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The New Internet World

A Global Perspective on Freedom of Expression, Privacy, Trust and Security Online

A contribution to:
The Global Information Technology Report 2010–2011
Transformations 2.0

World Economic Forum

in collaboration with:
INSEAD
comScore
Oxford Internet Institute

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Contents

COUNTRY ABBREVIATIONS

The following country abbreviations are used throughout the study. The number of respondents to the survey in each country appears in brackets. "Don't know" answers were treated as missing data. See Methodology section for details.

AUS/NZ = Australia and New Zealand (466 respondents)
BRA = Brazil (337)
CAN = Canada (598)
CHN = China (503)
ESP = Spain (206)
FRA = France (474)
GER = Germany (285)
ITA = Italy (237)
IND = India (601)
MEX = Mexico (346)
UK = United Kingdom (474)
US = United States (708)
ZAF = South Africa (309)

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Abstract

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Worldwide diffusion of the Internet is focusing debate around values and attitudes that are likely to vary across cultures, particularly around online freedom of expression, privacy, trust, and security. These are prominent topics of discussion amongst leading Internet stakeholders, such as private and public sector members, governments, policymakers, and the media. However, we know relatively little about the opinions of users around the world. How do users see these issues, and how do they experience the impact of the Internet in these areas?

This study reports the results of a survey of over 5,400 adult Internet users from 13 different countries. The online survey was conducted by the Oxford Internet Institute (OII) and INSEAD, in collaboration with comScore. It was designed to better understand cross-cultural differences in user behaviour and attitudes, focusing on the core Internet values of freedom of expression, privacy, trust, and security.

Findings from this study show that a global Internet culture has emerged as users across countries often share similar viewpoints and habits related to these vital matters pertaining to the Internet. Users worldwide generally support and desire the core Internet values, without signalling a willingness for tradeoffs among these potentially conflicting values and priorities. However, users in nations that are more recently embracing the Internet, who are becoming the dominant online population, express even greater support for the most basic value underpinning the Internet–freedom of expression. In addition, these users also outpace users in older-adopting nations in their innovative uses of the Internet. We conclude that a new Internet world is emerging which may lead to many shifts in the Internet's global centre of gravity–shifts that will have major implications for the future of the Internet.

Key Findings:

- There is a global culture developing around the Internet, in which users worldwide share similar values and attitudes related to online freedom of expression, privacy, trust, and security.
- The newly emerging nations online, primarily in the developing regions of Asia and Latin and South America, are becoming the dominant nations online, having the greatest number of users, despite lower levels of adoption.
- Users want it all: they desire freedom of expression, privacy, trust, and security without viewing these as mutually exclusive.
- Newly adopting countries are more liberal in attitudes, such as support for freedom of expression, and behaviours, such as use of social networking platforms, while older-adopting countries are more conservative, tied to more traditional Internet applications and content.

These findings point to the beginning of a new Internet world in which the developing nations move into a leading role in shaping the use and governance of this global network of networks.

The New Internet World: A Global Perspective on Freedom of Expression, Privacy, Trust and Security Online

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Introduction

Worldwide, a growing number of individuals are connected through the Internet and related information and communication technologies (ICTs), such as mobile phones, personal computers, personal digital assistants (PDAs), tablets and other networked gadgets and electronic devices, which are themselves converging. The number of individuals connected to the Internet at home reached almost 1.6 billion in 2010.[1] As of 2011, one-third of the world's population has come online, and this number will not stop growing.[2] As these new technologies become integrated into everyday life and work across a growing number of nations, a global, versus nation-centric, perspective on the Internet is increasingly vital.

The global diffusion and ubiquitous nature of the Internet have raised questions about online trust, privacy, security, and freedom of expression. Has such ubiquity undermined or reinforced the values that characterized the Internet's early vitality? Do users' online behaviours reflect their attitudes? In today's globalised and networked world, are individuals becoming complacent or more critical of certain values, such as privacy, as they adapt to an online world? Leaders across all industries, governments, and civil society are increasingly concerned about these issues and have begun to analyse them closely. Yet little is known about how individuals perceive these issues pertaining to the Internet and related ICTs.

The objective of this study is to understand and compare worldwide Internet values through cross-national comparisons of indicators of Internet use and activities as well as attitudes and behaviours. More than 5,400 Internet users from 13 different countries completed an online survey designed by the research team at INSEAD and the Oxford Internet Institute (OII), and administered by comScore, to answer the following questions:

- How concerned are Internet users worldwide with issues regarding online freedom of expression, privacy, trust, and security?
- Do users place the same importance on each of these Internet values?
- Do individuals from different countries, cultural traditions, and demographic groups regard these values in very different ways?
- Are these values consistent with online user behaviour?

Previous research has raised some of these questions, but has seldom marshalled sound empirical evidence from a global perspective on specific user behaviours and attitudes. This is the first global study to present a cross-national and cross-regional comparative perspective on the core Internet values.

Understanding and comparing the multiple dimensions of users' values and behaviours worldwide will allow multiple stakeholders, from business leaders to online managers, policy-makers, regulators, and service providers, to grasp the complex characteristics of today's online world. This study yields a complete and exhaustive picture of a new and evolving online world that is emerging, which readers need to understand in order to shape the future of the Internet.

The Rise of Ubiquitous Technology in the 21st Century: Global Online Values and Concerns

Both Gartner and International Data Corporation reported growth in personal computer shipments and mobile phone sales worldwide at the end of 2010.[3] As new products, such as the Apple iPad, Samsung Galaxy Tab, and Cisco Cius, entered the market this same year, sales for the reinvented media tablet were forecasted to reach 19.5 million.[4] These three electronic consumer devices alone accounted for more than a billion new Internet-enabled units on the market.

The beginning of the 21st century is marked by the rise of ubiquitous technology in everyday life. As more and more people are connected to the Internet, today's networked society makes it increasingly difficult to remain offline. Consequently, individual citizens are becoming more focused on the opportunities and risks electronic devices pose. For example, fewer than 35 percent of online users polled in a recent cross-national survey trusted online information provided by governments, online companies, or other Internet users.[5] A BBC World Service poll conducted in 26 countries in the spring of 2010 indicated that nearly four in five adults (78 percent) felt that the Internet had brought them more freedom. Yet only 48 percent felt it was a safe place to express their opinion, while 49 percent did not.[6] In another global poll conducted that same year,

65 percent of Internet users said they preferred to give express permission before being monitored for web searches and web page visits.[7] Concerns about the core Internet values have thus become of significant relevance for individuals in the digital age.

However, little is known about the values and attitudes across the world of Internet users. We cannot assume that globalisation leads to the homogenisation of world cultures, which is why it is important to acknowledge the multicultural and multidimensional nature of online behaviour.[8] Research has shown that value indicators can be a robust explanation for or influence on individual behaviours.[9] For this reason, knowledge of online values and attitudes will help readers better comprehend the complexities of cross-national user behaviours related to today's most prevalent online concerns: freedom of expression, privacy, trust, and security on the Internet.

Freedom of Expression

The Internet has allowed individuals to express themselves freely, as well as given them the opportunity to reach and join a wider audience.[10] This has fostered the sharing of innovative ideas and interests. However, the pervasive nature of today's technology ironically means that individuals could become more self-conscious about their actions and words, both online and offline, and regulate their own expression. A recent BBC World Service poll (2010) showed that people were divided about the Internet being a safe place to express personal opinions.

The debate over the extent and the value of individual freedom is not new and continues to be contentious. However, with users able to access content from one location and upload it to another, the Internet has further exposed differences in interpretations and concepts of freedom worldwide.[11] These notions can be associated with freedom of expression or impeding practices such as the use of security mechanisms, filtering, and surveillance procedures often associated with government authorities.[12] Influential business organisations and Internet service providers may also perform actions that can cripple freedom online.[13] Numerous cases around the world, which have generated much discussion over the dimensions and value of online freedom, have sprung up over the last few years.[14]

Privacy

> "If you have something you don't want anybody to know, maybe you shouldn't be doing it."
> —Eric Schmidt, Google CEO (Dec. 2009)[15]

> "Privacy is dead."
> —Mark Zuckerberg, co-founder and CEO of Facebook (January 2010)[16]

These striking remarks give insight to some of the assumptions shaping the Internet today and will no doubt have an impact on levels of online trust and concern about Internet-based privacy. They should not be dismissed, as they come from the offices of the Internet's two most visited websites in 2010.[17]

Privacy and the protection of personal information have been a concern since computers began to be used in the public sector–long before the Internet became a popular medium in the 1990s. Yet fear and interest in the protection of privacy and personal data have been heightened by the widespread diffusion of the Internet and its use in a growing number of areas, including commerce and medical care. The rise of online social networks has also contributed to concern over individual privacy. Governments and law enforcement agencies have sought to increase security measures online in order to address such concerns.[18]

Concern about privacy transcends clichéd lines, Hoofnagle et al. (2010) found that young Americans shared many of the same attitudes regarding online privacy as older adults did, contrary to what the media had previously deduced from anecdotal evidence. Likewise, one of the rare studies to focus on Internet users' opinions about information privacy worldwide found that levels of apprehensiveness were very similar across cultures and regulatory regimes.[19]

On the other hand, Cho et al. (2009) tested levels of online privacy concern in five international cities. Their results highlighted the conditional and multicultural nature of online privacy. This is why analysis of online behaviour at the individual and macro levels is suggested.[20] Both Bellman's and Cho's studies concluded that a lack of Internet experience affects levels of concern.

Despite the heightened concern users across countries and ages express, several studies have shown that they are often willing to share personal information for other online trade-offs. Acquisti and Grossklags (2007) highlight that users can be convinced to forego certain levels of online privacy for economic concessions. Some users might be willing to accept privacy-intrusive practices from online businesses in exchange for immediate economic gratification, such as free movie tickets or entry into a contest. Others might be willing to share their social network profile to increase their social capital and network. Clark (1999) also suggests that users may exchange personal data for access to information or services.

Trust

People are most often guarded about their privacy when they lack trust in others. Nearly all definitions of trust found involved a minimum of two agents: the one who must trust and the one who is trusted. The adoption of new technology could not occur without a minimum level of trust in both the device and the agents that

maintain and operate it. Urban et al. (2009) point to online trust as a key factor to the Internet's success. For example, lack of trust in ubiquitous technology can significantly hinder e-commerce.[21]

Empirical research about online trust has mainly focused on e-commerce or the adoption of the Internet and new technology. Yet many studies, such as Nielsen's *Global Faces and Networked Places* (2009) and the Pew Research Center's *Generations 2010*, indicate that the Internet is most widely used for e-mail and information search purposes, as well as social networking activities.

There are relatively few studies related to trust and these specific Internet uses. Dutton and Sheppard (2006) examined general trust of the Internet amongst British users. They asserted that users with greater Internet skills and years of use normally have more trust in the Internet. They also suggested that other factors, such as education, may impact levels of trust. However, as people become more familiar with the Internet, and begin to use it more frequently, they also increase their chances of encountering problems such as spam or viruses, issues that can undermine online trust.[22] In addition to years of use and levels of proximity to the technology, there are other interrelated elements that affect online levels of trust, such as security.[23]

Security

Notions of security have been studied from numerous perspectives. According to Jenkins-Smith and Herron (2009), online security is "essentially a contested concept, associated with contextual meanings that are extremely broad and variable." Security concerns can range widely, from an individual level (such as a person protecting her computers from viruses)[24] to a national level (such as agencies monitoring suspicious or terrorist activities).[25] Although these concepts exist side by side, and both involve government agencies, technical experts, and members of the private sector, it is important to make the distinction between the two.[26]

Protective measures adopted for technical or cybersecurity reasons inevitably have an impact on other concerns studied, such as freedom of expression or privacy. Many authors have noted the limiting effects of security mechanisms over other individual rights and freedoms.[27] A Gallup poll conducted in 2002, only months after the 9/11 attacks, found that the American public was evenly split about online freedom being reduced by monitoring practices for national security reasons.[28] There has not been any substantial follow-up on the subject since.

Often, research focuses instead on digital security in technical terms, informing the public about trends in phishing, spam, or malicious code, as the annual *Symantec Global Internet Security Threat Report* does.[29] UNISYS also publishes a bi-annual Security Index that presents social indicators regarding users' perceptions of national, financial, Internet, and personal security in 10 different countries. Though the study is quite robust, the definition of *Internet security* amongst the other types of security is limited to concerns related to spam, viruses, and online financial transactions.[30] It fails to recognise that other types of security threats, such as terrorism, financial fraud, or identity theft could also belong to this category, and instead classifies them under categories of national, financial or personal security.

Thus, the dimensions of online freedom, privacy, trust, and security are not simple and can overlap, causing conflicting Internet concerns and values. Cross-cultural differences and perceptions of these four issues can further complicate how users worldwide manifest related attitudes and behaviours. However, the rise of the global networked society and ubiquitous technology highlights how important it is to know users' opinions and online actions to better understand today's online environment.

In order to do this, we have carried out an online survey to closely examine how Internet users perceive issues of online freedom of expression, privacy, trust, and security. What importance do they give to these Internet values? Do attitudes and behaviours vary amongst individuals from different countries and demographic groups? Are online actions consistent with users' Internet values?

Methodology

Data were collected from 5,400 adult Internet users in 13 different countries through the use of online surveys, designed by the research team and administered by comScore. These countries include Australia/New Zealand, Brazil, Canada, China, France, Germany, Italy, India, Mexico, South Africa, Spain, the United States, and the United Kingdom.

Data were collected from October 21, 2010 to November 19, 2010. Invitations were issued to comScore panelists by e-mail or through data collection software that is installed on panellists' computers in the form of a web-based pop-up window.

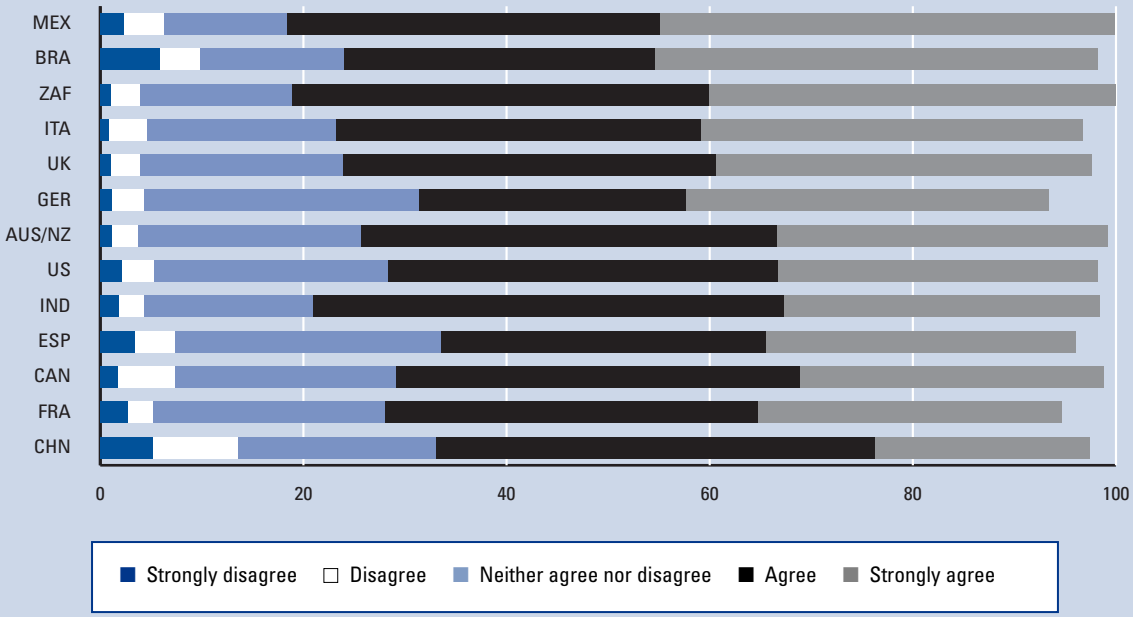
Sampling

The sample for this research study targeted the total online population in each of the targeted countries. Targeted samples were generated by the system based on this project's specific quotas and sampling requirements. The overall sample was stratified to the quota targets that were set by comScore and the research team. In instances where general demographics (age, gender, and income) in a given quota cell did not reflect the natural online population, sample weighting was applied.

Questionnaire Design

The questionnaire was developed by combining questions from numerous previous studies that examined issues of trust, privacy, security, and freedom of expression online, as well as questions related to household

Figure 1: "Access to the Internet should be a fundamental right for all people."



Note: See page 1 for country abbreviations and sample sizes.

connectivity, personal use, and demographic and control variables. These included questions from Oxford Internet Surveys (OxIs),[31] the Pew Internet and American Life Project,[32] the BBC World Service,[33] and comScore's own surveys.

Limitations

Since online surveying is a relatively new type of research method, it has faced some doubt related to validity and bias. The most notable problems with online surveying are sampling and non-response bias.

Using a proprietary panel management system to effectively manage and optimize panels for the specific needs of this study minimized sampling issues. Respondents were recruited through comScore's global online panel, which includes more than 5 million Internet consumers. The quality of the panels was assured by comScore's continuously refreshed pool of respondents through global recruitment activities across multiple recruiting sources, which include thousands of diverse sites. This reduced the possibility of collecting falsified or biased data from repeated panellist members, a problem highlighted by certain researchers, such as Wright (2005).

Non-response issues were minimized by using mandatory answers in order to complete the entire survey. This is a solution that was proposed by Couper (2000) to address this particular problem with web surveys.

We acknowledge that these solutions are not perfect, yet it is important to note that no methodology is flawless. Some of the problems found with online surveying are not unique to the Internet.[34] Mail surveys or any self-selected or -administered questionnaire, for example, suffer from the same basic limitations. We've tried our best to reduce these issues as much as possible.

The Emergence of a Global Internet Culture

The rise of ubiquitous technology and the global networked society appears to have created a global Internet culture, where users worldwide now generally share many of the same perspectives, concerns, and attitudes towards the Internet and new technology. Only small cross-national differences in users' outlooks on the core Internet values were found. In fact, similar patterns of national variance were identified amongst countries. Furthermore, there was a statistically significant but weak correlation found between values and gender, age, income, and education. This points to the global homogenisation of online values.

Respondents expressed the strongest concern for items related to online security and trust. An overwhelming majority (more than 70 percent) also strongly felt that access to the Internet should be a fundamental

right for all people, while there was general consensus in support of new technology and the Internet, online freedom of expression, and privacy. However, notable enthusiasm came from countries with the lower penetration rates (India, Brazil, Mexico, China, and South Africa), while roughly one-third of respondents in Internet-developed countries were more indifferent about these issues.

Users want it all: they do not assume that core Internet values are mutually exclusive. They support freedom of expression and privacy on the Internet, while showing great concern for online trust and security.

The Internet as a Fundamental Right for All

Respondents were asked, similarly to the BBC Internet poll (2010), if the Internet should be a fundamental right for all people. The majority of users, regardless of their country, believed that it should be (see Figure 1). On average, 72 percent of all respondents agreed that access to the Internet should be a fundamental right for all. (Overall averages were calculated by averaging together the results from within all the countries.) Results were almost identical to the BBC findings. However, this study allowed users to neither agree nor disagree with the item, which allowed us to identify that 20 percent of overall users did not have a defined opinion on the matter.

Countries where proportions were above average included Mexico (82 percent), South Africa (81 percent), and India (77 percent). This may or may not be very surprising, as these nations have some of the lowest Internet diffusion rates amongst the countries investigated. Users in these countries also have fewer years of experience, on average, than their counterparts elsewhere. This highlights the enthusiasm and maybe the felt need for the Internet in countries where access is limited and not available to all.

Germany, Spain, China, and France had below-average proportions of users who thought that the Internet should be a fundamental right for all. A higher proportion of users who neither agreed nor disagreed in these countries partly explains the reason for this. Other variables did not seem to offer any further explanation, as Internet penetration rates are not exceptionally high in these countries, nor are user years of experience.

Still, it is clear that the majority felt that the Internet should be a fundamental right for all people. This highlights the importance users give to the Internet in today's world.

Widespread Support for New Technology and the Internet

Overall, users also showed support for new technology and the Internet. Respondents were asked:

- whether technology and the Internet make things better for them;
- whether new gadgets should be tested when invented; and
- whether society could function without new technology.

On average, 66 percent of all users agreed that new technology and the Internet had a positive impact on their lives and on society. Age, gender, and education had no significant impact on results. Countries with the highest proportion of users who agreed were again from India, South Africa, and Mexico. Support was lowest in the United States, Germany, and Spain. This does not mean that these countries had the highest proportion of users who disagreed. Instead, they had the highest proportion of users who did not have a definite opinion on the matter, as almost 30 percent of respondents in these countries neither agreed nor disagreed that the Internet had a positive impact. Again, there are signs of enthusiasm and greater support from "newer" Internet countries and more indifferent or ambiguous sentiments emerging from "older" Internet countries. Nonetheless, we can confirm that the majority of users generally support new technology and the Internet.

General Sentiments about the Core Internet Values

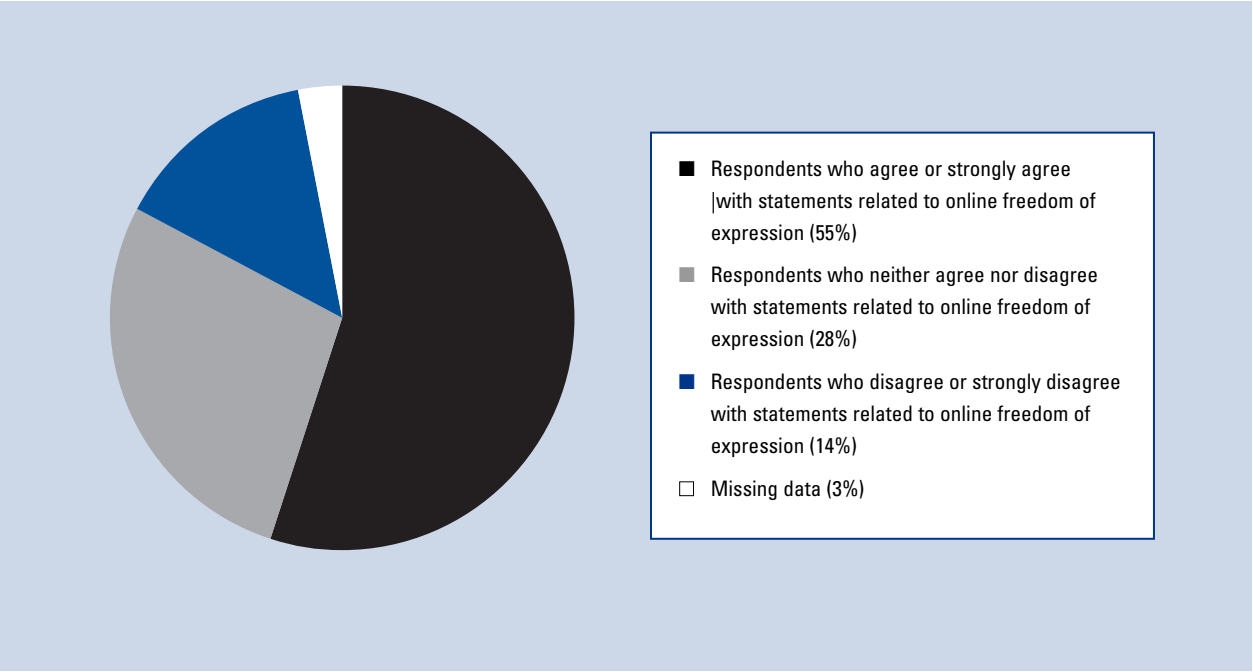
The majority of users supported freedom of expression and privacy online (see Figure 2 and Figure 3). Curiously enough, levels of support were virtually the same for these values. Fifty-five percent of all users supported both, while almost 30 percent consistently indicated that they neither agreed nor disagreed with all measurements of freedom of expression and privacy. This highlights the lack of opinion in a considerable portion of users. It is not simply that these users did not know how they felt about these issues, as "don't know" was a response option in the survey. (Those responses were treated as missing data for this study, since numbers were too trivial to take into account.) Age, gender, education, and income had no significant impact or influence on results. Respondents who had no defining opinion on these matters were often from countries where Internet diffusion is more established and widespread.

By and large, support for freedom of expression was strongest in India, Mexico, and South Africa, while those who supported it least were from Spain, France, and Germany. This is again a sign that enthusiasm and support for the Internet and technology are emerging from newer Internet countries, rather than older ones.

Users from the United States, Canada, and again South Africa valued online privacy the most. This is not surprising, as the protection of privacy and personal data have traditionally been strong in Canada and the United States. Further analysis is presented in the individual interpretations of each value.

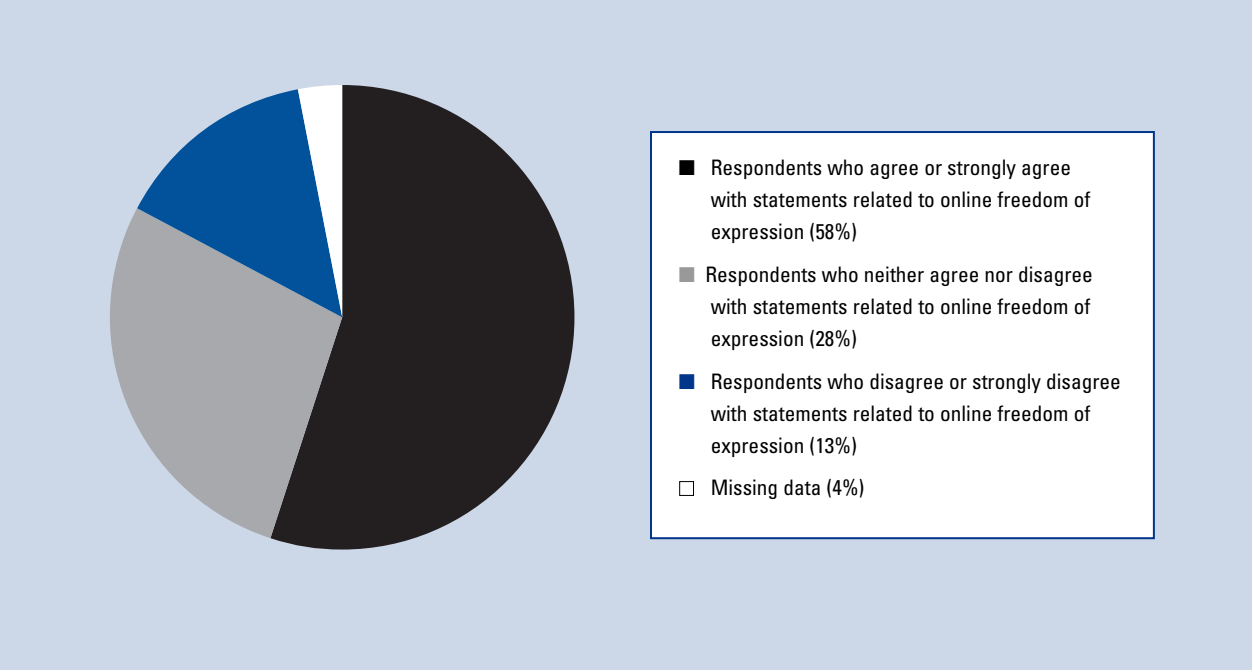
In terms of levels of trust, the majority of users in all countries showed high levels of distrust in information

Figure 2: Support for online freedom of expression



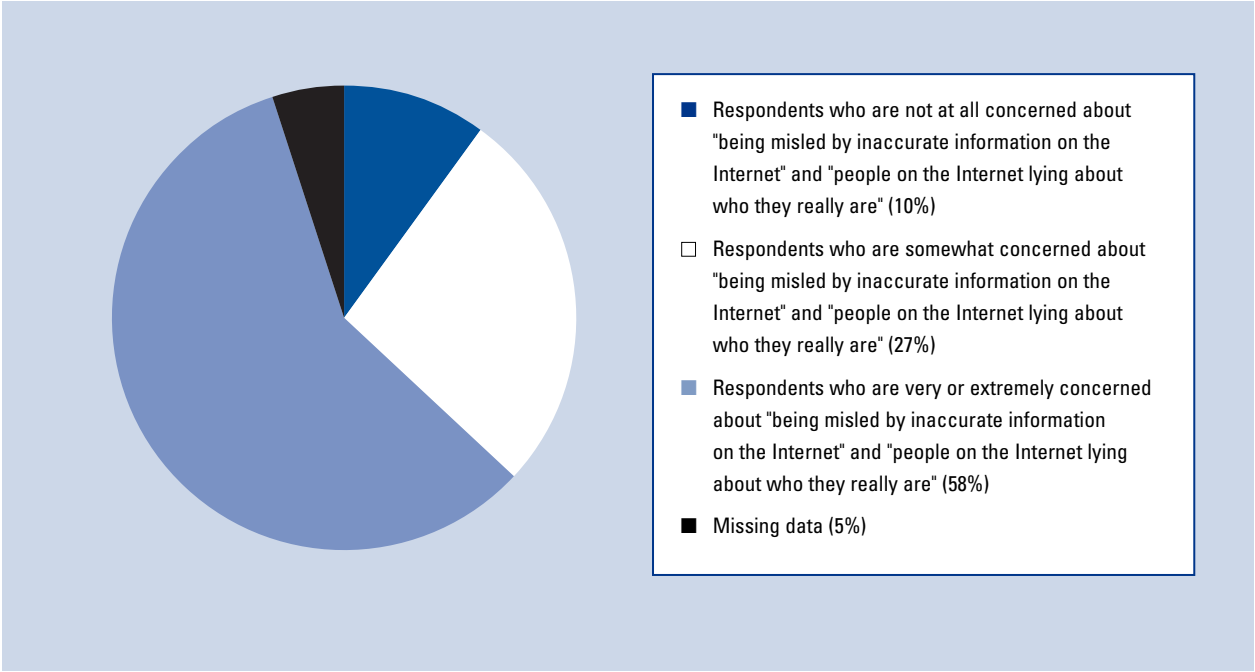
Note: n = 5400.

Figure 3: Support for online privacy



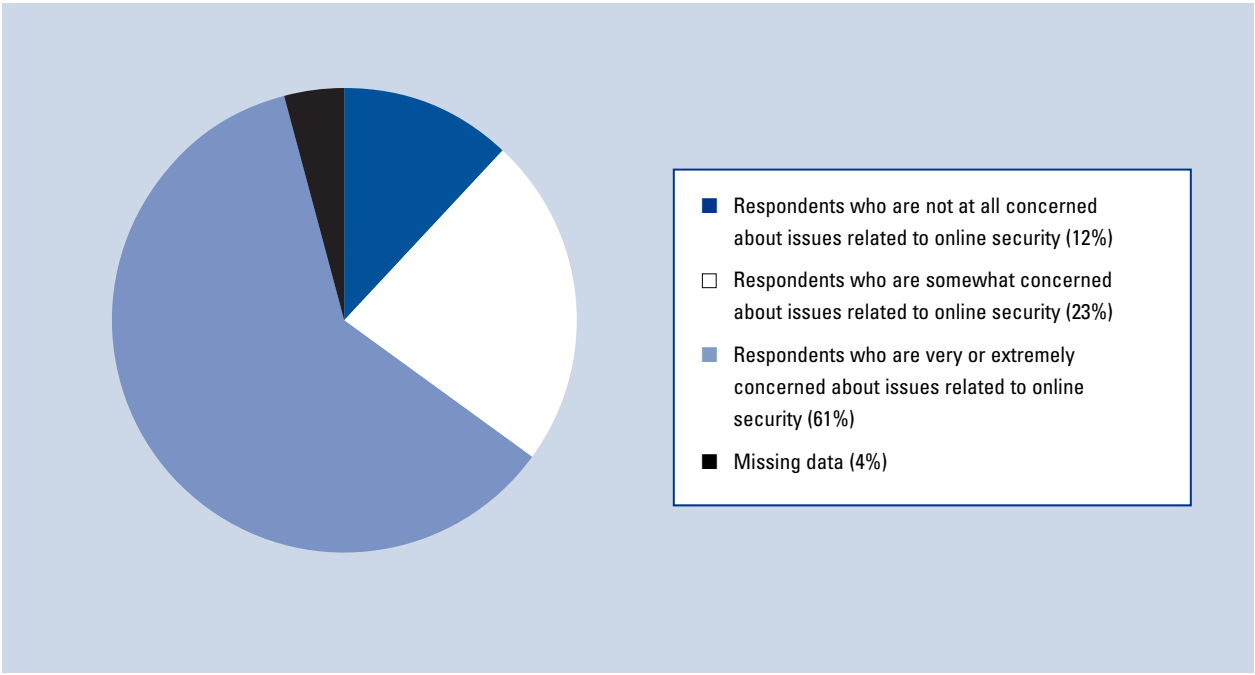
Note: n = 5400.

Figure 4: Concern about the trustworthiness of people and information online



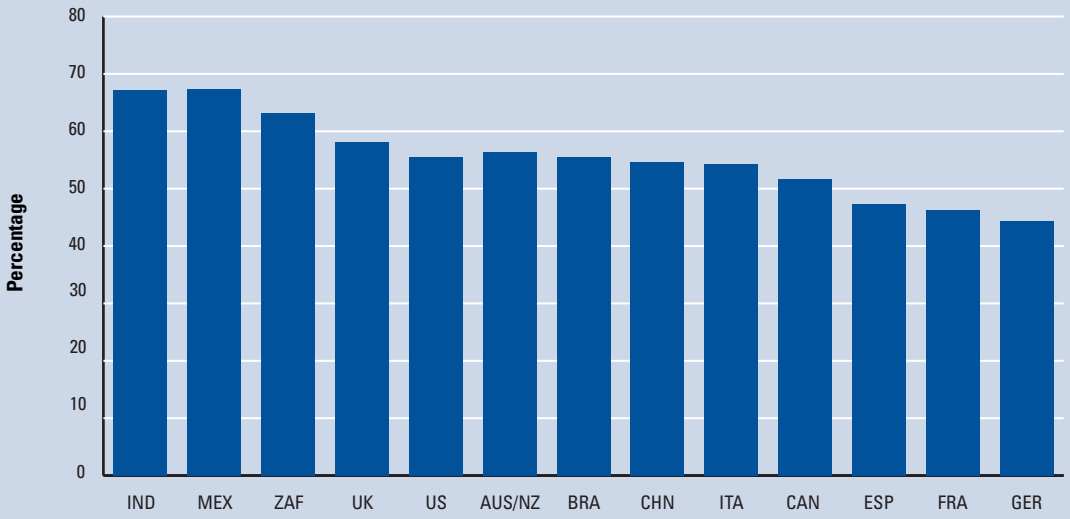
Note: n = 5400.

Figure 5: Concern for online security



Note: n = 5400.

Figure 6: Percentage of respondents who support online freedom of expression



Notes: See page 1 for country abbreviations and sample sizes. Blue bars indicate percentage of respondents who agree or strongly agree with the following statements related to online freedom of expression: (1) It is ok for people to express their ideas on the Internet, even if they are extreme; (2) People should be able to express their opinion anonymously on the Internet; (3) I feel that I can express myself freely online; and (4) people should be free to criticize their government on the Internet.

and people online. On average, 58 percent of all respondents seemed very or extremely concerned about information and people on the Internet misleading them. If we include respondents who were somewhat concerned, this number swells to 85 percent.

Respondents were just as concerned about matters pertaining to online security. On average, 61 percent of users were either very or extremely concerned about online security. This number rises to 84 percent when we include respondents who were somewhat concerned about these issues. Users from South Africa, India, and Mexico again felt the most concerned about online trust and security, while users from Europe and North America felt the least concerned.

In sum, users worldwide generally believed the Internet should be accessible to all and that new technology and the Internet are positive things in their lives and in society. There was general consensus amongst all users in support of online freedom of expression and privacy, and a high level of online distrust and concern for security. Age, gender, income, and education had a statistically significant but weak impact on levels of support and concern.

However, countries with low penetration rates often manifested stronger sentiments about these issues. Internet users from the European Union generally had the least strong sentiments. This might be explained by national context and regulation. The European Union is currently developing strategies to preserve core Internet values. Consequently, users from member countries may not feel that these values are threatened, while users from emerging economies, where Internet regulation is less developed, might feel that these values are at greater risk and therefore have more formed opinions about them. National Internet diffusion could also explain the variance of support or concern for the four core Internet values, a possibility we examine in the analysis of individual values.

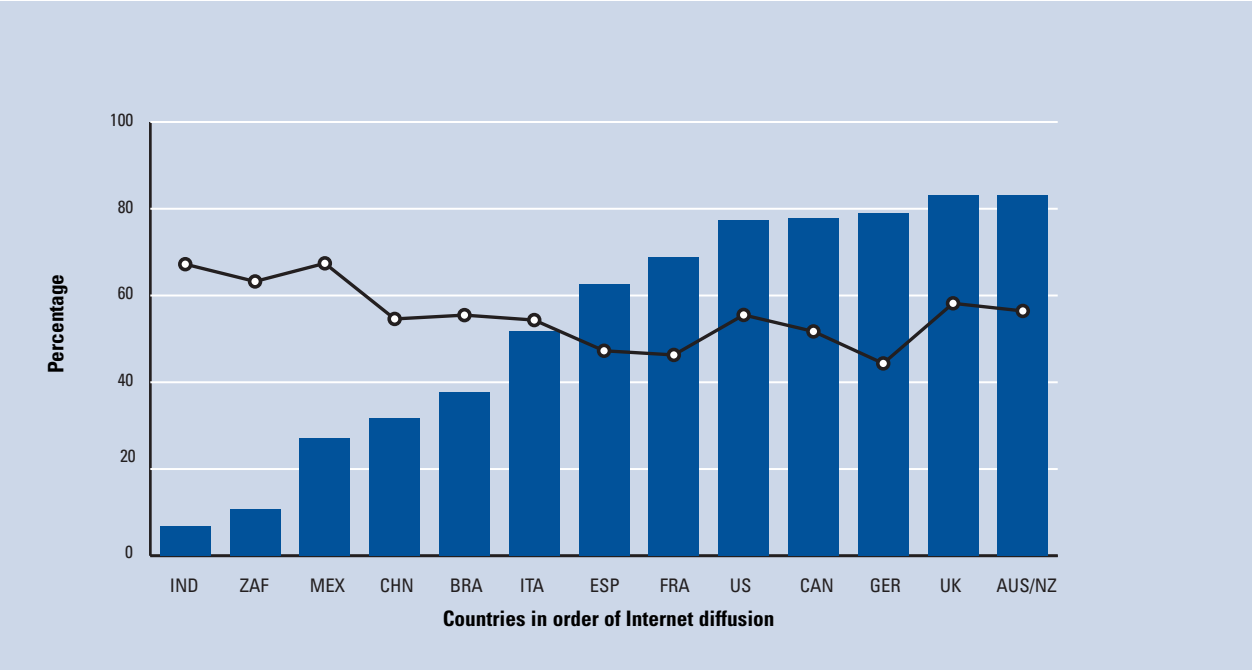
Freedom of Expression Online: Internet Diffusion Erodes Support

In order to measure freedom of expression as a core Internet value, we asked respondents how much they agreed or disagreed with the following four statements:

- "It is ok for people to express their ideas on the Internet, even if they are extreme."
- "People should be able to express their opinion anonymously on the Internet.
- "I feel that I can express myself freely online."
- "People should be free to criticize their government on the Internet."

Items for freedom of expression all loaded onto a single factor when using principal axis factoring. This

Figure 7: Support for online freedom of expression according to Internet diffusion



Notes: See page 1 for country abbreviations and sample sizes.Blue bars indicate percentage of population online (2010); black line indicates percentage of respondents who agree or strongly agree with the following statements related to online freedom of expression: (1) It is ok for people to express their ideas on the Internet, even if they are extreme; (2) People should be able to express their opinion anonymously on the Internet; (3) I feel that I can express myself freely online; and (4) People should be free to criticize their government on the Internet. Internet diffusion rates are according to the World Internet Statistics, last updated on June 30, 2010 (http://www.internetworldstats.com/).

confirmed that there was only one dimension of freedom of expression. Correlation between items was fairly strong and statistically significant, while the Kaiser-Meyer-Olkin (KMO) measure was .795. We concluded that factor loading was appropriate and that the sampling tests were adequate.

Overall, users generally agreed or strongly agreed with statements that supported freedom of expression. Users varied little cross-nationally, and instead shared similar patterns of variance within their nations. The majority of users across countries felt that people should be able to freely criticize their government online and express their opinion anonymously on the Internet.

Contrary to previous findings from the BBC Internet poll, our results show that users were not only divided but also ambiguous about the Internet being a safe place to express their opinion. While, on average, almost half of all respondents agreed that it was safe, more than 30 percent neither agreed nor disagreed with this item.

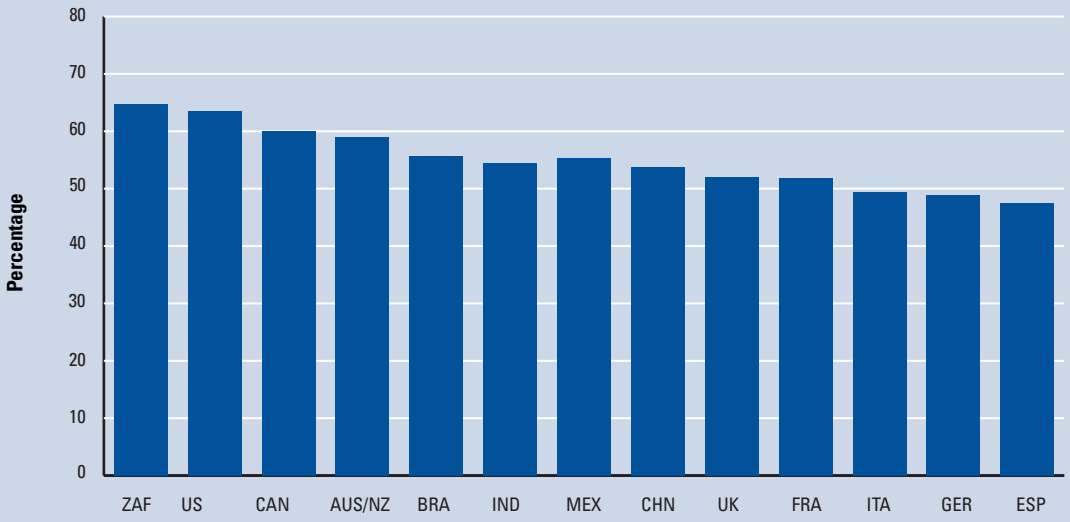
We calculated the combined averages of respondents who agreed and strongly agreed with each of the mentioned items related to freedom of expression, to see which country had the highest proportion of users who supported freedom of expression online (see Figure 6). On average, 55 percent of all users supported freedom of expression online, while 28 percent neither agreed nor disagreed and only 14 percent disagreed.

India and Mexico had the highest proportion of respondents who supported freedom of expression (67 percent). On average, fewer than 50 percent of users in Spain, France, and Germany supported freedom of expression online. These countries also had the lowest proportion of users who felt that they could express their opinion freely online or that the Internet was a safe place to do so.

These results are attributable to the fact that users in these countries often neither agreed nor disagreed with related measurements. This also explains why figures in many other countries where support for freedom of expression online is expected to be high, such as in the United States, are in fact lower.

In general, support for freedom of expression online diminished as penetration rates increased (see Figure 7). As previously mentioned, a notable number of users in countries with high Internet diffusion did not have strong opinions about freedom of expression online. There was a weak but statistically significant negative correlation between support for freedom of expression online and approximate years of use. This explains somewhat why support diminishes in countries where the Internet has been established longer. Emerging economies had a higher proportion of users with less Internet experience. Still, the percentage of less experienced users in these countries did not exceed the percentage of more experienced users. The only exception

Figure 8: Percentage of respondents who support online privacy



Notes: See page 1 for country abbreviations and sample sizes. Blue bars indicate percentage of respondents who agree or strongly agree with the following statements related to online privacy: (1) People who go on the Internet put their privacy at risk; (2) Personal information about myself that was gathered over the Internet is stored somewhere for purposes I do not know; (3) Organizations and agencies ask me to give too much personal information over the Internet; and (4) I do not like to provide personal information on the Internet.

was in India, which had the highest proportion of least experienced users. Therefore, individual users' levels of experience do not fully explain the greater enthusiasm demonstrated in the Internet-developing nations.

Another plausible explanation for low support in some countries where the Internet is more established is that Internet regulation is more developed and users may be culturally more sensitive to issues related to freedom of expression, such as hate speech online. France and Germany, for example, have strong regulation that prevents anti-Semitic content on the Internet.

Although findings indicate that emerging economies manifest greater support for freedom of expression, it is too early to say that users in these countries generally care more about this issue, or to predict whether sentiments will change over time as the countries reach higher Internet penetration rates. Further research, such as a longitudinal study, is needed to fully understand the erosion in support for freedom of expression that appears to be caused by Internet diffusion.

Support for Online Privacy Is Not Dead

We asked respondents how much they agreed or disagreed with the following statements, in order to understand how they valued their privacy on the Internet:

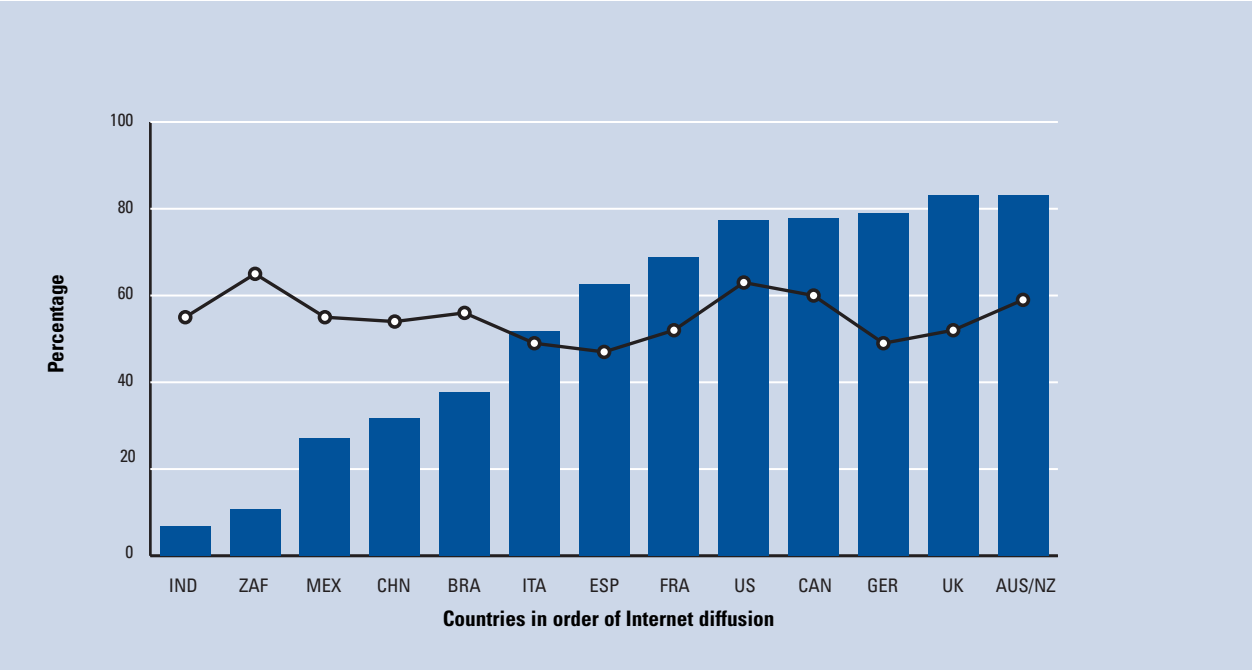
- "People who go on the Internet put their privacy at risk."
- "Personal information about myself that was gathered over the Internet is stored somewhere for purposes I do not know."
- "Organizations and agencies ask me to give too much personal information over the Internet."
- "I do not like to provide personal information on the Internet."

When using principal axis factoring, all items for privacy loaded onto a single factor, confirming that there was only one dimension of privacy. Correlation between items was not particularly high or low, but was statistically significant according to the Bartlett's test of sphericity. KMO measured at .735, above the satisfactory measure of .5.

In general, the majority of respondents valued their online privacy (see Figure 3). On average, 58 percent of all users agreed or strongly agreed with the above statements, while 13 percent disagreed and 28 percent neither agreed nor disagreed. Support for online privacy may indeed be conditional and multicultural to a certain extent, as Cho et al. (2009) have previously suggested. Yet, in general, results indicated that levels of apprehensiveness were similar in all countries, confirming the findings of Bellman et al. (2004).

We calculated the combined averages of respondents who agreed and strongly agreed with each of the

Figure 9: Support for online privacy according to Internet diffusion



Notes: See page 1 for country abbreviations and sample sizes. Blue bars indicate percentage of population online (2010); black line with white markers indicate percentage of respondents who agree or strongly agree with statements related to online privacy according to Figure 8: (1) People who go on the Internet put their privacy at risk; (2) Personal information about myself that was gathered over the Internet is stored somewhere for purposes I do not know; (3) Organizations and agencies ask me to give too much personal information over the Internet; and (4) I do not like to provide personal information on the Internet. Internet diffusion rates are according to the World Internet Statistics, last updated on June 30, 2010 (http://www.internetworldstats.com/).

mentioned items in order to see which countries had the highest proportion of users who valued privacy on the Internet (see Figure 8). Users from South Africa valued their online privacy the most (65 percent), followed by users in the United States (63 percent), Canada (60 percent), and Australia/New Zealand (59 percent).

Results from the United States, Canada, and Australia/New Zealand are not surprising, as privacy policies, principles, and advocacy groups are prevalent in these countries. Such measures include the US Federal Trade Commission standards for privacy on the Internet, the Canadian Standard Association *Model Code for the Protection of Personal Information* and the Australian *National Privacy Principles*, in addition to well-established privacy acts and privacy commissioners' offices. Growing use and popularity of online social networks, propelled by sites such as Facebook, have also made online privacy the centre of debate in these countries. There was a statistically significant correlation between years of use and support for privacy. However, this correlation was weak. Correlation with age, income, and education was also extremely weak though significant.

Therefore, there are no clear indications to why South Africa had such a high proportion of users who felt strongly about online privacy. We cannot attribute it to Internet diffusion eroding strong support, as it does for freedom of expression online, since countries such as the United States, Canada, and Australia/New Zealand had higher proportions of support than countries with low diffusion, such as India, Mexico, and China. Although we cannot say that Internet diffusion diminishes support for online privacy, neither can we say that it increases support (see Figure 9).

Even though some countries had a low proportion of users who seemed to value online privacy, this does not mean that users in these countries did not want their privacy protected online or that they did not mind sharing personal information online. It is essential to remember that, on average, almost 13 percent of respondents did not agree or disagree with these statements. Only 28 percent of respondents actually disagreed with statements related to online privacy.

Reasons for this are not clear, but may be related to the types of privacy legislation and regulation found in some countries. Online privacy regulation is relatively strict in Europe (with the EU Directive on Data Protection), while, in the United States and other countries, privacy is self-enforced.[35] It is possible that users in self-regulated environments felt that their privacy is more at risk, as online companies and organisations can collect data much more easily from them.

In sum, we can conclude that most Internet users, regardless of their country of origin, value privacy and the protection of personal information online. Yet, there was still about one-third of respondents who had no defining opinion about the issue. More research is needed

to better understand what might be some of the factors causing this.

Online Trust: Concern over Misleading Information and People

In order to measure users' levels of trust in people and information online, we asked respondents how concerned they were about:

- being misled by inaccurate information on the Internet; and
- people on the Internet lying about who they really are.

Principal axis factoring was used to assure that these two items loaded onto a single factor, which they did. Correlation between these two items was relatively high and statistically significant. The KMO measure was .5, which is satisfactory.

More than 75 percent of users in all countries felt at least somewhat concerned, if not more, about being misled by inaccurate information on the Internet, and 70 percent or more felt somewhat concerned about people lying about who they were online. Levels of income did have a statistically significant impact on trust, as Dutton and Sheppard (2006) suggested. However, the correlation was very weak. Other independent variables, such as age, gender, and education, were trivial and not significant.

We calculated the average percentage of users who were very or extremely concerned about being misled by information or people online, to see which users were most distrustful (see Figure 10). On average, users in South Africa seemed the most concerned about being deceived by information and people on the Internet (68 percent), followed closely by users in India (67 percent) and Mexico (61 percent). Users in France seemed the least concerned (37 percent).

When combining responses to both statements, we found that 58 percent of all respondents were either very or extremely concerned about being misled by information or people online. However, if we also added respondents who indicated that they were somewhat concerned about these two issues, on average 85 percent of all respondents were concerned (see Figure 4).

Concern over trustworthy information and people online was highest in the three countries with the lowest penetration rates (India, South Africa, and Mexico, as seen in Figure 11). The proportion of users who were concerned about misleading information or people online fluctuated as Internet diffusion increased. However, generally, Internet diffusion somewhat erodes concern over the trustworthiness of information and people online.

We can conclude that, by and large, the majority of users are at least somewhat distrustful of people and information misleading them online. This is somewhat alarming, as previous research has indicated that familiarity[36] and proximity to technology[37] help increase trust. Yet, maybe as Dutton and Sheppard (2006) have suggested, the more one uses the Internet and technology, the more one perceives and understands the possible risks. Further research is needed to better understand fluctuation amongst countries with higher penetration rates.

Online Security: A Major Concern for All

In order to understand how users valued online security in terms of technical security, personal data protection, and fraud, we asked respondents how concerned they felt about the following incidents:

- their computer being infected by a virus;
- someone stealing their credit card details; and
- someone getting inappropriate access to their e-mail.

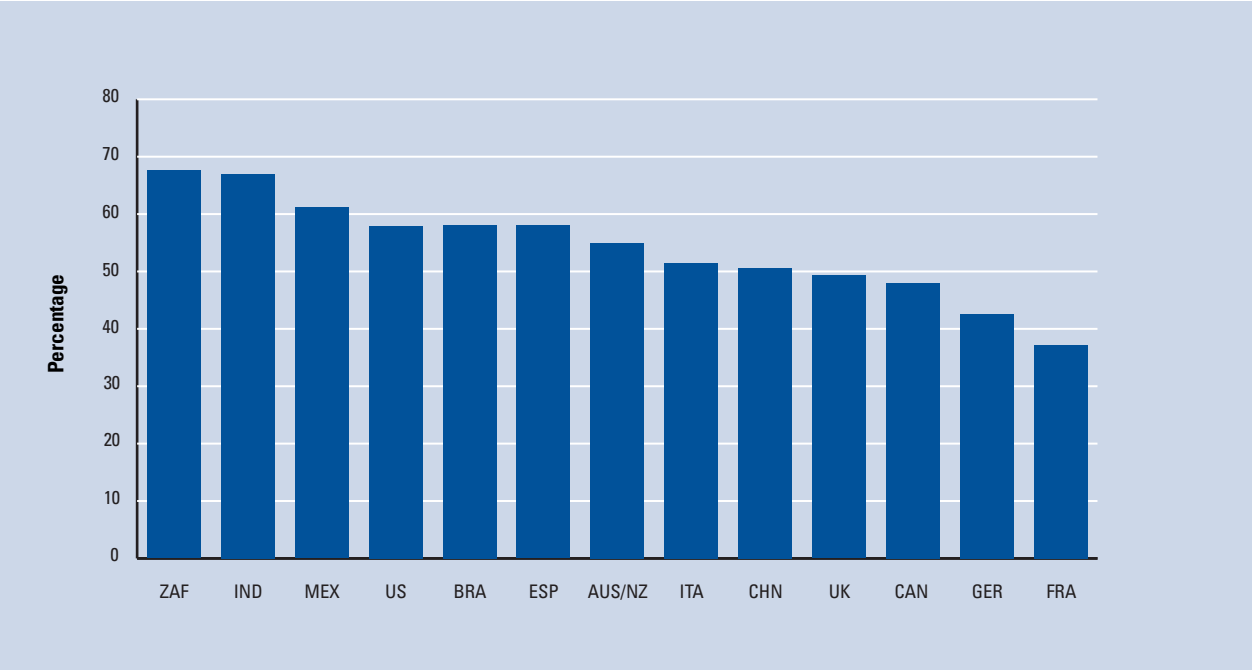
Items for security all loaded onto a single factor when using principal axis factoring. This confirmed that there was only one dimension of security. Correlation between items was high and statistically significant. The KMO measure was above the satisfactory measure of .5, indicating .718.

We calculated the combined averages of respondents who identified as very or extremely concerned for the three mentioned items related to online security (see Figure 5). On average, 61 percent of users in all countries were either very or extremely concerned about issues pertaining to online security. This number rose to 84 percent if we included those who said they were somewhat concerned about online security issues.

In general, users seemed highly concerned about their online security, with the exception of users in Germany and France (see Figure 12). Users who were most concerned about this were from South Africa (81 percent), India (79 percent), and Mexico (69 percent). This can maybe be explained by the fact that respondents from these countries had fewer years of experience using the Internet than the average respondent in this study. Findings indicated that items of online security and experience did correlate negatively, albeit in a weak but statistically significant way.

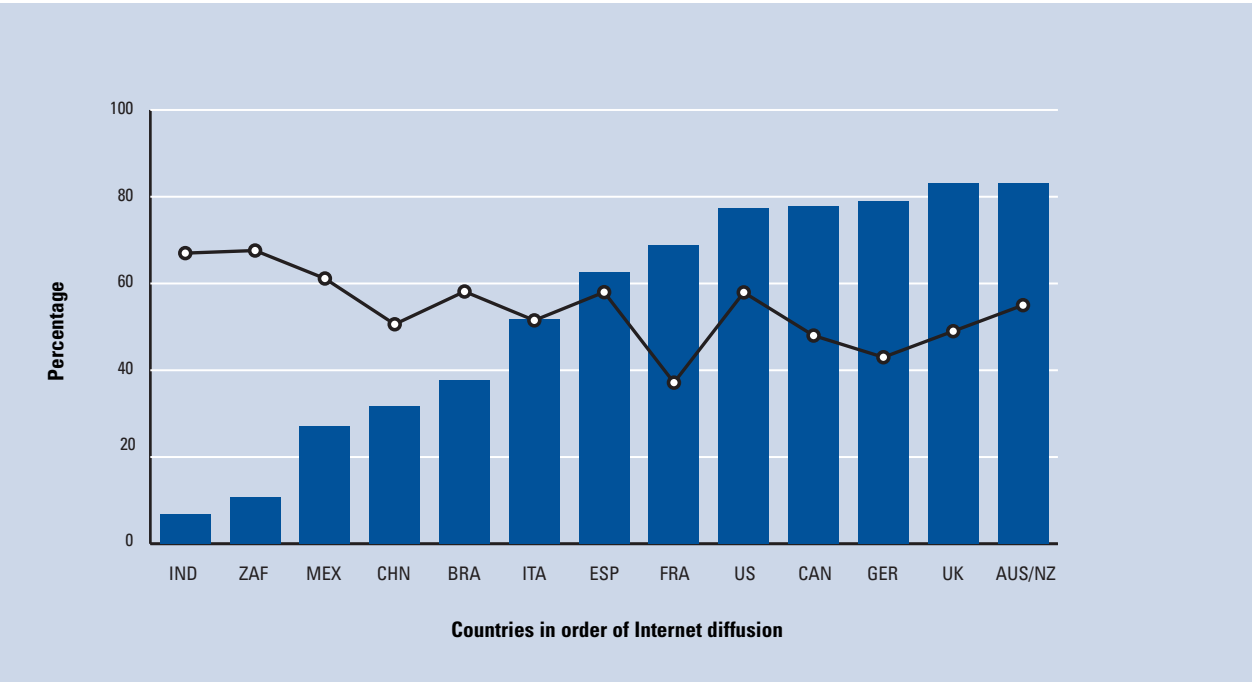
Generally, Internet diffusion does somewhat erode concerns for online security (see Figure 13). The weak correlation between concern and years of experience may also explain fluctuation of concern amongst nations with wider Internet diffusion.

Figure 10: Percentage of respondents who are concerned about the trustworthiness of people and information online



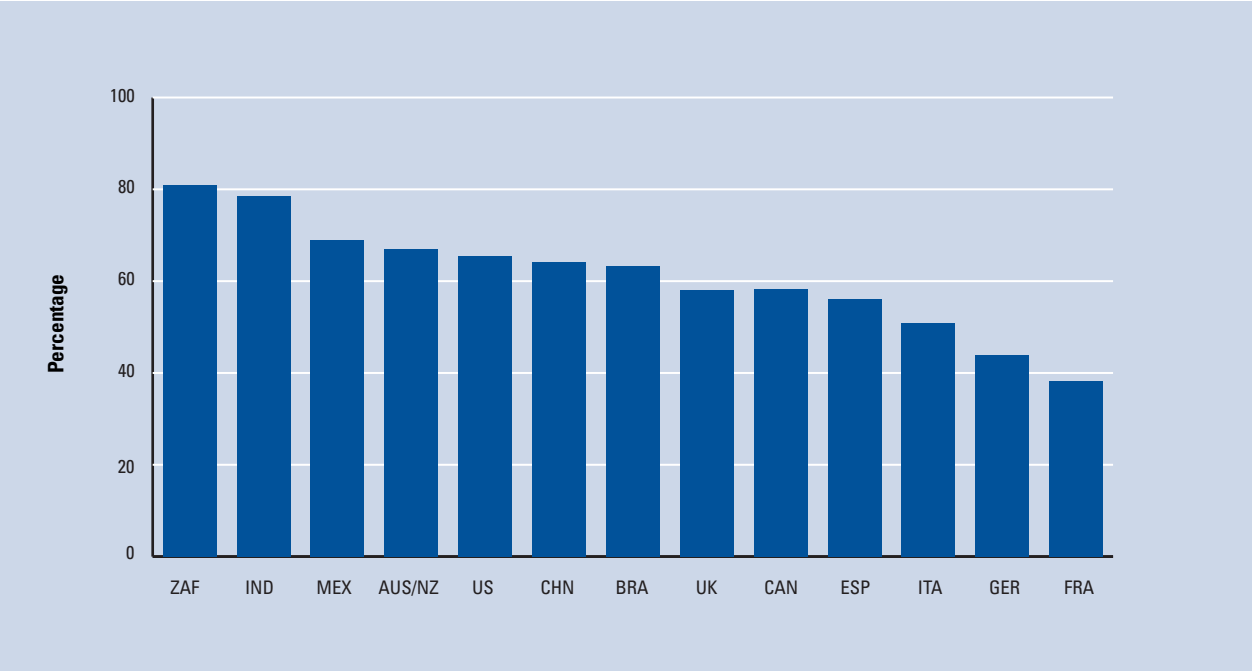
Notes: See page 1 for country abbreviations and sample sizes. Blue bars indicate percentage of respondents who are very or extremely concerned about "being misled by inaccurate information on the Internet" or by "people on the Internet lying about who they really are".

Figure 11: Concern about the trustworthiness of people and information online according to Internet diffusion



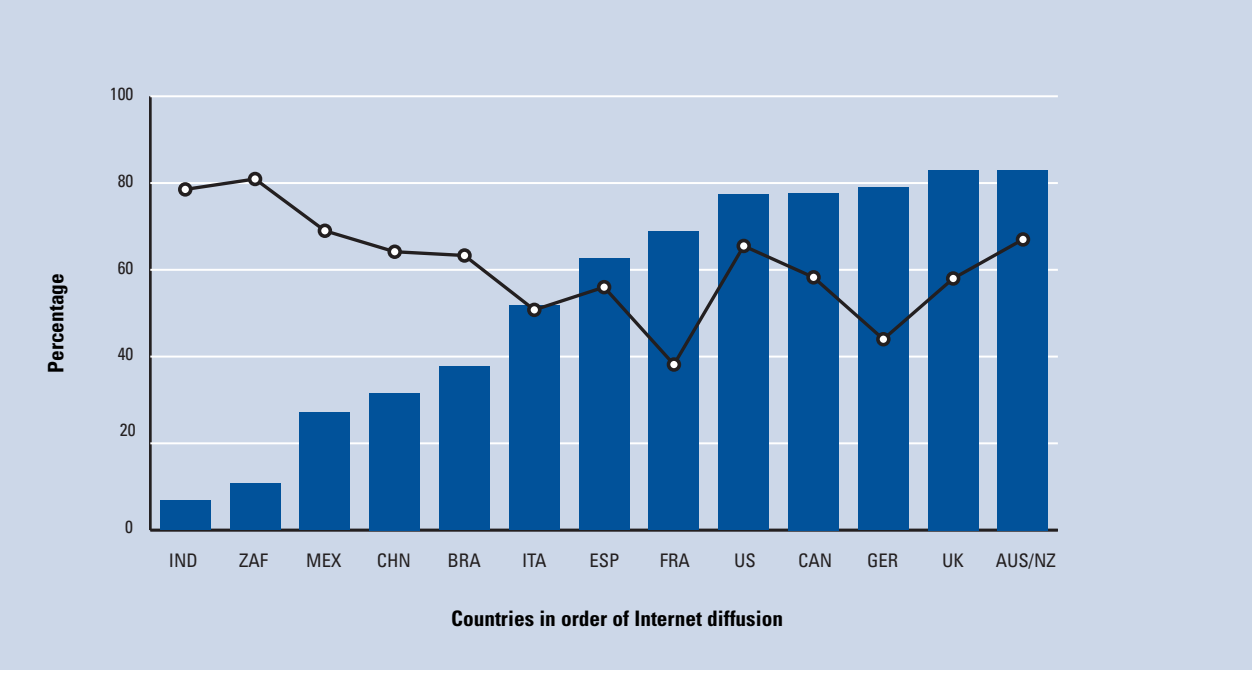
Notes: See page 1 for country abbreviations and sample sizes. Blue bars indicate percentage of population online (2010); black line with white markers indicates percentage of respondents who are very or extremely concerned about "being misled by inaccurate information on the Internet" or by "people on the Internet lying about who they really are". Internet diffusion rates are according to the World Internet Statistics, last updated on June 30, 2010 (http://www.internetworldstats.com/).

Figure 12: Percentage of respondents who are concerned about online security



Notes: See page 1 for country abbreviation keys. Sample sizes are indicated in parentheses. Blue bars indicate percentage of respondents who are very or extremely concerned about the following issues related to online security: (1) their computer being infected by a virus; (2) someone stealing their credit card details; and (3) someone getting inappropriate access to their e-mail.

Figure 13: Concern for online security according to Internet diffusion



Notes: See page 1 for country abbreviations and sample sizes. Blue bars indicate percentage of population online (2010); black lines with white markers indicate percentage of respondents who are very or extremely concerned online security according to Figure 12. Internet diffusion rates are according to the World Internet Statistics, last updated on June 30, 2010 (http://www.internetworldstats.com/).

Online Behaviours and Values

To confirm the dimensions of support for and concern with the four core Internet values, we asked respondents about certain online habits and implications and examined how behaviour and attitudes matched. These included:

- content production and opinions about government regulation of the Internet to better understand the extent of support for freedom of expression online;
- sharing of personal information for other online trade-offs to measure the degree of privacy users actually upheld;
- use of the Internet for communication, information, and socializing purposes in order to better comprehend degrees of trust; and
- scanning of computers for viruses and spyware to make sense of the security consciousness of users.

Principal axis factoring was performed for all of the measurements in order to assure that no hidden dimensions were overlooked. Items consistently loaded onto a single factor for each of the category measurements. All results were statistically significantly and passed the KMO and Bartlett's test of sphericity, confirming sample adequacy and the appropriateness of the factor model for these data.

Contrary to much hype in the media about social media, content production, online shopping, and other innovative uses of the Internet, our findings indicated that user behaviour was limited to a few basic daily and weekly activities. This means that users appeared to uphold core Internet values much more in theory than in practice. New nations in the online world also manifested more liberal behaviours, outpacing older nations in innovative patterns of use. Users in China, Brazil, India, South Africa, and Mexico were substantially more active than other users in Web 2.0 technology and other popular online habits and uses. This reflected findings about strong enthusiasm and support for new technology and the Internet from emerging economies.

When comparing attitudes with reported online behaviour, we found the following:

- Respondents generally supported freedom of expression much more in theory, producing little online content daily or weekly. On average, 42 percent of all respondents said they support government regulation of the Internet. That is less than 10 percentage points below the average number of users who said they generally supported freedom of expression online.
- Chinese users produced more online content than users in any other country.
- Levels of support for freedom of expression and government regulation were almost identical in India.
- Users generally valued online privacy both in theory and in practice. Respondents in countries with low penetration rates shared personal information for other online trade-offs much more frequently than others.
- Levels of supposed distrust in online information and people are not reflected by high levels of Internet use for communication and information purposes. However, low levels of online social playfulness do correspond with concerns over these matters.

Freedom of Expression in Theory and in Practice

We asked respondents about their content production habits and opinion of government regulation of the Internet to better understand how they upheld the value of freedom of expression online in practice. Digital media have allowed users to participate in the growth and spread of online culture.[38] Thanks to the architecture of the web, the production of online content has integrated a horizontal process rather than a vertical process found in traditional media.[39]

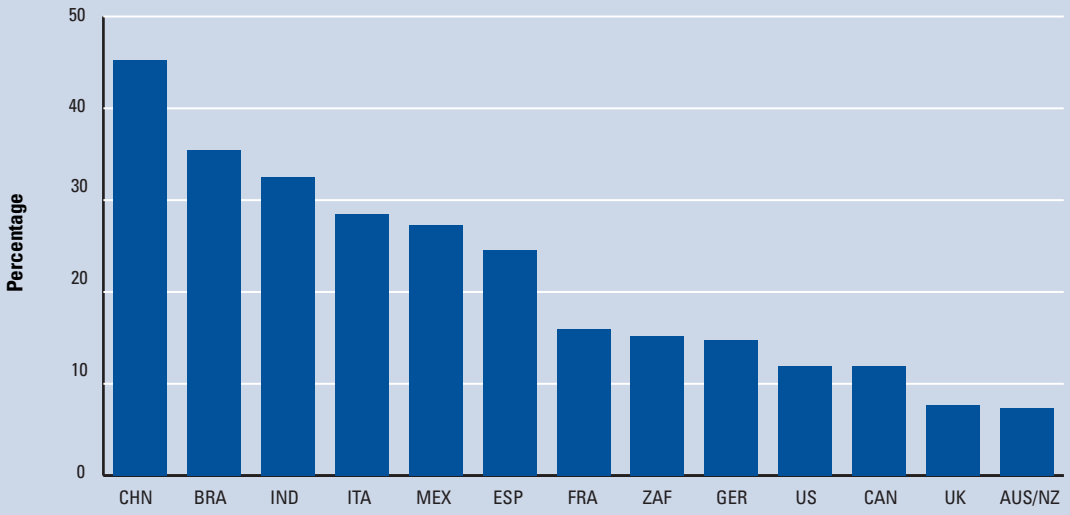
Content Production

Questions related to online content production asked how often users:

- update or create a profile on a social networking site;
- post pictures or photos on the Internet;
- post messages on discussion forums or message boards;
- use a distribution list for e-mail;
- write a blog;
- maintain a personal website;
- post a podcast; and
- post a video blog.

In general, only 21 percent of respondents produced some type of online content daily or weekly, 31 percent produced content on a monthly basis or less, and 45 percent said they had never produced any. These low numbers are not very surprising, as previous studies have shown that user-generated content online is produced by a relatively small group. For example, Wikipedia reported that 2.5 percent of its users contributed to 80 percent of its total content.[40] The free-rider phenomenon is also a problem that often plagues user-generated communities.[41]

Figure 14: Percentage of respondents who produce online content daily or weekly



Notes: See page 1 for country abbreviations and sample sizes. Percentage of respondents who produce one or more of the following online content daily or weekly: (1) update or create a profile on a social networking site; (2) post pictures or photos on the Internet; (3) post messages on discussion forums or message boards; (4) use a distribution list for e-mail; (5) write a blog; (6) maintain a personal website; (7) post a podcast; and/or (8) post a video blog.

The most regularly executed activity was updating or creating a profile online (on average 29 percent of respondents did this daily or weekly) and using a distribution list for e-mail (on average 28 percent of respondents did this daily or weekly).

We calculated the combined averages of respondents who answered daily or weekly for any of the items related to online content production (see Figure 14). Those who produced most frequently were users in China (45 percent), followed by users in Brazil (35 percent) and in India (32 percent). In fact, users in these three countries consistently produced online content the most often, no matter the type of content. Countries with the lowest proportion of users who produced online content were Australia/New Zealand (7 percent), the United Kingdom (8 percent), and the United States and Canada (12 percent).

Online content production was higher in countries with low Internet penetration rates, with the exception of South Africa. Notwithstanding the fact that already a minority of users regularly produces online content on the web, Internet diffusion seems to further erode contribution online (see Figure 15).

Online content production may indeed be higher in countries with low Internet diffusion because there may be less relevant content in the local language, creating more demand. Moreover, users in emerging economies are coming online in the period of Web 2.0, a time where user-generated content is much easier to produce. Those in advanced economies have larger mainstream media content online and are wedded to Web 1.0, diminishing the need and interest in producing user-generated content.

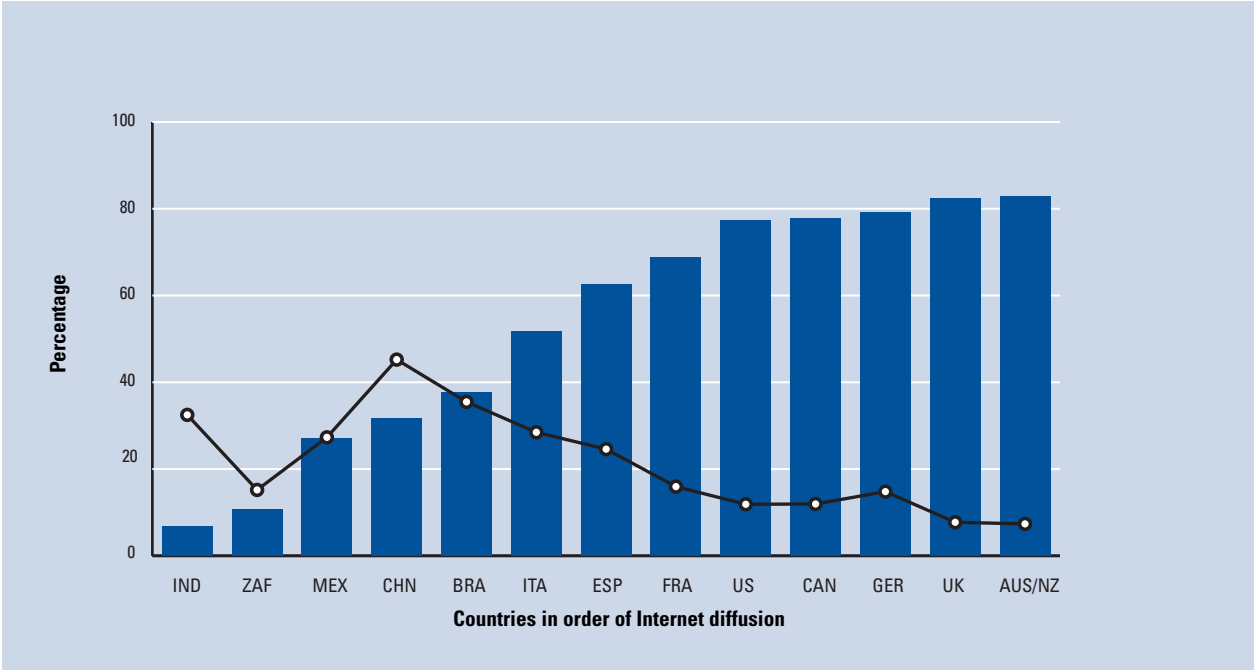
Support for Online Regulation

Respondents were also asked about various items related to government regulation of the Internet. McClosky et al. (1983) found that citizens had conflicting values that impeded on civil rights, such as freedom, when they felt insecure or fearful about specific issues. We therefore asked respondents how much they agreed with the following points:

- "Government should monitor content on the Internet."
- "It is okay for the government to block or censor Internet content."
- "Governments should censor Internet content in order to protect children."

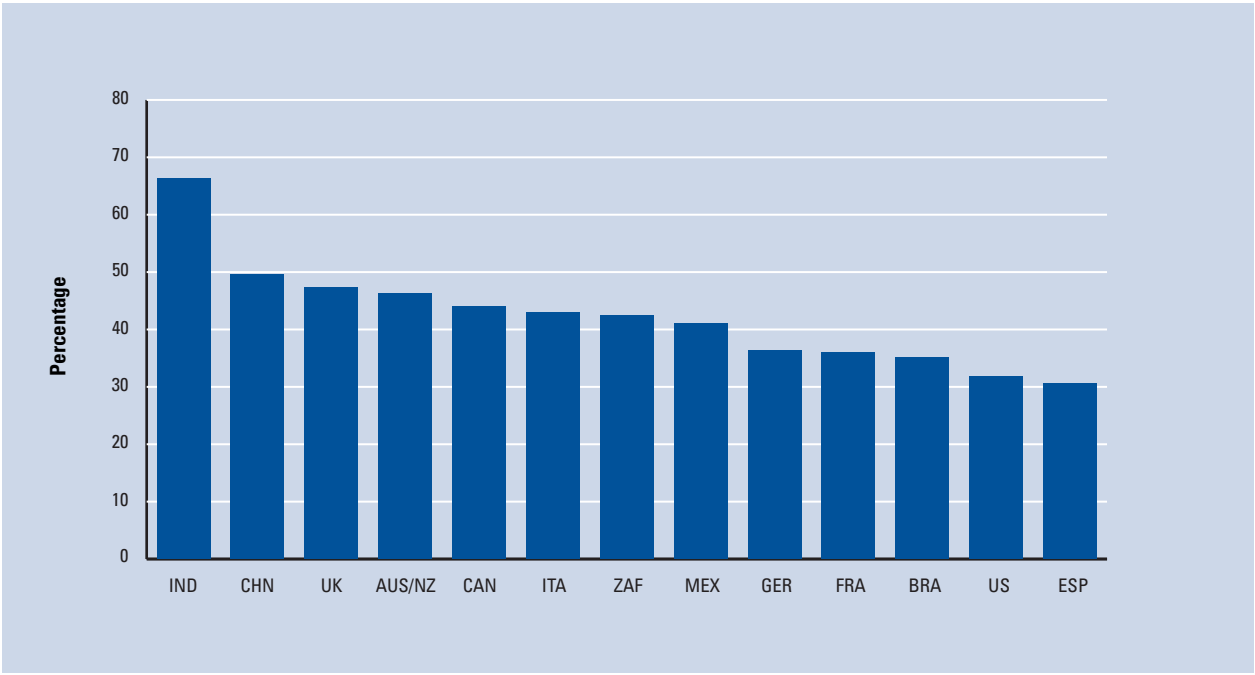
We calculated the combined average of users who agreed or strongly agreed with the mentioned items related to government regulation online (see Figure 16). On average, 42 percent of respondents supported general government regulation of the Internet, while 26 percent disagreed, and 28 percent neither agreed nor disagreed.

Figure 15: Percentage of respondents who produce online content daily or weekly according to Internet diffusion



Notes: Blue bars indicate percentage of population online (2010); black bars with white markers indicate percentage of respondents who produce online content daily or weekly according to Figure 14. Internet diffusion rates are according to the World Internet Statistics, last updated on June 30, 2010 (http://www.internetworldstats.com/).

Figure 16: Percentage of respondents who support government regulation of the Internet



Notes: See page 1 for country abbreviations and sample sizes. Blue bars indicate percentage of respondents who agree or strongly agree with the following statements related to government regulation: (1) Government should monitor content on the Internet; (2) It is okay for the government to block or censor Internet content; and (3) Governments should censor Internet content in order to protect children.

Why roughly one-third of respondents do not have a defined opinion on this matter is not clear. However, on average, 59 percent of respondents agreed that governments should censor online content to protect children, while only 16 percent disagreed.

As shown in Figure 16, India had the highest proportion of respondents (66 percent) who supported government regulation online. Spain (31 percent) had the lowest proportion, closely followed by the United States (32 percent).

Internet diffusion generally seemed to erode support for government regulation of the web, although fluctuations amongst countries may indicate levels of uncertainty amongst users (see Figure 17). Still, support for government regulation was approximately 10 percent lower in most EU countries and the United States than in other countries with high Internet diffusion rates.

In Figure 18, we observe that the level of approval for government regulation (see Figure 18) online is not much different from the level of support for freedom of expression online (see Figure 6). This difference is 10 percentage points or less in India, China, France, Canada, Germany, and Australia/New Zealand. This seems to indicate that users have conflicting values that levels of Internet diffusion cannot explain. The overlap between these conflicting points of view may account for why almost one-third of all respondents neither agreed nor disagreed with many of the related items found in the survey.

Low levels of content production indicate that, although users in principle may value freedom of expression online, they do not necessarily choose to exercise this right. However, more users in China (roughly 16 percent) notably produced more online content overall than the average user. It is clear that various dimensions and values cause conflict within users with regard to freedom of expression online.

Online Privacy in Theory and Practice

Personal Information and Online Trade-offs

In order to better understand the extent of support for online privacy, we asked respondents how often they shared personal information in exchange for other online trade-offs. Acquisti (2004) claims that it is unlikely that users will act rationally when faced with privacy sensitive issues if immediate gratifications are presented to them. Hann et al. (2002) also found that economic incentives could affect personal information sharing online. Therefore, respondents were asked how often they shared personal information online in the following situations:

- to open a bank account;
- to set up an account on a website;
- to participate in a contest or win a prize;
- to save time during subsequent visits to the same website;
- to gain free access to an online service or website; and
- to find a job.

On average, 34 percent of all users said they shared personal information often or regularly for these purposes, while 45 percent reported they did so seldom or hardly. Twenty percent of respondents said they never shared personal information for these purposes. In general, Brazil, China, and India had the highest proportion of users who shared personal information most often in exchange for online trade-offs. The only exception was in a situation where users wished to participate in a contest or win a prize online. In this case, users from the United Kingdom, Australia/New Zealand, and Canada had the highest proportion of users willing to share personal information online.

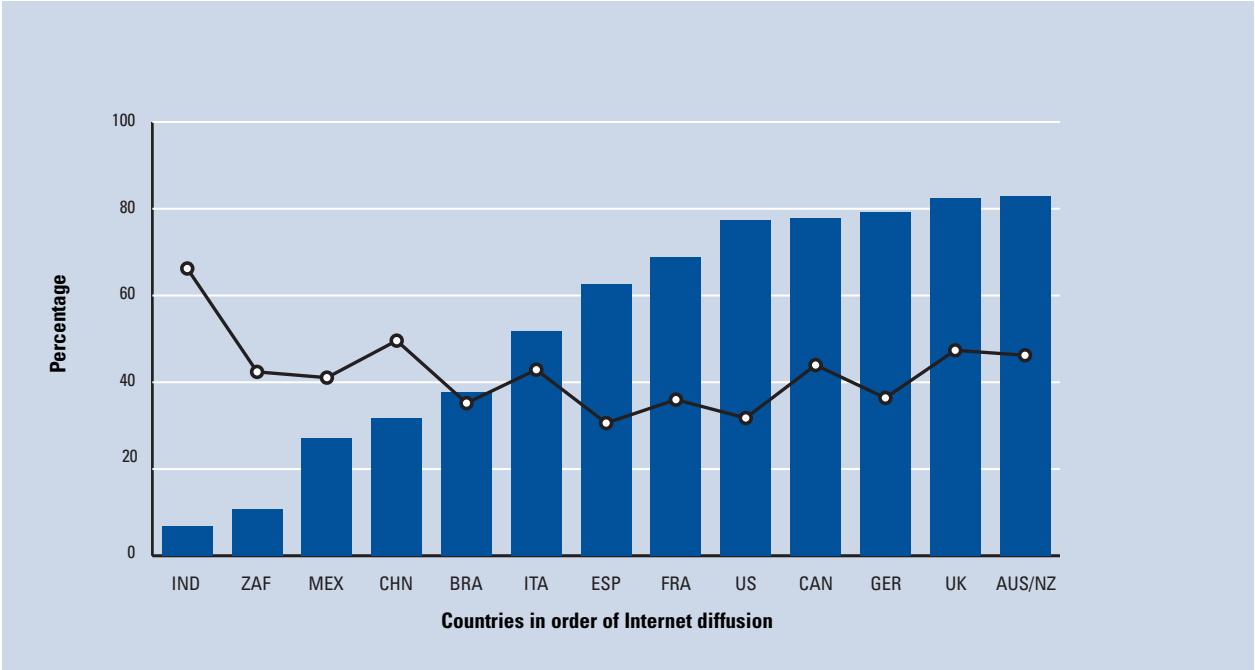
We examined the average responses of users who either often or regularly shared personal information online in exchange for the above-mentioned trade-offs (see Figure 19). We found that proportions were highest in India (51 percent), China (46 percent), and Brazil (39 percent). Proportions were lowest in Germany (21 percent), followed by the United States (28 percent), Spain, and France (29 percent).

Internet diffusion again played some role in eroding the sharing of personal information online (see Figure 20). Although the average proportion of users (34 percent) who do this is generally fairly low, we noted that users in countries with low penetration rates seemed to be more willing to share personal information in exchange for other trade-offs. Users in older Internet nations seemed much more reluctant to share their personal information online.

When comparing support for online privacy with habits of sharing personal information online, respondents, regardless of their country, always shared personal information less than they supported online privacy. This means that, in general, users support privacy both in theory and in practice. On average, there was a difference of 21 percentage points between support for privacy and sharing habits (see Figure 21). However, the difference between support for online privacy in theory and in practice was notably low in India (4 percentage points) and China (8 percentage points) and considerably higher in the United States (35 percentage points).

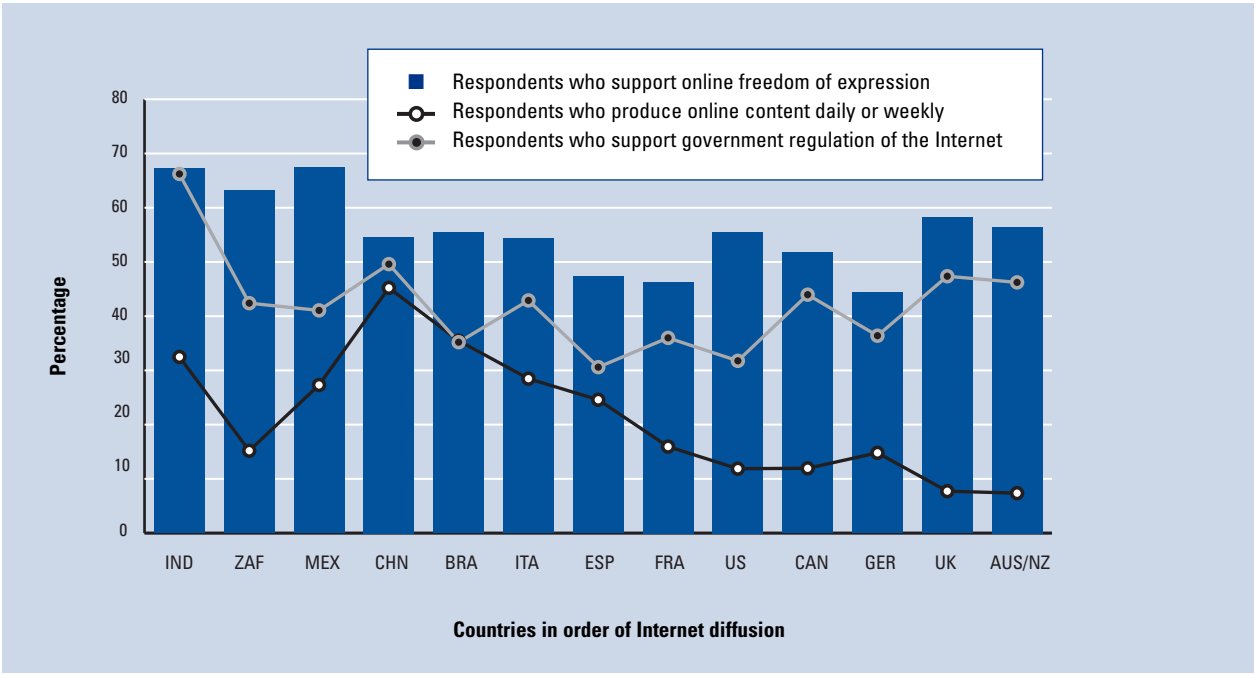
Users in India and China shared their personal information more readily to find a job or open up a bank account. They were also more willing, along with users from Brazil and Mexico, to share personal information in order to have free access to an online service or website, to open an account on a website, or to save time for a subsequent visit to a webpage. The only

Figure 17: Support for government regulation of the Internet according to Internet diffusion



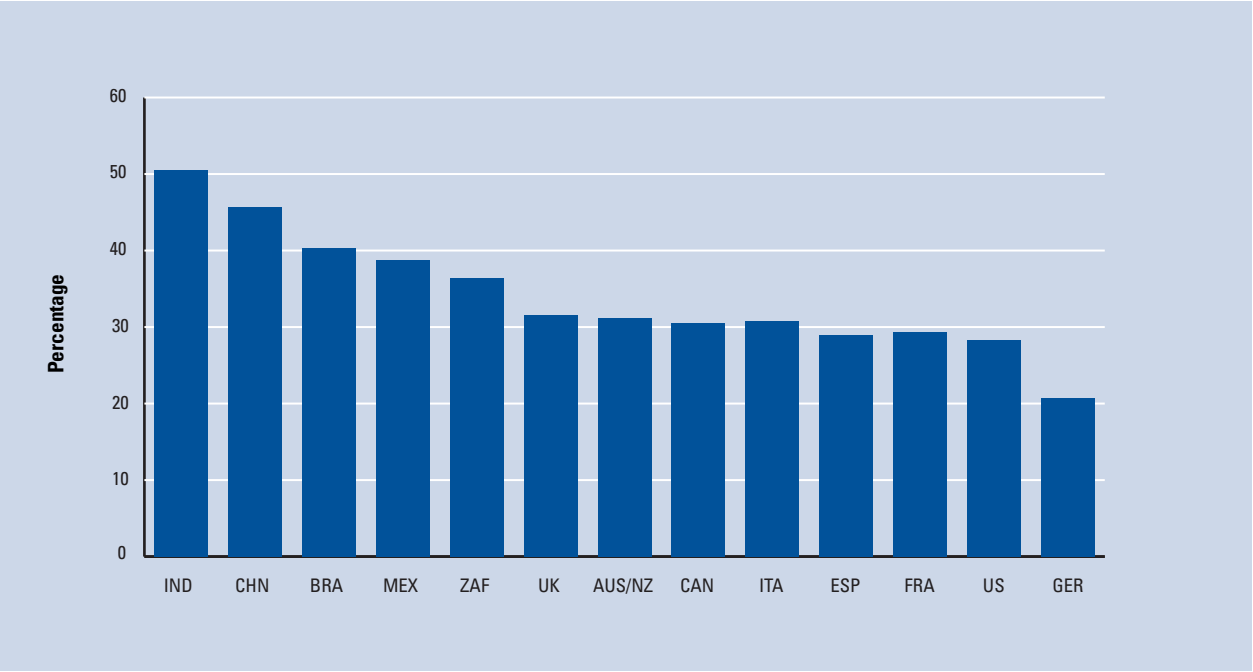
Notes: See page 1 for country abbreviations and sample sizes. Blue bars indicate percentage of population online (2010); black bars with white markers indicate percentage of respondents who agree or strongly agree with statements related to government regulation according to Figure 16. Internet diffusion rates are according to the World Internet Statistics, last updated on June 30, 2010 (http://www.internetworldstats.com/).

Figure 18: Online freedom of expression in theory and in practice



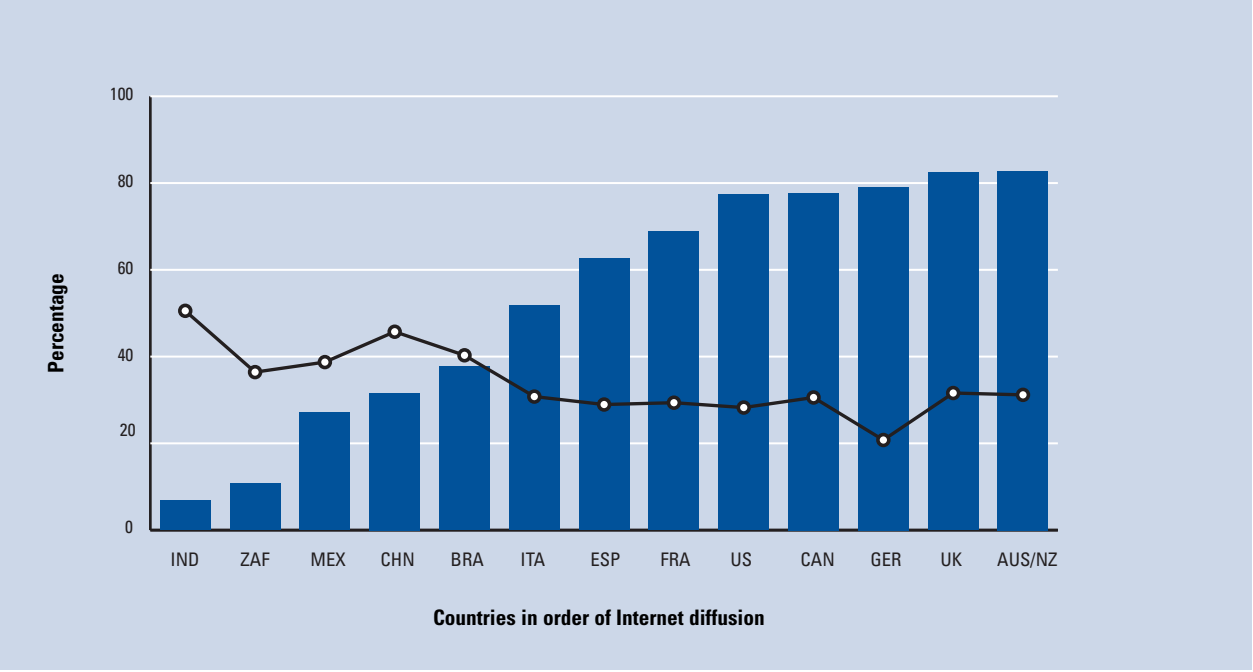
Notes: See page 1 for country abbreviations and sample sizes. Internet diffusion rates are according to the World Internet Statistics, last updated on June 30, 2010 (http://www.internetworldstats.com/).

Figure 19: Percentage of respondents who often or regularly share personal information in exchange for online trade-offs



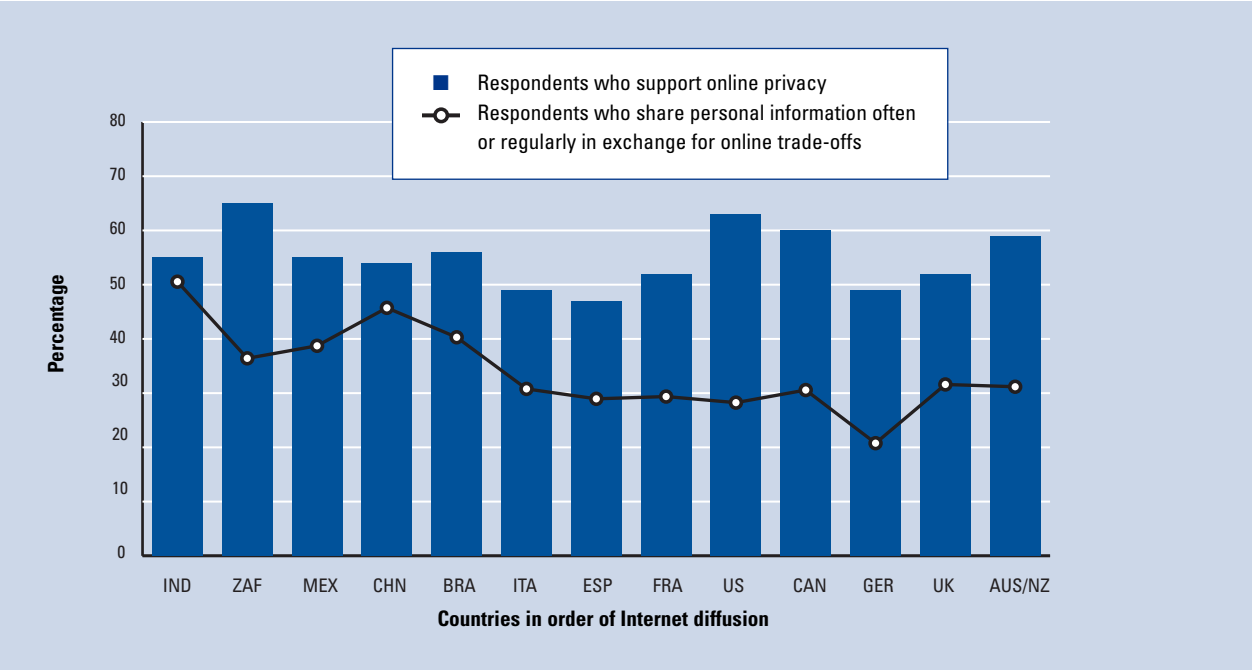
Notes: See page 1 for country abbreviations and sample sizes. Blue bars indicate percentage of respondents who share personal information often or regularly in exchange for the following online trade-offs: (1) to open a bank account; (2) to set up an account on a website; (3) to participate in a contest or win a prize; (4) to save time during subsequent visits to the same website; (5) to gain free access to an online service or website; and (6) to find a job.

Figure 20: Percentage of respondents who often or regularly share personal information in exchange for online trade-offs according to Internet diffusion



Notes: See page 1 for country abbreviations and sample sizes. Blue bars indicate percentage of population online (2010); black bars with white markers indicate percentage of respondents who share personal information often or regularly in exchange for online trade-offs according to Figure 19. Internet diffusion rates are according to the World Internet Statistics, last updated on June 30, 2010 (http://www.internetworldstats.com/).

Figure 21: Online privacy in theory and in practice



Notes: See page 1 for country abbreviations and sample sizes. Internet diffusion rates are according to the World Internet Statistics, last updated on June 30, 2010 (http://www.internetworldstats.com/).

instance where users in these countries shared less personal information was to win a prize or contest online.

This appears to indicate that users in emerging economies are willing to share their personal information only for significant purposes. It also may show that users in these countries are embracing the full integration of the Internet into everyday life and trust it more. Users in the United States and other older Internet nations still seem to feel a certain wariness of the Internet, noted in the early days of the Internet, when online data were much less secure and people could be much less sure about who was asking them for information.

Internet privacy is important for all users in theory and in practice (see Figure 21). Users from newer online nations, however, seem more ready to share personal information for online trade-offs that are not trivial (such as winning a prize online) but that are instead vital to everyday life (such as opening a bank account or finding a job). This does not mean that users do not do this because they are less concerned about online privacy and security or do not distrust people and information online. As shown earlier, users in emerging countries in fact at times have some of the highest levels of concern. This only highlights how users from newer online countries are different from their counterparts in older online countries.

Online Trust in Theory and in Practice

As previously mentioned, 84 percent of respondents felt somewhat concerned about being misled by inaccurate online information or about people on the Internet lying about who they really are. Sixty-one percent of respondents felt very or extremely concerned about this. To better understand how this concern applied in practice, we examined respondents' use of the Internet for communication and information purposes, as well as their social playfulness online.

By and large, users' concerns about these two items were inconsistent with their information and communication habits on the Internet. This disparity highlighted the importance given to the Internet by users as a tool for communicating and finding information.

Low levels of social playfulness did seem to correspond with users' concern about being misled by people or information online. Yet China, India, Brazil, Mexico, and South Africa exhibited not only some of the highest levels of concern over misleading information and people online but also some of the highest levels of contrary related habits. However, users in these countries also exhibited higher levels of content production. Aguiton and Cardon (2007) argue that users who create online content often do so as a form of socializing with others. This may explain why levels of online social playfulness are higher in these countries.

In general, levels of trust in theory were reduced in practice by use of the Internet for communication and information purposes while being supported in terms of users' lack of social playfulness online.

Internet Use for Communication and Information Purposes

In terms of communication and information purposes, respondents were asked how often they:

- check e-mail;
- surf or browse the web; and
- check the news online.

Almost 80 percent of respondents, across all countries, reported checking their e-mail daily and surfed or browsed the web weekly. More than 70 percent reported checking the news weekly. This highlights the globalised use of the Internet for communication and information purposes and how important it is as an information and communication technology.

The average percentage of users who did all three activities either daily or weekly was calculated in order to see which users employed the Internet the most for these purposes (see Figure 22). Brazil (94 percent), Mexico (93 percent), India (93 percent), and China (90 percent) had the highest proportion of users who used the Internet to communicate or search for information online. Spain and France had the lowest (82 percent) followed by Canada and the United States (84 percent). A possible reason for this is that other sources of information or communication technologies may be more readily available in these countries, and users therefore do not need the Internet as much for these purposes.

Note that in all countries, the average percentage of Internet use for communication and information purposes was much higher than Internet diffusion in itself, in contrast to other uses, which were mostly found below the Internet diffusion line. This highlights the importance of the Internet as a global information and communication technology (see Figure 23). The Internet is vital in terms of communication and information for the majority of users. Despite certain levels of concern about inaccurate information or deceptive people online, users generally still use the Internet heavily for their communication and information needs.

Internet diffusion slightly erodes the use of the Internet for communication and information search purposes, as the heaviest users are found in the countries with the lowest Internet diffusion. This may be explained by the fact that users in older online countries have access to multiple sources of information. Users in India, South Africa, Mexico, China, and Brazil may use the Internet more for these purposes because they feel that information is more controlled or limited offline than online. None of these countries were found in the top 50 countries of Reporters Without Borders' *Freedom of the Press 2010 Index*.[42] India, Mexico, and China did not even figure in the top 100 countries.

Online Social Playfulness

In terms of social playfulness online, respondents were asked how often they:

- accepted "friends" or links with someone on a social networking site they had not met in person;
- used a fictitious name on the Internet;
- met a person they had first come in contact with through the Internet;
- included biographical information about themselves online; and
- opened an attachment without knowing the sender.

We calculated the combined average of users who did all of the above activities often or regularly. Only 18 percent of all users said that they engaged in these socially playful activities often or regularly, while 46 percent reported doing these things seldom or hardly ever and 36 percent of users never engaged in these sorts of online activities.

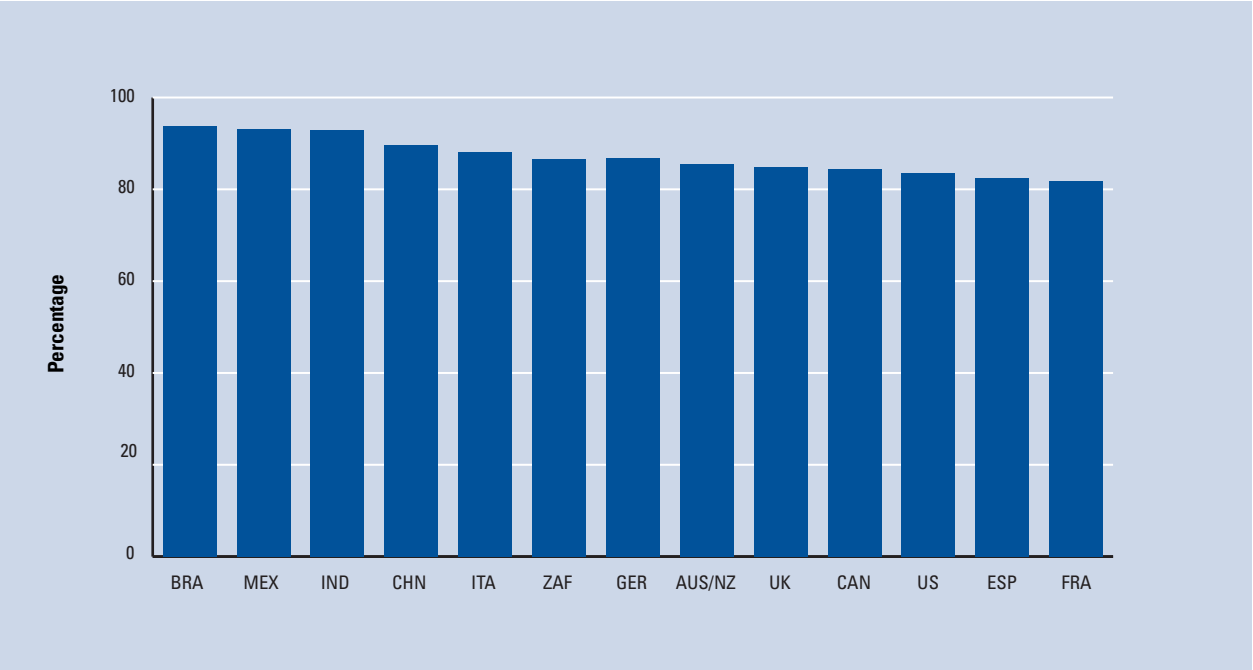
Of all the countries, China had the highest proportion of users (35 percent) who were most socially playful online (see Figure 24). Canada (10 percent), the United States (11 percent), and Australia/New Zealand (11 percent) had the least.

This may be surprising, as China has often been accused of highly controlling and monitoring the Internet by implementing filtering systems such as the so-called Great Firewall and the Green Dam Youth Escort, censoring certain content, and hiring paid commentators for what has been named the 50-Cent Party to create positive spin online. On the other hand, the United States has greatly prided itself in promoting freedom of speech and Internet freedom, which was publicly endorsed by the Secretary of State, Hilary Rodham Clinton, in early 2010.

Nonetheless, it appears that users in China had higher levels of trust in people and information online and thus engaged in more socially risky activities than users from the United States or elsewhere. Findings seem to indicate that a country's online environment (in terms of filtering, monitoring, blocking, and censoring) does not necessarily affect online user behavior and participation.

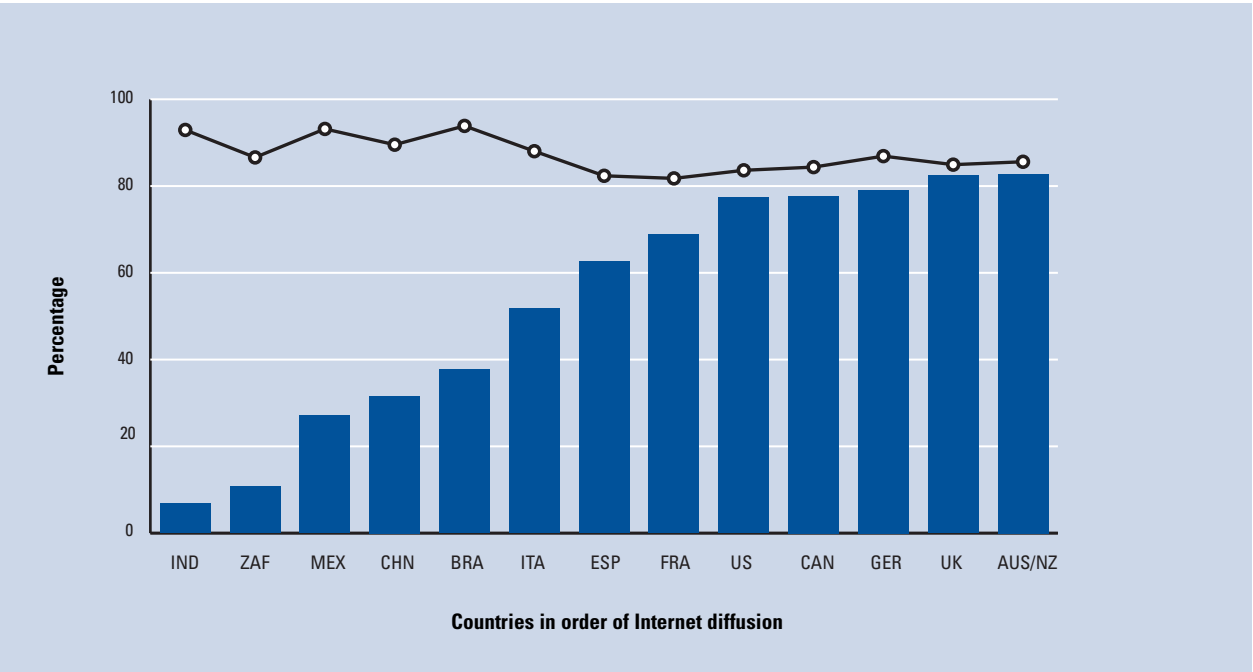
We can confirm that Internet diffusion generally diminishes levels of social playfulness online, even though levels on the whole are already low (see Figure 25). Users are more socially playful in emerging economies such as India, China, and Brazil, where levels of Internet diffusion are low. This appears to reflect the enthusiasm for new technology and the Internet displayed by users in these countries and the more apathetic outlook on

Figure 22: Percentage of respondents who use the Internet daily or weekly for communication purposes



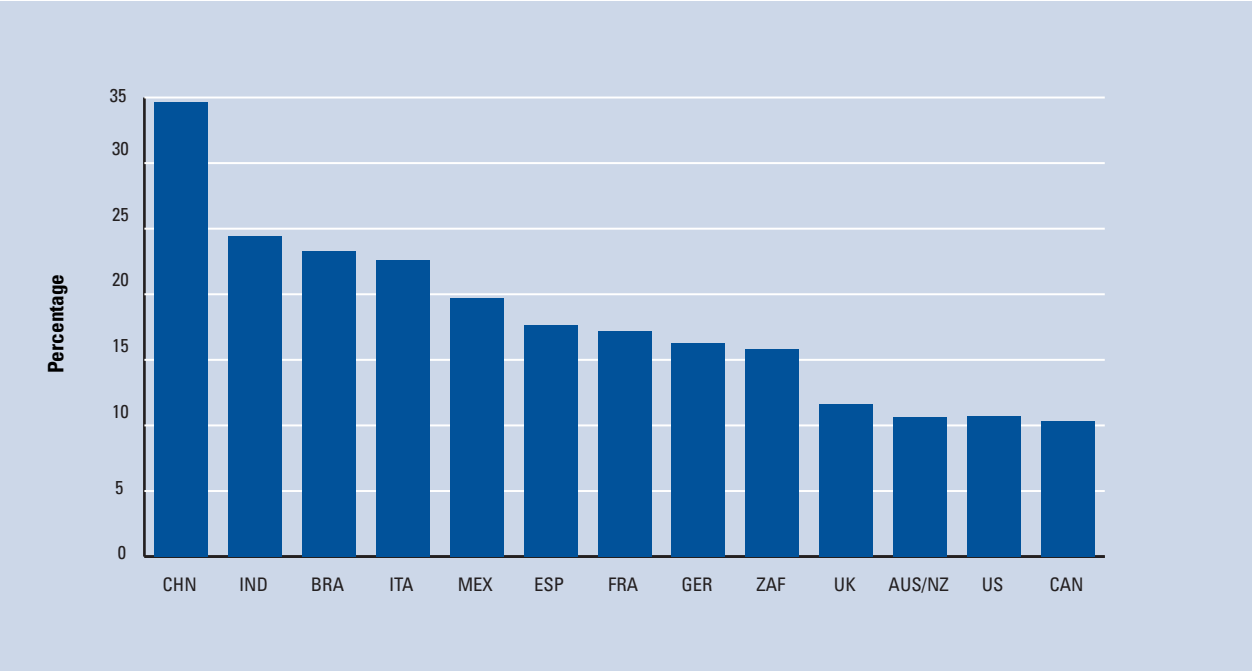
Notes: See page 1 for country abbreviations and sample sizes. Blue bars indicate percentage of respondents who use the Internet daily or weekly for the following communication and information purposes: (1) check e-mail; (2) surf or browse the web; and (3) check the news.

Figure 23: Percentage of respondents who use the Internet daily or weekly for communication purposes according to Internet diffusion



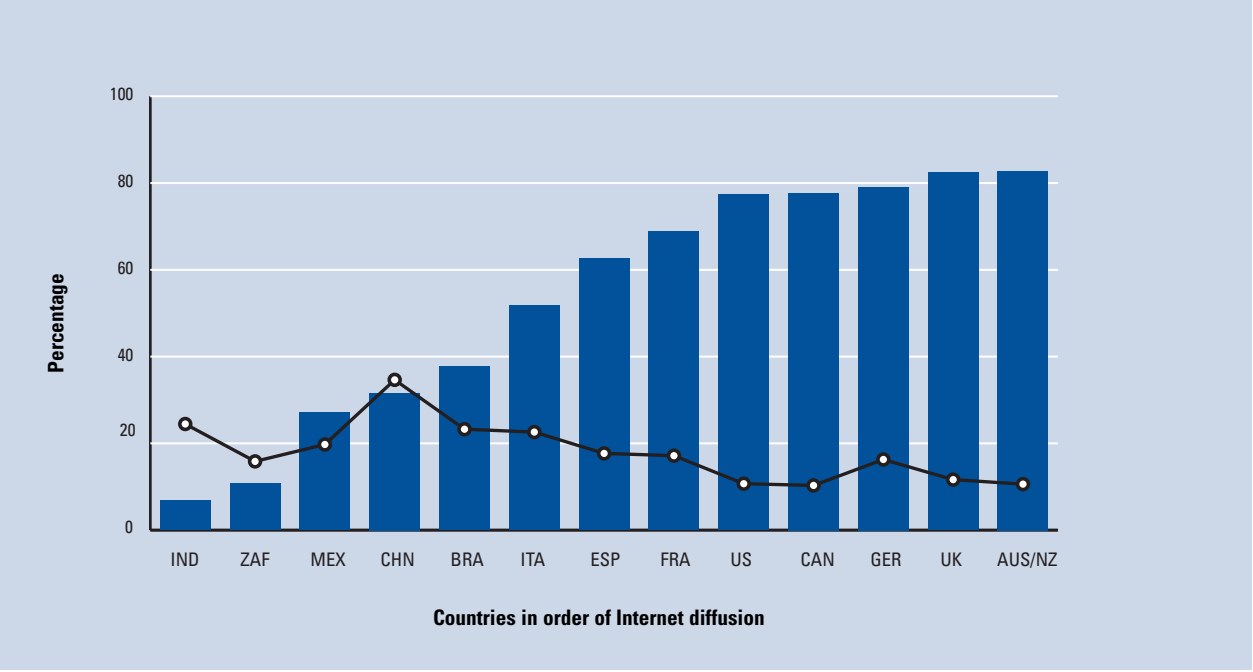
Notes: See page 1 for country abbreviations and sample sizes. Blue bars indicate percentage of population online (2010); black line with white markers indicate percentage of respondents who use the Internet daily or weekly for communication and information purposes according to Figure 22.

Figure 24: Percentage of respondents who often or regularly engage in socially playful activities



Notes: See page 1 for country abbreviations and sample sizes. Blue bars indicate percentage of respondents who often or regularly engage in the following socially playful activities: (1) accept "friends" or links with someone on a social networking site they have not met in person; (2) use a fictitious name on the Internet; (3) meet a person they first came in contact with through the Internet; (4) include biographical information about themselves online; and (5) open an attachment without knowing the sender.

Figure 25: Percentage of respondents who are socially playful online according to Internet diffusion



Notes: See page 1 for country abbreviations and sample sizes. Blue bars indicate percentage of population online (2010); black lines with white markers indicate percentage of respondents who often or regularly engage in socially playful activities according to Figure 24. Internet diffusion rates are according to the World Internet Statistics, last updated on June 30, 2010 (http://www.internetworldstats.com/).

technology in countries where the Internet is more established.

Thus, when examining levels of trust in theory and in practice, we can confirm two main findings. First, low levels of social playfulness seemed consistent with users' concern over untrustworthy people or information online (see Figure 26). However, extremely high levels of use for communication and information purposes did not reflect these same concerns. Respondents indicated that they very frequently used the Internet for information and communication purposes, disregarding concern over unreliable people and information online.

This discrepancy also confirms that users worldwide used the Internet as a primary global information and communication technology. So, although users did not engage in socially risky activities online, minimizing levels of social playfulness, they heavily relied on the Internet to communicate and provide information. Low levels of trust in theory are therefore supported by low levels of social playfulness in practice, but are diminished by high levels of use for communication and information purposes (see Figure 25).

Concern for Online Security in Theory and in Practice

In theory, an overwhelming majority of users felt concerned about online security. On average 84 percent of all respondents said that they were at least somewhat concerned about related items, while 61 percent felt very or extremely concerned. To understand the accuracy of these concerns, we asked respondents how often they scanned their computers for malware.

We calculated the combined average of users who scanned their computers often or regularly. The majority of users indicated doing so, which means that concern for online security appears to match online behavior. South Africa (89 percent) had the highest proportion of users who scanned their computer regularly or often, followed closely by the United Kingdom and Australia/New Zealand (88 percent). France had the lowest proportion of users who do this often or regularly (59 percent, a full 30 percentage points less than South Africa). There were no immediately apparent patterns or trends that could explain these country differences.

However, when comparing scanning behavior with Internet diffusion, it seemed that users who scanned the most were from countries where Internet penetration rates were either very low or very high (see Figure 28). Countries with the lowest proportion of users who scanned their computers frequently had Internet penetration rates hovering between 30 and 70 percent. This may be a sign that online populations are highly security conscious when they are first exposed to the Internet but lose some of that consciousness as they evolve, and then regain it once Internet penetration rates surpass 70 percent.

When comparing the average percentage of users who felt very or extremely concerned about online security with the average percentage of users who actually scanned their computers often or regularly, it can be noted that users were much more security conscious in practice than in theory (see Figure 29).

Attitudes and behaviors practically match in countries with low Internet diffusion (India, South Africa, Mexico, China, and Brazil), while users in countries with high Internet diffusion practiced online safety more than they expressed concern for it.

Thus, we can discern a certain pattern concerning online security and Internet diffusion. Users in newer Internet countries seem highly concerned about online security and act in accordance with their concern. Yet, as Internet diffusion grows, concern and related habits diminish until Internet penetration rates pass a certain level (around 70 percent). Afterwards, users seem to protect themselves again by actively scanning their computers more often, yet their concern does not increase. This means that, over time, users understand the importance of protecting themselves online but are less afraid of possible online threats.

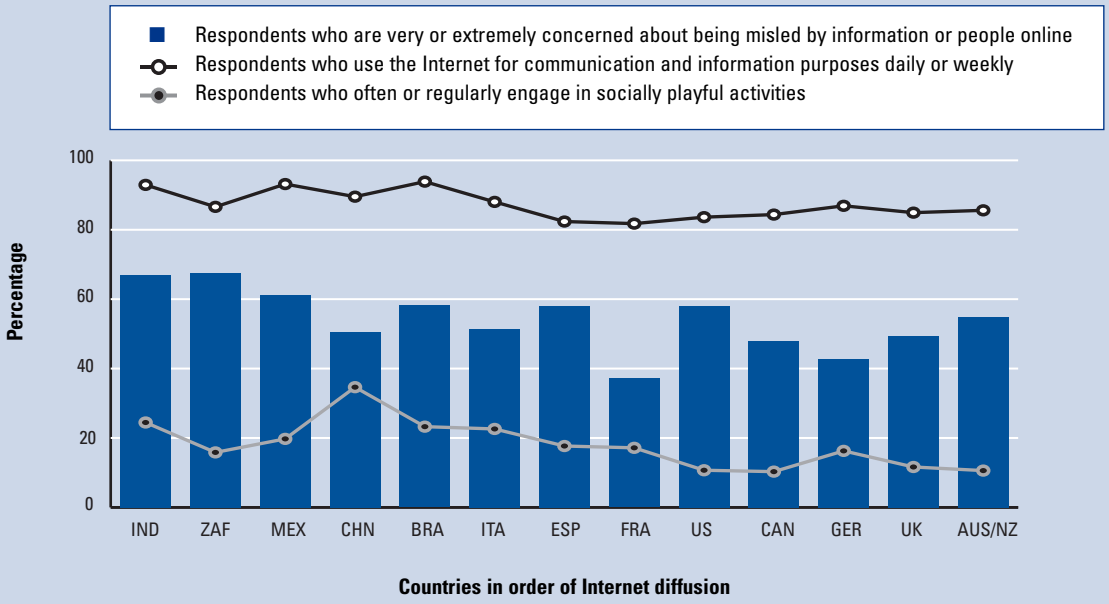
The New Internet World: Shifting Patterns of Attitudes and Behaviours on the Internet

Findings from this study highlight the international shift in the online environment today. A global Internet culture is developing as values and behaviours are generally becoming more homogenous across countries, as well as across gender, age, education, and income groups. Trends and patterns differ much less cross-nationally than they do within countries themselves.

When it comes to core Internet values, users generally want it all. They desire an online environment where they can simultaneously express themselves freely, protect their personal data and privacy, trust the people and information they find, and feel safe. They desire the same things that they do in everyday life. For users, these values are not necessarily mutually exclusive or conflicting. This presents a challenge to other Internet stakeholders, such as governments, policymakers, the private sector, and civil society. How they will manage the online environment will depend greatly on how well they are able to juggle users' expectations of an open and free, yet safe and trustworthy, Internet.

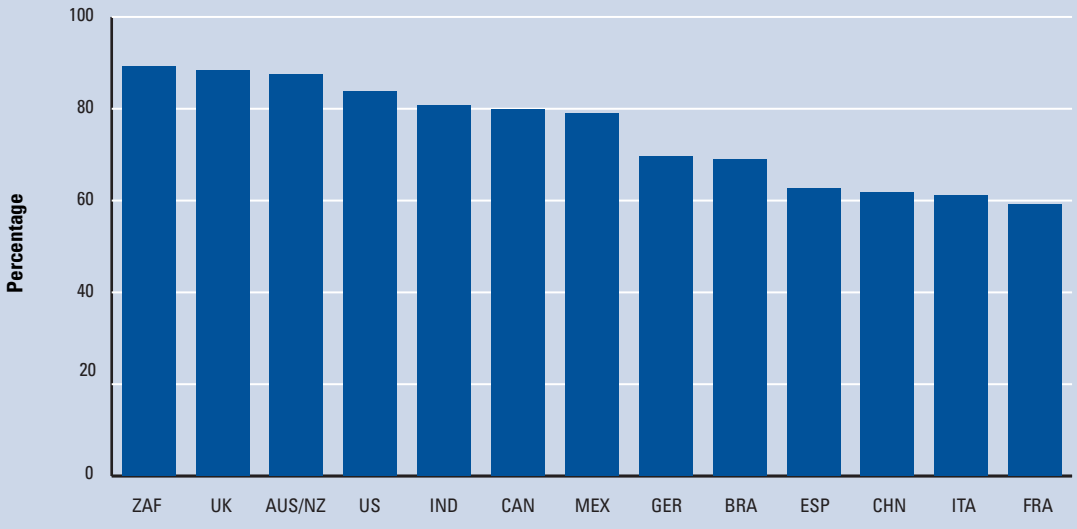
The relationship among these four issues is very complex. Though they are often related, they should be treated independently. For example, an e-commerce study illustrated that transaction security indirectly affected Internet purchase intentions, where trust acted as the mediator between the two.[43] Yet, more online security does not automatically ensure more trust. In some cases, the use of security mechanisms, such as a national filtering system,[44] can produce very low levels of trust amongst users. These filtering and blocking

Figure 26: Online trust in theory and in practice



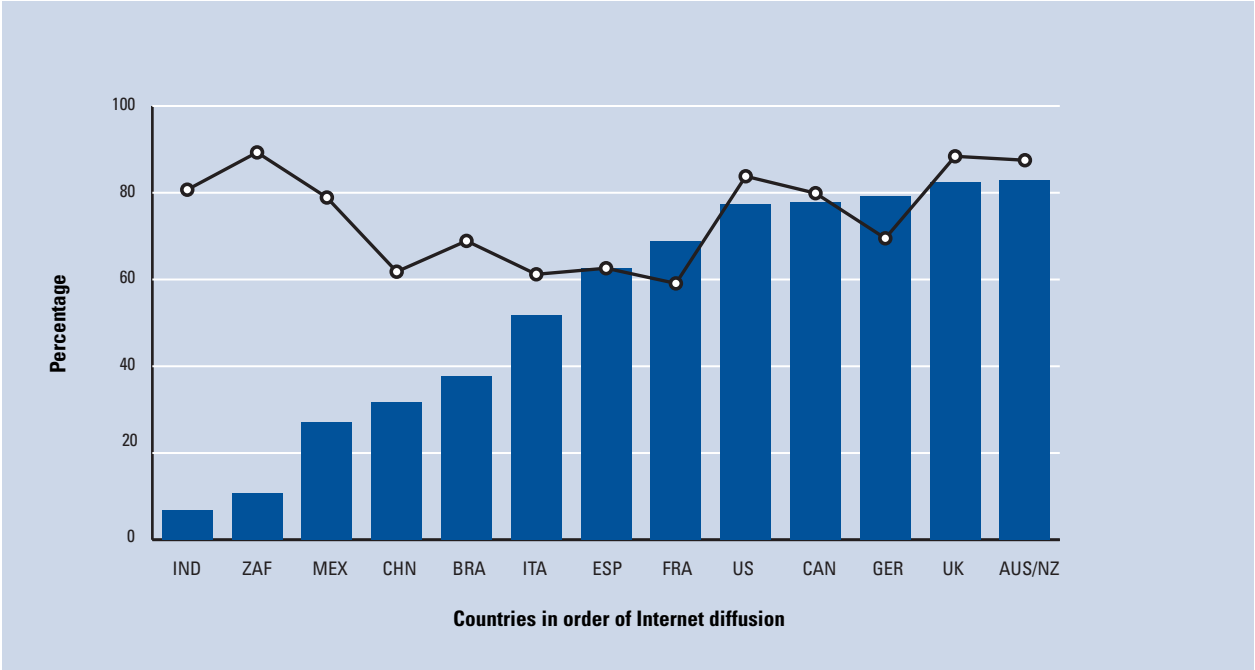
Notes: See page 1 for country abbreviations and sample sizes. Internet diffusion rates are according to the World Internet Statistics, last updated on June 30, 2010 (http://www.internetworldstats.com/).

Figure 27: Percentage of respondents who often or regularly scan their computers



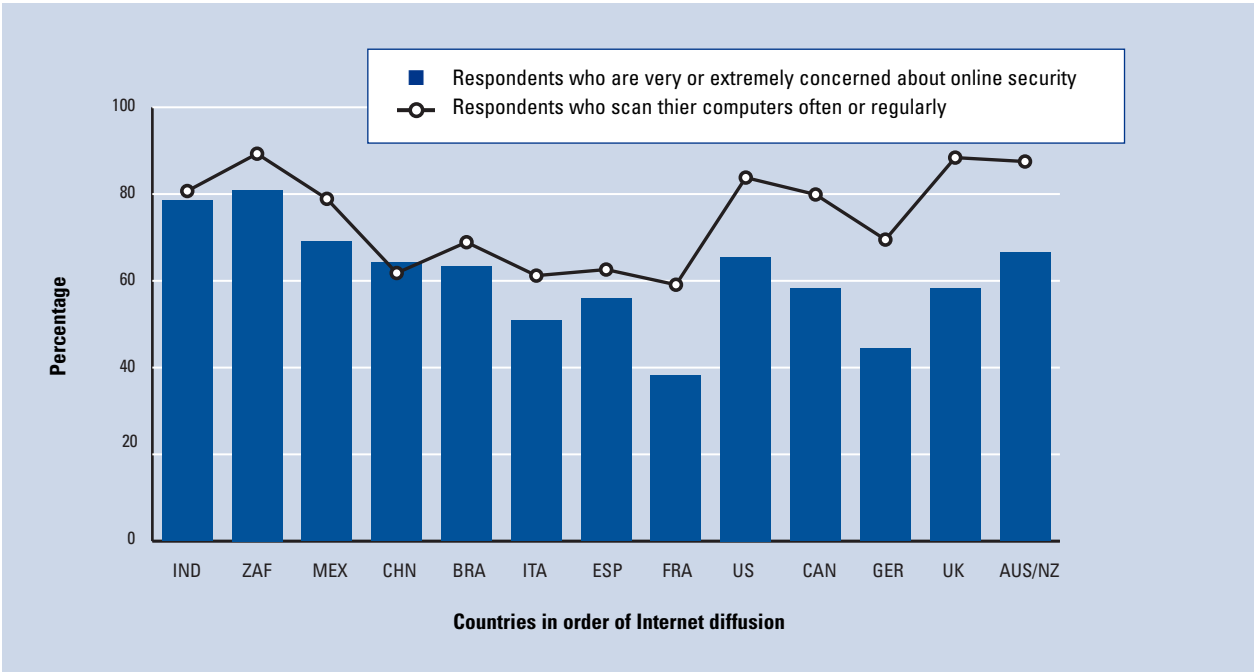
Notes: See page 1 for country abbreviations and sample sizes. Blue bars inidcate percentage of respondents who often or regularly scan their computers for viruses and spyware.

Figure 28: Percentage of respondents who often or regularly scan their computers according to Internet diffusion



Notes: See page 1 for country abbreviations and sample sizes. Blue bars indicate percentage of population online (2010); black bars indicate percentage of respondents who often or regularly scan their computers for viruses and spyware according to Figure 27. Internet diffusion rates are according to the World Internet Statistics, last updated on June 30, 2010 (http://www.internetworldstats.com/).

Figure 29: Online security concerns in theory and in practice



Notes: See page 1 for country abbreviations and sample sizes. Internet diffusion rates are according to the World Internet Statistics, last updated on June 30, 2010 (http://www.internetworldstats.com/).

mechanisms, said to protect against malware, fraud, child pornography, or hate speech, can also have an impact on freedom of expression.[45] These practices can also infringe on online privacy if they are meant for surveillance purposes.[46] Sometimes, online privacy is also trumped by freedom of expression, as users are at times asked for personal data or are required to forego their anonymity in exchange for access to information or the ability to publish and express freely.[47] The costs and benefits of each of these four issues ultimately have an impact on one another.

This study also reveals a noticeable difference in user attitudes and behaviours between older and newer adopting countries. Although, by and large, they are similar, users from newer adopting countries are more liberal in their attitudes and behaviours than users in older adopting countries. They are more engaged with Web 2.0 technology and are more active web users. Signs point to newer adopting nations (such as China, Brazil, India, Mexico, and South Africa) outpacing older ones (such as the United States, the United Kingdom, Canada, Germany, and France) in their innovative patterns of use in the online world.

It may come as a surprise to some that users from emerging economies display more liberal attitudes and behaviors than users from countries where values such as privacy and freedom of expression are more culturally valued. This may be in part generated by the convergence of eastern and western social systems and values, as Richard E. Nisbett describes in *The Geography of Thought* (2003). In examining how Asians and westerners think differently, Nisbett describes studies in which easterners had stronger "western" values than westerners themselves, and vice versa.[48] The idea of a convergence of cultures and values makes sense within the architecture of the Internet and the networked world, where everyone can virtually be connected and have access to ideas and values other than their own.

There may be a number of other explanations for the unfolding trends in this study. Internet diffusion appears to play some role in eroding support and enthusiasm in online attitudes and behaviours. Another possible explanation is that limited online local content in emerging economies may drive users to be more engaged online. Longer proximity to, and familiarity with, technology and the Internet in older adopting nations may have diminished the novelty and hype surrounding digital media and new technology, or may have exposed users to risks over time. Or, the differences may in part be due to the excitement currently created by high growth and development in these new economies. It is difficult to know the extent to which we can attribute these shifting patterns to early adoption, Internet diffusion, and years of experience, and the extent to which we must instead attribute them to the emergence of an unequaled online phenomenon created by the coming of age of fast-developing countries.

Finally, what the findings of this research may ultimately indicate is that we need to begin to examine online phenomena, trends, and patterns in a different light. Nisbett suggests that the convergence of cultures creates a shift in common social practices, which will ultimately lead to the transformation of typical patterns of perceptions and thoughts.[49] This seems to be what is happening on the Internet now.

Internet stakeholders of all sorts should follow these patterns closely as unpredictable transitions are currently occurring online. These changes may possibly bring forth a new Internet world, altering previously known attitudes and behaviours. Further research is needed to better comprehend some of the general trends and patterns identified in this project. It would also be useful to explore further how support and enthusiasm may be sustained or how users in newer online countries affect attitudes and behaviors in other countries. A longitudinal study would help confirm or reject the notion that the Internet is being reshaped by a much more than temporary predominance of new online nations.

Notes

1 ITU 2010.

2 ITU 2010.

3 Gartner 2011, International Data Corporation 2011.

4 Gartner 2010.

5 Fleishman Hillard and Harris Interactive 2010.

6 BBC 2010.

7 Real Opinions 2010.

8 Cho et al. 2009.

9 Wang et al. 1994.

10 Mowbray 2001.

11 Cammaerts 2009.

12 Brown 2008, Diebert and Rohozinski 2010.

13 Nunziato 2009, Brenkert 2010.

14 Dutton et al. 2010.

15 Huffington Post 2009.

16 Kirkpatrick 2010.

17 Alexa 2010.

18 Wade 2007, Jenkins-Smith and Herron 2009, Diebert and Rohozinski 2010.

19 Bellman et al. 2004.

20 Cho et al. 2009.

21 Luo 2002, Yoon 2002.

22 Dutton and Sheppard 2006.

23 Bart et al. 2005.

24 Nissembaum 2005.

25 Dutton et al. 2010.

26 Nissembaum 2005.

27 See for example, Jenkins-Smith and Herron 2009, Dutton et al. 2010.

28 Lewis 2005.

29 See Symantec website at http://microsites.oii.ox.ac.uk/oxis/.

30 UNISYS 2010.

31 See OxIs website.

32 See Fox 2000.

33 See BBC 2010.

34 Bethlehem 2010.

35 Lal Bhasin 2006.

36 Yoon 2002.

37 Dutton and Sheppard 2006.

38 Balkin 2004, Benkler 2006.

39 Castells 2009.

40 Cited in Rafaeli and Ariel 2008.

41 Hughes et al. 2005.

42 See Reporters Without Borders 2010.

43 Yoon 2002.

44 See the Australian government's proposed Clean Feed filtering system in Maher 2009.

45 Brown 2008, Deibert et al. 2008.

46 RAE 2007.

47 Clark 1999.

48 Nisbett 2003.

49 Nisbett 2003.

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