

COVID-19 Crisis and Women in Asia

Impacts on and opportunities for women workers in times of digitalisation

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Contents

| | |
|--|-----------|
| Executive summary | I |
| Introduction | 1 |
| The digitalisation and gender inequality nexus | 4 |
| Impact on the informal, formal and platform economies | 8 |
| Women's agency and collective actions | 17 |
| Harnessing digitalisation's benefits and minimising harmful effects | 20 |
| Ways forward and implications for the future | 24 |
| Policy recommendations | 28 |
| References | 30 |

Executive summary

Even before the pandemic, digitalisation was rapidly changing life for all workers, women and men, inside and outside the workplace. Since the onset of the COVID-19 crisis, it has presented opportunities and threats, tending to reproduce inequalities based on gender, class, caste, ethnicity, nationality and other differentiating factors.

The pandemic and its attendant lockdowns have affected sectors in Asia that are tightly integrated in the global economy, such as business process outsourcing and export processing zones, where women workers are predominant. There has been a sharp rise in unemployment and underemployment and an ominous decrease in the region's labour force participation rate. There also has been a large shift from formal to informal work. And informal workers have fared much worse than workers in the formal sector who have been partly shielded by social protection safety nets. With women accounting for the majority of informal workers, they have been rendered worse off than men by the pandemic's impacts. Online work, such as online selling and gig work, has prospered and become the recourse for many laid-off workers.

Because of the pre-existing digital gender gap, the acceleration of digitalisation due to the pandemic has worsened outcomes for women. Phone ownership and internet access are lower for women than for men in Asia, especially in South Asia. Women possess fewer digital skills. In Southeast Asia, women may be at par with men in basic and higher education, but they are still underrepresented in science, technology, engineering and mathematics courses. Restrictions on mobility in the first two years of the pandemic made it difficult for women workers in the informal economy to collect income support because many of them do not have

digital bank accounts and lack access to mobile money transfer services.

At the same time, the increasing prevalence of work-from-home arrangements may have allowed more women to enter the labour market. Likewise, app work in such lines as transcription or tutoring may be favouring women. E-commerce, allows unemployed or underemployed women to acquire gainful employment. On the other hand, however, working from home blurs the boundaries between income generating work and domestic work. In most cases, it aggravates the burden of unpaid care work of women. Confinement in the home, coupled with misogyny in cyberspace, have rendered many women and girls vulnerable to gender-based violence.

Whether the positive or negative effects will continue to predominate will depend on effective regulation and positive action. Positive outcomes for women can be realized through interventions in the use of digital technologies in the labour market. Good practices in this regard include numerous women's organizations and informal workers' associations collectively pooling skills and resources to create virtual markets and help home-based workers and street vendors who have been deprived of traditional livelihoods by the pandemic and the lockdowns shift to online selling.

Although the pandemic has spurred positive impacts for women in the digitalisation rush, the general trend is that the COVID-19 crisis has widened the gender gap at global, regional and national levels. Thus, this report makes recommendations to create an enabling policy environment for all citizens, especially women workers, in the digital world and to fulfil human rights towards realizing digital, gender, social and economic justice.

Introduction

The COVID-19 pandemic has vividly made visible many of the pressing challenges societies face today. Even before the pandemic struck, social exclusion, climate change and gender inequality had been hot-button subjects of public discourse vying for the attention of policy makers. With the pandemic moving into its third year, there is no doubt that many impacts have exacerbated existing inequalities between classes and countries.

The changes brought about by the COVID-19 crisis highlight both opportunities and threats that digital technologies present to working people, especially women. Businesses, big and small, have had to rapidly navigate the transition to digital technologies during the pandemic. Possibilities for offering products and services and creating wealth have opened up with new business models utilizing these technologies. Digital platforms have transformed the way humans are working, interacting and living.

The lockdowns and travel restrictions across borders imposed by governments led to an explosion in the use of digital technologies. The pre-pandemic push towards digitalisation became a rush after its onset. Work from home, use of apps, virtual interactions and cashless transactions became routine experiences for everyone as lockdowns and social distancing were enforced to contain the pandemic's spread.

On one hand, online selling has allowed women in the informal economy to continue earning an income. On the other hand, it has subjected women to an epidemic of online bullying and harassment. How the benefits of digitalisation for women can be maximized and its drawbacks mitigated are questions that must be resolved. For these issues to be appropriately addressed, interventions by society are a necessity, and regulations must be put in place.

Undeniably, digitalisation has rapidly changed the lives of workers, both women and men, inside and outside the workplace. Disruption has become a byword in many contexts. The so-called Fourth Industrial Revolution is both destroying and creating jobs in different sectors of the labour market. Social media is now mediating social interaction. Digital technologies are transforming the forms and methods of education, entertainment and culture.

Technology brings with it both advantages and disadvantages for different groups of people. Like all previous technologies, digitalisation can be a force for good or bad depending on who owns it, wields it or controls it. Unfortunately, the utilization and deployment of digital technologies tend to reproduce the existing inequalities based on gender, class, caste, ethnicity, nationality and other differentiating factors.

Before the pandemic, studies (Picot and Spath, 2020; ILO, 2018) had attributed the most significant challenges confronting women in Asia due to digitalisation. The most pressing of them were gender-blind technology, displacement of workers, informalization in the platform economy, education for reskilling and online harassment and surveillance. The containment responses to the COVID-19 crisis have immensely affected access to as well as use and outcomes of digital technologies for women.

The digital gender gap is widely documented. When compared with men, women have less access to the internet and mobile phones, especially smart phones. Women are discriminated against not just in the use of but also in the creation of digital technologies. There are many significant indicators of gender inequality specific to the digital economy (Nortajuddin, 2020; Sey, 2020).

The pandemic has only worsened the digital gender divide in Asia and intensified the economic vulnerability of women, who have remained severely constrained by social and cultural norms (Rahmadani, Vaz and Affiat, 2021). While the COVID-19 crisis has led to a leap in digitalisation, it also has exacerbated the digital divide that reinforces social and economic disparities (Jiexi, 2021).

For example, the restrictions on mobility after the onset of the pandemic made it difficult for women workers in the informal economy to collect income support because many of them do not have digital bank accounts and lack access to mobile money transfer services (WIEGO, 2020). Thus, the gender gap in mobile internet access has directly led to the financial exclusion of women (Cheney, 2021). Women have had a greater share of the adverse economic impact of the pandemic, yet they have received only a fraction of government aid (Julliard, Chambard and Alvarez, 2021).

Another impact of digitalisation is the loss of jobs for workers in general and women in particular as automation and robotization displace human labour. Automation in manufacturing threatens to lay off garment workers, of which women comprise a majority. Global value chains have found Asia valuable for locating labour-intensive assembly work in garments and electronics. But these value chains are endangered by digitalisation along with reshoring trends and climate change. However, although some jobs will be lost in the course of technology adoption, new ones will be created as well. Thus, granular and gendered analysis of the labour market impacts of digitalisation is necessary.

It is also important to emphasize that it was the severe quarantine measures in the first two years of the pandemic that shuttered a large part of the economy and displaced workers – not digitalisation. Women workers in both the formal and informal economies have borne the brunt of COVID-19's economic repercussions in Asia. Almost 33 per cent of women, for example, lost informal employment as of April 2020 (Khullar, 2021).

As millions of individuals permanently or temporarily lost their jobs in the formal and informal economies after the onset of the pandemic, there was a noticeable shift in work towards the platform economy in India and the Philippines (Manuel, 2021; Sarkar, 2021). The importance of work using digital apps had been increasing before the COVID-19 crisis, but clearly the pandemic hastened the growth of platform work. Food delivery, for example, became front-line work amid the lockdowns and employed an increasing number of workers. However, both before and throughout the pandemic to date, the informalization of platform jobs has made the work low-pay, insecure and unsafe. In the platform economy, men and women are usually freelancers and independent contractors. They are not treated as regular employees, and therefore labour standards, occupational health and safety protocols and social protection are out of reach for them.

Occupational segregation in the labour market as a whole is reflected in the platform economy as well, according to an International Labour Organization (ILO) (2021) report on digital labour apps. Men dominate in app-based taxi and delivery jobs while women are the majority in such platform services as encoding, transcription, writing and editing. Few

women, though, are working in platform-based technology and data analytics.

Thus, there is a clear imperative for encouraging education and training of women for reskilling and upskilling. Women are still stuck in certain courses and occupations that mirror their traditional roles as homemakers and caregivers. Women are predominantly in clerical, teaching and nursing courses. There are few women in technology courses, and even fewer in actual technology jobs. As a result, women are stuck in the lower-wage rungs of the occupational ladder and their incomes are less than men's earnings, despite their higher educational qualifications.

The COVID-19 crisis has patently worsened the education and occupational outcomes for poor women and girls due to the massive shift from face-to-face to online teaching. Online education requires the use of expensive gadgets like computers, laptops, tablets and phones, which are a luxury for poor families. In the context of gender- and age-based discrimination, it will be boys not girls, men not women and older children not younger ones who will be given priority in the use of devices for online education. Even distance learning, which requires the aid of television sets, similarly discriminates against women and younger children. The protracted stay-at-home orders increased the burden on women, girls and younger children due to how domestic work frequently falls on their shoulders. In rural settings, this is aggravated by the absence or lack of basic utilities like electricity and potable water as well as by the necessity to engage in family labour on the farm.

All of these situations can only be mitigated through purposeful interventions by society and governments to engage women and girls in education and training that alter their life outcomes. The Asian Development Bank (2021) acknowledges that training in digital literacy and skills for impoverished and rural communities, especially women and older persons, are urgent positive actions to be provided.

Women and girls suffer from pernicious forms of online harassment and digital surveillance. This had been well documented even before the pandemic (Picot and Spath, 2020). The pandemic has made it even worse in Asia. Gender-based violence during lockdowns has been called a "shadow pandemic" (Fitzgerald, 2021). And the rise in gender-based violence has rolled back

gains in gender equality (Julliand, Chambard and Alvarez, 2021).

It is clear that the pandemic has heightened the challenges confronting women due to digitalisation (Muhamad and Sey, 2021). Factors such as gender as well as location, age, skills, culture and social norms create yawning gaps in how people take advantage of the digital technologies to improve their outcomes in work and life (ADB, 2021).

While there are positive impacts on women of digitalisation during the pandemic (Human Resources Online, 2021), the general trend is that the COVID-19 crisis has widened the gender gap at the global, regional and national levels (Dalal and Mathews, 2021; World Economic Forum, 2021). According to the World Economic Forum, women will have to wait another 135.6 years — up from 99.5 years in 2020 — to achieve overall parity with men (Suleymanova, 2021).

Research objectives, approach and methodology

Given that the main trends in digitalisation's impact on women had already been identified before the pandemic, the research for this paper examined how these patterns have been amplified or modified during the pandemic. The study, to the extent possible with existing limitations, set out to complement the macro picture with experiences, insights and recommendations of women workers and their organizations in the formal sector and the informal economy, highlighting good practices in addressing digitalisation with support from other stakeholders. Although the research targeted the working conditions of women workers, it also looked at the situation in their households and communities.

The research had five objectives:

1. Analyse how the pandemic stepped up the process of digitalisation, especially in key sectors and sectors where women workers predominate, and how this development affected (either positively or negatively) women's paid and unpaid work.
2. Assess the inequalities in access to and use of technology by women workers, and identify the

factors that reinforce these inequalities.

3. Examine how women's agency and the collective actions of women's and workers' organizations have favourably influenced the way digitalisation affects women's participation in the labour market.
4. Describe good practices implemented by trade unions, informal workers' associations, women's rights organizations, employers' organizations, governments and other stakeholders to narrow the gender digital divide and that enable women to harness the benefits of digitalisation and minimize its negative effects.
5. Draw policy recommendations that can realistically respond to the challenges posed by digitalisation to the attainment of women workers' rights (as women and as workers).

To achieve these objectives within the limited time frame of the research project and the difficulties of undertaking field work amid the pandemic, the study mainly involved a thorough review of literature. The researchers also gathered inputs and feedback from women in trade unions, informal workers' networks and women's rights organizations through their documentation and interviews with selected women leaders and representatives who shared their experiences, advocacy campaigns and good practices and proposed policy recommendations.¹ These selected key informant leaders work with subregional networks such as Homenet South and Southeast Asia and with local unions and community-based women's organizations in the Philippines.

The next chapter discusses the central concepts relevant in understanding and framing the impact of digitalisation and the pandemic on women in the world of work.

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The digitalisation and gender inequality nexus

The connection between digitalisation and gender inequality is sharpened by certain key analytical ideas. The most salient of these concepts include the future of workers approach, digital colonialism, surveillance capitalism, technological discrimination, the gendered division of labour and an intersectional perspectives. Deploying these analytical concepts aids in unpacking the digital gender gap and enlarges the context for understanding the impact of the pandemic on women workers in the formal, informal and platform economies.

Future of workers approach

This research applied the future of workers approach (Schulze-Cleven, 2021; Gupta, Lerner and McCartin, 2018), which reframes the discourse away from technology and brings it back to people, particularly workers, and their perspectives on changes in patterns of work. It provides an important perspective to analyse the impact of digitalisation during the pandemic on the labour market prospects of women workers in the formal and informal economies. The approach emphasizes human agency amid digitalisation and emphasizes the crucial social issues of inequality, exclusion, informalization and insecurity that cannot be resolved by technological change alone.

The popular narrative on the “future of work” tends to slide to technological determinism. The pessimistic interpretation predicts the disruption of workplaces and the abolition of work due to accelerated automation and robotization, especially with the advent of artificial intelligence and machine learning. The optimistic view asserts that the most pressing social issues, such as climate change, can be solved by technological fixes. The future of work discourse, however, narrows the scope too much on the role of technological disruption to the neglect of human agency.

The end of work has repeatedly been predicted through the years, yet work remains central to human existence today and in the future. The much-quoted study by Frey and Osborne (2013) on the massive loss of jobs due to automation has been criticized for methodological bias (Arntz, Gregory and Zierahn, 2016). In fact, there

appears to be no net job loss due to automation in places where data on this concern are available. The United States Bureau of Labor Statistics (2018) even found that the number of gig workers is not growing, and many of the rapidly increasing jobs are not threatened by mechanization or robotization.

Gupta, Lerner and McCartin (2018) contended that talk of work disruption as a result of the so-called Fourth Industrial Revolution is really a distraction from the truly urgent issue of the day: “It is the concentration of wealth and power in this new economy, not computerization or artificial intelligence, that represents the gravest threat to our future. It is that concentration that will determine how innovative technologies are deployed and in whose interests they operate. The future of work will be determined by who wields power and for what purposes.” Thus, they stressed the need to interrogate the impact of the intersecting crises confronting the world today on the living and working conditions of people.

For Schulze-Cleven (2021), the future of workers approach “advocates for revaluing workers, exploring possibilities through collective agency and appreciating reproductive work as a crucible of innovation”. Changes brought about by technology on the lives of working people are indeed important but no more than other crucial trends in society. For example, it is not the abolition of work itself but the abolition of regular employment that we see today emerging as a trend in the brave new world of work as a result of the shifts in the labour market due to increasing corporate power and the decline of workers’ power. A perspective focusing on the future of workers necessarily looks at the possibilities of workers exercising collective agency to change the balance of power.

Moreover, Schulze-Cleven (2021) insisted on highlighting the role of paid and unpaid domestic care and community work as essential to any interrogation of the reality of work at present. Transforming the gendered division of labour inside and outside the home is a necessity to enable women and men to share household and care responsibilities and enjoy the benefits of gainful employment in an equitable manner.

Digital colonialism

The nature and changing patterns of work among women and men cannot be divorced from the larger politico-economic context in which they are embedded. Digitalisation is spearheaded by a few global firms — Google, Apple, Facebook, Amazon and Microsoft (also known as GAFAM or sometimes GAFAM to denote the importance of Alibaba and of China by extension). They have zoomed to the apex of extremely rich corporations with a global reach, profiting enormously from huge increases in their clientele as a result of necessary technological adjustments to the COVID-19 pandemic.

The North–South divide has widened even more, with digital corporate power located mainly in the industrialized countries, led by the United States, which has created a new form of domination. China, too, has become a major digital power to contend with, as evidenced by the far-reaching presence of Alibaba. The term “digital colonialism” is underpinned by the competition among transnational tech companies for the e-commerce markets of Global South countries. In this new form of plunder, tech transnational corporations install expensive internet services even as they harvest big data from the population of the Global South for monetization (Colclough, 2021). They are also engaged in exploitation of cheap, mainly female, labour of the South through the offshoring of digital services, such as business process outsourcing (BPO). Huge firms based in the Global North are also continuing old forms of colonialism through the extraction of minerals from Global South countries for the manufacture of digital equipment and supplies. These forms of digital colonialism remain unregulated by global bodies and nation states. And the forces behind them exhibit no transparency or accountability. For Colclough (2021), the positive or negative effect of technology is wholly dependent on the existence of regulation. Without regulation, technology in the hands of profit-maximizing companies leads to degradation of work, privacy issues and corporate abuse.

Surveillance capitalism

Zuboff (2019) called the model of big tech companies “surveillance capitalism” in reference to the monetization of data captured from the experiences of users of digital apps and social media without their

knowledge and consent. Thus, issues of privacy, human rights and corporate malfeasance are intertwined in the dynamics of surveillance capitalism. What is especially malevolent is that big data is not just used to predict human behaviour but to change it towards ends that are defined by the agenda of corporations. Therefore, Zuboff (2019) excoriated Google and Facebook for mining data without users’ consent and commodifying human experience for profit. At first, this was just for commercial purposes. Surveillance capitalists sold data to other companies so that the latter could market their own products or services more effectively based on algorithmic predictions of behaviour. But the next logical progression was even worse. Big data was manipulated for political ends. It is now well known that Facebook data were utilized to tailor political messages and alter voters’ preferences. Thus, Zuboff (2021) explains that surveillance capitalism means an unprecedented concentration of power aside from wealth and knowledge. Similar to Colclough, she recommends regulation of the “surveillance capitalists” and the reassertion of the people’s right to privacy, control and consent. Regulation will mean that people benefit from digital technology without sacrificing their freedoms to the surveillance capitalists.

There is a huge governance deficit with respect to the operations of tech companies because dominant models of development inhibit states from interfering in market exchanges (Gurumurthy and Chami, 2020). In analysing women’s place in the digital world, it is necessary to situate them within their own country contexts because their entitlements primarily hinge on their citizenship. The enjoyment of their digital and other rights is dependent on whether or not their government prescribes and implements regulations that can protect its citizens from big tech exploitation and abuse.

Technological discrimination

Digital technologies, which have spread like a giant web at a rapid rate with the pandemic, also exhibit a marked gender hierarchy. There is male domination in their ownership, control and management. The STEM disciplines, which are the source of digital expertise and innovation, are predominantly male fields of knowledge and practice. Algorithms used in artificial intelligence have been proven to be gender-biased. In terms of

patterns of power, responsibility and work in the digital hierarchy, men occupy the top rungs while women predominate at the bottom as call centre operators and transcribers, filling routine and relatively low-paying jobs. Women suffer from the worst forms of labour exploitation and insecurity with the informalization trend in the platform economy. They are consigned to service and care work, which is feminized, while the better-paying logistics sector is heavily masculinized. Women's enterprises, which have limited capitalization, inventory and capacity for expansion, are constrained in their efforts to engage in e-commerce to recover lost markets and find e-niches for survival.

Internet content as it now stands promotes misogyny and gender-based violence, both of which have become even more pronounced in the COVID-19 pandemic. It is not only access to the internet that is the problem. The sexist culture that it contains has even more insidious effects. In the words of Michelle Bachelet, United Nations High Commissioner on Human Rights (2021): "Specific groups of women, in particular young women, women belonging to ethnic minorities and indigenous women, lesbian, bisexual and transgender women, women with disabilities and women from marginalized groups may be at greater risk and may experience particularly severe forms of online violence, exacerbating their digital exclusion."

Gender equality in the digital economy remains an elusive goal, particularly in a crisis situation as the COVID-19 pandemic. Barriers to attaining this goal have to do with access and skills; social and cultural norms; the gender pay gap and unequal professional development; access to business finance; sexual harassment; and data deficits (Sey, 2020). For many grass-roots women, the problem begins with access, with smart phones and internet service typically beyond their financial reach. There are those who do not have the skills to activate digital cards to receive cash assistance during these pandemic times or in using the internet for getting important health-related information and for marketing goods online to recover lost income (Ratan and others, 2021). Social and cultural norms prevent many women from owning and using digital gadgets or pursuing STEM subjects in education. They remain at the low end of digital professions and are not paid as well as men. Many grass-roots women have not benefited from financial inclusion because they still do not have an e-wallet and remain unbanked

in a situation where face-to-face cash transactions are risky and avoided if possible. Sexual harassment remains endemic in the digital world as well as in other arenas of work, irrespective of time and circumstance. And gender-disaggregated data on women's participation in the digital economy are incomplete, if they are collected at all.

Reinforced gendered division of labour

Work from home and repeated lockdowns have intensified the multiple burdens on women and appear to have further entrenched the gendered division of labour. Work from home, which is predicted to outlast the pandemic, on the surface provides some flexibility on the part of wives and mothers to juggle their time between their paid work and their unpaid care work. The latter now encompasses teaching and taking care of children who are forced to stay home when schools close. It also includes caring for the sick, a heavy responsibility during these pandemic times, while protecting the vulnerable from getting sick. And despite the rosy picture in which it is painted, online work from home often is just an updated version of the traditional, insecure and unprotected forms of home-based, often subcontracted work that grass-roots women continue to undertake because it is compatible with household work. For more fortunate women workers who in some contexts can exercise self-determination as to their place of work, choosing to work from home can bring certain advantages, such as avoiding the stress, expense and lost hours exacted by daily commuting.

Intersectionality and women's agency

Employing a gender perspective necessarily involves using key analytical concepts, such as the gendered division of labour and occupational segregation. A closely related concept is intersectionality, or how gender, class, race, ethnicity, SOGIE (sexual orientation, gender identity and expression), age, location, ability and other differentiating factors impinge on women's perceptions and realities. As Bachelet succinctly described when analysing the global reality of digital exclusion (2021): "The offline population is disproportionately poor, rural, older and female. Women and girls form the majority of the estimated 3.7 billion unconnected people in the world. Those who are subjected to intersecting and multiple forms of discrimination are even less likely to be online."

Despite the daunting and immense challenges posed by digital exclusion amid the pandemic, many women have responded to these challenges with creativity, resilience and solidarity. Empowerment anchored on women's agency and participation in various forms of workers' and gender-based organizations, often working in tandem with other stakeholders, remains a beacon of light in these challenging times. As these organizations weave together the strands of digital, gender, social and economic justice (Gurumurthy and Chami, 2020), it becomes even clearer that human rights and freedoms comprise the foundation of women's entitlements and the types of work they want to pursue in the digital future.

In summary, the future of workers approach and an intersectional gender perspective, along with related concepts like digital colonialism and surveillance capitalism, allows the study to critically understand the possibilities of digital technology to both improve and worsen the lives of women in their various roles in the household, community, workplace and society.

Impact on the informal, formal and platform economies

The effect of the COVID-19 crisis on the global economy is enormous, and its humanitarian implications are staggering. The ILO (2020a) estimated that 81 million jobs were lost in 2020 due to the pandemic. Other estimations, according to the International Trade Union Confederation (2021), conclude that the equivalent of 485 million full-time jobs have been lost and 2 billion informal jobs have been threatened as a result of the economic recession ushered in by the pandemic. In the Asia–Pacific region working hours were reduced by 15.2 per cent in the second quarter of 2020 and then by 10.7 per cent in the third quarter, compared to 2019. As a result, family incomes collapsed, with wages estimated to have fallen by some 10 per cent in Asia and the Pacific for the first three quarters of 2020. This led to a hike in the number of the working poor, by about 22–25 million persons (ILO, 2020a).

India provides a relevant case study of the humanitarian crisis endured by working people and working women in particular. Incomes were wiped out for the poorest from March to October 2020 according one study (Abraham and others, 2021). A family of four at the bottom of the income distribution ladder lost 15,700 rupees, or the equivalent of two months' income. This means a loss of 40–80 per cent of income for informal workers due to the lockdowns and even beyond. As coping mechanisms, the working poor sold assets and borrowed at levels two to six times their household earnings. The bottom 25 per cent of the income distribution ladder became indebted at four times their monthly income, in contrast to just 1.4 times for affluent households. About 90 per cent of the income loss was due to wage cuts and 13 per cent due to loss of jobs. This implies that informal workers have suffered mostly from income declines while formal workers mainly have experienced job losses (Abraham and others, 2021). Because many of these poor workers are internal migrants, they have endured income decline, loss of employment, near starvation and reverse migration (Bhattacharya, 2020).

The differential effects on men and women due to the pandemic also can be seen in the case of India. Some 47 per cent of women lost their job during the 2020 lockdown, compared to 7 per cent permanent job loss

for men. Likewise, 33 per cent of workers aged 15–24 years were laid off at the height of the lockdown, compared with 9 per cent for those aged 45 years or older and 6 per cent for those aged 35–44 years (Abraham and others, 2021). Women and youth clearly have been disproportionately impacted. This implies an even worse scenario for young women. After the lockdown, the female labour force participation rate rebounded to almost pre-pandemic levels. Yet, women entered the labour force as precarious workers. In the last quarter of 2020, 43 per cent of women in the labor force were casual wage workers, while 54 per cent of men were self-employed. The self-employed earn two times the income of casual wage workers in India (Abraham and others, 2021).

In every crisis, women and youth are disproportionately and negatively affected. Both working hours and total employment have decreased even more for women than men in most countries in Asia and the Pacific due to the pandemic. Women have been more likely to have left the labour force entirely. Similarly, younger workers have been affected by employment losses and reduced working hours (ILO, 2020a).

The plight of women in the informal economy

At the beginning of the pandemic and during the lockdowns, some governments relied on online modalities to provide cash assistance and loans to impoverished households. In this new strategy, many women in the informal economy, or the “missing middle”, missed out on their entitlements because they were not registered as indigents and therefore were not on any verifiable list. For safety and convenience, registration during the pandemic had to be online or through smart phones, and cash transfers were directed to bank accounts and e-wallets, which the working poor seldom had. Identification cards verified through biometric and demographic data were required, which became a serious problem for those without these cards, with no knowledge of these cards or who had left the cards in other places, especially in the case of migrants (Alfers, 2021). In India, millions of women in poverty were reportedly deprived of their cash benefits because they could not access the electronic cash

transfers through accounts ironically meant to facilitate their financial inclusion (Pande and others, 2020).

Digitalisation and the pandemic also affected traditional subsectors of the informal economy in specific ways. Home-based workers who are at the bottom rung of the subcontracting ladder in global value chains producing garments, textiles, leather, footwear, crafts and home decor found themselves at greater risk. Increasing use of automation in the Global North reduced the need for low-paid women workers in the Global South and, in some cases, led to reshoring or the return of formerly offshore jobs to their countries of origin. A famous case is that of Adidas, which closed its factories in Vietnam to relocate production to Germany, where robots and 3D printers would be employed (The Economist, 2017). The spread of the pandemic led to the cancellation even of completed orders originally meant for export to the Global North, leaving producers in the Global South hanging in the air and with no means to pay their workers (Lai, 2020). Tourism also suffered a nosedive, which left home-based producers of souvenirs and other crafts without their usual markets. Home-based workers caught in these circumstances had to shift to alternative employment to survive, such as producing face masks and other personal protective equipment (Homenet and PATAMABA, 2020).

Vendors and other women in wholesale and retail trade also suffered severe losses due to the lockdowns, which limited their business hours and their mobility. Health protocols, especially for street vendors, were difficult to comply with, given the lack of water and sanitation facilities as well as the cost of masks, sanitizer and other protective supplies. Street vendors are rapidly being eased out of business by market concentration in big e-commerce retailing oligopolies, such as the China-based Alibaba and the Singapore-based Shopee, which are supported by efficient logistics. Women in the sales force in malls, supermarkets and community grocery shops found themselves without jobs as online shopping became the fallback of households during lockdowns. While traditionally female jobs in sales were being decimated, new jobs connected to retailing mostly went to men in platform-based delivery services. Gender stereotypes influenced this development due to women not usually pictured as drivers or riders, typically masculine occupations. In some contexts, women find it difficult to secure a driver's license.

Women microentrepreneurs engaged in services such as food, accommodations, tourism, domestic work, beauty culture, massage therapy and the likes have been severely affected by lockdowns and distancing restrictions. They have had difficulty adjusting because they lack the means, the knowhow and the networks to engage in online marketing. Physical restructuring of their facilities to meet safety protocols is an expense they cannot afford. Resources for wages and benefits for workers they employ intermittently in a close–open scenario have also been depleted.

Women in microbusiness engaged in artisanal production and light manufacturing for domestic consumption, tourism and for export are not gaining substantially from the huge increase in retail e-commerce in online sites. They own small business units with low capitalization and therefore limited output levels. They cannot afford keeping huge inventories and are severely constrained in meeting big online orders. Because their operating capital is restricted and their profit margins are thin, they are disadvantaged by the big commission fees and customer service expenses that are required to maximize e-commerce utilization. In Alibaba, for example, the average sales of women entrepreneurs, who comprise half of the account holders, are lower than those of their male counterparts (Aggarwal, 2020).

The list of losers in the informal economy extend even to women engaged in smallholder agriculture. They supply wet markets, grocery shops and supermarkets with vegetables, fruits, beans, spices, condiments, processed meat products and other daily food items. The repeated lockdowns disrupted their marketing operations. Transporting their goods became difficult and expensive, if at all possible, due to the imposed travel and mobility restrictions. And because most of them lack digital literacy and are based in rural areas, where internet connectivity is limited or unstable, they can hardly access platform-based delivery services.

Donning an intersectional lens also exposes the vulnerability of informal workers due to gender and age. Women in the informal economy are subject to the gendered division of labour that puts a heavier burden on them because unpaid care work demands a lot more of their time and effort during the pandemic. They have to look after children who are not at school. They need to take care of sick and older persons, particularly those who contract the COVID-19 virus or exhibit symptoms.

While men in the household are constrained to help out during times when entire households are under lockdown, evidence shows that they tend to revert to their old ways after lockdown, leaving the women with just as much or even more unpaid care work. For example, a national survey in India found that men spent more time on household work in April 2020, but the average number of hours showed a notable decline by August (Ratan and others, 2021).

Older women in the informal economy also exhibit particular vulnerabilities due to their age. They are more vulnerable to the virus and are more restricted in terms of mobility. They are not flexible enough to learn new skills, such as using smart phones and going online. Given these constraints, they are less likely to go back to employment in post-pandemic times. An additional burden is unpaid care work as they are pulled into child care or domestic tasks to support their daughters and other caregivers in the household.

Impact on apparel and electronics value chains

The pandemic has disrupted production schedules in supply chains and consumption patterns in the global economy, leading to a huge impact on Asia, which is a crucial site for global value chains in garments and electronics. The feminization of work in global supply chains in these sectors has undoubtedly provided an impetus for raising the fortunes of women in Asian societies through labour market participation. Still, the pandemic and other threats like automation and reshoring have shown the fragility of these gains and how easily they can be rolled back by a crisis. With the predominantly female workers in global supply chains in Asia, which are largely unorganized, women have had little voice in how responses to the pandemic and other crises have been shaped. Without inclusion, they typically end up being discriminated against and disadvantaged.

The estimates for the number of workers in the garment and apparel sector vary widely, from 35 million to 60 million. But there is no doubt that the majority of them are in Asia, and they are predominantly women (Asia Floor Wage Alliance, 2021a and 2020; Payyourworkers Campaign, 2020). Poverty wages, precarious employment and unsafe work typically characterize the jobs of garments workers. These conditions rendered them even more vulnerable when the pandemic set in.

Women are reportedly preferred as garment workers because they are gifted with the manual dexterity to execute the required operations fast and well. They are also perceived as docile and therefore less likely to organize to fight for their rights. These realities make probing the gender dimension of the labour crisis in the garments industry particularly relevant.

Garment production, which was forecast to grow by 3–4 per cent prior to the pandemic, declined by an estimated 27–30 per cent in 2020, compared to 2019 (Berg, Achim and others, 2020). Global brands did not pay their orders, cancelled existing ones, deferred payment on shipped garments and/or forced discounts on suppliers. The asymmetrical power relationships in the garment sector means brands are able to pass on the risks to suppliers, and then suppliers shift these risks to workers. This imbalance was clearly expressed during the first year of the pandemic when supplier factories shut down or fired workers due to the cancelled, unpaid, deferred or discounted orders from brands. In the end, the garment workers suffered through job loss or income decline (Asia Floor Wage Alliance, 2021a). Discriminatory employment practices were widespread and were based on existing inequalities related to age, gender and religion. Other categories for discrimination emerged, such as proximity to factory or membership in unions (Asia Floor Wage Alliance, 2020).

A study of garment workers in Bangladesh, Cambodia, El Salvador, Ethiopia, Haiti, India, Indonesia, Lesotho and Myanmar found that of the 25 per cent of workers who were fired due to the pandemic conditions, 70 per cent did not receive their full severance pay and 40 per cent did not get any separation benefit at all (Kyritsis, LeBaron and Nova, 2020).

Another research report covering Bangladesh, Cambodia, Ethiopia, Myanmar and the Philippines found that in seven of eight cases, workers were not paid the full amount of last salary and other benefits owed to them (BHRRRC, 2021). A study of wage gaps in Bangladesh, Cambodia, India, Indonesia, Myanmar, Pakistan and Sri Lanka found that garment firms worldwide owed their workers between \$3.2 billion and \$5.8 billion just for the first months of the pandemic (Clean Clothes Campaign, 2020).

Reduced wages led directly to widespread hunger among garment workers and their families. Some 77

per cent of the workers or members of their families went hungry from March to August 2020. Three of four workers had to borrow money to buy food despite the majority of them receiving government aid. This reality revealed the meagre amount of assistance provided by states in the covered countries in South Asia, Southeast Asia, Central America and Sub-Saharan Africa (Kyritsis, LeBaron and Nova, 2020).

The Business and Human Rights Resource Centre (2021) described this as “wage theft”. Of the 10,000 workers in eight factories covered in their study, the sourcing brands included heavyweights like H&M, Nike and Levi’s, which in total reported \$10 billion in profits in the second half of 2020. Further, the Asia Floor Wage Alliance (2021) argued that wage theft was not just an unintended consequence of the pandemic-induced recession but was built into the structure of the garment industry. In a set-up in which a few global brands exercise monopsony power over the market, they can dictate production prices and lead times on suppliers that cascade predictably down to workers as low wages, work speedup, forced overtime and unsafe work. Thus, poverty wages of garment workers can be described as intended consequence of global brand actions and practices. Although by law global brands in the garment industry are not the direct employers of low-wage workers in Asia, Africa or the Americas, unpacking the system of subcontracting exposes their obligations, because they impose not just production prices upon suppliers but product quality, lead times and order volume.

The Asia Floor Wage Alliance (2021b) called the economic harm induced by the actions of brands and supplier factories as a form of gender-based violence and harassment. Even before the pandemic, factory managers, who are usually male, typically harass, bully and coerce garment workers, mostly female, to achieve production quotas and deadlines. The Alliance conducted a study in 2021 covering several hundred women workers from Bangladesh, Cambodia, India, Indonesia, Pakistan and Sri Lanka and found economic harm linked to the gender-based violence and harassment that worsened as the pandemic wore on. Beyond the factory, women garment workers also suffered violence and harassment in their homes and communities amid pandemic-related difficulties (Asia Floor Wage Alliance, 2021b).

The realities of the pandemic (and the supply chain disruptions) are pushing brands towards even greater

efficiency by using digital tools and data analytics as well as models of dual sourcing and nearshoring. The latter could lead to global brands relocating partly or fully from Asia to Central America or Eastern Europe (Berg, Achim, and others, 2020).

Workers in electronics, predominantly young and female, in Asian countries like China, India, Indonesia, Malaysia, Thailand and Vietnam, are no less affected by supply chain disruptions due to COVID-19 but arguably less so in terms of scale. Among the challenges they face are reduced work hours and wages, job losses and unpaid separation benefits. The direct outcome has been decreased income and, consequently, debt and hunger, similar to the predicament of garment workers. Many electronics workers with a migrant background could not return to their hometown or province. Unionized electronics workers had their collective bargaining agreements suspended and wage increases deferred or cancelled. And they have faced occupational safety and health issues due to the lack of personal protective equipment and the absence of social distancing measures in factories (BHRRC, 2020).

There have been instances when electronic workers were requested or forced to work despite health risks under the threat of non-payment of wages (BHRRC, 2020). For example, in the Philippines, electronics and garment factories in the export processing zones — along with BPO offices — kept on operating for the first few weeks of the pandemic despite the strict lockdown imposed. With infections rising and public transportation suspended, these export-oriented firms shifted to maintaining a smaller group of workers who lived or were billeted near the zones. Plainly, this was motivated by businesses’ desire and even the government to maintain dollar revenues.

The gender dimension of the labour crisis in the garment and electronics industry is an important one. The overwhelming majority of garment and electronics workers are women because they are supposedly gifted with the manual dexterity to execute the operations fast and well. They are pictured as docile and therefore less likely to organize to fight for their rights. They can be harassed and abused and rendered helpless in the face of brazen and widespread wage theft amid unabated profit-making by the global brands. They can be paid less than men, based on the notion that their wages are merely supplemental to those of the

male breadwinners. Many of them are rendered invisible and without legal and social protection because they inhabit the lower rungs of the subcontracting ladder, where employer responsibility to workers is difficult to trace and therefore virtually non-existent. During the pandemic, when even meagre entitlements are drastically reduced or even foregone, the burden of keeping displaced workers' families afloat falls largely on women's shoulders. They are expected to produce and put food on the table even if there is none. They have to care for children out of school and household members who get sick even while they scrounge around for the wherewithal to go on living.

Impact of COVID on the business process outsourcing sector

The global supply chains in Asia unsettled by the pandemic are not just in manufacturing but also in services. Among the most important of these are those engaged in the BPO sector. They include call centres, health services, gaming and animation (Oxford Business Group, n.d.).

Two countries that have specialized in BPO are India and the Philippines, with Malaysia and Vietnam now competing (Purohit, 2020). Outsourced call centre work was originally located mostly in India but has since expanded the dominance to the Philippines. And India has since scaled up to higher-value-added jobs in outsourced work in information technology (IT) and engineering.

Today, there are some 1.3 million Filipino workers employed in BPO work (Manila Times, 2021; Cigaral, 2020), overwhelmingly in call centres. The majority of BPO workers are women who are young and college educated. A significant number are also LGBTQI, who usually are able to freely express themselves at work due to the liberal culture in BPO workplaces, some of which even allow cross-dressing. The BPO sector in the Philippines contributed \$26 billion in 2019 (Manila Times, 2021; Cigaral, 2020), or 9 per cent of the country's gross domestic product (Castillo, 2020). This is the same amount as the remittances sent by overseas Filipino workers, a testament to the importance of global outsourcing of services to the Philippine economy. In comparison, in 2019 there were 1.3 million workers in India's BPO sector. The number ballooned to 4 million when the IT sector was included. The whole industry

provides services ranging from customer care to IT support for the United States, the United Kingdom and the European Union in such essential areas as finance, health care and telecommunications (Purohit, 2020).

The BPO sector was not spared disruption with the onset of COVID-19. However, the larger BPO companies in the Philippines had business contingency plans in place and were able to transition to work-from-home arrangements with more ease and less difficulty. In India, it was reported that work from home was not easy to set up due to issues concerning data security, internet infrastructure, gadget distribution to workers and quality control of the work (Gupta, 2020; Purohit, 2020). Many BPOs in India tried to continue operating by utilizing loopholes in the lockdown protocols. There was incidence of workers complaining that their health was put at risk (Purohit, 2020).

An estimated 40 per cent of BPO employees in the Philippines shifted to work from home after onset of the pandemic, compared with 60-80 per cent in India (Ibañez, 2020). The Contact Center Association of the Philippines reported that 30-35 per cent of staff working from home while 20 per cent worked on-site. This meant that around half of workers were furloughed or laid off. The Contact Center Association claimed that most of its 123 members subsidized half of the salaries of employees who were put on forced leave (Ibañez, 2020). By 2021 in the Philippines, the ratio of work from home to on-site work was 64 per cent to 36 per cent, while more than a hundred BPOs were doing 90-100 per cent of their work from home.

Workers who transitioned to a work-from-home arrangement confronted problems with reduced income, longer hours, work stress and work-life imbalance. In a survey of eight countries in 2020, India ranked second in the number workers facing burnout, with 29 per cent of workers citing lack of separation between work and personal life and complaining of an additional one hour in the workday. However, India was first among workers citing work-life imbalance leading to stress, at 41 per cent (PTI, 2020). This is not surprising because work from home led to more meetings, taking more ad hoc calls and managing more incoming chats. Although the study did not provide gender disaggregation, it is safe to assume that women in work-from-home arrangements were greatly affected due to their predominant role in domestic chores.

In both India and the Philippines, many BPO clients from abroad stopped contracting work as the industrialized countries faced their own economic fallout from the pandemic (Gupta, 2020; Oxford Business Group, n.d.). This also is not surprising, given that 80 per cent of India's information technology BPOs service the United States and the European Union (The Hindu Business Line, 2020). At the start of the lockdown in India, telemarketing totally stopped (Gupta, 2020). In the end, BPO workers suffered from extended bouts of forced leave if not outright layoffs. For example, 3,000 persons were laid off out of 13,000 workers in BPO giant Teleperformance's operations in India (Moorthy, 2020).

Surprisingly, 23,000 more people reportedly were hired in the BPOs in 2020 (Manila Times, 2021), an increase of 1.8 per cent (Piadano and Lirio, 2021). Also, revenue rose by 1.4 per cent, to \$26.7 billion, with the rise in IT outsourcing by late 2020 due to digitalisation and increased outsourcing in health care, e-commerce, retail, banking, finance administration and telecommunications (Piadano and Lirio, 2021). Another explanation for this is that BPOs continued hiring at low salaries while furloughing existing workers with high salaries (BPO Industry Employees Network, 2021). This correlates with reports of BPOs hiring students who found it convenient work, given the online nature of classes during the pandemic (Piadano and Lirio, 2021).

Research by the BPO Industry Employees Network (2021) in the Philippines revealed that half of 24 respondents did not receive cash aid from the government even though they temporarily or permanently lost their job amid the pandemic. Among the range of worker grievances reported were lack of shuttle services for workers working on-site, being forced to work on-site because no work-from-home arrangement was possible, too many BPO workers sharing a single hotel room near their place of work and lack of mass testing and robust occupational safety and health protocols.

Along with export processing zones, BPOs in the Philippines were among the workplaces allowed to resume work early on (Manila Times, 2021; Piadano and Lirio, 2021) due to the dollar-earnings of these sectors. As a result, BPOs became COVID-19 hotspots, and by August 2020, at least 15 worksites had many cases of coronavirus infections (BPO Industry Employees Network, 2021).

Many of the furloughed BPO workers were left indebted because they took out loans from relatives, friends and the Social Security System to tide them through economic difficulties. They reduced the consumption of their families, with working mothers making sure that milk for their young children was at least guaranteed, as noted by the BPO Industry Employees Network (2021).

Even though BPO workers demanded the opportunity to work from home, the arrangement also allowed companies to squeeze workers for productivity without commensurate wage gains. The overhead costs of work from home was borne by the workers. In some cases, an internet allowance was provided but only if workers met the talk time requirements. To achieve this performance metric, call centre workers had to work 12 hours for five days. Worse, due to poor internet connection, this could mean working 13 hours a day for seven days a week just to comply with talk time requirements. For women BPO workers, who also bore the burden of domestic work, this was a heavy price to pay for the opportunity of subsidized internet. None of the BPO employees were provided with electricity subsidies for working from home (BPO Industry Employees Network, 2021).

On the brighter side, work-from-home arrangements have helped educated Indian women rise to mid-level and senior positions amid the pandemic. From 20 per cent of such positions being filled by women in 2019, the ratio surged to 43 per cent in 2020. By 2021, there was an 89 per cent increase in the number of women looking for mid-level to senior job positions. In contrast, the outcomes have differed for working class women. The COVID-19 crisis has led to men shifting from formal to informal work while it has pushed women entirely out of the labour force (Madhok, 2021).

Women in India are more educated than ever but are still not joining the labour force. Women's labour force participation rate in India remains at 20 per cent due to the persistence of cultural norms aggravated by workplace harassment. This remains the situation despite reforms, such as a 2013 rule that publicly traded companies must have at least one woman on the board of directors and a 2017 law providing for 26 weeks of paid maternity leave (Madhok, 2021).

Gig economy straddling the formal and informal economies

Straddling the twilight zone between the formal and the informal economies, the gig economy was both disrupted and enabled by the COVID-19 crisis. Constructed on the ramparts of digital technology, firms and workers engaged in the platform economy arguably had better chances of navigating the labour market troubles created by the pandemic.

Women comprise the overwhelming majority of workers in domestic work — this sex segregation mirrors their traditional role in the family. Paid domestic work has not escaped the innovation brought by the gig economy, and today, platform apps mediate between workers and employers in the household setting. Platform domestic work had become brisk business, with double-digit growth in some settings, before the outbreak of COVID-19 (Tandon and Rathi, 2021). Nonetheless, the pandemic has not spared domestic workers from distress. Globally, about three out of four domestic workers lost their job or had their working hours reduced in 2020. As a result, they lost income while not being able to access social security benefits. These negative outcomes affected some 80 per cent of domestic workers in the Asia-Pacific region and, worse, about 86 per cent in the subregion of South Asia (ILO, 2020b).

With the onset of the pandemic, domestic work through platform apps was regulated by governments in Asia as part of the COVID-19 response and protocols. But it was later allowed based on the argument that paid domestic work was essential. And with the further loosening of strict protocols, there was heightened demand for gig jobs for household workers. Tandon and Rathi (2021) looked at platform domestic work in India, Indonesia, Pakistan and Vietnam to get a cross-national perspective and found three prevalent types. First, on-demand platforms, similar to the Uber model, which engage domestic workers on short-term gigs but monitor work through certain metrics like performance ratings. Second, digital placement agencies in which the apps become passive after mediating the placement and negotiating wages between the domestic worker and the household employer. Third, online marketplaces that merely match workers with employers without any intervention in the setting of terms and conditions of employment. Similar to what is prevalent in platform apps in general, the wages of gig domestic workers may be higher than usual with

the possibility of more formal working conditions. The reality, however, is that the digital apps skirt regulations governing employee-employer relationships. Thus, mostly women platform domestic workers remain outside of the coverage of labour standards and are denied social protection (Tandon and Rathi, 2021).

An estimated 1.3 million to 1.5 million Filipinos, many of them women, engaged in the gig economy and online freelancing prior to the pandemic, in such jobs as web designing, multimedia content and editing, advertising, accounting, IT networking, engineering, architecture, data science and analytics, film, animation and game development (Ofreneo, 2018). These jobs were reported as least affected by the pandemic (Piadano and Lirio, 2021).

The number of app workers are increasing in India, no doubt an indication of rising digitalisation: 8.5 million in 2016 to 11.7 million in 2017 to 15 million in 2018 (Tiwari and others, 2019). There are some 2 million ride-hailing workers (Nair, 2020; Salve and Paliath, 2019). But at the height of the lockdowns in India in 2020, app companies laid off 13-25 per cent of their workers due to declines in revenue (Bhargava, 2020; Kumar, 2020; Pant and Shende, 2020). As independent contractors, problems faced by gig workers during the pandemic were up to the individuals because the app companies are not employers by law. To cope with the pandemic, some gig workers either went back to their home province while others remained as platform workers so they could earn an income to repay loans, such as ride-hailing drivers who bought a vehicle. In many cases, ride-hailing app workers did not earn enough to defray the costs of gasoline and hand sanitizer (Behera, 2020).

In Bangladesh, an estimated half a million freelancers were active in the gig economy, while 19 per cent of the employed population was working part-time prior to the pandemic. As the pandemic raged on, numerous platform start-ups in Bangladesh closed shop or retrenched staff. Consumer demand was sharply reduced for platform apps in finance, health, education, transportation and hospitality. Nonetheless, food delivery via platform apps boomed amid the lockdowns. Ride-hailing apps also diversified into delivering grocery items, non-prescription medicines and other essentials (Hasan, 2021). The COVID-19 induced economic crisis led to gig workers losing their jobs and becoming indebted. Many freelancers took out loans to invest

in work-related tools, like cars for work in ride-hailing apps, only to be hit by the pandemic restrictions and be saddled with unpaid loans. But even if they held onto their gig job, they were regulated as employees for obligations like achieving performance metrics but not for entitlements, such as social security benefits (Hasan, 2021). In the gig economy, freelancers get the worst of both the formal and informal worlds.

No wonder that the pandemic generated an outbreak in grievances and even protests among platform workers, specifically food-delivery riders. Among app workers, food-delivery riders have been the most militant in terms of engaging in organizing into associations or unions and mobilizing actions and protests (Trappmann and others, 2020).

In the Philippines, for example, several high-profile protests broke out among workers in different food delivery and courier apps during the pandemic, despite their visible role as essential workers. In November 2020, some 700 riders of the food delivery app Foodpanda held a protest in the form of a unity ride that ended at the national office of the Department of Labor and Employment (DOLE). The riders were protesting the reduction in pay and new rules that endanger their safety (Partido Manggagawa, 2020). About one in ten of the participants in the protest were women. Then in 2021, a group of 300 Foodpanda riders from the southern Philippine city of Davao organized another mass action to protest low pay. But before the group could stage its offline action, Foodpanda jumped the gun and suspended them for ten years (Mendoza, 2021). Although a minority, women riders were participants in the dispute. Similarly, riders in the courier app Lalamove also organized a protest by going around Manila to highlight their demand for higher pay and for scrapping the delivery bag rental fee. The protesting riders were also terminated by the app company (Ilagan, 2021). All these labour disputes led the Philippine government to issue an “advisory” on July 2021 that sought to clarify the applicability of labour regulations to app riders and also their employment status (DOLE, 2021). But since the advisory merely reiterated the vagaries of existing government rules and app practice, it really did not resolve anything, and disputes will certainly arise again in the future.

Similar to the complaints of app riders in the Philippines, platforms in India unilaterally lowered the pay of their contractors. Despite working for ten hours during the lockdowns, gig workers could not receive the same

amount of incentives as pre-pandemic. Also, workers with 16-20 orders daily declined from 31 per cent to just 7 per cent in the post-lockdown period (Lalvani and Seetharaman, 2020). All of these reductions have meant economic difficulties for gig workers during the pandemic, even when they were being hailed as essential workers. As a result, gig workers in India launched protests but were met with suspension from the app companies, akin to the situation in the Philippines (Lalvani and Seetharaman, 2020).

The Hong Kong Foodpanda riders’ strike in November 2021 was also driven by a dispute over pay. Their action, which led to a successful resolution, included some women as participants, leaders and organizers. For now, however, none of the disputes has raised distinct gender issues and all of them have concerned generic labour demands, such as pay and safety.

In the Philippines, the motorcycle riders’ rights group Kagulong was founded in 2020 in response to the discriminatory COVID-19 protocols issued by the government. Kagulong’s initial demand was the repeal of a policy banning riding in tandem, which is commonly a male driver and the female partner in the pillion seat. Riding in pillion was the recourse of many couples when public transportation was banned but women workers needed to go to work. Kagulong would later initiate the formation of a women’s committee and all-female riders’ clubs.

Workers in ride-hailing, courier and food delivery service are predominantly men, women are an exception. The few female riders face discrimination from fellow riders, app users and the platforms, which are definitely not equal opportunity employers. In South Asia, one explanation for the prevalence of male gig riders is the fact that few women possess a driver’s license, which is symptomatic of a more extreme level of gender inequality. In the Philippines, however, this is not the case, and there is no legal restriction against women getting a driver’s license. Although women drive cars and motorcycles for personal use, they do not drive as a job due to cultural norms and employer discrimination.

This situation of women in ride-hailing and delivery platforms is also mirrored in the informal jeepney and tricycle sectors in the Philippines. Women jeepney and tricycle drivers are an exception. However, in certain areas, such as the Visayas (central Philippines),

many women are operators who invested part of the remittances of their migrant worker husbands in ownership of a jeepney. With the implementation of the Philippine government's jeepney modernization plan proceeding apace during the pandemic, new modern jeepneys being rolled out now have women as conductors even though drivers remain predominantly men. The National Confederation of Transport Workers' Union-SENTRO, which organizes jeepney drivers and operators in the Philippines, has actively encouraged women's participation and leadership. Thus, in some cases, jeepney associations and cooperatives are headed by women.

With the rise of online selling and door-to-door delivery during the COVID-19 crisis in particular and in general the digitalisation of work through platforms, an increasing number of women transitioned to gig work on an informal and temporary basis. Although women have benefited from the rise of platform work, gains have been limited by the structural gender barriers. For female workers to take full advantage of these labour market changes, purposive interventions in promoting

labour force participation and inclusive social protection are needed. Thus, the actions of trade unions and workers' associations to encourage female involvement and leadership are good starting points.

In summary, across the different sectors within informal, formal and gig economies, women in Asia have faced difficult challenges and structural barriers in navigating the disruptions brought about by digitalisation and the pandemic. These are connected to the political economy of digitalisation that determines the operations of global value chains, drives up the "uberization" of work and places working people at a great disadvantage. In certain circumstances and for a select number of women, digitalisation and even the pandemic may have opened up livelihood possibilities and improvements in working conditions. But the overwhelming evidence points to the grave impact of both the COVID-19-induced recession and use of new technology by businesses. The gendered division of labour remains well entrenched inside and outside the home, while other differentiating factors, such as age, location and citizenship, figure in the intersectional analysis of the situation.

Women's agency and collective actions

The Chinese language character for crisis has a double meaning: It is both a challenge and an opportunity. The COVID-19 pandemic is a crisis like no other that the world has ever seen, claiming the lives of millions and triggering economic losses in the billions of dollars. Nevertheless, it also has moved organized forces of grass-roots women into action to address the pandemic and spur livelihood recovery. This was done using digital instruments to raise awareness, coordinate solidarity-based activities at many levels and build online financial and commercial markets necessary to survive the crisis and overcome its negative effects. Women workers do not sit idle as their lives are wracked by crisis after crisis. They resist when they can, and they adapt as best as possible to changing conditions. And they grab at viable alternatives when they are presented or create them when they are not. They have stories to tell and experiences that others — organizations and other women — can learn from.

Home-based workers move towards digital inclusion

Narratives from home-based workers in Asia illustrate the resilience, creativity and solidarity of organized women in the informal economy in using digitalisation as a means for positive change, despite its initial unfamiliarity. These narratives occur at many levels: individual, community, national, subregional and global. As soon as the pandemic struck and lockdowns were imposed, there was no alternative but to explore existing means of communication, such as mobile phones and internet services, to provide home-based workers with updated news, knowledge, awareness and motivation to engage in collective responses. Soon, meetings, webinars and assemblies mediated by Zoom became the principal mode for re-establishing social connections beyond the household and for continuing work that was rudely but unsuccessfully interrupted by the pandemic.

At an individual level, a Cambodian home-based worker tells an inspiring story of how she was able to secure an important order using Facebook and Messenger. Vicheka Yun is a young home-based work leader of the Chamka Samrong group in Battambang City. She posted on the Facebook page of her Homenet group about the order she received for 300 sedge mats and

100 brooms from a customer in Banteay Meanchey Province, about 60 kms from Battambang City. She was able to clinch the order by chatting with the customer via Messenger. She sourced the sedge mats and the brooms from other home-based workers' groups in Battambang City because her group did not have enough inventory to supply the customer. In this way, she was also able to help the other groups expand their markets. She posted the story about the order on the Facebook account of Homenet Cambodia in Khmer language while her group was loading the mats and the brooms in a small truck for delivery to the customer. Men Sinoeun, the coordinator of Homenet Cambodia who took the lead in launching the digital training for home-based workers, says with pride, "Now you see the real example of how Homenet Cambodia empowers Cambodian women home-based workers in digital technology... It is a sign of hope that they will be growing in digital business."

For the past two years, Homenet Cambodia has been providing hands-on training to home-based work group leaders on how to develop a Facebook page and use it with the help of their family members, particularly the younger generation who are more adept at employing digital technology. They receive constant follow-up and monitoring to further hone and upgrade their digital skills. Because some 70 per cent of group leaders have second-hand mobile smartphones, they can now use Facebook and Facebook Messenger, get orders online and join Zoom meetings and webinars. They have become fast and skilful in posting, sharing and sending out text and voice messages in Khmer language. A few can even communicate via email in the English language.

The results have so far been encouraging. Home-based workers' groups and products have gained digital presence and visibility. Home-based work leaders, especially those who already know how to boost their Facebook pages so that more viewers can see them, are getting more local as well as foreign orders online. They have avoided laying off workers and are able to provide more assistance to them. They can order food stuffs, raw materials and other needs more easily. They get important information on health protocols to avoid COVID-19 infection. And they are looking forward to

further capacity-building in using more advanced digital technology for their daily life and work (Sinoeun, 2021).

There are similar examples of capacity-building, organization-strengthening and networking through digital means from other country Homenets. In the Philippines, for instance, home-based work leaders have used digital technology to conduct participatory action research on the impact of the COVID-19 crisis in four localities (Homenet Philippines and PATAMABA, 2020). They have conducted and attended online training and webinars on social protection advocacy, youth entrepreneurship, e-marketing and other topics in cooperation with regional and international organizations, such as Homenet Southeast Asia, the Asian Solidarity Economy Council, the Asia Monitor Resource Centre and Women in Informal Employment Globalizing and Organizing (WIEGO). And due to COVID-19-imposed restrictions on face-to-face organizational meetings and assemblies, Homenet Philippines conducted its Fourth Congress and elected a new set of officers via Zoom.

All the country Homenets belonging to a subregional networks, like Homenet Southeast Asia and Homenet South Asia, look for inspiration to the “mother” of all Homenets — the more than 1.9 million-strong Self-Employed Women’s Association (SEWA) based in Ahmedabad, India, and in existence since the 1970s. SEWA has been “hand-holding”, or providing steady and consistent support, to its members to clamber up digital platforms knowing that these are new and strange vantage points for empowerment for grass-roots women. Through such careful and patient capacity-building, its members are slowly able to stay connected, access important information, develop and expand markets for their products and services and engage in business-to-customer transactions. Beyond this, SEWA, which runs its own bank, is engaged in large-scale financial inclusion initiatives by building and expanding networks of grassroots banking correspondents called *saathis* (friends), lately with support from the State Bank of India (Ratan and others, 2021).

SEWA had led efforts for the establishment of a Homenet International, built from existing subregional and regional home-based workers’ networks in Asia, Africa and Latin America. It was supposed to be launched in Nepal in early 2020, but due to COVID-19,

it was launched virtually via Zoom in February 2021. Homenet International now regularly organizes global Zoom-based celebrations and webinars with multiple-language translation channels for consolidating, capacitating and inspiring home-based workers all over the world. This example illustrates how the use of digital technology can be maximized for the empowerment of grass-roots women.

Unionized women adjust to the crisis situation

Displaced garment workers, mainly women, in the Philippines became home-based workers engaged in value chains for local apparel manufacturers. Situated at the lowest end of the garment value chain, these workers are paid at piece rates, without benefits and social security. This situation was forced on them after it was hard to find work in the export zone after being blacklisted as unionists. Nonetheless, they have found a certain autonomy because they can work at their own pace and without a boss. They own, individually or collectively, the high-speed sewing machines due to investments using the separation pay they received when they were terminated as export processing zone workers.

These workers are former union members who were fired by their Korean employers as part of union-busting manoeuvres. Their unions are affiliated to the Rosario Workers Association, a legitimate labour organization that is registered with the DOLE and whose mission is to organize workers in the Cavite Economic Zone, the biggest government-operated export processing zone in the Philippines.

When the pandemic struck, many value chains were disrupted, and thus many of these Cavite home-based workers faced loss of their livelihood. To adapt, they made ready-to-wear clothes and washable face masks but started selling them online using social media platforms like Facebook. Unlike Homenet, this was without any institutional support. Thus, they had difficult barriers to surmount because the shift was made as an individual or small group effort. The Rosario Workers Association had neither the material resources nor the expertise in digital skills to support the home-based workers. Thus, the groups of home-based workers have remained dispersed and without coordination despite doing the same kind of work and facing the same predicament.

Workers of several garment factories in the Cavite export processing zone sought assistance from the Rosario Workers Association for their labour cases after pandemic-related closures. And workers at an apparel firm in Bulacan and a glass firm in Laguna approached the Partido Manggagawa organization, according to Judy Miranda, secretary-general of the group. In all these situations, the DOLE initially set up mediation meetings, which the employers did not even bother to attend. Subsequently, complaints regarding illegal dismissal, non-payment of wages and separation pay were lodged with the labour court.

While the cases were being heard, the United Cavite Workers Association and Partido Manggagawa empowered the workers through labour education and union formation. The workers participated in the Nagkaisa project with the Danish Trade Union Development Agency on promotion of decent work and freedom of association. The increased awareness among the workers of their labour and human rights led to their active participation in several labour activities. Levy Equipado of the United Cavite Workers Association stated that among these activities was a protest at the DOLE national office just before International Women's Day in 2021. The women's rally was timed for a dialogue with labour officials. Although without any previous experience in social dialogue, the women garment workers tabled their demands and negotiated with the DOLE officers. The labour officials promised to look into their cases and offered to provide immediate assistance from the government's cash-for-work programme.

Partido Manggagawa is discussing with the workers the option of pooling part of their cash assistance so that they can form an informal cooperative for a livelihood project. In case the workers decide to pursue this option, Partido Manggagawa will seek support of other groups so that training in digital skills can be provided to the workers, aside from additional capital. Rosario Workers Association's Jessel Autida said that this is in response to the lessons from the experience of the homeworkers who faced challenges in transitioning to online selling without any institutional backing.

Harnessing digitalisation's benefits and minimising harmful effects

There are a few available examples of trade unions, private entities, the state and other stakeholders working independently and cooperating with each other in efforts to narrow the digital divide, harness the benefits of digital technology and mitigate its negative effects during these pandemic times. Development organizations and social enterprises also are helping capacitate communities to go online to communicate with each other.

Skills in digital technologies are necessary for achieving decent work but can also facilitate social inclusion. There are organizations and projects that aim to provide communities with relevant digital skills and enhance the employability of people, with an eye on narrowing gaps based on gender, class and ability. Many of these initiatives aim at financial and digital inclusion, addressing online gender-based violence, linking producers to markets and providing access to education and training technology. The more notable and inspiring examples focus on workers in both the formal and informal economies as well as farmers who comprise the backbone of Asian societies. Some of them involve the tech giants, whose roles can be considered contradictory because their positive impact may be offset many times over by the harmful effects of their overall operations on the human rights of citizens in general and of workers and women in particular.

Connecting trade union members online

Judy Miranda described how unions in the Philippines, as elsewhere, adapted to the extended and strict lockdowns by shifting their work and activities online. The labour coalition Nagkaisa conducted an online rally on May Day in 2020 that gathered several thousands of participants over Zoom and Facebook Live. Labour education as well as organizational meetings went virtual (Velasco, 2021). The shift faced difficulties at the start because many workers, especially members belonging to the informal economy, were not familiar with Zoom or had no access to Zoom-enabled gadgets. But as the pandemic progressed and the lockdowns extended, a combination of training and practice proved

useful in getting more members onboard Zoom for meetings, webinars and online events.

Aside from digital skills, access was also a major concern. Most trade union members from both the formal and informal economies do not have Wi-Fi connections at home due to its prohibitive cost. Purchasing a mobile data package is expensive for many people. Thus, trade unions have provided "communication allowances" to some members, especially women in the informal economy, who could not otherwise afford to participate in online meetings. As a result, attendance in labour meetings and webinars has become more consistent. Local unions also have done the same thing to incentivize membership participation.

Judy Miranda explained that their group Partido Manggagawa, which is a member of Nagkaisa, took it a step further by convening small groups of informal workers and union members in backyard open-air settings as hubs. In these hubs, small groups are able to participate in online events using just one smartphone connected to a mobile data package. This year, Partido Manggagawa plans to scale up the hubs by providing smart TVs to the hubs through assistance from the Business and Human Rights Resource Centre.

The same project is funding Partido Manggagawa's weekly podcast, whose target audience is women workers. The podcast started this year and has discussed topics as varied as expanded maternity leave, sexual and reproductive health and rights and COVID-19-related labour issuances. The podcast is shared on social media and is boosted on Facebook to reach a wider audience.

Similarly, SENTRO, another constituent organization of Nagkaisa, has been hosting a twice-a-week radio show for workers, according to CJ Castillo who is a member of the union. Started in 2016, the radio programme continues to this day, although to adapt to the lockdown and social distancing protocols, hosts now pre-record the show and then send the episode to the radio station for airing. The recording is also shared on social media to reach more members and the public too.

Linking farmers to markets

Smallholder farmers have experienced devastating pandemic-related disruptions in reaching their markets due to restrictions on mobility, social distancing rules and financial limitations. The COVID-19 crisis has spurred the spread of technological innovations spearheaded by development organizations, such as Digital Green.

Digital Green works principally in India. It dedicates its technical extension work to smallholder farmers, and 90 per cent of its 1.9 million partner farmers are women spread out over 15,000 villages. They have developed tools so that farmers can expand their social media sales by using chatbots, artificial intelligence and an online store. It is also developing an internet platform by which farmers can connect directly with their clients and receive payments from them (The Asia Foundation, 2021; Digital Green, n.d.).

Social enterprises have also gone into action to assist farmers in dire need of market connections during these pandemic times. One good example is Kokopon, a women-led fair trade initiative in Cambodia that has empowered a hundred local farmers to use a mobile e-payment platform for free. Kokopon runs an online selling platform catering to local consumers and has featured more than 500 local products, with the aim of supporting local economies. Its founder, Sokneang N Nodzak, is a female entrepreneur who believes that Cambodian women of the twenty-first century are powerful and ambitious and can do anything that men can do. Her greatest challenge, she says, is stepping out of her comfort zone and telling everyone to “stop judging us” because she did not follow the traditional route of marrying and remaining a housewife. She says women must follow their dreams and have time for themselves beyond family responsibilities (The Asia Foundation, 2021; Spiess, 2019).

Financial and digital inclusion

The Indonesian financial technology company Amarthia has pledged to provide a million rural women with loans for operating capital by 2022. It has committed to extend loans for 5 million more women within the ensuing five years. One of the groups that Amarthia has already helped is composed of women food vendors in Sulawesi who lost their livelihood because of the

lockdowns. The ban on street vending left the informal women workers unable to pay loans on the products that they had bought for reselling. Moreover, the health protocols meant added cost for buying face masks, whose prices rose steeply due to their scarcity. But a group of women street vendors pooled their resources so they could buy face masks wholesale and then sell them online. With brisk business, they later expanded to online selling of clothes, banana chips and cakes (Julliard, Chambard and Alvarez, 2021).

The example of Amarthia is noteworthy in that the company is a signatory to the Women’s Empowerment Principles. The principles aim to encourage companies in promoting gender equality in the workplace. Nevertheless, unequal access to training, capital and technology makes the successful case of the Sulawesi street vendors hard to replicate elsewhere (Julliard, Chambard and Alvarez, 2021). Other than finance and training, women entrepreneurs also need skills in digital technology (Dalal and Mathews, 2021). This challenge led UN Women to set up the 2021 Global Equality Forum on closing the financial and digital gender gaps.

Similar to the Amarthia model, the Ignite programme in Vietnam supports women entrepreneurs by opening up access to both capital and digital resources. Ignite has assisted women entrepreneurs whose wholesale business have faced pandemic-related difficulties and helped them transition to online retail. Ignite is a collaboration between the international non-government organization CARE and the Mastercard Center for Inclusive Growth. Both CARE and the Mastercard Center seek to assist poverty-reduction projects. Amarthia and the Mastercard Center are examples of financial service providers that are mobilizing to widen women’s access to capital through a reassessment of traditional risk paradigms. Conventional risk models typically exclude women in poverty and in the informal economy. Instead, new risk paradigms are based on more holistic data that consider the particularity of poor women’s lives (Dalal and Mathews, 2021).

Algorithms now routinely compute the creditworthiness of loan applicants. However, poor women tend to be disadvantaged by algorithms because, for example, they spend less time on smartphones due to hours of unpaid care work. This fact lessens their credit score as first-

time loan applicants. Thus, Women's World Banking, data.org's Inclusive Growth and Recovery Challenge and Lendingkart, an Indian financial technology start-up, joined forces to ensure that poor women have access to capital for sustaining viable livelihoods. They also aim to make sure that the algorithms become fairer to poor women (Cheney, 2021).

Also in Indonesia, UN Women, Pulse Jakarta, the platform giant Gojek and the National Council for Financial Inclusion jointly conducted a research project focusing on micro and small businesses in the food and beverage sector, called Leveraging Digitalisation to Cope with COVID-19. The main research finding is that more than half of women-owned micro and small businesses used at least three digital platforms for their transactions, and 82 per cent benefited from digital solutions in GoBiz (offered by Gojek) in balancing their work and family responsibilities. It is, however, unclear whether or not the gendered division of labour remains the same, with the businesswomen just gaining more time from being able to conduct their transactions digitally while attending to the same unpaid care work that men still refuse to share. Gojek, a platform-based company that initially engaged in the transport business, has expanded its services and now has 900,000 "partner merchants" mostly at the micro and small business level (UN Women Asia and the Pacific, 2020).

The Asia Foundation, supported by a \$3.3 million grant from Google, has embarked on basic digital literacy and skills training and mentoring called GO Digital ASEAN. This is meant to capacitate disadvantaged individuals, groups and communities in rural and other far-flung areas across the member countries of the Association of Southeast Asian Nations. The goal is for them to eventually serve as the workforce of microbusiness enterprises that have the capacity to use social media for reaching their customer base and expanding their markets. Some 144,000 were trained in the programme, 77 per cent of whom were women, and 78 per cent of whom were younger than 35 years. Its trainees have become adept in getting online information to improve their business, make online sales and payments and advertise their products on the net (The Asia Foundation, 2021).

As mentioned earlier, some of these initiatives, while laudable, also serve to promote the image and expand

the customer base of global big tech, like Google, and also big tech on a national and now regional scale, which Gojek represents. They are not surprising because the notion of corporate social responsibility has been widely used to gain positive points for well-known brands. What needs to be inserted into the picture is the notion of corporate social accountability for issues that have been raised against them (UN Research Institute on Social Development, 2010). Tech giants, for example, have been accused of violating data privacy, tolerating harmful online content in the interest of profit-maximization and profiting from data extraction without the knowledge and consent of the data providers or owners. They have amassed super profits from these reprehensible activities, and whatever amounts they donate or provide for their "good work" are minuscule in comparison. The notion of corporate social accountability insists that they must first be held responsible for their questionable actions, answer for the harm done to various stakeholders, be penalized for non-compliance with international human rights standards and provide mechanisms for those they aggrieved to channel their complaints and seek redress.

Addressing gender-based violence

It is well known that cases of sexting, false news, internet scams, uploading of materials that violate personal privacy, cyberbullying and other forms of cyberviolence have increased tremendously during the pandemic. In Lahore, Pakistan, the Digital Rights Foundation led the formation of a helpline for women seeking assistance about cases of online harassment. The hotline saw a 500 per cent increase in calls after the lockdown started. The complaints ranged from bullying and impersonation on social media to blackmail due to sensitive personal information or photos being shared without consent. The helpline helped women by offering legal assistance, psychological counselling and digital security advice (Fitzgerald, 2021).

To address these issues, Google Be Internet Awesome has trained more than 100,000 teachers in Thailand to educate their students in digital citizenship and equip them with the means to handle the many kinds of risks that lurk on the internet. By August of 2021, some 1.6 million Thai students were expected to benefit from the delivery of a curriculum designed to ensure their safety when they go online (The Asia Foundation, 2021). Again, however, the irony is inescapable — having a tech giant

provide the means to train teachers and students on how to navigate the internet safely while not doing enough to keep the internet safe in the first place.

Accessing education and training technology

In India, the tech company Gram Vaani formed a social media network for women through which they call a number to listen to gender-relevant information regarding pregnancy and maternity as well as COVID-19-related facts. In addition to passive listening, the women can also contribute their thoughts and opinions on the audio-based platform. While in earlier times poor rural women in India usually did not have access to a phone, which is controlled by the husband, the stay-at-home policies due to the pandemic gave the women access to a smartphone. Simply gaining access to a phone gave the women the ability to get valuable information (Fitzgerald, 2021).

Also in India, the non-government Pratham, Katha and Naz Foundation spearheaded digital, home-based and community initiatives for online education. Online training modules for teachers and students were drafted on such topics as mental health, menstrual hygiene and COVID-19 prevention. The initiative used any available local digital technology. But a key mechanism of the

success was a pool of volunteers, connection with the community and participation of the state (Srinivasan, Singh and Sekhar, 2021).

Likewise, through the Indian government's flagship skilling scheme, *Pradhan Mantri Kaushal Vikas Yojana* (PMKVY, Prime Minister's Skill Development Plan) 3.0, vocational courses are being introduced for students in grades 9–12. Initial data show that the girls have preferred training in courses on textiles, office and business-related work, health care, life sciences and childcare-related work (Srinivasan, Singh and Sekhar, 2021). However, these preferences fall into the stereotypical occupations of women.

In Indonesia, the Ministry of Education and Culture is attempting to address the lack of trained personnel for jobs requiring advanced digital skills, such as machine learning, cloud computing and mobile development. It is offering an online interdisciplinary undergraduate programme called *Bangkit* to train young women and men who will get university credit, certification and incubation funding when they finish. Some 3,000 students had enrolled as of the first half of 2021. The programme is conducted with the support of private sector entities such as Google, Tokopedia, Traveloka and DeepTech (The Asia Foundation, 2021).

Ways forward and implications for the future

Feminist networks, organizations of women in the informal economy, trade unions, research institutes, United Nations officials and agencies as well as other stakeholders have all highlighted implications and ways forward that reinforce each other in creating a future that weaves together digital, gender and social and economic justice. Many of them cite international human rights standards to argue their case. Michelle Bachelet (2021) set the tone in her statement to the Human Rights Council, when she emphasized that “issues of access to, use and misuse of digital technologies should be guided by international human rights norms and principles, especially equality, non-discrimination, inclusion, participation and the provision of effective remedies”.

Altogether, the implications cover the concerns brought up in earlier sections of this paper, ranging from global and national governance deficits to the digital divide based on nationality, class, gender and other forms of discrimination and an array of barriers that prevent the attainment of women workers’ rights in the digital world.

Regulating big tech

The reproduction of existing inequalities in the digital realm and even their exacerbation, especially amid the pandemic, all point to the urgent need to regulate the huge global corporations that reap super profits from their extraction and control of data as well as other resources from developing countries (Colclough, 2021; Gurumurthy and Chami, 2020). The concept of data governance is crucial in this regard, covering individual rights to privacy and ownership of personally generated data as well as the sovereign rights of countries to prevent unauthorized exploitation and manipulation of data generated by its nationals by foreign entities and often global interests that habitually breach digital security with impunity. To further address the North–South digital divide, developed countries must honour their commitment to transfer digital technology to developing countries.

Irene Khan, the United Nations Special Rapporteur on Freedom of Expression, demands that big tech adhere to the United Nations Guiding Principles on Business and Human Rights. Thus, social media and technology companies must perform human rights and gender

impact assessments to determine and mitigate risks to women and LGBTQI. Platforms must be made gender-inclusive, adopt safety policies, guarantee transparency, algorithms included, and offer remedies (Khan, 2021). This acquires relevance in the light of recent exposés regarding how Facebook, for the sake of profit maximization, tolerated the online propagation of harmful content even though it had the technological capability to take it down (Sadowski, 2021).

States need to revise taxation and labour laws to affect the redistribution of digital gains. Developing countries, and even developed nations, need to generate even more fiscal revenue by preventing the base erosion and profit-shifting manoeuvres of global corporations, including tech companies. Transnational corporations have skirted national taxation regimes and exploited tax havens by shifting prices and revenues easily, given the global scope of their operations. These companies should be held accountable for violating decent work standards, which includes guaranteeing fundamental rights at work, providing social security and protection and preventing all forms of discrimination. For women workers in particular, maternity benefits and the prevention as well as redress of sexual harassment and other forms of gender-based violence in the workplace must be ensured. For home-based and other informal workers, it is important to make global brands accountable for all workers in their supply chains, from the first-tier factories to home-based processes (Ratan and others, 2021).

The global tax justice movement’s call for fair taxation of global tech giants implies treating multinationals as single global entities — the so-called unitary taxation — and allocating global tax revenues to countries according to where profit is genuinely earned, not artificially shifted, based on a formula termed “formulary apportionment” (Colclough, 2021).

Ensuring universal access, investing in digital public goods

Assuming that developing states in Asia manage to expand fiscal space through the imposition of tariffs on big tech and other forms of wealth taxation directed at the biggest corporations making the most profits, where should the taxes go?

Top priority should be guaranteeing universal access to and use of digital technology through data allowances and subsidies, basic digital education along with provision of digital gadgets, promoting STEM education for all and funding reskilling and upskilling programmes to facilitate digital employment for workers in the formal and informal economies.

Developing States should also invest in digital public goods, beginning with the “essential digital infrastructure for economic transactions”, such as affordable apps for making payments and authenticating identities to serve as alternatives to commercial apps, which charge huge fees. Next would be “publicly funded e-commerce marketplaces” that would prioritize products of microentrepreneurs, artisans, farmers and other small producers, especially women. “Publicly managed labour portals” could be set up to facilitate connection of service workers to potential clients. And last but not least, seed funds could be awarded to service unions, farmers’ groups, social enterprises, women producers and other disadvantaged groups to set up alternative platform models that can maximize their digital gains and increase their net surplus (Gurumurthy and Chami, 2019).

Strengthening gender-responsive social protection and livelihood recovery

The pandemic has shown how women’s unpaid care work has intensified to maintain life and health; how social protection, basic amenities and services are crucial to family and community survival; and how these have been transformed through digitalisation to conform with health protocols. These provide the reasons why states need to spend more to provide cash and data allowances, water, sanitation and hygiene facilities, universal health care and child and elderly care, to lighten women’s burdens by reducing and redistributing unpaid care work. At the same time, resources for solidarity-based livelihood and income-recovery activities, including setting up digital credit, marketing and credit facilities, must be disbursed to producer groups, and first to the marginalized populations among them.

Given these realities, “the post-pandemic economic recovery” needs to take on board the worsening digital divide affecting girls and women in rural areas who are clearly left behind (Marsan and Sey,

2021). States should recognize and provide the pressing needs of women-run informal enterprises of microentrepreneurs and contributing family workers for meaningful digital access, working capital and stable markets. Governments can give preferential treatment for products of these informal enterprises in their procurement programmes (WIEGO, 2020). Another solution is localization of digitalisation through community use of solidarity-based digital value chains (Gurumurthy, 2019).

Advancing gender equality in the digital economy

There are several proposals on how to address the gendered digital divide in the region and how gender equality in the digital economy could be achieved. The most evident is ensuring basic digital access for all, especially women. However, increasingly advanced modes of access to the digital economy, such as STEM skills, jobs and careers, must also be assured. Young girls should be encouraged to learn coding at school and be given grants for enrolment in STEM-based higher education. Also, digital leadership positions need to be expanded for women in both the private and public sectors through mechanisms to balance the number of women and men in senior management positions. Entrepreneurship for working women must be data- and digital-driven and use dedicated funding schemes and coaching and mentoring programmes (Marsan and Sey, 2021).

Gender equality in the digital world can only be achieved if various levels of access are connected to higher forms of participation. Gender equality should be measured not only in terms of basic digital access to computer use, mobile phone use and ownership and internet use but also in terms of what is described as “meaningful access” to social media and mobile money. This means that women and girls need to be trained to acquire not only basic digital literacy but also intermediate and advanced skills for technological work and entrepreneurship. To build and enhance gender equality in participation in the economy, women must gain visibility in telecommunications and computer programming-related occupations; scientific research and development; technical careers in frontier technologies; management roles; digital entrepreneurship; and digital policymaking positions (Sey, 2020).

Changing social and cultural norms are imperative to attain these goals. Discriminatory gender stereotypes must be combated. Access of women and girls to digital technology and STEM education should be normalized. Given that 90 per cent of future jobs will possibly require digital technology skills, it is necessary to ensure women's equal access to digital literacy skills, including for girls living in geographically isolated and disadvantaged areas (Bachelet, 2021).

Guaranteeing labour rights

The rights to recognition, representation and participation are the building blocks for the enjoyment of other rights for the organized citizenry. Workers, women and other marginalized groups need to occupy places at the decision-making table, together with representatives of governments and employers' groups, so that they can push for their legitimate demands for legal and social protection. Many of these groups have mobilized their forces, often through digital means, to address the worst impacts of the pandemic and conduct solidarity-based actions with their constituents, with or without state support (AMRC, 2021). The best way to recognize their efforts is to appreciate their contributions, reward them if possible and enable them to participate and represent themselves in dialogues that will determine the course of policy developments, particularly in the allocation of resources. It makes perfect sense to support organizing, awareness-raising, advocacy and networking efforts of these marginalized groups.

The pandemic has shown in bold relief how labour rights have been ignored through the massive displacement and insecurity, if not impoverishment, of workers as companies shut down and left their employees to fend for themselves. Workers in the platform economies, even if they remain employed, work in the limbo of contractor status, as platform owners refuse to recognize them as employees with rights regarding wages and benefits. Many workers in the informal economy, including home-based workers, vendors, domestic workers, non-corporate construction workers and small transport operators, have been reduced to penury as demand for their products and services fell dramatically. And in all these categories, women, older persons, racial, ethnic and sexual minorities, rural dwellers and the low-educated are more affected and at risk. This situation demands a clearer legal articulation of workers' entitlements across gender, race, age, etc.

so that all sectors and types of work are adequately covered and protected.

The massive rise in unemployment and underemployment as a result of the impact of the COVID-19 measures highlight the need for ensuring social protection for workers in both the formal and informal economies. Trade unions are calling for more robust unemployment insurance systems and extending the net of social protection to informal workers through government subsidies of insurance contributions. Informal workers are discriminated against in the traditional social security mechanisms because they must shoulder both the employee and employer share of premiums while usually earning less than their formal sector counterparts. Likewise, strengthening old or pioneering public employment programmes will put the unemployed and underemployed back into the active labour market under conditions of decent work and respect for labour rights and entitlements. These public employment programmes must be congruent with just-transition measures, in light of climate change adaptation, and must prioritize the provision of climate-proofing jobs in such areas as renewable energy, reforestation or beach clean-up (Ofreneo, 2021).

Within the labour movement, there is a discourse on the suitability of universal basic income in response to automation and robotization. Most Global North unions instead prefer to revive strong social protection systems predicated on freedom of association, collective bargaining, workers' rights and labour standards. Further, the shortening of the working day is included in this suite of innovative responses to the Fourth Industrial Revolution. However, there are Global South unions that are open to the idea of a universal basic income. The difference has to do with context. In the Global South, universal basic income is understood as an anti-poverty intervention and not as a response to the threat of automation. In any case, labour movements in both the Global South and Global North are increasingly calling for wealth taxes targeting the richest individuals and corporations, especially because their incomes have enormously grown amid the pandemic and other recent global crises.

Informal workers' organizations claim that their constituencies have always been left behind in terms of legal and social protection. Ratan and others (2021) enlists proposals for this set of workers who comprise

the overwhelming majority of the Asian labour force include:

- (i) determine minimum wage rates across informal wage employment categories for hourly, daily, monthly and piece-rate work;
- (ii) institutionalize relations between employers, contractors and informal workers;
- (iii) create a three-way negotiating forum involving all stakeholders across government, employers and informal workers; and
- (iv) ensure that public work programmes focus on women informal wage workers, and create reliable, stable jobs for these workers.

The following proposals have particular reference to legal and social protection (Ratan and other, 2021; WIEGO, 2020):

- (i) account for women informal workers as part of the economy and prioritize reaching them in government relief schemes;
- (ii) extend short-term cash grants, food relief and other social protection measures for informal workers that specifically target women;
- (iii) expand the social security system to include women informal workers, providing them with access to health insurance, pensions and old-age homes; and
- (iv) enforce labour protections and support policies for migrant wage workers.

Respecting freedom of expression and preventing gender-based violence in cyberspace

Governments must implement and enforce effective laws that are based on international human rights

standards to proscribe and prosecute online violence against women. In this regard, there is need to craft an accepted working definition of online gender-based violence to safeguard women and girls while taking care to guarantee respect for the freedom of legitimate speech. As it stands, gender-based hate speech is banned under international law in the same way as religious and racial hatred. Thus, the best way to respond to incidents of gender-based violence and disinformation in cyberspace is by fostering independent media, fact-checking, grass-roots awareness and media and digital literacy. However, social media companies are not addressing gender-based violence with the urgency and resoluteness needed to fight the onslaught of hate speech and gendered discrimination. Further, freedom of expression should always be protected, and no limitations, except those that can be justified by internationally recognized legal standards, should be imposed to hinder the cultural, gender and sexual expression of women or to limit feminist discourse (Kahn, 2021).

Clearly, there is need for new legal frameworks to address these challenges. In crafting these frameworks, expert groups who will be engaged should be complemented by strong participation of women, particularly women's rights organizations focusing on cyber violence (Marsan and Sey, 2021). Similarly, there is a need for States to collaborate with the private sector and business organizations in formulating and implementing concrete measures against online violence (Bachelet, 2021).

Policy recommendations

Given the results of this study, a multistakeholder approach is necessary to build synergy among the various social actors and partners, focusing on creating an enabling policy environment for all citizens, especially women workers, in the digital world. The main players of course are trade unions, informal workers' associations and women's and other organizations of the marginalized who are the claim holders in terms of demanding respect, protection and the fulfilment of human rights towards eventually realizing digital, gender, social and economic justice. The principal duty bearer is the State, which is obliged to provide an enabling environment for the progressive realization of human rights.

In addition to the pivotal role of governments, the tech giants have a primordial responsibility to account for various forms of injustice that they have committed in their quest for super profits, to provide mechanisms for redress of such injustice and to submit themselves to global and national regulation towards achieving justice in the digital world (Young, 2006). When guided by ethical principles and motivated by women's empowerment goals, the business sector can achieve a lot on their own or through public-private partnerships with government agencies or ministries in providing women and girls basic and meaningful access to digital technology and further supporting their efforts to advance in STEM-related programmes.

Academic and research institutes also have important contributions to make in generating data on women's participation in the digital economy. But they can do much more to fill the gaps to address the pressing lack of gender-disaggregated data in certain key areas. Up-to-date and precise information is necessary to come up with policy programmes that are evidence-driven.

At the regional and global levels, agencies affiliated with the United Nations system and international development foundations, organizations and institutions must continue providing macro-level analysis of the fast-unfolding trends in the digital world with accompanying recommendations on how to address them. They must continue providing important sources of funds, technical assistance and other resources to advance women's and workers' rights in the digital world.

In summary, the study makes the following recommendations for improving the outcomes for working women in Asia and promoting digital and gender equality. These proposals are based on the study's analysis regarding the challenges confronting working women in particular and the working class in general due to the pandemic.

For women's organizations, trade unions and informal workers' associations

- Develop knowledge and awareness regarding urgent digital issues, with a human rights and gender perspective. Consider how they can be concretely addressed through collective action, as evidenced by good practices.
- Provide capacity-building opportunities for union members, informal workers, women and other marginalized groups in the use of digital tools and data analytics for organizing, awareness-raising, advocacy, networking and participation in social dialogue and policy-making bodies at various levels.
- Facilitate access and use of e-wallets, e-commerce and marketing facilities, e-portals for job placements, local digital supply chains and alternative state-provided and/or non-profit platforms that enable workers in both the formal and informal economies, farmers, women entrepreneurs and producers to recover and sustain their incomes and livelihoods.
- Campaign for the digital rights of all citizens, especially women and workers, that ensure privacy rights, governance of big data and the eradication of gender-based and other forms of violence in cyberspace while ensuring freedom of expression.
- Increase networking among women's rights organizations, trade unions, informal workers' associations, youth groups, coalitions of older persons and other marginalized sectors, which can in turn create forums for advocating universal and gender-responsive social protection and services to effectively respond to the impacts of the pandemic, accelerated digitalisation, the climate emergency and other crises of global proportions.

For national governments and global institutions

- Provide digital public goods and services for all people, with a focus to ensuring that women and girls can acquire digital skills, education in STEM and new technologies, internet access and gadget ownership.
- Ensure data governance at the global and national levels, effective regulation and fair taxation of big technology companies.
- Institute robust and gender-responsive social protection mechanisms, such as income and job guarantees, and unemployment insurance to mitigate the impact of the pandemic-related economic, health and social crises on working people (especially working women).
- Foster participatory mechanisms that will enable organized workers in both the formal and informal

economies as well as women's rights and other civil society organizations to represent themselves in policy-making on digital concerns.

For global technology corporations

- Comply with data standards, akin to the labour standards and environmental standards that regulate companies to ensure their actions do no harm.
- Agree to the regulation of operations and specifically to stem online violence against women, the weaponization of social media and surveillance without consent.
- Assure open access to the big data at the hands of big tech and the algorithms that drive apps, including ensuring transparency for workers engaged in the platform.

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