

# Public Acceptance of Internet Censorship in Indonesia

## Full research paper

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## Abstract

The rapid uptake of digital technologies promises great benefits for citizens to transact and communicate in a free and open space. Yet this freedom may also lead governments to impose regulation and to attempt to filter content that may be considered offensive or politicised in nature. We empirically study public perceptions of internet censorship, perceived personal consequences of internet filtering and efforts to circumvent censorship through a survey of 112 residents of Indonesia, analysing our results with PLS structural equation modelling. Our findings show that perceived need for filtering, as well as social norms strongly influence public attitudes. We also find that uncertainty avoidance – a cultural trait - also influences these attitudes. However, the use of circumvention tools is determined by perceived personal consequences rather than attitude. Our findings address the lack of research in this space while addressing implications for government and policymakers.

**Keywords** Internet censorship, filtering, Indonesia, public acceptance, circumvention tools

## 1 Introduction

In the almost 3 decades of public uptake of the world wide web, the advancement of digital technologies has transformed the way society communicates, transacts and stays updated on news and current events. For developing nations, such technology holds great potential to improve the quality of life. In Indonesia, the economic benefit from internet-based industries has supported stable economic growth for many years (Paterson 2019). In 2019, the internet was being used by 171 million Indonesians (Indonesia-Investments 2019), approximately 68% of the nation's population.

This low-cost, borderless, and instantaneous global medium for free speech has been touted as being a "great equaliser", yet in practice, in Indonesia, the public experience of the internet is influenced and controlled, often in subtle ways. In this period of rapid uptake of the internet, Indonesia has seen its democracy index declining sharply from 6.97 (rank 48th) in 2016 to 6.39 (rank 68th) in 2017 (Stott 2019) influenced by civil freedom and the political climate. Though government officials are elected in an ostensibly democratic manner, the growing influence of conservative Muslim groups and the drafting of controversial legislation has been felt (Power 2018). This is evidenced by the proactive support for the enactment of the anti-pornography laws in 2008 and the criminal sentencing of some public figures such as Basuki Tjahaja Purnama on religious grounds (BBC 2017).

In practice, the internet can not in itself provide new freedoms for society; as it is so integrated into every aspect of society it simply provides "new ways of engaging in old practices" (Lyon 2003). In Indonesia, this has led authorities to control speech and content sharing by implementing a new content detection system "Cyber Drone 9" (Freedom House 2018) and revising the law concerning electronic information and transactions, which can criminalise the posting of online content (Balfas 2009). In contrast to China, however, internet censorship in Indonesia has received little attention from researchers.

Prior studies have been limited to a general description of the current internet censorship imposed in Indonesia, such as the filtering methodology, infrastructure, and a handful of the widely reported cases which made it into the mainstream media. For instance, Crete-Nishihata et al. (2013) revealed that every Internet Service Provider (ISP) in Indonesia is authorised to filter the internet. Consequently, internet users in Indonesia may experience the internet differently, depending on which ISP they subscribe to. For example, Telkom, the biggest ISP in Indonesia has blocked its users from accessing Netflix since it was first launched.

The purpose of this research is to understand factors influencing public acceptance of internet censorship and shed light on the use of circumvention tools (e.g. Wang and Mark 2015). We explore constructs identified in previous descriptive research (Shen and Tsui 2016) to examine causal links. To achieve this goal, we investigate public perceptions around internet censorship in Indonesia and usage of circumvention tools through primary data collected in Indonesia. Specifically, the study considers factors that may influence the acceptance of this censorship: namely: awareness of internet filtering, the perceived need for internet filtering, descriptive norms, uncertainty avoidance, and perceived personal consequences. In addition, the use of technical countermeasures for evading internet censorship is also explored and discussed, particularly concerning public awareness of, and support for, internet censorship. Our findings have practical implications for governments and policy makers wishing to both improve public attitudes and to develop effective messaging and communication approaches.

## 2 Background

As the internet provides access to a global audience, while avoiding more traditional intermediaries such as publishers and broadcasters, it can be seen as supporting the ideological position of free speech with no central authority (Volokh 1994). Indeed, it is reported that during the conceptualisation of the internet, scholars such as Langdon Winner, Nicholas Negroponte, and John Perry supported the idea that the internet would serve as a communication medium free from government intrusion (Subramanian 2011). The achievement of this vision has, however, been limited by the way governments have exercised control over the internet and public access to this resource. Global internet freedom has declined for ten consecutive years, with evidence suggesting that this decline is accelerating (Shahbaz and Funk 2021). Ironically, open communication between governments has also led them to share their tools and techniques for censorship. For example, China has assisted other countries through holding conferences and selling censorship tools (Freedom House 2018).

Deibert et al. (2010) describe three generations of internet restrictions. The "first generation", often labelled as "Chinese-style" is where the internet request will be refused if it contains network data or keywords that match with the ones registered in blacklists on the network devices. The "second-generation" techniques include direct removal of prohibited internet resources (websites, platforms)

and security attacks such as denial of service attacks against these resources. “Third-generation” techniques consider access denial as low priority and place the focus on managing the user directly, through monitoring user behaviour and activity. As these mechanisms for internet censorship typically involve removing a resource entirely from the public view (as opposed to redacting or blocking out portions as might be done in other media), internet censorship can be described as a type of *filtering* where only permitted resources are allowed to pass through the filter. China implements all of these techniques and their heavy censorship and public surveillance infrastructure is classified by Freedom House as *not free* (Shahbaz and Funk 2021). Indonesia is classified as *partly free* (Freedom House 2018): the censorship technology and legislation are not fully implemented, but Indonesia has many of the hallmarks of China’s early efforts in censorship.

## 2.1 Internet regulation in Indonesia

After the fall of the regime of Suharto, Indonesia transformed into a more democratic state (Webber 2006). This limited the involvement of military and government officers in political matters and provided more freedom for mass media and political association. However, the development of democratic practices did not seem to correlate directly with the freedom to convey opinions and to speak freely. This was exemplified by the passing of two bills: The *Law against Pornography and Pornographic Acts* (Government of Indonesia 2008b) and *Law Concerning Electronic Information and Transactions* (Government of Indonesia 2008a).

Despite being controversial and attracting public comment, the *pornography law*, with support from Islamic organisations such as Muhammadiyah and Indonesia Ulama Council, was considered instrumental to protect the morals of Indonesian society (Sherlock 2008). While prohibiting pornographic materials which might exist in print and audio-visual media, this law has a far wider reach due to its broad definitions of prohibited materials or actions (Lim 2012).

The second relevant bill passed in 2008 was the *Bill of Electronic Information and Transactions* which broadly addressed the need to secure the internet environment for business and community purposes, and to protect from cybercrime (Lubis and Maulana 2010). These two bills provided the requisite legal basis for Indonesia’s Ministry of Communication and Information Technology (MCIT) to employ control mechanisms via ISPs. MCIT is responsible for providing guidelines and standards regarding the internet content that should be censored by ISPs (Crete-Nishihata et al. 2013). This began with the implementation of the *DNS Nawala* program which provided members of the Indonesian ISP association a list of restricted website URLs (Adji et al. 2014). This project developed into *Trust + Positif*, a centralised database maintained by MCIT containing a list of safe and unsafe websites, used by ISPs as a reference for providing safe internet to their users. While these initiatives were priority initiatives for the MCIT, there were numerous implementation issues which meant that many users could still access illegal content or that many religious and education websites were blocked after they had been mistakenly classified as illegal (Crete-Nishihata et al. 2013). Nevertheless, CIGI-Ipsos (2019) reported that 85% of survey participants from Indonesia supported the online censorship imposed by the government. Strong support for internet censorship (90%) was also reported in a survey of Indonesian voters (Shen and Tsui 2016). These MCIT initiatives to censor the internet in Indonesia received significant support from the public, which could suggest high public trust in the government internet control system. Given the public support and to address the risks posed by the advancement of internet technology, MCIT has stepped up their attempts to detect harmful content by launching a new initiative, *Cyber Drone 9* (Freedom House 2018).

In 2019, following violent incidents in two provinces, Jakarta and West Papua, the Indonesian government temporarily imposed a far more overt and blanket internet censorship regime, with the stated objective of preventing the spread of racist speech and fake information. In Jakarta, social media (Facebook, Twitter, Instagram) and WhatsApp were blocked in May 2019 and people in West Papua were entirely disconnected when the Indonesian government shut down all internet access in August 2019. Such government actions, whether well-intentioned for preventing the spread of hoaxes or restoring order, raise concerns as the public no longer have a “shared awareness” (Shirky 2011). In the context of Jakarta and West Papua, this shared awareness would include public understanding of the problems that are happening on the ground and first-hand information on their local conditions.

## 2.2 Use of circumvention tools

While online freedom of expression has been challenged by the practice of blocking and filtering, the development and availability of circumvention technology has provided users with the means to bypass restrictions. Several authors have described means to do this using tools such as VPN and TOR (e.g. Invernizzi et al. 2013).

In China, where the use of censorship technologies is sophisticated, VPN use was found to be increasing exponentially to circumvent filtering (Yang and Liu 2014). Similarly, a rising interest in VPN has been experienced in Indonesia (Trend 2019), prompted by the temporary blocking of social media and the messaging app WhatsApp following riots. Bypassing internet censorship can also be done using TOR (The Onion Router), a tool that enables anonymous communication. It has been estimated that approximately 3% of internet users who live in countries with strong censorship policies utilise circumvention software for evading censorship (Roberts et al. 2010). With 170 million users in Indonesia (Freedom House 2018), that would suggest at least 5 million may use such tools.

### 3 Research Model

There has been a lack of understanding of the public's view on government monitoring of internet communications (Reddick et al. 2015). Regardless of the policy reasons for internet censorship, public perceptions of it are important. Prior research has identified constructs relevant to internet censorship and its acceptance in an Asian context, but these studies have reported descriptive statistics without considering a causal model (Shen and Tsui 2016). We are not aware of any empirical research which has modelled these constructs, and following the example of work in related contexts such as government surveillance (e.g. Dinev et al. 2008) we propose a research model to support our investigation of any causal links. This model and the associated hypotheses are discussed in the following sections. In this research, we study several potential determinants of attitudes to filtering of the internet and examine the role of both these attitudes and the perceived personal consequences of filtering on the circumvention behaviour of individuals in Indonesia.

#### 3.1 Internet Censorship Awareness

Awareness of internet filtering is the extent to which individuals know and understand the restrictions on their internet use. This awareness develops from their experience facing any form of filtering. Attitude towards filtering is the extent to which individuals support or oppose internet filtering, where a positive attitude indicates that the individual is in favour of online censorship. Prior work has studied the role of internet filtering awareness; in two studies, Roberts (2014) showed that censorship did not deter bloggers from publishing political articles or reading and sharing censored materials. In other words, users who experienced censorship directly were less likely to support it. Wang and Mark (2015) demonstrated that even in China, a country with extensive censorship mechanisms, around 30% of respondents were not aware that the Chinese government censored internet content. Differing levels of awareness were also found to influence the levels of acceptance of internet censorship, as those with more experience of the internet and censorship of it, had lower support for the censorship. We thus hypothesize that:

H1: Awareness of filtering negatively influences attitude to filtering.

#### 3.2 Need for Filtering

We define perceived need for filtering as the perception that individuals in a society have of the need for access restrictions to internet content that is deemed to negatively affect society. Almost two-thirds of respondents in a study conducted in Turkey supported the blocking of access to websites that disseminate offensive content (Ozkan and Arikan 2009). A broader poll with respondents of 11 Asia Pacific countries also found strong support for internet censorship (Shen and Tsui 2016). The strongest support was expressed by Indonesia (90%), followed by Taiwan (88%), and India (83%) with many internet users expecting that censorship could improve the content and make the internet a safer medium.

Perceived need for internet filtering is a belief held by individuals, and consistent with the Theory of Reasoned Action (Fishbein et al. 1975), this behavioural belief should influence attitude to the behaviour of internet filtering. Perceived need has been shown to influence attitude in a range of settings including perceived need for change in organisations (Van den Heuvel et al. 2015) and perceived need for surveillance by governments (Thompson et al. 2020). We thus hypothesize that:

H2: Perceived need for filtering positively influences attitude to filtering.

#### 3.3 Uncertainty Avoidance

In this study, we also consider a cultural dimension developed by Hofstede (1984): uncertainty avoidance. This is the degree to which an individual or group of people can manage unexpected and ambiguous situations. People with lower levels of uncertainty avoidance are more comfortable and less anxious when facing uncertain situations while societies that have higher uncertainty avoidance levels

are believed to need more formal laws and regulations to reduce citizens' concerns (Duronto et al. 2005). In the context of internet censorship, sensitive and offensive content such as pornography, violence, and terrorism are perceived as having the potential to cause harm and disrupt society. Therefore, consistent with research on support for the regulation of violent games, which showed that those with higher levels of uncertainty avoidance were more likely to support such regulation (Hong 2015), people who live in a society with high uncertainty avoidance should be more likely hold attitudes that support censorship to reduce their fear of the negative impacts of harmful internet content. Thus, we hypothesize that:

H3: Uncertainty avoidance positively influences attitude to filtering.

### **3.4 Descriptive Norms**

In this study, descriptive norms refer to an individual's belief that other people, such as family and friends, support internet censorship. Fishbein and Ajzen (2011) argue that descriptive norms can influence both attitudes and behaviour, and the role of descriptive norms has been investigated in some privacy, censorship and security related studies. For example, Anderson and Agarwal (2010) found that how people act in response to something that harms a shared resource (the internet) is significantly influenced by descriptive norms. Saeri et al. (2014) also found that descriptive norms are associated with both attitudes to privacy on Facebook and intentions to protect oneself. In a study of public support for censorship of films in Singapore, Ho et al. (2012) found that social norms (including both subjective and descriptive norms) were associated with public support for censorship. Thus, we hypothesize that:

H4: Descriptive norms positively influences attitude to filtering.

### **3.5 Attitude to Filtering**

Yang and Liu (2014) suggested that users' behaviours in response to online censorship are influenced by their attitudes about the importance of internet restriction. Specifically, negative attitudes to censorship would lead people to use circumvention tools, such as VPNs and TOR, giving them access to the blocked content. Through focus groups and a web survey, Yang and Liu (2014) identified that the need to obtain information, access to social network platforms, social status, and access to Chinese entertainment materials were the primary motivations of Chinese people to penetrate the China blocking system. Those who circumvented the Chinese internet firewall disagreed with the practice of internet censorship, while those who exhibited a positive attitude were unlikely to access blocked websites. This conclusion is in line with reactance theory (Brehm and Brehm 2013), which suggests that people are more likely to exert effort to obtain restricted information when attitudes that are contrary to what was intended are strengthened because of threatened loss of access. Thus, we hypothesize that:

H5: Attitude towards filtering is negatively associated with the use of circumvention tools.

### **3.6 Perceived personal consequences**

Perceived personal consequences of internet filtering relates to individuals' perceptions of the negative consequences of internet filtering in their lives. Shen and Tsui (2016) identified concerns about personal consequences such as limiting that content that individuals wish to access and increasing their fear of their actions being under surveillance. Those who perceive that their freedom is being limited by the practice of internet filtering may therefore attempt to restore it through countermeasures. For example, in the context of privacy, citizens who had higher concerns about government surveillance were significantly more likely to employ circumvention tools in both Australia and Sri Lanka (Thompson et al. 2020). Similarly, in the context of internet filtering, these circumvention tools would enable access to the blocked content. Thus, we hypothesize:

H6: Perceived personal consequences positively influence use of circumvention tools.

## **4 Research Method and Design**

Data was collected through an anonymous online survey administered through the Qualtrics platform. The survey was open to anyone 18 years of age and over who lived in Indonesia at the time of the data collection. This ensured that respondents' responses were based on direct experience of the environment under study. The survey instrument contained two blocks: one to collect general demographic information, and one to collect information about the constructs in the model, which contained items to measure the seven constructs in the research model. The second block was developed using previously validated scales where possible. Human Research Ethics Committee approval was obtained before commencing data collection. All items were measured on 5-point scales. A summary of the constructs studied is given below in Table 1.

Construct	Definition	Source of items
Awareness of filtering	The extent to which an individual understands and has experienced internet filtering	Self-created
Perceived need for filtering	The perception that individuals have of the need for access restrictions to internet content that is deemed to negatively affect society	Shen and Tsui (2016)
Uncertainty avoidance	The degree to which an individual can manage unexpected and ambiguous situations	Dorfinan and Howell (1988); Liu and Wang (2018)
Descriptive norms	An individual's belief that other people, such as family and friends, support internet censorship	Thompson et al. (2017)
Attitude to filtering	The extent to which an individual supports or opposes internet filtering	Shen and Tsui (2016)
Perceived personal consequences	An individual's perceptions of the negative consequences of internet filtering on their lives	Shen and Tsui (2016)
Use of circumvention tools	The extent of usage of tools and methods to evade internet filtering	Jamali and Shahbaztabar (2017)

Table 1. Summary of constructs and their measurement

## 5 Data and Analysis

The research model was tested using partial least squares (PLS). PLS was chosen due to its suitability for exploratory models (Hair Jr et al. 2016). Testing of the model was carried out in two stages using SmartPLS 2: the measurement model was evaluated first and then the structural model. Bootstrapping with 5,000 subsamples was performed to determine the significance of the paths proposed in the model.

### 5.1 Descriptive Statistics

We received 112 valid responses (59.8% males and 40.2% females), and these were included in the data analysis. The most common age group was 36 to 45 years (43.8%) and a majority of participants had bachelor degrees (61.6%), suggesting that the sample was significantly better educated than the general Indonesian population (OECD 2019). Table 2 provides the demographic profile.

<b>Group</b>					
Gender	Male	Female			
Percent	59.8	40.2			
Age	18-25	26-35	36-45	46-55	56+
Percent	10.7	20.5	43.8	19.6	5.4
Education	Doctorate	Masters	Bachelor	Community College	High school
Percent	4.5	19.6	61.6	11.6	2.7

Table 2. Demographic profile

### 5.2 Model Testing

As a single questionnaire was used to collect all of the data, we assessed the potential threat of common method variance (CMV) using a Harmon one-factor analysis. The results showed that the most variance explained by one factor was 20.8%. Therefore, CMV is unlikely to be a serious concern in this data set.

The measurement model was then assessed. Each construct was first examined, and several items were removed from awareness of internet filtering, and one item from the use of circumvention tools, to improve indicator reliability. All composite reliability (CR) values were above 0.70 and average variance extracted (AVE) was over 0.50 for all constructs. Table 3 shows the CR and AVE results, and as can be seen, the measurement can be considered reliable and to have acceptable convergent validity. Discriminant validity was assessed using analysis of cross-loadings and the Fornell-Larcker criterion. All items loaded more strongly on their construct than on other constructs. The square root of AVE for each construct was also greater than the correlation between that construct and any other construct, so discriminant validity was established for the measurement model.

Construct	Final CR	Final AVE
Awareness of filtering	0.85	0.59
Perceived need for filtering	0.91	0.67
Uncertainty avoidance	0.87	0.59
Descriptive norms	0.91	0.78
Attitude to filtering	0.88	0.71
Perceived personal consequences	0.92	0.74
Use of circumvention tools	0.84	0.51

Table 3. Construct convergent validity

We then examined the structural model. As can be seen in Figure 1, four of the six hypotheses were supported and 61.4% of the variance in attitude toward internet filtering was explained by the model. However, only 10.2% of the variance in the use of circumvention tools was explained.

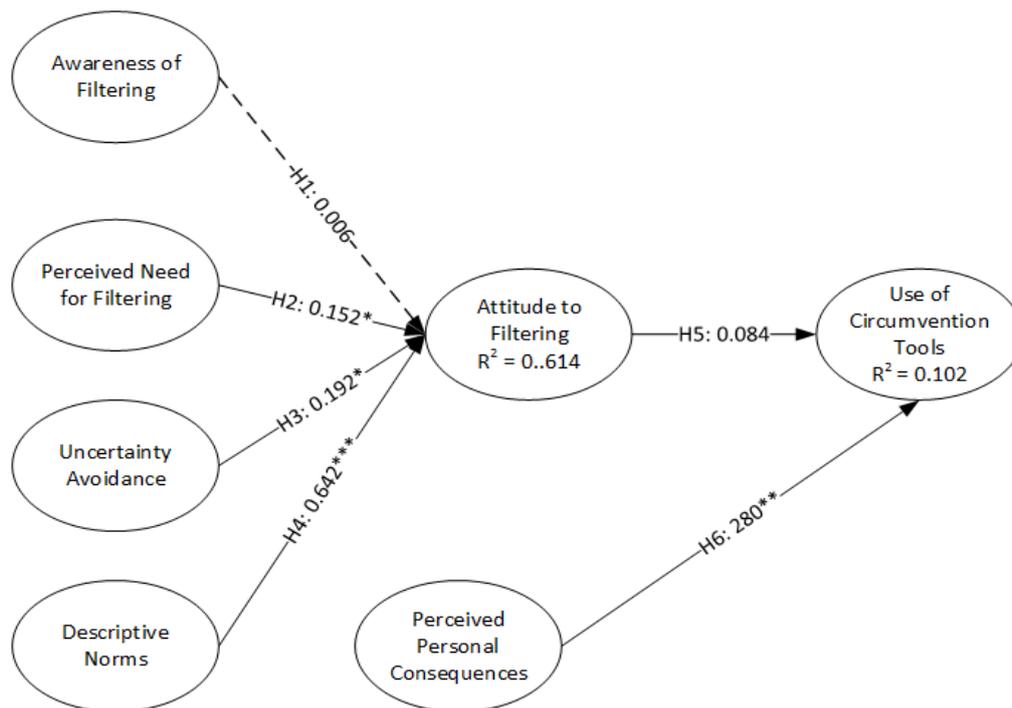


Figure 1: Model testing results

Awareness of internet filtering did not influence attitude to filtering ( $\beta = 0.006$ ,  $p > 0.05$ ), so H1 was rejected. As hypothesised, attitude to filtering was, however, positively influenced by perceived need for filtering ( $\beta = 0.152$ ,  $p < 0.05$ ), uncertainty avoidance ( $\beta = 0.192$ ,  $p < 0.01$ ) and descriptive norm ( $\beta = 0.642$ ,  $p < 0.001$ ). H2, H3 and H4 were all, therefore, supported. Attitude to filtering did not influence use of circumvention tools ( $\beta = 0.08$ ,  $p > 0.05$ ), leading us to reject H5, but perceived personal consequences did have a positive influence on use of circumvention tools ( $\beta = 0.280$ ,  $p < 0.01$ ) so H6 was supported.

## 6 Discussion

We address the lack of understanding of public perceptions of internet censorship in Indonesia. Using primary data collected in Indonesia, we investigated public acceptance of internet censorship and use of circumvention tools finding support for four of six hypotheses.

We proposed a negative relationship between awareness of internet filtering and attitude towards internet filtering, but this was not found; knowledge about the practice of internet censorship in Indonesia does not contribute to the level of support that Indonesians have. This is contrary to the results of Wang and Mark (2015) who found that internet users with experience of facing internet censorship were less likely to have a positive attitude towards it. This lack of relationship may be because of the pervasiveness of internet censorship, with 62.3% of participants having previously encountered internet filtering.

As hypothesised, perceived need for internet filtering had a positive influence on attitude to filtering; that is, the more that individuals believe that there is a need for internet censorship, the more they support it. This finding is consistent with the role perceived need for surveillance has been shown to play in influencing attitude towards government surveillance (Thompson et al. 2020).

Cultural factors have been shown to play an important role in many aspects of human attitudes and behaviours (Hofstede 1984), and in this study uncertainty avoidance positively influenced attitude to internet filtering. The higher an individual's level of uncertainty avoidance the more positive their attitude towards internet filtering was, and this is consistent with the work of Hong (2015) on the regulation of violent games. The role that uncertainty avoidance plays in determining attitudes to internet censorship occurs because internet censorship is perceived as reducing exposure to unexpected and ambiguous situations and is consistent with the need for those from higher uncertainty cultures to have rules that enable the avoidance of ambiguity (Hofstede et al. 1991). For example, in the Indonesian context, blasphemous content is seen as having the potential to disrupt social harmony, and because of the important role social harmony plays there, it has been suggested that the government is seen as the formal institution that should protect against this potential disruption (Mayselless and Popper 2007).

Descriptive norms were the strongest predictor of attitude to internet filtering. Those who believe that people who are important to them support internet censorship are more likely to have a positive attitude towards it. This is consistent with previous research on censorship of films in Singapore (Ho et al. 2012) and with research on the role of descriptive norms in determining attitudes to protecting the internet from security threats (Anderson and Agarwal 2010).

Contrary to what was hypothesised, attitude to internet filtering did not influence usage of circumvention tools such as VPNs and TOR. This finding is inconsistent with that of Yang and Liu (2014), who investigated attitudes to internet censorship in China, but is consistent with the results of Mou et al. (2016), who found that attitude toward internet censorship did not influence the use of tools for bypassing internet censorship, but that gratifications played an important role. However, low levels of knowledge about circumvention tools or fear of legal sanctions for accessing or sharing blocked content could also play a role.

Those who perceived greater personal consequences from internet filtering, such as not being able to access the content they wished to access, were found to be more likely to use circumvention tools to enable access to the blocked content. This finding can be understood as reflecting the role of gratifications in the use of circumvention tools that was identified by Mou et al. (2016) and by Li et al. (2018) and is consistent with the findings of Thompson et al. (2020) about the role of privacy concerns in a study of determinants of use of circumvention tools to avoid government surveillance in Australia and Sri Lanka.

Governments increasingly have the technical capacity and possible motivations to engage in internet censorship, but these measures may be met with resistance or circumvention by the public. This study highlights the role that perceived personal consequences of internet filtering play in contributing to the use of circumvention tools and addresses the call from Wang and Mark (2015) for more research on an apparent inconsistency between pro-censorship attitudes and anti-censorship behaviours.

Our research is differentiated from prior work in that we do not solely focus on the acceptance of internet filtering, but also measure how people reacted to these measures through circumvention tools. We make several contributions through this study. First, this study confirms the hypothesized roles played by the perceived need for internet filtering, descriptive norms, and uncertainty avoidance in determining the support for internet filtering. On the other hand, we find that experience and knowledge of internet censorship do not influence support or opposition to censorship.

Secondly, we also find that use of tools or methods for accessing blocked content is not determined by the awareness of and attitude to internet filtering, but rather by perceived personal consequences of the internet filtering. Regardless of attitudes held towards internet censorship, individuals' censorship avoidance behaviour is driven by the impacts they fear on the gratifications that motivate their internet use. This apparent disconnect requires further research, while also increasing the scale of the study to improve the statistical power.

A practical implication for government and policymakers may be drawn from our findings around the role of social norms. Our results reveal that descriptive norms are a strong influence on individuals' attitudes toward internet filtering – this relationship was the strongest path in our research model. This suggests that policymakers may foster more positive public attitudes by tailoring their communications and messaging to emphasise descriptive norms. Describing what other members of the public believe and do could help the government to create successful and effective public communication (Saeri et al. 2014). For example, in the context of internet censorship, government messages indicating that the rationale for filtering measures is that most citizens are worried about the impact of the spread of radical ideas, and thus support government efforts to remove such content, could strengthen attitudes to censorship. However, given the more important role of perceived personal consequences of internet filtering, targeted messaging to address these perceptions is likely to be more successful.

Further understanding of beliefs regarding the specific types of content that should be censored and the positive implications of filtering this content would be useful. For example, in a study of 11 countries, Shen and Tsui (2016) identified that support for censorship relating to national security issues was substantially higher than that for censorship relating to political or religious issues. Post-hoc analysis of our data set also suggests the existence of multiple factors within the overall attitude toward censorship. This is a promising area for future work, with larger sample size, as this would enable the testing of sub-groups. Therefore, the policy and approach employed in restricting information on the internet should consider the public needs rather than, for example, solely accommodating the interests of supporters of a particular regime. For example, the removal of fake news should be done consistently regardless it is favourable or unfavourable to the government. An inconsistency of the government or the ISP in implementing internet censorship could generate distrust from the public and this distrust could lead to increased use of circumvention tools. Though our research scope was only Indonesia, our findings have relevance for a future global study on this topic.

## 7 Conclusion

The increased pervasiveness and uptake of technology has pushed many aspects of government and personal communication online. While this brings many potential efficiencies, such as reduced cost and a means to communicate and interact even when physical travel may be limited, there is potential for increased government control of citizens' communications. Such control may be ostensibly for the protection of the public, and may be recognized and accepted as such, but may also be met with resistance, protest and circumvention. Our findings highlight that public perceptions of the need for such filtering, as well as their social normative beliefs, are significant influences on acceptance of surveillance. These are aspects that policymakers may emphasise with transparent and effective communication to strike the necessary balance between public protection and the risk of stifling free and open communication.

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