
| 4) I use my smartphone because I do not have many friends or a partner to spend time with in-person. | 3.25 | 3.50   | 1   | 4   | 50%        | 20%        |
| 5) I use my smartphone because I feel like I lack companionship. <sup>+</sup>                        | 3.40 | 3.50   | 1   | 5   | 50%        | 15%        |

| Item                                                                          | Mean | Median | Min | Max | % ≥ 4 | % ≤ 2 |
|-------------------------------------------------------------------------------|------|--------|-----|-----|-------|-------|
| 6) I use my smartphone to feel a greater sense of belonging with others.      | 2.90 | 3.00   | 1   | 5   | 25%   | 35%   |
| Coping                                                                        |      |        |     |     |       |       |
| 7) I use my smartphone because it helps me to reduce discomfort. <sup>+</sup> | 3.65 | 4.00   | 2   | 5   | 55%   | 15%   |
| 8) I use my smartphone because it helps me to reduce stress.*                 | 4.00 | 4.00   | 2   | 5   | 70%   | 5%    |
| 9) I use my smartphone because it helps me feel less anxious.*                | 3.90 | 4.00   | 3   | 5   | 70%   | 0%    |
| Escapism                                                                      |      |        |     |     |       |       |
| 10) I use my smartphone because it helps me forget about university or work.* | 3.95 | 4.00   | 2   | 5   | 80%   | 5%    |
| 11) I use my smartphone to escape from the stress of everyday life.*          | 4.25 | 4.00   | 2   | 5   | 95%   | 5%    |
| Reduce boredom                                                                |      |        |     |     |       |       |
| 12) I use my smartphone when there is nothing to do.*                         | 4.20 | 4.00   | 3   | 5   | 85%   | 0%    |
| 13) I use my smartphone when I have nothing better to do.*                    | 4.25 | 4.00   | 3   | 5   | 90%   | 0%    |
| 14) I use my smartphone because it helps me pass the time.*                   | 4.40 | 4.50   | 3   | 5   | 90%   | 0%    |
| Social comfort                                                                |      |        |     |     |       |       |

| Item                                                                                                           | Mean | Median | Min | Max | % $\geq 4$ | % $\leq 2$ |
|----------------------------------------------------------------------------------------------------------------|------|--------|-----|-----|------------|------------|
| 15) I use my smartphone because it helps me avoid interacting with other people in person.*                    | 3.90 | 4.00   | 2   | 5   | 80%        | 10%        |
| 16) I use my smartphone because it allows me to talk about things I find difficult to talk about face-to-face. | 3.70 | 4.00   | 1   | 5   | 70%        | 20%        |
| 17) I use my smartphone to tell something to someone that I would rather not say to them face-to-face.         | 3.70 | 4.00   | 1   | 5   | 75%        | 20%        |
| 18) I use my smartphone because it helps me cope with feeling awkward when talking to people in person.        | 3.70 | 4.00   | 1   | 5   | 80%        | 20%        |
| 19) I use my smartphone because it helps me manage nervous feelings when I am around other people.             | 3.60 | 4.00   | 1   | 5   | 65%        | 20%        |
| 20) I use my smartphone because it helps me manage discomfort I experience when I am around other people.*     | 3.75 | 4.00   | 1   | 5   | 70%        | 15%        |
| 21) I use my smartphone because it helps me avoid in person conversations with people.+                        | 3.60 | 4.00   | 1   | 5   | 60%        | 15%        |

| Item                                                                                                               | Mean | Median | Min | Max | % $\geq 4$ | % $\leq 2$ |
|--------------------------------------------------------------------------------------------------------------------|------|--------|-----|-----|------------|------------|
| 22) I use my smartphone because it helps me feel more comfortable when talking to people.                          | 3.25 | 4.00   | 1   | 5   | 60%        | 35%        |
| 23) I use my smartphone during social situations so I will not feel left out.                                      | 2.80 | 3.00   | 1   | 5   | 25%        | 45%        |
| 24) I use my smartphone because it helps me avoid talking to people in social situations I do not know very well.* | 3.80 | 4.00   | 1   | 5   | 80%        | 10%        |
| 25) I use my smartphone to help fill uncomfortable silences when talking with others in person.                    | 3.45 | 4.00   | 1   | 5   | 60%        | 20%        |
| Safety                                                                                                             |      |        |     |     |            |            |
| 26) I use a smartphone to help me in case of emergency situations.*                                                | 4.30 | 4.00   | 3   | 5   | 85%        | 0%         |
| 27) I use my smartphone to be able to contact someone in case I am in danger.*                                     | 4.10 | 4.00   | 3   | 5   | 85%        | 0%         |
| 28) I use my smartphone to feel safer when I go out.*                                                              | 3.85 | 4.00   | 2   | 5   | 70%        | 5%         |
| 29) I use my smartphone so that family can let me know if they need help.*                                         | 4.00 | 4.00   | 3   | 5   | 75%        | 0%         |

| Item                                                                                         | Mean | Median | Min | Max | % $\geq 4$ | % $\leq 2$ |
|----------------------------------------------------------------------------------------------|------|--------|-----|-----|------------|------------|
| 30) I use my smartphone to have family members reassure me when they are away. <sup>+</sup>  | 3.65 | 4.00   | 2   | 5   | 55%        | 10%        |
| 31) I use my smartphone to feel more secure when I am home alone.                            | 3.60 | 3.50   | 2   | 5   | 50%        | 20%        |
| 32) I use my smartphone to communicate with others when I feel scared at home. <sup>+</sup>  | 3.50 | 3.50   | 2   | 5   | 50%        | 15%        |
| 33) I use my smartphone to feel safe when scary people are around.*                          | 3.65 | 4.00   | 1   | 5   | 70%        | 15%        |
| 34) I use my smartphone to talk to others when I feel like I am in danger.*                  | 3.90 | 4.00   | 2   | 5   | 75%        | 10%        |
| Social obligation                                                                            |      |        |     |     |            |            |
| 35) I use my smartphone because I feel like I should respond quickly to others. <sup>+</sup> | 3.75 | 4.00   | 2   | 5   | 60%        | 5%         |
| 36) I use my smartphone to respond quickly so that others do not get upset with me.          | 3.45 | 4.00   | 1   | 5   | 55%        | 20%        |
| 37) I use my smartphone because others expect me to be easily contactable. <sup>+</sup>      | 3.85 | 4.00   | 2   | 5   | 65%        | 5%         |

| Item                                                                                                       | Mean | Median | Min | Max | % $\geq 4$ | % $\leq 2$ |
|------------------------------------------------------------------------------------------------------------|------|--------|-----|-----|------------|------------|
| 38) I use my smartphone because others expect me to always be contactable. <sup>+</sup>                    | 3.80 | 4.00   | 2   | 5   | 55%        | 5%         |
| 39) I use my smartphone because I feel pressure to respond to notifications.                               | 3.25 | 3.00   | 1   | 5   | 40%        | 20%        |
| 40) I use my smartphone because my friends/family/partner/colleagues will not like me if I do not respond. | 3.05 | 3.00   | 1   | 5   | 30%        | 25%        |
| 41) I use my smartphone because others want me to.                                                         | 3.00 | 3.00   | 2   | 5   | 25%        | 35%        |
| Positive impression                                                                                        |      |        |     |     |            |            |
| 42) I use my smartphone to be liked by my friends.                                                         | 2.95 | 3.00   | 2   | 5   | 35%        | 45%        |
| 43) I use my smartphone to make a good impression on my friends/family/partner/colleagues.                 | 3.00 | 3.00   | 1   | 5   | 35%        | 35%        |
| 44) I use my smartphone in a similar way to my friends/family/partner/colleagues to be more like them.     | 2.70 | 3.00   | 1   | 4   | 15%        | 35%        |
| 45) I use my smartphone because it is considered cool.                                                     | 3.00 | 3.00   | 1   | 5   | 40%        | 35%        |

| Item                                                                                      | Mean | Median | Min | Max | % $\geq 4$ | % $\leq 2$ |
|-------------------------------------------------------------------------------------------|------|--------|-----|-----|------------|------------|
| 46) I use my smartphone to fit in with others.                                            | 3.30 | 3.00   | 2   | 5   | 45%        | 20%        |
| 47) I use my smartphone to show off to others.                                            | 2.95 | 2.50   | 1   | 5   | 45%        | 50%        |
| 48) I use my smartphone because it is a tool that allows me to get attention from others. | 2.70 | 2.50   | 1   | 4   | 30%        | 50%        |
| 49) I use my smartphone to show my strengths.                                             | 2.60 | 2.50   | 1   | 5   | 15%        | 50%        |
| 50) I use my smartphone to look cool.                                                     | 3.15 | 3.00   | 1   | 5   | 45%        | 35%        |
| 51) I use my smartphone to appear to others as if I am on the cutting edge.               | 3.10 | 3.00   | 1   | 5   | 45%        | 30%        |
| 52) I use my smartphone to look stylish.                                                  | 3.00 | 3.00   | 1   | 5   | 35%        | 35%        |
| 53) I use my smartphone as a status symbol.                                               | 3.10 | 3.00   | 1   | 5   | 45%        | 35%        |
| 54) I use my smartphone to be up to date.                                                 | 2.55 | 3.00   | 1   | 5   | 25%        | 45%        |
| 55) I use my smartphone to get validation from others.                                    | 2.75 | 2.50   | 1   | 4   | 40%        | 50%        |
| Enjoyment                                                                                 |      |        |     |     |            |            |
| 56) I use my smartphone because it helps me experience pleasure. <sup>+</sup>             | 3.65 | 3.50   | 3   | 5   | 50%        | 0%         |

| Item                                                                                               | Mean | Median | Min | Max | % $\geq 4$ | % $\leq 2$ |
|----------------------------------------------------------------------------------------------------|------|--------|-----|-----|------------|------------|
| 57) I use my smartphone because it helps me enhance positive emotions. <sup>+</sup>                | 3.80 | 4.00   | 3   | 5   | 60%        | 0%         |
| 58) I use my smartphone when I am feeling good.                                                    | 2.50 | 2.00   | 1   | 5   | 15%        | 55%        |
| 59) I use my smartphone because it offers a pleasant experience. <sup>+</sup>                      | 3.80 | 4.00   | 2   | 5   | 65%        | 5%         |
| 60) I use my smartphone in the pursuit of happiness.                                               | 3.25 | 3.00   | 2   | 5   | 35%        | 20%        |
| 61) I use my smartphone when my mood is high.                                                      | 2.30 | 2.00   | 1   | 4   | 15%        | 65%        |
| Convenience                                                                                        |      |        |     |     |            |            |
| 62) I use my smartphone because it helps me to organize my life.*                                  | 4.10 | 4.00   | 3   | 5   | 75%        | 0%         |
| 63) I use my smartphone because it provides convenient access to a range of content and services.* | 4.15 | 4.00   | 3   | 5   | 85%        | 0%         |
| 64) I use my smartphone because it makes my life easier.*                                          | 3.85 | 4.00   | 2   | 5   | 70%        | 10%        |
| Social                                                                                             |      |        |     |     |            |            |
| 65) I use my smartphone because it helps me make friends. <sup>+</sup>                             | 3.60 | 3.50   | 2   | 5   | 50%        | 10%        |
| 66) I use my smartphone because it allows me to learn about other people's lives.                  | 3.35 | 3.50   | 1   | 5   | 50%        | 20%        |

| Item                                                                                                  | Mean | Median | Min | Max | % $\geq 4$ | % $\leq 2$ |
|-------------------------------------------------------------------------------------------------------|------|--------|-----|-----|------------|------------|
| 67) I use my smartphone because it increases my feelings of connection with others.*                  | 3.70 | 4.00   | 1   | 5   | 70%        | 15%        |
| 68) I use my smartphone because it helps me develop relationships with others.*                       | 3.95 | 4.00   | 3   | 5   | 80%        | 0%         |
| 69) I use my smartphone to let others know I care about them.*                                        | 3.80 | 4.00   | 3   | 5   | 70%        | 0%         |
| 70) I use my smartphone because it helps me maintain good relationships with others.*                 | 3.95 | 4.00   | 3   | 5   | 75%        | 0%         |
| 71) I use my smartphone because it helps me keep up to date with the lives of others.                 | 3.45 | 4.00   | 1   | 5   | 55%        | 20%        |
| 72) I use my smartphone to chat with others.*                                                         | 4.40 | 4.50   | 3   | 5   | 90%        | 0%         |
| 73) I use my smartphone so that others can help take care of me.                                      | 2.55 | 2.50   | 1   | 4   | 15%        | 50%        |
| 74) I use my smartphone because it allows me to be contactable and/or contact others whenever I want. | 3.35 | 3.50   | 1   | 5   | 50%        | 25%        |

*Note.* There were 23 participants in round 1 and 20 in round 2. ‘%  $\geq 4$ ’ = the percentage of participants that responded 4 or more on a particular item. ‘%  $\leq 2$ ’ = the percentage of participants that responded 2 or less on a particular item. \* = item reached consensus for inclusion ( $\geq 70\%$  of

| Item | Mean | Median | Min | Max | $\% \geq 4$ | $\% \leq 2$ |
|------|------|--------|-----|-----|-------------|-------------|
|------|------|--------|-----|-----|-------------|-------------|

participants responded 4 (very representative) or 5 (extremely representative) and  $\leq 15\%$  responded 1 (not representative) or 2 (not very representative). <sup>+</sup> = item was close to consensus after round 2 ( $\leq 15\%$  responded 1 (not representative) or 2 (not very representative)).

## Supplementary material 2

### *Preliminary Motives for Smartphone Use Questionnaire (MSUQ) items for psychometric investigation*

| Item                                                                           | Proposed domain   |
|--------------------------------------------------------------------------------|-------------------|
| 1) I use my smartphone because it helps me to feel less lonely.                | Reduce loneliness |
| 2) I use my smartphone because I do not want to be alone.                      |                   |
| 3) I use my smartphone because I feel like I lack companionship.               |                   |
| 4) I use my smartphone because it helps me to reduce stress.                   | Coping            |
| 5) I use my smartphone because it helps me feel less anxious.                  |                   |
| 6) I use my smartphone because it helps me feel better when I am down.         |                   |
| 7) I use my smartphone because it helps me feel better when I am upset.        |                   |
| 8) I use my smartphone because it helps me to reduce discomfort.               | Escapism          |
| 9) I use my smartphone because it helps me forget about study or work.         |                   |
| 10) I use my smartphone to escape from the stress of everyday life.            |                   |
| 11) I use my smartphone because it helps to distract me from my problems.      |                   |
| 12) I use my smartphone because it helps me escape from reality.               |                   |
| 13) I use my smartphone because it helps me forget about worries and concerns. |                   |
| 14) I use my smartphone because it helps me to forget about my problems.       |                   |

| Item                                                                                                              | Proposed domain |
|-------------------------------------------------------------------------------------------------------------------|-----------------|
| 15) I use my smartphone when there is nothing to do.                                                              | Pass time       |
| 16) I use my smartphone when I have nothing better to do.                                                         |                 |
| 17) I use my smartphone because it helps me pass the time.                                                        |                 |
| 18) I use my smartphone to kill time.                                                                             |                 |
| 19) I use my smartphone to avoid boredom.                                                                         |                 |
| 20) I use my smartphone when I'm feeling bored.                                                                   |                 |
| 21) I use my smartphone because it helps me avoid interacting with other people in person.                        | Social comfort  |
| 22) I use my smartphone because it helps me manage discomfort I experience when I am around other people.         |                 |
| 23) I use my smartphone because it helps me avoid talking to people in social situations I do not know very well. |                 |
| 24) I use my smartphone because I find it easier to communicate by smartphone than in real life.                  |                 |
| 25) I use my smartphone because it helps me avoid in person conversations with people.                            |                 |
| 26) I use a smartphone to help me in case of emergency situations.                                                | Safety          |
| 27) I use my smartphone to be able to contact someone in case I am in danger.                                     |                 |
| 28) I use my smartphone to feel safer when I go out.                                                              |                 |
| 29) I use my smartphone so that family can let me know if they need help.                                         |                 |
| 30) I use my smartphone to feel safe when I am scared.                                                            |                 |

| Item                                                                                | Proposed domain   |
|-------------------------------------------------------------------------------------|-------------------|
| 31) I use my smartphone to talk to others when I feel like I am in danger.          |                   |
| 32) I use my smartphone to be able to contact the emergency services if necessary.  |                   |
| 33) I use my smartphone to have others reassure me when I am scared.                |                   |
| 34) I use my smartphone to communicate with others when I feel scared at home.      |                   |
| 35) I use my smartphone because I feel like I should respond quickly to others.     |                   |
| 36) I use my smartphone because others expect me to be easily contactable.          | Social obligation |
| 37) I use my smartphone because others expect me to always be contactable.          |                   |
| 38) I use my smartphone to have fun.                                                |                   |
| 39) I use my smartphone because it is enjoyable.                                    |                   |
| 40) I use my smartphone for entertainment.                                          |                   |
| 41) I use my smartphone because it helps me experience pleasure.                    | Enjoyment         |
| 42) I use my smartphone because it helps me enhance positive emotions.              |                   |
| 43) I use my smartphone because it offers a pleasant experience.                    |                   |
| 44) I use my smartphone because it increases my feelings of connection with others. | Social            |

| Item                                                                                              | Proposed domain |
|---------------------------------------------------------------------------------------------------|-----------------|
| 45) I use my smartphone because it helps me develop relationships with others.                    |                 |
| 46) I use my smartphone to let others know I care about them.                                     |                 |
| 47) I use my smartphone because it helps me maintain good relationships with others.              |                 |
| 48) I use my smartphone to chat with others.                                                      |                 |
| 49) I use my smartphone because it offers me the chance to meet new friends and exchange views.   |                 |
| 50) I use my smartphone to socialize with others.                                                 |                 |
| 51) I use my smartphone to maintain relationships with others.                                    |                 |
| 52) I use my smartphone to keep in touch with others.                                             |                 |
| 53) I use my smartphone to interact with people.                                                  |                 |
| 54) I use my smartphone because it helps me make friends.                                         |                 |
| 55) I use my smartphone because it helps me to organize my life.                                  |                 |
| 56) I use my smartphone because it provides convenient access to a range of content and services. |                 |
| 57) I use my smartphone because it makes my life easier.                                          | Convenience     |
| 58) I use my smartphone because I rely on it to get me where I need to go.                        |                 |
| 59) I use my smartphone to obtain the information I need.                                         |                 |
| 60) I use my smartphone to find information instantly.                                            | Information     |
| 61) I use my smartphone in order to stay up to date on the latest news.                           | seeking         |

| Item                                                                        | Proposed domain |
|-----------------------------------------------------------------------------|-----------------|
| 62) I use my smartphone to be informed about what is going on in the world. |                 |

*Note.* This pool of items reached consensus during round 1 or 2, or were close to consensus— $\geq 85\%$  of participants responded 3 (representative) 4 (very representative) or 5 (extremely representative) and  $\leq 15\%$  responded 1 (not representative) or 2 (not very representative)—and retained after a moderation meeting at the end of round 2. They will be subjected to further psychometric testing in subsequent research.

### Supplementary material 3

#### MSUQ CFA code

```
library("lavaan")
```

```
library("MVN")
```

```
newdata <- data[c("coping1", "coping2", "coping4", "coping6", "safety1", "safety2",  
"safety3", "safety4", "pass1", "pass2", "pass4", "pass5", "soc1", "soc2", "soc3", "soc4",  
"comf1", "comf2", "comf3", "comf4", "info1", "info2", "info3", "oblig1", "oblig2", "oblig3")]
```

```
str(newdata)
```

```
result = mvn(newdata, mvnTest = "hz")
```

```
result$multivariateNormality
```

```
cfa7fac <- '
```

```
coping =~ coping1 + coping2 + coping4 + coping6
```

```
safety =~ safety1 + safety2 + safety3 + safety4
```

```
passtime =~ pass1 + pass2 + pass4 + pass5
```

```
social =~ soc1 + soc2 + soc3 + soc4
```

```
socialcomfort =~ comf1 + comf2 + comf3 + comf4
```

```
information =~ info1 + info2 + info3
```

```
socialobligation =~ oblig1 + oblig2 + oblig3
```

```
,
```

```
fitcfa7 <- cfa(cfa7fac, data=newdata, std.lv=TRUE, estimator = "MLR")
```

```
summary(fitcfa7, fit.measures=TRUE, standardized=TRUE)
```

```
cfa1fac <- '
```

```
motivation =~ coping1 + coping2 + coping4 + coping6 + safety1 + safety2 + safety3 +  
safety4 + pass1 + pass2 + pass4 + pass5 + soc1 + soc2 + soc3 + soc4 + comf1 + comf2 +  
comf3 + comf4 + info1 + info2 + info3 + oblig1 + oblig2 + oblig3
```

```
,
```

```
fitcfa1 <- cfa(cfa1fac, data=data, std.lv=TRUE, estimator = "MLR")
```

```
summary(fitcfa1, fit.measures=TRUE, standardized=TRUE)
```

### **Omega coefficient code**

```
library("MBESS")
```

```
coping <- data[c("coping1", "coping2", "coping4", "coping6")]
```

```
coping <- na.omit(coping)
```

```
set.seed(1)
```

```
ci.reliability(data=coping, type="omega", conf.level=0.95, interval.type="bca", B=1000)
```

```
safety <- data[c("safety1", "safety2", "safety3", "safety4")]
```

```
safety <- na.omit(safety)
```

```
set.seed(2)
```

```
ci.reliability(data=safety, type="omega", conf.level=0.95, interval.type="bca", B=1000)
```

```
pass <- data[c("pass1", "pass2", "pass4", "pass5")]
```

```
pass <- na.omit(pass)
```

```
set.seed(3)
```

```
ci.reliability(data=pass, type="omega", conf.level=0.95, interval.type="bca", B=1000)
```

```
social <- data[c("soc1", "soc2", "soc3", "soc4")]
```

```
social <- na.omit(social)
```

```
set.seed(4)
```

```
ci.reliability(data=social, type="omega", conf.level=0.95, interval.type="bca", B=1000)
```

```
comfort <- data[c("comf1", "comf2", "comf3", "comf4")]
```

```
comfort <- na.omit(comfort)
```

```
set.seed(5)
```

```
ci.reliability(data=comfort, type="omega", conf.level=0.95, interval.type="bca", B=1000)
```

```
info <- data[c("info1", "info2", "info3")]
```

```
info <- na.omit(info)
```

```
set.seed(6)
```

```
ci.reliability(data=info, type="omega", conf.level=0.95, interval.type="bca", B=1000)
```

```
oblig <- data[c("oblig1", "oblig2", "oblig3")]
```

```
oblig <- na.omit(oblig)
```

```
set.seed(7)
```

```
ci.reliability(data=oblig, type="omega", conf.level=0.95, interval.type="bca", B=1000)
```

## Supplementary material 4

### *Inter-factor correlations*

|                |     | 1    | 2    | 3    | 4    | 5    | 6   | 7 |
|----------------|-----|------|------|------|------|------|-----|---|
| 1) Coping      |     | —    |      |      |      |      |     |   |
| 2) Safety      | CFA | .35  | —    |      |      |      |     |   |
|                | EFA | .35  | —    |      |      |      |     |   |
| 3) Pass time   | CFA | .68  | .44  | —    |      |      |     |   |
|                | EFA | -.52 | -.30 | —    |      |      |     |   |
| 4) Social      | CFA | .63  | .68  | .71  | —    |      |     |   |
|                | EFA | .38  | .46  | -.32 | —    |      |     |   |
| 5) Comfort     | CFA | .86  | .42  | .56  | .58  | —    |     |   |
|                | EFA | .66  | .23  | -.29 | .29  | —    |     |   |
| 6) Information | CFA | .43  | .64  | .69  | .81  | .44  | —   |   |
|                | EFA | -.24 | -.36 | .37  | -.35 | -.09 | —   |   |
| 7) Obligation  | CFA | .52  | .65  | .58  | .79  | .57  | .70 | — |
|                | EFA | -.38 | -.54 | .37  | -.52 | -.30 | .37 | — |

*Note.* Comfort = social comfort. Information = information seeking. Obligation = social obligation. EFA = exploratory factor analysis ( $n = 359$ ). CFA = confirmatory factor analysis ( $n = 313$ )

## Supplementary material 5

*Items from exploratory factor analysis not retained for confirmatory factor analysis and reasons for removal*

| Factor    | Removed Items                                          | Reason for removal    |
|-----------|--------------------------------------------------------|-----------------------|
| Coping    | (3) because it helps to distract me from my problems.  | Similar to item 1     |
|           | (5) because it helps me feel better when I am down.    | Similar to item 4     |
|           | (7) because it helps me forget about study or work.    | Weaker factor loading |
|           | (8) because it helps me escape from reality.           | Weaker factor loading |
|           | (9) because it helps me to reduce stress.              | Weaker factor loading |
| Safety    | (10) because it helps me feel less anxious.            | Weaker factor loading |
|           | (15) so that family can let me know if they need help. | Weaker factor loading |
| Pass time | (16) to feel safer when I go out.                      | Weaker factor loading |
|           | (19) when there is nothing to do.                      | Similar to item 16    |
|           | (22) to kill time.                                     | Weaker factor loading |

| Factor  | Removed Items                                                                 | Reason for removal                        |
|---------|-------------------------------------------------------------------------------|-------------------------------------------|
| Social  | (23) I use my smartphone for entertainment.                                   | Weaker factor loading                     |
|         | (24) because it is enjoyable.                                                 | Weaker factor loading                     |
|         | (29) to let others know I care about them.                                    | Weaker factor loading                     |
|         | (30) to maintain relationships with others.                                   | Weaker factor loading, similar to item 23 |
|         | (31) to keep in touch with others.                                            | Weaker factor loading                     |
|         | (32) because it increases my feelings of connection with others.              | Weaker factor loading                     |
| Comfort | (37) because I find it easier to communicate by smartphone than in real life. | Weaker factor loading                     |

*Note.* No items were removed from the information seeking and social obligation motives factors. Item numbers refer to the same items numbers used in Table 3.

Removed items = items removed from factors derived from exploratory factor analysis before conducting confirmatory factor analysis.

## Supplementary material 6

*Standardized factor loadings from the confirmatory factor analysis*

| Items   | Coping | Safety | Pass time | Social | Comfort | Info | Obligation |
|---------|--------|--------|-----------|--------|---------|------|------------|
| Item 1  | .80    |        |           |        |         |      |            |
| Item 2  | .80    |        |           |        |         |      |            |
| Item 4  | .74    |        |           |        |         |      |            |
| Item 6  | .78    |        |           |        |         |      |            |
| Item 11 |        | .77    |           |        |         |      |            |
| Item 12 |        | .81    |           |        |         |      |            |
| Item 13 |        | .81    |           |        |         |      |            |
| Item 14 |        | .72    |           |        |         |      |            |
| Item 17 |        |        | .72       |        |         |      |            |
| Item 18 |        |        | .73       |        |         |      |            |
| Item 20 |        |        | .76       |        |         |      |            |
| Item 21 |        |        | .73       |        |         |      |            |
| Item 25 |        |        |           | .71    |         |      |            |
| Item 26 |        |        |           | .72    |         |      |            |
| Item 27 |        |        |           | .74    |         |      |            |
| Item 28 |        |        |           | .73    |         |      |            |
| Item 33 |        |        |           |        | .77     |      |            |
| Item 34 |        |        |           |        | .80     |      |            |
| Item 35 |        |        |           |        | .76     |      |            |
| Item 36 |        |        |           |        | .75     |      |            |
| Item 38 |        |        |           |        |         | .72  |            |

| Items   | Coping  | Safety  | Pass time | Social  | Comfort | Info    | Obligation |
|---------|---------|---------|-----------|---------|---------|---------|------------|
| Item 39 |         |         |           |         |         | .80     |            |
| Item 40 |         |         |           |         |         | .63     |            |
| Item 41 |         |         |           |         |         |         | .77        |
| Item 42 |         |         |           |         |         |         | .73        |
| Item 43 |         |         |           |         |         |         | .63        |
| Omega   | .87     | .86     | .83       | .82     | .86     | .77     | .76        |
| CI      | .83–.89 | .82–.89 | .79–.86   | .77–.85 | .83–.89 | .70–.81 | .69–.80    |

*Note.* Comfort = social comfort. Info = information seeking. Obligation = social obligation.

Item numbers refer to those numbers listed alongside items in Table 3. Omega = omega coefficient. CI = 95% bootstrap confidence interval (based on 1,000 samples) for omega.