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Original Article

A Path Analysis of Factors Affecting Social Control of Cybercultural Transgressions

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Abstract

Social control of cyberspace is a necessity to restrict online transgressions (non-normative behaviors), and reduce their disruptive effects. The current study aimed at examining the factors affecting social control of cybercultural transgressions. A questionnaire was administered to Iranian social media users, and 989 participants have filled it out. A path analysis model was constructed testing the effects of Low Self-Control, Depression, Negative Interpersonal Relationships, Computer/ Internet Self-Efficacy, Netiquette, and Normative Beliefs on Transgressive Behaviors, and Transgressive Content Consumption. The results showed that Low Self-Control increased both criterion variables, and fully or partially mediated the effects of other variables on them, except for Negative Interpersonal Relationships. The important contribution of the current study was the recognition of the role of self-control as a mediator among examined variables. The findings of this study can be employed to devise new policies and initiatives to socially control the cybercultural transgressions, without applying coercion.

Keywords: cybercultural transgressions, self-control, social-control, transgressive behaviors, transgressive content consumption.

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Introduction

Every society needs social control to maintain order, and prevent or reduce transgression– or in other words, deviance. Transgression is the (un)conscious overstepping of moral or legal boundaries, that confronts (un)written rules (Hermes & Hill, 2021: 4), and induces social control, which is both informal and formal forms of punishment, discipline, and also positive and negative sanctions, in the case of normative violations (Giddens et al., 2018: 60; Goode, 2015: 7). To make for a pleasant society, control is necessary not only for real-world communities, but also for online communities, in different forms of self-regulation, government and company control (Van Kokswijk, 2010: 239). Various efforts have been made to control the Internet use "on political, moral, cultural, security, and other grounds", and to reduce its likely risks imposed to children, privacy, intellectual property rights, and national security (Dutton et al., 2010: 6). Some distinctive attributes of Computer-mediated communication such as anonymity (Hardaker, 2010: 215) and ease of communication (Reyns, 2010: 99-100) play a major role in creating a fertile ground for transgressive and antisocial behaviors.

The number of global Internet users has been on the rise since 2005 (Statista, 2021, Feb 16), and as of January 2021, 4.66 billion (59.5% of the global population) were active Internet users worldwide (Statista, 2021, Apr 7). As of December 2020, Internet penetration rate in Iran was 79.5 %, and there were 67,602,731 Iranian Internet users (Internetworldstats, 2021). Due to the engagement of a large global and national population of users in cyberspace, governments in all countries try to use different means of social control to regulate cyberspace. Iranian government also employs different social control means from criminalization of some online behaviors, to blockage of different websites, and social media platforms to restrict consumption of allegedly socially, politically, and religiously harmful content. Despite the government ban on some popular websites and social media platforms, including Facebook, Twitter, YouTube, and Telegram, 10 to 12 million Iranians use virtual private networks (ISNA, 2018, October 14) to access blocked websites and apps.

However, to maintain the cyber social order, and restrict online transgressions, and also to protect users from the likely negative impacts of Internet and social media use, exerting cyber social control is a must. The current quantitative study aimed at examining the factors that affect social control of cybercultural transgressions among Iranian social media users. Those transgressive behaviors and transgressive content were chosen as criterion variables that did not have criminal essence.

As previous literature demonstrates, different psychological, personal, and normative factors may affect the transgressive behaviors of users. In the current research, we chose three psychological factors (including low self-control, depression, and negative interpersonal relationships), one personal factor (computer/ internet self-efficacy), and two normative factors (including netiquette and normative beliefs). All these factors and their significance are discussed later.

In the following sections, first, theoretical foundations and related research are discussed. Then, the method section explains in detail how data is collected from the 989-participant sample, and how the research instrument went through validity and reliability assessment processes. The next section shows the relationship among examined variables in a path analysis model, and presents the results of Bayesian hypothesis testing. The research results show that Low Self-Control increases Transgressive Behaviors, and Transgressive Content Consumption, and mediates the effects of other examined predictor variables– except for Negative Interpersonal Relationships– on both criterion variables. In the last section, the findings are discussed, and the implications for practice and further research are suggested.

Theoretical Foundations and Research Background

Transgression and Social control

Transgression is an action which crosses and recrosses boundaries, and violates limits (Cieślak & Rasmus, 2012: 85); the one that goes beyond the accepted practices, laws or conventions (Sara & Littlefield, 2014: 295-297). Transgression questions the boundaries, as there is an intrinsic desire to transcend physical, racial, aesthetic, sexual, national, legal and moral limits (Jenks, 2003: 8-9).

Transgressions induce different forms of organized and purposive reactions, called social control which defines, controls, and influences the deviance and conformity, to give society a trend toward an ideal (Innes, 2003: 3; Horwitz, 1990: 9; Janowitz, 1975: 83), and to "maintain social order and morality" (Dijker & Koomen, 2007: 4). Mechanisms of social control are distinguished in two forms of internal (individual's internalized norms, values and standards), and external means of control (the reactions of others to individual's behavior) (Tischler, n.d.: 158-159).

The sociology of transgression (normative violations), and the theories of criminology (legal violations) examine different, but either partially or entirely overlapping phenomena (Goode, 2015: 20; Worthen, 2016: 57).

Cybercultural Transgressive Behaviors

Transgressive behaviors are diverse. To delimit the scope of the current research, trolling and flaming were examined as transgressive behaviors. Trolling, a type of malicious, deceptive, destructive, and disruptive or disinhibited online behavior, is a vituperative discursive action without account, responsibility, or apparent instrumental purpose, which is intended to aggravate, annoy or disrupt online interactions and communication through luring other users into often pointless and time-consuming discussions (Coles & West, 2016: 2; Kovic et al., 2016: 7; Griffiths, 2014: 85; Buckels et al., 2014: 1; Whelan, 2013: 38).

A Troll, also called griefer or e-terrorist (Anable, 2008: 1) is an antisocial user who harass others with posting irrelevant, abusive and false or offensive comments in online communities to fool and provoke others (Kumar et al., 2017: 947; Siersdorfer et al., 2014: 4). "Trolling often merges other online behaviours such as flaming" (Griffiths, 2014: 86), griefing, swearing, or personal attacks (Cheng et al., 2017: 2).

Flaming, as an uninhibited online behavior, is the hostile, aggressive, emotionally-fueled interactions or contrary statements characterized by using insulting, profane, or offensive languages with an instrumental purpose, that may threaten the victim's self-esteem and reputation (Cook, 2021: 35, 44, 96; Cho & Kwon, 2015: 364).

Cybercultural Transgressive Content Consumption

A variety of transgressive content have also been identified in the research literature. To delimit the scope of the study, consumption and dissemination of Pornography (Scarcelli, 2015: 237; Chen et al., 2015: 825; Zaidan et al., 2014: 1459001-1; Luder et al., 2011: 1027), Nonsuicidal self-injury (NSSI) content (Moreno et al., 2016: 78), Violent content (Atchison, 2000: 89), and Online Sexual Pushiness (Sexting) (Brewer et al., 2020: 7; Nevin, 2015: 78) were examined as transgressive content consumption.

Social Control Means of Cybercultural Transgressions

Psychological Means

Different psychological factors have been identified in the previous research on online transgressions. To feasibly limit the number of variables, following psychological variables were selected to be examined in the current research: Low Self-Control, Depression, and Negative Interpersonal Relationships. The significance of these factors will be discussed in the next paragraphs.

Low Self-Control- Self-control theory is a useful theoretical framework for explaining the involvement in a variety of online deviant behaviors

(Donner et al., 2014: 170). Gottfredson and Hirschi's General Theory of Crime predicted that when low self-control, and the tendency to pursue immediate gratification, mix with the available crime opportunities, the probability of engagement in various types of deviant and criminal behaviors will increase (Piquero, 2009: 153-154; Baek et al., 2016: 28). This theory considers low self-control as the major cause of crime regardless of its place in time, history, context, and types of criminal acts (Piquero, 2009: 153-154).

Six dimensions of self-control were identified as follows: impulsivity, a preference for simple tasks, risk-seeking, preference for physical over mental activities, self-centeredness, and a bad or volatile temper (Worthen, 2016: 53; Grasmick et al., 1993, as cited in Donner et al., 2014: 171; Piquero, 2009: 153-154). Na and Paternoster (2012) mentioned five domains of self-control assessment, including: impulsivity, hyperactivity, concentration problems, oppositional-defiant behavior, and helplessness (p. 14). Na and Paternoster's (2012) study found that in contrast to Gottfredson and Hirschi's theory, there is "meaningful differences in the growth pattern of self-control during adolescence across individuals" (p. 28). Empirical research showed that opportunities moderate some aspects of the self-control-crime linkage (Piquero, 2009: 159).

In cyberspace research, the research results of Baek, Losavio and Higgins (2016) showed that low self-control, opportunity, and gender have a significant effect on online harassment (p. 27); the findings of Li et al. (2016: 131), and Vazsonyi et al. (2012) showed significant associations between cyberbullying and low self-control, and the results of Higgins, Wolfe and Marcum (2008) also showed a link between self-control and digital piracy.

Depression- Psychological studies examined the characteristics of individuals who engage in cyber aggression and violence, including externalizing traits (traditional criminal risk factors, including low self-control, impulsivity, psychopathy, sadistic, and Machiavellian traits, and lack of empathy) and internalizing traits (including depression, suicidal ideation, and shyness); online violence and aggression may attract individuals with a distinct set of these internalizing traits (Peterson & Densley, 2017: 195-196). In the general strain theory, Agnew (2009) argued that Strains may increase crime because they lead to negative emotional states (p. 170).

Negative Interpersonal Relationships- Robert Merton established strain as a major risk factor for deviance and crime, and in general strain theory, Agnew emphasized on negative relations with others as the primary source of strain (Ford, 2014: 654). He argued that negative interpersonal relationships can lead a person to criminal behavior (Kurtz & Zavala, 2016:

2), and deviance, as coping mechanism to deal with the negative emotions stemmed from strain (Ford, 2014: 655).

Personal Means

Different personal means can influence users' online transgressions. Computer/ Internet Self-efficacy was selected to be examined in the current research due to its importance.

Computer/ Internet Self-efficacy- Self-perceived level of Internet competence is an important factor in commitment of online misconduct (Nevin, 2015: 48). Competent users are more likely to be malicious than non-competent, frequent users more than infrequent users, and young users more than old ones (Kumar, 2017: 24). Expertise can predict the increased downloading of media, pornography use, and misrepresentation of self (Nevin, 2015: 48). Technical skills, digital literacy and the number of years using computers and the Internet, should be considered as variables for understanding cybercrime, as well (Ibid: 48). "In the general public, the mean score for web-use skills is 3.24 out of a possible 5 that represents full understanding of a list of Internet-related terms" (Hargittai & Hsieh, 2012, as cited in Nevin, 2015: 48-49).

Normative Means

Netiquette and Normative Beliefs are selected to be examined in the current research as normative means of cyber social control of online transgressions.

Netiquette- The systems of control on Internet can be divided into informal netiquette and formal legal control (Atchison, 2000: 87). Internet etiquette guidelines are necessary to make users become a digital citizen (Walsh, 2020: 15). Informal (direct and indirect) mechanisms of control on Internet operate at the individual, group, and organizational level (Atchison, 2000: 94). The most effective control at the individual level is through self-regulation (Ibid).

Formal legal control attempts to regulate pornographic, hateful, and violent content; children protection; copyright violations; cybercrime; online gambling; online threats or harassment, etc. (Ibid: 89). In the current research awareness and knowledge about both formal and informal systems of control on Internet were considered as the knowledge about netiquette.

Normative Beliefs- Social norms that are "the perception of what others are doing, approve, or disapprove of", are a strong predictor of behavior, and individuals heavily rely on them "to understand the situations they are in, especially in contexts of uncertainty" (Vlasceanu, 2021: 95). Robert Merton stated that norms are central to "restraining – or failing to restrain – deviant behavior" (Messner & Rosenfeld, 2009: 210). Norms of the society

are considered as one of the four "modalities of regulation" in cyberspace by Lessig (2006), which is congruent with the Scott and Murray's community-based control (Murray, 2007: 10, 29). In the current research perceived levels of conformity with social norms, religiousness, and being a traditional person were considered as normative beliefs.

Method

In this quantitative research, which adopted a "Correlational Research Design" (Privitera, 2014), the variables extracted from literature review were validated by four experts, and validated variables were used in an instrumentation process. In the next sections, data collection method, sampling technique, instrumentation process and measures are discussed.

Data collection and Sample

The statistical population of the current research was Iranian Internet users (67,602,731 users; Internetworldstats, 2021). Due to the largeness of population, "Convenience Non-Probability Sampling" method was adopted, as assigning an equal chance of selection to each element of the population (probability sampling) was impossible. Walliman (2011) mentioned that non-probability sampling "can be useful for certain studies, for example, […] where it is difficult to get access to the whole population" (p. 96). The minimum desirable sample size of 664, was calculated based on the formula suggested by Krejcie and Morgan (1970: 4) (for known population size), calculated with a confidence level of 99% and a margin of error of 5%.

A call for participation was posted on numerous Iranian Instagram highly-visited posts, and on several Telegram groups with high numbers of users, available to the researcher. The online questionnaire, made with Google Forms, was filled out by 989 participants (964 in the final conduction, and 25% in the pilot study). Hence, due to the sample size of 989, the sample margins of error, with the confidence levels of 99%, and 95%, are 4.10%, and 3.12% respectively.

The participants of the current study gender-wise were almost split in half. Almost half of them were in the age range of 25-34 years old, single, and university-educated, and 30% of them were students. More than 80% of participants considered themselves middle-income. Around 70% of participants live in province capitals, and more than 40% were heavy internet users.

Instrument and Measures

The self-made questionnaire of the current research went through validity and reliability assessments. An expert panel consisted of 10 experts

rated the initial 85 items in terms of content and face validity, and also 6 participants participated in the face validation of the initial item pool. The link of the revised version of the questionnaire was administered to users via Instagram and Telegram Apps.

After an exploratory factor analysis (EFA) of items, according to Iacobucci (2001: 58), a priori and post hoc reliability assessments were conducted employing Cronbach's Alpha. The mean inter-item correlation (0.15 to 0.50) was considered as a measure of internal consistency (Clark & Watson, 1995: 316), and the percentage of the total item variance explained greater than 60% (Hinkin et al., 1997: 109) was considered for item retention. According to criteria mentioned by Shi, Cristea, Foss, Al Qudah, and Qaffas (2013), all subscales showed a good or acceptable value of Cronbach's α, greater than .6, and mean inter item correlations were in the accepted range, except for three subscales with values between .548 to .586. Total item variance explained for all subscales was greater than 60%, except for one subscale.

The finalized questionnaire was consisted of 14 closed-ended questions about participants' demographic characteristics, and Internet and social media use habits, and 50 items, which were 5-point Likert-type scales with response options of Extremely=5; Very=4; Moderately=3; Slightly=2; Not at all=1. The retained items after post hoc reliability assessment measured following variables: Low Self-Control (items adapted from Nakhaie et al., 2000); Depression (items adapted from Kliem et al., 2017; Prilleltensky, 2013; Tamburrino et al., 2009; Brooks, 1979); Negative Interpersonal Relationships (items adapted from Furman & Buhrmester, 2010); Computer/ Internet Self-Efficacy (items adapted from Van Deursen et al., 2015); Netiquette; Normative Beliefs (items partly adapted from Duke, 1998; Faulkner & De Jong, 1968); Transgressive Behaviors; and Transgressive Content Consumption.

Results

After grouping Likert-type items into a "survey scale" through conducting factor analysis, and calculating Cronbach's Alpha, according to Sullivan and Artino (2013) it is common to "calculate a total score or mean score for the scale items". Due to the unequal number of items per subscale, according to Taveira, Hipólito and Jesus (2014: 274) mean scores of items were calculated by IBM SPSS Statistics 22. A path analysis model was constructed, and hypotheses were tested employing Bayesian Statistics. "Endogenous variables should be assessed on an interval or ratio level of measurement" (Hatcher & O'Rourke, 2013: 112) in path analysis, hence, the mean scores were treated as "approximately interval data" as Ladd (2011) also mentioned in his research paper.

Normality, Linearity and Multicollinearity Analyses

As recommended by Ghasemi and Zahediasl (2012), normality of variables was assessed both visually (using histograms and boxplot), and through normality tests. According to Ghasemi and Zahediasl (2012) and Razali and Wah (2011: 21), Kolmogorov–Smirnov and Shapiro–Wilk tests were employed to assess univariate normality of variables. Multivariate normality was assessed by Mardia's multivariate kurtosis (Gao et al., 2008: 2) employing IBM SPSS Amos Graphics 22 Software. All the univariate, and multivariate normality tests showed that the normality assumption for the sub-scales was not held.

According to Promes (2016: 286), Linearity among exogenous and endogenous variables is assumed in SEM, hence, regression curve estimation should be "conducted for each variable on at least one other variable". All exogenous variables, except for two, were sufficiently linear to be tested in a SEM model. "[M]odels with nonlinear relationships are often encountered in social and behavioral sciences" (Lee & Zhu, 2003). To address the nonlinearity issue of variables, the following solutions are recommended: 1. The use of Maximum likelihood, 2. Bootstrap (Sohn & Menke, 2002), and 3. Bayesian approach (Dunson et al., 2005: 2), via 4. Markov chain Monte Carlo (MCMC) methods (Green & Worden, 2015) (an algorithm employed by AMOS software; Byrne, 2016: 153). One approach to deal with the multivariate non-normal data is to use the bootstrap method (Ibid: 367). The general approach to bootstrap process used in the current research, "is commonly termed as *simple, nonparametric, or naïve* Bootstrapping" (Ibid: 371). The Maximum Likelihood (ML) estimation, and Bootstrap ML and Bollen-Stine bootstrap, with 2000 bootstrap samples, and Bayesian methods were employed to deal with nonlinearity and nonnormality issues in the current research.

Multicollinearity (near-linear dependence) is a violation of one of the basic assumptions for regression models, and is assessed by regression analysis, (Daoud, 2017: 1, 4). Multicollinearity of all variables was assessed one-by-one, and it was concluded that mean-scored variables were not multicollinear.

Construct Validity

Construct validity of the variables with their indicators was evaluated in a measurement model. Convergent validity was examined using standardized loadings, Average Variance Extracted (AVE) and Composite Reliability (CR). All factor loadings for the indicators, were statistically significant at the 0.001 level, and greater than twice their standard errors, that according to Hatcher and O'Rourke (2013: 239), and Arifin and Yusoff (2016: 4), demonstrated convergent validity of the indicators. All factor loadings were ≥ .50, except for two items that had factor loadings greater than .40.

Composite Reliability, convergent and discriminant validity of the constructs, were assessed employing ValidityMaster tool, a part of an Excel spreadsheet named Excel StatTools, developed by Gaskin (2018). Half of the variables had Composite Reliability greater than .70, and the rest had Composite Reliability close to .70. AVE for all variables was greater than .50, except for 3 variables, of which two had values close to .50, and only one variable had an AVE lower than .40. Standardized loadings, Composite Reliability, and AVE of variables demonstrated an adequate convergent validity in almost all of the variables. According to Arifin & Yusoff (2016: 4), and Hatcher & O'Rourke (2013: 244), all of the exogenous variables had discriminant validity, as their AVE values were greater than the SV values. But endogenous variables of Transgressive Behaviors and Transgressive Content did not demonstrate an adequate discriminant validity, as they are considered to be a constituent of a single latent variable, namely Cybercultural Transgressions.

The Path Analysis Model

The path analysis model was constructed by IBM SPSS Amos Graphics 22 Software. As shown in Figure 1, Low Self-Control variable had the strongest effect on Transgressive Behaviors, and Transgressive Content Consumption. The Computer/Internet Self-Efficacy-Transgressive Behaviors, Netiquette-Transgressive Behaviors, and Normative Beliefs- Transgressive Behaviors paths were statistically insignificant.

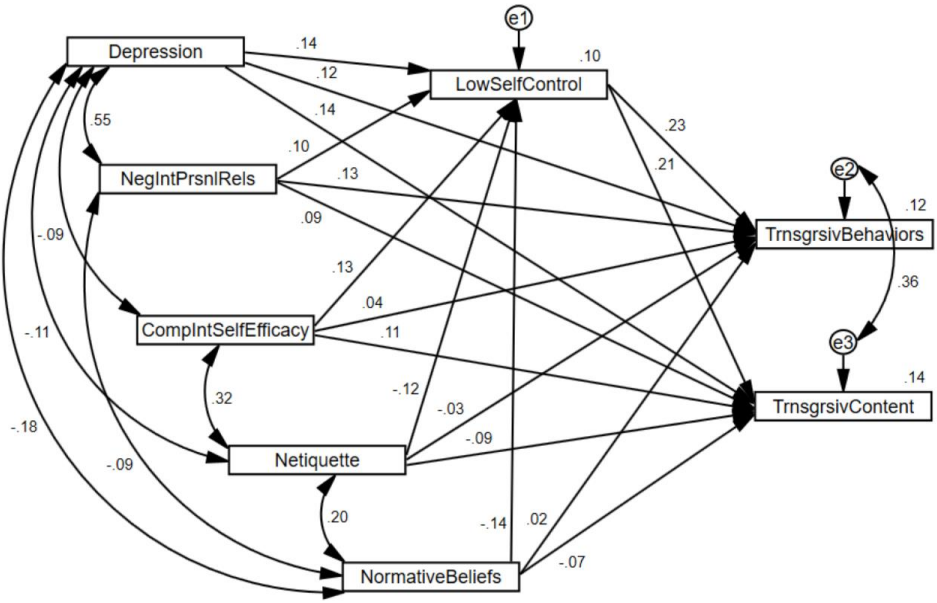

Figure 1. Path Analysis Model

Model Fit Indices

Some of the most-reported goodness-of-fit indices and their cutoffs are presented below, for the path analysis model: CMIN= 3.294, DF = 3, *p* =.348 (*p*> .05; Hooper et al., 2008); CMIN/DF= 1.098 (< 3.0; Moss et al., 2015); Bollen-Stine bootstrap p= .415 (>.05; Byrne, 2016); RMSEA= .010 (< .01 (Very Good); Moss et al., 2015); GFI= .999, and AGFI= .990 (> .90; Ibid); NFI= .997 (> .95; Hooper et al., 2008); CFI= 1.000, and NNFI or TLI= .997 (≥ .95 (Very Good; Gana & Broc, 2019). "The largest sample size[s] for which one would accept at the.05 and .01 level a model with this chi-square statistic and this many degrees of freedom" (according to IBM SPSS Amos Graphics 22 Software) were HOELTER .05= 2344, and HOELTER .01= 3403. Regarding the fit indices, the model demonstrated an excellent fit to the data.

Effect Sizes and Post Hoc Power Analysis

To calculate achieved power, post hoc power analysis was conducted employing G*Power 3.1.9.2 software (Faul et al., 2009), using post hoc power analysis for *F* tests (Linear multiple regression). According to the effect sizes for the endogenous variables, and the mediating variable (i.e., Transgressive Behaviors= 0.1363636 (Small), Transgressive Content Consumption= 0.1627907 (Medium), and Low Self-Control= 0.1111111 (Small)), Error Probability Level of 0.01, and the number of predictors (6 & 5), the achieved power was > .999.

Bayesian Hypothesis Testing

In the current research, Bayesian hypothesis testing was employed to test hypotheses. Prior values of Bayesian SEM of IBM SPSS Amos Graphics 22 Software, were used to test hypotheses, as follows: Mean = 0; S.D = 1. H_0 was accepted when zero fell between posterior confidence intervals.

Posterior predictive p (PPP) value for the model was .48, which according to Muthén and Asparouhov (2012: 10) demonstrated an excellent-fitting model. Enough Bayesian samples have been drawn with generating 71 additional samples (500+71.501), and the C.S. reached the value of 1.0015. The Bayesian hypothesis testing with 99% confidence level, rejected five out of seventeen main and subsidiary hypotheses, and the rest were accepted. The hypotheses are shown in Table 1.

Table 1. Bayesian Hypothesis Testing
H0 is accepted when zero falls between posterior confidence intervals

Hypothesis	99% Lower bound	99% Upper bound	H_0	H_1
$H_{P1\text{-}1}$: Low Self-Control increases Transgressive Behaviors.	0.102	0.214	Rejected	**Accepted**
$H_{P1\text{-}2}$: Low Self-Control increases consumption of Transgressive Content.	0.066	0.143	Rejected	**Accepted**
$H_{P2\text{-}1}$: Depression increases Transgressive Behaviors.	0.020	0.142	Rejected	**Accepted**
$H_{P2\text{-}2}$: Depression increases consumption of Transgressive Content.	0.018	0.103	Rejected	**Accepted**
$H_{P3\text{-}1}$: Computer/Internet Self-Efficacy increases Transgressive Behaviors.	-0.032	0.080	Accepted	Rejected
$H_{P3\text{-}2}$: Computer/Internet Self-Efficacy increases the consumption of Transgressive Content.	0.012	0.086	Rejected	**Accepted**
$H_{P4\text{-}1}$: Negative Interpersonal Relationships increase Transgressive Behaviors.	0.024	0.151	Rejected	**Accepted**
$H_{P4\text{-}2}$: Negative Interpersonal Relationships increase consumption of Transgressive Content.	-0.004	0.089	Accepted	Rejected
$H_{P5\text{-}1}$: Knowledge about Netiquette decreases Transgressive Behaviors.	-0.082	0.046	Accepted	Rejected
$H_{P5\text{-}2}$: Knowledge about Netiquette decreases consumption of Transgressive Content.	-0.095	-0.006	Rejected	**Accepted**
$H_{P6\text{-}1}$: Normative Beliefs decrease Transgressive Behaviors.	-0.047	0.066	Accepted	Rejected
$H_{P6\text{-}2}$: Normative Beliefs decrease consumption of Transgressive Content.	-0.071	0.006	Accepted	Rejected

Subsidiary Hypotheses	99% Lower bound	99% Upper bound	H_0	H_1
$H_{P4\text{-}1S}$: Negative Interpersonal Relationships increase Low Self-Control.	0.001	0.201	Rejected	**Accepted**
$H_{P2\text{-}1S}$: Depression increases Low Self-Control.	0.041	0.218	Rejected	**Accepted**
$H_{P3\text{-}1S}$: Computer/Internet Self-Efficacy increases Low Self-Control.	0.045	0.194	Rejected	**Accepted**
$H_{P5\text{-}1S}$: Knowledge about Netiquette decreases Low Self-Control.	-0.226	-0.038	Rejected	**Accepted**
$H_{P6\text{-}1S}$: Normative Beliefs decrease Low Self-Control.	-0.216	-0.059	Rejected	**Accepted**

Bayesian Hypothesis Testing of Indirect (Mediating) Effects

New hypotheses were proposed based on the mediating role of the Low Self-Control variable. Eight out of ten hypotheses were accepted, and two were rejected. The hypotheses are shown in Table 2.

Table 2. Bayesian Hypothesis Testing of Indirect (Mediating) Effects

Hypothesis	99% Lower bound	99% Upper bound	H_0	H_1
$H_{P1\text{-}1M}$: Low Self-Control partially mediates the effects of Depression on Transgressive Behaviors.	0.009	0.059	Rejected	**Accepted**
$H_{P1\text{-}2M}$: Low Self-Control partially mediates the effects of Depression on Transgressive Content.	0.009	0.054	Rejected	**Accepted**
$H_{P1\text{-}3M}$: Low Self-Control partially mediates the effects of Negative Interpersonal Relationships on Transgressive Behaviors.	0.000	0.047	Accepted	Rejected
$H_{P1\text{-}4M}$: Low Self-Control partially mediates the effects of Negative Interpersonal Relationships on Transgressive Content.	0.000	0.046	Accepted	Rejected

Hypothesis	99% Lower bound	99% Upper bound	H_0	H_1
$H_{P1\text{-}5M}$: Low Self-Control fully mediates the effects of Computer/ Internet Self-Efficacy on Transgressive Behaviors.	0.010	0.049	Rejected	**Accepted**
$H_{P1\text{-}6M}$: Low Self-Control partially mediates the effects of Computer/ Internet Self-Efficacy on Transgressive Content.	0.009	0.050	Rejected	**Accepted**
$H_{P1\text{-}7M}$: Low Self-Control fully mediates the effects of Netiquette on Transgressive Behaviors.	-0.053	-0.007	Rejected	**Accepted**
$H_{P1\text{-}8M}$: Low Self-Control partially mediates the effects of Netiquette on Transgressive Content.	-0.047	-0.007	Rejected	**Accepted**
$H_{P1\text{-}9M}$: Low Self-Control fully mediates the effects of Normative Beliefs on Transgressive Behaviors.	-0.056	-0.013	Rejected	**Accepted**
$H_{P1\text{-}10M}$: Low Self-Control fully mediates the effects of Normative Beliefs on Transgressive Content.	-0.053	-0.012	Rejected	**Accepted**

Discussion

The main purpose of the current quantitative study is to examine the factors affecting social control of cybercultural transgressions among Iranian social media users. Altogether, 989 participants (almost equally split by gender) have filled the questionnaire out.

The results show that Low Self-Control increases Transgressive Behaviors, and Transgressive Content Consumption, and (partially or fully) mediates the effects of almost all other examined variables (i.e., Depression, Netiquette, Computer/ Internet Self-Efficacy, and Normative Beliefs) on both Transgressive Behaviors, and Transgressive Content Consumption, except for Negative Interpersonal Relationships. These results once again confirm that, as Donner et al. (2014: 170) have also mentioned, self-control theory is useful for explaining the involvement in a variety of online deviant behaviors, and as Piquero (2009: 153-154) has mentioned, low self-control can be considered as the major cause of crime regardless of its place in time, history, context, and types of criminal acts. The findings are also aligned with the research results of Baek, Losavio and Higgins (2016), Li et al. (2016), Vazsonyi et al. (2012),

and Higgins, Wolfe and Marcum (2008) about the relationship between low self-control and the specific kinds of online deviant behaviors.

The results demonstrate that Depression increases Low Self-Control, and also Transgressive Behaviors, and the consumption of Transgressive Content. The effect of Depression on transgressions is consistent with Agnew's (2009) General Strain Theory, and also with the Peterson and Densley's (2017) notion of internalizing traits of online aggressors.

The results demonstrate that Negative Interpersonal Relationships increase Transgressive Behaviors, but do not have an effect on consumption of Transgressive Content. The effects of Negative Interpersonal Relationships on Transgressive Behaviors, and Transgressive Content Consumption are not mediated by Low Self-Control, but Negative Interpersonal Relationships increase Low Self-Control. The effect of Negative Interpersonal Relationships on transgressions is consistent with the notion of strain that is predicted to be most conducive to crime, mentioned by Agnew (Kurtz & Zavala, 2016; Ford, 2014).

The results show that Computer/Internet Self-Efficacy does not have a direct effect on Transgressive Behaviors, but increases Low Self-Control, and the consumption of Transgressive Content. The mean score of Computer/ Internet Self-Efficacy in the current research is 3.234, identical with the findings of Hargittai and Hsieh (2012, as cited in Nevin, 2015; mean score= 3.24 out of 5). The findings are also consistent with the aforementioned importance of the level of computer and Internet competence of users in committing online misconduct, as argued by Kumar (2017), and Nevin (2015).

Knowledge about Netiquette does not directly affect Transgressive Behaviors, but decreases consumption of Transgressive Content. The effects of Netiquette on Transgressive Behaviors, and Transgressive Content Consumption are fully, and partially mediated by Low Self-Control, respectively. Netiquette also decreases Low Self-Control. The effect of netiquette on controlling transgression is aligned with the arguments of Atchison (2000), and Walsh (2020).

Normative Beliefs do not have a direct effect on Transgressive Behaviors, and Transgressive Content Consumption. The effects of Normative Beliefs on Transgressive Behaviors, and Transgressive Content Consumption are fully mediated by Low Self-Control. Normative Beliefs decrease Low Self-Control. These findings are consistent with the importance of norms in restraining deviance mentioned by Merton (Messner & Rosenfeld, 2009), and as one of the four "modalities of regulation" in cyberspace, as mentioned by Lessig (2006), and Scott and Murray (Murray, 2007).

The resultant model for the factors affecting social control of cybercultural transgressions among Iranian users is shown in Figure 2.

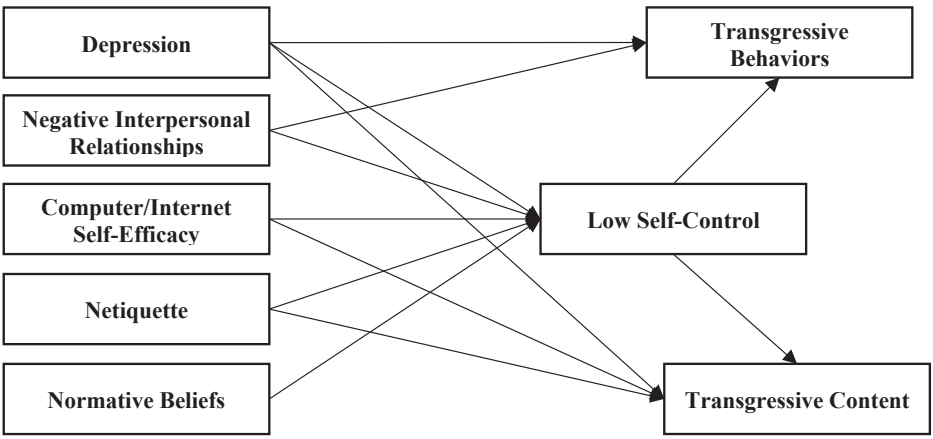

Figure 2: The Model for the factors affecting social controlof cybercultural transgressions

Conclusion

The important contribution of the current study is the recognition of the role of self-control as a mediator among examined variables. As self-control theory has also emphasized, increasing self-control of social media users can restrain online transgressions. Hence, as the findings show, transcending psychological health by decreasing depression levels, and improving communicational and interpersonal skills of users, and also boosting their normative beliefs, and knowledge about netiquette can contribute to inhibiting or reducing cybercultural transgressive behaviors, and consumption of cybercultural transgressive contents. Although computer and Internet self-efficacy can increase the likelihood of transgressive content consumption, but knowledge about social norms can guide the Internet and computer competence to a more socially-oriented behavior online.

The abovementioned variables can be employed to devise new policies and initiatives to socially control the cybercultural transgressions, without applying coercion. Hence, delivering quality education, and devising initiatives to increase self-control, personal and social psychological health, and also transcending knowledge about netiquette, and normative beliefs can produce effective social control means to constrain online transgressions.

The limitation of the current study lies in the fact that the study examines the effects of multiple variables on cybercultural transgressions

in the path analysis model, hence, all aspects of each variable could not be examined, due to the practical limit on the questionnaire length. Due to this limitation, it is recommended, for future study, to conduct in-depth, and comprehensive examinations of the impacts of each variable on the cybercultural transgressions. Findings of the study demonstrate that self-control acts as a mediator among examined variables. It is recommended to further study the mediating role of self-control in committing cybercultural transgressions.

Ethical considerations

The authors have completely considered ethical issues, including informed consent, plagiarism, data fabrication, misconduct, and/or falsification, double publication and/or redundancy, submission, etc.

Conflicts of interests

The authors declare that there is no conflict of interests.

Data availability

The dataset generated and analyzed during the current study is available from the corresponding author on reasonable request.

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