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Internet Use, Freedom Supply, and Demand for Internet Freedom: A Cross-National Study of 20 Countries

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This study examines public demand for Internet freedom and control along with their microindividual and macrosocietal predictors. Based on a secondary analysis of the Internet Society's Global Internet User Survey data, it is found that the picture regarding people's attitudes toward Internet freedom and censorship is more complicated and nuanced than assumed. First, Internet use was a positive predictor of demand for Internet freedom, but not of demand for Internet control. Second, *freedom supply (*the amount of Internet freedom in a given country), and individual perception of freedom supply in particular, was found to be negatively associated with people's demand for both Internet freedom and Internet control, which partially supports the prediction of balance theory. Finally, the results of statistical interaction analyses suggest the impact of Internet use on demand for Internet freedom and control is contingent on people's perceived freedom supply in their respective countries.

Keywords: Internet freedom, Internet censorship, public opinion, balance theory, democratic values

According to Freedom House (2016), Internet freedom around the world has been declining for six consecutive years, and only 17 of the 65 countries included in their study were labeled as "free." A free Internet facilitates the realization of a wide range of human rights, including

> economic, social and cultural rights, such as the right to education and the right to take part in cultural life and to enjoy the benefits of scientific progress and its applications, as well as civil and political rights, such as the rights to freedom of association and assembly. (La Rue, 2011, p. 7)

Public demand for Internet freedom is an important force to be reckoned with as civic attitudes play a crucial role in democratic development (Almond & Verba, 1963). Democratic consolidation requires

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both high supply and demand for democracy (Mattes & Bratton, 2007; Stoycheff, Nisbet, & Epstein, 2016). In particular, consolidation mandates a strong public demand for democratic values, including citizen's support for press freedom, support for free and fair elections, and support for a free Internet. Thus, understanding people's support for Internet freedom is particularly valuable for promoting public demand of civil rights in cyberspace as well as fostering support for democratic norms in general.

Past research has examined the macrolevel impacts of press freedom on political and economic outcomes (e.g., Chowdhury, 2004), the relationship between citizens' demand for press freedom and institutional *freedom supply* (Nisbet & Stoycheff, 2013), and the relationship between Internet use and public demand for democracy (e.g., Stoycheff & Nisbet, 2014; Stoycheff et al., 2016). However, very few studies have examined citizens' demand for Internet freedom, let alone their support for the opposite of it, Internet control. Against this background, this study seeks to explore people's demand for Internet freedom and control and to identify their microindividual and macrosocietal predictors.

This study focuses on two key predictors of public demand for Internet freedom. First, as was suggested by different Internet user reports (Internet Society, 2012; Pew Research Center, 2014), demand for Internet freedom is a function of Internet use. The Internet has been theorized to be a valuable tool for promoting democratic transitions and maintaining democracies (Groshek, 2009; Morozov, 2011b). Second, social context matters. Freedom supply (the amount of Internet freedom in a given country), might influence people's expectation of what is possible. People living in societies with limited freedom supply behave differently than those in societies with sufficient Internet freedom. Finally, it is important to think about the interaction between individual- and context-level factors. For instance, in democracies, perceived limited freedom supply might lead to higher demand for freedom, whereas in authoritarian countries, the reverse can be true due to the lack of civil liberty and rule of law.

Internet Freedom and Public Demand for Internet Freedom

Internet freedom is a much more debated and contested concept than press freedom due to the global reach of its policy implications. The questions and issues revolving around Internet governance have been inextricably intertwined with international affairs and foreign policy since the inception of the Internet (Wagner, 2011). A wide variety of principles and guidelines have been developed over the years, including civil society declarations, private sector initiatives, and principles proposed by governmental and intergovernmental organizations (Hawtin, 2011).

The United States has long been an active advocator of Internet freedom (Hanson, 2012; Morozov, 2011b). The landmark public statement by former U.S. Secretary of State Hillary Clinton (2010) at the Newseum in Washington, DC, serves as a good starting point for discussion. In her "Remarks on Internet Freedom," Clinton went to great lengths to discuss how repressive regimes have erected barriers that prevent people from accessing parts of the global Internet and how a free Internet without censorship would change the world. Indeed, freedom from censorship and abridgement of expression is an important element of Internet freedom, but it constitutes only a part of the conceptualization. A comprehensive interpretation of Internet freedom is more than narrowly defined negative freedom–absence of control by

governments or other institutions. Internet freedom includes positive freedom as well—the right of the public to access the Internet so that all voices in society could be heard (Ross, 2010).

The differentiation of positive and negative Internet freedom could be traced back to the pre-Internet era when scholars elaborated the meanings of press freedom. For instance, Picard (1985) distinguished between negative press freedom—that is, freedom from censorship—and positive press freedom—the ability of the public to use the media. Therefore, the responsibility of government is not only to protect the openness of the Internet but also to promote universal access and engagement. The conceptual framework incorporating both positive and negative Internet freedom well echoes the human rights approach to Internet freedom, the belief that international human rights norms are applicable to freedom of opinion and expression on the Internet. In the UN Special Rapporteur report, La Rue (2011) addressed two inseparable dimensions of Internet freedom: (a) rights to access content on the Internet and (b) rights to access the physical and technical infrastructure required for Internet services.

In addition, debates over the sovereignty of the Internet are dominated by two perspectives: many Internets versus one Internet. In recent years, the Chinese government has been forcefully promoting the idea of Internet sovereignty to justify their control of the domestic Internet. Russia follows suit with a law that requires all Internet companies to store Russian citizens' data on servers within the country. The United States supports a single global Internet and does not recognize national border-based sovereignty in cyberspace. However, it is crucial to point out that the dispute between the two viewpoints is more complex than heroes promoting freedom and villains seeking control. Critics observed that promoting a "free Internet" agenda relates to the vested interests of the United States simply because so much of the world's communication infrastructure is run by American corporations (Morozov, 2011a).

Public demand for Internet freedom could be considered as a subdimension of democratic attitudes to the extent that democracy requires civil liberty. Every individual Internet user should be able to communicate freely on the Internet and obtain information freely from online sources. But do people all over the world desire a free Internet? Only a few large-scale opinion polls on Internet freedom were conducted so far. In 2008, the Program on International Policy Attitudes (PIPA) at the University of Maryland coordinated a cross-national poll of 20,512 respondents in 20 nations. The survey showed that on average about 62% of people believed that they have the right to read whatever is on the Internet, whereas 30% said that the government has the right to prevent people from accessing certain content online (Kull et al., 2008). Between 2009 and 2010, the BBC commissioned a survey of 27,973 adult citizens in 26 countries, where questions concerning both negative freedom and positive freedom were asked. About 79% of the people agreed or strongly agreed that access to the Internet should be a fundamental right, but only 53% of the respondents believed that the Internet should never be regulated ("Four in five," 2010). Similar to the BBC survey, Internet Society's survey of Internet users from 20 countries suggested that 83% of the respondents agreed that access to the Internet should be a basic human right, and 86% agreed that freedom of expression should be guaranteed (Internet Society, 2012). More recently, Pew conducted a global attitude survey of 21,847 respondents in 24 developing countries and found that the majorities in 22 of 24 nations supported Internet access without government censorship, with Uganda and Pakistan being the exceptions (Pew Research Center, 2014).

Predicting Public Demand for Internet Freedom

Political scientists consider attitudes toward free speech as a part of political tolerance, the extent to which people are willing to extend the protection of free expression to various groups in society (Stouffer, 1955). Hense and Wright (1992), in their study of college and high school students, found censorship attitudes were related to authoritarianism, conservatism, traditional family ideology, and religiosity. Fisher, Cook, and Shirkey (1994) discovered sexual conservatism and authoritarianism were highly correlated with support for censoring violent media. Thompson (1995) demonstrated that people who rated high on need on a cognition scale were more likely to apply free speech principles. In addition to the psychographic approach, third-person effect hypothesis attracted much scholarly attention in censorship attitudes studies. The third-person hypothesis suggests that people generally tend to perceive media content to have a greater impact on others than on themselves (Davison, 1983). Such perception might lead them to support censoring potentially "dangerous" content. Third-person effect's impact on censorship support has been demonstrated in different topical areas, including pornography (Gunther, 1995), election campaign messages (Salwen, 1998), and violent rap lyrics (McLeod, Eveland, & Nathanson, 1997). Unlike the above-mentioned studies of free speech support, existing empirical studies predicting people's support for Internet freedom and censorship heavily relies on two sets of antecedents: demographics and Internet use (e.g., Internet Society, 2012; Pew Research Center, 2014).

Internet Use

Pew Research Center's 2014 report underlines two important findings from the polls. First, young respondents were especially opposed to Internet censorship). Second, demand for Internet freedom tends to be strong in nations with high rates of Internet penetration and the correlation between percentage of support for Internet freedom and Internet penetration was as high as 0.76. Pew does not explain the mechanisms for the correlation, but there is an underlining tone suggesting that the spread and use of the technology leads to higher demand for freedom. To buttress this argument, it is important to differentiate correlational mechanisms at micro- and macrolevels of analysis. Without empirical data linking Internet use and support for Internet freedom at the individual level, the relationship between Internet penetration and public demand for Internet freedom could not be used as direct evidence suggesting Internet use leads to stronger support for Internet freedom.

Nevertheless, there is sufficient documented evidence to believe that frequent Internet use has been linked to procivic activities (e.g., Shah, Kwak, & Holbert, 2001). Frequent Internet use leads to procivic attitudes as well. Scholars have argued that more frequent use of the Internet fosters demand for democracy (Bailard, 2012; Nisbet, Stoycheff & Pearce, 2012; Stoycheff & Nisbet, 2014; Stoycheff et al., 2016). Norris (2011) found that Internet use could make people to be more critical of the supply of democracy. The attributes of the Internet such as being open, interactive, and pluralistic could help citizens to better participate in civic and political activities through the mechanisms of "window opening" and "mirror holding" (Bailard, 2012, 2014). Window opening is a process where citizens utilize the Internet to learn about how democracy works in other countries whereas mirror holding is a process whereby the public obtain more accurate and comprehensive information about politics from the Internet than from the traditional media (Bailard, 2012). Admittedly, Internet censorship exists online in different

forms, but generally speaking, the control of the Internet is much more difficult than traditional media censorship. Therefore, the following hypotheses were proposed:

H1a: The more frequently people use the Internet, the more likely they will support Internet freedom.

H1b: The more frequently people use the Internet, the less likely they will support Internet control.

Freedom Supply

How much freedom people want depends on how much freedom they have. However, the association between freedom supply and demand for freedom seems to be intriguing. The important question is, do people with limited freedom supply want more freedom or less freedom compared with people with plenty of freedom?

One theoretical framework that could be invoked to make a prediction is the balance theory. The balance theory (Heider, 1958) assumes that individuals prefer cognitive consistency and tend to avoid unbalance in cognitive network of beliefs and evaluations. Balance theory provides a contextual prediction of the outcome of Internet censorship: When freedom infringement occurs, people's response to censorship depends on their attitude toward the censor (Hayes & Reineke, 2007). With three elements (i.e., individual, censor, censorship) in the system, there are two possible conditions of balance. People hold positive attitudes toward the authority of censorship and censorship policy, or people hold negative attitudes toward both. In all other conditions, individuals will try to change their attitude toward either the authority or censorship to restore balance. Given the fact that most people in authoritarian regimes tend to identify with the authorities due to government propaganda or political pressure (Norris & Inglehart, 2010; Shen & Guo, 2013), if balance theory holds water, then it is highly likely to observe a positive relationship between Internet freedom supply and Internet freedom demand.

Hayes and Reineke (2007) employed a split-ballot survey to explore American respondents' interest in viewing images of caskets containing U.S. military personnel killed in overseas actions. The manipulation of the experiment was the presence or absence of a reminder informing people of Bush administration's policy to ban the coverage of such image in the media. The results suggested that for Bush supporters, telling people the policy actually reduced their desire to view the images (i.e., supporting censorship and demand less freedom), whereas for Bush detractors, no significance difference in people's desire to view the image was found. Taken together, the overall effect of restricting people of their freedom seems to lead to less demand for freedom. Nisbet and Stoycheff (2013), in their analysis of the 2007 Pew Global Attitudes Survey data, found that both perceived freedom supply and institutional press freedom index were positive predictors of individuals' demand for press freedom for individuals who perceive a high supply of press freedom. Their findings seem to be partially consistent with the balance theory. Though the mechanism is not crystal clear, given the existing empirical evidence, the following hypotheses were proposed:

H2a: When freedom supply is higher, people are more likely to support Internet freedom.

H2b: When freedom supply is lower, people are more likely to support Internet control.

Conditional Effects

The assumption of a linear and universal impact of Internet use on freedom demand seems to be oversimplified if not naïve before social context is factored into consideration. The value of a social scientific theory lies in its specification of social context where meanings of individual intention and action can be derived. Previous studies on public demand for Internet freedom (e.g., Pew Research Center, 2014) very much ignored influences of social environment. Internet use and freedom supply might interact with each other in predicting people's demand for Internet freedom.

Eveland (1997) proposed four types of interaction relationships: divergent, convergent, transverse, and contributory. In divergent and contributory interaction conditions, the impact of an independent variable on a dependent variable increases as the value of a third variable (moderator) increases (amplification effects). In convergent and transverse interaction conditions, the impact of an independent variable on a dependent variable decreases as the value of a third variable increases (mitigating effects). In the current study, two scenarios are possible. Obviously, not all nations support Internet freedom. Norris and Inglehart (2010) noted that in autocracies where the state consistently restricts media freedom and controls broadcasting, regular exposure to domestic news media would generate more positive orientations toward the regime. If the Internet in free nations serves as an enabler of other rights leading to stronger demand for more freedom and the Internet in restrictive regimes would be manipulated by government to serve as a "suppresser," then we would expect a divergent or contributory interaction pattern. All other things being equal, the increase of demand for Internet freedom in high freedom supply countries is larger than in low freedom supply countries for the same unit of increase in Internet use. However, the reverse possibility could also be true: a convergent or even a transverse pattern. The impact of Internet use on Internet freedom demand in high freedom supply countries might be constrained by the already high demand for freedom, exhibiting a ceiling effect.

No previous studies have directly explored such relationship, but there is plenty of indirect evidence that supports the possibility that conditional effects might be at work. For instance, Groshek (2009) analyzed Internet penetration and democratization data between 1994 and 2003 and found that the impact of Internet penetration on democratization depends on the existing level of democracy. Internet penetration's impact on democratization is higher in societies that are already democratic. Similarly, Bailard's (2012) multimethodological, cross-national study found that Internet use is related to enhanced satisfaction in democracies, but to decreased satisfaction in nondemocracies. Nisbet and Stoycheff (2013) found that the positive relationship between institutional supply of press freedom and citizen demand for press freedom only exists when people perceive a high freedom supply. In addition, Stoycheff and Nisbet (2014) discovered that the impact of Internet use on support for democracy was moderated by Internet penetration—international bandwidth per use, to be more specific. In high bandwidth countries, Internet use exerts a larger influence on people's support for democracy. In another study, Nisbet et al. (2012) found that Internet use frequency has a greater impact on public demand for

democracy in democratic countries than in nondemocratic countries. Given these, it is reasonable to argue that people's demand for Internet freedom is a function of Internet use frequency, and the strength of their relationship depends on the amount of freedom supply in a particular society. Very likely, the data could exhibit a divergent interaction pattern, but the possibility of a transverse interaction pattern is not excluded. Therefore, two research questions were proposed to probe the interaction effects of Internet use and freedom supply in predicting people's demand for Internet freedom and control:

RQ1: How does freedom supply qualify the relationship between Internet use and demand for Internet freedom?

RQ2: How does freedom supply qualify the relationship between Internet use and demand for Internet control?

Method

The current study used a secondary data set to test the hypotheses and to explore the research questions. The data came from the Internet Society, a global nonprofit organization for promoting open Internet. The survey project, titled the 2012 Global Internet User Survey (GIUS), was conducted during July and August 2012 in 20 societies including the United States, Argentina, Brazil, Chile, Peru, France, Germany, Italy, Poland, Russia, Spain, Kenya, Saudi Arabia, South Africa, UAE, China, India, Indonesia, Philippines, and South Korea. A total of 10,789 Internet users from 20 countries participated in the survey. The sample is not representative of the general population of those countries, but is reportedly aiming to be representative of the population of Internet users within each country. Accordingly, the study was conducted using online panels only. The questionnaire was administered in local language in each country.

The survey was contracted out by GIUS to Redshift Research, a leading UK market research firm. The online panels were recruited using different techniques, ranging from telephone recruitment, panel website recruitment, and other methods such as promotion via Facebook or Twitter. Special quality control measures were taken to prevent fraudulent respondents (Internet Society, 2012). Unfortunately, the response rate of the survey was not tracked, but the estimation was said to range between 20% and 30% (Internet Society, 2012). A comparison between the GIUS sample composition in Germany and estimate of German Internet population in 2012 suggested very small demographic difference in terms of gender and age distribution (Internet Society, 2012).

Measures

Demand for Internet Freedom and Control

Demand for Internet freedom contains four items measured by 4-point Likert scales, where 1 indicates *strongly agree* and 4 indicates *strongly disagree*. Scales were reverse coded so agreement with the statements was coded high. Two of the four items refer to protecting negative freedom: "Freedom of expression should be guaranteed on the Internet" (M = 3.41, SD = 0.748) and "Governments in countries with no Internet censorship have a responsibility to keep the Internet free of censorship in countries

where the Internet is being censored/controlled/shut down" (*M* = 3.00, *SD* = 0.927). The other two items emphasize promoting positive freedom: "Access to the Internet should be considered a basic human right" (*M* = 3.36, *SD* = 0.802) and "My government has an obligation to ensure that I have the opportunity to access the Internet" (*M* = 3.30, *SD* = 0.854). The average of the four indicators formulates the demand for Internet freedom index (*M* = 3.26, *SD* = 0.624, Cronbach's alpha = .702). Likewise, demand for Internet control contains three interrelated items measured by 4-point Likert scales. Support for Internet censorship was measured by the statement, "Censorship should exist in some form on the Internet" (*M* = 3.00, *SD* = 0.967). Demand for Internet protection was measured by the statement, "The Internet should be governed in some form to protect the community from the harm" (*M* = 3.30, *SD* = 0.864). Support for sovereignty based Internet governance was measured by the statement, "Each individual country has the right to govern the Internet the way it sees fit" (*M* = 2.92, *SD* = 0.991). The average of them formulates the support for Internet control index (*M* = 3.07, *SD* = 0.750, Cronbach's alpha = .691). When all seven items of Internet freedom and control were subjected to an exploratory factor analysis with the direct oblimin rotation method, two clear factors emerged accordingly—which suggests that the two concepts have high construct validity.

Internet Use Frequency

Internet use frequency was measured by five Internet activities on a 6-point scale ranging from *never/I don't use this* to *at least once a day*. The activities were e-mail (*M* = 5.81, *SD* = 0.630), social media (*M* = 5.02, *SD* = 1.58), Internet-based audio/video conferencing (*M* = 3.33, *SD* = 1.91), instant messaging (*M* = 4.31, *SD* = 1.92), and audio/video streaming (*M* = 4.23, *SD* = 1.76). The average of the five items formulated an index of Internet use frequency (*M* = 4.54, *SD* = 1.12, Cronbach's alpha = .718).

Freedom Supply

Empirical measures of freedom supply usually take two forms: citizen perception scores at the individual level and institutional measures at the societal level. The current study employed both types of measures. Perceived Internet censorship was measured by a single item on a 4-point scale ranging from *strongly disagree* to *strongly agree*: "Censorship currently exists on the Internet" (*M* = 2.97, *SD* = 0.905). Across all 20 countries, more than two thirds of the respondents agreed with this statement (31.9% strongly agree, 40.7% agree). Two important assumptions were made regarding the use of this measure in a multinational survey: (a) people from different societies understand the term *censorship* roughly the same way, and (b) people across different societies are similar in terms of showing strong disagreement and strong agreement in surveys. Finally, this perceived Internet censorship score was then reverse coded to become a measure of perceived Internet freedom (*M* = 2.03, *SD* = 0.905) since censorship indicates the lack of freedom.

For institutional measures, *The Economist*'s democracy index was used to serve as a proxy for institutional freedom supply. To match the Internet Society survey data, the democracy index from the year 2012 was used. The index ranges from 0 to 10, where 0 means being most authoritarian and 10 means being most democratic (*M* = 6.37, *SD* = 2.05). *The Economist*'s democracy index is based on 60 indicators measuring political pluralism, civil liberties, and political culture (see Economist Intelligence Unit,

2012, for detailed measurement items). Conceptually, levels of democracy and freedom supply go hand in hand. A true democracy requires a high level of civil liberty and therefore a democratic society is a society with high freedom supply. Admittedly, a direct measure of Internet freedom would be better than a generic democracy measure. However, the only available index of this kind—Freedom House's Internet freedom index (Freedom House, 2012) suffers from two problems. First, Freedom House's indices have been criticized that they contain political bias (Steiner, 2016). More importantly, Freedom House's Internet freedom index project covers a very small group of countries around of the world—only 15 countries in the Internet Society survey were rated in Freedom House's project. A simple correlation analysis showed that *The Economist*'s democracy index was strongly correlated with Freedom Houses' Internet freedom index (r = .846, p < .001, n = 15, R^2 = .716), attesting to democracy index's convergent validity. Therefore, this study uses *The Economist*'s democracy index as a proxy to freedom supply.

Theoretically, aggregated citizen perception scores and institutional measures should be consistent with each other. Becker and Vlad (2009) argued that citizens possess the collective wisdom of judging media institutions within their countries, and they discovered a strong correlation between institutional measures of press freedom and citizen perception scores. English, Becker, and Vlad (2011) confirmed that expert ratings of institutional media freedom scores could be validated by Gallop world poll data. To further explore the measurement validity of the citizen perception scores and institutional measures used in this study, a simple correlation analysis was conducted. Democracy index showed a significant positive relationship with people's perceived Internet freedom (r = .588, p < .01, n = 20, R^2 = .34). In other words, the two freedom supply measures are of appropriate convergent validity.

Control variables. Both individual level and country level variables were used for the purpose of statistical control. Demographic controls included gender and age. Gender is a dichotomy with male coded as 1 and female coded as 2 (52% male). Age is an 11-point interval variable ranging from "18 to 21" to "65 and above" (median = 5, "35–39"). Internet penetration as a country level control variable was also included in the study because support for Internet freedom was demonstrated to be related to Internet penetration (Pew Research Center, 2014). Internet penetration refers to the percentage of Internet users within a particular country (M = 56.84%, SD = 22.34%). The data on Internet penetration were harvested from International Telecommunication Union (2013), United Nations' specialized agency for information and communication technologies.

Data Analysis

The data for this study contain respondents from multiple countries, which incurs the problems of interdependency. Respondents from the same country might be interdependent on each other due to the simple fact that they share the same macrosocietal environment, be it cultural or political. As alluded to earlier in the hypotheses and research questions, this study is interested in exploring not only whether Internet use impacts one's support for Internet freedom but also whether the relationship between Internet use and demand for freedom actually varies across countries. With a nested data structure, the ideal method of data analysis is multilevel modeling. Multilevel models were designed to analyze data generated from a nested structure because conventional linear regression models underestimate standard

errors and, in turn, overestimate test statistics. In the current study, there are only 20 countries at the second level of the current data set, which is less than ideal. Maas and Hox (2005) did a simulation study and discovered that a small sample size of 50 or fewer could lead to biased estimates of the second-level standard errors in multilevel modeling. Despite the fact that in practice many studies used multilevel modeling with fewer than 20 second-level cases, this study choose to employ an alternative approach, the cluster-robust standard errors method, to analyze the data. Primo, Jacobsmeier, and Milyo (2007) compared the two methods and argued that the clustered standard error approach is more straightforward and practical, especially when dealing with large datasets or cross-level interactions.

Findings

Before formal hypotheses testing, a few descriptive analyses were conducted to understand the general patterns of people's demand for Internet freedom and control, along with its variation across countries. Figure 1(a) is a bar graph of people's demand for Internet freedom. Overall, respondents all over the world showed a consistently high demand for Internet freedom. Most countries had an overall score higher than 3, and the only exception is the U.S. The intraclass correlation coefficient was 0.05, indicating that about 5% of the variance in people's demand for Internet freedom could be attributed to country differences. The demand for Internet control—see Figure 1(b)—spans a wider range than the demand for Internet freedom. The intraclass correlation coefficient for demand for Internet control was 0.16, suggesting a larger country-to-country difference. Furthermore, a paired *t* test suggested that, on average, people's demand for Internet freedom was stronger than their demand for Internet control, $t(9984) = 22.86$, $p < .001$. Figure 1(c) is a bar graph depicting the national variation of people's perception of Internet freedom in their perspective countries. It seems citizens' perceived Internet freedom scores concurred with the conventional wisdom regarding the status quo of civil liberty.

H1a expected that demand for Internet freedom is positively related to Internet use, and H1b predicted that demand for Internet control is negatively related to Internet use. Tables 1, 2, and 3 contain findings from regression analyses predicting people's demand for Internet freedom and control. Model 1 and Model 2 were models containing individual level predictors only with relatively low explanatory powers. Model 1 explained about 7% of the variance in demand for Internet freedom, and Model 2 explained about 3% of the variance in demand for Internet control. More specifically, Internet use frequency was significantly and positively related to demand for Internet freedom in Model 1 ($b = 0.152$, $SE = 0.014$, $p < .001$). In other words, the more frequently people use the Internet, the more likely they will support for Internet freedom. Nevertheless, according to Model 2, Internet use frequency was positively associated with demand for Internet control as well ($b = 0.083$, $SE = 0.021$, $p < .001$). The more frequently people use the Internet, the more likely they will support Internet control. Therefore, H1a was supported, but H1b was not supported.

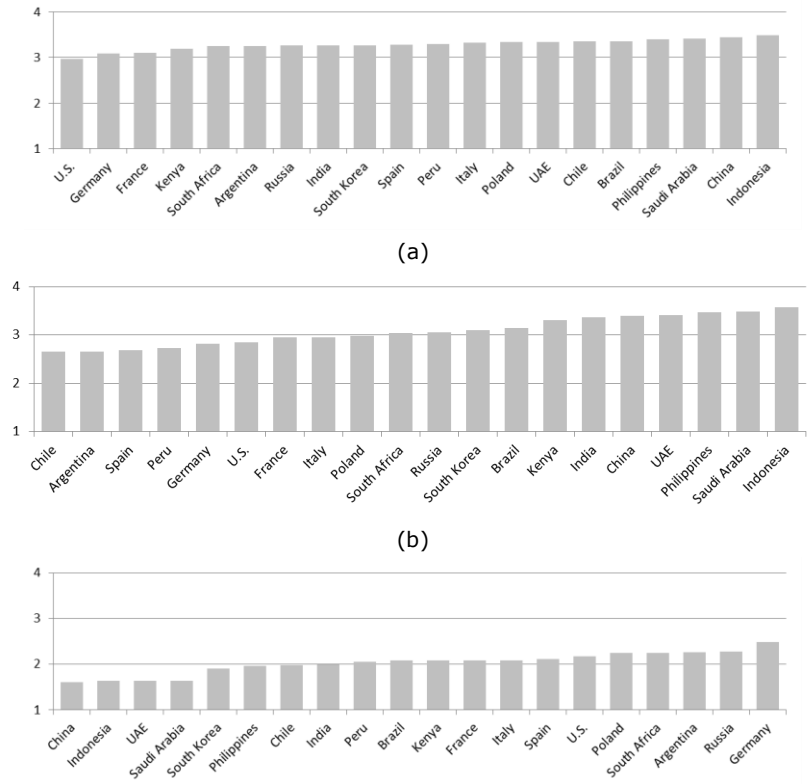

Figure 1. Public demand for Internet freedom (a), public demand for Internet control (b), and perceived Internet freedom (c) by country.

Table 1. Predicting Public Demand for Internet Freedom and Control: Models 1 and 2.

	Internet freedom Model 1, *N* = 10,038		Internet control Model 2, *N* = 10,008	
	b	*SE*	*b*	*SE*
Constant	2.553***	0.073	2.561***	0.139
Individual level				
Gender	−0.048**	0.016	0.119***	0.032
Age	0.017*	0.007	−0.010	0.008
Internet use	0.152***	0.014	0.083***	0.021
R^2 (%)	6.86***		2.53***	

Note. All regression coefficients are unstandardized coefficients. Standard errors are adjusted for clusters by country. ***p < .001. **p < .01. *p < .05. R^2 (%) indicates percentage of variance explained by the model.

H2a and H2b hypothesized that demand for Internet freedom and control was related to freedom supply. Models 3 through 6 were results of regression analyses containing both individual-level and country-level predictors. When country-level variables entered the equations, they did increase the explanatory power of the models substantially. First, take a look at how democracy influences people's demand for Internet freedom and Internet control. Model 4 showed the democracy index was negatively related to people's demand for Internet control (b = −0.073, SE = 0.018, p < .001). People from democratic societies are less likely to support Internet control than those from nondemocratic societies. But Model 3 suggested that the democracy index was not related to people's demand for Internet freedom.

Table 2. Predicting Public Demand for Internet Freedom and Control: Models 3 and 4.

	Internet freedom Model 3, N = 10,038		Internet control Model 4, N = 10,008	
	b	*SE*	*b*	*SE*
Constant	2.777***	0.098	3.400***	0.206
Individual level				
Gender	−0.038*	0.016	0.149***	0.025
Age	0.021***	0.006	0.006	0.006
Internet use	0.140***	0.010	0.039	0.087
Country level				
Penetration	−0.002	0.001	−0.005*	0.002
Democracy	−0.013	0.006	−0.073***	0.018
R^2 (%)	7.57***		8.42***	

Note. All regression coefficients are unstandardized coefficients. Standard errors are adjusted for clusters by country. ***p < .001. **p < .01. *p < .05.

Table 3. Predicting Public Demand for Internet Freedom and Control: Models 5 and 6.

	Internet freedom Model 5, N = 9,375		Internet control Model 6, N = 9,377	
	b	*SE*	*b*	*SE*
Constant	3.162***	0.078	3.735***	0.198
Individual level				
Gender	−0.024	0.015	0.172***	0.025
Age	0.023***	0.005	0.011	0.006
Internet use	0.120***	0.009	0.024	0.030
Perceived Internet freedom	−0.189***	0.011	−0.179***	0.030
Country level				
Penetration	−0.002*	0.001	−0.005*	0.002
Democracy	−0.004	0.005	−0.064***	0.016
R^2 (%)	15.13***		13.58***	

Note: All regression coefficients are unstandardized coefficients. Standard errors are adjusted for clusters by country. ***p < .001. **p < .01. *p < .05.

Possibly the failure to identify a significant relationship between demand for Internet freedom and democracy index could be attributed to the fact there were only a handful of country-level cases and, therefore, a low statistical power. Thus, Model 5 and Model 6 included an individual-level freedom supply variable into the equation: perceived Internet freedom. The two models explained about 15% of the variance in the outcome variables. In Model 5, perceived Internet freedom was negatively and significantly related to Internet freedom support (b = 0.186, SE = 0.011, p < .001). Put simply, individuals who sensed low levels of Internet freedom had high demands for freedom. Interestingly, Model 6 showed that perceived Internet freedom was also negative related to demand for Internet control (b = 0.177, SE = 0.031, p < .001): People who were facing stricter Internet censorship called for more Internet control. Therefore, H2a was not supported, but H2b was supported by both individual censorship perception data and institutional-level freedom supply data. It is nonetheless important to note that when both country-level and individual-level freedom supply predictors were controlled, Internet use remained a robust predictor of people's demand for Internet freedom, but the positive relationship between Internet use and demand for Internet control disappeared.

The two research questions concerning freedom of supply qualifies the relationship between Internet use and demand for Internet freedom and control. Models 7 through 10 examined the conditional effects of Internet use by freedom supply. First, the democracy index did not show significant interaction effects in Model 7 and Model 8 (see Table 4). Again, this could be caused by the likelihood of having a low statistical power. To further check if conditional effects exist, the individual-level freedom supply-based interaction term entered the equation in Model 19 and Model 10 (see Table 5). The data showed a robust interaction effect between Internet use and Internet censorship in predicting the outcome variables in both models. Both models found mitigating effects, not amplification effects.

Table 4. Predicting Public Demand for Internet Freedom and Control: Conditional Effects Models 7 and 8.

	Internet freedom Model 7, N = 9,375		Internet control Model 8, N = 9,377	
	b	*SE*	*b*	*SE*
Constant	3.165***	0.172	3.229***	0.339
Individual level				
Gender	−0.024	0.015	0.172***	0.025
Age	0.023***	0.006	0.010	0.006
Internet use	0.120***	0.023	0.129*	0.056
Perceived Internet freedom	−0.189***	0.011	−0.179***	0.030
Country level				
Penetration	−0.002*	0.001	−0.006*	0.002
Democracy	−0.004	0.024	0.013	0.046
Interaction				
Internet use × democracy	0.000	0.004	−0.016	0.008
R^2 (%)	15.13***		13.74***	

Note. All regression coefficients are unstandardized coefficients. Standard errors are adjusted for clusters by country. ***p < .001. **p < .01. *p < .05.

Table 5. Predicting Public Demand for Internet Freedom and Control: Conditional Effects Models 9 and 10.

	Internet freedom Model 9, *N* = 9,375		Internet control Model 10, *N* = 9,377	
	b	*SE*	*b*	*SE*
Constant	3.287***	0.102	3.241***	0.368
Individual level				
Gender	−0.024	0.015	0.171***	0.025
Age	0.023***	0.006	0.011	0.006
Internet use	0.159***	0.017	0.131*	0.048
PIF	−0.249***	0.025	0.058	0.114
Country level				
Penetration	−0.002*	0.001	−0.005*	0.002
Democracy	−0.004	0.005	−0.063***	0.016
Interaction				
Internet use × PIF	0.013*	0.005	−0.052*	0.021
R^2 (%)	15.18***		14.10***	

Note. All regression coefficients are unstandardized coefficients. Standard errors are adjusted for clusters by country. PIF = perceived Internet freedom. ***p < .001. **p < .01. *p < .05.

To better understand the mechanisms of the interaction effects, two plots were made to illustrate the relationship among Internet use, perceived Internet freedom supply, and people's demand for Internet freedom and control. Figure 2(a) is a bar graph representing the conditional impacts of Internet use on demand for Internet freedom by different degrees of perceived Internet freedom. The main effect in this graph is the more Internet use, the higher demand for freedom. However, the increases of demand were not equal when freedom supply varies. The demand for freedom increases more rapidly when people perceived high Internet freedom compared with when people perceived low Internet freedom. In other words, Internet censorship suppresses the impact of Internet use on people's desire for freedom.

Similarly, Figure 2(b) plots the conditional effects of Internet use on demand for Internet control by different degrees of Internet freedom. Compared with Figure 2(a), Figure 2(b) showed a more straightforward pattern because the direction of relationship between Internet use and demand for Internet control were opposite in two different scenarios, which explains why there was no significant main effect between Internet use and demand for Internet control. In high perceived freedom conditions, the more frequently one uses the Internet, the lower levels of demand for Internet control he or she has. However, in low perceived freedom conditions, Internet use was positively related to demand for Internet control—more Internet use leads to higher demand for control.

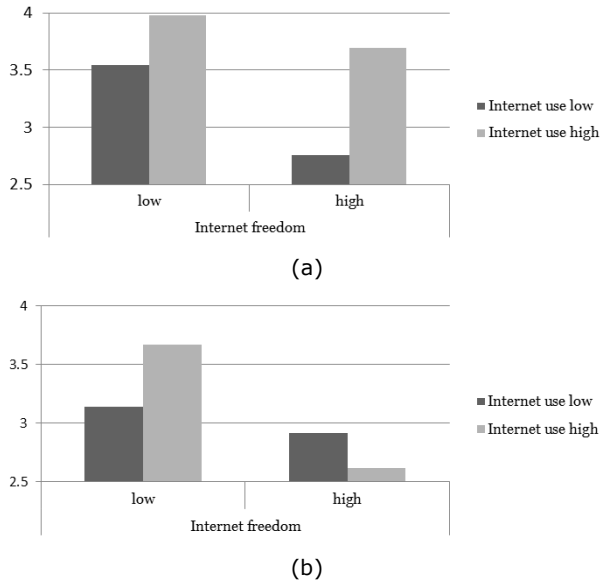

Figure 2. Conditional effects: Predicting public demand for Internet freedom (a) and public demand for Internet control (b).

Discussion and Conclusion

This study not only adds to our knowledge about people's demand for Internet freedom and control but also improves our understanding of the contextual influence of such demands. Based on a secondary analysis of the Internet Society's Global Internet User Survey data, it is found that the picture regarding people's attitudes toward Internet freedom and censorship are more complicated and nuanced than assumed.

First of all, consistent with findings from the BBC poll ("Four in five," 2010) and Pew reports (Pew Research Center, 2014), people across the world have a high demand for Internet freedom—for both negative freedom and positive freedom. For instance, 88.7% of respondents support freedom of expression on the Internet, and 86.2% of the respondents acknowledged access to the Internet is a basic human right. But the optimism accompanying such findings belies the fact that the same group of people also reported a considerable amount of support for Internet control. Most people agreed the Internet needs to be governed to protect the community from harm (84.4%); most people agreed that censorship should exist on the Internet in some form (73.5%); and most people agreed individual country has their own governing rights over the Internet (69%) as opposed to the one Internet model advocated by the U.S. Fortunately, people's cry for freedom (M = 3.26) is stronger than voices of supporting control (M = 3.07), but the margin is not substantial. These findings suggest that the same person can support Internet freedom and Internet control at the same time. For most Internet users, their attitude toward Internet freedom is quite ambivalent. In principle, they support the notion of freedom, but they also seem to recognize the values of control and censorship.

Not every country exhibits the same pattern. There is a clear contrast in terms of the levels of cross-national variation exhibited by people's demand for Internet freedom and control. The demand for freedom seems to be pretty consistent. The range of freedom demand score spans roughly from 3 to 3.5 (on a 4-point scale) across 20 countries, but country-to-country differences in support for Internet control were relatively large: The scores range from 2.7 to 3.6. This comparison is especially telling because, hypothetically, control is the opposite of freedom, and there should be little difference between the variances of the two measures.

In addition, people can tell whether or not they enjoy high levels of Internet freedom pretty accurately. Consistent with findings from existing press freedom studies (Becker & Vlad, 2009; English, Becker, & Vlad, 2011), there was a relatively strong correlation between institutional measures of Internet freedom and citizen perceptions as measured by public opinion surveys. Respondents from China provided the highest Internet censorship score (3.40), and respondents from Germany provided the lowest (2.52). The collective wisdom of people matches well with the expert ratings.

The relationship between freedom supply and freedom demand seems to be more complicated than expected. The data only partially supported the prediction of balance theory. For Internet control demand, the main effect of freedom supply showed a negative relationship with it. Internet users in countries with low Internet freedom supply tend to support Internet control more than those in countries with high Internet freedom. However, for Internet freedom demand, the main effect of the model went against the prediction of balance theory: low Internet freedom supply goes with high demand for freedom; high Internet freedom supply goes with low demand for freedom. People from authoritarian countries with high Internet control were more supportive of Internet control than people from democracies. For instance, China is one of the most severe Internet censoring countries in the world (Shen, 2014), and, correspondingly, the Chinese public reported very a high need for freedom, only second to Indonesia. In contrast, the U.S., Germany, and France are relatively on the other side of the Internet censorship spectrum, and, accordingly, citizens from these three countries reported the lowest levels of need for Internet freedom. Possibly, this could be caused by the mechanism of psychological reactance (Behrouzian, Nisbet, Dal, & Çarkoğlu, 2016; Brehm, 1966; Hayes & Reineke, 2007), where individuals tend to show enhanced interest in freedom when they are deprived of freedom. For instance, Worchel and colleagues (Worchel, 1992; Worchel & Arnold, 1973) found in a series of studies that when people were told that a speech was censored, they reported higher levels of interest in hearing the speech. Taken together, the data suggest that balance theory and reactance theory received some support in one setting, but were rejected in another. Such conditional effects seem to very much depend on the direction of measurement, or the way survey questions are framed. To be more specific, when respondents were asked about their support of Internet control, the findings are consistent with the prediction of the balance theory, but when respondents were asked about their support of Internet freedom, the data exhibit patterns congruent with psychological reactance theory.

The current study also found interesting patterns regarding the impact of Internet use on demand for Internet freedom and control. Internet use was found to be related to higher demand for freedom, but not for control. Interestingly, opposite to the assumption that people's demand for freedom is negatively related to their demand for control, the two variables actually go hand in hand ($r = .20$, $p < .001$). It is

important to note that a simple linear influence of Internet use over people's demand for freedom and control seems to be oversimplified. The data suggest freedom supply matters more than frequency of use. A repressive Internet environment suppresses the impact of Internet use on people's desire for Internet freedom, but facilitates the impact of Internet use on people's desire for Internet control. Once again, this demonstrates that technology can be harnessed for good or for ill. Technology use has differential impacts in different societies (e.g., Shen & Liang, 2015). Repressive states consistently restrict Internet content and encourage self-censorship, and regular exposure to such information system can socialize individuals into a norm of control.

It is important to point out that the current study has a few limitations. One of the disadvantages of using secondary data is their constraints of measurement. Researchers have to rely on the items contained in the questionnaire, and it is not possible to go beyond the list of questions being asked. In this study, one weakness of the Internet Society data is their insufficient inclusion of individual demographic questions. Only gender and age were asked, whereas the survey did not contain social economic status measures (e.g., education, income), which are related to citizen demand for press freedom (Kull et al., 2008). In addition, the Internet penetration measure used in this study is not optimal. For instance, Stoycheff and Nisbet (2014) used three subdimensions of Internet penetration including hardware, community of users, and information capacity to predict perceived supply of democracy and demand of democracy, and they found the three subdimensions have different impacts over citizens' democratic attitudes. Also, cross-national survey has to face the problem of measurement equivalence. People from different societies might have very different conceptualizations of what is censorship and they have different levels of tendencies to give extreme answers, which raises question about the validity of the perceived Internet freedom measure. In this study, the quality of the perceived censorship measure is sufficiently high due to the convergent validity it has shown—perceived Internet freedom correlated with a democracy index. Furthermore, the number of countries included in the data set is limited. The findings of the study will be more persuasive if more cases at the country level could be included to boost statistical power. It is suggested that generalizing findings relating to country-level predictors should be made with caution. Moreover, the testing of balance theory will be more rigorous if the analysis could include measures of attitude toward government since the balance theory argued the impacts of censorship depends on one's attitude toward censoring authority. Finally, Internet governance is a highly complex issue, and a survey can only capture a limited part of the reality regarding how the public think about Internet governance. Future research may extend this line of inquiry productively to understand how people think about Internet freedom and control by asking more specific questions, using more innovative methods (e.g., controlled experiment design), and including participants from more geographical locations.

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