MEKONG WOMEN IN OPEN DATA

IN CAMBODIA, LAO PDR, MYANMAR & VIETNAM

Overall Trends, Case Studies, What Next?

OPEN DEVELOPMENT INITIATIVE
AN EAST-WEST MANAGEMENT INSTITUTE PROJECT

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The Open Development Initiative, conceived by the East-West Management Institute, is a pioneer in open data in the Mekong region. The Open Development Initiative's approach to open data was initiated in 2011 with Open Development Cambodia, and has since expanded into a regional platform that includes a network of national sites (Open Development Cambodia, Open Development Laos, Open Development Myanmar, Open Development Vietnam, Open Development Thailand) and one regional site, Open Development Mekong. The Open Development platform relies on impartial presentation of information, combining open data, data journalism, and research to increase public awareness, enable individual analysis, improve information sharing, and inform rigorous debate on regional development.

A woman working on a laptop
Photo by: Rawpixel

PREFACE

Data are a central tool to measuring progress and impact within the development landscape. The Sustainable Development Goals (SDGs) are contingent upon utilising data to track and monitor progress against key indicators in support of meeting development objectives, specifically “to leave no one behind”. However, often less highlighted in these discussions is recognition that data are not just static metrics, but people themselves. To quote D’Ignazio and Klein (2020) in Data Feminism, data are “people who offer up their experiences to be counted and analyzed, people who perform that counting and analysis, people who visualise the data and promote the inside of any particular project, and people who use the product in the end. There are, always, people who go uncounted- for better or worse.”

This makes data powerful. In turn, it means that whoever collects and consolidates this knowledge about others ultimately remains in control over other people’s lives.

In the Mekong countries of Cambodia, Lao PDR, Myanmar and Vietnam, the general population's conceptual understanding of data science and technology is not very nuanced. Additionally, the means to collect, consolidate, and maintain data collection about these countries have been developed within male dominated, bureaucratic, hierarchical systems. Data collected within these systems are then applied to make decisions, which are often not reflective of the whole of the population. Those who are under-reflected within this system are predominantly women, the rural poor, migrants, Indigenous Peoples, and other marginalized communities.

This report presents the results of original research examining the impact of gender in accessing data and information across four Mekong countries, where cultural practices are strongly patriarchal and gender equality remains work in progress. This research, conducted by partners of the Open Development Initiative, sits at the crossing of these two paths and examines the resulting inequalities.

Equitable access to meaningful data and information is at the core of the Open Development Initiative mandate. Since its

inception in 2011, the Open Development platforms serve the region by increasing the accessibility of data by making it available, and also assisting understanding through the development of data products. Working with a network of on-the-ground local partners, each of the national Open Development teams works to build capacity for data and in digital literacy across the region, being mindful of local circumstances and needs. This report represents an initial spotlight on some of the issues that ground this work, and is intended to serve as evidence for why this work needs to be continued as well as a jumping-off point for further research into the specific contextual requirements of women and other marginalized groups.

While each of the Mekong countries are undeniably unique, this research highlights the significant inequalities in the open data landscape and indeed more broadly in the development sector where data and information continually reflect existing privilege, class and race.

As tempting as it may be to try and boil the issues that Mekong women face down to a singular sector, approach, or intervention, the pervasiveness of the lived impacts of gender inequalities requires cross-cutting changes at a systemic level, from multiple perspectives at once. The ingrained gender and racial biases in the information systems that drive the development landscape across the Mekong are complex. Yet, we need to first recognise the inequalities built into these systems, then strive to change these power imbalances.

Pyrou Chung
Director
Open Development Initiative

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Temples in Krong Siem Reap, Cambodia
Photo by: Van Trang Ho, Pixels

LIST OF ABBREVIATIONS

ASEAN	Association of Southeast Asian Nations
CLMV	Cambodia, Lao PDR, Myanmar and Vietnam
CSOs	Civil Society Organisations
CEDAW	Convention on the Elimination of all Forms of Discrimination Against Women
GDI	Global Development Index
GSO	Vietnam's General Statistics Office
ICT	Information and Communications Technology
INGOs	International non-governmental organisations
IT	Information technology
NGOs	Non-governmental organisations
Lao PDR	Lao People's Democratic Republic
LGBTQI+	Lesbian, Gay, Bisexual, Transgender, Queer, Intersex +
LWU	Lao Women's Union
MoWA	Cambodia's Ministry of Women's Affairs
ODI	Open Development Initiative
OD4D	Open Data for Development (OD4D)
OGP	Open Government Partnership
NACC	Cambodia's National Anti-Cybercrime Committee
RGC	Royal Government of Cambodia
SDGs	Sustainable Development Goals
STEM	Science, technology, engineering, and mathematics
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNESCO	United Nations Educational, Scientific and Cultural Organization
WCCC	Women's and Children's Consultative Committee, Cambodia

INTRODUCTION

Gender inequality underscores the lives of women all over the world. It is rooted in systems of governance and cultural norms that function to perpetuate this inequality. The systemic roots of gender inequality intersect to create an underlying web that impacts the ability of women to access data in Cambodia, Lao People's Democratic Republic (Lao PDR), Myanmar, and Vietnam (together, CLMV). The nature of gender inequality is such that women are often unable to place exactly why they are experiencing injustices in their lives. This report explores the various barriers impacting women, and their access to open data in the region, identified through primary research conducted in 2018 and 2019, and desk reviews.

CLMV is not a monolithic group of countries, and each country has a unique context. Yet, the countries are interconnected sociopolitically, economically, and culturally; as such, it is possible to consider the countries as a group, and identify overarching themes impacting women and their access to open data in this region. This research, conducted by the Open Development Initiative and its partners, discusses the CLMV context, including the policy and legal frameworks, before going on to discuss the findings of the research that include analysis of the systemic barriers underlying these findings. Finally, the report puts forth the lessons learned and discusses next steps.

The Beauty of Bagan, Myanmar
Photo by: Lwin Moe Aung, Unsplash

THE RESEARCH

Two young ladies working on laptop
Photo by: Mimi Thian, Unsplash

Research objectives

Research was conducted in Cambodia, Lao PDR, Myanmar, and Vietnam (CLMV) by partners of the Open Development Initiative to better understand the data and technology environment for women, and their involvement in the open data sector and engagement with technology.

The overall guiding research questions for this work were as follows:

1. How do women engage within the open data movement in the Mekong region?
2. What are some examples of open data and access to information being used by women in the Mekong region to advance their agenda and rights?
3. What initiatives currently exist that support women's engagement with open data in the Mekong region?
4. What are the barriers preventing women in the Mekong region from engaging with the open data movement?

Research methodology

Research teams in all countries used a coordinated, mixed methodology approach comprised of a desk review of existing literature as well as primary data collection through an online survey, focus group discussions, and stakeholder interviews. This work took place beginning at the end of 2018, and all countries completed analysis by the end of 2019. Not all countries received responses to the online survey, although an online survey was deployed in all four countries. Only Lao PDR and Cambodia received responses, and these respondents were limited in reach, as the majority of them were solicited during unrelated but gender-focused events hosted by the researchers.

All countries used the same research methodology and guidelines, which were developed in all the national languages (Khmer, Lao, Burmese, and Vietnamese), but adapted them to their national contexts. Interviews were conducted primarily in national languages, with some conducted in English where it was either

preferable or necessary. English was not the primary language for most of the participants and research teams. Transcriptions of some interviews were completed, and in other cases notes were taken. Translations of interviews into English were made by research team members.

The researchers sought participation from a wide range of people in different sectors, including private sector, academia, government, CSOs and NGOs. While women participants were prioritized, in some cases men also provided input, especially in countries with responses to the online survey.

Research questions were identified at the start of the research, but it became clear that given the low understanding of "open data" in CLMV, the research questions needed to be broadened to include discussions on data and technology use at large. This allowed the research teams to discuss gender issues without being limited by this. One additional issue hindering full comprehension of the topic being studied is that the technical term "open data" does not have an equivalent in any of the national languages.

For this regional analysis, a desk review was conducted, in English only, for relevant literature and policy documents. All country research was given an in-depth review and analyzed for relevant trends.

Limitations

This research is new and unique in the Southeast Asia region. Gender remains a nascent issue in the tech sector, while also lacking mainstream traction in the region. Open data is a concept that remains niche. These broader limitations were apparent in each country research teams' baseline understanding of open data and gender. These variations were reflected in their interpretation of the research as well as their analysis of the findings. We acknowledged early on that country research teams varied in their fluency in research methods, methodology, and management. This hindered the ability to maintain consistency across CLMV resulting in a wide range of quality in the research, findings, and analyses. However it offered opportunities to strengthen research skills across the network and increased awareness of open data within the region.

Low study sample numbers, approximately 250 people, means that it is not possible for this research to confidently represent the current situation for all women in open data across the region. In particular, the online survey deployed attracted very limited responses in all countries: Cambodia's survey, which attracted the most respondents, only received 87 responses, the majority of which were from men. While not the original intention, this result exemplifies the gender gap in online presence. Informants were overwhelmingly urban and well-educated, and no one identified their gender as other than a woman or man, so generalized trends across the countries are based upon known barriers for cisgender, binary women in the region, supported by existing research. Indigenous Peoples and ethnic minorities were poorly represented, with the exception of Myanmar. In addition, the scope of research originally included Thailand, but due to resource and time constraints, as well as the fact that it is disproportionately more developed than the four other countries of the Lower

Mekong region, it was eliminated from the study.

Additionally, the word "gender" could represent a great deal more complexity than it is used in this research. We primarily requested participants based on their identification and presentation as a cisgender woman, and based our analysis of gender on this. We did not explore gender identity across the spectrum, nor its impact on accessing data and technology. A more complex treatment of gender identity is relevant, especially for future research, given that a regular lack and suppression of LGBTQI+ voices remains an issue globally, and digital access can be key for marginalized populations such as these to access community and support.
Because the regional analysis is based on the findings of the country studies, it is subject to the same constraints.

In sum, technical difficulties, methodological limitations, skills and resource gaps with logistical constraints may have had some impact on the quantity and quality of participation, scope of data collection, data validation, and analysis. However, it is our opinion that the level of consistency across the region suggests trends that are insightful and, at minimum, allow for general anecdotal insight into the reality of some women, their access to data, the open data movement, and the technology sector in the CLMV countries.

THE CLMV DEVELOPMENT CONTEXT

River in the middle of forest, Vietnam
Photo by: Saya Kimura, Pexels

Cambodia, Lao PDR, Myanmar and Vietnam make up four of the five Lower Mekong countries, the fifth being Thailand. Together they make up half of the 10 ASEAN member countries. The Lower Mekong countries are grouped together because the Mekong River, the upper reaches of which originates in China where it is called the Lancang River, runs through them all. The downstream Mekong population in CLMV are highly dependent on this waterway for the provision of everything from energy via hydropower, to food via irrigation and fisheries, and transportation via boat.

CLMV countries share geographic similarities but they represent a wide range of levels of development. Cambodia, Lao PDR and Myanmar were only recently upgraded to being Lower Middle-Income countries, and despite significant economic development, they remain primarily rural. Vietnam, in contrast, leads development in these countries as a strong Lower Middle-Income Country since 2011. Differing colonial and political histories mean that each is uniquely situated with regard to their legal and education systems.[1] Recent and ongoing conflict has also shaped the current landscape in each of the countries.

All four countries face challenges due to poverty and inequality, low accountability, transparency, lack of governance, with limited openness and access to information. These interact with economic development to play into the degree of technological penetration in each country, which also varies significantly. Vietnam is highly developed in this regard, while the other three countries lag significantly behind. Despite rapid increases of basic internet and mobile access in Cambodia, Lao PDR and Myanmar, they remain at the lower end

Figure 1: Map of CLMV countries

Source: Created by ODI

of the spectrum of digital adoption and readiness in the East Asia and Pacific Region. However, metrics of digital adoption and readiness are limited in their representation of digital literacy and technological sophistication, which remain especially low for poor, rural women in all four countries, who make up the majority of the population in the region.

One key emerging technological issue is Industry 4.0, also known as smart manufacturing or the Fourth Industrial Revolution. This refers to the shift from traditional manufacturing and production to cyber-physical systems. For CLMV, which are dependent on production, along with their fellow members of ASEAN, this represents a significant hurdle. Despite a strong policy push to keep up with the Fourth Industrial Revolution, CLMV is generally not considered ready. The Networked Readiness Index, a World Economic Forum (WEF) metric which measures a country's readiness to reap the benefits of emerging technologies, ranks Vietnam 79th, with Cambodia, Lao PDR and Myanmar sitting in the bottom third of ranked countries at 109, 104, and 133 of 139 respectively. Similarly, another WEF ranking on the readiness of countries for the future of production considers Cambodia and Vietnam nascent. Lao PDR and Myanmar are not included in this measure.[2]

Connected is the push in CLMV countries to shift to a so-called "knowledge-based economy". While the majority of employment reportedly available to people living in CLMV requires workers with at least secondary school education[3], the need to improve work-ready skills in technology has been recognized.[4] However, women are primarily employed in formal or informal sectors requiring few or no skills in ICT, and so women are expected to be impacted more than men. Further, closing the skills gap for women is understood to be even more difficult, given the impact of cultural stereotypes overlaid on time poverty, mobility constraints, limited family investment, institutionalized discrimination, and limited employment choices.[5]

Even in urban areas of a country like Vietnam, where technology infrastructure is comparatively mature, difficulties remain. Further, technology use has boomed in recent years in Myanmar, Cambodia, and Lao PDR. Infrastructure for internet and mobile use is available, although at present basic in these countries. A rural-urban divide remains, exacerbated by gendered cultural stereotypes. ICT will enable CLMV to keep up with shifts toward a digital and knowledge-based economy[6], but the reality is that there remain fundamental gaps in both access to physical infrastructure, as well the skills of those living in the CLMV countries.[7]

With respect to open data, the CLMV countries can be understood as a group: data openness remains low in the region. The Open Data Barometer, an assessment of a country's readiness of open data initiatives, most recently measured in 2016, puts Vietnam at 17/100, and Myanmar at 1/100. Cambodia and Lao PDR were not included in this metric.[8] Further, equality is constitutionally guaranteed in all the countries, but access to information is not generally enshrined in the law.

Laws across the countries tend to limit freedoms, giving governments a good deal of discretion when it comes to sharing information, making data public, and

otherwise limiting transparency. The World Justice Project's Rule of Law Index, which ranks countries on rule of law on eight factors including open government, ranks Vietnam 11/15, Myanmar 14/15, and Cambodia (which ranks second to last globally) is ranked last place of 15 countries of East Asia and the Pacific (Lao PDR is not included). None of the four countries are members of the Open Government Partnership, a global initiative to promote accountable, responsive, and inclusive governance.[9] Adding to low transparency in governance is limited political will to shift a closed institutional culture, and poor digital infrastructure outside of urban settings. These factors contribute to an open data sector that continues to be niche.

Table 1: Benchmarking digital infrastructure of CLMV countries

INDICATOR	DATA YEAR	CAMBODIA	LAO	MYANMAR	VIETNAM
Networked Readiness Index Measures country's readiness to reap the benefits of emerging technologies, out of 139 nations	2018	109	104	133	79
Open Data Barometer assessmentof a country's readiness of open data initiatives, out of 115 nations	2016	not included	not included	113	79
World Justice Project's Rule of Law Index Measures rule of law on eight factors including open government, out of 128 nations	2020	127	not included	112	85
ICT Development Index Measures ICT access, ICT skills, and ICT adoption, out of 176 nations	2017	128	139	135	108
Global Cybersecurity Index Measures commitments and progress in cybersecurity across five areas (legal, technical, organisational, capacity building and cooperation), out of 193 nations	2018	131	120	128	50
Average Download Speeds (Worldwide broadband speed league - out of 200 nations;Mbps)	2020	151	not included	129	102
Inclusive Internet Index (Measures inclusiveness of the Internet based on infrastructure, affordability, capability and relevance of content to users, out of 100 nations	2020	73	78	67	50
Population with Internet Access (in World Bank's wold development data, % of population)	2017	32.9%	25.5%	23.6%	58.1%
Number of Internet Users (in Global Digital Yearbook, millions of people)	2020	9.7	3.1	22	65
E-Government Index Measures e-government development based on three areas: telecommunications infrastructure, human capital and online services , out of 193 nations	2020	124	167	146	86

Source: Compiled by ODI [10-19]

Stone on stone
Photo by: tVXJN PaZLG, Unsplash

SITUATING THIS WORK IN THE MEKONG REGION

This research is unique at the time of writing, both in terms of topic and scope. As noted elsewhere,[20] gender is a recent topic in the open data sector, and this is no exception in Southeast Asia. We are aware of only one primary study, conducted at the local level by Jakarta-based Open Data Labs, which considered in an intersectional way whether providing better access to government data to women in two villages in Indonesia would help them advocate for more gender-inclusive policies and actions.[21] Another recent study, published in 2019, considered secondary data to understand women's their participation in the digital economy in ASEAN.[22]

While research on gender in open data that specifically focuses on the Mekong region is lacking, research exists on understanding gender in ICT more broadly in the greater Asia region. This work is led by a few policy think tanks and research networks in Asia. One such organization is LIRNEasia , a policy think tank based in Sri Lanka that focuses on infrastructure issues, including ICT, in the Asia Pacific region. Gender, as well as Data, Algorithms and Policy are two themes of their focus. One of the organization's most recent works on ICT in Asia which considered gender is "AfterAccess: ICT Access and Use in Asia and the Global South (Version 1)". This survey highlighted Cambodia and Myanmar and covers a wide range of topics that relate to the use of mobile phones, internet, social media, and other platforms. Another example is GenderIT.org, which is a project that considers internet policy and culture from a feminist and intersectional perspective, and prioritizes voices from countries in Africa, Asia, and Latin America, Arabic-speaking countries and Eastern Europe. Some interesting work includes a consideration of a feminist internet. More recent analytical work on the Asia region focuses more on South Asia, for instance on how the digital divide impacts women in Manipur, India, as well as how technology has helped women build a community in Durgadahalli, India. The Association for Progressive Communications supports the work of GenderIT.org, and has itself produced a paper entitled "Mapping research in gender and digital technology". This literature review gave some research recommendations related to access to ICTs which include, among other things, highlighting the importance of understanding barriers at the local level through conducting primary research. This current research fills in that space.

Existing regional research on open data concentrates on Southeast Asia and the Asia-Pacific rather than the smaller sub-

region of the Mekong.[23] Given the wide range of country contexts (South-east Asia includes the highly developed economy of Singapore, while the Asia-Pacific includes the economic giants of China, India, Australia, New Zealand, South Korea, and Japan) regional research understandably paints the sector with a broad brush.

The regional landscape is more populated with relevant initiatives. Yet many of these have a much broader scope than the Mekong. For instance, Open Data Labs Jakarta led development of a regional strategy for open data in Asia in 2015.[24] The Asian Open Data Partnership, an organization founded by partners in Taiwan with members across Asia including partnerships with the Open Data for Development (OD4D) Asia Hub, regularly organizes conferences and hackathons.[25] Work is being done to promote women's empowerment through ICT- for instance, the ASEAN Intergovernmental Commission on Human Rights recently led a workshop on Promoting Gender Equality and Empowerment of Women through Information and Communications Technology, with a focus toward achieving the SDGs.[26] There is also an Asia-Pacific regional level initiative, led by the UN Economic and Social Commission for Asia and the Pacific (UNESCAP) and the Asian and Pacific Training Centre for Information and Communications Technology for Development, to build and strengthen the capacity of UNESCAP members in ICT.[27] Other initiatives include BarCamps, ICT Camps and hackathons. BarCamp has a comparatively long-standing history in the Mekong Region (for example, BarCamp Bangkok first started in 2007[28] and BarCamp Yangon in 2010, with what was the world's biggest BarCamp at that time[29]). However, regional-level events are more recent. The first Mekong Region BarCamp was held in Vietnam in 2017,[30] and Mekong ICT Camp was held in the same year.[31] BarCamp ASEAN was held in Cambodia in late 2019.[32] A climate-change focused hackathon for UNESCO was held in Vietnam in 2018,[33] and the Future Ready ASEAN Coding Competition, a youth-focused hackathon, was held in Thailand in late 2019.[34]

While the Mekong region has seen a number of these user-generated conferences, hackathons, and similar ICT activities, women organizers and attendees are usually under-represented. For example, photos from a recent BarCamp in Vientiane show a predominantly male audience.[35] BarCamp ASEAN's advisory team was poorly represented by women, although the organizational and volunteer teams had more equal representation of men and women.[36] However, photos from the event also show a predominantly male audience.[37]

The Open Development Initiative (ODI), a network of independent organizations co-managing a centralized open data and knowledge platform, leads open data advocacy in the Mekong region.[38] In addition to national level websites (Open Development Cambodia, Laos, Myanmar, Thailand, and Vietnam), the project produces a regional level website (Open Development Mekong). ODI and its partners, who are involved with this research, represent the only collective of Mekong voices championing open data and open data sharing as a movement to increase transparency and governance within the region.

POLICY AND LEGAL FRAMEWORK

Vender street destiny
Photo by: Adi Perets, Pexels

Gender equality is constitutionally protected in all four of the CLMV countries, but implementation of this right varies. Gender is not mainstreamed in any of the countries' policies and legislation, and only Lao PDR and Vietnam have laws on gender-specific issues. Yet, all but Lao PDR have a gender policy framework.

Access to information is generally afforded even less protection, with constitutional protection only in Vietnam. On the other hand, three of the four countries limit the dissemination of certain types of information by law, and laws restricting the spread of fake news (mis- and disinformation) are often used to limit the spread of certain types of information at the discretion of the government.

As members of ASEAN, CLMV have signed onto a number of relevant policies that feature ICT development and Industry 4.0. For instance, the Blueprint for the ASEAN Economic Community 2025 includes ICT as a major part of their work in connectivity, and ASEAN has developed both an ASEAN ICT Master Plan 2020 as well as a Master Plan on ASEAN Connectivity 2025. In 2018, an assessment of ASEAN Readiness for the Fourth Industrial Revolution was conducted, and a consolidated strategy for the region is set to be developed.[39] All CLMV countries have also launched planning or policy initiatives in this respect.

The future awaits
Photo by: Tony Pham, Unsplash

FINDINGS

Research respondents

The women we spoke with in focus groups and key informant interviews for this research were, as a group, more educated, literate, and knowledgeable about data and technology than most other women in the region. Many were at least bilingual and had accessed higher education, both locally and abroad. Some were western, foreign workers. They were also aware of their comparatively privileged positions. Our research showed that the people we spoke to regularly used data, found it useful, and wanted it to support actions for change. They wanted good quality data, but generally did not know how to assess data to support this. Yet, they also exhibited low data literacy and expressed a limited ability to use, critique and analyse data. They also had a poor understanding of the concept of "open data".

Means of access

The women we spoke to in the region indicated that they most frequently access data using social media, primarily Facebook. YouTube and Twitter are also used, and data and information is often shared using social messaging applications such as WhatsApp. Information is also accessed offline using radio, newspapers, television, and via friends.

In all countries, a lack of relevant data remained an issue: those searching for datasets on certain "highly sensitive" topics, such as gender-based violence and relevant services, were unable to find what they wanted. Further, data and information are primarily only available in English, and data and information are available in some national languages more than others. For example, there is more available in Vietnamese than there is in Laotian or Burmese. This is for a number of reasons. First, the data and empirical research are often being conducted by external, top-down international institutions. Another issue is with regard to non-Anglo fonts, and the non-widespread use of universal fonts, which contributes to the limited amount of content available. In this regard, research respondents in some of the countries (Myanmar, Cambodia) indicated that issues with a non-Anglo font and non-universal use of Unicode made it difficult for users to

access documents in local languages. Finally, data in national languages are often not digitized, and for the data made available in a digital format, these are sometimes in formats not suitable for analysis (eg. PDF). Generally speaking, there is very little available across CLMV in the national languages and fewer still in Indigenous Peoples or ethnic minority languages.

Main concerns about data and information

Respondents unanimously wanted to have free, up-to-date, publicly available data. They were concerned about quality - especially regarding timeliness and disaggregation. They were concerned about the reliability of data sources and producers, and depending on the sector in which they worked they had different preferences for data producers (for example, if they worked in government they preferred government sources, and if they worked for the private sector they preferred private sector sources).

There is also a high degree of knowledge about the existence of cyber-crimes such as fraud, online harassment, and misinformation and disinformation (specifically "fake news"). These are highly campaigned issues in the region, both by government and civil society alike. Gendered predatory behaviour was mentioned frequently in the Myanmar context. However, respondents primarily expressed a fear of being impacted by such crimes, but only discussed in a limited way about how to prevent these crimes. Those in Cambodia expressed a greater degree of concern with the ability to trust information, while those in Vietnam expressed a greater degree of trust with the information that is made available, especially by the government. Those in Myanmar indicated less complex knowledge about tools to prevent and deal with these issues of crime and trust, while the topics did not come up with any frequency in Lao PDR.

Expressions of deeply entrenched gender norms with local manifestations

The way that research respondents spoke about barriers in accessing open data and technology suggested that they were impacted, sometimes unconsciously, by deeply entrenched gender norms. Similar gender norms emerged across the CLMV countries, including a preference for women to prioritize childcare and housework to the exclusion of all else, including education and careers. These beliefs are referred to as stronger in rural areas. Connected to this is a belief that women should not study technology, whether because they are not smart enough to do so (Lao PDR, Cambodia), do not have the skill or time to excel, or that it is unseemly (all countries). In Lao PDR, one respondent even noted that although technology is supposed to be taught in schools, not all students learn it; she then related an anecdote about an all female class that did not learn these skills, and she did not know whether it was because the teacher did not have the skill to do so, or because the teacher felt that the class could not handle the subject. Educational materials are dated, variable and gendered. For example, textbooks show men as doctors, lawyers, engineers and managers, while women are shown as weavers, housekeepers, mothers, and shop attendants [40]. This is a context where the

"Chbab Srey", a code of conduct that describes a highly gendered vision of the ideal traditional woman, was only abolished from the education system in 2007; however, this set of ideals finds new life in a draft law on public order which also legislates the length of women's dress, proposed in 2020.[41] Another aspect of gender norms manifested in the restriction of women's movement, highlighted by respondents in Cambodia and Myanmar. For example, in Cambodia, a number of young women indicated that they or their younger colleagues have a family-enforced curfew, restricting their ability to attend after-work and evening events.

All CLMV countries have a culture of women's deference to men, and this came out the most strongly in the research in Myanmar, with regard to technology use. This is enforced by families in all contexts; women respondents across Cambodia, Lao PDR and Myanmar noted that boys would get priority in using laptops and phones, and that women of all ages had to complete housework before they could start to study or use computers, contrary to boys.

All countries suffer from masculine science, technology, engineering and mathematics (STEM) environments, including Vietnam which has the most women in STEM of the CLMV countries. This imbalance then supports and perpetuates the belittling and bullying of women in STEM. Connected to this is a view that women are not interested in studying STEM, and that even if they are, it will be difficult for them to pursue this interest to completion. Family and friends will try to convince or pressure them to change due to cultural norms and how such a choice might reflect on themselves.

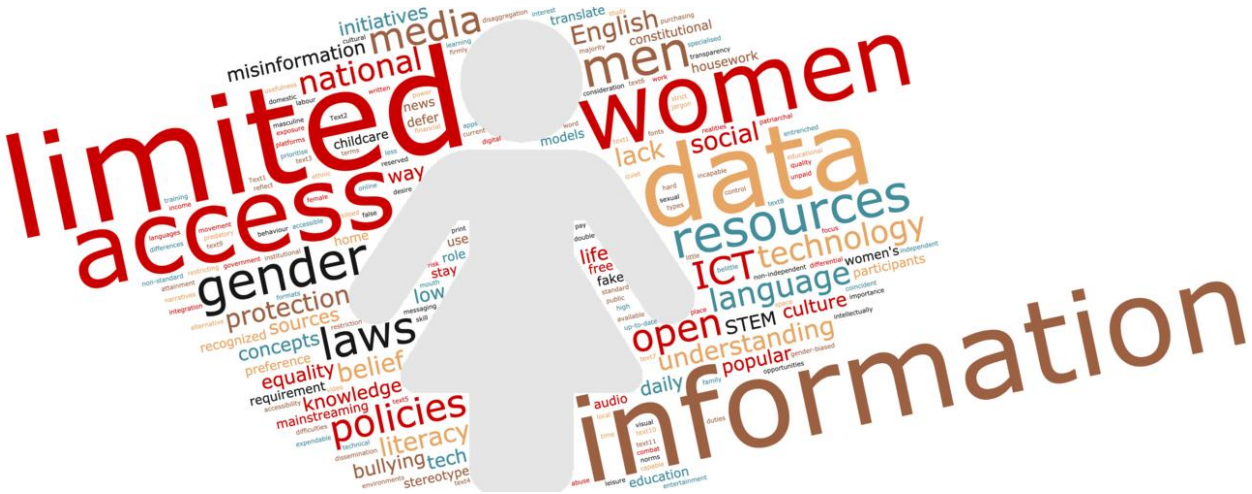

Figure 2: Mekong women in data - Word cloud

Source: Created by ODI - based on frequently arising themes of the study results, identified by the author.

Sun over the fence
Photo by: Jimmy Chan, Pexels

BARRIERS, CASE STUDIES, AND RECOMMENDATIONS

An analysis of the interviews conducted across the region, supported by the primary research and the literature review, revealed a number of cross-cutting barriers. These include poor institutional support for increasing access to information; deeply entrenched gendered cultural norms; and a lack of true inclusivity. The discussion below considers these barriers in the context of how they present themselves in the CLMV countries.

Barrier 1: Poor institutional support for increasing access to information

The CLMV countries suffer from limited access to information. Information that is available is poor in quality and limited in availability. This results in a strong reliance on social media, which is perceived to be reliable because it is an alternative to highly controlled state media, combined with reliance on written resources. Gender inequalities in access to education, especially regarding STEM, results in women having difficulty analysing information and determining whether to trust that information or not. Women have less exposure to specialised concepts and terminology in general, but the term "open data" is arguably novel regardless of gender. Furthermore, there is a lack of voices that support alternative narratives about women and gender in the tech sector.

The fact that there is no institutional culture of information sharing adds to this barrier, and practices of restricting the flow of information through government and institutional censorship normalizes the environment with self-censorship increasing as constraints narrow civic space within the region. Government budgetary priorities do not place a focus on sharing information, so there are insufficient monetary resources to support data sharing or to ensure the quality of data or information that is made available. Thus, there is limited information available digitally, or for free.

Information made available is often poor in quality, hard to access, and hard to use. Without governments prioritizing data sharing, it is primarily external entities (NGOs, civil society for example) that advocate in the data sharing space, leading to a predominance of resources in English, which are of limited usefulness to most women in the CLMV countries. Instead, women must rely on information sources that are readily available to them, including news, national TV, radio, friends/gossip, and especially, social media.

COUNTRY CASE STUDY
VIETNAM

The Vietnamese government controls data and information in the country. The government is the single source of available public data and has overall approval and dissemination authority. There are very few independent sources.

At the same time, the government is working on developing an open data system, but with certain boundaries- it does not follow open data principles, for example, a bureaucratic processes (e.g. an application and payment process) still typify the system. Well developed infrastructure and comparatively high technical capacity support access, although there remains much information that is not yet digitized or shared. The country ranks higher in regard to data openness than other Mekong countries, but openness still varies depending on sector, even for leaders and highly educated women.

> *"We need to use a lot of data from the General Statistics Office (GSO), but whether they provide us the data or not is another story. If the concept of "openness" can be understood as for every person to freely access and use, I think there is nothing really "open", like that. For example, if we want to get the data of previous surveys from GSO, we still have to submit an application for it. We do not need to pay for the data but must do such procedures.*
> *In fact, we have a great need for data, but it is not easily accessible because not many documents are included in the open data system. In my opinion, not many industries have digitized their data. For example, when we need data, we have to look for multiple sources, the analysis and results will be very different and it is difficult to know which sources are reliable. GSO is a general data source,[...] I could not find gender disaggregated data."*

The result is a strong reliance on official sources of information, without a sense of alternative sources. In some cases, official sources were preferred, as a mark of reliability. Yet there was a notable absence of consideration of how these sources might be lacking, or whether producers could have a bias.

Mountainous view in Northen Vietnam
Photo by: Amanda Mini, Unsplash

Recommendations: Develop accessible platforms for gender-based data while pushing for policy and legislative reform

1. Develop accessible platforms for gender-based data

With institutional difficulties impacting access to information in the CLMV countries, the development of accessible platforms for gender-based data is key. Increasing censorship and circulation of disinformation across the region is narrowing the scope of reliable and trustworthy data and information sources, which were cited by research participants as important factors in accessing and using data. The institutional environment is making it challenging to authenticate data sources, let alone analyze and process data.

An accessible platform in this context would provide clear provenance of data to ensure authority and offer data and information that requires little to no analysis to facilitate evidence-based advocacy on gender rights issues. Relevant data and information would include disaggregated data, and made available in reusable and open formats. An example of this is the Open Development Initiative's Open Development platforms. Another is the database of the United Nations Population Fund in Asia and the Pacific on violence against women in the broader Asia Pacific region, kNOwVAW data.

Because gender issues in the CLMV are systemic, it is necessary to pay extra attention to influencing those with the power to make change, while also working to make behavioural changes at all levels in society. In this sense, work should continue on increasing the accessibility and usability of this and other platforms, including by prioritizing visual and audio format options to disseminate data and information, alongside offline approaches for certain types of information. Additional work to support the development of a truly accessible platform involves conducting targeted research with marginalized populations to understand the languages, formats, and content that they most require and desire for their advocacy and work, bolstered by applied training on data literacy skills that can be used to forward their advocacy.

2. Push for policy and legislative reform

While each of the CLMV countries constitutionally protects gender equality, other legislation is missing.

Legislative provisions on data protections, in the countries where they exist (Cambodia, Lao PDR, and Vietnam), are insufficient for considering the broader ramifications of data rights in the current technological context. These provisions consider data protection only in the criminal context, rather than thinking of rights and requirements specific to data itself. Countries like Myanmar, which do not yet legally consider data protection, have the opportunity to move straight into a comprehensive piece of legislation on data rights that meaningfully considers gender. Developing policies on data rights and protection, nonexistent in the CLMV countries, will provide a crucial framework for governments to operate from, and the development of which offers countries an opportunity to be transparent with their approach to technology rights.

A complementary area that requires policy reform is access to information. None of the CLMV countries have an access to information policy, and only Vietnam has an access to information law, which operates within a highly constrained information environment. Access to information is a fundamental right, and the realities of gender inequality mean that even in environments where this is legally protected, women have a harder time accessing it. Gender needs to be considered in legislation on access to information, and the legislative void in Cambodia, Lao PDR and Myanmar and the policy void in CLMV offer a great opportunity to build gender into the policy and legislation from the ground up.

It is worth reiterating that the systemic nature of the issue requires that gender be mainstreamed across all sectoral legislation, rather than treating it as a sectoral, siloed issue. All the CLMV countries except Lao PDR do have policies on gender equality, but Cambodia and Myanmar do not yet have sectoral legislation. A law against violence against women exists in Lao PDR and needs to be lobbied to complete the legislative process in Myanmar; such legislation is helpful, but insufficient to create systemic change if not effectively enforced. In this sense it is of absolute importance that gender issues are institutionalized within legislation that deals with digital rights. There remains work to be done in this area for all the CLMV countries.

Barrier 2: Deeply entrenched and as-yet unaddressed gendered cultural norms

Cultural norms across the CLMV are very gendered, requiring women to stay in the home, promoting the stereotype that women are less intellectually capable than men, and prioritizing the needs of male children over female children. Although the concept of gender inequality has gained in prominence as a result of civil society advocacy, the implementation of these concepts in legislation and policy remains quite shallow. Limited shift in cultural views and practices means that gender inequalities are entrenched and perpetuated. Cultural perceptions of women as less mentally capable than men, especially in the field of ICT, are mirrored by women themselves, in the absence of strong voices pushing change in this view. On the other hand, regular belittling of women who may show an interest in tech or ICT make the environment dangerous and violent for women attempting to forward change. Gendered differences in literacy, educational level, and access to meaningful paid work make it even more difficult for cultural shift.

The restriction of women's movement as a manifestation of gender norms is justified by CLMV society not only by the focus on women's work being at home, but also by the explanation that women need extra protection. This trope is rooted in gendered views of women - that they are childlike and naive and thus more vulnerable to abuse (physical, sexual, and financial were some examples mentioned), and also that they are highly sexualized beings. Part of this narrative stereotypes women who go out late as "bad" and "naughty", a stereotype which is then

used as a circular justification for gender-based violence. The practical result of this is that women interviewed, especially in Cambodia and Myanmar, explicitly mentioned being restricted in being able to attend after-work events as a result of externally imposed pressures (e.g. curfews, social shaming, husband preferences). This limits womens opportunities to be exposed to novel subjects like open data.

Practically, gendered cultural norms mean that women are limited in their ability to access formal labour, which also means that women have less access to expendable income, and thus do not have the ability to purchase technological tools like phones, SIM cards, and internet access. Nor is their access to these tools prioritised. With lower literacy and access to education, women are also less likely to have a job that requires regular usage of data or to have casually encountered open data concepts, nor are they likely to have the skill to critically assess information that is available. On the other hand, women may not be permitted to attend school for tech, as this is considered unseemly. Without these opportunities, women cannot casually obtain information, interact with colleagues, or attend work events that may bring them closer to data or open data concepts. Furthermore, culturally normalized deference to men (whether colleagues, husbands, brothers, or fathers) encompasses technology use, with a corollary of this being that women cannot access the tools necessary to improve their skill. Womens domestic commitments mean that women are less likely to have time to use technology, or attend events or socialise with colleagues to further careers or meet role models.

Ultimately, it is clear that gender stereotypes and norms have perpetuated the disempowerment of women, in some cases even amongst women themselves.

Recommendations: Build data literacy skills, address online gender-based violence, and develop a regional mentorship and role-model program

3. Build data literacy skills

Systemic issues interact to make it such that digital literacy across the region is low, particularly for rural women and women in lower socioeconomic circumstances. Data literacy is a necessary basic skill, and particular effort should be made to create safe spaces for women to learn these skills, for instance by providing women-only training sessions, especially for young women. This allows for open and free discussions about the cultural barriers and stigmas women face, and to ensure that their needs can be appropriately met in a safe and representative way. In addition, using a "Train the Trainer" format could be useful for supporting and developing a network of role models in the region, promoting knowledge sharing across borders, and encouraging mentorship relationships for women in ICT.

Ultimately, a great deal of trust needs to be developed, and this will take time. Women are used to certain barriers to sharing and learning and often take these as unchangeable, as systemic inequalities are pervasive and may be difficult to pinpoint. Furthermore, key open data and gender concepts may have limited relevance to certain communities, especially those whose worldviews are alternative to the mainstream. Thus, it is important to work with women and their communities to

COUNTRY CASE STUDY
MYANMAR AND LAOS

Although equality is legally protected in both Myanmar and Lao PDR, the reality is that systemic gender issues severely impact the ability to achieve equality. In both countries, gender remains an underexplored barrier significantly hampering the access of women to technology and open data.

In Myanmar, this takes the form of uncritical considerations of gendered bullying.

> *"For women, internet use is not safe. Photos are transformed into sexually attractive photos and women are asked for money by being threatened that the photos will be put on the internet."*
>
> *"Young women are more subject to sexual harassment by using internet"*

The solutions to this problem are highly gendered, and verge on blaming women themselves for the issue, despite the fact that perpetrators are men.

> *"In some villages, men restricted women's use of mobile phones as they are worried that women might have another relationship with other men. Some men also give reasons for the safety of women, as women might be abused financially by money lenders."*

In some cases, skill level is given as a reason to restrict Myanmar womens' access to technology, while at the same time this lack of skill level is also given as a reason that women are more subject to bullying.

> *"Usually, men use laptops to have internet access while women use mobile phones. If computer use is available, men and sons are given first priority to have access to the internet as they are more technically competent."*
>
> *"Women are usually not technically competent in Myanmar so they are more subject to bullying and financial abuses than men, who are more technically competent."*

In Lao PDR, uncritical gendered considerations of women's need for knowledge and information contribute to the issue. One research respondent described the mentality that many rural women may have:

> *"If my husband knows and uses it, why do I need to use it?"*

Yet, this is not solely a "rural issue". Secondary education programs in Lao PDR recently began to include teaching some technological skills to students, but while one female college student studying IT who grew up in Vientiane was taught IT skills in secondary school, another younger female IT student who grew up in a southern province did not receive this course at all, for unknown reasons. The student believed her teacher thought her class would not understand, and therefore did not teach ICT skills to her class. Regardless of the reason, one result is the perpetuation of gaps in education.

Transporting on the river, Myanmar
Photo by: Julie Recard, Unsplash

understand the concepts that are most meaningful to them in order to help them "translate" open data principles into recognizable and relevant concepts.

4. Address online gender-based violence

Online gender-based violence is prevalent across Southeast Asia. This violence mimics traditional physical violence but is in some ways amplified due to the feeling of anonymity in a virtual setting. Unaddressed gendered cultural norms permits, justifies, and perpetuates this behaviour. Thus, education on the gendered nature of this issue is necessary, alongside training and support for women on how to protect their personal privacy and increase digital security. Simultaneously, services for women to safely and anonymously report incidents of online gender-based violence, with an eye toward seeking justice for violations, need to be developed and made available. Such a space could be physical - a woman-only meeting area - or it can be a digital network, whether a web application or an SMS network.

The baseline work to support the effectiveness of such training includes initiating both programming and research on areas where gender data has been generated or collected, then using this data as examples in advocacy approaches to shift policy. The reality is that gender-based violence is evidence of a systemic issue which requires value-based change towards women across society.

5. Develop a regional mentorship and role-model program

If women are not represented in ICT and the open data sector, it is challenging for them to imagine themselves in these sectors. Creating mentorship programs where women are supported to network and exchange knowledge allows women to see and relate to women leaders in the sector, which would incentivise engagement within the sector. Promoting digital literacy and gendered data use in women's rights advocacy agendas across the region would create a knowledgeable constituency as well as generate more need for gender-disaggregated data. One-on-one, in-person approaches are key.

Such a program can also act as an incubator for research and skills development, building on the capacity building and women's network described above. This in turn can support community-designed participatory research projects, community-led data collection, and responsible sovereign data governance, all in support of empowered and inclusive community advocacy by women for women. However, while offering digital skills training is essential, standalone skills are ineffective. Training should thus include development of leadership skills and conversations on intersectional gender issues to aid in breaking down gender norms. In time this should lead to greater representation of women in senior and managerial roles within the ICT sector.

Breaking down gender stereotypes is a key underlying aspect of all of the above recommendations. Gender inclusivity is not women's work alone; behaviour change programming for men is crucial to shift culturally entrenched gender norms for systemic change. Even while safe spaces are made for women, men must be included in the broader work; however, women should

be especially supported to take on leadership roles to drive the agenda.

Barrier 3: Lack of true inclusivity

Despite progress toward equality in the laws and policies of the CLMV countries, the reality is that inclusivity remains to be enforced. The most obvious is in the continued gender inequalities in accessibility of education, particularly in science and technology, despite mandates for gender equality in education. Assessments on inequality with regard to education point to the difficulty of achieving gender equality in this area, especially when faced with deeply entrenched gendered cultural practices that impact the education being provided by underqualified teachers.[42] This was evident in this research as well, as some indicated that women may attend school, but be at the behest of teachers who believe that they will not understand technological concepts, and therefore not be taught the subject. At the same time, teachers themselves may not have been trained in technological concepts, and therefore skip this part of the curriculum.

Practically, this results in a variety of scenarios. Women may choose science as a subject of study, but find themselves in discouraging and toxic environments, where there are limited women ICT professionals and role models. Women may want to attend school but are likely to drop out and are more likely to be forced to miss classes or stop attending due to limited family income, to help with caregiving, or due to health concerns unique to women. This also means that women are less likely to have encountered open data concepts and are less likely to have data literacy. While limited training in critical thinking is a systemic issue in the CLMV education systems, the additional biases women face compounds the difficulty in developing the ability to think critically about information.

Marginalization is magnified for women who identify as ethnic minorities, whose realities add an additional layer of difficulty in accessing data, information, and technology. For instance, they are less able to access education and meaningful paid labour, making it harder for them to be able to access technology or the internet. For those who have the tools, they are even more limited in their ability to find data or information that reflects the realities of their communities or needs, whether as regards to language, content, or format. Inequalities in the availability of data and biases in available data then inform non-inclusive policies, limiting the uptake of alternative voices and narratives. Furthermore, there is a gap between what is available and what is needed, which is more basic than what is being offered. Companies, governments, and NGOs alike continue to push online, internet-focused technological solutions. This remains limited in usefulness for people who cannot read, who do not have smartphones, are not connected to the internet, and whose realities are otherwise not reflected in any of the solutions.

This lack of inclusivity extends beyond the CLMV countries and into the tech community as a whole, where gender and race have only begun to be meaningfully discussed in the sector. This, in part, perpetuates the gap between what is available and what is needed, especially with regard to the promotion of social media as a comparatively affordable service

to access the internet without addressing gaps in skill or access to hardware. The result is a more deeply entrenched and extreme digital divide, and an exclusive reliance on social media by poor and marginalized communities who do not have an understanding of its limitations, risks and biases.

Further, the tech community relies on Western-developed tech concepts — such as "open data". This means that key concepts need to be translated before they can be used in the CLMV countries, and because they were developed in a different cultural context, may not be fully translatable, or reflect the needs of local communities. Advocacy primarily from foreign entities further magnifies this gap, as data and information are made available primarily in the languages of foreign donors (English), limiting the ability for local communities to understand the relevance of this data and information. This also means that there are few Asian-language compatible tools, as well as few local advocates for inclusive tech.

"Companies, governments, and NGOs alike continue to push online, internet-focused technological solutions. This remains limited in usefulness for people who cannot read, who do not have smartphones, are not connected to the internet, and whose realities are otherwise not reflected in any of the solutions."

Recommendations:

6. Prioritize marginalized communities

The CLMV countries contain a diversity of Indigenous Peoples and ethnic minorities who are perpetually marginalized due to having no access to the right to self determine, alongside geography and cultural barriers that limit their ability to access relevant data and information. Ensuring the implementation of Indigenous Data Sovereignty under the CARE Principles for Indigenous Data Governance (Collective benefit, Authority to control, Responsibility, Ethics)[43] would set the necessary baseline to dialogue on critical considerations for Indigenous rights and interests in data.

Further, including marginalized communities in all stages of the data lifecycle (design, collection, access, analysis, reporting, storage, protection, use, and reuse) and throughout data ecosystems (digital infrastructures, analytics, and applications) would enhance benefits, especially for Indigenous Peoples and ethnic minorities, who are underrepresented in mainstream collected data which is then used to guide

policy. This would also minimize the potential of harm from misrepresentation and disinformation. In the Asian context this requires a decentralised approach to ensure data protection and security as well as control within tightening constraints of civil liberties.

This, too, will require time to build trust with these communities. The importance of understanding the worldviews of these communities to be able to "translate" relevant data concepts and principles into recognizable and relevant ideas cannot be overemphasized. For these communities, who regularly have lower access to the necessary technological infrastructure and resources, in-person interactions and offline dissemination of information are absolutely crucial.

COUNTRY CASE STUDY
CAMBODIA

Cambodia is a pioneer in the open data community in the CLMV countries, with an open data initiative in-country since 2011. Yet, the country remains primarily rural, and digital infrastructure remains basic despite significant improvements in the last decade. Despite this gap, the government continues to push to meet Industry 4.0. With advocacy in the sector originating primarily from foreign NGOs and donors, available data and information is often not in Khmer, perpetuating privileged access to information by foreigners and foreign-trained nationals.

> *"If you know English then a whole world is open for you, but if you only speak Khmer then you are very limited."*

A lack of government support perpetuates the lack of inclusivity. More than one participant noted a lack of political support in making certain types of data and information accessible. Further, there is a strong belief that certain types of information should not be made available to the public. This, combined with strong gendered norms, makes for a very non-inclusive environment in which women need to fight for their right to access information.

> *"Our sociocultural norms are also one of the indicators which limit female's access to information. Considering the family case, will parents buy a smartphone for the son or the daughter first? The question will be raised against the female, why do you need a smartphone - playing on Facebook, communicating with your love? But this question won't be asked of males."*

Headless statue, Cambodia
Photo by: Colton Jones, Unsplash

Looking ahead
Photo by: Streetwindy, Pexels

LESSONS LEARNED AND NEXT STEPS

Choice of Methodology

The methodology chosen for this project included an online portion (survey), as well as focus groups and interviews. Overall, the project did not attract a significant number of participants, particularly with respect to the survey. Those who did participate in the survey were primarily men, despite the fact that the research was intended to primarily solicit the perceptions of women. Ultimately, responses were only received from Cambodia and Lao PDR.

While an online survey was chosen because of its potential to reach a greater number of participants at a lower cost, in hindsight, the limited number of participants suggests that a different medium of survey should have been chosen. This is for a number of reasons. First, an online survey limited the research to those who already have access to internet, effectively eliminating the views of all others and perpetuating the lack of representation of difference seen in the region. A written survey, even in national language, limits those who do not have comfort with the language. In addition, it is likely that potential participants simply did not know that the research project existed, despite research partners and the Open Development Initiative proactively reaching out to as many people as was feasible within the realities of the research scenario. The limited response provided useful insight for the project. It illuminated the gender gap in access to and use of the internet, as well the continued need to bridge analog and digital approaches. It confirmed the existence of digital access issues, and was a useful reminder that offline approaches remain necessary in order for research to fully encompass the perspectives of marginalized populations.

Moving forward, we suggest using an online survey as one part of a multi-medium survey approach that also includes in-person surveys; and solicitation of participants from non-urban centres and outside of open data events.

Variation in strengths and weaknesses of research teams

This research project was designed with the intention of having partner national teams conduct research on the ground. However,

it became clear through the research process that each partner had a variety of different strengths and capacity gaps with regard to the research topic, process, and implementation. Analytical research in open data requires both knowledge in the topic area and skills that allow for critical thinking around the impacts of open data. In hindsight, the project needed to be designed in a way that better matched the strengths of those who would be involved, while also adding opportunities for capacity building and skills sharing on open data experience between research teams. The teams would also have benefited from support to build key analytical and critical thinking skills to push for stronger research in the region.

The data collected supported a more sophisticated analysis of the issue than national teams had originally proposed, yet the original writing more accurately reflected the capacity level of the teams. Part of this conundrum lies in the education system available in the CLMV countries. Critical thinking skills are not typically part of the curriculum of CLMV schools, and a wide range in the skills of teachers, as well as not-yet-considered gender norms mean that as a practical matter, what is actually taught in schools varies widely. Considerations about gender, both regarding education policy as well as more broadly, remain more at the level of making services available to women and girls, rather than working to change the systemic reasons that lie behind the inequalities. As already identified in this paper, a nuanced understanding of gender issues pertaining to open data and technology is not prevalent in the CLMV, and this should be taken into account in future research.

Moving forward, we see a need to provide partner coordination support; prioritizing research management training and support; hiring external translation services; providing seminars on data analysis and visualisation; and organizing regular workshops for peer review of draft work.

Water lily boats
Photo by: Quang Nguyen Vinh, Pexels

REGIONAL APPROACH TO WOMEN IN OPEN DATA

The analysis of the country research highlights the fact that women encounter barriers to their engagement with open data as a result of deeply ingrained systemic issues: highly traditional cultural norms, alongside briskly and uninclusively developed ICT infrastructure, significantly hinder access to open data. The day-to-day experiences of women are enforced by these systemic issues. Open data principles will not solve the systemic issue of the unaffordability of smartphones, or more insidiously, these tools being kept from women by the men in their lives. At the same time, even for those women who can access the necessary tools, available resources are limited, of poor quality, and do not meet the needs of the women wanting to use them.

These systemic issues are not easily changed. It requires intersectional thinking beyond the business-as-usual scenario, and a true commitment to inclusivity. While governments have agreed, in principle, to globally relevant development goals that include one on gender equality via the 2030 Agenda, the reality is that progress is not advancing nearly as fast as it needs to.[44]
Thus, any work to either further understand the needs of women in regard to data, or to increase access for women will require simultaneously bridging systemic gaps while addressing the need for universal infrastructure with the engagement of a variety of stakeholders. Open data still remains a viable tool for some women to use in working toward gender equality and in advocacy for their rights and the rights of other marginalized women; with some encouragement, data could be made more accessible to more women.

Government support is necessary to promote systemic change. Significant change is already ongoing in the region to support technological transformation. The inclusion of open data principles in policy and the development of regulations that promote greater transparency and data sharing through open standards will provide policy and legislative incentive to shift

behaviours. Implementing this also requires liberalising access to information, and ensuring these rights are accessible by reducing barriers and penalties for online expression while protecting against online gender-based violence and hate speech. Bureaucratic processes that hinder access to information, paywalls and other fee structures restricting access should be eliminated. Government statistical capacities should be enhanced, along with mandating data interoperability and disaggregation, following responsible data principles, and requiring transparent public disclosure as a default.

Work must be done to further understand the physical tools and infrastructure, along with the skills required for marginalized populations, such as women, to fully gain the benefits of technological transformation. Governments need to be open to conducting applied research with women and other marginalized populations at the forefront and in positions of power. CSOs and NGOs can help to support this effort both by conducting their own research in this way, as well as supporting advocacy for change in this direction.

Moving forward, there are a number of things that women and the open data sector would benefit from. The first is a continued effort to push for institutional, systemic change both in regard to information sharing and gender. The second is to support women to access technological tools, skills, and information through capacity and network building, as well as addressing women's issues such as gender-based violence. Finally, meaningful inclusivity in technology is crucial, through providing information in non-mainstream languages; making visual, audio and non-digital formats available, and prioritizing marginalized communities, including through the implementation of data sovereignty approaches. Systemic implementation of data ecosystems that allow women, especially disenfranchised minorities, to have greater agency will lay down the necessary foundations to be equitable in the data landscape in Mekong.

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ANNEX 1 - CAMBODIA WOMEN IN DATA EXECUTIVE REPORT

A lack of true inclusivity impacts an environment with long-standing open data initiatives.

Context

Cambodia is a lower middle-income country whose population is primarily rural. It continues to face serious challenges due to high levels of poverty and inequality, low accountability and transparency of government, limited freedom of expression, and environmental degradation, among others. Cambodia is considered one of the least open countries in the world in terms of data available for citizens,[1] and a gender gap makes this worse. Women have less access to the resources they need for their economic activities than men do, especially information about laws and regulations.[2]

Despite a rapid increase of basic internet and mobile access,[3] [4] the country remains low on being ready for digital adoption compared to the rest of the East Asia and Pacific Region.[5] At the same time, Cambodia has increased restrictions and surveillance on online speech and communications.[6]

Legislation and policies

Gender equality is guaranteed by the Constitution of Cambodia. It recognizes all Khmer citizens as equal before the law, regardless of sex.[7] It also recognizes equal rights for men and women participating in the political, economic, social and cultural life of the nation, amongst other provisions.[8] It also "abolishes" any discrimination against women.[9]

There are no specific laws on data, licensing, and copyright, although the 2015 Telecommunications Law indicates that "all telecommunications operators and persons involved with the telecommunications sector shall provide to the Ministry of Post and Telecommunications the telecommunications information and communication technology service data", with no limits on how long data is stored.[10] Moreover, secret surveillance by the government is permitted.[11]

Growing fear of cyber-attacks and online threats has prompted the government to establish the National Anti-Cybercrime Committee (NACC) through the Cybercrime Law, still being drafted.[12] Together with the e-Commerce Law, it is being promoted as a way to ensure secure online transactions and protect consumer rights.

An inter-ministerial prakas on website and social media control came into force in 2018.[13] This is considered to lay the groundwork for censorship of online content and provides what is considered by Freedom House to be excessive surveillance powers to the government.[14]

Policy-wise, gender is addressed in the Neary Rattanak, a five-year strategic plan for gender equality, first developed in 1999 by the Ministry of Women's Affairs (MoWA). It aims to support women in both formal and informal sectors through capacity and skill development and provision of employment opportunities.

Keeping pace with the so-called Fourth Industrial Revolution, which refers to the shift from traditional manufacturing and production to cyber-physical systems, is an important aspect of the Royal Government of Cambodia's (RGC) agenda. Technology is a key integrated aspect of Cambodia's Industrial Development Policy 2015-2025,[15] and the country aims to be a digital economy by 2023.[16] The National Science and Technology Master Plan (2014-2020), on technological competitiveness,[17] expires this year and will be replaced by the National Policy on Science, Technology and Innovation 2020-2030.[18] The government has also developed the Cambodian ICT Masterplan 2020.[19]

None of the current government master plans are gender-responsive in addressing the development of the digital economy even though relevant implementing ministries are aware of the importance of reducing gender disparities in ICT.[20]

The government has established a Ministry of Women's Affairs (MoWA). In addition, the Women's and Children's Consultative Committee (WCCC) is the institutional mechanism responsible for the promotion of gender equality and women's empowerment at provincial, municipal, district and commune levels.[21]

Findings

Those interviewed expressed an understanding that data and information are useful for everyday life, but their skill level varied depending on education and vocation. Many expressed limited technical ability to process and analyze data. Misunderstandings of the concept of open data were present regardless of skill level, especially as it is a technical concept that does not translate well into Khmer. The issue of language was especially relevant, as most data and information resources are available only in English.

Interviewees accessed data and information via a variety of media and information sources including newspapers, TV, radio, and friends, but the most popular digital source was Facebook. People also used other social media including Twitter and YouTube.

Research participants expressed a desire for trustworthy, reliable data, but showed limited skill in making this assessment. There is a recognition of the need to critically consider data. This skills gap led to uncritical usage of inherently unreliable sources, such as Facebook, which is considered to be reliable for sharing and getting information and news as it is perceived to be more timely than other sources. In addition, different sectors showed different biases toward sources- for example, government workers preferred government data over citizen or CSO data, while private sector workers specifically tried to avoid government data. The open data organization, Open Development Cambodia, has been active in Cambodia since 2011, and there is knowledge of the existence of this platform. However, re-

spondents did not express a broader knowledge of the movement or other platforms. Respondents' answers suggested a strong underlying fear of surveillance. Combined with vague understandings of issues which the government has drawn awareness to such as identity theft, human trafficking, and hacking, respondents expressed concerns about accessing and sharing information online.

Interviewees expressed themselves in ways that suggest deeply entrenched gender norms that impact women's lives in ways that have not yet been critically considered. At the same time, they also expressed themselves in ways that actively undermined other women.

Barriers

Low skill level acts as a barrier to accessing open data at all. Low data literacy, limited skill in data analysis, and low technical expertise prevented people from adequately assessing and fully using data they found. This is made worse by living in rural areas, a factor not fully understood or considered by interviewees. Other factors preventing access to data include language literacy (both Khmer and English), low educational attainment, having limited time, and having limited purchasing power. The impact of gender is to augment these other barriers.

Recommendations

Government

Target youth – middle school, high school and university students – to ensure that the upcoming workforce is digitally literate and knowledgeable about data;

Private Sector

Develop training videos that can be made freely accessible to all.

Civil Society

Prioritize trainings in digital literacy, including on privacy and confidentiality of information, especially in the provinces;

An institutional culture of confidentiality and lack of transparency **limits the channels of access to data.** Data is not available from official or trusted sources in a timely manner, and may need to be directly requested, introducing time delays, the potential for human error, and the need for a strong personal social network. Data that is available may be limited in reliability and completeness. Not all data is disaggregated. Furthermore, data and information is frequently only available in English, limiting those able to understand it.

Recommendations

Government

Promote translation of resources (including videos, datasets, and training materials) into Khmer an ethnic minority languages;

Encourage clarity and transparency in data through the use of metadata, and include tools to assist with risk analysis and data analysis;

Prioritize disaggregation of datasets according to gender, sexual orientation, age, disability and other categories;

Prioritize addressing ICT limitations, including options to digitally connect rural areas independently;

Civil Society

Organize public engagements that aim to promote use of government data for decision-making, especially in rural areas.

Pervasive stereotypes about women impact their engagement with open data. These include the stereotype that women should not study ICT or use technology, and that women should prioritize caring for the home, family, and children. The result is that women are prevented from using technology, even while men are permitted without question. This difference between what is considered appropriate for men compared to women limits women's ability to engage in basic education, let alone professional development and skills training. Because ICT is considered an unseemly line of work for women, there are few women role models in the sector. In addition, a hypersexualized view of women, combined with an infantiliation of women, leads to men considering it necessary to protect women by limiting their ability to access technology, impacting women's ability to develop skills.

Recommendations

Government

Provide support for women interested in studying in the ICT sector via a mentorship and working group program, development of a peer and professional network contact list, and provision of scholarships;

Encourage shifts in thinking around gender norms, for example by including men in discussions even while ensuring safe women's discussion spaces;

Government should work with multiple stakeholders, including civil society to enforce policies and strategies that are gender responsive and promote women in society;

Support women in developing economic power to lessen her dependence on a male breadwinner;

Encourage men to provide support to women by showing that support for women will be supportive of the family;

Private Sector

Increase visibility of women role models in the technology sector by pushing for equal representation within senior management, teams, and as representative leaders at events (e.g. on panels);

Encourage story sharing from successful women professionals in the technology sector;

Civil Society

Teach women to use smart phones, especially those in rural areas;

Ensure educational programs, trainings, and capacity building are presented in the provinces so that women are not limited by travel time;

Ensure that training includes childcare and playgrounds, and ensure that timing of training and events are scheduled at a time that does not prevent women with curfews from attending.

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ANNEX 2 - LAO PDR WOMEN IN DATA EXECUTIVE REPORT

Deeply ingrained gender norms remain an unexplored barrier to women's access to data

Context

Lao People's Democratic Republic (Lao PDR) has a population of 6.5 million, with two thirds of the population living in rural areas. It is the most ethnically diverse country in Southeast Asia, with 50 officially recognized ethnic groups that can be broken down into more than 200 subgroups.[1] It is considered a least developed country, with high poverty, significant income inequality, and persistent gender inequality as measured by the UN's Gender Development Index. Literacy and higher education rates are lower for women than men, and even more so in rural areas for ethnic minorities. Women are less likely to be employed in formal labour, and less so in rural areas for ethnic minorities. Women are underrepresented in professions, management, and government. The ICT sector is particularly male-dominated.

Cultural values consider domestic work the exclusive domain of women, and undervalue women's participation in education. This is even more so in rural areas. Women are considered incapable of studying STEM, and technology use for women is considered unnecessary.

Internet and social media use is rising, predominantly on Facebook. Mobile connectivity remains a challenge, and people are less likely to have access to technology in rural areas, especially women and ethnic minorities. A gender gap remains in all locations in terms of access, use and skill. Data is not open, with gender data openness ranked at zero.[2]

Relevant policies and legislation

While the Lao PDR Constitution protects equal rights to all, the reality is that this is implemented narrowly. Policies consider gender sectorally, without considering how it intersects with other aspects of life, including access to technology.[3] There is a National Action Plan on Prevention and Combatting of Violence Against Women (2021-2025),[4] as well as two women-specific laws and a recently adopted gender equality law.[5] While these laws address gender equality, legislation protecting other rights that are necessary to support equality are limited, such as education, or non-existent, such as access to information. The Law on the Media (No. 01/NA, 2008)[6] and a Decree on Internet Information Management (No.327/GOV, 2014)[7] give people the right to media, but indicates that media is party-focused, with the party having discretion to determine what media and information is disseminated. Some newer laws address ICT

(The Law on Information and Communications Technology (No. 02/NA, 2016))[8] and data protection (Law on Electronic Data Protection (25/NA, 2017))[9].

One of the central organizations representing women in Lao PDR is the party-organised Lao Women's Union (LWU). Women Techmakers Vientiane supports women in tech, while BarCamp is a venue for civic tech engagement that is held annually. Aside from Open Development Laos, at the time of writing there are no other initiatives specific to open data.

Findings

Although all women interviewed felt that data and information was important for everyday life, and that technology could make life easier, skill varied with education, income, geography, and vocation. "Open data" was poorly understood, especially as it is a concept that does not translate well into Laotian. Interviewees noted that information is commonly only available in English, and that state control limited their access to information.

Interviewees accessed a variety of media and information sources including newspapers, TV, radio, and friends, but the most popular digital source was Facebook. It is used as a social and entertainment platform, although it is considered to be reliable for sharing information and news as it is perceived to be an alternative to state-controlled media. As the government has campaigned against "fake news" and misinformation, people were aware of these risks on social media.

Interviewees expressed themselves in ways that suggest deeply rooted gender norms that have not yet been critically considered. Additionally, thinking around gender is very siloed and often considered a problem for others. Some expressed that not all data and information were relevant for women, and that it depended on their profession. Some noted that women primarily accessed media for entertainment purposes, suggesting that this was because women did not see the relevance of news or information. One woman agreed with the common rural perception that if a husband could access technology, a wife didn't need to. Some interviewees had also experienced gendered bullying related to a desire to learn and use technology.

Barriers

A key underlying barrier for women is the **deep entrenchment of gender norms in society.** This results in women needing to do more unpaid work than men and therefore having less leisure time to use technology, combined with being less likely to have the purchasing power and skill to access and use technology and data. Women are also less likely to be literate and educated and are discouraged from pursuing STEM because women are considered less capable of doing so. A related issue is that women are not openly challenging any of these gender norms. In this context, this silence amounts to acceptance of these norms.

Recommendations
Government

Create programs that promote women in leadership in information, research and technology to mentor and be a role model for other women. Such a program should also include exchange opportunities for women involved in technology and data to learn from each other.

Private Sector

Raise awareness among people working in and interested in information technology (IT) about open data and its relevance to their work, including through developing a case study that effectively demonstrates the value of data;

Civil Society

Build women's technical capacity in internet and computer/mobile phone use through trainings and workshops. These efforts should focus on women government employees, students, and general citizens;

Another key barrier is a **closed institutional culture**, which leads to lower open data availability and institutional transparency.

Recommendations

Government

Strengthen government-led statistical collection and publishing efforts that are upheld by principles of open data, particularly principles of responsible public disclosure of information and accessibility for all;

Enshrine access to information as a right of Lao citizens, either through amendments to the Constitution or through specific laws and policies;

Reduce bureaucratic and financial barriers to accessing data and information by the general public from government ministries;

Strengthen existing e-government services to ensure that online database systems are open, standardized and interoperable;

Private Sector

Encourage existing private databases (run by the private sector, civil society, development partners, etc.) to be transparent and embrace open data principles, such as by removing requirements to create an account for access and making all data accessible, available in open access formats and downloadable.

Civil Society

Make efforts to link the emerging technology and web development scene in Lao PDR with the open data movement;

Encourage publication of key information in languages other than Laotian and in non-written formats (such as video or audio).

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ANNEX 3 - MYANMAR WOMEN IN DATA EXECUTIVE REPORT

Systemic issues perpetuate persistent inequalities in accessing open data and technology

Context

Myanmar is a lower-middle income country, with almost three quarters of the population living in rural areas. The population is made up of more women than men.

Gender equality is considered middling, ranking higher than Cambodia and Lao PDR but lower than Thailand and Vietnam, as measured by the Global Development Index (GDI). The reality is that significant inequalities remain, ranging from lower literacy rates for women, to fewer women reporting themselves as "employed" even as they represent higher numbers of informal workers. Gender imbalances remain systemic in Myanmar due to gender-based power differentials, gendered roles and expectations, and a lack of institutional incentives.[1] Gender inequality continues to impact high-level decision-making, with fewer than 10% of seats in parliament held by women, and only 5% of ministerial level positions held by women.[2]

Freedom of information, openness, and transparency are generally ranked quite poorly.[3] Affordability of the internet has improved, and SIM and internet penetration has increased significantly. However, access to this is gendered. Women are 28% less likely than men to own mobile phones, which are the primary means of accessing the internet in the country.[4] Of about 21 million Facebook users in the country, 62% are male and, at almost half of the number of male users, 38% are female.[5]

Open data, particularly with regard to open government, was gaining traction in 2012. However, no progress has been made since the 2016 assessment of Myanmar's membership application to the Open Government Partnership (OGP) which determined that the country does not meet the eligibility criteria for any sections of OGP membership.[6] At present, Myanmar's open data ecosystem consists of actors from government, civil society, national/international development organizations and the private sector.

Relevant policies and legislation

The Myanmar Constitution protects Myanmar citizens from discrimination based on a number of characteristics, including sex.[7] However, citizenship rights are multi-leveled and eligibility is based on race.[8] Women are subject to these constraints, as well as practical and customary constraints. Aside from constitutional protection, legal protections

for women's rights are limited, although an anti-domestic violence law has been drafted and is currently awaiting Hluttaw (Parlimentary) debate.[9]

Freedom of expression has constitutional protection but is limited to the extent that it does not impact national solidarity, national security, or public order.[10] Citizen communication is also protected. A draft law on the Right to Information was released in December 2017 but has not progressed.

There are no specific laws on data rights or protections, although there are some basic criminal provisions preventing demand of data without a warrant,[11] and interception of online communications without permission.[12] Despite an indication that the government would consult on a new cybersecurity policy and legislative framework, there has been little progress in this regard.[13]

Policies are limited with regard to technology, although the 2013 National Strategic Plan for the Advancement of Women 2013-2022[14] does mention gender as it relates to technology in a general way. Gender is not well mainstreamed across Myanmar's policies.

Myanmar is a signatory to a number of international and regional declarations, including Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW).

Findings

Women who participated in this research indicated that they believed that data and information was important and relevant to everyday life but did not think that this was a common perception amongst all Burmese. This indicated the perceived divide between urban, educated people and rural, less-educated people.

Though interviewees accessed information using a variety of tools, they indicated that women primarily use smartphones for social media, since mobile internet packages that offer access only to social media are cheaper. Women's access to money is limited as men control finances, and since women more commonly work in the informal sector and do unpaid work, they have less money to spend.

Interviewees who regularly access data and information found that it was difficult, as they did not know where to go, had difficulty collecting all the data they needed, or knew it was either unavailable or untrustworthy. There was a heightened awareness of hate speech, internet safety, and disinformation, which are issues that are heavily campaigned in-country by civil society.

Interviewees indicated an understanding of limitations due to gendered cultural norms, but not how these layered with other inequalities to produce greater inequalities for certain women in accessing data and technology. Interviewees expressed a knowledge of existing inequalities, but did not consider that there were any active actions taking access away from women. This indicates an underlying framework of institutional, systemic, and cultural gendered views that impact all aspects of society, including access to technology. This resulted in circular logic being used to justify inequalities in accessing technology. For instance, women's naivety and lack of technological skill was perceived as the reason why gendered cyber-bullying and sexual

harassment happened to women, and thus a reason that men cited to limit women's access to technology. Yet, by limiting this access, women are unable to gain the necessary skills. Nor was there any consideration of what changes men should make, as the bullies and harassers in this scenario.

The findings also suggest a gap between what is needed to help marginalized women in bridging the digital divide, and what is available. Women have limited skills and access to tools; they need information on basic services, not just data; they need practical steps they can take to use information (such as on reporting domestic violence) in everyday life; and these need to be provided in languages (ethnic minority languages) and formats (visual) that are accessible. The responses of interviewees suggest that gender norms play a major part in perpetuating this gap: technology is used by husbands and men to control women.

Barriers

Low skill level in language and digital literacy acts as a major barrier for women in accessing open data. Only a narrow subset of women- urban, educated- have the necessary skills to use technology. In some cases, this barrier interacts with systemic issues, particularly gendered social norms, creating a cycle of disempowerment. Lack of skill level is used as a reason, by men, to prevent women from accessing technology, and women are then prevented from accessing the necessary skills to use technology, justified as protection of the "weaker" women.

Recommendations

Government

Government should incentivise women to engage in STEM and initiate skills enhancement programs for women who are interested in data sciences

Investment into women's participation in the open data movement in Myanmar should be encouraged, for instance through building technical literacy and targeting women's issues contextually

Civil society

CSOs and NGOs should set up data literacy schools and programs to educate women on data-relevant skills, including safety and security online

Poor accessibility of data and information- ranging from a lack of physical digital infrastructure and hardware; to issues with affordability; to a lack of data at all; to few, unreliable, and poor quality channels of access- is another major barrier. While this barrier impacts all people in Myanmar, it has an additive effect with gender norms. For example, men's control over money, and the norm of giving men priority of use of technology before women, means that women regularly have less access.

Recommendations

Government

Make quality data available, by disaggregating data and publishing comprehensively in a timely and open way;

Set up public funds to make the internet more easily accessible for women;

Enforce and provide incentives for use of Unicode to avoid font issues;

Mandate the collection of disaggregated data, including on age and gender;

Create an effective data management system and have channels for people to access and use the data.

Private sector

Contribute to the open data ecosystem by sharing datasets openly and on a streamlined, easy-to-access platform;

Encourage government to open the data environment by requesting openly accessible data with internationally recognized standards;

Support women's engagement with digital tools beyond communication apps and social media though digital literacy campaigns;

Work with government to offer internet access packages that provide access to a broader range of online platforms at an affordable rate;

Partner with academic institutions and governments to provide ICT training to women and girls and their families.

Civil society

CSOs and NGOs should push for quality data to be made available in many languages, including ethnic languages;

All civil society stakeholders should advocate for quality data, disaggregated by gender, to be made openly available;

All civil society stakeholders should help the government and private sector to standardize data in such a way that data from different sources can be merged and used for further analysis;

Build a constituency of women who are driving data generation that meets their contextual needs.

Systemic constraints, such as closed institutional data culture and gendered cultural norms, are an additional and significant barrier, interacting with the other barriers identified. This results in an environment that perpetuates inequalities in women's overall freedoms to access open data and information.

Recommendations

Government

Initiate efforts to become a member of the Open Government Partnership;

Adopt gender-responsive open data policy;

Review draft legislation and bills related to the right to information, with the intention to progress it through the parliamentary process;

Review and pass gender-relevant legislation, such as the law against gender-based violence;

Provide education for women on parliamentary functions

Civil society

Improve awareness on the relevance of data to daily life, as well as open data;

Mobilize open data initiatives among women communities, such as through citizen science projects;

Advocate for Open Government Partnership and Open Data policies to government officials and MPs;

Help Myanmar women use new technologies to promote peace and ensure the sustainability of open data portals by providing sustainable funding and capacity building;

Facilitate collaboration between government, women's organizations and the private sector for open data initiatives, such as by developing an online platform for communication.

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ANNEX 4 - VIETNAM WOMEN IN DATA EXECUTIVE REPORT

An information environment highly controlled by the government impacts access

Context

Vietnam is a lower middle-income country. While Vietnamese womens' overall access to resources such as education and health have improved, institutional and cultural gender inequality remain. The percentage of women in government and political managerial positions are low, and despite high participation in the labor force, official statistics indicate that the average woman's income is lower than that of the average man.[1]

The Vietnamese government has control over data and information in the country. The government is the single source of available public data and has overall approval and dissemination authority. It does not follow open data standards. There are very few independent sources.

Based on information collected from Vietnam's official General Statistics Office, Open Data Watch has calculated Vietnam to have a ranking of 106 out of 178 countries in terms of openness. The country ranks higher in this regard than other Mekong countries. However, openness varies depending on category.[2]

A gendered divide remains in Vietnam in regard to access to technology, regarding both mobile phone ownership and internet access.[3] A divide also exists between urban and rural areas, partly due to poor economic and infrastructure conditions. However, in 2017 women made up 41% of graduates in science, technology, engineering, and mathematics (STEM).[4]

Legislation and Policies

Vietnam's constitution[5] protects equality for all ethnicities and between men and women. It also states that all citizens are equal before the law. The right to access information is also enshrined in the constitution.

There are two laws directly addressing gender, the Law on Gender Equality 2006[6] and the Law on Prevention and Control of Domestic Violence 2007.[7]

Vietnam has ratified the International Convention of Elimination of All Forms of Discrimination Against Women.

There are a number of relevant laws in regard to access to information,[8] although there is no legal framework for open data. The most relevant legislation is the Law on Access to Information, which was issued in 2016 and took effect in 2018. It allows the

restriction of access to information in regard to national defense, national security, social order and safety, social ethics, and public health, although this must be prescribed by law. There is also a 2006 Law on Information Technology[9] and a series of implementation decrees relevant to this law. Finally, an Ordinance on National Secrets Protection[10] (and the relevant decrees and circulars for implementation) interacts with the Law on Access to Information to restrict access to certain types of information.

The 2015 Law on Cyberinformation Security[11] gives the State broad powers over the country's digital information networks. Data privacy is addressed in this law, as well as in the Law on Information Technology. The Decree No. 72/2013/NĐ-CP issued in 2013 on management, provision, and use of internet services and online information (amended and supplemented by Decree No. 27/2018/NĐ-CP), deals with information security online, among other things.

Vietnam has strategies relevant to gender as well as technology. There is a National strategy on gender equality 2011-2020. Technology is not specifically mentioned here, although education is a big aspect of the strategy. Regarding technology, there is a national strategy on "Transforming Viet Nam into an advanced ICT country"[12], as well as two decisions setting targets for relevant infrastructure and technology development through to 2020[13], primarily on investment. In addition, the Prime Minister issued a directive in 2017 on progress towards the 4th Industrial Revolution[14], also through to 2020. Gender is not an explicit part of any of these policies.

The Vietnam Women's Union is a socio-political organization representing the rights of women in Vietnam.

Findings

Interviewees understood the importance of data and were able to express its relevance to work, advocacy, and accessing rights, as well as everyday life. Data was considered more useful for those who work in research or policy, versus manual labour or the service industry. Interviewees, primarily urban and educated, use data but also access information more generally: online shopping, videos, childcare, healthcare, education, and others. Some interviewees considered that urban location and education was perhaps a bigger factor than gender in accessing data.

Despite a recognition of the importance of data, there is also varying skill in data literacy and analysis. Interviewees had limited awareness of openness and prioritized making information available over increasing data literacy. There was greater understanding among women with more education. Work sectors also made a difference: for example government workers had greater understanding versus other sectors.

Related to this was a desire for reliable information. Women felt they could get this via government verified, licensed sources. For some, the preference for using government data was seen as necessary when advocating for policy reforms, due to a perception of its authoritativeness and a view that government data legitimized their arguments.

Some women expressed themselves in ways that suggested that they had considered

gender issues, including how it might interact with other factors, such as location and economic conditions, to impact access to technology, while others took these issues at face value. Women also placed a high level of trust in the quality of data from the government, with no explicit consideration of whether information received might be constrained in some way. Yet, some women were also able to describe specific ways to improve data and information, including disaggregation, interoperability, and presentations of applied, alongside raw, data.

Barriers

Cultural requirements for women are deeply entrenched in Vietnamese society, broadly centred around prioritizing family. Stereotypes include that women should be more focused on their family duties and that men should dominate the public sphere. There is the gendered presumption that men are more invested in their careers, and thus need to expand their knowledge, and therefore need to use information more.

Recommendations

Government

- Establish, implement, and expand social services such as childcare and kindergartens while also supporting flexible work schedules for working parents;[15]
- Enhance awareness of gender equality, through regular campaigns and gender-sensitive education.[16]

Private sector

- Ensure that hiring policies promote gender equality at all levels.

Civil society

- Work with government to enhance awareness of gender equality.

Institutional aspects, particularly a closed institutional culture, act as a barrier to women's access to data and information. There is extensive government control over information and little independence of information providers. A siloed research and institutional environment results in the need to engage in bureaucratic processes to access even the information that is considered most accessible. More often, there is a need to look at many sources, not all of which are interoperable, with users coming up against the issue of low digitization of information.

Recommendations

Government

- Promote policies on ICT that reflect womens' realities, ensuring that these policies are reflective of the needs of the most disenfranchised communities as a baseline;[17]
- Introduce a gender quota system for personnel at the decision-making level within government institutions;[18]
- Develop regulations to encourage companies to implement gender equal policies.

Private sector

- Include incentives internally for companies to implement gender equal policies.

Civil society

- Work to develop a group of data advocates who are able to advocate on

behalf of the public for more government data to be made available openly.

This exacerbates the issues for women who lack skills and the means of access. Poor, less educated, and rural women face more difficulties in access due to poorer economic conditions and information and communications technology (ICT) infrastructure. Furthermore, for these women, who may have to spend a lot of time on making a living, they may not have the knowledge of, or the time to explore, open data, and may have no means to access information. For these women, having access to information is only the first step; not knowing how to use information effectively acts as an additional barrier.

Recommendations

Government

Continue to promote the construction of information and communication technology infrastructure, especially in rural areas;

Promote digital skills education in schools, targeting gender-segregated lessons which focus upon girls learning with other girls;[19]

Establish support groups for women, people with disabilities, people living in rural areas, and minority ethnic groups to build networks that support their demographic needs.[20]

Private Sector

Develop scholarships, mentorship programs and campaigns to promote studying and working in STEM.[21]

Civil society

Support women to improve their digital competence, including through digital literacy trainings and making technological tools readily available directly to women.

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