



Unpacking drivers of online censorship endorsement: Psychological and demographic factors

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ARTICLE INFO

Keywords:

Online censorship
Endorsement
Motivated resistance
Similarity
Religiosity
Psychological factors
Demographic factors
Telegram

ABSTRACT

This study explores the complex dynamics of online censorship endorsements within a national context. We examined the impact of some of the influential psychological and demographic factors contributing to online censorship endorsement of Iranian Telegram users. Through the analysis of 517 responses to an online questionnaire, we investigated the influence of variables such as age, education level, gender, the use of state-controlled media, political interests, personal trust, religiosity, perceived similarity, and motivated resistance to censorship on individuals' attitudes toward censorship. Our findings reveal that education level, state-controlled media usage, religiosity, perceived similarity, and motivated resistance to censorship significantly shape censorship endorsements in the Iranian Telegram users. The implications of these findings and avenues for further research are highlighted.

1. Introduction

About 87% of the world's population lives in countries where the media is subject to varying degrees of government oversight (Dunham, 2017, p. 3). The free flow and access to information in all its forms continually creates tensions in all societies, whether democratic or undemocratic (Bar-Tal, 2017). Over the past decades, governments have consistently restricted the Internet through methods such as blocking, filtering, or censorship (Golovchenko, 2022), and the prevalence of Internet restrictions underscores the complex challenges in disseminating information. The prevalence of censorship measures has changed citizens' information-seeking behavior and attracted the attention of researchers who wanted to investigate how citizens behave in response to different types of censorship (see, for example, Behrouzian et al., 2016; Chang et al., 2022; Hobbs & Roberts, 2018; Kou et al., 2017; Nisbet et al., 2017).

The American Library Association (2023) describes censorship as the restriction or elimination of access to words, images, or ideas (of an individual, a collective, or an organization) with the decision to limit or

deny access (typically made by governing authorities). Two types of censorship are widely acknowledged in literature: internal and external (Wajda, 1988). While internal censorship refers to self-imposed restrictions driven by an individual's apprehension of the unknown (Bar-Tal, 2017), external censorship is enforced under pressure by various institutions, governments, and companies tasked with maintaining established norms like order and morality (Wajda, 1988).

According to Niaki et al. (2020), external/governmental censorship could be categorized into overt (revealed) and covert (unrevealed): in overt censorship, users are shown a "block page" in place of the restricted content, while in covert censorship, users experience network errors that seem unrelated, hiding the fact that censorship occurred. Authorities may apply overt methods to certain content and covert methods to others. Both types of censorship span traditional media and online platforms (Medina, 2020).

Online overt censorship (e.g., explicit internet filtering by the government) is an influential factor in how users change their information search strategies (Jamali & Shahbazztabar, 2017). In other words, users not only experience some negative emotions but also a change in their

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<https://doi.org/10.1016/j.chbr.2025.100639>

Received 29 October 2024; Received in revised form 25 February 2025; Accepted 26 February 2025

Available online 2 March 2025

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information-seeking process like using circumvention tools. However, it is yet unclear which factors might influence the individual's decision to react to censorship and change their searching behavior. Considering the mentioned arguments, the article aims to obtain an answer to the question of which factors could potentially influence the endorsement of overt censorship in online world. Particularly, when individuals are confronted with restricted access to some specific types of media, what roles their previous interests/trust/values, as well as their psychological reaction, might play in this regard? Likewise, how such factors as age, education level, gender, and daily use of media resources would drive their perceptions towards overt censorship.

2. Background

Censorship in Iran has been a longstanding and complex issue, shaped by political, cultural, and religious factors. The government employs a system of censorship that regulates various forms of media and expression to align with its interpretation of religious principles and safeguard national interests (Hashemzadegan & Gholami, 2022).

In Iran, authorities constrain Internet access, connecting slightly more than half of the households as of 2016 (Ververis, Marguel & Fabian, 2019). A state-owned entity, the Telecommunications Infrastructure Company (TIC), oversees the country's Internet infrastructure, allowing the government to maintain full control. This control further extends to commercial Internet Service Providers (ISPs), as they are mandated to purchase bandwidth from the TIC, leading to expensive and substandard Internet services. Iran has one of the highest global rates of content filtering, a prevalent issue that compels users to often resort to advanced circumvention technologies to bypass these restrictions. By banning major social media platforms such as Facebook, Instagram, Telegram, Twitter, WhatsApp, and YouTube, the Iranian government has fueled the growth of the VPN industry as the primary means for users to bypass filtering and access free Internet (Payande, 2024). Telegram remains one of the major instant messengers in Iran, with more than 40 million active users constituting half of the population (Hashemi & Zare Chahooki, 2019). Because of the Telegram functionality, Iranian users highly use this channel through bypassing mechanisms even after a ban from May 1, 2018, based on the order of the Iranian Judiciary System. Governments employ various methods to restrict access of citizens to internet services or specific information channels, using overt, covert or both types of censorship. In this study, the banning of Telegram in Iran is considered an overt form of censorship, as the authorities explicitly announced the ban and the users were aware of this restriction.

3. Literature review

3.1. Censorship studies from general perspective

A macro-overview of the publications on censorship across diverse academic disciplines in Scopus (a major international indexer of academic journals) reveals a multidisciplinary exploration of censorship's impact on various aspects of knowledge, society, and decision-making. Censorship has been linked with religion (Latif et al., 2024), political system (Foucault, 1977), and culture (Klimovich, 2018; Müller, 2004), among others. A multitude of research asserts that censorship is a major impediment for citizens to access information (e.g. Golovchenko, 2022; Lessig, 1999; Morozov, 2011) and this is more prevalent in authoritarian regimes (Kalathil & Boas, 2010; MacKinnon, 2012; Morozov, 2011; González-Quinones & Machin-Mastromatteo, 2019). Hence, governments take different ways of censorship in different situations like content removal and website blocking (Deibert et al., 2010; Shirk, 2011) or in the case of large-scale collective actions, online censorship in a haste manner (King et al., 2013; 2014). Based on the 2012 America's Barometer data, Rodríguez (2013) showed that citizens generally display limited endorsement for government-imposed media censorship. Nevertheless, significant differences become apparent among nations,

resulting in perplexing results. For instance, in certain nations where recent media restrictions occurred, support for censorship is relatively low. Conversely, in other countries experiencing similar restrictions, there is a comparatively high level of support for media censorship. Furthermore, younger individuals, on average, exhibit less support for media censorship when faced with politically damaging news. Those citizens with higher education and wealth levels tend to engage with the media more frequently.

Vogels et al. (2020) argued that 90% of Republicans in the USA claim that social media platforms intentionally censor political viewpoints they find disagreeable. However, Aubin and Liedke (2023) reported that 65% of the population backs the idea of technology companies moderating inaccurate information on the Internet, while 55% express support for the U.S. government being involved in implementing such measures. Furthermore, Kemp and Ekins (2021) show a significant majority of Americans (75%) express a lack of trust in social media's capacity to make fair content moderation decisions, with 60% expressing a desire for more control over the posts they view. The last report reveals that 54% of Americans are more concerned about the potential censorship of accurate information than they are about the spread of misinformation. In this vein, Ng et al. (2021) explored how people from different cultures react to social media censorship threats. Iranian Canadians reacted more strongly to government-imposed threats compared to European and East Asian Canadians, mainly due to their past experiences with censorship.

3.2. Censorship in hierarchical societies

Callanan et al. (2016) investigated how the advancement of the information society impacts attitudes of security risks and state-controlled Internet censorship of citizens of ten countries, i.e. Azerbaijan, Belarus, China, Iran, Oman, Saudi Arabia, Syria, Tunisia, Uzbekistan, and Vietnam. Their findings showed that in prosperous mobile markets like China, Saudi Arabia, and Oman, users were less worried about rigid government regulations. These countries have high to moderate Gross National Income and most skilled users who trust their governments, state agencies, and local Internet Service Providers. However, among Chinese users, commercial organizations were trusted more when respondents who answered 'Don't know' were considered. On the other hand, users in countries like Iran, Vietnam, Syria, and Uzbekistan showed trust only in foreign Internet service providers, indicating a lack of trust in their governments and state agencies. In countries where mobile technology is widely accessible and advanced, such as Saudi Arabia, Oman, and China, users were generally accepting of government restrictions if they were in line with national strategies or dominant religions. They viewed content blocking as a form of state protection against content that could be religiously or culturally inappropriate. This perspective contrasts with users in developed regions. However, in less developed countries with controlled markets and oppressive regimes, users demonstrated less tolerance for state involvement and a high level of distrust in state-owned entities.

Some previous studies like Wang and Mark (2015) have considered variables such as demographic characteristics, prior experience with the Internet, and personality as drivers of positive or negative attitudes towards censorship in China. One of the important findings of this study is the negative impact of monthly income, residence population density, Internet usage frequency, and first year of Internet adoption indicating that those users who live in big cities, get paid more, use the Internet more often and adopt the Internet earlier are less likely to support censorship. On the flip side, users who support the government with authoritarian tendencies are more prone to endorse censorship.

Some other studies (e.g. Kou et al., 2017) investigated how variables like topical interest and time might affect censorship endorsement, finding out that interest in the censored topics and available time will determine how they react to censorship activities made by governments. They further mentioned that censorship is context-dependent and needs to be related to national sociocultural dimensions. In some countries like

China, people might hold contradictory attitudes towards censorship in a way that the same people might consider censorship as an accepting or hindering action at the same time.

Additionally, risk perception is of high significance in predicting censorship endorsement. As an example, Russian users who are considered to be supportive of the government's decisions have perceived a great deal of risk from the Internet and supported the censorship. Moreover, whereas reliance on the Internet and TV news had no same effect, frequency of Internet use was associated with less perceived risk and not supporting censorship (Nisbet et al., 2017).

3.3. Censorship in democratic societies

Censorship endorsement in democratic countries has also been a subject of consideration in recent years. For example, German people believe that if social media is considered an information resource, censorship endorsement might be considered convincing in a way people might think of self-censorship when it comes to self-presentation on social media to ensure their privacy protection (Kaspar & Müller-Jensen, 2021). In this sense, censorship endorsement as a general action towards social media is not different from the same one towards all media types. Kaspar and Müller-Jensen (2021) further found out that Germans might tolerate censorship as long as it helps retain decent communication and information space. This research clearly shows how using social media for searching information can convince users to endorse censorship no matter their country whether it is an authoritarian or democratic one.

Other studies in democratic countries also showed that social media users consider self-censorship as an effective strategy to maintain their privacy or to avoid receiving negative comments as a consequence of their political expression (Dohle & Bernhard, 2014; Kwon et al., 2015). However, this spectrum of research differs from other studies aiming at investigating users' perceptions regarding government-imposed censorship.

Overall, the review of the current literature reveals a diverse range of factors affecting censorship endorsement either positively or negatively. However, there is little evidence of strong predictors of censorship endorsement.

4. The rationale for this study

As mentioned above, the previous studies have focused more on the associations of censorship endorsement and variables like personality, information-seeking, privacy protection, social dominance, and self-presentation. Even though there is research done on the prevalence of Telegram use in Iran via various lenses such as media psychology (Razavi & Nematifar, 2018), group quality (Hashemi & Zare Chahooki, 2019), or linguistics (Mofidi et al., 2017), to best of our knowledge, there is no research on online user's reactions towards censorship of online platforms such as Telegram. Thus, this research aimed to fill this gap by developing and testing a multivariate, conceptual model. Besides, the research literature on the effects and consequences of censorship is overwhelmingly related to the political sphere. Censorship in mass media environments includes but is not limited to political information, and therefore information-seeking behavior of citizens may not be limited to just the political sphere. In the broader information sphere, to fully understand what might cause individuals to approve or reject overt censorship, we identified a set of confounding variables. Thus, the novelty of our research is the identification and testing of demographic and psychological factors influencing attitudes towards overt online censorship in a new setting (i.e. Iran) and explaining them in light of related theories. This study aims for following overarching research question.

- Which factors could contribute to the endorsement of overt online censorship among Iranians (if any)?

The novelty of the present research is not only touching upon an understudied phenomenon in Iran and its relation to a very popular platform like Telegram (Maleki, 2023; Maleki & Tamimi Arab, 2020) but also in a way people might react to possible banning of those platforms. Previous studies clearly have shown that as opposed to democratic countries, people in authoritarian countries like China react differently or controversially concerning Internet censorship (Guo & Feng, 2012; Wu, 2012). Because of a polarization in opinions regarding online censorship in Iran, we anticipated a mixed response including supporting and resisting attitudes towards censorship from the participants.

5. Hypotheses

5.1. Personal trust

Social media, with its continuous access and news broadcasting capabilities, plays a pivotal role in shaping the relationship between the government and society (Listhaug & Jakobsen, 2017; Starke et al., 2020). However, this influence is twofold, as it has the potential to bridge the trust gap while also exacerbating it through the dissemination of misinformation or as a response to government-imposed censorship (Rahbarqazi & Mahmoudoghli, 2021).

Trust happens, at least, in three major levels, i.e. individual level (micro), institutional level (meso), and governmental/societal level (macro), and in each level, there are various types of trust with unique features (Khosrowjerdi, 2016). For example, at the individual level, the trust types of person-to-person (e.g. personal trust), person-to-system, person-to-organization, and person-to-government (e.g. public trust) have been documented. Public trust holds a significant sway over the acceptance of censorship interventions, particularly in the context of combating misinformation and upholding public morals (Müller, 2013). Moreover, a higher level of public trust correlates with a greater acceptance of information control by governments, as evidenced in authoritarian political systems like China (Gallagher & Miller, 2021).

It's important to recognize the nuanced nature of trust, with personal trust differing from public trust. While an individual may be generally trusting (and has high personal trust), their public trust might be different. The overall public trust within a society can influence attitudes toward macro-level variables, such as overt censorship. For instance, in societies with high public trust, individuals inclined toward trust may support national strategies or overt censorship. On the contrary, in societies like Iran, where public trust is low but interpersonal trust is high, individuals may harbor negative attitudes toward overt censorship due to a lack of trust in the political system (Talaie & Hashemi, 2021; Crabtree, 2020). As a result, where public trust is relatively low, personal trust plays a limited role in fostering positive attitudes toward overt censorship but in democratic societies, high public trust contributes to the acceptance of government-imposed censorships (Gallagher & Miller, 2021; Müller, 2013). In addition, lower personal trust tends to manifest as resistance to censorship, driven by skepticism about the potential misuse of information manipulation or control (Nathan, 2020). In this research, we investigate the possible role of interpersonal trust on the endorsement of online overt censorship. Therefore, we posit.

H1. There is no statistically significant positive correlation between individuals' personal trust (interpersonal trust) and their endorsements of online overt censorship in societies characterized by low public trust.

5.2. Interest in politics

Previous studies have documented a low level of political knowledge among typical residents even in democratic societies (Converse, 2006). A rational lack of knowledge in politics, something that Downs (1975) calls "rational ignorance", might be much more likely in authoritarian regimes, where people have even less control over political issues. In this

regard, one could argue that in authoritarian regimes, if citizens get more credible political information, they would be more inclined to reject overt censorship. Thus, we posit.

H2. Higher interest in politics and political information is a negative predictor of online censorship endorsement.

5.3. Perceived similarity

The associations of perceived similarity with overt censorship could be hypothesized by Balance Theory and Selective Exposure Theory.

According to balance theory (Heider, 1958), citizens may naturally gravitate towards opinions that align with those of their leaders to maintain cognitive balance. This alignment helps to create a sense of consistency and harmony in their belief systems. Essentially, balance theory posits that people seek consistency and harmony in their beliefs, attitudes, and relationships. In the context of citizens and leaders, this theory can help elucidate the dynamics at play in shaping their shared opinions and views on censorship. Thus, it could be asserted that citizens sharing similar opinions with their governing system strive to maintain cognitive equilibrium, steering clear of contradictory information about their leaders, and lending support to all national policies related to censorship.

Besides, the Selective Exposure Theory (Festinger, 1957) assumes that people tend to favor information similar to their values that reinforces their pre-existing views. Furthermore, Song et al. (2018) showed that the more people find the source of regulatory policy similar to their values, the less they show psychological reactance toward such policies. Simply said, citizens would be more inclined toward censored and state-controlled information sources that reinforce their pre-existing values. Thus, we posit.

H3. Higher similarity of citizens' opinions with the political leaders (i.e. perceived similarity (PS)) is associated with higher citizens' support of online overt censorship.

5.4. Using state-run media

As Walker and Orttung (2014) state, media channels, whether directly or indirectly influenced by governmental bodies, are increasingly vital for the sustainability of non-democratic administrations globally. The content disseminated through these channels, coupled with the indifference they foster among the public, plays a significant role in discouraging defection among key regime figures and inhibiting the emergence of alternative sources of power within society (Walker & Orttung, 2014, p. 71). The information digestion via state-run media could be related to many factors such as education. For example, Kennedy (2009) shows that governmental support in authoritarian regimes such as China is dependent on the exposure to/and use of controlled media and education systems, especially in rural regions. In this vein, we hypothesize.

H4. Using state-run media is a positive driver of online overt censorship.

5.5. Religiosity

There is evidence that religiosity influences the behavior of individuals. For example, the report by the Pew Research Center (2016) among Americans shows a strong tie between religiosity and the daily behavior of people. Furthermore, Jung (2019) analyzed the *World Values Survey* data and showed that individual religiosity has a positive correlation with the sense of control, independent of individual and country-level factors. The researcher revealed that the relationship between individual religiosity and the sense of control varies depending on the religious context of the nation, with stronger associations observed in countries with higher levels of religiosity.

Previous literature also shows the significant links between religiosity and attitudes towards censorship. For instance, while exploring the Roman Catholic and Islamic views on autonomy and authenticity, Jelen (2017) concluded that despite the general notion that censorship contradicts democratic principles, insights from those two groups suggest that specific forms of censorship might support citizen autonomy and authenticity, contributing to positive collective self-governance. Droubay et al. (2021) used the data from *General Social Survey (GSS)* and confirmed the positive relationships of religiosity and supporting censorship in the American adult population. Besides, religiosity has proven to be a significant predictor of using non-regime media outlets (Wojcieszak et al., 2018). In accordance with the mentioned evidence, we posit.

H5. A higher degree of religiosity is associated with higher support for online overt censorship.

5.6. Motivated resistance to censorship

An increasing body of research has considered some well-known theories like Psychological Reactance Theory in studying how citizens would respond to media censorship (Behrouzian et al., 2016; Chang et al., 2022; Miller, 2022; Ng et al., 2021). In other words, when the right to access the free flow of information is taken away by means of censorship, citizens may exercise psychological reactance to restore their freedom. According to Brehm (1966), the elimination or threat to specific freedoms leads to psychological reactance, defined as a motivational state focused on restoring the jeopardized freedom. In essence, when faced with the elimination or threat of certain freedoms, individuals may experience a strong urge to engage in prohibited activities as a means of reclaiming their freedom (Brehm & Brehm, 1981). Reactance theory has been mostly applied to design persuasive messages, crisis communication, and health communication (see for example, Katz et al., 2017; Krpan & Dolan, 2022; Reynolds-Tylus, 2019; Richards et al., 2020; Xu & Wu, 2020) and less to media censorship. Nevertheless, Behrouzian et al. (2016) measured the psychological reactance arising from media censorship, termed it Motivated Resistance to Censorship (MRC), and explained how citizens use online political information-seeking as a mitigation strategy in response to online censorship. Thus, we posit.

H6. Motivated resistance to censorship has a negative association with online overt censorship endorsement.

5.7. Demographic factors

The relationships of age, gender, and education with attitudes toward censorship have been very complex and contextual. However, the general trends (Droubay et al., 2021; Fisher et al., 1994; Lambe, 2004; Lim et al., 2021; Price et al., 2016) reveal that older generations may tend to embrace more conventional and conservative beliefs, potentially impacting their endorsement of censorship, while younger generations might exhibit a greater inclination toward freedom of expression and mostly reject overt censorship. Furthermore, the evidence (e.g. Lambe, 2004) shows that levels of education could be linked to increased exposure to a variety of ideas and the development of critical thinking skills, and consequently, individuals with a higher educational level are more likely to place value on freedom and resist overt censorship. Besides, studies suggest that gender may be an influencing factor in attitudes towards censorship, with some research (such as Cowan, 1992; Rojas et al., 1996; Lambe, 2004) indicating that women might show more support for specific forms of censorship compared to men. It should be noted that the relationships of demographic factors with censorship endorsement could be contextual. For example, Lambe (2004) showed that the relationships between age and censorship could change based on the censorship context, that is, older adults are more inclined towards censoring sexual content while rejecting other types of

ensorship such as hate speech. Therefore, we posit.

H7. The older the individuals are, the more they are inclined towards online overt censorship.

H8. Higher education level is positively associated with resisting on-line overt censorship.

H9. As opposed to men, women are more supportive of overt censorship than males.

The conceptual model of this study is depicted in Fig. 1. Although incorporating intermediate (demographic) variables within the model would enhance its multi-layered nature and affect the interpretation of the coefficients of interest, we could not identify convincing literature to support the inclusion of any mediating or moderating variables to further investigate indirect relationships between the predictor and outcome variables. Consequently, we specified a model that only includes direct relationships.

6. Methodology

6.1. Participants

The research samples drawn entirely from Western, Educated, Industrialized, Rich, and Democratic (WEIRD) societies are proven to be among the least representative populations one could find for generalizing about fundamental aspects of human psychology, motivation, and behavior (Henrich et al., 2010). Thus, we decided to choose our case study from a non-WEIRD society (i.e., Iran) to make the results more generalizable to at least Iran’s society. Data was gathered in spring 2022 via a Google Form questionnaire. We used several national Telegram channels as third-party platforms to distribute the questionnaire’s link to their users. We gathered data from those who were using Telegram via a circumvention tool as Telegram was banned at that time. Totally, a sample of 517 Telegram users (208 males and 309 females; Mean age = 28 years, Standard deviation of Age = 10.3) provided responses to (nearly) all questions and were included in the statistical analyses. As an incentive, they were allowed to participate in a random draw of ten gift cards for online shopping.

6.2. Data collection

We recruited the participants using a combination of purposive and snowball sampling. The data were collected through several large Telegram channels in Iran as starting points. Then, all consented respondents were directed to a Google Form questionnaire to participate

in the study. This type of data collection helped us reach out to a justifiable sample of Telegram users throughout the country. Based on well-argued instructions given by some methodological researchers of Internet-based sampling (e.g. Borodovsky, 2022; Grewenig et al., 2023), we assumed that with a careful targeting process focusing on Telegram users as well as a solid data analysis, the finding would be generalizable to the whole Iranian Telegram users.

We strictly followed ethical guidelines in our research, ensuring informed consent, data privacy, and confidentiality. Participants were informed that their involvement was voluntary, and they could withdraw at any time without consequence, ensuring anonymity. No personal data was collected.

6.3. The questionnaire

The questionnaire included questions about the demographic characteristics of respondents such as age, education level, and gender. Age and gender were self-report measures. Participants were also asked to select the highest level of education completed.

Personal trust was measured by one statement: “I generally trust others” (with a five-point Likert scale option; completely disagree - completely agree). The frequency of using state-controlled media was measured by one question, i.e., “How many hours a week do you spend on domestic media outlets (TV, radio, newspapers, magazines, or local news sites) to keep up with news? (I don’t use such media outlets, less than an hour, 1–2 h, 3–5 h, 6 h and more). The degree of interest in politics was operationalized via one statement, i.e., “Generally speaking, how much are you interested in politics?” (Not interested at all - very little interested - somewhat interested - very interested), and the religiosity was measured by one statement: “Regardless of how frequently you engage in either NAMAZ or DUA, how religious are you?” (7-point Likert scale ranging from “Not religious at all” to “Very religious”). The items that shape Perceived Similarity (PS, five statements), Motivated Resistance to Censorship (MRC, eight statements), and Censorship Endorsement (CE, 10 statements) are described below.

● Motivated Resistance to Censorship (MRC)

Psychological reactance arising from media censorship that threatens individuals’ media freedom was assessed using the concept of MRC as conceptualized by Behrouzian et al. (2016). It consisted of eight items on a 5-point scale assessing both cognitive and affective dimensions. Sample items are “I feel frustrated by the lack of accurate information available in Iranian media” or “I often find myself looking for the flaws in the way information is presented in the Iranian media”.

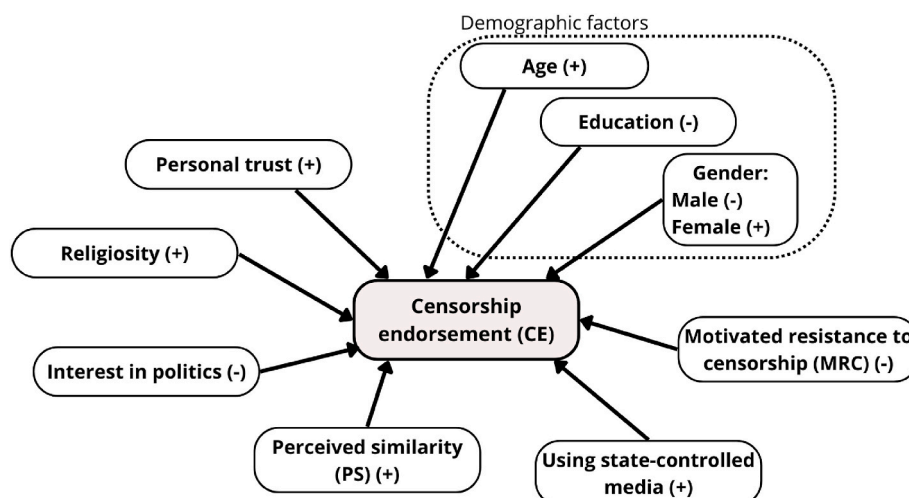


Fig. 1. Conceptual model of the study.

● *Perceived similarity (PS)*

The respondents' attitudes towards their similarity with various state-run media outlets were measured by five items on a 5-point scale that [Needham and Vaske \(2008\)](#) initially developed. Sample items were "I think state-sponsored media outlets ... share common values with me ... share common opinions with me".

● *Censorship endorsement (CE)*

CE was measured by ten items on a 5-point scale (completely disagree ... completely agree) that was adopted from [Kaspar and Müller-Jensen \(2021\)](#). Sample items were "Censorship boards should have the power to ban dangerous webpages" or "I support governmental control over the Internet".

We obtained written permission from the original authors/designers to incorporate the questionnaires/questions into our study.

The reliability of the sub-scales measured by Cronbach's Alpha and all dimensions (MRC = .884, PS = .952, and CE = .819) were higher than .80 indicating acceptable consistency ([Taber, 2018](#), p. 1279). The validity of one-item statements such as Age, Education, religiosity, using state-controlled media, and interest in politics were assured via Item clarity, face validity, and content validity by experts.

6.4. *Data analysis*

The regression analysis (in SPSS version 20) was used to analyze the data. The assumptions of regressions analysis (such as Normality, multicollinearity, non-existence of outliers in the data, linear relationship) were inspected before interpreting the findings. Please see [Appendix 1-3](#). The missing data for the covariates (that was less than five percent) were replaced with the mean of the observed values for that variable.

7. **Results**

7.1. *Overview of the survey responses*

In this study, a total of 571 responses were received, and subsequent analysis focused on the subset of respondents (n = 517) who answered nearly all of the questions outlined in the survey. The details of the demographic characteristics of the final sample are presented in [Table 1](#).

Respondents' ages exhibited a diverse distribution. The majority fell within the 20–29 years age range, constituting 42.2% of the analyzed sample. The second-largest group comprised individuals aged 30–39 years (20.9%), followed by those aged 19 years and younger (22.6%). Age distribution gradually declined with increasing age, with only .6%

Table 1
Demographics of the respondents (N = 517).

		N	%
Age	19 years and younger	117	22.6
	20–29 years	218	42.2
	30–39 years	108	20.9
	40–49 years	52	10.1
	50–59 years	19	3.7
	60 years and older	3	.6
Education	Middle school	9	1.7
	High school	161	31.1
	Associate	39	7.5
	Bachelor	187	36.2
	Master	90	17.4
	PhD	28	5.4
	n.s.	3	.6
Gender	Male	208	40.2
	Female	309	59.8

n.s. not stated.

of respondents aged 60 years and older.

The sample displayed a varied array of educational backgrounds. The highest percentage of respondents held a bachelor's degree, accounting for 36.2% of the analyzed group. High school education ranked as the second most prevalent, encompassing 31.1%, while those with a master's degree constituted 17.4%. A smaller proportion of respondents held a PhD (5.4%), while a nominal percentage reported educational levels at the middle school (1.7%) or associate degree (7.5%) levels. The gender distribution of the analyzed sample indicated a slightly higher representation of females (59.8%) compared to males (40.2%).

Age-wise, our sample had 76.9% of participants aged 20–59 that aligns relatively with the population age, that is, 69% of Iranians aged 15–64 ([World Bank, 2024](#)). Educationally, our respondents had higher educational attainment compared to around 25% tertiary graduates in the population in 2020. Gender-wise, 40.2% of our sample were male, slightly underrepresenting the 50.5% males aged 20–64 in the population ([ESCAP, 2022](#)). This must be considered when reading the findings.

7.2. *Key findings from the regression analysis*

The overall regression model was statistically significant, as evidenced by model summary ([Table 2](#)) and ANOVA results ($F = 44.232, p < 0.001$), indicating that the combined effect of the predictors significantly contributes to explaining the variance in censorship endorsement. The model accounted for 43% of the variance in the dependent variable (i.e. censorship endorsement) within the studied population ([Table 3](#)).

As [Table 4](#) shows, among the demographic variables, education level emerged as a significant predictor of censorship endorsement ($\beta = -.119, p = 0.002$). The negative coefficient indicates that as the education level increases, there is a corresponding decrease in censorship endorsement. Age ($\beta = .059, p = 0.150$) and gender ($\beta = .31, p = 0.369$) did not exhibit statistically significant effects on censorship endorsement. Moreover, interest in politics ($\beta = -.043, p = 0.239$) and personal trust ($\beta = -.014, p = 0.668$) did not demonstrate statistically significant impacts on censorship endorsement. These findings suggest that, within our studied sample, interest in politics and personal trust may not be strong predictors of attitudes toward censorship.

Using state-controlled media showed a statistically significant influence on attitudes toward censorship ($\beta = .089, p = 0.012$). The positive coefficient indicates that individuals who use state-controlled media more frequently are more likely to endorse censorship.

Religiosity was a substantial predictor of censorship endorsement ($\beta = .349, p < 0.001$). The positive coefficient indicates that higher levels of religiosity are associated with increased endorsement of censorship and vice versa.

Perceived similarity (PS) displayed a statistically significant relationship with censorship endorsement ($\beta = .177, p < 0.001$). The positive coefficient suggests that perceived similarity to authorities' views is associated with higher levels of censorship endorsement.

Motivated resistance to censorship (MRC) exhibited a substantial and negative influence on censorship endorsement ($\beta = -.266, p < 0.001$). The negative coefficient indicates that higher levels of motivated resistance are associated with lower levels of censorship endorsement, suggesting a counteractive effect.

Based on the standardized coefficients (β) from the regression analysis, three variables of religiosity ($\beta = .349$), motivated resistance to

Table 2
Model summary.^{a, b}

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.663 ^a	.440	.430	.58101

^a Predictors: (Constant), Motivated resistance to censorship (MRC), personal trust, Education level, Gender (dummy, 1 Male), Using state-controlled media, Interests in politics, Religiosity, Age, Perceived similarity (PS).

^b Dependent Variable: Censorship endorsement (CE).

Table 3
ANOVA.^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	134.381	9	14.931	44.232	<.001 ^b
	Residual	171.148	507	.338		
	Total	305.529	516			

^a Dependent Variable: Censorship endorsement (CE).

^b Predictors: (Constant), Motivated resistance to censorship (MRC), personal trust, Education level, Gender (dummy, 1 Male), Using state-controlled media, Interests in politics, Religiosity, Age, Perceived similarity (PS).

censorship ($\beta = -.266$), and perceived similarity ($\beta = .177$), were the most influential factors in predicting individuals' attitudes toward censorship in the studied population.

In order to know if the variables of age, education, and gender independently have any influence on attitudes toward censorship, we calculated a hierarchical linear regression (please see Appendix 4-5). In the first block, we included just the three demographic variables: age, education, and gender. On the second block, we added the rest of the predictors of censorship endorsement. The results revealed that demographic factors do not significantly influence censorship endorsement independently, but when they are imported as confounders to other predictors of censorship endorsement, only the education level had negative associations with censorship endorsement as we discussed earlier in this study.

Table 4
Coefficients^a of linear regression model and the results of hypothesis testing.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics		Hypothesis confirmation	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF		
1	Hypothesis	(Constant)	2.536	.216		11.733	<.001						
	H01	Personal trust	-.008	.019	-.014	-.429	.668	.017	-.019	-.014	.987	1.013	YES
	H02	Interests in Politics	-.036	.031	-.043	-1.178	.239	-.070	-.052	-.039	.836	1.197	NO
	H03	Perceived similarity (PS)	.094	.024	.177	3.890	<.001	.508	.170	.129	.533	1.877	YES
	H04	Using state-controlled media	.057	.023	.089	2.516	.012	.240	.111	.084	.889	1.125	YES
	H05	Religiosity	.151	.016	.349	9.178	<.001	.525	.377	.305	.765	1.307	YES
	H06	Motivated resistance to censorship (MRC)	-.222	.036	-.266	-6.198	<.001	-.505	-.265	-.206	.601	1.663	YES
	H07	Age	.004	.003	.059	1.441	.150	-.028	.064	.048	.666	1.502	NO
	H08	Education level	-.071	.023	-.119	-3.110	.002	-.088	-.137	-.103	.758	1.319	YES
	H09	Gender (dummy, 1 Male)	.049	.054	.031	.899	.369	-.014	.040	.030	.926	1.080	NO

^a Dependent Variable: Censorship endorsement (CE).

The confirmed conceptual model based on current data is shown in Fig. 2 below.

8. Discussion

The findings of this study provide valuable insights into the factors contributing to individuals' attitudes toward censorship within the Iranian population.

Among the demographic variables, education level emerged as a significant negative predictor of censorship endorsement, indicating that as education level increases, there is a corresponding decrease in censorship endorsement. This finding is in accordance with the findings of Lambe (2004) who showed that the higher education level could be linked to better critical thinking skills, and consequently, to resist overt censorship (Lambe, 2004).

The demographic factors of age and gender did not show any significant relationship with attitudes toward censorship. This contradicts the general trends (e.g., Aubin & Liedke, 2023; Lim et al., 2021) that showed older adults are more supportive of overt censorship than younger generations. One explanation for this finding could be the variations in the socio-demographic context of studies, the digital competence, and the literacy levels of citizens in investigated countries. For example, based on the latest updates of the Cultural Observation Center of Iran on Telegram users in Iran, the majority (59.2%) of users were young adults (aged 18–29 years old), and just 22.4% of older adults

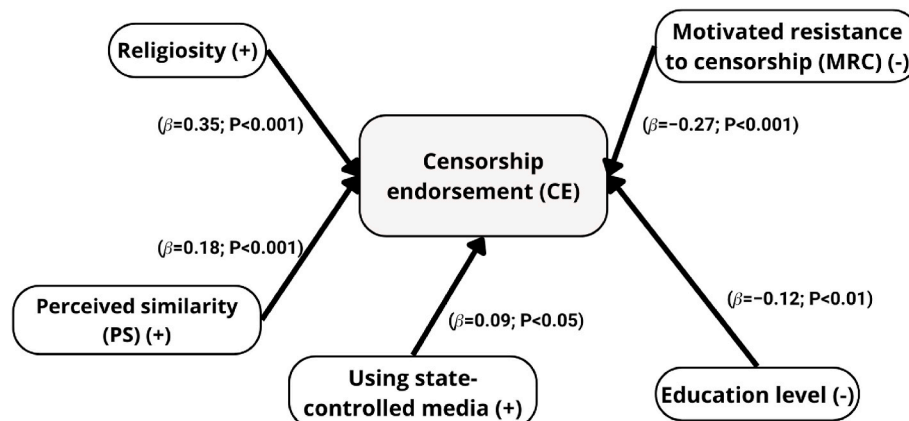


Fig. 2. The drivers of censorship endorsement among the Iranian sample.

(aged +50) were reported as Telegram users after telegram ban in Iran (Cultural Observation Center of Iran, 2021). When it comes to the digital skills of adults, the situation would be much worse. There are no formal statistics about the digital competencies of the Iranian adult population, however, similar statistics for European countries show that about 50% of the European adult population (aged 16–74) lack the basic overall digital skills (Eurostat, 2022).

Interest in Politics, while theoretically relevant, did not demonstrate statistically significant impacts on censorship endorsement. Furthermore, the individuals' personal trust did not have any significant influence on their endorsements of online overt censorship. One argument for this finding was that in hierarchical societies such as Iran with low public trust, personal trust plays a limited role in raising positive attitudes toward overt censorship.

These findings suggest that, at least within the context of this study, interest in politics and personal trust may not be strong predictors of acceptance of online overt censorship. The findings are in accordance with the results of Khosrowjerdi et al. (2020) that showed the low usage level of various information sources in hierarchical societies (i.e., societies with higher levels of power distance between for instance authorities and citizens, managers and staff, teachers and students, and parents and children). One argument for this could be the disadvantages of having political knowledge in hierarchical societies, in which the knowledge would not give a better chance for active participation in democratic decisions.

The perceived similarity to authorities' views and the use of state-controlled media emerged as noteworthy positive predictors of censorship endorsement, indicating that individuals who perceive their views as similar to those of authorities and those who use state-controlled media more frequently are more likely to endorse censorship. This finding confirms the fruitfulness of selective exposure theory and balance theory in explaining the attitudes of the Iranian population towards censorship. If it is regarded that the usage of state-controlled media is an indicator of the favorable attitudes of citizens towards the governing system in a society, then, this could be explained by balance theory, in which the citizens who favor the governing system would like to sustain equilibrium in their social surroundings and this would happen by confirming what the governing system does. Similarly, this finding is in accordance with selective exposure theory. The citizens who are frequently exposed to the information shared via state-controlled media would like to reinforce their pre-existing beliefs and ideas rather than expose themselves to contradictory information and sources. Our finding on the role of similarity in predicting individuals' resistance/endorsement of censorship is also in accordance with the studies of Song et al. (2018), and Silvia (2005). Song et al. (2018) asserted that the more people find the source of regulatory policy similar to their values, the less they show psychological reactance (resistance) toward such policies. With the same logic, if we consider government-imposed censorship as a practice of regulatory policies, it is expected to see that the perceived similarity to authorities' values would negatively influence resisting limiting regulatory policies imposed by authorities (e.g., censorship), as demonstrated in our results. Silvia (2018) study on the role of similarity in increasing compliance and reducing resistance showed that when the communicator exhibited a high degree of similarity to the participants, individuals expressed significant agreement and less resistance to their message, irrespective of any potential threat. This study can also be used to justify our findings on the role of similarity in predicting individuals' resistance/endorsement of censorship.

Religiosity stood out as a substantial positive predictor of censorship endorsement, with a positive coefficient ($\beta = .349$). Higher levels of religiosity were associated with increased endorsement of censorship. This result confirms the findings of previous studies (e.g., Droubay et al., 2021; Jelen, 2017) on the positive relationships of religiosity with positive attitudes towards overt censorship. Furthermore, according to the balance theory, religious people would like to sustain the equilibrium in their thoughts and beliefs. Therefore, they support the

censorship initiatives of their religious leaders. The importance of obedience for religious people could be explained by the Islamic thoughts adopted from the Qur'an, the Muslim holy book. According to Qur'an verse 4:59, that is, "O believers! Obey Allah and obey the Messenger and those in authority among you." (<https://quran.com/4/59>), true believers must obey their authorities. The authorities have often been interpreted as the governing system and religious leaders.

Motivated resistance to censorship exhibited a substantial and negative influence on censorship endorsement. The negative coefficient indicates that higher levels of motivated resistance are associated with lower levels of censorship endorsement, suggesting that individuals with a strong inclination to resist censorship may act as a counterforce to prevailing censorship endorsement tendencies. This finding is in accordance with the reactance theory (Brehm, 1966; Brehm & Brehm, 1981). The censorship of information could be regarded as a threat to the citizens' freedom to access information, and consequently, it could trigger psychological reactance in citizens. This reverse trigger effect of censorship has been documented in previous studies of Worchel (1992), Krpan and Dolan (2022), among others.

While our research presents some interesting findings, it is important to consider certain aspects when interpreting the results. Firstly, although females constitute approximately 60% of the Iranian population, our study included 50% female participants. Secondly, there is a potential for response bias, as participants might provide socially desirable answers or may not fully disclose their true opinions on sensitive topics like online censorship, which can impact the accuracy of the data. Lastly, by sharing the questionnaire link among Telegram users, we effectively reached a targeted audience and gathered valuable insights. Although this method may have attracted more active Telegram users, the findings on the attitudes and variables are not applicable for Telegram non-users.

9. Conclusion

This study provides insights into factors shaping attitudes toward censorship among the Iranian population. Higher education is identified as a critical determinant, revealing a negative correlation between education level and censorship endorsement, echoing findings that highlight the role of enhanced critical thinking skills in resisting overt censorship. Surprisingly, age and gender do not exhibit significant relationships with censorship attitudes, challenging conventional assumptions and suggesting the possible influence of socio-demographic contexts and digital competencies in attitudes towards digital overt censorship. Interest in politics and personal trust do not exert significant impacts, diverging from expectations based on prior assumptions, particularly in power-distant (hierarchical) societies. The perceived alignment with authorities and frequent engagement with state-controlled media emerge as strong positive predictors of censorship endorsement, supporting selective exposure and balance theories. Religiosity stands out as a substantial positive predictor, aligning with previous research and emphasizing the role of religious teachings in supporting censorship initiatives. Notably, motivated resistance to censorship is identified as a crucial counterforce, with higher levels associated with lower endorsement, corroborating reactance theory and highlighting the impact of perceived threats to freedom of information access.

In contemporary society, the advent of digital technologies has both facilitated and complicated the landscape of censorship. The Internet and social media platforms have democratized access to information, enabling individuals to bypass traditional gatekeepers and disseminate various perspectives. On the other hand, the same platforms have become battlegrounds for censorship, with institutions exerting increasing control over online content.

Future studies could explore the evolving dynamics of digital literacy, political engagement, and information source preferences,

especially considering the digital landscape's impact on diverse age groups. At the societal level, fostering a culture of information, digital and media literacy, critical thinking, and civic engagement could be crucial for immunizing populations against the insidious effects of censorship. By equipping individuals with the skills to discern credible sources, evaluate information critically, and participate actively in public discourse, societies can cultivate resilience against manipulation and censorship. Additionally, further investigation into the interplay between religiosity, obedience, and censorship attitudes could deepen our understanding of cultural influences on information control. Ultimately, these findings contribute to the broader discourse on censorship and inform strategies for fostering a more open and informed society.

10. Practical implications

It seems that perceived similarity and religiosity would accumulate using state-controlled media and subsequently censorship endorsement. However, this is not the case for education level; since well-educated people would experience more resistance and finally show less censorship endorsement. The findings clearly show these two dynamics working against one another simultaneously. It could be claimed that the less-educated pious not only use the state-run media more often but also endorse restriction measures taken by the government. On the flip side, well-educated secular people are not willing to use state-controlled media and will not support any restrictions on access to information while experiencing negative emotions triggered by the government's decisions at the same time.

Overall, in case of illegitimacy of and distrust of Iran's government by social media users, the findings of this study would be considered of utmost importance to policymakers. More specifically, the results showed how well-educated people would resist censorship. If resistance against censorship becomes a prevailing trend among highly educated individuals, that would raise significant concerns for the Iranian government. The same would happen when it comes to perceived similarity, religiosity, and using state-controlled media.

Moreover, as secularism and distrust towards government-controlled media continue to rise, so will efforts to bypass censorship mechanisms. This trend, particularly evident among the growing number of Iranians using platforms like Telegram, poses a significant challenge to

government efforts to control the flow of information.

CRediT authorship contribution statement

Houman Jafari: Writing – review & editing, Writing – original draft, Visualization, Validation, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Hamid Keshavarz:** Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Mahmood Khosrowjerdi:** Writing – review & editing, Writing – original draft, Validation, Methodology, Formal analysis, Conceptualization. **Dorota Rak:** Writing – review & editing, Validation, Formal analysis. **Alireza Noruzi:** Writing – review & editing, Writing – original draft, Supervision, Methodology, Formal analysis, Conceptualization.

Declaration of generative AI and AI-assisted technologies in the writing process

The quality of author-produced texts in this manuscript were checked by using the SIKT AI CHAT (a safe system developed by Norwegian Agency for Shared Services in Education and Research). After using this tool/service, the authors reviewed and edited the content as needed and take full responsibility for the content of the publication.

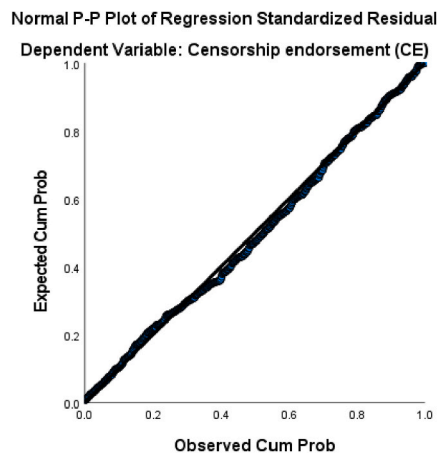
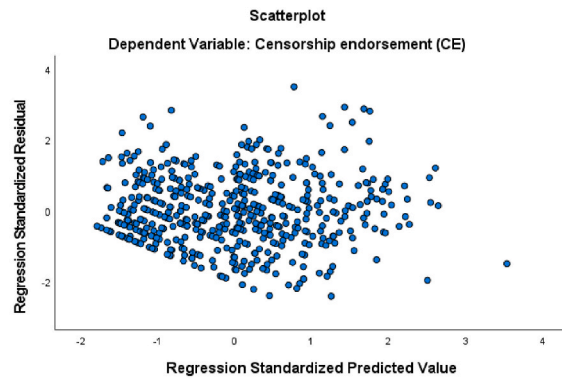
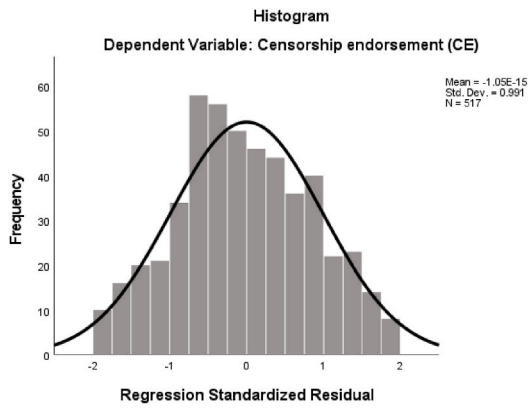
Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgements

The authors would like to express their gratitude to the University of Inland Norway for the financial support in covering the article processing charges (APC) of this research. The constructive comments of the anonymous reviewers of CHBR, and the contribution of all participants in this study are also acknowledged.

Appendix 1. Regression analysis assumptions



Appendix 2. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Std. Error	Kurtosis	Std. Error
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic
Gender (dummy, 1 Male)	517	.00	1.00	.4023	.49084	.400	.107	-1.848	.214
Age	517	15.0	71.0	27.959	10.2519	1.102	.107	.652	.214
Education level	517	3.0	8.0	5.529	1.2850	.001	.107	-1.058	.214
Using state-controlled media	517	1.0	5.0	2.246	1.1925	.797	.107	-.265	.214
Interests in politics	517	1.0	4.0	2.496	.9075	-.129	.107	-.788	.214
Religiosity	517	1.0	7.0	3.309	1.7765	.158	.107	-1.132	.214
personal trust	517	1.0	5.0	2.630	1.3248	-.164	.107	-1.496	.214
Motivated resistance to censorship (MRC)	517	1.00	5.00	3.7844	.92073	-.871	.107	.335	.214
Perceived similarity (PS)	517	1.00	7.00	2.2838	1.45193	1.103	.107	.343	.214
Censorship endorsement (CE)	517	1.00	4.70	2.1754	.76949	.525	.107	-.028	.214
Valid N (listwise)	517								

Appendix 3. Mean scores and standard deviations of the variables in the model

	Mean	Std. Deviation	N
Censorship endorsement (CE)	2.1754	.76949	517
Age	27.959	10.2519	517
Education level	5.529	1.2850	517
Gender (dummy, 1 Male)	.4023	.49084	517
Using state-controlled media	2.246	1.1925	517
Interests in politics	2.496	.9075	517
Personal trust	2.630	1.3248	517
Religiosity	3.309	1.7765	517
Perceived similarity (PS)	2.2838	1.45193	517
Motivated resistance to censorship (MRC)	3.7844	.92073	517

Appendix 4. Hierarchical regression analysis to investigate the independent influence of demographic variables on censorship endorsement

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.536	3	.845	1.431	.233 ^b
	Residual	302.993	513	.591		
	Total	305.529	516			
2	Regression	134.381	9	14.931	44.232	<.001 ^c
	Residual	171.148	507	.338		
	Total	305.529	516			

- a. Dependent Variable: Censorship endorsement (CE).
- b. Predictors: (Constant), Gender (dummy, 1 Male), Education level, Age.
- c. Predictors: (Constant), Gender (dummy, 1 Male), Education level, Age, personal trust, Religiosity, Using state-controlled media, Interests in politics, Motivated resistance to censorship (MRC), Perceived similarity (PS).

Appendix 5. Coefficients^a of supplementary hierarchical regression analysis

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
	Age	.002	.004	.022	.431	.666	-.028	.019	.019	.753	1.328
	Education level	-.059	.030	-.099	-1.957	.051	-.088	-.086	-.086	.761	1.314
	Gender (dummy, 1 Male)	-.028	.069	-.018	-.398	.691	-.014	-.018	-.017	.984	1.016
2	(Constant)	2.536	.216		11.733	<.001					
	Age	.004	.003	.059	1.441	.150	-.028	.064	.048	.666	1.502
	Education level	-.071	.023	-.119	-3.110	.002	-.088	-.137	-.103	.758	1.319
	Gender (dummy, 1 Male)	.049	.054	.031	.899	.369	-.014	.040	.030	.926	1.080
	Using state-controlled media	.057	.023	.089	2.516	.012	.240	.111	.084	.889	1.125
	Interests in politics	-.036	.031	-.043	-1.178	.239	-.070	-.052	-.039	.836	1.197
	Personal trust	-.008	.019	-.014	-.429	.668	.017	-.019	-.014	.987	1.013
	Religiosity	.151	.016	.349	9.178	<.001	.525	.377	.305	.765	1.307
	Perceived similarity (PS)	.094	.024	.177	3.890	<.001	.508	.170	.129	.533	1.877
	Motivated resistance to censorship (MRC)	-.222	.036	-.266	-6.198	<.001	-.505	-.265	-.206	.601	1.663

a. Dependent Variable: Censorship endorsement (CE).

Data availability

The data for this study is available here, <https://doi.org/10.18710/NA5ZWS>.

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