Supplementary Material

Variable Description

For *enjoying trolling*, we use two items “To what extent do you enjoy the following: Debating various topics with the intention to irritate/upset others” (Debate_To_Upset) and “To what extent do you enjoy the following: ‘Trolling’” (Enjoy_Trolling) which were measured on a 5-point Likert scale ranging from Not at all to Very much.
For *likelihood to troll*, we have four items: “How likely is it that you would do the following... - Make comments on other people's posts with the only purpose to upset or irritate others?” (Comment_To_Upset), “- Create offensive posts with the only purpose of upsetting or irritating others?” (Offensive_Posts), “- Send people to "shock websites" just for the fun of it.” (Send_ShockWebsites), “Please indicate how much you agree with the following statement: I like to post memes and comments with the intent to aggravate or annoy others” (Post_To_Annoy). All measured with the 5-point Likert scale ranging from Extremely unlikely to Extremely likely (first three items) and Strongly disagree to Strongly agree (fourth item).

Occupational status was measured with two items. First, respondents were asked whether they have a work (yes/no), and if they said “yes”, asked to name the title of their primary job. Since it was an open-ended question, we had to recode filled-in answers into the categories by two coders. To summarize specific job titles into occupation categories, we used ISCO-8 (International Standard Classification of Occupations) scheme. Later, however, made these categories more general as to represent skill levels necessary to do these jobs. We ended up with these categories: Manager, Professional, Clerk/assistant professional, Skilled worker, Unskilled worker, Other occupation, Unemployed.
From the question on the working situation (full-time (one job)/part-time (one job)/part-time (multiple jobs)/other), we created a variable where having multiple part-time positions represents a *precarious working situation.*
Interpersonal support was measured with Interpersonal Support Evaluation List (ISEL), which consists of 40 statements concerning the perceived availability of potential social resources (Cohen & Hoberman, 1983). The ISEL was designed to assess the perceived availability of four separate functions of social support as well as providing an overall support measure:
“This scale is made up of a list of statements each of which may or may not be true about you. For each statement check ‘definitely true’ (codes as 3) if you are sure it is true about you and ‘probably true’ (2) if you think it is true but are not absolutely certain. Similarly, you should check ‘definitely false’ (0) if you are sure the statement is false and ‘probably false’ (1) is you think it is false but are not absolutely certain.
1. There are several people that I trust to help solve my problems.
2. If I needed help fixing an appliance or repairing my car, there is someone who would help me.
3. Most of my friends are more interesting than I am.
4. There is someone who takes pride in my accomplishments.
5. When I feel lonely, there are several people I can talk to.
6. There is no one that I feel comfortable to talking about intimate personal problems.
7. I often meet or talk with family or friends.
8. Most people I know think highly of me.
9. If I needed a ride to the airport very early in the morning, I would have a hard time finding someone to take me.
10. I feel like I’m not always included by my circle of friends.
11. There really is no one who can give me an objective view of how I’m handling my problems.
12. There are several different people I enjoy spending time with.
13. I think that my friends feel that I’m not very good at helping them solve their problems.
14. If I were sick and needed someone (friend, family member, or acquaintance) to take me to the doctor, I would have trouble finding someone.
15. If I wanted to go on a trip for a day (e.g., to the mountains, beach, or country), I would have a hard time finding someone to go with me.
16. If I needed a place to stay for a week because of an emergency (for example, water or electricity out in my apartment or house), I could easily find someone who would put me up.
17. I feel that there is no one I can share my most private worries and fears with.
18. If I were sick, I could easily find someone to help me with my daily chores.
19. There is someone I can turn to for advice about handling problems with my family.

20. I am as good at doing things as most other people are.
21. If I decide one afternoon that I would like to go to a movie that evening, I could easily
find someone to go with me.
22. When I need suggestions on how to deal with a personal problem, I know someone I can
turn to.
23. If I needed an emergency loan of $100, there is someone (friend, relative, or acquaintance) I could get it from.
24. In general, people do not have much confidence in me.
25. Most people I know do not enjoy the same things that I do.
26. There is someone I could turn to for advice about making career plans or changing my
job.
27. I don’t often get invited to do things with others.
28. Most of my friends are more successful at making changes in their lives than I am.
29. If I had to go out of town for a few weeks, it would be difficult to find someone who
would look after my house or apartment (the plants, pets, garden, etc.).
30. There really is no one I can trust to give me good financial advice.
31. If I wanted to have lunch with someone, I could easily find someone to join me.
32. I am more satisfied with my life than most people are with theirs.
33. If I was stranded 10 miles from home, there is someone I could call who would come and
get me.
34. No one I know would throw a birthday party for me.
35. It would be difficult to find someone who would lend me their car for a few hours.
36. If a family crisis arose, it would be difficult to find someone who could give me good
advice about how to handle it.
37. I am closer to my friends than most other people are to theirs.
38. There is at least one person I know whose advice I really trust.
39. If I needed some help in moving to a new house or apartment, I would have a hard time
finding someone to help me.
40. I have a hard time keeping pace with my friends.”

Items that are reverse-coded: 3, 6, 9, 10, 11, 13, 14, 15, 17, 24, 25, 27, 28, 29, 30, 34, 35, 36, 39, 40. The items which comprise the ISEL fall into four 10-item subscales. The "tangible" subscale (items: 2, 9, 14, 16, 18, 23, 29, 33, 35, 39) is intended to measure perceived availability of material aid; the "appraisal" subscale (items: 1,6, 11, 17, 19, 22, 26, 30, 36, 38), the perceived availability of someone to talk to about one's problems; the "self-esteem" subscale (items: 3, 4, 8, 13, 20, 24, 28, 32, 37, 40), the perceived availability of a positive comparison when comparing one's self to others; and the "belonging" subscale (items: 5, 7, 10, 12, 15, 21, 25, 27, 31, 34), the perceived availability of people one can do things with. Subscale independence was maximized by selecting items (from a larger item pool) which were highly correlated with items in their own subscale and at the same time minimally correlated with other subscales.

Regarding *political affiliation*, participants were asked to choose whether they affiliate with different political parties of which we have created a variable with four categories only: Democratic party, Republican party, another political affiliation, or no political affiliation at all. Furthermore, participants were asked to rate the *strength of their affiliation,* i.e. how many political views they share with the party they affiliate with: strong affiliate (share all political views with party), affiliate, somewhat affiliate, neutral (share few political views but support the goals of the party)?

Religion is an open-ended question in the survey, so two coders grouped them manually into different possible categories. Most of the answers were very easy to classify since they explicitly named some known world religion. These categories had to be reduced taking into account their frequencies (combining religions with very small numbers of affiliates, such as Muslims or Buddhism). We remained with Christian, Hindu, other religion, spiritual, nonreligious. To indicate the strength of their *religiosity,* participants were asked to rate the importance of religion or spirituality in their life on a 6-point scale from Very not important (not incorporated in all aspects of my life) to Very Important (incorporated in all aspects of my life).

To control for the person’s general involvement in political matters online (political interest was not available in the survey), we also created a variable of average *percentage of political posts* (self-assessment), with ‘political’ actually capturing both, posting on one’s political beliefs and on religious views (Cronbach’s Alpha = 0.79).

For measuring *empathy*, we used two subscales of the Interpersonal Reactivity Index (IRI) (Davis, 1983), namely perspective taking (PT) and empathic concern (EC) (7 items each). Participants were asked to rate how well particular statements gauging these dimensions describe themselves on a 5-point Likert scale ranging from Does not describe me well to Describes me very well. From the items of both subscales we built an average empathy score. Both subscales represent measures the strongest related to affective empathy, the only real antidotal to trolling, whereas cognitive empathy is pretty well developed by psychopaths, too (Sest & March, 2017). Reliability of this index is 0.73.

„The following statements inquire about your thoughts and feelings in a variety of situations. For each item, indicate how well it describes you.

2. I often have tender, concerned feelings for people less fortunate than me. (EC)
3. I sometimes find it difficult to see things from the "other guy's" point of view. (PT) (-)
4. Sometimes I don't feel very sorry for other people when they are having problems. (EC) (-)
8. I try to look at everybody's side of a disagreement before I make a decision. (PT)
9. When I see someone being taken advantage of, I feel kind of protective towards them. (EC)
11. I sometimes try to understand my friends better by imagining how things look from their perspective. (PT)
14. Other people's misfortunes do not usually disturb me a great deal. (EC) (-)
15. If I'm sure I'm right about something, I don't waste much time listening to other people's arguments. (PT) (-)
18. When I see someone being treated unfairly, I sometimes don't feel very much pity for them. (EC) (-)
20. I am often quite touched by things that I see happen. (EC)
21. I believe that there are two sides to every question and try to look at them both. (PT)
22. I would describe myself as a pretty soft-hearted person. (EC)
25. When I'm upset at someone, I usually try to "put myself in his shoes" for a while. (PT)
28. Before criticizing somebody, I try to imagine how I would feel if I were in their place. (PT)"

Note: (-) denotes item to be scored in reverse fashion.

We also included all the personality traits from *Big5* inventory (John & Srivastava, 1999):

____1. Is talkative
____2. Tends to find fault with others
____3. Does a thorough job
____4. Is depressed, blue
____5. Is original, comes up with new ideas
____6. Is reserved
____7. Is helpful and unselfish with others
____8. Can be somewhat careless
____9. Is relaxed, handles stress well
____10. Is curious about many different things
____11. Is full of energy
____12. Starts quarrels with others
____13. Is a reliable worker
____14. Can be tense
____15. Is ingenious, a deep thinker
____16. Generates a lot of enthusiasm
____17. Has a forgiving nature
____18. Tends to be disorganized
____19. Worries a lot
____20. Has an active imagination
____21. Tends to be quiet
____22. Is generally trusting
____23. Tends to be lazy
____24. Is emotionally stable, not easily upset
____25. Is inventive
____26. Has an assertive personality
____27. Can be cold and aloof
____28. Perseveres until the task is finished
____29. Can be moody
____30. Values artistic, aesthetic experiences
____31. Is sometimes shy, inhibited
____32. Is considerate and kind to almost everyone
____33. Does things efficiently
____34. Remains calm in tense situations
____35. Prefers work that is routine
____36. Is outgoing, sociable

____37. Is sometimes rude to others
____38. Makes plans and follows through with them
____39. Gets nervous easily
____40. Likes to reflect, play with ideas
____41. Has few artistic interests
____42. Likes to cooperate with others
____43. Is easily distracted
____44. Is sophisticated in art, music, or literature

Social media use has been measured with the simple question "To what extent do you use the following social media applications?" (Never to Every day), but we recoded it to differentiate between 'heavy' users and occasional or non-users, defining the former as people who use the medium at least once a week.
Social media comparison is retrieved with two questions: "When comparing yourself to others on social media, to what extent do you focus on people who are better off than you?" (*upward comparison*) and "When comparing yourself to others on social media, to what extent do you focus on people who are worse off than you?" (*downward comparison*). These questions could be responded with the 5-point Likert scale ranging from Not at all to A great deal.
Another important quality of troll's social networks is what percentage of what s/he/they follow/s match her/his/theirs personal beliefs (*percentage of similar groups*) and what percentage do not (*percentage of dissimilar groups*).

We recoded gender to *male* and all others since male gender has been shown to be related to all sorts of cyber-violence (in the form of trolling see: Fichman & Sanfillipo, 2015; Craker & March, 2016; March & Steele, 2020).
Age has a protective effect: The older the person, the less s/he/they is prone to trolling (e.g. Craker & March, 2016).
We measure *race* with three categories (White/Black/other) and expect that in accordance with the literature, whites, Asians and Hispanics (other) to be more correlated to cyber-deviance than Blacks (Holt et al., 2010).
Being an African-American should work similarly as belonging to a sexual minority (*LGBTQAI+*), in other words, they should be less likely to attack others online due to their own victimization experience.

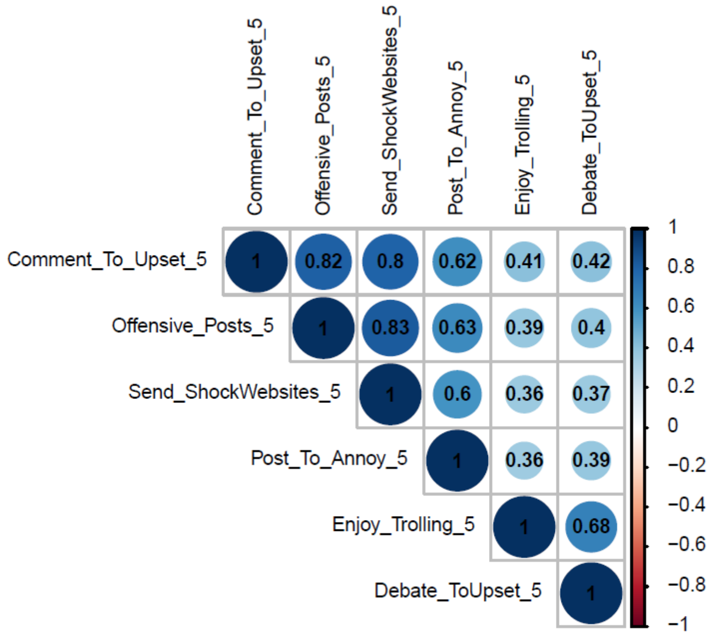
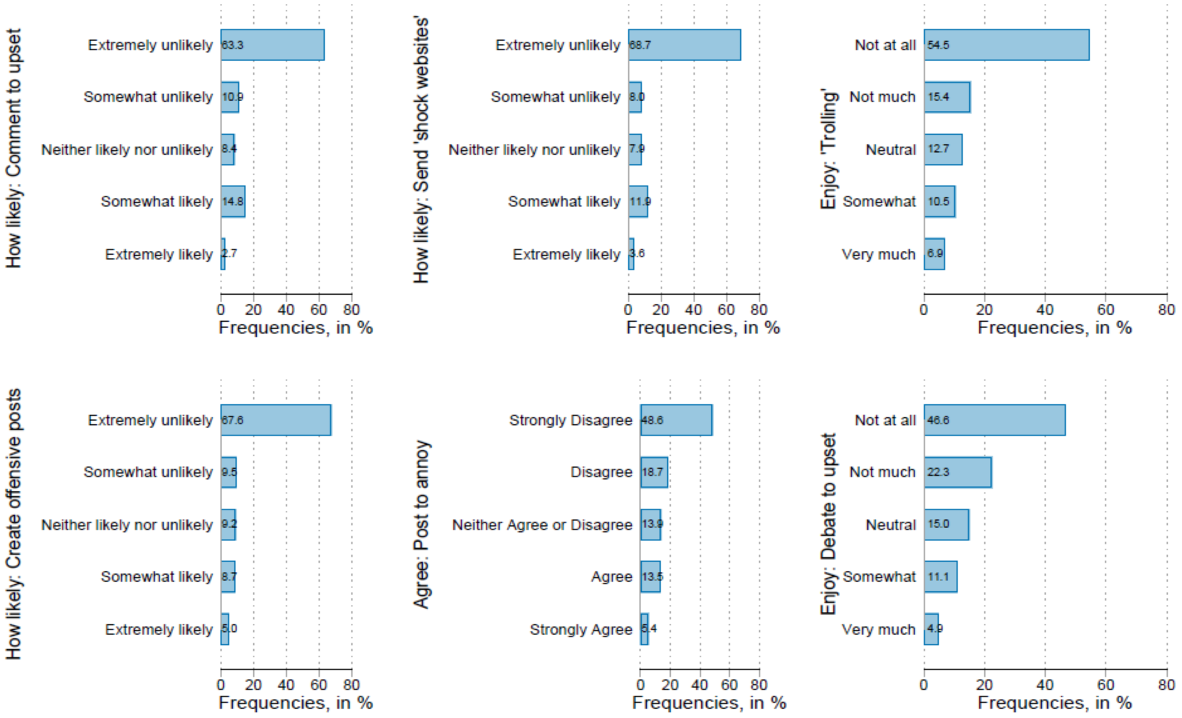
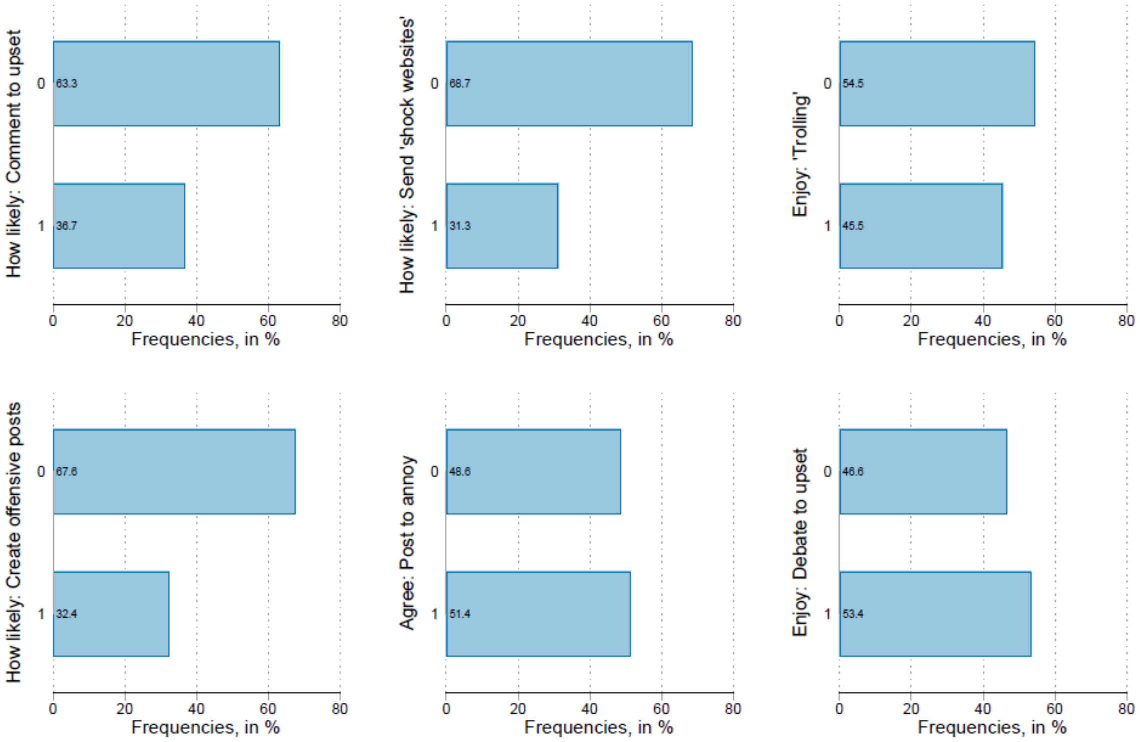


Figure A1. Correlation Matrix of Trolling Items.



(a) Frequencies of Original Variables



(b) Frequencies of Recoded Binary Variables

Figure A2. Frequencies of Trolling Variables.

Table A1. Factor Loadings of Trolling Items (SEM).

	Likely to troll	**Enjoy trolling**
Comment to upset	0.883	0.000
Offensive posts	0.938	0.000
Send shocking websites	0.880	0.000
Post to annoy	0.589	0.000
Enjoy trolling	0.000	0.819
Enjoy debating to upset	0.000	0.741

Notes: CFI=0.981, TLI=0.965 and RMSEA=0.094.

Validity Checks

Descriptives in Figure A2 demonstrate that 13.7 to 18.9 % of respondents are somewhat or very likely to engage in one of the trolling behaviors, whereas 48.6 to 68.7 % of them are extremely unlikely to do it. For enjoyment, numbers are similar: Around 50 % are not at all enjoying trolling, 16 to 17.4 % are somewhat or very much enjoying it. According to the study from 2015, 28 % of Americans admitted to have trolled (YouGov, 2015). Taking into account that MTurk sample is younger and obviously online-friendlier as well as the fact that a few years have passed between two studies, making it possible that general levels of trolling increased, we think that survey presents us with realistic proportions of occasional and ongoing trolling. As we have said, using the high threshold for non-trolling is a rigid test of our hypotheses since we also include those who might have trolled once or enjoyed it only slightly, e.g. due to revenge, not because it was their intrinsic motivation for trolling.

We also have another possibility to check how adequate our numbers of trolls are. Our survey includes not only closed-ended questions, but also some open-ended questions, one of them being: “What are reasons that you have posted comments with the intention to irritate or upset others?”. The answers to this question have been coded separately by two people and then discussed in the larger group of three to improve intercoder reliability of the categories. We arrived at the following reasons to troll: 1. Politics and other beliefs; 2. Defensive/reactive; 3. Fun and boredom; 4. No answer; 5. No trolling.

Answers have been coded as Politics and other beliefs when they referred to political topics, beliefs, and values as the reported reasons for trolling. Instances included cases were respondents took adversarial positions towards certain party affiliations or ideological stances, e.g. “Only Libtards for their dumb views”, “To agitate Republican family members”, “I will only do that if it's an opinion I think very highly of and believe in fully”, “I felt my beliefs were under attack or someone was being a jerk to others and needed to be put back in their place”, “When someone has beliefs that go against mine”. Other respondents stated that they had a disagreement with the target of their trolling, wanted to make a point, or educate and change the mind of the target e.g. in the case of misinformation or ignorance: “The only reason that I've done so in the past is in response to a post that is ignorant or misinformed. I would partially do it to educate others, but it would also make me feel (a tiny bit) good to anger the ignorant person.”, “Sometimes I feel like people with stupid beliefs have it coming to them”, “When people make comments that show they are uninformed or haven't bothered to find out the truth of matters. People that watch Fox News come to mind here. Some of the conspiracies they embrace just astound me.”. Mainly, these are the people who do not put their entertainment or their emotions first in naming why they troll and mention specific reasons for this behavior, like political beliefs, urge to educate or fight disinformation.

Answers were coded as defensive when they displayed the motivation for trolling as a reactive emotion triggered by external stimuli such as being trolled, attacked, or offended by another individual first, but did not name the specifics of what (e.g. views) or who (e.g. affiliates of other party) offended them. Individuals who trolled because their targets invoked their anger, annoyance, hatred, or other forms of dislike also were included in this category: “because they irritated or upset me”, “in defense of myself”, “if they specifically speak ill of my significant other or family”, “It's very rare that I do this; I typically only intend to irritate people who are irritating others, like trolls.”.

The third category, Trolling for fun, included cases where the declared reason for trolling was intrinsically motivated, for example, when individuals stated that they engage in trolling because they were bored, looking for entertainment and saw trolling as a way to have fun or joke around e.g. “just for fun”, “sometimes just for a laugh”, “boredom”. Some individuals also stated that they enjoyed teasing others and causing irritation, while others sought the attention they got in response to this behavior: “to test people’s reaction”, “I like to get a rise out of other people and laugh at their reactions”, “In order to be funny and to make people more interested in me.”.

Finally, the No answer category includes cases where no explicit motivation was named to match one of the other categories, but where it could not always be confidently inferred that the respondent does not troll, e.g. “NA”. On the contrary, No trolling category includes only people who explicitly answered this question with “I do not troll” or “I have never trolled”. Distribution of this coded variable could be found in Table A2. These categories clearly overlap in reality, yet what we could show is that the number of people who do not troll is 53.5 %, very similar to the percentage of those who in closed questions responded that they are extremely unlikely to troll. Only 11 % of respondents say they do it for fun which is a bit lower than the percentage of those who somewhat or a lot enjoy trolling, but we could explain it by possible mixed motivations of people to troll. At last, 15 % of people who themselves name their political and other beliefs as the reason to troll and 12 % acknowledge that it was a defensive reaction convinces us that it does make sense to look at different motivations for and determinants of trolling behavior than only entertainment.

Table A2. Reasons to Troll.

Category	Frequency	Percent
Political and beliefs	197	14.99
Defensive/reactive	156	11.87
Fun and boredom	143	10.88
No answer	115	8.75
No trolling	703	53.5
Total	1,314	100

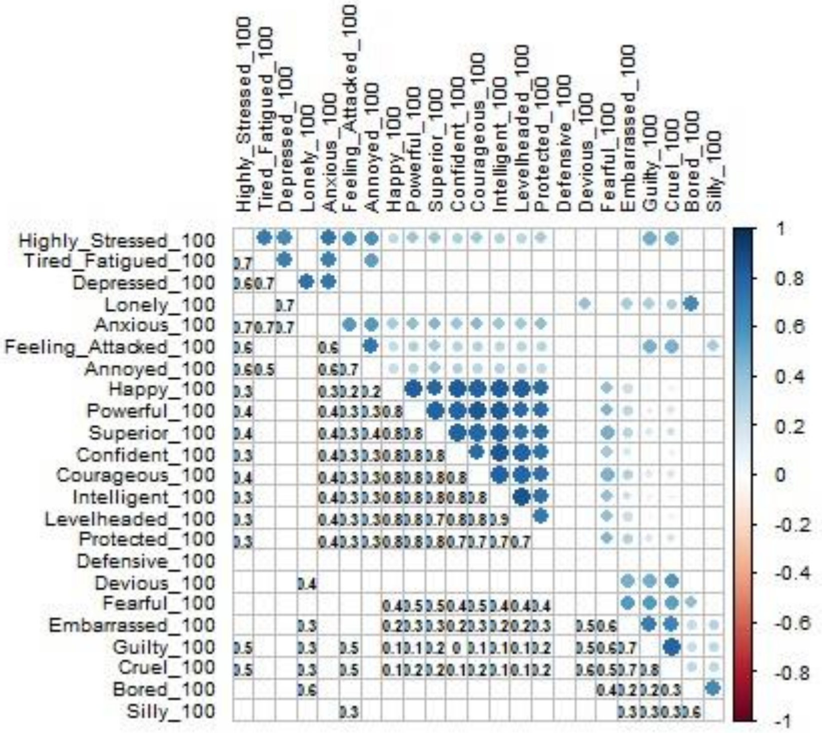


Figure A3. Correlation matrix of trolling motivations. Notes: Only significant results shown.

Table A3. Factor loadings of trolling motivations (SEM).

	Stressed and anxious	Attacked and annoyed	Powerful and happy	Embarrassed and guilty	Silly and bored
Highly stressed	0.937	0.000	0.000	0.000	0.000
Tired/fatigued	0.951	0.000	0.000	0.000	0.000
Depressed	0.954	0.000	0.000	0.000	0.000
Lonely	0.967	0.000	0.000	0.000	0.000
Anxious	0.946	0.000	0.000	0.000	0.000
Feeling attacked	0.000	0.965	0.000	0.000	0.000
Annoyed	0.000	0.958	0.000	0.000	0.000
Happy	0.000	0.000	0.979	0.000	0.000

Powerful	0.000	0.000	0.975	0.000	0.000
Superior	0.000	0.000	0.972	0.000	0.000
Confident	0.000	0.000	0.988	0.000	0.000
Courageous	0.000	0.000	0.973	0.000	0.000
Intelligent	0.000	0.000	0.987	0.000	0.000
Levelheaded	0.000	0.000	0.983	0.000	0.000
Protected	0.000	0.000	0.943	0.000	0.000
Embarrassed	0.000	0.000	0.000	0.962	0.000
Guilty	0.000	0.000	0.000	0.919	0.000
Cruel	0.000	0.000	0.000	0.935	0.000
Bored	0.000	0.000	0.000	0.000	0.947
Silly	0.000	0.000	0.000	0.000	0.928

Notes: CFI==1.000, TLI=0.999 and RMSEA=0.039.

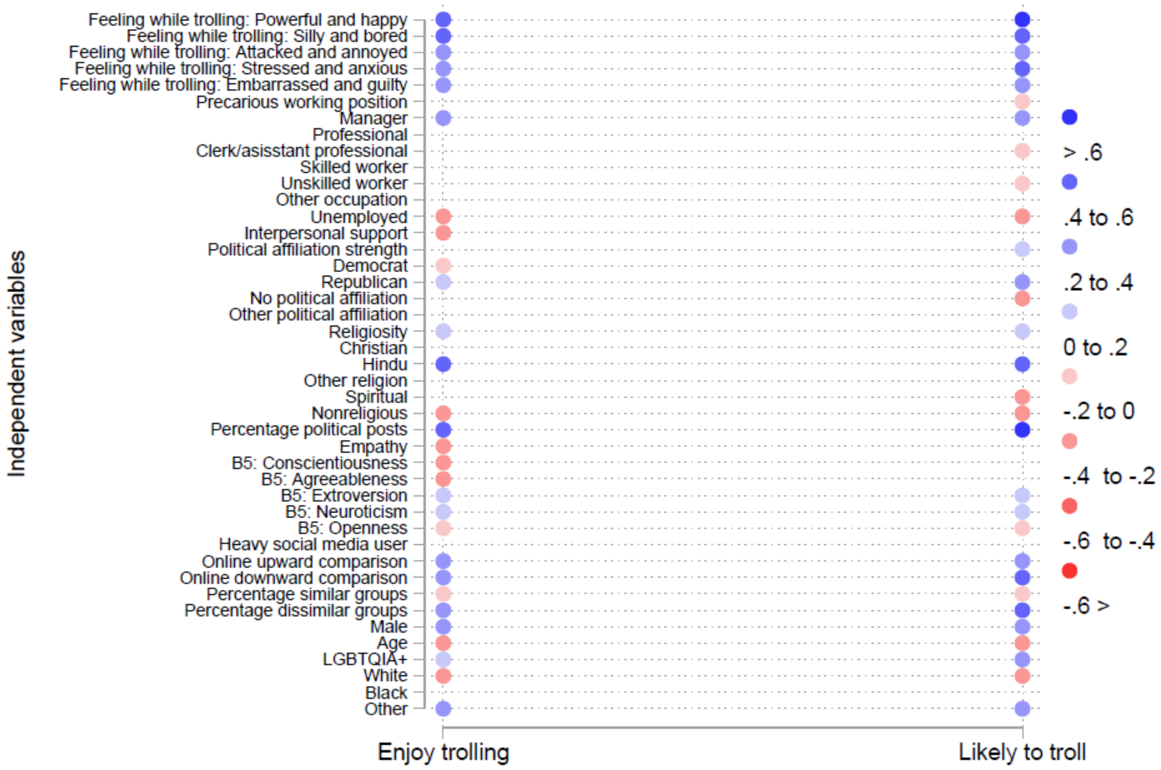


Figure A4. Correlations of independent variables and trolling. Notes: Poliserial or Pearson correlation coefficients.

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