

## Regression analysis of flood risk perception

**Table S1**

Regression analysis in gender group.

| Variable                 | Standardized coefficient |          |
|--------------------------|--------------------------|----------|
|                          | Males                    | Females  |
| Flood risk knowledge     | 0.815***                 | 0.841*** |
| Flood risk worry         | 0.087**                  | 0.043*   |
| Government trust         | 0.105**                  | 0.090*** |
| Flood disaster education | 0.062*                   | 0.042    |
| Flood experience         | -0.015                   | 0.027    |
| R <sup>2</sup>           | 0.768                    | 0.812    |
| Adjusted R <sup>2</sup>  | 0.764                    | 0.810    |
| F                        | 209.864                  | 352.248  |

\*\*\* P < 0.001, \*\* P < 0.01, \* P < 0.05

**Table S2**

Regression analysis in age group.

| Variable                 | Standardized coefficient |                                   |
|--------------------------|--------------------------|-----------------------------------|
|                          | Elder                    | Non-elder (young and middle-aged) |
| Flood risk knowledge     | 0.828***                 | 0.823***                          |
| Flood risk worry         | 0.128**                  | 0.059**                           |
| Government trust         | 0.060                    | 0.101***                          |
| Flood disaster education | 0.042                    | 0.056**                           |
| Flood experience         | 0.028                    | 0.007                             |
| R <sup>2</sup>           | 0.780                    | 0.792                             |
| Adjusted R <sup>2</sup>  | 0.767                    | 0.790                             |
| F                        | 58.303                   | 488.224                           |

**Table S3**

Regression analysis in group of education level.

| Variable                 | Standardized coefficient |                     |
|--------------------------|--------------------------|---------------------|
|                          | High education level     | Low education level |
| Flood risk knowledge     | 0.817***                 | 0.831***            |
| Flood risk worry         | 0.041                    | 0.109***            |
| Government trust         | 0.124***                 | 0.054               |
| Flood disaster education | 0.025                    | 0.093***            |
| Flood experience         | 0.013                    | -0.008              |
| R <sup>2</sup>           | 0.807                    | 0.778               |
| Adjusted R <sup>2</sup>  | 0.804                    | 0.775               |
| F                        | 346.002                  | 217.902             |

**Table S4**

Regression analysis in group of living time.

| Variable                 | Standardized coefficient |                   |
|--------------------------|--------------------------|-------------------|
|                          | Long living time         | Short living time |
| Flood risk knowledge     | 0.829***                 | 0.734***          |
| Flood risk worry         | 0.051*                   | 0.111             |
| Government trust         | 0.064*                   | 0.187**           |
| Flood disaster education | 0.083**                  | 0.042             |
| Flood experience         | 0.018                    | -0.012            |
| R <sup>2</sup>           | 0.767                    | 0.801             |
| Adjusted R <sup>2</sup>  | 0.764                    | 0.782             |
| F                        | 245.078                  | 41.063            |

**Table S5**

Regression analysis in group of health condition.

| Variable                 | Standardized coefficient |                      |
|--------------------------|--------------------------|----------------------|
|                          | Good health condition    | Bad health condition |
| Flood risk knowledge     | 0.821***                 | 0.824***             |
| Flood risk worry         | 0.059***                 | 0.228                |
| Government trust         | 0.107***                 | -0.099               |
| Flood disaster education | 0.046*                   | 0.373                |
| Flood experience         | 0.017                    | 0.082                |
| R <sup>2</sup>           | 0.788                    | 0.801                |
| Adjusted R <sup>2</sup>  | 0.787                    | 0.702                |
| F                        | 458.429                  | 8.066                |

**Table S6**

Regression analysis in group of exercising situation.

| Variable                 | Standardized coefficient |                |
|--------------------------|--------------------------|----------------|
|                          | Regular exercising       | Not exercising |
| Flood risk knowledge     | 0.833***                 | 0.817***       |
| Flood risk worry         | 0.076***                 | 0.056*         |
| Government trust         | 0.097***                 | 0.091***       |
| Flood disaster education | 0.026                    | 0.090***       |
| Flood experience         | 0.024                    | -0.009         |
| R <sup>2</sup>           | 0.792                    | 0.793          |
| Adjusted R <sup>2</sup>  | 0.789                    | 0.790          |
| F                        | 337.860                  | 214.957        |

**Table S7**

Regression analysis in group of life style.

| Variable | Standardized coefficient |             |
|----------|--------------------------|-------------|
|          | Smoking                  | Not smoking |

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|                          |          |          |
|--------------------------|----------|----------|
| Flood risk knowledge     | 0.815*** | 0.831*** |
| Flood risk worry         | 0.093*   | 0.063*** |
| Government trust         | 0.118*** | 0.086*** |
| Flood disaster education | 0.111*** | 0.041*   |
| Flood experience         | -0.015   | 0.009    |
| R <sup>2</sup>           | 0.815    | 0.784    |
| Adjusted R <sup>2</sup>  | 0.808    | 0.782    |
| F                        | 116.896  | 429.389  |

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## Regression analysis of flood preparedness

**Table S8**

Regression analysis of risk perception group.

| Variable                 | Standardized coefficient |                     |
|--------------------------|--------------------------|---------------------|
|                          | High risk perception     | Low risk perception |
| Threat appraisal         | 0.226***                 | 0.309**             |
| Flood risk knowledge     | 0.103***                 | 0.039               |
| Flood risk worry         | 0.162***                 | -0.060              |
| Government trust         | 0.123*                   | 0.126               |
| Flood disaster education | 0.213**                  | 0.060               |
| Flood experience         | -0.171                   | 0.051               |
| R <sup>2</sup>           | 0.166                    | 0.119               |
| Adjusted R <sup>2</sup>  | 0.158                    | 0.083               |
| F                        | 18.984                   | 3.300               |

**Table S9**

Regression analysis of response intention group.

| Variable                 | Standardized coefficient |                        |
|--------------------------|--------------------------|------------------------|
|                          | High response intention  | Low response intention |
| Threat appraisal         | 0.216***                 | 0.211***               |
| Flood risk knowledge     | 0.217***                 | 0.082                  |
| Flood risk worry         | 0.069                    | 0.097                  |
| Government trust         | 0.193***                 | 0.172**                |
| Flood disaster education | 0.106*                   | 0.067                  |
| Flood experience         | -0.112*                  | -0.006                 |
| R <sup>2</sup>           | 0.249                    | 0.120                  |
| Adjusted R <sup>2</sup>  | 0.234                    | 0.107                  |
| F                        | 16.906                   | 9.172                  |

**Table S10**

Regression analysis in gender group.

| Variable                 | Standardized coefficient |          |
|--------------------------|--------------------------|----------|
|                          | Males                    | Females  |
| Threat appraisal         | 0.263***                 | 0.154*** |
| Flood risk knowledge     | 0.192**                  | 0.090    |
| Flood risk worry         | 0.028                    | 0.089    |
| Government trust         | 0.240***                 | 0.141**  |
| Flood disaster education | 0.044                    | 0.123*   |
| Flood experience         | -0.060                   | -0.075   |
| R <sup>2</sup>           | 0.272                    | 0.135    |
| Adjusted R <sup>2</sup>  | 0.258                    | 0.122    |

|   |        |        |
|---|--------|--------|
| F | 19.665 | 10.569 |
|---|--------|--------|

**Table S11**

Regression analysis in age group.

| Variable                 | Standardized coefficient |           |
|--------------------------|--------------------------|-----------|
|                          | Elder                    | Non-elder |
| Threat appraisal         | 0.237*                   | 0.217***  |
| Flood risk knowledge     | 0.206                    | 0.136**   |
| Flood risk worry         | -0.062                   | 0.083*    |
| Government trust         | 0.319**                  | 0.155***  |
| Flood disaster education | -0.081                   | 0.096*    |
| Flood experience         | -0.050                   | -0.086*   |
| R <sup>2</sup>           | 0.252                    | 0.186     |
| Adjusted R <sup>2</sup>  | 0.197                    | 0.178     |
| F                        | 4.560                    | 24.446    |

**Table S12**

Regression analysis in group of education level.

| Variable                 | Standardized coefficient |                     |
|--------------------------|--------------------------|---------------------|
|                          | High education level     | Low education level |
| Threat appraisal         | 0.276***                 | 0.180***            |
| Flood risk knowledge     | 0.065                    | 0.226***            |
| Flood risk worry         | 0.088*                   | 0.036               |
| Government trust         | 0.152**                  | 0.205***            |
| Flood disaster education | 0.085                    | 0.049               |
| Flood experience         | -0.102*                  | -0.011              |
| R <sup>2</sup>           | 0.199                    | 0.191               |
| Adjusted R <sup>2</sup>  | 0.187                    | 0.176               |
| F                        | 17.144                   | 12.194              |

**Table S13**

Regression analysis in group of living time.

| Variable                 | Standardized coefficient |        |
|--------------------------|--------------------------|--------|
|                          | Long                     | Short  |
| Threat appraisal         | 0.204***                 | 0.352* |
| Flood risk knowledge     | 0.180***                 | -0.059 |
| Flood risk worry         | 0.076                    | -0.113 |
| Government trust         | 0.169***                 | -0.017 |
| Flood disaster education | 0.102*                   | 0.031  |
| Flood experience         | -0.005                   | -0.209 |
| R <sup>2</sup>           | 0.184                    | 0.161  |
| Adjusted R <sup>2</sup>  | 0.171                    | 0.061  |
| F                        | 14.018                   | 1.602  |

**Table S14**

Regression analysis in group of health condition.

| Variable                 | Standardized coefficient |          |
|--------------------------|--------------------------|----------|
|                          | Bad                      | Good     |
| Threat appraisal         | 0.602                    | 0.172*** |
| Flood risk knowledge     | 0.292                    | 0.127**  |
| Flood risk worry         | -0.125                   | 0.105*** |
| Government trust         | 0.394                    | 0.192*** |
| Flood disaster education | -0.246                   | 0.078*   |
| Flood experience         | 0.016                    | -0.091*  |
| R <sup>2</sup>           | 0.531                    | 0.170    |
| Adjusted R <sup>2</sup>  | 0.219                    | 0.161    |
| F                        | 1.700                    | 20.897   |

**Table S15**

Regression analysis in group of exercising situation.

| Variable                 | Standardized coefficient |                |
|--------------------------|--------------------------|----------------|
|                          | Regular exercising       | Not exercising |
| Threat appraisal         | 0.208                    | 0.207***       |
| Flood risk knowledge     | 0.137*                   | 0.147**        |
| Flood risk worry         | 0.045                    | 0.108          |
| Government trust         | 0.218**                  | 0.116***       |
| Flood disaster education | 0.026                    | 0.147          |
| Flood experience         | -0.048                   | -0.113*        |
| R <sup>2</sup>           | 0.175                    | 0.214          |
| Adjusted R <sup>2</sup>  | 0.164                    | 0.198          |
| F                        | 15.750                   | 12.692         |

**Table S16**

Regression analysis in group of life style.

| Variable                 | Standardized coefficient |             |
|--------------------------|--------------------------|-------------|
|                          | Smoking                  | Not smoking |
| Threat appraisal         | 0.159***                 | 0.229***    |
| Flood risk knowledge     | 0.210**                  | 0.119*      |
| Flood risk worry         | 0.103                    | 0.064*      |
| Government trust         | 0.238***                 | 0.161       |
| Flood disaster education | 0.076                    | 0.076*      |
| Flood experience         | -0.072                   | -0.078*     |
| R <sup>2</sup>           | 0.246                    | 0.171       |
| Adjusted R <sup>2</sup>  | 0.211                    | 0.163       |
| F                        | 7.165                    | 20.374      |

## Analysis results of influence path

**Table S17**

Regression results of path analysis (health condition – flood preparedness).

| Variable                 | M: Response intention |        |          |        |        |        | Y: Flood preparedness |        |         |        |        |        |
|--------------------------|-----------------------|--------|----------|--------|--------|--------|-----------------------|--------|---------|--------|--------|--------|
|                          | $\beta$               | SE     | t        | p      | LLCI   | ULCI   | $\beta$               | SE     | t       | p      | LLCI   | ULCI   |
| X: Threat appraisal      | 0.3969                | 0.0455 | 8.7262   | 0.0000 | 0.3076 | 0.4862 | 0.3128                | 0.0449 | 6.9724  | 0.0000 | 0.2247 | 0.4009 |
| M:<br>Response intention | —                     | —      | —        | —      | —      | —      | 0.1737                | 0.0344 | 5.0540  | 0.0000 | 0.1062 | 0.2412 |
| W:<br>Health condition   | —                     | —      | —        | —      | —      | —      | 0.0873                | 0.0325 | 2.6833  | 0.0075 | 0.0234 | 0.1512 |
| X×W                      | —                     | —      | —        | —      | —      | —      | 0.1090                | 0.0501 | -2.1774 | 0.0298 | 0.2074 | 0.0107 |
| Intercept                | 2.8680                | 0.0277 | 103.6208 | 0.0000 | 2.8137 | 2.9223 | 3.5593                | 0.1020 | 34.9055 | 0.0000 | 3.3591 | 3.7595 |
| R <sup>2</sup>           |                       |        |          |        |        |        | 0.1458                |        |         |        |        |        |
| F                        |                       |        |          |        |        |        | 31.2232               |        |         |        |        |        |
| p                        |                       |        |          |        |        |        | p<0.001               |        |         |        |        |        |

**Moderating effect of W on X and Y:**

|      | Health condition | Effect | se    | t      | p     | LLCI  | ULCI  |
|------|------------------|--------|-------|--------|-------|-------|-------|
| M-SD | -0.8010          | .4002  | .0612 | 6.5424 | .0000 | .2801 | .5202 |
| 0    | .0000            | .3128  | .0449 | 6.9724 | .0000 | .2247 | .4009 |
| M+SD | .6879            | .2378  | .0557 | 4.2727 | .0000 | .1285 | .3471 |

**Indirect effect(s) of X on Y:**

| Variable           | Effect | BootSE | BootLLCI | BootULCI |
|--------------------|--------|--------|----------|----------|
| Response intention | .0689  | .0158  | .0402    | .1031    |

**Partially standardized indirect effect(s) of X on Y:**

| Variable           | Effect | BootSE | BootLLCI | BootULCI |
|--------------------|--------|--------|----------|----------|
| Response intention | .0913  | .0202  | .0546    | .1345    |

**Completely standardized indirect effect(s) of X on Y:**

| Variable           | Effect | BootSE | BootLLCI | BootULCI |
|--------------------|--------|--------|----------|----------|
| Response intention | .0556  | .0123  | .0330    | .0816    |

**Note: independent variable (X), dependent variable (Y), mediator variable (M),**

**moderator variable (W).**

**Table S18**

Regression results of path analysis (education level – flood preparedness).

| Variable              | M: Response intention |        |          |        |        |        | Y: Flood preparedness |        |         |        |        |        |
|-----------------------|-----------------------|--------|----------|--------|--------|--------|-----------------------|--------|---------|--------|--------|--------|
|                       | $\beta$               | SE     | t        | p      | LLCI   | ULCI   | $\beta$               | SE     | t       | p      | LLCI   | ULCI   |
| X: Threat appraisal   | 0.3969                | 0.0455 | 8.7262   | 0.0000 | 0.3076 | 0.4862 | 0.3342                | 0.0446 | 7.4883  | 0.0000 | 0.2466 | 0.4218 |
| M: Response intention | —                     | —      | —        | —      | —      | —      | 0.1776                | 0.0346 | 5.1382  | 0.0000 | 0.1097 | 0.2455 |
| W: Education level    | —                     | —      | —        | —      | —      | —      | 0.0587                | 0.0238 | 2.4703  | 0.0137 | 0.0121 | 0.1054 |
| X×W                   | —                     | —      | —        | —      | —      | —      | 0.1119                | 0.0388 | 2.8852  | 0.0040 | 0.0358 | 0.1880 |
| Intercept             | 2.8680                | 0.0277 | 103.6208 | 0.0000 | 2.8137 | 2.9223 | 3.5442                | 0.1025 | 34.5865 | 0.0000 | 3.3430 | 3.7453 |
| R <sup>2</sup>        | 0.0939                |        |          |        |        |        | 0.1459                |        |         |        |        |        |
| F                     | 76.1473               |        |          |        |        |        | 31.2649               |        |         |        |        |        |
| p                     | p<0.001               |        |          |        |        |        | p<0.001               |        |         |        |        |        |

**Moderating effect of W on X and Y:**

|      | Education level | Effect | se    | t      | p     | LLCI  | ULCI  |
|------|-----------------|--------|-------|--------|-------|-------|-------|
| M-SD | -1.1000         | .2111  | .0595 | 3.5472 | .0004 | .0943 | .3279 |
| 0    | .0000           | .3342  | .0446 | 7.4883 | .0000 | .2466 | .4218 |
| M+SD | 1.1000          | .4573  | .0639 | 7.1570 | .0000 | .3318 | .5827 |

**Indirect effect(s) of X on Y:**

| Variable           | Effect | BootSE | BootLLCI | BootULCI |
|--------------------|--------|--------|----------|----------|
| Response intention | .0705  | .0162  | .0413    | .1048    |

**Partially standardized indirect effect(s) of X on Y:**

| Variable           | Effect | BootSE | BootLLCI | BootULCI |
|--------------------|--------|--------|----------|----------|
| Response intention | .0933  | .0207  | .0554    | .1367    |

**Completely standardized indirect effect(s) of X on Y:**

| Variable           | Effect | BootSE | BootLLCI | BootULCI |
|--------------------|--------|--------|----------|----------|
| Response intention | .0568  | .0126  | .0338    | .0828    |



**Table S19**

Regression results of path analysis (gender – threat appraisal– flood appraisal).

| Variable              | M: Response intention |        |          |        |        |        | Y: Flood preparedness |        |         |        |        |        |
|-----------------------|-----------------------|--------|----------|--------|--------|--------|-----------------------|--------|---------|--------|--------|--------|
|                       | $\beta$               | SE     | t        | p      | LLCI   | ULCI   | $\beta$               | SE     | t       | p      | LLCI   | ULCI   |
| X: Threat appraisal   | 0.3969                | 0.0455 | 8.7262   | 0.0000 | 0.3076 | 0.4862 | 0.3051                | 0.0445 | 6.8628  | 0.0000 | 0.2178 | 0.3924 |
| M: Response intention | —                     | —      | —        | —      | —      | —      | 0.1786                | 0.034  | 5.2488  | 0.0000 | 0.1118 | 0.2454 |
| W: Gender             | —                     | —      | —        | —      | —      | —      | 0.2376                | 0.0515 | 4.6156  | 0.0000 | 0.1365 | 0.3386 |
| X×W                   | —                     | —      | —        | —      | —      | —      | 0.2146                | 0.0839 | -2.5569 | 0.0108 | 0.3794 | 0.0498 |
| Intercept             | 2.868                 | 0.0277 | 103.6208 | 0.0000 | 2.8137 | 2.9223 | 3.5399                | 0.1009 | 35.0902 | 0.0000 | 3.3418 | 3.7379 |
| R <sup>2</sup>        |                       |        |          |        |        |        | 0.1628                |        |         |        |        |        |
| F                     |                       |        |          |        |        |        | 35.5789               |        |         |        |        |        |
| p                     |                       |        |          |        |        |        | p<0.001               |        |         |        |        |        |

**Moderating effect of W on X and Y:**

|      | Gender | Effect | se    | t      | p     | LLCI  | ULCI  |
|------|--------|--------|-------|--------|-------|-------|-------|
| M-SD | -.5617 | .4257  | .0605 | 7.0385 | .0000 | .3069 | .5444 |
| M+SD | .4383  | .2111  | .0613 | 3.4451 | .0006 | .0908 | .3313 |

**Indirect effect(s) of X on Y:**

| Variable           | Effect | BootSE | BootLLCI | BootULCI |
|--------------------|--------|--------|----------|----------|
| Response intention | .0709  | .0161  | .0409    | .1052    |

**Partially standardized indirect effect(s) of X on Y:**

| Variable           | Effect | BootSE | BootLLCI | BootULCI |
|--------------------|--------|--------|----------|----------|
| Response intention | .0939  | .0205  | .0552    | .1365    |

**Completely standardized indirect effect(s) of X on Y:**

| Variable           | Effect | BootSE | BootLLCI | BootULCI |
|--------------------|--------|--------|----------|----------|
| Response intention | .0572  | .0125  | .0335    | .0831    |

**Table S20**

Regression results of path analysis (gender – coping appraisal – flood appraisal).

| Variable              | M: Response intention |        |          |        |        |        | Y: Flood preparedness |        |         |        |        |        |
|-----------------------|-----------------------|--------|----------|--------|--------|--------|-----------------------|--------|---------|--------|--------|--------|
|                       | $\beta$               | SE     | t        | p      | LLCI   | ULCI   | $\beta$               | SE     | t       | p      | LLCI   | ULCI   |
| X: Coping appraisal   | 0.447                 | 0.0217 | 20.5714  | 0.0000 | 0.4043 | 0.4897 | 0.1318                | 0.0308 | 4.2835  | 0.0000 | 0.0714 | 0.1922 |
| M: Response intention | —                     | —      | —        | —      | —      | —      | 0.1471                | 0.0415 | 3.5446  | 0.0004 | 0.0656 | 0.2286 |
| W: Gender             | —                     | —      | —        | —      | —      | —      | 0.2612                | 0.0525 | 4.9764  | 0.0000 | 0.1582 | 0.3642 |
| X×W                   | —                     | —      | —        | —      | —      | —      | 0.1539                | 0.0491 | -3.1354 | 0.0018 | 0.2502 | 0.0575 |
| Intercept             | 2.868                 | 0.0232 | 123.8185 | 0.0000 | 2.8225 | 2.9135 | 3.6249                | 0.1219 | 29.7248 | 0.0000 | 3.3855 | 3.8643 |
| R <sup>2</sup>        |                       |        |          |        |        |        | 0.1314                |        |         |        |        |        |
| F                     |                       |        |          |        |        |        | 27.6881               |        |         |        |        |        |
| p                     |                       |        |          |        |        |        | p<0.001               |        |         |        |        |        |

**Moderating effect of W on X and Y:**

|      | Gender | Effect | se    | t      | p     | LLCI   | ULCI  |
|------|--------|--------|-------|--------|-------|--------|-------|
| M-SD | -.5617 | .2182  | .0396 | 5.5135 | .0000 | .1405  | .2959 |
| M+SD | .4383  | .0644  | .0390 | 1.6519 | .0990 | -.0121 | .1409 |

**Indirect effect(s) of X on Y:**

| Variable           | Effect | BootSE | BootLLCI | BootULCI |
|--------------------|--------|--------|----------|----------|
| Response intention | .0658  | .0184  | .0305    | .1017    |

**Partially standardized indirect effect(s) of X on Y:**

| Variable           | Effect | BootSE | BootLLCI | BootULCI |
|--------------------|--------|--------|----------|----------|
| Response intention | .0871  | .0242  | .0404    | .1346    |

**Completely standardized indirect effect(s) of X on Y:**

| Variable           | Effect | BootSE | BootLLCI | BootULCI |
|--------------------|--------|--------|----------|----------|
| Response intention | .0929  | .0259  | .0430    | .1440    |

**Table S21**

Regression results of path analysis (health condition – preventive behavior).

| Variable                    | M: Response intention |        |          |        |        |        | Y: Preventive behavior |        |         |        |        |        |
|-----------------------------|-----------------------|--------|----------|--------|--------|--------|------------------------|--------|---------|--------|--------|--------|
|                             | $\beta$               | SE     | t        | p      | LLCI   | ULCI   | $\beta$                | SE     | t       | p      | LLCI   | ULCI   |
| 0.0000                      | 0.3969                | 0.0455 | 8.7262   | 0.0000 | 0.3076 | 0.4862 | 0.3455                 | 0.0512 | 6.7474  | 0.0000 | 0.245  | 0.4461 |
| M:<br>Response<br>intention | —                     | —      | —        | —      | —      | —      | 0.2144                 | 0.0392 | 5.4659  | 0.0000 | 0.1374 | 0.2914 |
| W: Health<br>condition      | —                     | —      | —        | —      | —      | —      | 0.1251                 | 0.0371 | 3.3679  | 0.0008 | 0.0522 | 0.198  |
| X×W                         | —                     | —      | —        | —      | —      | —      | 0.1464                 | 0.0572 | -2.5604 | 0.0107 | 0.2586 | 0.0341 |
| 0.0000                      | 2.868                 | 0.0277 | 103.6208 | 0.0000 | 2.8137 | 2.9223 | 3.2423                 | 0.1164 | 27.8567 | 0.0000 | 3.0138 | 3.4708 |
| R <sup>2</sup>              |                       |        |          |        |        |        | 0.1558                 |        |         |        |        |        |
| F                           |                       |        |          |        |        |        | 33.7706                |        |         |        |        |        |
| p                           |                       |        |          |        |        |        | p<0.001                |        |         |        |        |        |

**Moderating effect of W on X and Y:**

|      | Health condition | Effect | se    | t      | p     | LLCI  | ULCI  |
|------|------------------|--------|-------|--------|-------|-------|-------|
| M-SD | -.8010           | .4628  | .0698 | 6.6286 | .0000 | .3257 | .5998 |
| 0    | .0000            | .3455  | .0512 | 6.7474 | .0000 | .2450 | .4461 |
| M+SD | .6879            | .2448  | .0635 | 3.8542 | .0001 | .1201 | .3696 |

**Indirect effect(s) of X on Y:**

| Variable           | Effect | BootSE | BootLLCI | BootULCI |
|--------------------|--------|--------|----------|----------|
| Response intention | .0851  | .0179  | .0523    | .1216    |

**Partially standardized indirect effect(s) of X on Y:**

| Variable           | Effect | BootSE | BootLLCI | BootULCI |
|--------------------|--------|--------|----------|----------|
| Response intention | .0981  | .0199  | .0609    | .1375    |

**Completely standardized indirect effect(s) of X on Y:**

| Variable           | Effect | BootSE | BootLLCI | BootULCI |
|--------------------|--------|--------|----------|----------|
| Response intention | .0598  | .0121  | .0369    | .0837    |

**Table S22**

Regression results of path analysis (education level – preventive behavior).

| Variable              | M: Response intention |        |          |        |        |        | Y: Preventive behavior |        |        |        |        |        |
|-----------------------|-----------------------|--------|----------|--------|--------|--------|------------------------|--------|--------|--------|--------|--------|
|                       | $\beta$               | SE     | t        | p      | LLCI   | ULCI   | $\beta$                | SE     | t      | p      | LLCI   | ULCI   |
| X: Threat appraisal   | 0.3969                | 0.0455 | 8.7262   | 0.0000 | 0.3076 | 0.4862 | 0.3727                 | 0.0511 | 7.2866 | 0.0000 | 0.2723 | 0.4731 |
| M: Response intention | —                     | —      | —        | —      | —      | —      | 0.2209                 | 0.0396 | 5.575  | 0.0000 | 0.1431 | 0.2986 |
| W: Education level    | —                     | —      | —        | —      | —      | —      | 0.0761                 | 0.0272 | 2.7947 | 0.0053 | 0.0226 | 0.1296 |
| X×W                   | —                     | —      | —        | —      | —      | —      | 0.1159                 | 0.0445 | 2.607  | 0.0093 | 0.0286 | 0.2032 |
| Intercept             | 2.868                 | 0.0277 | 103.6208 | 0.0000 | 2.8137 | 2.9223 | 3.2177                 | 0.1174 | 27.396 | 0.0000 | 2.9871 | 3.4482 |
| R <sup>2</sup>        | 0.0939                |        |          |        |        |        | 0.1489                 |        |        |        |        |        |
| F                     | 76.1473               |        |          |        |        |        | 32.0234                |        |        |        |        |        |
| p                     | p<0.001               |        |          |        |        |        | p<0.001                |        |        |        |        |        |

**Moderating effect of W on X and Y:**

|      | Education level | Effect | se    | t      | p     | LLCI  | ULCI  |
|------|-----------------|--------|-------|--------|-------|-------|-------|
| M-SD | -1.1000         | .2452  | .0682 | 3.5954 | .0003 | .1113 | .3791 |
| 0    | .0000           | .3727  | .0511 | 7.2866 | .0000 | .2723 | .4731 |
| M+SD | 1.1000          | .5002  | .0732 | 6.8304 | .0000 | .3564 | .6440 |

**Indirect effect(s) of X on Y:**

| Variable           | Effect | BootSE | BootLLCI | BootULCI |
|--------------------|--------|--------|----------|----------|
| Response intention | .0877  | .0184  | .0539    | .1263    |

**Partially standardized indirect effect(s) of X on Y:**

| Variable           | Effect | BootSE | BootLLCI | BootULCI |
|--------------------|--------|--------|----------|----------|
| Response intention | .1011  | .0205  | .0633    | .1434    |

**Completely standardized indirect effect(s) of X on Y:**

| Variable           | Effect | BootSE | BootLLCI | BootULCI |
|--------------------|--------|--------|----------|----------|
| Response intention | .0615  | .0125  | .0383    | .0872    |

**Table S23**

Regression results of path analysis (gender – threat appraisal – adaptive behavior).

| Variable              | M: Response intention |        |          |        |        |        | Y: Adaptive behavior |        |         |        |        |        |
|-----------------------|-----------------------|--------|----------|--------|--------|--------|----------------------|--------|---------|--------|--------|--------|
|                       | $\beta$               | SE     | t        | p      | LLCI   | ULCI   | $\beta$              | SE     | t       | p      | LLCI   | ULCI   |
| X: Threat appraisal   | 0.3969                | 0.0455 | 8.7262   | 0.0000 | 0.3076 | 0.4862 | 0.2671               | 0.0482 | 5.5477  | 0.0000 | 0.1726 | 0.3617 |
| M: Response intention | —                     | —      | —        | —      | —      | —      | 0.1374               | 0.0369 | 3.7269  | 0.0002 | 0.0650 | 0.2097 |
| W: Gender             | —                     | —      | —        | —      | —      | —      | 0.1994               | 0.0557 | 3.5772  | 0.0004 | 0.0900 | 0.3089 |
| X×W                   | —                     | —      | —        | —      | —      | —      | 0.2241               | 0.0909 | -2.4654 | 0.0139 | 0.4026 | 0.0457 |
| Intercept             | 2.8680                | 0.0277 | 103.6208 | 0.0000 | 2.8137 | 2.9223 | 3.8608               | 0.1093 | 35.3346 | 0.0000 | 3.6463 | 4.0753 |
| R <sup>2</sup>        |                       |        |          |        |        |        | 0.1072               |        |         |        |        |        |
| F                     |                       |        |          |        |        |        | 21.9689              |        |         |        |        |        |
| p                     |                       |        |          |        |        |        | p<0.001              |        |         |        |        |        |

**Moderating effect of W on X and Y:**

|      | Gender | Effect | se    | t      | p     | LLCI  | ULCI  |
|------|--------|--------|-------|--------|-------|-------|-------|
| M-SD | -.5617 | .3931  | .0655 | 6.0004 | .0000 | .2645 | .5217 |
| M+SD | .4383  | .1689  | .0664 | 2.5456 | .0111 | .0386 | .2992 |

**Indirect effect(s) of X on Y:**

| Variable           | Effect | BootSE | BootLLCI | BootULCI |
|--------------------|--------|--------|----------|----------|
| Response intention | .0545  | .0160  | .0249    | .0888    |

**Partially standardized indirect effect(s) of X on Y:**

| Variable           | Effect | BootSE | BootLLCI | BootULCI |
|--------------------|--------|--------|----------|----------|
| Response intention | .0688  | .0198  | .0320    | .1113    |

**Completely standardized indirect effect(s) of X on Y:**

| Variable           | Effect | BootSE | BootLLCI | BootULCI |
|--------------------|--------|--------|----------|----------|
| Response intention | .0419  | .0120  | .0195    | .0676    |

**Table S24**

Regression results of path analysis (gender – coping appraisal – preventive behavior).

| Variable              | M: Response intention |        |          |        |        |        | Y: Preventive behavior |        |         |        |        |        |
|-----------------------|-----------------------|--------|----------|--------|--------|--------|------------------------|--------|---------|--------|--------|--------|
|                       | $\beta$               | SE     | t        | p      | LLCI   | ULCI   | $\beta$                | SE     | t       | p      | LLCI   | ULCI   |
| X: Coping appraisal   | 0.4470                | 0.0217 | 20.5714  | 0.0000 | 0.4043 | 0.4897 | 0.0950                 | 0.0356 | 2.6698  | 0.0078 | 0.0252 | 0.1649 |
| M: Response intention | —                     | —      | —        | —      | —      | —      | 0.2270                 | 0.0480 | 4.7266  | 0.0000 | 0.1327 | 0.3213 |
| W: Gender             | —                     | —      | —        | —      | —      | —      | 0.2967                 | 0.0607 | 4.8851  | 0.0000 | 0.1774 | 0.4159 |
| X×W                   | —                     | —      | —        | —      | —      | —      | 0.1306                 | 0.0568 | -2.2997 | 0.0217 | 0.2420 | 0.0191 |
| Intercept             | 2.8680                | 0.0232 | 123.8185 | 0.0000 | 2.8225 | 2.9135 | 3.1939                 | 0.1411 | 22.6373 | 0.0000 | 2.9169 | 3.4709 |
| R <sup>2</sup>        |                       |        |          |        |        |        | 0.1181                 |        |         |        |        |        |
| F                     |                       |        |          |        |        |        | 24.4996                |        |         |        |        |        |
| p                     |                       |        |          |        |        |        | p<0.001                |        |         |        |        |        |

**Moderating effect of W on X and Y:**

|      | Gender | Effect | se    | t      | p     | LLCI   | ULCI  |
|------|--------|--------|-------|--------|-------|--------|-------|
| M-SD | -.5617 | .1684  | .0458 | 3.6770 | .0003 | .0785  | .2583 |
| M+SD | .4383  | .0378  | .0451 | .8389  | .4018 | -.0507 | .1263 |

**Indirect effect(s) of X on Y:**

| Variable           | Effect | BootSE | BootLLCI | BootULCI |
|--------------------|--------|--------|----------|----------|
| Response intention | .1015  | .0211  | .0612    | .1433    |

**Partially standardized indirect effect(s) of X on Y:**

| Variable           | Effect | BootSE | BootLLCI | BootULCI |
|--------------------|--------|--------|----------|----------|
| Response intention | .1170  | .0239  | .0709    | .1645    |

**Completely standardized indirect effect(s) of X on Y:**

| Variable           | Effect | BootSE | BootLLCI | BootULCI |
|--------------------|--------|--------|----------|----------|
| Response intention | .1248  | .0256  | .0756    | .1755    |

# Flood Risk Perception Questionnaire

Questionnaire Number:

Home Address:

Survey Date:    Year    Month    Day

Investigator Name:

Hello! Global warming has become an important topic of concern to people in the world today. In order to understand the public risk perception of flood disasters, research team of Jiangsu University is conducting a public welfare survey. The information collected by this survey is used for scientific research purposes only and we will keep the survey data strictly confidential. Thank you very much for support and help!

## 1. Flood risk perception

### 1.1 Threat appraisal

1. Do you care about floods and their impacts?

1                      2                      3                      4                      5  
least                      less                      generally                      more                      most

2. Do you understand the causes of flooding?

1                      2                      3                      4                      5  
least                      less                      generally                      more                      most

3. How much do you think floods will affect you?

1                      2                      3                      4                      5  
least                      less                      generally                      more                      most

4. Do you think floods will cause damage to urban infrastructure after occurrence?

Yes       No

5. Do you think the occurrence of floods is seasonal?

Yes       No

### 1.2 Coping appraisal

1. Do you agree that there are a number of measures that humanity can take to mitigate the effects of floods?

1                      2                      3                      4                      5  
least                      less                      generally                      more                      most

2. How well do you know about evacuation routes within a 3 km radius of your home address?

1                      2                      3                      4                      5  
 least                      less                      generally                      more                      most

3. How well you know how often floods occur within a 3 km radius of your home address?

1                      2                      3                      4                      5  
 least                      less                      generally                      more                      most

4. How well you know about the intensity of a flood disaster within a 3 km radius of your home address?

1                      2                      3                      4                      5  
 least                      less                      generally                      more                      most

5. How well you know about the flood-prone areas within a 3 km radius of your home address?

1                      2                      3                      4                      5  
 least                      less                      generally                      more                      most

6. How well do you know about the disaster losses of flood disasters within a 3 km radius of your home address?

1                      2                      3                      4                      5  
 least                      less                      generally                      more                      most

## 2. Flood preparedness

### 2.1 Adaptive behavior

The following are some specific response behaviors during flood events. 1-5 is least to most. Please draw on the corresponding option (check  $\surd$ ).

| Number | Question   | 1 | 2 | 3 | 4 | 5 |
|--------|--|---|---|---|---|---|
| 1      | Reduce going out during floods                         |   |   |   |   |   |
| 2      | Pay attention to flood information                     |   |   |   |   |   |
| 3      | Extra stock with some food and drinking water          |   |   |   |   |   |
| 4      | Disinfect your accommodation                           |   |   |   |   |   |
| 5      | Learn about your local government's flood control plan |   |   |   |   |   |



|   |   |  |  |  |  |  |
|---|---|--|--|--|--|--|
| 6 | When the disaster is serious, turn off the gas valve and the power switch |  |  |  |  |  |
| 7 | Avoid power facilities such as high-voltage power lines                   |  |  |  |  |  |
| 8 | Seek medical attention in time if you are unwell                          |  |  |  |  |  |

## (2) Preventive behavior

The following are some specific response behaviors during flood events. 1-5 is least to most, and please draw on the corresponding option (check  $\checkmark$ ).

| Number | Question   | 1 | 2 | 3 | 4 | 5 |
|--------|--|---|---|---|---|---|
| 1      | Regularly check the drainage system in your home                           |   |   |   |   |   |
| 2      | Develop household flood response plans                                     |   |   |   |   |   |
| 3      | Emergency supplies such as first aid kits are available                    |   |   |   |   |   |
| 4      | Listen to the weather forecast every day and follow flood warning messages |   |   |   |   |   |
| 5      | Conduct flood hazard avoidance exercises                                   |   |   |   |   |   |
| 6      | Wash your hands frequently and pay attention to personal hygiene           |   |   |   |   |   |
| 7      | Place valuables in a place that will not be flooded                        |   |   |   |   |   |
| 8      | Purchase flood disaster insurance  |   |   |   |   |   |

## 3. Response intention

### 3.1 Flood experience

1. Have you experienced flooding in the last five years?

Yes  no?

### 3.2 Flood disaster education

1. If you have received the following forms of flood disaster education, please draw  $\checkmark$  on the corresponding options, and you can select more than one:

|                     |                     |                    |           |                     |
|---------------------|---------------------|--------------------|-----------|---------------------|
| Classroom education | Promotional posters | Television program | Broadcast | Network information |
|---------------------|---------------------|--------------------|-----------|---------------------|

|  |  |  |  |  |
|--|--|--|--|--|
|  |  |  |  |  |
|--|--|--|--|--|

### 3.3 Flood risk worry

Here are a few questions that investigate your mood in the face of floods, and then indicate the extent of the question after each question, based on how you actually feel about the flood disaster.

1. Are you worried about floods?

- Yes       No

If yes, then choose what you will do because of worry

- Learn the knowledge of flood avoidance
- Purchase flood disaster insurance
- Conduct flood disaster avoidance exercises
- Formulate household flood response plans
- Prepare emergency supplies such as first aid kits
- Pay attention to flood early warning information
- Learn about your local government's flood control plan

### 3.4 Flood risk knowledge

Here is some knowledge related to local flood disasters, and please indicate how well you know about local flood disasters. 1-5 is least to most. Please draw √ on the corresponding option.

| Number | Question  | 1 | 2 | 3 | 4 | 5 |
|--------|---|---|---|---|---|---|
| 1      | How well do you know how often floods occur in your city?                             |   |   |   |   |   |
| 2      | How well do you know the intensity of flooding in your city?                          |   |   |   |   |   |
| 3      | How well do you know about the flood-prone areas of your city?                        |   |   |   |   |   |
| 4      | How well do you know about the disaster losses of flood disasters in your city?       |   |   |   |   |   |
| 5      | How well do you know about disaster policies proposed by the government of your city? |   |   |   |   |   |

### 3.5 Government trust

1. Do you understand the government's early warning mechanism for flood disasters?

1                      2                      3                      4                      5

least                      less                      generally                      more                      most

2. Do you know the government's emergency response to floods?

1                      2                      3                      4                      5

least                      less                      generally                      more                      most

3. Do you know about the government's campaign to prevent floods?

1                      2                      3                      4                      5

least                      less                      generally                      more                      most

4. Do you know how to contact the government flood response department?

1                      2                      3                      4                      5

least                      less                      generally                      more                      most

5. Do you think the government's response to floods has been swift?

1                      2                      3                      4                      5

least                      less                      generally                      more                      most

#### 4. Basic information of respondents

1. Gender:  Male  Female

2. Age: \_\_\_\_\_ years old

3. Height: \_\_\_\_\_ cm, weight: \_\_\_\_\_ kg

5. Your highest level of education:

Elementary school

Junior high

High school

Undergraduate

Postgraduate and above

7. You have lived in the city for \_\_\_\_\_ years.

8. What do you think of your health?

1                      2                      3                      4                      5

Very poor                      Poor                      General                      Good                      Excellent

9. Have you been diagnosed with the following health conditions by the hospital?

(Multiple selections are available).

Hepatitis Cholera Dysentery High Cholesterol

Coronary Heart Disease Angina Myocardial Infarction

Chronic Bronchitis Asthma Other Respiratory Diseases

I have never been diagnosed with these problems

10. Do you smoke?

Yes No

11. Do you have a habit of exercising regularly?

Yes No