



Who is connected?

Social Media and the Digital Divide

Asia-Pacific Information Superhighway (AP-IS) Working Paper Series

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Abbreviations and Acronyms

AI	Artificial intelligence
CALM	Campaign Against Living Miserably
CBO	Community-based organizations
CTED	Counter-Terrorism Committee Executive Directorate
FGM	Female genital mutilation
GNI	Gross National Income
HIV	Human immunodeficiency virus
ITU	International Telecommunications Union
LGBT	Lesbian, gay, bisexual, and transgender
MRA	Men's rights activism
MRM	Men's rights movement
NGOs	Non-governmental organization
OECD	Organisation for Economic Cooperation and Development
PFP	Physicians for Peace (PFP)
POTUS	President of the United States
PPP	Purchasing Power Parity
TEWS	Twitter Early Tsunami Warning System
THE	Times Higher Education
UNDP	United Nations Development Programme

Introduction

Social media applications have been the subject of much study and analysis, yet the scope and impact remain difficult to understand. As part of a fast growing and quickly changing Internet ecosystem, these applications have been used by billions of people across the globe. With such high use rates, the potential for beneficial impact on economic growth and social development is significant. However, because previous research has clearly shown that ICTs can amplify existing inequalities, it is important to ensure that the benefits of these technologies do not increase the existing digital divide.

Data which illustrates the existing inequalities such as affordability and availability of broadband connectivity helps provide a contextual framework for the capacity of people in the region to benefit from ICTs. Analysis shows that in addition to factors such as income, urbanization and education, gender issues also impact not only adoption rates but also the types of activities which users undertake through social media. Therefore, it is important to understand the gender gaps in social media use through the lens of existing patterns of ICT access and use generally. Unfortunately, because of the existing digital divide, compounded by gender gaps in the usage of social media technologies, the economic and social benefits of social media applications can contribute to inequality.

While social media has the potential to be a powerful tool to empower people, there are factors and emerging concerns, such as safety, privacy and rights of users, which need to be better addressed in the expanding use of social media. As more people use these applications, the content they are generating produces high revenues for the owners of the platforms. Selling users' data would have implications for user's safety and data privacy. Other challenges concern biases linked to social norms and the design of social media technologies which may lead to underrepresentation of certain groups, such as women, minority groups, senior citizens and rural residents.

Further, the increasing utilization of automated content creation and curation technologies challenge the previously accepted understandings of social media itself. While earlier social media products such as MySpace and blogging were almost entirely user generated and controlled, current applications make extensive use of automation of content curation for purposes such as determining what content a user will be most interested in, as well as determining what content should be banned for potential violations of community standards. These evolving approaches make the social media ecosystem less a reflection of the expressions of people, and increasingly influenced, controlled and even created by the platforms themselves.

Objective

The objective of this paper is to measure the use of social media applications in Asia and the Pacific. The reliability of existing usage statistics, as well as contextual analysis of data trends will be examined. In this context, the analysis will seek to evaluate the available data for suitability to identify the principle determinants of those usage rates across demographics categories such as age and gender. It is expected that the relevant factors will include education, broadband accessibility, and income.

The research provided in this paper will provide policy makers with the insight needed to understand the data available on social media. This evidence will illustrate what policy actions are necessary to ensure that these technologies can equitably benefit all members of society and avoid increasing the gender digital divide. Putting in place the necessary physical infrastructure, cyber legislation and policy frameworks will enable social media to deliver positive socio-economic development in exciting new ways. Given the unique national environments of the region, cooperation among and between countries will be particularly needful in order to overcome gaps and work together to leave no one behind and make the promises of these tools a tangible reality.

Methodology

To the greatest degree possible, statistical data relating to connectivity has been gathered from official sources including through United Nations entities such as the International Telecommunications Union. As with many themes related to information and communications technology for development, the issues and underlying data tend to be fast moving. In order to accurately understand the relevant aspects of the scope of this paper, it is therefore necessary to include consideration of data which is collected by individuals, companies and other stakeholders which study the social media landscape for commercial purposes. In these cases, understanding data transparency and methodology are vital to support a high-quality analysis. These issues tend to arise most frequently in relation to the definitions of what qualifies as social media applications and the regional aggregations applied.

This paper is developed based on data collected through research including data released by national statistical authorities, social media companies, scholarly journals, conference papers and proceedings, and trade journals. Research has been undertaken through services such as ProQuest, using search terms such as social media, Asia, WeChat, TenCent and other specific terms related to social media applications

and the companies which support them. Emphasis has been placed on sources which are peer reviewed and published in the last five years.

Further complicating the methodological challenges are the difficulties in determining the number of social media users in a given country. For example, it is necessary for researchers to avoid error of summing the number of user accounts reported by the most popular social media applications to derive an aggregate of total use. This technique is erroneous as it has been well established that individual people tend to use a multitude of social media applications at any given time, and in some cases, share the same content on each. Therefore, an inherent accounting problem is commonly encountered in the research undertaken in this subject area that would lead to aggregate social media use rates which are likely to be greatly exaggerated. For example, the generally accepted estimates indicate that for 2018 the average user will utilize between seven and nine social media applications¹. Consequently, failing to account for this effect can lead to significant over-counting. This paper highlights the data limitations, which are fundamental to the estimation of the total number of people using social media within a country as a baseline from which to understand the digital divide and its impact on human behavior.

Data has also been collected from industry sources which draw upon their own processes, sometimes involving proprietary data and methodologies which are not fully transparent. As a result, obtaining robust data on the use of specific applications, particularly across, countries and language groups, is difficult. To the greatest extent possible, priority will be given to data derived from sources with published methodologies, with attention to best practices in data weighting to promote comparability. As above, because individual applications track their usage statistics in non-standard ways, and analyze and release these data pursuant to their corporate policies, it is difficult to make conclusions related to the cross-cutting use of social media applications in the aggregate at the national level. These data tracking factors can particularly be seen in applications with different business models, such as Facebook and WeChat.

Additionally, social media applications tend to promote estimates of the number of people who could potentially view shared content. This metric, commonly known as ‘reach’ is computed using closely guarded, proprietary processes. Measures of this type are vital to the advertising-driven business models of Facebook, but comparatively much less relevant to applications such as WhatsApp or Line. Because this key data is available almost exclusively processes which do not provide transparent methodology and are only relevant to some but not all applications, it illustrates the analytical difficulty faced by researchers.

¹ Globalwebindex, Flagship Report 2018

Unfortunately, depending on the functionality of the specific application itself, the measures applicable to analyzing that respective network are starkly different. For applications which seek to broadcast content, such as Twitter or Facebook find great value in measures such as ‘amplification’². This term refers to the onward sharing of social media content to other social groups than the original recipient. For applications such as Snapchat, which focuses more on the direct sharing of images with specified friends only, amplification is not a suitable measure of usage rates. These examples illustrate the difficulty of understanding what constitutes an active user on a social network. In some cases, visiting an application once a month constitutes the measure of ‘monthly active user’, and is a generally accepted baseline. However, the measure ‘daily active user’ is viewed with significantly more value as an indication of the health and profitability of an application³. In general, more frequent access, and more sharing of original content, tends to indicate whether or not a social media network is growing or shrinking, healthy or fading⁴. Therefore, speaking of ‘social media’ use rates in a specific country over time is quite problematic⁵.

These data points are particularly important and problematic as a result of the proliferation of inauthentic accounts which further distort usage statistics. In the case of Facebook, the company reports having eliminated 1.4 billion inauthentic accounts from April through September of 2018, a number which represents an increase from the 1.3 billion accounts removed in the previous six months. Estimates of the number of inauthentic accounts which remain active range from 85 million to 91 million per quarter. Instagram and Twitter have likewise engaged in the deletion of hundreds of millions of inauthentic accounts, and applications such as Weibo are likewise affected. The economic relevance of these problems can further be seen in the secondary trading markets facilitating the purchase and creation of inauthentic accounts, and the use of these accounts to promote content for financial reward. As such, this paper will give careful examination to the adjustment of the usage statistics reported in these cases, through methodologies described in peer reviewed literature as below.

Accordingly, increasing scrutiny has been placed on the matter of the reliability of user and usage statistics throughout social media applications, with particular emphasis on the largest companies. As social media networks derive their primary economic value from the measures such as the size of their

² <https://www.gshiftlabs.com/social-media-blog/social-amplification-part-1-of-3-what-is-social-amplification/>

³ <https://www.vox.com/2019/2/7/18215204/twitter-daily-active-users-dau-snapchat-q4-earnings>

⁴ <https://www.socialmediatoday.com/news/twitter-reports-another-decline-in-users-shifts-to-alternate-performance-m/547981/>

⁵ <http://nymag.com/intelligencer/2017/06/how-facebook-is-trying-to-fix-itself.html>

user networks, the proportion of human interaction, and the sharing of original content, there are powerful motivations for companies in this fast-moving market to demonstrate fast growth and robust numbers. In general, this has been the narrative in most sectors for some time. However, the increased transparency and scrutiny which are applied to mature companies, and particularly those which are publicly traded, it has become apparent that usage statistics are prone to inflation through mechanisms such as overestimated user counts and inaccurate tracking of user behavior. As such, this paper specifically addresses the contextualization of the provided statistical data in order to determine the reliability of the methodologies used in measuring social media.

When evaluating the available data sources, significant disparities emerge. First, when measuring the baseline number of internet users, the data released by national statistical sources can exhibit significant variances from the data obtained through direct survey efforts. This effect can be observed even in advanced economies with robust statistical authorities such as Japan. Second, the number of social media users estimated by private sector companies is seen to exceed the total number of internet users by significant margins, such as in the cases of Thailand and Indonesia. As a case in point, for Bangkok the reported number of social media users is more than double the total population. Variances of these degrees suggests that significant methodological problems are likely to exist in the available data.

Finally, it should be noted that the adoption of social media tools varies widely according to national circumstances. As expected, accessibility and affordability of Internet connections is a key determinant in the update of these tools. Additionally, national regulation and linguistic diversity are important factors. In this context, and particularly for ESCAP member countries, it is important therefore to adopt an approach which does not prioritize the analysis of individual applications, over user behavior patterns. The cases of the People's Republic of China and the Russian Federation are key examples of this effect in that both countries demonstrate significant statistical variances in the use of individual applications (such as Facebook) but otherwise high levels of use of domestic applications (such as Vkontakte and WeChat). Therefore, this paper will disaggregate usage data and apply cross-cutting definitions to the greatest extent possible.

Literature Review

For the purposes of this analysis, services such as ProQuest were utilized to draw upon the highest quality research possible. From this vantage point, it can be easily seen that these topic areas are receiving

increased scrutiny, but with less reliance on traditional quality assurance processes, such as peer review. For example, when searching for terms such as “social media asia”, 196,478 articles appear. However, when filtered to only peer reviewed articles, the results drop to 8,854, or approximately 4.5 per cent. Further, when searching for terms such as “twitter bot”, 23,854 articles appear, only to drop to 761 when only peer reviewed sources are considered, for a conversion rate of approximately 3 per cent. For context, when searching for terms such as “development economics”, there are 1,925,306 total articles, and 502,284 subject to peer review, for a conversion ratio of 26 per cent. Therefore, we can clearly see that the research being undertaken in these topic areas is subject to peer review at a significantly lower rate. It is likely that the rapidly evolving nature of this subject area is a factor in discouraging the use of peer review, due to the delays in publication which these quality assurance mechanisms represent. Indeed, it was clear during this research process that some of the most insightful and timely issues were being explored outside the traditional academic realms, which creates challenges to the robust analysis of research hypothesis.

By further refining search terms within the particular research objectives of this paper, terms such as “weibo fake user”, return 73 results. By such mechanism, papers such as “Detecting Marionette Microblog Users for Improved Information Credibility”, which provides robust mechanisms for the identification of inauthentic accounts and activity, resulting in estimates which found that in the worst case, up to 55.6 per cent of followers and 36.2 per cent of retweeters are inauthentic. Further extension of this research trajectory identified key publications such as in the case of Facebook data “Fake Identities in Social Media: A Case Study on the Sustainability of the Facebook Business Model” and for twitter “Online Human-Bot Interactions: Detection, Estimation, and Characterization”. The techniques developed and applied by these researchers have provided important, peer-reviewed mechanisms for increasing the quality of statistical measures in this context.

Additionally, our research has identified papers such as “Integrated anchor and social link predictions across multiple social networks” and “Inferring Anchor Links across Multiple Heterogeneous Social Networks”, which provide important methodologies for solving the problem of double counting the use of multiple social network applications in determining a more accurate count of users. These papers advance the previous work by deriving probative value not only from the links which are present, but also the links which are absent. This research is of particular value in not only validating user counts, but also providing a more accurate baseline of authentic user behavior, which can also assist in removing false activity.

In relation to the breadth and scope of the measurement problems inherent in studying social media, it is apparent that the research undertaken by intergovernmental organizations tends to focus on social media use in a governance context. For example, the Asian Development Bank, which normally provides significant analysis of emerging issues, has not notably engaged on the topic of social media. The most distinctive research on this topic has been their paper on “Social Media and the Public Sector”. This tendency can also be seen in the work undertaken by the Organization for Economic Cooperation and Development, which in 2015 published “Social media use by governments” and in 2014 “Social Media Use by Governments: A Policy Primer to Discuss Trends, Identify Policy Opportunities and Guide Decision Makers”. By contrast, other approaches such as those undertaken by the Pew Research Center, are more likely feature direct data collection and analysis on the use profiles of social media as a whole. Their work on “Social Media Use”, published in 2018, illustrates this point. While this is very helpful, the scope of the research undertaken by Pew features a limited number of countries, and comparatively shorter time series data than is typically used in research of this kind.

Among these sources, the work undertaken by the Pew Research Center is of value for several reasons. The organization releases extensive information about their research methodologies and source data, empowering enhanced levels of peer review. Likewise, the survey is undertaken using selected countries at the global level, over a time series, providing valuable statistical rigor. A resulting analysis of this data published as: “Social Media Use Continues to Rise in Developing Countries but Plateaus Across Developed Ones” provides helpful insight into the digital divides while adjusting for the methodological problems associated with inauthentic accounts and reliance on subscription numbers. From this vantage point it is possible to more accurately analyse the structural determinants of the digital divide pertinent to Internet access as the basis for understanding social media use. For example, while Internet use rates are approximately similar between the Russian Federation and Japan, use of social media are starkly different at 66 per cent and 39 per cent respectively.

From these examples, we can see that the study of social media features key constraints which must be carefully evaluated. In order to obtain a robust analysis, it will be necessary to combine official statistics with data collected by third parties which are by nature the subject of a variety of interests and quality concerns. Therefore, this paper seeks to strike a balance in the contextualization of these data points in order to provide the reader with an understanding of social media within the overall context.

Methodological Limitations

Starting with the most basic data, Internet Users, it is evident that data on social media use rates faces several key challenges. As illustrated by the table below, and noted in the metadata on per capita use rates, national statistical offices implement a variety of standards in whom they enumerate as an Internet User.

Table 1: Population Metadata for Per Capita Internet Use

Country	Notes
Iran	Age 6 and over
Thailand	Individuals 6 years and older
Korea (Rep. of)	Individuals aged 16-74
Macao, China	Individuals aged 3 and above using computer/Internet/mobile in the last 3 months prior to the date of interview.
Hong Kong, China	Number of individuals aged 10 and over who used the Internet (from any location) in the last twelve months

Source: *ITU, World Telecommunications Indicators Database 2018*

Understandably, these fundamental differences in measurement of the basis of use can cause asymmetries in the results in downstream analytics, such as social media use. For reference, in order to guide national statistical offices in the tabulation of these figures, the following definition is given by the ITU:

"This indicator can include both; estimates and survey data corresponding to the proportion of individuals using the Internet; based on results from national household surveys. The number should reflect the total population of the country; or at least individuals of 5 years and older. If this number is not available (i.e. target population reflects a more limited age group) an estimate for the entire population should be produced. If this is not possible at this stage; the age group reflected in the number (e.g. population aged 10+; population aged 15-74) should be indicated in a note. If no survey data are available at all; please provide an estimate specifying in detail the methodology that has been applied to calculate the estimate."⁶

⁶ *ITU, World Telecommunications Indicators Database 2018*

Further, when advancing to questions of social media use rates, it is important to note that there is no authoritatively accepted definition of what constitutes a social media application. As such, it is common to encounter difficulties in comparability in the existing analytical sources. As illustrated by the table below, this issue can be observed even in the case of highly reputable sources. Therefore, it is necessary to pay close attention to the basis for the statistics being discussed in order to synchronize these differences in definition. Likewise, as reflected in the notes, significant variances in scope also exist. Because use rates of individual applications can vary significantly among and between countries, these asymmetries will alter the subregional aggregations and conclusions reached.

Table 2: Comparative Definitions of Social Media, 2018

	Facebook	Snapchat	Youtube	Linkedin	Twitter	Instagram	Pinterest	Whatsapp	FB Messenger	Google+	Skype	LINE	Viber	WeChat
How the World Changed Social Media*														
We are Social														
Jobvite**														
Social Media Examiner***														
GlobalWebIndex****														
Hootsuite														

Notes: Country scope for each analysis is as follows:

* Considers 8 countries (Brazil, Chile, China, England, India, Italy, Trinidad and Turkey)

** survey from 1,400 recruiting and human resources professionals

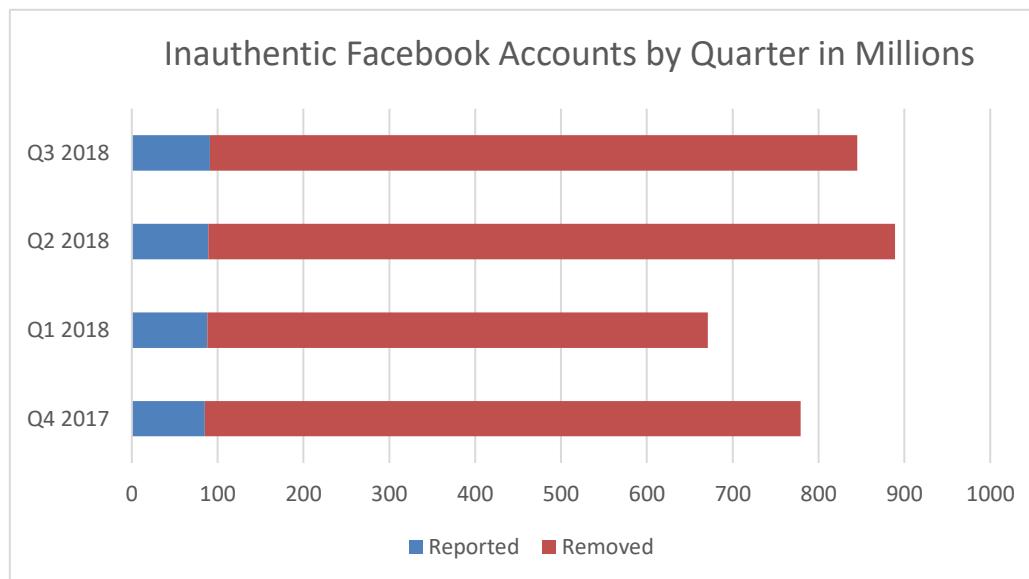
***6 countries (United States, United Kingdom, Canada, Australia, India and South Africa)

****45 countries

Source: Compiled by ESCAP, 2019

Additionally, not only do social networks change significantly over time, their records are subject to significant retroactive revision. According to analysis undertaken in 2018, variances can be observed in the reported inauthentic accounts reported by quarterly reports and the numbers of accounts actually removed. Taken together, these data points illustrate the opacity of the user data in question and therefore represent a significant challenge for detailed data analysis.

Table 3: Facebook Account Authenticity ratios



Source: New York Times (2019), Does Facebook Really Know How Many Fake Accounts it Has?

A further example of this effect can be seen in Weibo, due to the financial impact on product promotion. As such, inauthentic accounts and the links sent by them have tangible impact on the viability of the financial system. Recent research suggests that the levels of inauthentic accounts can be estimated at approximately 4.56 per cent of total users, responsible for 741 million links⁷. This level of activity is asserted to represent a threat to the credibility of these platforms for the purpose of ecommerce⁸. Likewise, it has been estimated that nearly two thirds of the links sent in twitter are posted by bots with no human involvement⁹.

Structurally, it can also be observed that significant differences emerge when data on social media use is collected by surveying users, as compared to data sourced from the companies. With regard to the Chinese social media landscape, the following differences may be observed. When evaluating the data

⁷ https://www.researchgate.net/publication/299548775_Discover_millions_of_fake_followers_in_Weibo

⁸ <https://www.scmp.com/lifestyle/arts-culture/article/2189047/china-faces-social-media-crackdown-fake-accounts-threaten-e>

⁹ <https://www.pewinternet.org/2018/04/09/bots-in-the-twittersphere/>

released from corporate sources, an incremental digital divide of approximately 6 per cent may be observed in the demographic data of social media use in China¹⁰.

However, in parallel, the WeChat Economics Social Influence Analytical Report 2016, published by the China Academy of Information and Communications Technology (CAICT) implemented a survey with 40,443 online participants and 1,101 telephone participants which found that the 32.5 per cent of the user base was female and 67.5 per cent male. This represents an incremental difference of nearly double the comparator figures. It may also be noted that the report indicates the gender ratio had worsened from 1.8:1 the year before, to 2:1 in the sampled year. These variances are significant, and by no means restricted to the study of social media in China. Similar effects are observed in a number of countries, as explored in detail in later sections of this paper.

Internet Use Statistics

Internet access is a requirement for social media presence, and therefore a critical for understanding potential social media use rates and potential growth. As part of the regular data collection efforts of the ITU, ‘Percentage of individuals using the Internet’ is tracked and reported. This data draws upon official reports of the national statistical offices and is considered the most authoritative data available. Additionally, private sector and academic institutions also undertake to report or estimate these baseline measures. Methodologies include independent surveys, estimation models and proprietary methodologies. In this context, the resulting data points can vary wildly.

Table 4: Percentage of Individuals Using the Internet, 2017

Country	ITU	We Are Social	Pew Research Center
Australia	87%	88%	93%
Hong Kong, China	89%	87%	
India	34%	34%	
Indonesia	32%	50%	30%
Japan	91%	93%	76%
Korea (Rep. of)	95%	93%	96%
Malaysia	80%	79%	
Singapore	84%	84%	
Thailand	53%	82%	
Viet Nam	50%	67%	64%

Source: Compiled and analyzed by ESCAP, 2019 based on: *ITU*, World Telecommunications Indicators Database 2018, *We Are Social*, Digital in 2018, *Pew Research Center*, Social Media Use Continues to Rise in Developing Countries but Plateaus Across Developed Ones, 2018

¹⁰ This data is further explored in the section of this paper dedicated to Social Media Use Rates.

This data set illustrates that as a result of the different methodologies, source data and approaches, the resulting data for basic indicators can vary wildly and erratically. For these ESCAP countries, the average standard deviation for the variances in these measures is approximately 11 per cent. Importantly, these variances appear not to follow any rational or predictable pattern, with estimates being erratically over or under ITU figure. While no consistent statistical methodology can be applied to create harmony between the various estimates, it is of note that in general, the variances tend to be most severe in developing countries. Indonesia, Thailand and Viet Nam stand out with particularly severe variances. Japan is a notable exception to this trend, with Pew Research estimating Internet use at 15 per cent below ITU levels, compared to We Are Social, which estimates the use rate to be 2 per cent higher. In addition to introducing statistical problematicity into the national level analysis of the Japanese case, comparative abnormalities also emerged. This data would put Japan at an Internet use rate close to Colombia, Hungary, Poland and Turkey. By contrast, when comparing Japan to other peer countries in the region, a nearly 20 per cent Internet use variance is seen between Australia, Republic of Korea and Japan, which is counter-intuitive to the overall trend of data available. Because social media use rates cannot by definition be higher than the foundational Internet use rates, these fundamental disagreements on the levels of Internet use demonstrate the expected impact on the subsequent analysis of social media use rates.

Expanding this analysis to the global level illustrates that the data variances continue in ways that are difficult to predict or correct. In a close inspection of the methodologies, it is noted that We Are Social does devote some treatment to the variances: "...the latest user numbers published by these companies can be a useful proxy for the number of internet users in countries where no other reliable data are available, because all active social media users must have an active internet connection in order to access social media." Therefore, it is useful to segment these data variances into two groups, those for which official data was released by the national statistical offices, and those for which estimates were provided by the ITU.

Table 5: Percentage of Individuals Using the Internet, 2017

Country	ITU	WAS	Variance	Source
Thailand	53%	82%	29%	National Statistical Office
Indonesia	32%	50%	18%	BPS-Statistics Indonesia
Italy	61%	73%	12%	Italian National Institute of Statistics
Saudi Arabia	82%	91%	9%	Communications & IT Commission
France	81%	88%	8%	Institut National de la Statistique et des Etudes Economiques
Germany	84%	91%	7%	Federal Statistical Office
Egypt	45%	50%	5%	Ministry of Communications and Information Technology

Source: Compiled and analyzed by ESCAP, 2019 based on: *ITU*, World Telecommunications Indicators Database 2018, *We Are Social*, Digital in 2018

Beginning with an analysis of internet use rates for countries which released official statistics, and in contrast to the stated methodology, it can be seen that there are significant revisions, including for countries with advanced statistical capacity. In total, it can be noted that for countries which provided data, there were 18 upward revisions (+6 per cent average), and 6 downward revisions (-2 per cent average). For countries which did not report data, the ITU estimates were revised upwards an average of 21 per cent, and downwards by an average of -2 per cent. Therefore, important systemic questions remain on the methodologies implemented, and the nature of the bias towards upward revision of these data points by We Are Social.

By contrast, significant variances are also seen in the analysis by Pew Research Center. Their primary source of data relies on extrapolation of the results of their annual survey exercise. Significant variances among and between the reported data continue to be observed. For example, Pew consistently reports internet access rates in Japan to be 15 per cent below the levels reported to the ITU, while We Are Social reports a 2 per cent increase. Likewise, while We Are Social reports the internet use rates in China to be 1 per cent below the ITU rate, Pew reports them to be 17 per cent higher.

Table 6: Internet Use Rate Variances, 2017

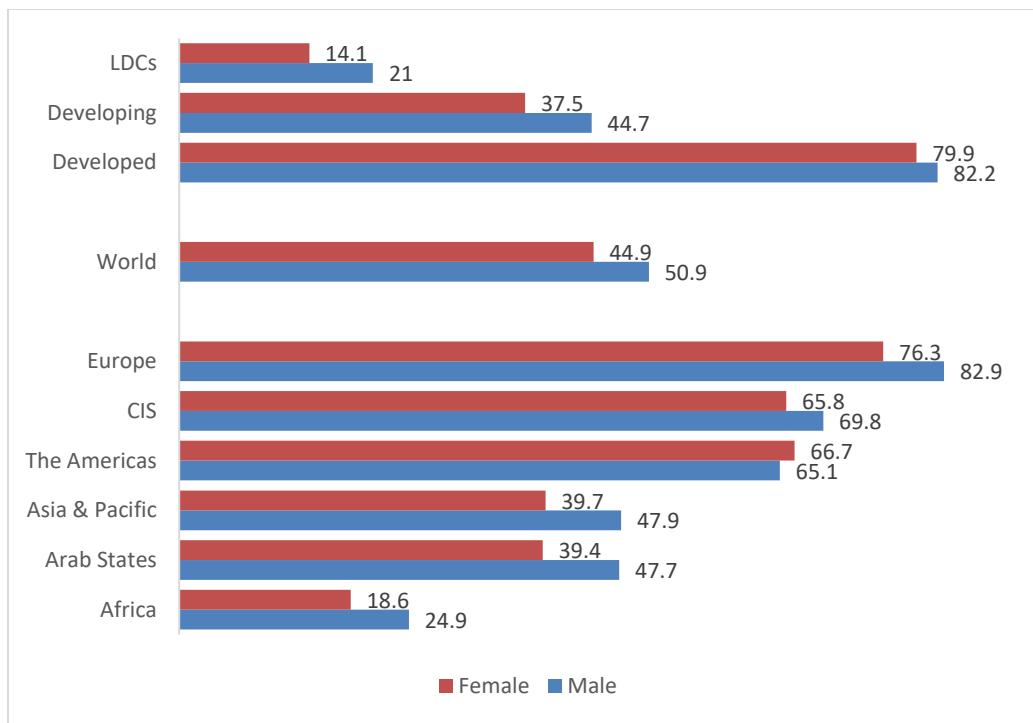
Country	Source	ITU Int %	WAS Int %	Pew Int %	WAS Variance	PEW Variance
China	CNNIC.	54%	53%	71%	-1%	17%
Turkey	Turkish Statistical Institute	65%	67%	76%	2%	11%
Italy	Italian National Institute of Statistics	61%	73%	71%	12%	10%
France	Institut National de la Statistique et des Etudes Economiques	81%	88%	87%	8%	6%
Australia	Australian Bureau of Statistics	87%	88%	93%	1%	6%
Mexico	Instituto Nacional de Estadística y Geografía (INEGI)	64%	65%	67%	1%	3%
Germany	Federal Statistical Office	84%	91%	87%	7%	3%
Brazil	NIC.br	67%	66%	70%	-1%	3%
Spain	Instituto Nacional de Estadística	85%	85%	87%	0%	2%
Russian Federation	Federal State Statistics Service of the Russian Federation	76%	76%	78%	0%	2%
Korea (Rep. of)	Ministry of Science and ICT	95%	93%	96%	-2%	1%
Netherlands	Statistics Netherlands	93%	96%	93%	3%	0%
Poland	Central Statistical Office	76%	78%	75%	2%	-1%
Indonesia	BPS-Statistics Indonesia	32%	50%	30%	18%	-2%
Sweden	Statistics Sweden	96%	97%	92%	1%	-4%

India	Ministry of Communications.	34%	34%	25%	0%	-9%
Japan	Communications and Media Commission	91%	93%	76%	2%	-15%

Source: Compiled and analyzed by ESCAP, 2019 based on: *ITU, World Telecommunications Indicators Database 2018, We Are Social, Digital in 2018, Pew Research Center, Social Media Use Continues to Rise in Developing Countries but Plateaus Across Developed Ones, 2018*

This analysis demonstrates that even when considering the baseline internet use rates, significant variances exist for the largest countries (China), high social media growth countries (Indonesia), and highly advanced information societies (Japan). It is therefore very difficult to robustly analyze social media use rates or trends when the available data sources demonstrate greater rates of variance than the trends being studied. Within this context, it is important to note that Internet user rates have historically demonstrated gender digital divides at the access level. While access barriers are complex and should be examined in the context of the national level, connectivity barriers tend to move together with socio-economic factors such as income, education, age, location (urban/rural), ethnicity, and tend to reflect historical patterns of inequality. At the global and subregional levels, these factors almost exclusively result in scenarios in which women use the Internet at lower rates than men. Therefore, the capacity of social media to positively impact development outcomes must be understood within the context of this important, pre-existing gender digital divide. Even when women are connected to the Internet, other factors such as digital media literacy, online content, normative values, confidence, online harassment, and women's perception on the benefits of social media influence their participation in Social Media, often leading to a 'second-level digital divide'. Because of these underlying issues in the data on Internet access, it is not possible to meaningfully explore determinants such as education and income.

Figure 1: Internet Penetration Rate for Men and Women, 2017



Note: Penetration rates in this chart refer to the number of women/men using the Internet, as a percentage of the respective total female/male population. CIS refers to the Commonwealth of Independent States
Source: ITU. 2017. ICT Facts and Figures 2017.

Social Media Use Rates

In addition to data on Internet access rates, the ITU also collects data on the type of activities undertaken by user in their Internet use. Under category HH9, “Internet activities undertaken by individuals”, data is collected on “Participating in social networks”. Under the statistical guidelines provided in the Manual for Measuring ICT Access and Use by Households and Individuals, this is defined as “Creating user profile, posting messages or other contributions to Facebook, Twitter etc.” in the past three months. The definition applied by We Are Social, counts the number of “Monthly active accounts on the top social network in each country, compared to population”. The definition applied by the Pew Research Center is “Do you ever use online social networking sites like Facebook, Twitter.” Each of these definitions is slightly different, most notably in the time series range collected. These definitional differences compound the variances seen in the Internet access baselines, although in inconsistent ways. For comparative analysis, the data for selected ESCAP member countries has been identified by giving priority first to ITU data, then We Are Social data, and finally, Pew Research data.

Table 7: Social Media Use Rates by Total Population by Source, 2017

Country	ITU	WAS	Pew
Australia	69%	69%	69%
Hong Kong, China	86%	78%	
Indonesia	26%	49%	26%
Japan	67%	56%	39%
Korea (Rep. of)	68%	84%	69%
Malaysia	69%	75%	
Singapore	63%	83%	
Thailand	50%	74%	

Source: Compiled and analyzed by ESCAP, 2019 based on: *ITU, World Telecommunications Indicators Database 2018, We Are Social, Digital in 2018, Pew Research Center, Social Media Use Continues to Rise in Developing Countries but Plateaus Across Developed Ones, 2018*

These data points illustrate several contradictions in their results, which can be at least partially understood by differences in approach. For the case of Thailand, a significantly higher social media use rate is reported, exceeding even the total per cent of the population using the Internet. Consequently, it appears that the study significantly upwardly revises the levels of Internet access for the country as a whole in order to harmonize with the claimed levels of social media use. As official sources report 36.5 million Internet users, the revisions undertaken adjust that number upward to 56.6 million, resulting in an additional 20.1 million Internet users in the country. As a result, Thailand is listed as having increased internet access by 24 per cent in one year. This dichotomy illustrates the problem in reconciling the available data. In order to support the levels of social media use claimed, which by definition cannot be higher than the levels of Internet access, tens of millions more Internet users have been estimated over and above those enumerated by official sources. This effect is further emphasized in the case of Bangkok, for which We Are Social estimates to have 22 million active Facebook users, against a baseline population of 8.3 million people.

Indonesia is likely to be a similar case. Noting that Indonesia is one of the largest markets for Facebook, with approximately 130 million accounts reported. However, it should be noted that according to official government sources, there are only 85.2 million Internet users in the country, resulting in a disparity of approximately 44 million people, all of whom would need to be Facebook users. Notably, this data claims that Indonesia is one of Facebook's fastest growing markets, with an annual growth rate of 23 per cent. Accordingly, it seems plausible that this would be a motivating factor for We Are Social to have upwardly revised the per cent of Internet users by population from the official 32 per cent, to the adjusted 50 per cent. The unusually high per cent of social media use in Indonesia reported by We Are Social

appears driven by the significant upward revision in the proportion of individuals using the Internet, combined with the number of accounts reported. However, given the vast amounts of investment and infrastructure deployment necessary, it is unlikely that the levels of Internet access estimated would be plausible. It appears more likely, that instead of revising estimates of social media usage downwards, the research methodology seems to have revised estimates of connectivity upwards. By contrast, it seems more compelling that the levels of social media use reported by unofficial sources are exceptionally high, rather than that the levels of telecommunications infrastructure and use reported by official sources are exceptionally low.

The data variances across the data set also appear to be driven by a number of other factors. Conceptually, it should be improbable for the one-month social media use rate (WAS), to be lower than the three-month social media use rate (ITU). As the three-month category would logically include the previous month as well, the quarterly number should only be lower than the monthly number in cases of remarkable growth rates. However, this data set would assert that somehow in five of the eight countries listed, more people had used social media in the previous one month than in the previous three. More plausibly, methodological and statistic issues across the processes and sources are responsible for variances of this type.

Comparison of these data points reveals that while both comparators demonstrate standard deviation from the ITU of approximately 14 per cent of these sample countries, the patterns of variance are so divergent as to exceed the identified disparities in baseline Internet access or time scale of data collection. As a result of these fundamental misalignments of data, the analytical conclusions reached are disparate and lead to substantively different conclusions. Therefore, it is very difficult to accurately distill any specific conclusions from these datasets.

The methodological difficulties of understanding social media use rates are also illustrated at the level of individual applications themselves. In order to determine what to measure, it is necessary to understand that different applications function in fundamentally different ways, and towards different ends. Comparisons are often made between WeChat (called Wēixin, 微信 in China) and Facebook. However, this framework breaks down almost immediately. Historically, Facebook has been largely advertising supported and draws content from submissions by the user base. WeChat by contrast is largely supported by revenue from facilitation of financial services. In this scenario, the use cases of these applications are highly dissimilar. For example, as an electronic payments facilitator, WeChat would spend significantly more effort measuring the percentage of financial transactions undertaken through the

application. Facebook, which has not yet been able to deploy similar financial services, has not focused on these numbers. Therefore, these companies illustrate the degree to which the use case for the application influences the necessary statistical measures necessary to be able to accurately determine whether a social media application is healthy and growing, before impact on the targets of the 2030 Agenda for Sustainable Development.

Both companies closely guard the data which would be necessary to accurately understand the behavior and growth of their user bases for rigorously answering any of these questions. In some cases, the data which is released raises serious questions. For example, one of the generally accepted measures of the significance of a social network is the concept of reach. This term refers to the number of people who could potentially see a piece of content shared on their network. In general, the wider the reach, the greater the impact of the network. Since 2017, Facebook has been reporting a potential reach of 41 million adults in the United States between the ages of 18 and 24. However, the Census Bureau of the United States reports that there are only 31 million people in that age group. Facebook overestimates the potential reach of their network by between 3 and 42 per cent for all fifty States in the US¹¹. The problem is by no means exclusively national level aberration as at the worldwide level, Facebook claims a total number of accounts with the gender set to 'male' which exceed population census bureau data for persons aged 18,19, 22 and 25¹².

The issues of inauthentic accounts and content further compounds the problem of reliable data on Facebook users. The company releases periodic commentary on these important issues, illustrating that between April and September of 2018, the company identified and removed 1.5 billion inauthentic accounts, an amount which demonstrates an upward trend from the 1.3 billion inauthentic accounts removed in the six months prior. In the first quarter of 2018, the company reports having identified and removed 837 million spam posts¹³. While the company reports that high levels of these accounts and posts are identified and removed very quickly, Facebook also estimates that three to four per cent of the overall number of accounts are inauthentic. At current usage levels, this would account for approximately 66 million accounts.

These problems are endemic to social media applications, which derive much of their value from the size of their networks. Of the roughly 337 million users of Weibo, it is estimated that approximately

¹¹ <https://www.adweek.com/digital/facebook-ad-reach-more-than-u-s-census-bureau-data-50-states-vab-report/>

¹² <https://www.adweek.com/digital/facebook-ad-reach-more-than-u-s-census-bureau-data-50-states-vab-report/>

¹³ <https://www.engadget.com/2018/11/15/facebook-transparency-report-fake-account-removal/>

40 per cent of these are inauthentic accounts¹⁴. Twitter has also struggled with inauthentic accounts and content. As an example, between May and June of 2018, the company reports having removed approximately 70 million of such accounts. The financial impact of these downward adjustments to the size of these social networks is important, with Twitter's stock having fallen by 9 per cent as a result¹⁵. Researchers have struggled to identify methodologies which can effectively identify and correct for these effects. Challenges include the inherently different patterns of user behavior across social media applications, the accessibility of data, and the conflicted motivations of the companies themselves, which have powerful economic motivations to demonstrate that their usage networks are healthy and growing. Further, when peer reviewed research on detection methodologies are released, these papers provide a roadmap for the avoidance of the very techniques they advocate. As a result, there are disincentives for successful methodologies to be publicly shared, as this can have a counterproductive effect.

The social media landscape is therefore opaque by design, as companies have few motivations to share data with researchers. Further, the arms race between the creation and detection of inauthentic accounts and content make such metrics an uncertain and moving target. As demonstrated, data collection efforts, even from highly respected think tanks, research agencies and official sources are often significantly variant and contradictory. As a result, the degree of measurement inaccuracy in the available data exceeds the statistical effects being studied by several orders of magnitude, such as in the case of gender.

Gender Aspects

Within the context of the overall data issues noted above, an analysis of available data from Facebook showed a significant 12-point difference between female and male users. As of January 2017, 56 per cent of Facebook profiles were male, while only 44 per cent were female¹⁶. In ESCAP countries, South and South West Asia had the highest gender gap for Facebook users. In addition to being the global leader, Facebook is also the most used social media platform in all eight countries in the South and South West Asia. However, the story is opposite in the Pacific region, where in some countries, female users represent a larger share than men, regardless of the country's level of development.

¹⁴ <https://www.bloomberg.com/opinion/articles/2019-03-05/china-s-weibo-and-e-commerce-are-being-strangled-by-fake-accounts>

¹⁵ <https://www.npr.org/2018/07/12/628522147/twitter-is-removing-millions-of-fake-followers-from-users-lists>

¹⁶ We Are Social Singapore (2017), "Facebook usage analysis".

It is necessary to analyze social media users by gender in order to understand to what extent women, who as a group that has traditionally been underrepresented in political participation and misrepresented in mass-media, are at risk of being further marginalized. Although gender minorities are also a vulnerable group, the study is focused mainly on binary genders due to a lack of available data on non-binary users. For example, although Facebook has many options for gender selection, the non-binary users are reconfigured into a system that assigns them either male or female identities¹⁷.

In some cases, available data from other applications show an even wider gender gap. In 2016¹⁸, 67.5 per cent of WeChat users were declared as males¹⁹, this gap is proportionally greater than the overall all demographic divide in the country (51.2 per cent male, 48.8 per cent female), as well as the gender digital divide in Internet access (52.4 per cent male, 47.6 per cent female). Therefore, the available data suggests that statistically significant factors are at play which are widening the gender divide in the use of social media. Those determinants are not explored by this paper but should be prioritized for further research.

Table 8: China: Internet and Social Media Demographics

Platform	Male	Female
Qzone	60.0%	40.0%
Weibo	55.7%	44.3%
Wechat moments	58.3%	41.7%
Internet users	52.4%	47.6%
Population	51.2%	48.8%

Research on the gender of consumers with a YouTube subscription in the U.S. has shown a gap between female and male of 7 points: 12 per cent of all females had a (free) subscription while 19 per cent of all males were registered²⁰. On LinkedIn, the largest professional network with over 500 million members worldwide, there is 14 points gap between male (57 per cent) and female (43 per cent) members (as of 2017)²¹. Additionally, gender gaps can also be observed in the available data on social media use in other national contexts. Research undertaken by the Russian Public Opinion Research Center

¹⁷ Bivens, R. (2017), "The gender binary will not be deprogrammed: Ten years of coding gender on Facebook. New media and society", *The New Media & Society*, Volume 19, no. 6, 880–898.

¹⁸ Slide Share (2016), "WeChat Impact Report 2016", Available from <https://www.slideshare.net/TingyiJennyChen/wechat-impact-report-2016>

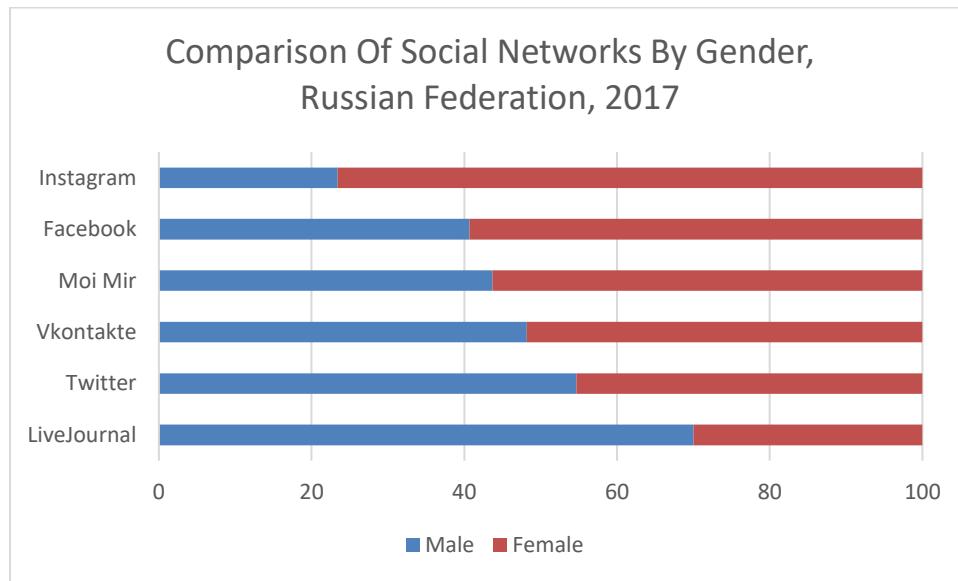
¹⁹ China Skinny (2016), "WeChat Infographics".

²⁰ Socratic Technologies (2017), "Consumers with a YouTube or YouTube Red subscription in the U.S. 2017, by gender.

²¹ LinkedIn (2017), "LinkedIn By The Numbers: 2017 Statistics".

demonstrates intriguing results relating to the social networking preferences when disaggregated by age and gender. For example, women were one third more likely to utilize social media for education and self-development, while men were twenty-five per cent more likely to utilize social media for information related to the economy, finance and business²². Likewise, as illustrated by the chart below, there are significant differences in the gender balance of individual social media applications which warrants further study.

Figure 2: Social Media Use by Sex



Source; Brand Analytics, "СОЦИАЛЬНЫЕ СЕТИ В РОССИИ осень 2018", <https://br-analytics.ru/blog/wp-content/uploads/2018/12/Sotsseti-Rossiya-osen-2018.pdf>

Speculation on Sex Disparity

Digital literacy

A study that examined the relationship between digital media literacy and exclusion found that the participatory gap between the ‘haves’ and ‘haves-not’ of digital literacy impacts on social exclusion²³. The author defines digital media literacy as the ability “to access, understand and create both in the area of device and content”²⁴. This illustrates that “in the digital media environment, it is not only necessary for people to be able to find the relevant content and understand the meaning within context, but also to

²² <https://wciom.com/index.php?id=61&uid=1405>

²³ Park, S., (2012) “Dimensions of digital media literacy and the relationship with social exclusion”, *Media International Australia*, 2012, 142(1). 87-100.

²⁴Ibid

create and communicate messages". These complex dimensions of digital media interaction can create physical and psychological barriers, influencing who is participating and who is not.

In a study on women's perceived barriers in using the Internet, Web Foundation found that 'not knowing how' was an important reason cited by women from poor backgrounds with little or no education. Women were 1.6 times more likely than men to report a lack of skills as a barrier²⁵. Lack of confidence may result in a lack of motivation for acquiring the necessary skills to engage meaningfully with social media. Older people, particularly, lack motivation to learn ICT skills and engage with digital media due to their lack of confidence²⁶. The study also found that the lack of confidence was closely correlated with the level of education, which decreased significantly with higher levels of education. However, in many developing countries (many of them in South East Asia), social norms prioritize boys' education over girls' education, influencing the exclusion of women from online spaces. Additionally, it is likely that streamlined and more visual interfaces used by smartphone apps may make it easier for individuals with lower levels of literacy to make use of these systems.

Social Context Factors

Understanding social context is very important in the analysis of social media online. Online harassment is a prevalent behavior on social networking sites. According to a recent study by Data & Society Research Institute, 47 per cent of Internet users experienced some form of harassment²⁷. While both men and women are likely to experience online harassment, the study found that women experience a wider variety of abuse, including more serious violations. Online harassment was also found to have a stronger impact on women compared to men. For example, in Italy, a woman who was a victim of 'revenge porn', a practice whereby (ex) partners disseminate sexually explicit material online without consent, has committed suicide in 2016 after a sex video went viral and she was unable to remove it²⁸.

Another study which examined the threat of attacks in online chatting applications using a combination of bots and real users, concluded that compared to users with male names, "users with female names are far more likely to receive malicious private messages, slightly more likely to receive files and links, and equally likely to be attacked". The experiment also concluded that "[the] bots with

²⁵ World Wide Web Foundation (2015), "Women's Rights Online Translating Access into Empowerment", Global Report, Available from <http://webfoundation.org/docs/2015/10/womens-rights-online21102015.pdf>

²⁶ Pew Research Center (2017), "Barriers to adoption and attitudes towards technology", Available from <http://www.pewinternet.org/2017/05/17/barriers-to-adoption-and-attitudes-towards-technology/>

²⁷ Data&Society Research Institute (2016), and Center for Innovative Public Health Research, "Online Harassment, Digital Abuse, and Cyberstalking in America", Report, Available from https://www.datasociety.net/pubs/oh/Online_Harassment_2016.pdf

²⁸ The Guardian (2016), "Italy grapples with suicide of woman taunted over online sex video", Available from <https://www.theguardian.com/world/2016/sep/16/italy-grapples-with-suicide-of-woman-taunted-over-online-sex-video>

ambiguous names received significantly more malicious private messages (on average 25) than the male bots (on average 3.7), but less than the average between the male and female bots (which is around 52)”²⁹. The evidence indicated that the sexually explicit messages and threatening language targeting these accounts were coming from real male users.

Gender-based harassment may result in (and has often aimed at) women’s exclusion from online spaces. It has also been found that women are more likely to censor themselves online to avoid harassment. At the same time “online harassment and abuse can cause victims to experience increased isolation or disconnection from their communities, whether because of the strain the harassment has put on their close relationships, or because their harassment has made them feel more cut off from avenues for communication and information-seeking”³⁰.

The experiment described above discussed how bots with ambiguous names received more cyber-harassment than users with male names. This may be linked to an adversity towards transgender people that still exists in many societies. Sexual minorities have been found to be more likely to experience³¹ digital abuse³² compared to other Internet users³³. For transgender people, who are at higher risks to commit suicide than the general public³⁴ and therefore depend on support groups made available through social media, online bullying is a very serious issue having critical implications for their lives³⁵.

Recommendations on how to address the gender digital divide and address some of the challenges discussed in this section were also discussed in a report by The Broadband Commission for Sustainable Development's Working Group on the Digital Gender Divide in March 2017³⁶.

Conclusion

²⁹ Meyer, R. and Cukier, M. (2016), “Assessing the Attack Threat due to IRC Channels”, University of Maryland’s A. James Clark School of Engineering.

³⁰ Data & Society Research Institute (2016) Online Harassment, digital Abuse, and Cyberstalking in America.

³¹ Schwickrath, H. (2012), “Cyberbullying and suicide among a sample of lesbian, gay, bisexual, transgender, and questioning young adults”, PhD Dissertation, Duquesne University.

³² Wiederhold, B. (2014) “Cyberbullying and LGBTQ youth: a deadly combination”, *Cyberpsychology, Behavior and Social Networking*, September 2014, Vol.17(9), pp.569-70.

³³ GLSEN (2013), “Out Online: The Experiences of Lesbian, Gay, Bisexual and Transgender Youth on the Internet”, Report.

³⁴ Virupaksha, H. et. al. (2016), “Suicide and Suicidal Behavior among Transgender Persons”, *Indian Journal of Psychological Medicine*, 38(6):505-509.

³⁵ Ybarra, M. et. al. (2015), “Online social support as a buffer against online and offline peer and sexual victimization among U.S. LGBT and non-LGBT youth”, *Child Abuse & Neglect*, January 2015, Volume 39, 123-136.

³⁶ The report is available from <http://broadbandcommission.org/Documents/publications/WorkingGroupDigitalGenderDivide-report2017.pdf>

Social media applications are widely used around the globe. With the promise of enhanced communication and connectedness, it is likely that there are new opportunities for achieving the 2030 Agenda for Sustainable Development, particularly Reduced Inequality, Gender Equality, and Peace, Justice and Strong Institutions. However, the available data suggests that use rates for social media networks are often exaggerated and misleading. For example, without sufficient data, it would be very difficult to determine if a government's social media outreach efforts are reaching their targets and benchmarks³⁷, or if digital currency systems are in fact deepening the disenfranchisement of female entrepreneurs. Therefore, careful analysis is necessary to avoid reinforcing existing digital divides, particularly in the case of gender.

The 2017 ICT Facts and Figures report released by ITU shows that the proportion of women using the Internet is lower than the proportion of men in two thirds of the countries worldwide³⁸. In this study, research further examined social media users by gender and found that in the majority of the ESCAP countries (as well as other countries), the proportion of male social media users is higher than the proportion of female users to a greater degree than can be explained by existing demographic gender divides. The reasons why women are less likely to use digital media appear linked to connectivity, affordability, digital literacy, digital content, cyber-bulling, and normative values. This gender bias present on social media platforms has implications for women's empowerment and gender equality, fair political representation and economic equality. While digital technologies do not translate automatically into gender equality, women's lack of access and control over digital media platforms could lead to further discrimination and underrepresentation, impacting women's rights and the sustainable development of economies. Social media tools are enabling new ways to influence change and civic engagement, and women are likely to miss out an opportunity if they are not able to use such powerful tools to shape the agenda.

Therefore, policy makers should take action to determine how to best address the gender digital divides in their countries and to allow all people to have access to the enabling technologies represented by the complex social media landscape. This should include training policy makers on the optimal use of social media in the context of the existing digital divide from a gender mainstreaming perspective. Additionally, policy makers should put in place the necessary physical infrastructure, cyber legislation and policy frameworks will enable social media to deliver positive socio-economic development in exciting

³⁷ <http://oecdinsights.org/2015/02/18/measuring-government-impact-in-a-social-media-world/>

³⁸ ITU (2017), "ICT Facts and Figures 2017"

new ways. Given the unique national environments of the region, cooperation among and between countries will be particularly needful in order to overcome gaps and work together to leave no one behind and make the promises of these tools a tangible reality.

Bibliography

1. Asian Development Bank (2010), Social Media and the Public Sector
2. Bivens, R. (2017), "The gender binary will not be deprogrammed: Ten years of coding gender on Facebook. New media and society", *The New Media & Society*, Volume 19, no. 6, 880–898.
3. Brand Analytics, "СОЦИАЛЬНЫЕ СЕТИ В РОССИИ осень 2018", <https://brand-analytics.ru/blog/wp-content/uploads/2018/12/Sotsseti-Rossiya-osen-2018.pdf>
4. China Skinny (2016), "WeChat Infographics".
5. Data&Society Research Institute (2016), and Center for Innovative Public Health Research, "Online Harassment, Digital Abuse, and Cyberstalking in America", Report, Available from https://www.datasociety.net/pubs/oh/Online_Harassment_2016.pdf
6. Globalwebindex, Flagship Report 2018
7. GLSEN (2013)," Out Online: The Experiences of Lesbian, Gay, Bisexual and Transgender Youth on the Internet", Report.
8. LinkedIn (2017)," LinkedIn By The Numbers: 2017 Statistics".
9. Meyer, R. and Cukier, M. (2016), "Assessing the Attack Threat due to IRC Channels", University of Maryland's A. James Clark School of Engineering.
10. Park, S., (2012) "Dimensions of digital media literacy and the relationship with social exclusion", *Media International Australia*, 2012, 142(1). 87-100.
11. Pew Research Center (2017), "Barriers to adoption and attitudes towards technology", Available from <http://www.pewinternet.org/2017/05/17/barriers-to-adoption-and-attitudes-towards-technology/>
12. Schwickrath, H. (2012), "Cyberbullying and suicide among a sample of lesbian, gay, bisexual, transgender, and questioning young adults", PhD Dissertation, Duquesne University.

13. Slide Share (2016), "WeChat Impact Report 2016", Available from <https://www.slideshare.net/TingyiJennyChen/wechat-impact-report-2016>
14. Socratic Technologies (2017), "Consumers with a YouTube or YouTube Red subscription in the U.S. 2017, by gender.
15. The Guardian (2016), "Italy grapples with suicide of woman taunted over online sex video", Available from <https://www.theguardian.com/world/2016/sep/16/italy-grapples-with-suicide-of-woman-taunted-over-online-sex-video>
16. The report is available from
<http://broadbandcommission.org/Documents/publications/WorkingGroupDigitalGenderDivide-report2017.pdf>
17. Virupaksha, H. et. al. (2016), "Suicide and Suicidal Behavior among Transgender Persons", Indian Journal of Psychological Medicine, 38(6):505-509.
18. We Are Social Singapore (2017), "Facebook usage analysis".
19. Wiederhold, B. (2014) "Cyberbullying and LGBTQ youth: a deadly combination", Cyberpsychology, Behavior and Social Networking, September 2014, Vol.17(9), pp.569-70.
20. World Wide Web Foundation (2015), "Women's Rights Online Translating Access into Empowerment", Global Report, Available from <http://webfoundation.org/docs/2015/10/womens-rights-online21102015.pdf>
21. Ybarra, M. et. al. (2015), "Online social support as a buffer against online and offline peer and sexual victimization among U.S. LGBT and non-LGBT youth", Child Abuse & Neglect, January 2015, Volume 39, 123-136.
22. ACM (2013), Inferring Anchor Links across Multiple Heterogeneous Social Networks
23. ACM SIGCAS Conference on Computing and Sustainable Societies (COMPASS) (2018), Measuring Subnational Digital Gender Inequality in India through Gender Gaps in Facebook Use
24. American Journal of Infection Control (2016), How people react to Zika virus outbreaks on Twitter? A computational content analysis
25. Common Sense Media (2015), The Common Sense Census: Media Use By Tweens And Teens
26. Communication Authority of Kenya (2019), Third Quarter Sector Statistics Report For The Financial Year 2018/2019
27. Data & Society (2016), Online Harassment, Digital Abuse, And Cyberstalking In America
28. Global Web Index (2017), Trends to Watch in 2017

29. Global Web Index (2019), Flagship Report 2019
30. International Conference on Social Media & Society, Copenhagen, Denmark (2018), Comfortably Numb: Danish Teens' Attitudes Towards Social Media Platforms
31. International Telecommunication Union (2010), The Rise Of Social Networking: Changing The Web As We Know It
32. International Telecommunication Union (2011), Global Industry Leaders' Forum 2011 Discussion Paper
33. International Telecommunication Union (2017), ICT Facts and Figures 2017
34. International Telecommunication Union (2017), ITU's inputs to the report on the gender digital divide and ways to bridge it
35. International Telecommunication Union (2017), Working Group On The Digital Gender Divide: Bridging The Gender Gap In Internet And Broadband Access And Use
36. International Telecommunication Union (2018), World Telecommunications Indicators Database 2018
37. International Telecommunication Union (2014), Manual for Measuring ICT Access and Use by Households and Individuals
38. Joint statement on global privacy expectations of the Libra network (2019)
39. Jordan Wright (2017), Don't @ Me: Hunting Twitter Bots at Scale
40. Journal of Service Science Research (2012), Fake Identities in Social Media: A Case Study on the Sustainability of the Facebook Business Model
41. Konrad-Adenauer-Stiftung, Reality Check (2016), Assessing The Impact Of Social Media on Political Communication and Civic Engagement in Uganda
42. Michael Geist, 4th Global Industry Leaders' Forum (2011), Confronting the Social Media Regulatory Challenge
43. OECD (2015), Social media use by governments
44. OECD (2018), Bridging The Digital Gender Divide: linclude, Upskill, Innovate
45. OECD Working Papers on Public Governance No. 26 (2014), Social Media Use by Governments
46. Pacific Journalism Review (2018), Internet under threat?: The politics of online censorship in the Pacific Islands
47. Pew Research Institute (2018), Social Media Use Continues to Rise in Developing Countries but Plateaus Across Developed Ones

48. Pew Research Institute (2018), Bots in the Twittersphere
49. Pew Research Institute (2018), Social Media Bots Draw Public's Attention and Concern
50. Pew Research Institute (2018), Social Media Use in 2018
51. Pew Research Institute (2019), Mobile Connectivity in Emerging Economies
52. Proceedings of the Eleventh International AAAI Conference on Web and Social Media (ICWSM 2017), Online Human-Bot Interactions: Detection, Estimation, and Characterization
53. Social Network Analysis and Mining (2016), Discover millions of fake followers in Weibo
54. UNESCO (2011), Social Media for Learning by Means of ICT
55. UNESCO (2016), Background Note Social Media And Youth Radicalization In Digital Age
56. UNESCO (2017), Protecting Journalism Sources in the Digital Age
57. UNESCO (2017), What If We All Governed The Internet?
58. UNESCO (2017), Youth And Violent Extremism On Social Media: Mapping The Research
59. University College London (2016), How the World Changed Social Media
60. University of Oxford (2017), Troops, Trolls and Troublemakers: A Global Inventory of Organized Social Media Manipulation
61. We Are Social (2018), Digital In 2018 Essential Insights Into Internet, Social Media, Mobile, And Ecommerce Use Around The World
62. WeChat Economic and Social Impact Report (2017), Build an Innovative Community of Shared Ecosystem and Foster New Drivers of Economic Growth
63. World Bank (2016), World Development Report 2016, Enabling Digital Development: Social media
64. World Bank (2011), The Role of Mobile-Enabled Social Media in Social Development
65. World Bank (2012), Evaluating the Efficacy of Mass Media and Social Marketing Campaigns in Changing Consumer Financial Behavior
66. World Bank (2016), World Development Report, Digital Dividends: Development Impact of Social Media
67. World Bank (2017), World Development Report 2017: Governance and the Law
68. World Bank (2018), Benefiting From The Digital Economy: Cambodia Policy Note
69. World Bank (2018), Disruptive Technologies and the World Bank Group, Creating Opportunities, Mitigating Risks

70. World Bank Communication for Governance and Accountability Program (2011), A Draft
 Discussion Paper: International Support to Media Development: Context, Evidence,
 Challenges and Possible Strategic Principles

Annex 1: ITU: Social Media Use Rates by Individuals Using the Internet

Country	Latest year	Participating in social networks
Australia	2017	79.9
Austria	2017	58.2
Azerbaijan	2017	18.6
Bahrain	2017	96.4
Bangladesh	2013	...
Belarus	2017	...
Belgium	2017	82.1
Bosnia and Herzegovina	2017	72.3
Botswana	2014	78.4
Brazil	2017	76.6
Brunei Darussalam	2016	92.0
Bulgaria	2017	78.8
Colombia	2017	81.5
Croatia	2017	70.4
Cuba	2017	...
Cyprus	2016	79.0
Czech Republic	2017	56.2
Denmark	2017	77.8
Egypt	2017	85.2
El Salvador	2017	...
Estonia	2017	73.7
Finland	2016	65.7
France	2016	45.8
Georgia	2017	92.1
Germany	2017	54.6
Greece	2016	67.5
Hong Kong, China	2016	96.5
Hungary	2017	84.1
Iceland	2014	84.3

Indonesia	2017	79.1
Iran (Islamic Republic of)	2017	53.3
Ireland	2016	70.5
Israel	2016	...
Italy	2017	58.0
Jamaica	2016	...
Japan	2017	73.6
Kazakhstan	2017	65.6
Kenya	2015	74.7
Korea (Rep. of)	2017	71.4
Kuwait	2017	83.0
Latvia	2017	74.8
Lithuania	2017	69.0
Luxembourg	2017	69.9
Macao, China	2017	...
Malaysia	2017	86.3
Malta	2017	86.8
Mauritius	2016	40.8
Mexico	2017	76.6
Montenegro	2017	81.9
Morocco	2017	94.3
Netherlands	2016	66.3
Norway	2017	83.5
Oman	2016	96.2
Palestine	2014	75.1
Paraguay	2017	86.6
Peru	2017	...
Poland	2017	63.2
Portugal	2017	76.1
Qatar	2017	74.0
Romania	2016	74.4
Russian Federation	2017	78.1
Saudi Arabia	2017	92.3
Serbia	2017	67.8
Singapore	2017	75.0
Slovakia	2016	70.8
Slovenia	2017	57.2
Spain	2017	67.6
Sweden	2017	73.5

Switzerland	2017	54.9
Taiwan, Province of China	2016	94.3
Thailand	2017	94.0
TFYR Macedonia	2017	83.8
Turkey	2017	83.7
Ukraine	2017	49.8
United Arab Emirates	2017	63.5
United Kingdom	2016	72.5
United States	2015	60.5
Zimbabwe	2014	54.6

Annex 2: Social Media Use in Russian Federation

What kind of communities do you browse, or are you interested in to get information/news from? (closed-ended question, any number of answers, % of those who use at least one of the mentioned social media websites)								
	Total respondents	Men	Women	Aged 18-24	Aged 25-34	Aged 35-44	Aged 45-59	Aged 60 and more
Humor	43	46	40	49	43	44	37	40
Health	41	24	54	35	38	41	46	49
National news	41	43	40	32	40	40	45	62
Food, recipes	36	16	52	34	35	38	35	46
Family, children, home	33	17	46	28	39	32	31	28
Travelling	32	27	36	39	36	29	22	41
Sport	31	45	19	44	33	31	24	12
Science and technologies	28	43	15	36	31	27	21	15
Education, self-development	26	20	31	35	26	27	21	21
Cars, bikes	23	45	6	26	30	22	18	14
Politics (anything related to government policies, president, parties, opposition)	23	27	21	14	22	24	28	41
Animals	23	17	29	26	23	22	21	28
Art and culture	21	15	26	21	18	21	18	44
Shopping	21	14	26	25	24	19	13	27
Fashion and beauty	21	7	33	32	25	22	11	10
Economy, finance business	20	23	18	17	22	20	17	35
Psychology, motivation	17	11	23	25	18	19	12	6
Local communities (my city, district, et cet.)	15	13	18	13	15	18	14	19
Professional community	14	14	14	14	15	17	8	17
Education community (university, school, et cet.)	14	10	17	21	15	12	7	15
Other	2	2	2	1	0	2	3	5
None of these groups	2	2	2	0	1	2	4	4
Don't know	1	1	0	0	0	0	2	0

Annex 3: Social Media Use in the People's Republic of China

Gender	Platform	Male	Female				
	Qzone	60.0%	40.0%				
	Weibo	55.7%	44.3%				
	Wechat moments	58.3%	41.7%				
	Internet user	52.4%	47.6%				
	population	51.2%	48.8%				
Age	Platform	19 or below	20~29	30-39	40~49	50 or above	
	Qzone	9.9%	44.8%	26.0%	12.8%	6.4%	
	Weibo	9.3%	50.0%	25.2%	8.3%	7.2%	
	Wechat moments	6.7%	40.7%	30.2%	14.7%	7.8%	
	Internet user	23.4%	30.3%	23.2%	13.7%	9.4%	
Education	Platform	Primary school or below	Junior high school	High school or other same leve school	college	undergraduat e education or above	
	Qzone	7.1%	34.1%	32.1%	10.8%	15.8%	
	Weibo	4.6%	20.8%	34.7%	14.1%	25.8%	
	Wechat moments	7.9%	31.8%	32.8%	11.4%	16.1%	
	Internet user	15.9%	37.3%	26.2%	9.1%	11.5%	
Income	Platform	none	less than 3000 CNY	30001-5000 CNY	5000-8000CNY	more than 8000 CNY	
	Qzone	5.6%	16.9%	29.3%	14.5%	11.6%	
	Weibo	11.7%	28.0%	30.4%	17.0%	12.9%	
	Wechat moments	10.7%	32.4%	29.9%	15.2%	11.9%	
	Internet user	7.0%	53.2%	23.2%	9.7%	6.9%	
Region	Platform	urban	rural				
	Qzone	73.6%	26.4%				
	Weibo	80.4%	19.6%				
	Wechat moments	72.1%	27.9%				

	Internet user	72.6%	27.4%			
Device	Platform	desktop	laptop	smartphone/tablet		
	Qzone	26.2%	15.0%	87.2%		
	Weibo	19.5%	16.4%	89.4%		
	Wechat moments	0.0%	0.0%	100.0%		
	Internet user	60.1%	36.8%	95.1%		

Source: China Internet network information center, by the end of December 2016.

Annex 4: Internet Use Rates by Source, 2017

Country	ITU	WAS	Pew
Afghanistan	11%		
Albania	72%		
Algeria	48%		
American Samoa	0%		
Andorra	99%		
Angola	14%		
Anguilla	0%		
Antigua and Barbuda	76%		
Argentina	76%	78%	78%
Armenia	70%		
Aruba	97%		
Ascension	0%		
Australia	87%	88%	93%
Austria	88%		
Azerbaijan	79%		
Bahamas	85%		
Bahrain	96%		
Bangladesh	18%		
Barbados	82%		
Belarus	74%		
Belgium	88%	89%	
Belize	47%		
Benin	14%		
Bermuda	98%		

Bhutan	48%		
Bolivia (Plurinational State of)	44%		
Bosnia and Herzegovina	69%		
Botswana	41%		
Brazil	67%	66%	70%
British Virgin Islands	0%		
Brunei Darussalam	95%		
Bulgaria	63%		
Burkina Faso	16%		
Burundi	6%		
Cabo Verde	57%		
Cambodia	34%		
Cameroon	23%		
Canada	93%	90%	91%
Cayman Islands	81%		
Central African Rep.	4%		
Chad	6%		
Chile	82%		78%
China	54%	53%	71%
Cocos Keeling Islands	0%		
Colombia	62%		75%
Comoros	8%		
Congo (Rep. of the)	9%		
Cook Islands	0%		
Costa Rica	72%		
Cote d'Ivoire	44%		
Croatia	67%		
Cuba	49%		
Curacao	0%		
Cyprus	81%		
Czech Republic	79%		
Dem. People's Rep. of Korea			
Dem. Rep. of the Congo	9%		
Denmark	97%		
Djibouti	56%		
Dominica	70%		
Dominican Rep.	65%		
Ecuador	57%		
Egypt	45%	50%	

El Salvador	31%		
Equatorial Guinea	26%		
Eritrea	1%		
Estonia	88%		
Eswatini	30%		
Ethiopia	19%		
Falkland (Malvinas) Is.	0%		
Faroe Islands	98%		
Fiji	50%		
Finland	87%		
France	81%	88%	87%
French Guiana	0%		
French Polynesia	73%		
Gabon	50%		
Gambia	20%		
Georgia	60%		
Germany	84%	91%	87%
Ghana	38%	35%	39%
Gibraltar	0%		
Greece	70%		66%
Greenland	69%		
Grenada	59%		
Guadeloupe	0%		
Guam	81%		
Guatemala	41%		
Guernsey	0%		
Guinea media	11%		
Guinea-Bissau	4%		
Guyana	37%		
Haiti	12%		
Honduras	32%		
Hong Kong, China	89%	87%	
Hungary	77%		74%
Iceland	98%		
India	34%	34%	25%
Indonesia	32%	50%	30%
Iran (Islamic Republic of)	60%		
Iraq	49%		
Ireland	85%	82%	

Israel	82%		88%
Italy	61%	73%	71%
Jamaica	49%		
Japan	91%	93%	76%
Jersey	0%		
Jordan	67%		80%
Kazakhstan	76%		
Kenya	18%	86%	39%
Kiribati	15%		
Korea (Rep. of)	95%	93%	96%
Kosovo	0%		
Kuwait	98%		
Kyrgyzstan	38%		
Lao P.D.R.	26%		
Latvia	81%		
Lebanon	78%		83%
Lesotho	30%		
Liberia	8%		
Libya	22%		
Liechtenstein	98%		
Lithuania	78%		
Luxembourg	98%		
Macao, China	83%		
Madagascar	10%		
Malawi	14%		
Malaysia	80%	79%	
Maldives	63%		
Mali	13%		
Malta	80%		
Marshall Islands	39%		
Martinique	0%		
Mauritania	21%		
Mauritius	56%		
Mayotte	0%		
Mexico	64%	65%	67%
Micronesia	35%		
Moldova	76%		
Monaco	97%		
Mongolia	24%		

Montenegro	71%		
Montserrat	0%		
Morocco	62%	63%	
Mozambique	21%		
Myanmar	31%		
Namibia	37%		
Nauru	57%		
Nepal (Republic of)	21%		
Neth. Antilles	0%		
Netherlands	93%	96%	93%
New Caledonia	82%		
New Zealand	91%	89%	
Nicaragua	28%		
Niger	10%		
Nigeria	28%	49%	42%
Niue	0%		
Norfolk Islands	0%		
Northern Marianas	0%		
Norway	97%		
Oman	80%		
Pakistan	16%		
Palau	0%		
Palestine	65%		
Panama	58%		
Papua New Guinea	11%		
Paraguay	61%		
Peru	49%		64%
Philippines	60%	63%	56%
Poland	76%	78%	75%
Portugal	74%	75%	
Puerto Rico	73%		
Qatar	96%		
Reunion	0%		
Romania	64%		
Russian Federation	76%	76%	78%
Rwanda	22%		
Saint Kitts and Nevis	81%		
Saint Lucia	51%		
Saint Vincent and the Grenadines	66%		

Samoa	34%		
San Marino	60%		
Sao Tome and Principe	30%		
Saudi Arabia	82%	91%	
Senegal	30%		46%
Serbia	70%		
Seychelles	59%		
Sierra Leone	13%		
Singapore	84%	84%	
Slovakia	82%		
Slovenia	79%		
Solomon Islands	12%		
Somalia	2%		
South Africa	56%	54%	59%
South Sudan	8%		
Spain	85%	85%	87%
Sri Lanka	34%		
St. Helena	0%		
St. Maarten	0%		
St. Pierre & Miquelon	0%		
Sudan	31%		
Suriname	49%		
Sweden	96%	97%	92%
Switzerland	94%		
Syrian Arab Republic	34%		
Taiwan, Province of China	93%		
Tajikistan	22%		
Tanzania	16%		25%
Thailand	53%	82%	
The Former Yugoslav Rep. of Macedonia	76%		
Timor-Leste	27%		
Togo	12%		
Tokelau	0%		
Tonga	41%		
Trinidad and Tobago	77%		
Tunisia	56%		44%
Turkey	65%	67%	76%
Turkmenistan	21%		
Turks & Caicos Is.	0%		

Tuvalu	49%		
Uganda	24%		
Ukraine	57%		
United Arab Emirates	95%	99%	
United Kingdom	95%	95%	88%
United States	75%	88%	89%
Uruguay	68%		
Uzbekistan	52%		
Vanuatu	26%		
Vatican			
Venezuela	64%		72%
Viet Nam	50%	67%	64%
Virgin Islands (US)	64%		
Wallis and Futuna	0%		
Yemen	27%		
Zambia	28%		
Zimbabwe	27%		

Annex 5: Per Cent of Population using Social Media by Source, 2017

Country	ITU	WAS	Pew
Australia	69%	69%	69%
Austria	51%		
Azerbaijan	15%		
Bahrain	92%		
Belgium	72%	65%	
Bosnia and Herzegovina	50%		
Brazil	52%	62%	53%
Bulgaria	50%		
Colombia	51%		61%
Croatia	47%		
Czech Republic	44%		
Denmark	76%		
Egypt	38%	40%	
Estonia	65%		
Georgia	56%		
Germany	46%	46%	40%
Hungary	65%		56%

Indonesia	26%	49%	26%
Iran (Islamic Republic of)	32%		
Italy	36%	57%	48%
Japan	67%	56%	39%
Kazakhstan	50%		
Korea (Rep. of)	68%	84%	69%
Kuwait	81%		
Latvia	61%		
Lithuania	54%		
Luxembourg	68%		
Malaysia	69%	75%	
Malta	70%		
Mexico	49%	64%	53%
Montenegro	58%		
Morocco	58%	44%	
Norway	81%		
Paraguay	53%		
Poland	48%	45%	46%
Portugal	56%	64%	
Qatar	71%		
Russian Federation	59%	47%	66%
Saudi Arabia	76%	75%	
Serbia	48%		
Singapore	63%	83%	
Slovenia	45%		
Spain	57%	58%	59%
Sweden	71%	73%	67%
Switzerland	51%		
Thailand	50%	74%	
Turkey	54%	63%	63%
Ukraine	28%		
United Arab Emirates	60%	99%	

Annex 6: Internet Use Rate Variances (National Data) 2017

Country	Source	ITU Int % 2017	WAS Int %	Pew Int %	WAS Variance	PEW Variance
China	CNNIC.	54%	53%	71%	-1%	17%
Turkey	Turkish Statistical Institute	65%	67%	76%	2%	11%
Italy	Italian National Institute of Statistics	61%	73%	71%	12%	10%
France	Institut National de la Statistique et des Etudes Economiques	81%	88%	87%	8%	6%
Australia	Australian Bureau of Statistics	87%	88%	93%	1%	6%
Mexico	Instituto Nacional de Estadística y Geografía (INEGI)	64%	65%	67%	1%	3%
Germany	Federal Statistical Office	84%	91%	87%	7%	3%
Brazil	NIC.br	67%	66%	70%	-1%	3%
Spain	Instituto Nacional de Estadística	85%	85%	87%	0%	2%
Russian Federation	Federal State Statistics Service of the Russian Federation	76%	76%	78%	0%	2%
Korea (Rep. of)	Ministry of Science and ICT	95%	93%	96%	-2%	1%
Netherlands	Statistics Netherlands	93%	96%	93%	3%	0%
Poland	Central Statistical Office	76%	78%	75%	2%	-1%
Indonesia	BPS-Statistics Indonesia	32%	50%	30%	18%	-2%
Sweden	Statistics Sweden	96%	97%	92%	1%	-4%
India	Ministry of Communications.	34%	34%	25%	0%	-9%
Japan	Communications and Media Commission	91%	93%	76%	2%	-15%

Annex 7: Internet Use Rate Variances (ITU Estimates) 2017

Country	Source	ITU Int % 2017	WAS Int %	Pew Int %	WAS Variance	PEW Variance

Kenya	ITU estimate.	18%	86%	39%	68%	21%
Viet Nam	ITU estimate.	50%	67%	64%	17%	14%
Nigeria	ITU estimate.	28%	49%	42%	21%	14%
United States	ITU estimate.	75%	88%	89%	13%	14%
South Africa	ITU estimate.	56%	54%	59%	-2%	3%
Argentina	ITU estimate.	76%	78%	78%	2%	2%
Ghana	ITU estimate.	38%	35%	39%	-3%	1%
Canada	ITU estimate.	93%	90%	91%	-3%	-2%
Philippines	ITU estimate.	60%	63%	56%	3%	-4%
United Kingdom	ITU estimate.	95%	95%	88%	0%	-7%