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The Asian Productivity Organization (APO) is an intergovernmental organization that promotes productivity as a key enabler for socioeconomic development and organizational and enterprise growth. It promotes productivity improvement tools, techniques, and methodologies; supports the National Productivity Organizations of its members; conducts research on productivity trends; and disseminates productivity information, analyses, and data. The APO was established in 1961 and comprises 21 members.

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Women's Empowerment in the Digital Age

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PREFACE

The P-Insights, short for "Productivity Insights," is an extension of the Productivity Talk (P-Talk) series, which is a flagship program under the APO Secretariat's digital information initiative. Born out of both necessity and creativity under the prolonged COVID-19 pandemic, the interactive, livestreamed P-Talks bring practitioners, experts, policymakers, and ordinary citizens from all walks of life with a passion for productivity to share their experience, views, and practical tips on productivity improvement.

With speakers from every corner of the world, the P-Talks effectively convey productivity information to APO member countries and beyond. However, it was recognized that many of the P-Talk speakers had much more to offer beyond the 60-minute presentations and Q&A sessions that are the hallmarks of the series. To take full advantage of their broad knowledge and expertise, some were invited to elaborate on their P-Talks, resulting in this publication. It is hoped that the P-Insights will give readers a deeper understanding of the practices and applications of productivity as they are evolving during the pandemic and being adapted to meet different needs in the anticipated new normal.

INTRODUCTION

Most countries today acknowledge the critical role of digital technologies and have strategies to leverage the digital economy for national development. A key component of these national strategies is often an assumption that the benefits of the digital economy will accrue to all, or that the digital economy will empower marginalized or disadvantaged groups to participate more fully in the national economy. Among these groups, the quest for women's empowerment has been strongly associated with opportunities in the digital economy. Enthusiasts anticipate that access to technology and economic opportunity in the digital economy will facilitate women's empowerment, not only economically but also socially and politically. Empowerment agendas typically include efforts to expand relevant infrastructure, make access more affordable, and equip women with the necessary skills to partake fully in the benefits of the digital age. This paper discusses the landscape of women's participation in the digital economy and asks whether digital technologies enable or constrain women's equal participation in society. It draws on examples from different world regions and reflects on some key considerations necessary to bridge gender digital inequalities and advance women's empowerment.

The OECD [1] defines economic empowerment as "the capacity of women and men to participate in, contribute to and benefit from growth processes in ways which recognise the value of their contributions, respect their dignity and make it possible to negotiate a fairer distribution of the benefits of growth." This essentially highlights the value of equitable and nonexploitative access to economic opportunity and benefits, and the variety of considerations relevant to the topic. Since economic empowerment has several dimensions, pursuing it for any population will require attention to all these different dimensions. For example, many people (such as most low-wage workers) perform critical roles that contribute to growth in the national or global economy, but they do not benefit equally from those processes. Or consider that women's unpaid domestic and care work is generally not calculated as contributing to the national economy. Yet it is estimated that unpaid domestic and care work could be worth as much as USD11 trillion, 9% of the global GDP, of which women contribute almost 7%, while men contribute only about 2% [2]. In APEC countries, the value of unpaid work ranges from 5% to as much as 41% of GDP.

INTRODUCTION

When trying to address women's economic empowerment as a matter of national policy or organizational practice, it is important to also understand women's empowerment in general, because oftentimes issues related to women's general empowerment significantly advance or impede their economic empowerment. Further, we should clearly define what empowerment means in the specific context in question. A lot of programs, initiatives, and policies use the term "women's empowerment," but it might mean different things to different people. These can lead to different ways of trying to achieve it as well as differences in the effectiveness of those efforts.

Take, for instance, the following three definitions of women's empowerment. The first suggests that empowerment means making it easier for women to have access to the capabilities that enable human development, like education, health, and employment: "improving the ability of women to access the constituents of development—in particular health, education, earning opportunities, rights, and political participation" [3]. A second definition [4] implies that women's empowerment starts with women becoming aware of and taking action to overcome the constraints imposed by power structures that disadvantage them: "a multi-dimensional, gradual process by which women become aware of their subordinate position and the power structures at play in their environment; then go ahead to do something to overcome these constraints." In other words, women's empowerment happens when women empower themselves. The third definition goes even further beyond self-empowerment, placing primary emphasis on the ability to control one's destiny, which requires removing the things that prevent women from making their own choices and decisions: "the process of removing the factors which cause the powerlessness.... The core of the meaning of women empowerment lies in the ability of a woman to control her own destiny" [5].

We can think of all these dimensions of empowerment from an economic perspective, but it is important to keep in mind that women's social empowerment and economic empowerment are very much intertwined. A central question that continues to consume scholars, policymakers, and public and private institutions is whether digital technologies and the opportunities in the digital economy can contribute to improving women's empowerment, including the dimensions identified in the three definitions above: participating in and benefiting from growth processes; access to critical development enablers; access to resources for self-empowerment; and the dismantling of structures that impede women's self-determination.

ARE WOMEN BEING EMPOWERED OR CONSTRAINED BY THE DIGITAL ECONOMY?

Participation in the digital economy can take different forms (Box 1) and has the potential to generate significant empowering outcomes. In some cases, merely having access to or being able to make basic use of technology confers benefits. In others, some level of intermediate or advanced digital skills is needed to generate beneficial outcomes. Digital technologies such as computers, phones, and the internet enable access to resources that facilitate development, including education, health, employment, or finance facilities, information resources, and the ability to overcome mobility constraints. Through educational, informational, and community-building resources, digital technologies can introduce women to ideas, platforms, tools, and services to understand their situation in life and free themselves from norms and values that constrain their freedom. By virtue of facilitating access to resources and ideas, digital technologies can also help to remove some of the factors that cause powerlessness or block women from economic opportunity. To what extent is the digital economy helping to realize this potential?

Empowering Trends

Globally, there are many signs that developments in the digital economy are contributing to women's economic empowerment by enabling them to participate in the digital economy, especially as consumers, producers, employees, and entrepreneurs.

Connectivity

Being reachable and able to reach others is essential for economic participation, especially in the digital age. Mobile technologies, in particular, have enhanced women's connectivity, especially in developing countries, so that they can keep in touch with business clients, suppliers, and employees, for example. In the face of domestic responsibilities, and in some contexts, restricted mobility, the use of ICT

BOX 1

PARTICIPATION IN THE DIGITAL ECONOMY TAKES DIFFERENT FORMS

Consumption: Buying or using technology products, purchasing goods and services online, or using online resources. Probably the most common form of participation.

Production: Anyone designing digital technology hardware or software or in the technology manufacturing industry. This usually requires some degree of advanced technical knowledge.

Employment: Working for digital technology companies in any capacity or working in an organization that makes intensive use of digital technologies in its operations. Depending on the type of position held, technical skills may not be required.

Entrepreneurship: Owning or running a digital technology company or a company that makes intensive use of digital technology in its operations. A business owner may or may not need technical technology skills.

Education: Teaching science, technology, engineering, and mathematics (STEM) and related subjects such as digital entrepreneurship in educational and training institutions. This also typically requires some form of specialized knowledge.

Research: Studying digital technologies and/or the digital economy. Here, technical knowledge may or may not be required depending on the topic being studied.

Investment: Providing funding to digital-focused or digital-intensive enterprises, for example, through loans or venture capital. Access to financial resources is more important than technical skills in this instance.

has enabled women to escape isolation, maintain connection to the world outside the home, and reduce the power of social norms that restrict their movements beyond the home setting. Initiatives to make ICT more accessible and affordable, especially in rural areas (such as GSMA's Connected Women program), are making it possible for more and more women to get connected.

Skill Development

While digital skills are a prerequisite to some types of technology use, access to online training programs and information resources has also enabled women to acquire the necessary digital skills to participate in the digital economy. Recognizing the importance of adequate digital skills, several governments, nonprofit organizations, and global partnerships have created programs to provide at least basic skills to women from different walks of life. For example, the EQUALS Global Partnership's Her Digital Skills program aims to provide free digital skill training and mentorship to 1 million women and girls by 2026. Furthermore, to improve the proportions of women working in the digital economy as producers and entrepreneurs, institutions are actively trying to encourage more women and girls to develop an interest in learning about and pursuing professions in STEM fields. An example is Women in STEM, a US-based organization that works with high schools to increase the proportion of girls studying STEM subjects.

Flexible Work

A particularly important benefit enabled by the digital economy is the opportunity for women to negotiate flexible work arrangements through which they can overcome barriers to their mobility, such as when domestic responsibilities or cultural norms restrict their movements outside the home. For example, several years ago, Bangladesh's famous Grameen Village Phone program became a global symbol of women's empowerment, by turning homebound women into airtime and data service resellers. Assessments of the program indicated that its impacts extended beyond the economic realm, and the ability to generate income and contribute to household finances was shown to have led to increased status, recognition of women's value and improved domestic gender dynamics [6]. Today, platform work and the gig economy are providing employment opportunities to women all around the world, enabling them to earn an income, create new businesses or expand existing ones, reduce dependence on others for income support, and give them a measure of independence and the ability to pursue professional goals. Benefits experienced include income generation, access to new markets and customers, improved marketing and customer service, improved competitiveness, and increased sales.

Access to Financial Services

Mobile money has enabled greater access to financial services and alternative options for business transactions for many women in developing and emerging economies [7]. In rural areas especially, traditional brick-and-mortar banking institutions are often inaccessible to women either physically (because they are located too far away), or because the administrative requirements to open a bank account or qualify for other financial services are restrictive for women. Mobile network providers, with innovative business models and their extensive networks of independent agents, have bypassed geographic constraints and leveraged technology to offer digital financial services more readily.

Constraining Trends

Despite the variety of potential pathways into the digital economy, women tend to have consistently lower levels of participation than men along practically all pathways. There continue to be huge challenges and barriers to women's empowerment, including some that are created by the digital economy itself.

Digital Divides

Gender-based gaps in digital access, skills, and leadership persist globally, and new divides are created with each new technological development. For example, data collated by the International Telecommunication Union show that globally 48% of women use the internet compared to 55% of men. In Asia and the Pacific, 59% of men use the internet, compared to 54% of women. In the education system, women are less likely to study the subjects (such as engineering and mathematics) that are necessary for technical careers in the technology sector. And there are far fewer women than men in technology-sector jobs, especially top management and executive positions. These trends are repeating themselves with new technologies such as AI.

Gender-based Biases and Discrimination

Gender-based discrimination affects women's ability to work in the digital economy. Discrimination may be the result of human biases, such as stereotypes that women are not good leaders. Unwelcoming male-dominated work environments or unequal pay may discourage women from pursuing management positions. Stereotypes and misconceptions about women make it difficult for them to secure business capital. A number of studies have shown that women-owned or womenled companies receive only about 3% of venture capital, for instance. Generally, organizations recognize the value of digitalization for their operations, especially its ability to drive productivity, efficiency, and profitability. Less attention is paid to how productivity might be affected by who participates in business operations and how. However, estimates suggest that including women equally in the digital economy could boost the global economy by billions of dollars. Over the years, evidence has emerged that including women at high levels of business operations, at management and board levels, for example, leads to measurable improvements in company productivity and profitability compared to companies with few or no women in management and executive positions, with the performance difference being as much as 48% [8].

Biased Technology

Biases are also embedded into the creation and functioning of technologies. For example, in 2021, a study found that Facebook algorithms were showing women and men different ads for jobs based on gendered assumptions about professions and industries [9]. Similar observations have been made with processes at Amazon and Google. Only recently have companies started to address this and other sexist representations in their products, such as the fact that most virtual assistants are given female personalities.

Occupational Segregation and Feminized Jobs

Some of the occupational segregation seen in traditional work is also emerging in digital work. Men, for instance, are more likely to do gig work full-time while women usually do gig work on a part-time basis. Women also tend to work in certain sectors, such as food delivery, cleaning, and caring and not in others such as transport and other types of delivery services. For example, an analysis of data on Uber drivers in the USA between 2015 and 2017 found that women made up about 27% of Uber drivers [10]. Customers also make gendered hiring choices, for example, selecting male gig workers for jobs like software development and females for jobs like typing [11]. Additionally, new technologies are speeding up automation of jobs, and the sectors that are most vulnerable to automation (such as the textile, clothing, and footwear sector) happen to be highly feminized sectors [12]. Thus, it is expected that women will suffer heavier job losses than men as companies move toward higher levels of automation. Although there is a lot to celebrate in the opportunities offered by the gig or platform economy, that type of employment remains highly insecure and does not provide economic stability, social protections, or benefits like sick leave or retirement plans. Digital technologies have contributed to decent work for some women but, in aggregate, they have not made a significant enough contribution to counteract the level of insecure and poorly compensated work that women tend to do.

Gender Pay Gaps

The benefits of access to the digital economy are often not equally enjoyed by men and women. For example, a recent study of digital platform workers in Africa showed that even among males and females with similar education and digital skills, male workers earned almost 4 dollars more than female workers [13]. Similar gender pay gaps have been observed among Uber drivers in the USA, where research [10] found a 7% gender pay gap. Some of the reasons for women earning less are that they drive more slowly and carefully, so make fewer

trips, and they do not accept certain routes or driving at certain times of day because of concerns about safety. This demonstrates how social and structural constraints invisibly affect women's ability to gain similar benefits from the same technological opportunities as men.

Social Norms

Social and cultural norms impose expectations on women that can constrain their ability to explore their full economic potential. In some societies, women are not allowed to own technology devices or to open a bank account, meaning they are cut off from opportunities that require connectivity or from direct financial services. Programs designed for women may end up being usurped by men. For example, one assessment of the Grameen Village Phone program found that, despite its initial success in promoting women's digital entrepreneurship, there were indications that the majority of village phone accounts issued to women were being taken over by male family members [14].

In addition, the unequal responsibility for unpaid domestic and care work restricts women's mobility both physically and professionally. When professionally successful, women also bear the double burden of work and domestic responsibilities, which can take a heavy physical and psychological toll. Even in countries with some of the most progressive national gender policies and programs, high levels of gender-based digital and social inequality persist. This is the case in Rwanda, which has stronger gender policies and digital infrastructure than most African countries but also has one of the highest gender digital gaps on the continent [15]. It is also notable that efforts to mitigate the impact of social norms can backfire or lead to unintended consequences that defeat the original aims. For example, family-friendly policies such as maternity leave and part-time employment might enable women to balance their domestic and professional lives but can also result in women having mostly low-level, lowpay employment options available to them. Flexible and remote work options enabled by digitalization can have the perverse effect of making it appear that women can easily combine work and family care without support from their male counterparts.

Violence against Women and Girls

Women's access to digital technology brings with it the risks of online and technology-facilitated violence, which can discourage women from using technology personally or professionally or can make it an unpleasant and disempowering experience for them. Workplace harassment, whether online or offline, also harms women and makes workplaces and certain types of gig work (e.g., Uber driving) unsafe for them. Women gig workers, for example, are generally more likely than men gig workers to experience harassment and other forms of unwanted attention while working, but most platforms do not provide adequate systems to monitor and protect workers from harassment.

Intersectional Inequalities

Notably, the potential of digital technologies is different for women in different countries as well as for different types of women. These differences may be along the lines of geographic location (e.g., rural/urban), race or ethnicity, gender identity, marital status, or age. A survey on internet access in South Africa [16] during the first year of the COVID-19 pandemic showed that Black women living in rural areas were the least likely to use the internet (48%). Urban white men (90%) were the most likely to be using the internet, followed by urban white women (89%) and rural Black men (52%). Urban women (66%) were overall also more likely to use the internet than rural women (48%). Research in Rwanda showed that women who were unemployed, had lower levels of education, or had lower incomes were less likely to own a smartphone [15].

CONCLUSION

In sum, there are both encouraging signs that digital technologies and the digital economy are helping to improve women's empowerment and self-determination, and disappointing evidence that these technologies and systems do not fully remove the structures that reduce women's power. In fact, the digital economy has been shown to also provide tools and environments that disempower women or reinforce entrenched gender norms and practices that disadvantage women. Backlash against women's empowerment can also derail progress if initiatives are not designed to gain genuine buy-in from men or other demographic groups. The lesson here is that economic empowerment and general empowerment have multiple dimensions. Thus, it is possible to make progress in some areas, while neglecting, failing, or creating new problems in other areas. To avoid complacency when some successes are achieved, stakeholders should continually monitor all dimensions of empowerment, pay attention to intersectional inequalities, and look out for unintended or unexpected outcomes. Box 2 lists examples of the range of actions necessary to holistically leverage the digital economy for women's empowerment.

Taking a holistic approach requires understanding the different implications of concepts such as equality, equity, and liberation. These distinctions demonstrate how sometimes doing what seems right might not be effective. Equality assumes that everyone should be treated the same way. However, doing this props up people who do not need support, while those that need help the most remain disadvantaged relative to others. Even if digital economy opportunities were equally available to everyone, by virtue of disadvantages associated with their intersectional identities, some people (such as rural, married women, for instance) would still be left behind. Equity, on the other hand, requires that each person or population is given support proportionate to their need. For example, subsidizing digital access to make it more affordable for very low-income rural dwellers has a better chance of equalizing outcomes adequately, as it accounts for preexisting disadvantage. Liberation agendas seek to remove the structures that are causing inequality in the first place. This requires heavier lifting to dismantle structural constraints to women's empowerment, such as cultural norms that make women responsible for unpaid domestic care work or that prohibit women's access to technology.

BOX 2

SAMPLE OF MEASURES THAT COULD PROMOTE WOMEN'S EQUITABLE PARTICIPATION IN THE DIGITAL ECONOMY [17]

Technical measures: Technology can provide tools to reduce gender discrimination.

- Design jobs creatively to reduce the influence of gender stereotypes.
- Use software such as Gender Decoder for Job Ads to identify gender biases in recruitment processes.
- Adopt mechanisms such as appropriate monitoring and reporting systems to discourage gender-based violence and harassment.

Policy measures: Policy interventions can help to reduce certain types of gender-based discrimination.

- Establish diversity goals and initiatives, bearing in mind that easier programs such as diversity training may be less effective than more demanding efforts such as mentorship programs.
- Collect, monitor, and openly share gender-disaggregated data on recruitment, promotions, salaries, and other company trends.
- Make pay scales and levels more transparent.
- Discourage gender-based violence in the workplace.
- Institute measures to eliminate gender discrimination in organizations.

Social measures: Transforming the social context is critical for sustained impacts.

- Promote changes in organizational culture to be more inclusive and less discriminatory.
- Establish less masculine-oriented definitions of an effective employee, manager, or entrepreneur.
- Foster greater work–life balance for all employees.
- Ascribe value to unpaid domestic and care work, so as not to disregard its contribution to the economy; and creatively rethink the view that maternity leave disrupts career progress.
- Address the sociocultural roots of gender-based violence.

Program and other measures: Programs can be designed to foster greater inclusion of women.

- Include more women in management, leadership, and policymaking positions.
- Scale up and actively track the progress of digital and business training programs targeted at women and girls.
- Consider practices such as gender lens investing to encourage gender sensitivity in organizations.



Globally, data on gender differences within the digital economy continue to be scarce, making it difficult to determine the scale of women's participation, empowerment, or disempowerment and to institute appropriate policy or actions to address gaps [18]. Despite the proliferation of national, regional, and global women's empowerment initiatives, it is still challenging to find concrete examples of effective and sustained projects. Few initiatives have been tried and tested over an extensive period; and those that have often show contradictory and/ or unsustained outcomes. Things are further complicated by the fact that some policies or programs might work well in one location but not in another. There is a critical need for governments, business entities, and other organizations to support research and the collection of data disaggregated by gender and other demographic characteristics to inform women's empowerment programs and track progress toward targets.

As already noted, to increase the chances of success, context considerations should be at the forefront in implementing any measures. Ideally, the choice of measures should be informed by research on the conditions under which outcomes were achieved in specified contexts.

REFERENCES

- [1] OECD. Women's economic empowerment. Issues Paper, 2011. https://www.oecd. org/social/gender-development/47561694.pdf (accessed 3 June 2023).
- [2] APEC. Unpaid care and domestic work: Counting the costs. 2022. https://www.apec.org/publications/2022/03/unpaid-care-and-domestic-workcounting-the-costs (accessed 3 June 2023).
- [3] Duflo E. Women empowerment and economic development. Journal of Economic Literature 2012; 50(4): 1051–1079.
- [4] Patil D.A., Shere A., Pawar C.H., et al. ICT and empowerment of rural and deprived women in Asia. Asia-Pacific Journal of Rural Development 2009; 19(1): 1–22.
- [5] Haque M.M., Islam T.M., Tareque M.I., et al. Women empowerment or autonomy: A comparative view in Bangladesh context. Bangladesh e-Journal of Sociology 2011; 8(2): 17–30.
- [6] Barua D.C., Diacon D. The impact of the Grameen Bank mobile phone programme on the lives and housing of rural women in Bangladesh. 2003. https://world-habitat.org/wp-content/uploads/2016/03/Grameen-Bank-Report.pdf (accessed 3 June 2023).
- [7] Loko B., Yuanchen Y. Fintech, female employment, and gender inequality. IMF.
 2022. https://www.imf.org/en/Publications/WP/Issues/2022/06/03/Fintech Female-Employment-and-Gender-Inequality-518871 (accessed 3 June 2023).
- [8] Hunt V., Prince S., Dixon-Fyle S., et al. Diversity wins: How inclusion matters.
 2020. https://www.mckinsey.com/~/media/McKinsey/Featured%20Insights/
 Diversity%20and%20Inclusion/Diversity%20wins%20How%20inclusion%20
 matters/Diversity-wins-How-inclusion-matters-vF.ashx (accessed 3 June 2023).
- [9] Horowitz J. Facebook algorithm shows gender bias in job ads, study finds. 2021. https://www.wsj.com/articles/facebook-shows-men-and-women-different-job-adsstudy-finds-11617969600 (accessed 3 June 2023).

REFERENCES

- [10] Cook C., Diamond R., Hall J., et al. The gender earnings gap in the gig economy: Evidence from over a million rideshare drivers. NBER Working Paper 2018; 24732. https://www.nber.org/papers/w24732 (accessed 3 June 2023).
- [11] Galperin H. "This gig is not for women": Gender stereotyping in online hiring. Social Science Computer Review 2021; 39(6): 1089–1107.
- [12] Chang J.-H., Rynhart G., Huynh P. ASEAN in transformation: The future of jobs at risk of automation. Working Paper, 2016; 9. Geneva: International Labour Organization. http://www.ilo.org/actemp/publications/WCMS_579554/lang--en/ index.htm (accessed 3 June 2023).
- [13] Onkokame M. Digital labour in Africa: Opportunities and challenges. 2021. Research ICT Africa. https://researchictafrica.net/publication/digital-labour-inafrica-opportunities-and-challenges/ (accessed 3 June 2023).
- [14] Asian Development Bank. Bangladesh: Grameenphone Telecommunications Project and Grameenphone Telecommunications Expansion Project. 2013. https://www.adb.org/sites/default/files/evaluation-document/36153/files/bangrameenphone_6.pdf (accessed 3 June 2023).
- [15] Sey A., Gillwald A., Deen-Swarray M., et al. Gender norms, gendered work and intersectional digital inequalities in Rwanda. 2021. https://firn.genderit.org/ research/gender-norms-gendered-work-and-intersectional-digital-inequalitiesrwanda (accessed 3 June 2023).
- [16] Onkokame, M., Chinembiri T. Intersectional inequality inhibits digital substitution aimed at mitigating COVID-19 effects in South Africa, 2022. https:// researchictafrica.net/publication/intersectional-inequality-inhibits-digital-substitutionaimed-at-mitigating-covid-19-effects-in-south-africa/ (accessed 3 June 2023).
- [17] Sey A. Barriers, not the pipeline, prevent gender equality in tech. Harvard Business School Digital Initiative 2019. https://d3.harvard.edu/barriers-not-thepipeline-prevent-gender-equality-in-tech/ (accessed 3 June 2023).
- [18] Sey A. Availability of gender-disaggregated data on the ASEAN digital economy. ERIA Discussion Paper 2023; 148. https://www.eria.org/publications/availability-ofgender-disaggregated-data-on-the-asean-digital-economy/ (accessed 3 June 2023).

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