

Addressing the Gender Dimension of E-commerce

Towards a Holistic Analytical and Policy Framework



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Abstract

This study examines the gender dimension in E-commerce, identifying the main gender gaps in the e-commerce ecosystem. It also looks through a gendered lens at the emerging e-commerce policies and regulations from the national to the international level. The aim is to generate a deeper understanding of the gender perspectives of E-commerce and to develop a holistic framework for addressing the current gender gaps through appropriate policies and regulations.

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Abbreviations

AI	Artificial Intelligence
COVID-19	Corona Virus Disease - 2019
E-commerce	Electronic Commerce
EIGE	European Institute for Gender Equality
G5	Generation 5
ICT	Information and Communication Technology
ILO	International Labour Organization
IPU	Inter Parliamentary Union
IT	Information Technology
ITC	International Trade Centre
JSI	Joint Statement Initiative
LDCs	Least Developed Countries
MCIT	Ministry of Communication and Information Technology
MIWE	Mastercard Index of Women Entrepreneurs
OECD	Organisation for Economic Co-operation and Development
RTA	Regional Trade Agreement
SDGs	Sustainable Development Goals
SMEs	Small and Medium-sized Enterprises
SNA	System of National Accounts
STEM	Science, Technology, Engineering, and Mathematics

TUS	Time Use Surveys
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNECA	United Nations Economic Commission for Africa
UNECE	United Nations Economic Commission for Europe
USAID	United States Agency for International Development
WEF	World Economic Forum
WTO	World Trade Organisation

SECTION 1

Introduction

During the previous two decades, the digital economy, and e-commerce as its primary trait, has been continuously expanding.¹ The years 2020 and 2021 have been particularly marked by an accelerated propagation of e-commerce towards new firms, customers and types of products. During the COVID-19, e-commerce proved necessary for increasing economic resilience at times of crisis. It allowed assuring the provisioning of goods and services for consumers and businesses more than conventional trade. With more and more consumers encouraged to purchase online, e-commerce platforms can be considered the fastest-growing retail market. According to Coppola (2021), based on data by Statista published in July 2021, “in 2020, global e-retail sales grew 27.6 per cent compared to the previous year. During that period, retail e-commerce sales accounted for 18 per cent of global retail sales.”

1.1 E-commerce: A new opportunity for development

UNCTAD (2021a) finds that the digital economy and e-commerce offer new possibilities for developing countries, including least developed countries (LDCs), to build economic resilience and achieve the Sustainable Development Goals (SDGs). “Countries whose governments create an enabling environment for e-commerce and whose businesses seize those opportunities will be well-placed to benefit from it. Those that do not, however, risk falling further behind”, adds UNCTAD (2021a). Guglya and Maciel (2020) refer to a “circular” relation between e-commerce and the SDGs. They explain that “e-commerce enabling measures contribute to the emergence of the e-commerce ecosystem, which is firmly embedded in the broader digital economy/society context”. In other words, strengthening the e-commerce ecosystem has positive spillovers that contribute to achieving many SDGs (see figure 1 below).

¹ Launched in 1998, the World Trade Organisation (WTO)'s Work Programme on Electronic Commerce, refers to the term “electronic commerce” as the electronic production,

distribution, marketing, sale, or delivery of goods and services (WTO, 1998).

Figure 1: E-commerce Circular Inter-relation with the Sustainable Development Goals



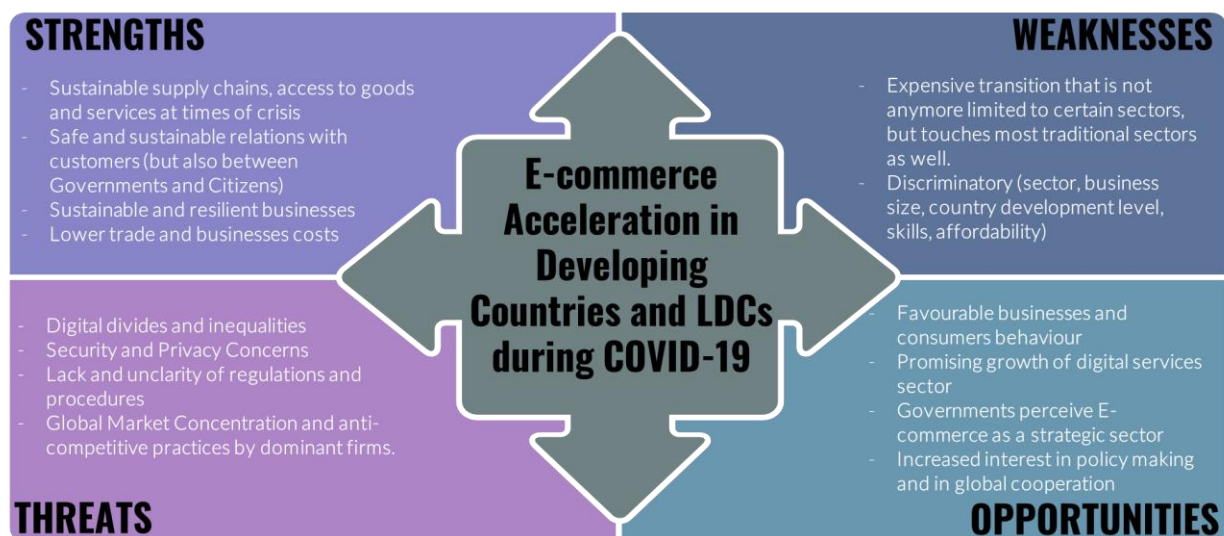
Source: Authors - Inspired by Guglya & Maciel (2020) and Darsinouei, & Kaukab (2017).

Hence, it can be observed that developing countries and LDCs are seeking to accelerate the adoption and development of e-commerce to secure their place in the rising digitised economy and to harness e-commerce development potentials. For instance, the Council on Foreign Relations (2021) predicts that between 2020 and 2030, the value of Africa’s e-commerce sector is expected to double. According to the same source, Southeast Asia’s e-commerce platform revenues tripled between 2015 and 2020 and are anticipated to triple again by 2025.

But Ismail (2020) warns the “digital economy and e-commerce are double-edged swords. While they are promoters of resilient supply chains and sustainable businesses and trade in times of crisis, they also can be exacerbators of inequalities if digital gaps and

needs of the vulnerable remain unaddressed”. She summarised key observations on a rushed e-commerce adoption in lower-income countries during COVID-19 in figure 2 below. She emphasised that positive spill-overs of e-commerce on small businesses, economies and societies are threatened by pre-existing digital gaps and economic and social inequalities. They may prevent reaping e-commerce fruits and reverse marches that have been taken towards achieving sustainable development.

Figure 2: A SWOT analysis of e-commerce acceleration in COVID-19 context



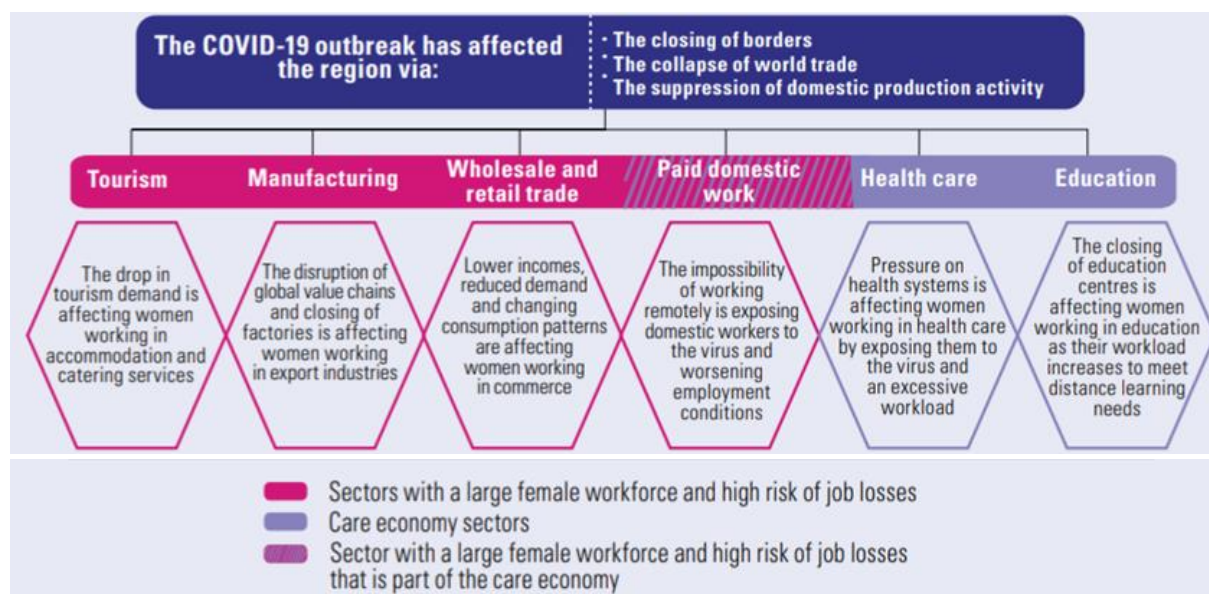
Source: Ismail (2021b) – updated.

1.2 E-commerce, digitalisation and Gender Equality

Gender equality is fundamental to the United Nations’ 2030 Sustainable Development Goals (SDGs) under SDG 5. According to the Global Gender Gap Report 2021 by the World Economic Forum (WEF) on COVID-19 crisis impacts, the “pre-existing gender gaps have amplified the crisis asymmetrically between men and women, (...). The hardest-hit sectors by lockdowns and rapid digitalisation are those where women are more frequently employed”. The report concludes that “the crisis has halted progress toward gender parity in several economies and industries”.

A recent report by the United Nations Economic Commission for Latin America and the Caribbean (ECLAC) demonstrated that the COVID-19 crisis hit harder economic sectors with large female workforces in this developing region, these are: tourism, manufacturing, wholesale commerce and retail trade, paid domestic work, healthcare and education (See figure 3).

Figure 3: The effects of COVID-19 on economic sectors with large female workforces

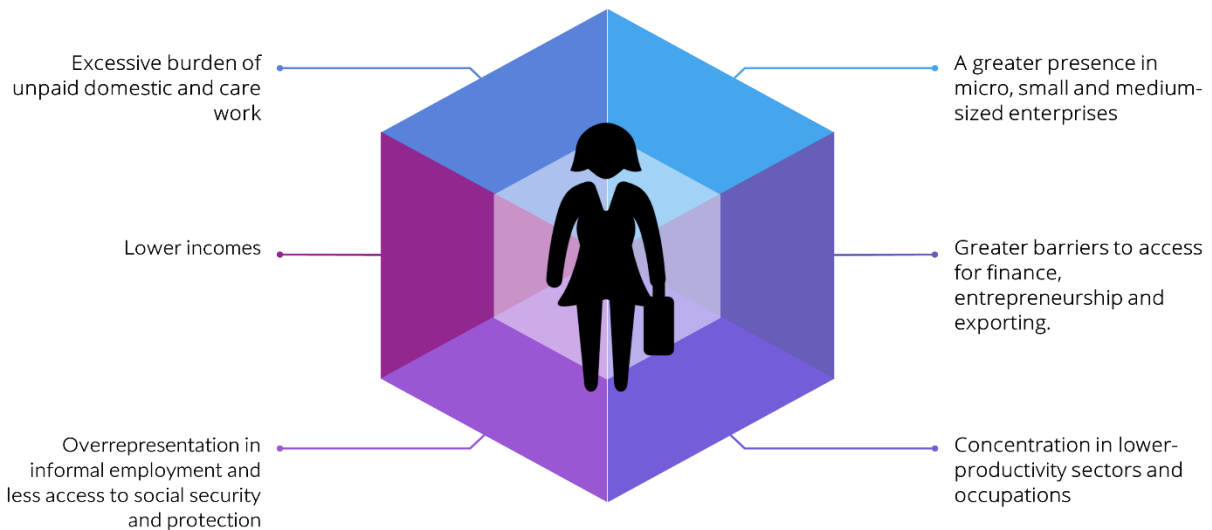


Source: ECLAC (2021)

According to Guglya and Maciel (2020), the e-commerce online business models and reproduced ecosystems can offer women to overcome some of the structural constraints they face on a daily basis in traditional trade and economic sectors (see figure 4). For instance, online-based jobs allow women to have flexible working hours to continue to provide the care needed by their families. Also, online financial services and access to e-wallets can promote better women financial inclusion and independence. E-commerce platforms can lower cross-border trade costs

for small and medium enterprises (SMEs) where women have a greater presence and enjoy greater leadership. According to the International Trade Centre (ITC) reported by Al-Saleh (2020), women use online platforms to their advantage despite having limited access to technology. Hence, according to the same source, four out of every five small businesses involved in cross-border e-commerce are owned by women compared to one out of every five firms in offline trade.

Figure 4: Structural inequalities affecting women’s participation in paid work



Source: Authors (based on ECLAC, 2021)

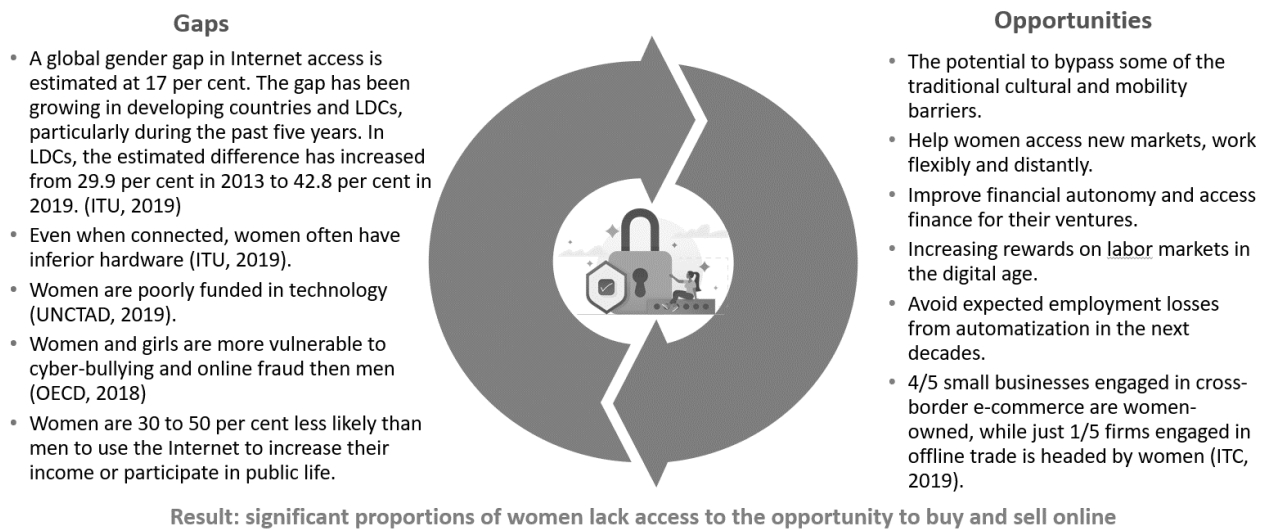
“Systemic inequalities do not disappear when transfigured through the medium of the internet”

Dy & Al. (2017)

Despite the above opportunities, e-commerce has also shown during the COVID-19 pandemic its potential to “leave more behind” and to worsen inequalities and divides that directly or indirectly intersect with existing gender structural gaps—on top of these

comes the digital divide. The OECD (2006) defines digital divide as “the gap between individuals, households, enterprises, and geographical areas at various socio-economic levels in terms of both their access to information and communication technologies (ICTs) and their use of the internet for a wide range of activities”. Figure 5 below gives a glimpse of the vicious circle of gender gaps and opportunities causing women to miss the chance to buy or sell online.

Figure 5: E-commerce and Gender Inequality: the vicious circle of gender gaps and opportunities



Source: Ismail & Sajous 2021

“Contrary to popular suggestion, systemic inequalities do not disappear when transfigured through the medium of the internet”, says Dy & Al. in their article in Human Relations in 2017.

Hence, to secure a better place for women in a digitising economy and increase the chances of their integration and empowerment in the growing e-commerce sector, it is necessary to apply a gender lens for the various e-commerce enabling policies being adopted increasingly.

This study examines the two-pronged relation between gender and e-commerce to generate a deeper understanding of potential gender impacts and key gender considerations to introduce in e-commerce relevant policies. In chapter 2, the study will first explore the myriad of e-commerce relevant policies frameworks. Chapter 3 will unveil e-commerce related gender gaps and implications for women as consumers, employees and entrepreneurs. Chapter 4 will generate, based on the previous chapters, a framework for introducing gender considerations into various e-commerce enabling policies.

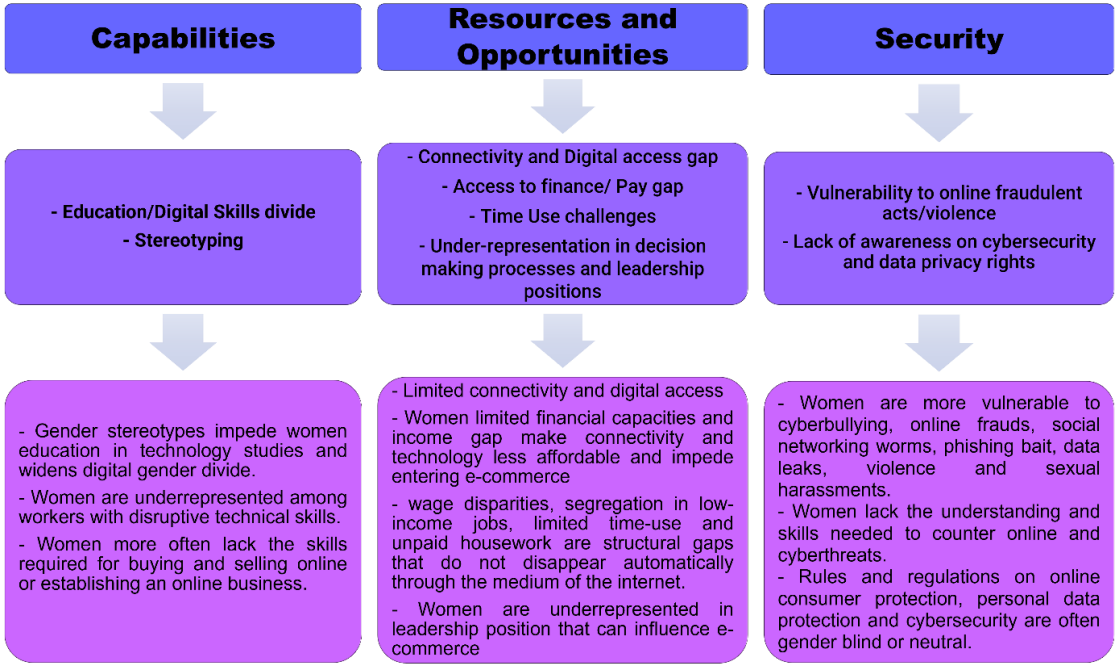
SECTION 2

Gender Inequality Aspects in E-commerce: A Global View

According to UNCTAD (2014), “Gender is a system of norms and practices that ascribe particular roles, characteristics and behaviours to males and females based on their sex and generally assign those born females a subordinate status in society”. Adopting gender blind policies to promote e-commerce means the chances to narrow down gender gaps in the economy will only get lesser in the future. The ITC decomposed an e-commerce transaction into four stages: establishing an online business, facilitating electronic payments (e-payments), logistical delivery and aftersales services such as online

consumer protection mechanisms and others that increase consumers and businesses trust (ITC, 2017). This chapter highlights gender inequality dimensions of e-commerce by revealing the specific challenges and limitations women face along an e-commerce process chain in three large gender inequality domains indicated by UNCTAD (2014): i) capabilities, ii) access to resources and opportunities, and iii) security. A summary of these e-commerce relevant gender inequality aspects is outlined in the below figure 6.

Figure 6: Summary of Gender Inequality aspects in E-commerce



Source: Authors

This chapter considers the different roles that women can play in e-commerce, i.e. a consumer, an employee or an entrepreneur and will compare (based on the availability of data) existing gender gaps between developed and developing economies.

2.1 The capabilities domain: Education and digital skills

Being equipped with education and the necessary digital skills is a crucial requirement for e-commerce. In developing countries and LDCs, the lack of access to education and digital skills deprives women of the opportunities that e-commerce presents. According to data from ITU (2021a), the digital gender gap continues to widen in many developing countries, necessitating a special effort to promote digital gender equality. According to ITU (2020), traditional illiteracy in developing countries and LDCs often leads to digital illiteracy preventing women from penetrating e-commerce businesses or using online shopping to purchase their family subsistence. Women and girls are also affected by educational barriers due to increasing domestic duties and gender bias towards working women (ITU, 2020). Women who only write and speak local languages face difficulty accessing ICT as not all digital platforms support the local languages.

Gender stereotyping impacts women's will and ability to seek high-level education in ICT or e-commerce related fields. Gender Stereotypes are generalised opinions about qualities or characteristics of the roles that women and men should perform, and they are harmful when they inhibit women's or men's ability to develop personal skills or pursue the professional careers they desire (OHCHR,

n.d.). In many developing countries and LDCs, the gender digital gap is widening due to stereotypes. For example, girls or women are caregivers and don't need high-level education or women cannot undertake studies or assume jobs in science, technology, engineering, and mathematics (STEM). UNGeneva (2021) states that although girls surpass boys globally in reading and writing, women remain underrepresented amongst top achievers in STEM.

In all the country groups, i.e., developed, developing and least-developed, socio-cultural barriers are entrenched in the society that discourages women from participating in the digital sector. OECD (2019) found that communities, schools, and even family members often put girls under peer pressure to make decisions that adhere to stereotypical conceptions of femininity. As a result, when it comes to choosing courses, educational paths, and jobs, females are frequently given stereotypical advice. The above factors contribute significantly to economies in which few women not only lack the skills, confidence, and commitment required to thrive in the digital world but also in which few women are willing to play a leading role in this sector even when they possess the necessary competencies (OECD, 2019).

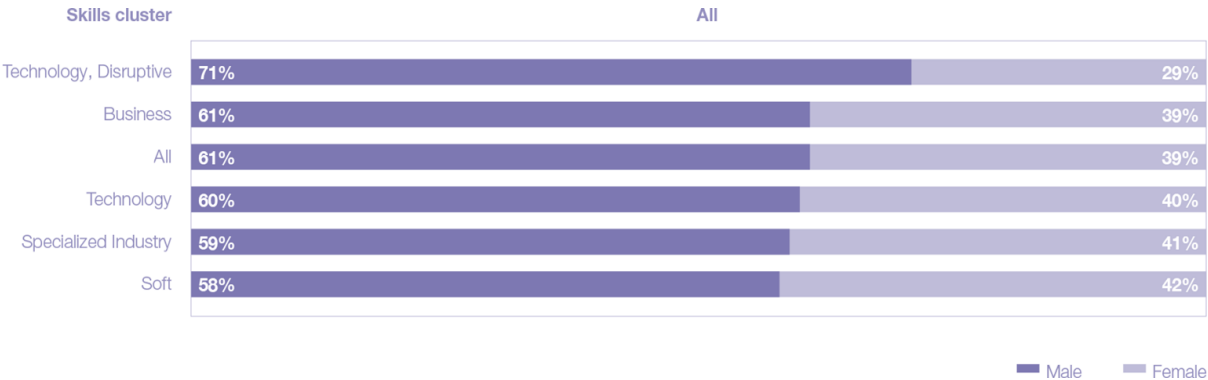
The lack of education and necessary digital skills, in its turn, brings about difficulties for women workers and entrepreneurs in the e-commerce sector. According to the Mastercard Index of Women's Entrepreneurs (MIWE) 2020, women businesses have been hit harder during the pandemic because their "on-average lesser knowledge assets" have hindered their conversion to platform-based processes. Women entrepreneurs may face incurring losses because of not knowing how to use the complex features of e-commerce platforms which are perceived to be expensive. According to the WEF, only 32%

of low-income countries population possess the basic digital skills needed compared to around 62% in high-income countries (WEF, 2020a).

Disruptive technologies are innovations that significantly affect how consumers, businesses, or industries function as they offer distinguishably superior characteristics. Smith (2020) considers E-commerce in itself an example of disruptive technology. Women continue to be under-represented among workers with disruptive technical skills, which continuously impacts men and women’s capacity to participate equally in the future

(WEF, 2020b). Disruptive technological skills are linked to emerging technologies like Artificial Intelligence (AI), robotics, and genetic engineering. Figure 7 below by WEF (2020b) depicts the gender distribution of men and women with various skill sets. According to the data, women make up a relatively greater percentage of individuals who claim to have “soft skills” and a comparatively smaller share of those who claim to have “disruptive technology skills”. However, women make up a lesser share of both groups (WEF, 2020b).

Figure 7: Share of men and women by skills cluster



Source: WEF, 2020b

2.2 Access to Resources and Opportunities

Women face several resource inequalities in e-commerce: unequal access to the Internet and ICT hardware and infrastructure, finance gaps, time use challenges due to household burdens, and lesser influence on decision-making in households, businesses or governments.

Connectivity and digital divide

Connectivity and digital access are fundamental for buyers and sellers to perform an e-commerce transaction. When it comes to the gender digital divide, Thystrup (2018) defined it as the “impaired access to IT infrastructure or IT skills education based on gender”. It affects women’s ability to integrate into e-commerce and reap its fruits, whether consumers, employees or entrepreneurs.

According to UN Women data, just 45% of women globally have internet access, while men own the majority of mobile phones. UNCTAD (2020) highlights that urban-rural disparities widen the gender digital divides in internet access and use. According to the assessment, in LDCs, only 40% of the population is covered by high-speed mobile networks (United Nations, 2020).

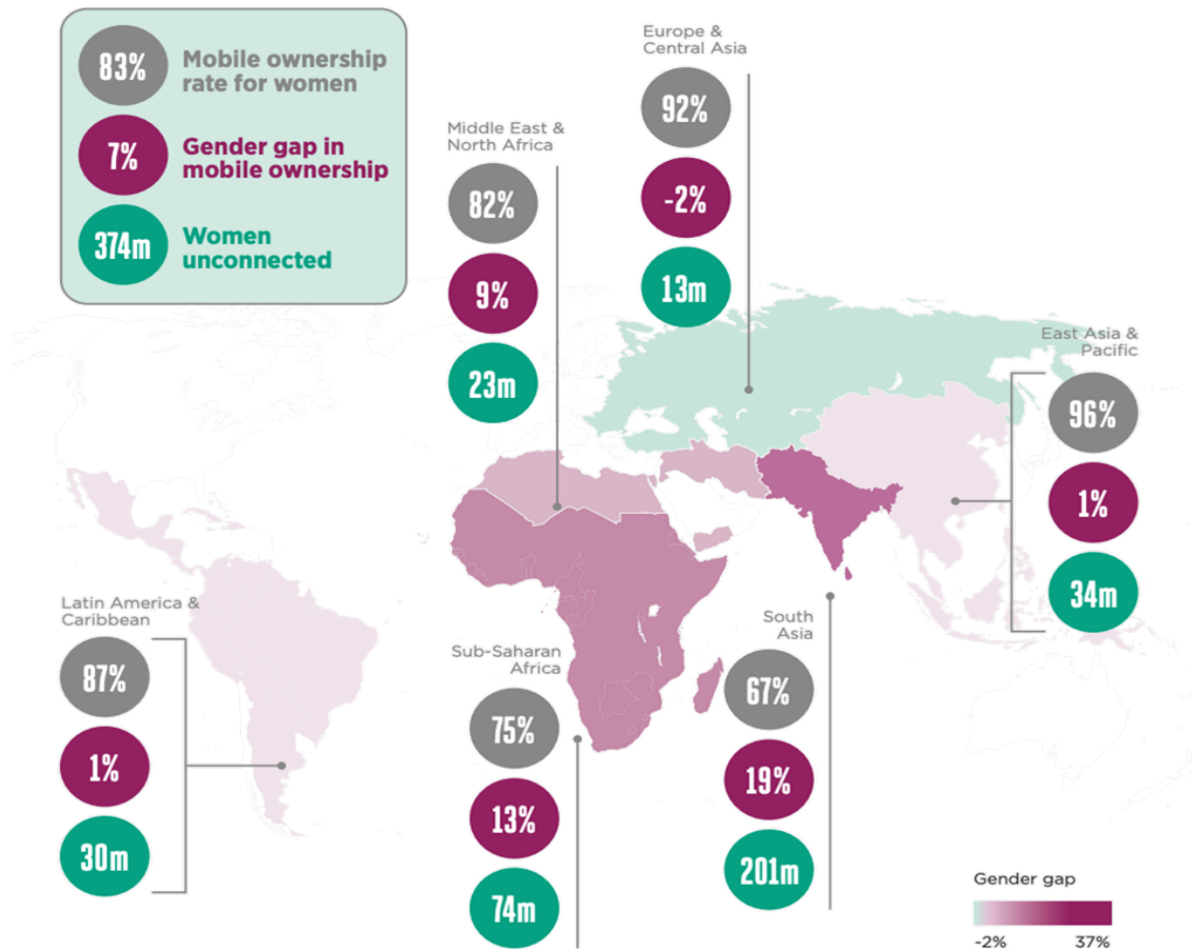
In developing countries and LDCs, the lack of relevant digital infrastructure limits access to the Internet and makes it expensive to use, limiting women's access to e-commerce. High costs are incurred to ensure broadband penetration in both rural and urban areas. Inadequate connectivity and unreliable power supplies lead to unstable internet connections, and this lack of reliable connectivity leads to lower trust in e-commerce for both consumers and traders/entrepreneurs. Both men and women may face these issues; however, in a gendered economy, women feel the effects of these constraints more.

Women as entrepreneurs cannot cater to the high costs of the Internet and necessary ICT hardware, especially when running SMEs and informal businesses. Even when connected, women often have inferior hardware that impedes progress on e-commerce platforms. There is a significant global gender gap in internet access. ITU (2019) showed that the

global gender gap in internet access was estimated at 17%. The data showed that in LDCs, the percentage gap increased from 29.9% in 2013 to 42.8% in 2019. In addition, in 2019, just 15% of women in LDCs accessed the Internet, contrary to 86% in the developed world (ITU, 2021a).

Despite the increase in mobile internet use, a gender gap exists in mobile ownership in low and middle-income countries. Figure 8 below by GSM Association (GSMA) (2021) depicts the gender gap in adult mobile ownership in 2020. It shows 374 million unconnected women, which calls for increased efforts to ensure increased internet connectivity. Because smartphones are the most commonly used way of accessing the Internet, most countries with a significant gender gap in Internet access also have a large gender gap in smartphone ownership. One of the most significant impediments to women's Internet and mobile phone access is their affordability (ITU, 2020). The high expense of technology is especially burdensome for women in developing countries and LDCs. They earn less than men in general and are much more likely to participate in unpaid employment. Challenges such as employment segregation, gender wage disparities, lack of financial decision-making capacity, parenting and unpaid household work, and exclusion from the formal economy, severely hinder many women's ability to utilise ICTs (ITU, 2020).

Figure 8: Gender gap in mobile ownership in low- and middle-income countries, by region



Source: GSMA, 2021

In rural areas, issues of poor connectivity infrastructure and limited purchasing power prevent the e-commerce sector from thriving more generally, particularly for women. Connectivity also relates to how accessible regions are. Rural areas that lack good transport connectivity cause hurdles in e-commerce logistics during deliveries of products, which is an issue for traders who have to facilitate a feasible option and consumers who incur high delivery costs. Because they lack access to connection, hardware, and digital skills, women rural

producers often miss the opportunity to reach new markets through online means. Combinations of these factors may impede small farmers from securing a place in the growing online marketplace and value chains (Chatterjee, 2019). Lockdowns imposed during the COVID-19 pandemic and limited online access meant that many women of developing countries and LDCs could not adjust their consumer behaviour and use the rising online shopping trends to access necessary goods and services for the livelihoods of their families.

Access to finance

It is vital to foster a robust financial infrastructure that supports innovation and entrepreneurship throughout the e-commerce process chain, particularly for women. Despite their growth, several economies fail to provide secure financial services or early-stage capital/debt to start-ups and growth-oriented enterprises in the e-commerce sector, where women, in particular, may face challenges (Ismail & Al. 2020). According to the Council on Foreign Relations (2021), female entrepreneurs face a roughly \$1.5 trillion global funding deficit. Several platforms are launching financial technology services for loans and payments but do not necessarily reach women. In certain countries, women still do not have the freedom to own land or inherit property, get loans, make a living, or advance in their careers without facing discrimination. According to UNCTAD (2019), women are poorly funded in technology, highlighting the need to increase funding for women aspiring to be digital entrepreneurs.

Stereotypes towards women also limit access to finance. Discriminatory constraints against gender equality in resource access are frequently stated in the context of access to resources (Joekes & Al. 2020). For example, as stated by (Joekes & Al. 2020), in certain Middle Eastern and North African countries, women have no independent right to create a bank account, take loans, own properties, or start up a business on their own. Due to the lengthy processes, registration for firms and loans for women can also be challenging, burdening and complicated.

Another difficulty women face regarding access to finance is the inability to link bank accounts to e-commerce platforms. As both consumers and entrepreneurs, women need to have digital payment means when using e-

commerce to buy and sell goods and services. Investing in new ways to connect digital wallets to the informal e-commerce sector helps empower women in developing and LDCs. According to the United Nations Economic Commission for Africa (UNECA, 2019), it is necessary to acquire formal and general education to obtain financial services from banking sectors, credit unions, and microfinance. Understanding financial services and trust in the financial markets requires specific knowledge and literacy, particularly financial literacy. Women have considerably less access to finance and land than men. This is a significant drawback in competitive e-commerce markets. Reforming legislative rules, which must be accompanied by effective implementation and enforcement, can assist women in obtaining access to a fair economic sector, and there are still numerous regulations that have a negative influence on women's access to e-commerce (UNECA, 2019).

The Mastercard Index 2020 found that increased financial inclusion for women in the business allows access to a wide range of financial incentives, including receiving and distributing subsidies and relief, enabling applications for business loans, and online payments, among others. The Index highlights that given the lack of gender-inclusive digital services supporting rural-based supply chains and overall food security systems, the majority of women in rural areas are “unbanked”. According to Thompson (2021), women account for 55% of the world's unbanked population, which means they do not have access to savings or checking accounts and financial services such as insurance, credit facilities, and loans.

The lack of bank accounts possession is exacerbated by the fact that the benefits of the digital era are not distributed evenly. Women, particularly those living in low-income and

disadvantaged communities, are substantially more likely to be on the losing end of a persistent digital divide (Thompson, 2021). According to UNCTAD (2021), although some unbanked individuals and businesses have no interest in opening accounts, the majority are excluded due to barriers such as cost, lack of documents, lack of trust and travel distance. These barriers affect women in e-commerce, particularly those living in areas where the financial sector is not developed.

Time use

Time use refers to women's time spent on services towards family and the household, unpaid work, etc. Time use is related to the social perspective of the role of women as carers for the home (Ferrant & *Al.*, 2014). Women carry more burden of unpaid work, and in most cases, this may not be considered a contribution to the gender gap, but it does since it takes up a lot of women's time and disadvantages women willing to work. For instance, it is difficult for women to have full-time jobs while having children and a household to care for. In addition, there is a societal pressure that adds a burden on women to stay at home and not pursue careers. E-commerce allows women to run businesses from home as e-commerce platforms enable businesses to run 24/7 without being physically present. Women in sectors such as the garment industry are also able to work from home and use e-commerce to sell products from homes by linking the supply and production chains while at the same time caring for their homes and children.

Time use surveys (TUS) are the most common information source on unpaid work. It is complex and costly to obtain time use data in stand-alone and nationally representative

surveys. For a long time, developed countries have undertaken time use surveys, although this practice is less prevalent in developing countries. Consequently, the data required to track SDG 5.4 on unpaid care work is still sparse (Rubiano-Matulevich & Kashiwase, 2018). Women have uneven labour-market access due, in part, to the significant amount of time they spend on unpaid care duties.

Consequently, women are always short on time, limiting their labour-force involvement (Charmes, 2019). Differences in time use are observed between men and women across regions and countries. For instance, in developing countries and LDCs, most women cannot hire someone to help them with chores and take care of children while at work. Unpaid work is also witnessed in developing countries when analysing the differences between rural and urban areas. In rural regions, women devote more time to unpaid care labour than in urban areas. Unpaid housework requires less time in cities since these tasks are more capital intensive. There is greater access to basic infrastructure, labour-saving equipment, and processed food. However, in rural regions, time might be spent on food preparation (Charmes, 2019). According to (UNCTAD 2014), the 1993 UN System of National Accounts (SNA) divides unpaid work into three categories: (a) housework, childcare, and other family-related services that are not identified as economic activity by SNA; (b) subsistence and non-market activities, such as agricultural production for household consumption and imputed rent of own-occupied dwellings; and (c) household businesses that produce for the market and for which more than one family member contributes unpaid labour.

Data on time use demonstrates how men and women use their time differently due to gender

stereotypes and duties. There is an uneven allocation of paid and unpaid work time. Women carry significantly more burdens for unpaid labour and spend relatively less time on paid work than men (Rubiano-Matulevich & Kashiwase, 2018).

E-commerce solves the problems faced regarding time use as online platforms run 24/7, and most operations are carried out by the systems, saving staff costs. For cross-border trade, e-commerce makes it easier for women to ship goods while still caring for the household once the digital platforms are linked to ensure smooth production and supply chains. However, it is also essential to consider the health impacts faced by women that have to work and cater for the household at the same time. Despite running e-commerce businesses, balancing roles as a trader/entrepreneur and a mother/wife can be strenuous, particularly in developing countries and LDCs, as most e-commerce businesses are SMEs that do not have a high profit margin. Thus, women do not earn as much to hire someone to care for their homes while they work. In addition, running a business from home despite being an e-commerce business is difficult in countries where the houses are occupied by large families, which demand more time and effort to care for.

Time use also applies to women as consumers who often cannot leave their homes to purchase goods and access services. E-commerce provides a platform for accessing goods and services with ease from the comfort of their homes. It also ensures safety as women do not have to travel long distances at late hours to access services and purchase goods as they can place orders online and pay online safely without the risk of getting robbed.

Decision Making

Women's ability to make decisions in politics, government, business, and homes is critical to equal participation in the economy. Involvement in politics and policymaking bodies allows women to formulate and implement trade-related policies, programs, and instruments (UNCTAD, 2014). Women need to be empowered and involved in decision-making processes related to e-commerce to better address the challenges faced. This applies to all country groups; however, women in developing countries and LDCs are largely underrepresented, mainly owing to gender stereotypes as compared to women in developed countries.

In developing countries and LDCs, women, particularly those living in rural areas, are excluded from local decision-making, especially when patriarchal norms require that land-use decisions be made in all-male meetings. Even while women are allowed to attend such gatherings, they remain silent and adhere to cultural standards that allow men to communicate on their behalf (Viña, 2017). Because of this, women willing to adopt e-commerce platforms may not be able to since decisions are taken on their behalf, which is a hurdle in running a business, especially on e-commerce platforms. To empower women in decision-making allow better addressing of gender discriminatory stereotypes. According to UN Women (2021), recent studies show that despite women's growing involvement and participation in public life, we are still a long way from full equality at decision-making tables. In addition, the COVID-19 pandemic has increased difficulties in terms of women's rights, decision-making, and equal representation in society.

Women's rights and prospects to reach their full potential are essential for achieving gender equality and various development goals.

Empowered women who participate in major decision-making lead to the growth and prosperity of their families, communities, and economies, creating an environment that benefits everyone (Peace Corps, n.d.). Reducing gender inequality and increasing women's participation in e-commerce requires providing traders/entrepreneurs a place at the decision-making tables, whether in governments or businesses. This ensures that women are involved in the e-commerce policymaking procedures and foster more inclusion in the digital sector.

2.3 The Security Domain: Vulnerability to online frauds and cybers-crimes

Cybercrime is a concern with threats that can be particular to women. Also, women may be less attentive and perceptive when it comes to identifying unusual online behaviour and are more likely to be victims due to their lack of expertise due to their restricted use of the Internet (Ismail & Al. 2020). According to the European Institute for Gender Equality (EIGE, 2017), cybercrime can take various forms: Inappropriate sexually graphic emails and texts; improper approaches on social networking sites or internet chat rooms; threats of physical and sexual violence by email and text message; hate speech, defined as rhetoric that disparages, degrades, threatens, or attacks an individual based on gender or other characteristics such as sexual orientation or disability.

Women and girls using e-commerce platforms face particular cyber threats and crime, for example, young girls lured into trafficking. Therefore, strict legislation is key in ensuring

these risks are curbed. According to EIGE (2017), it is critical for organisations and authorities combating cybercrime to address gendered forms of cybercrime, notably the online enticement or "recruitment" of women and girls into dangerous circumstances such as trafficking. Control measures should be created that involve the e-commerce sector, such as developing self-regulatory norms to avoid harmful gender discrimination and the propagation of derogatory pictures of women or material that connects sex with violence.

A study by the OECD (2018) found evidence that women and girls are more vulnerable to cyber-stalking, bullying and online harassment than men highlighting that cyber security risks are amplified for women and make them less likely to use the Internet. Because of the danger posed by cyber threats, most women are not proactive in e-commerce. For women, privacy, security, and online rights are critical issues. Women's concerns include having secure online places where women may feel safe from abuse and shielded from cyber prying while enjoying the freedom of expression and communication privacy (Michota, 2013). Security issues, privacy issues, digital threats, social networking worms, phishing bait, data leaks, impersonation, violence against women, and censorship are some of the significant challenges faced by women in e-commerce. E-commerce laws and policies ought to address how these threats can be mitigated to enable e-commerce for women economic empowerment.

Women in impoverished and rural locations may access the Internet only at schools, where privacy is limited, or at publicly accessible locations that may be unsafe or unattainable. Women who possess or want to own devices are frequently targeted for theft,

online abuse, and scams. Applications and services designed to protect women are also used to monitor and abuse them (Souter & van der Spuy, 2018). Concerns about safety, security, and harassment deter women from using e-commerce platforms and digital technology in general. In particular, the fear of harassment from strangers (unwanted calls, texts, online messages, or cyberbullying) are problems linked to online data security and privacy. Women express less awareness of the Internet's capabilities and a perceived lack of value (USAID, 2021). It is essential for cybersecurity laws to be gender-sensitive and ensure that e-commerce platforms are a safe space where women and girls thrive using digital technology.

Cybercrime Magazine estimates the yearly economic impact of cybercrime will reach \$6 trillion by 2021, up from \$3 trillion in 2015, demonstrating the necessity and pace with which the business must develop to cope with this ². According to Cybersecurity Guide (2021), The staffing shortage of cybersecurity professionals stands at 3 million and is expected to increase with the demand for infosec resources. The Guide points to one distressing aspect of this shortfall: the disparity might be significantly narrowed if women were represented equally in the sector. Women in developing countries and LDCs are hesitant to move businesses on e-commerce platforms due to a lack of security. These concerns act as impediments to wider ICT uptake. In developing countries, the lack of reliable internet connections and necessary

digital infrastructure amplifies the cybersecurity risks.

Facing cybersecurity risks requires investing in expensive technologies, e.g. to prevent data leaks and people with malicious intentions. Women in developing and least developed countries do not have these required resources nor cheap access to advanced technologies.

Women are more likely to determine how family income is spent on consumer goods, in addition to making most financial choices (Rollo, 2021). With most transactions taking place online during COVID-19, simply shopping for food may be dangerous, subjecting women to risks such as credit card fraud and spyware hidden in mobile applications (Rollo, 2021).

Women as consumers are at risk of threats such as phishing. Phishing seeks to access the purchasers' personal information (logins, passwords, bank card details). Phishing hackers frequently utilise bulk mailings on behalf of well-known firms with links to fake internet businesses that appear identical to real ones. Unfortunately, the customer receives nothing after payment (Cybervore, 2021). E-commerce policies need to address women's vulnerability to online frauds and cyber-violence, which also requires empowering women's education. It equips them with the necessary knowledge of the digital platforms' risks and how they can be prevented.

² <https://cybersecurityventures.com/cybercrime-damages-6-trillion-by-2021/>

SECTION 3

E-commerce for Women Economic Empowerment

As governments and other relevant actors intensify their actions to promote an ecosystem enabling e-commerce business expansion and growth, they need to ensure that women-specific challenges and structured inequalities presented in Chapter 2 are addressed across the relevant policies. This chapter will view recent international e-commerce governance and assessment frameworks to identify core e-commerce enabling policy groups. It will adopt then a gender lens and develop a framework for considering gender in core e-commerce enabling policy groups.

3.1 Enabling E-commerce: A myriad of intersecting policies and regulations from the national to international levels

Based on the previously mentioned ITC's e-commerce transaction four elements and on a recent analysis by World Bank (2020), it can be said that e-commerce exists at the intersection of four large core policy areas (see figure 9): i) ICT and connectivity, to ensure necessary digital infrastructure and connectivity services are accessible and affordable; ii) Financial and e-payment

Services, to ensure online payments are possible; iii) Trade and logistics facilitation, to allow faster transactions and successful deliveries; and iv) Legislations and mechanisms that enhance the trust of businesses and consumers in using online mediums, such as consumer protection, online transactions dispute settlements, personal data protection and cybersecurity.

Figure 9: E-commerce Ecosystem Core Elements and Relevant Policies



Source: Authors

The International Telecommunication Union has been leading with ICT Regulatory Outlook and Benchmarking when it comes to ICT regulations and policies. ITU released its “Generation 5 (G5) Benchmark” in 2020, building on its previous generations and

recognising that “ICTs have moved far beyond the realm of simple ‘communications’. They have become the foundation for every economic sector” (ITU, 2019), the ITU’s G5 adopts “collaborative regulation”. It aims to: i) expand collaboration between the ICT regulator and other regulators (Pillar 1), ii) promote participative policies (Pillar 2), iii) examine policies and tools needed to support countries’ digital transformation and progress

towards relevant SDGs (Pillar 3) and iv) instil these in the context of a country’s Digital Economy Policy Agenda (Pillar 4). The G5 Benchmark index was calculated for 158 countries for 2020. Based on the score, the country falls in one of the following stages of “Collaborative Regulation in ICT”: Limited, Transitioning and Advanced.

Figure 10: ITU G5 Benchmark Pillars and Score Thresholds

Fulfillment of G5 Benchmark	National Collaborative Governance	Policy Design Principles	Digital Development Toolbox	Digital Economy Policy Agenda	Maximum Score	Minimum Score
Limited	<ul style="list-style-type: none"> No collaboration No entity in charge 	<ul style="list-style-type: none"> Public consultations are not undertaken or required by law No formal requirement for Regulatory Impact Assessment The decisions of the regulatory authority are not subject to a general administrative procedures law Affected parties may not request reconsideration or appeal of regulations adopted by the administrative agency Authorization/operating licences or spectrum, are not technology and service neutral No mechanisms for regulatory experimentation or sandboxes exist No ex-post regulatory policy reviews 	<ul style="list-style-type: none"> No overarching digital strategy in place No digital identity framework No e-government strategy in place No existence of policy/legislation/regulation for Smart Cities, e-Health, and applications for education and learning No cybersecurity/cybercrime legislation and/or regulation in existence There is neither a data protection law nor a data protection agency No National Emergency Telecommunications Plan 	<ul style="list-style-type: none"> No holistic innovation strategy tailored to the ICT sector No forward-looking competition policy, law or regulation applied to digital markets No policies and regulations for e-commerce transactions in place No strategy, policy or initiative focusing on IoT Taxes on the telecommunications and digital sector exist 	30	0
Transitioning	<ul style="list-style-type: none"> Activities carried under the same ministry Informal collaboration 	<ul style="list-style-type: none"> Public consultations exist but there is no requirement/it is unclear what the timeline and process is and whether the regulator incorporates results in their decision-making/ there is no obligation to consider/respond to all comments Regulatory Impact Assessment is required but it is not consistently applied to all decisions There is an administrative review by the regulatory body Authorization/operating licences or spectrum, are either technology or service neutral (with exceptions) 	<ul style="list-style-type: none"> Overarching digital strategy expired, or being planned, is part of a broader development strategy, only covering specific plans or not clearly implemented Partial measures regarding cybersecurity and cybercrime regulation Data protection law exists but a data protection agency has not been established 	<ul style="list-style-type: none"> Forward looking competition policy, law or regulation applied to digital markets, or spectrum management processes in the process of definition Rules at regional level exist but country has not yet formulated national rules to match them, or no monitoring and enforcement of rules exist or, if they do, they have limited provisions 	60	30
Advanced	Formal collaboration (Joint Program of Committee)	<ul style="list-style-type: none"> Public consultations designed as a tool to gather feedback from national stakeholders and guide regulatory decision-making Regulatory Impact Assessment is required for all decisions The decisions of the regulatory authority are subject to a general administrative procedures law Affected parties may request reconsideration or appeal to an independent body or the judiciary of regulations adopted by the administrative agency Authorization, operating licenses, and spectrum are technology and service neutral Mechanisms for regulatory experimentation or sandboxes exist Systematic ex-post policy reviews Laws that are currently in effect available on a single website managed by the government 	<ul style="list-style-type: none"> Existing of current and updated digital strategy in place Digital identity framework in place Existence of a national e-government strategy or equivalent Existence of policy/legislation/regulation for Smart Cities, e-Health, and applications for education and learning Full cybersecurity and cybercrime legislation and regulatory framework Existence of a law and data protection agency Existence of a National Emergency Telecommunications Plan Mention of SDG or other international development goals mentioned in the digital strategy 	<ul style="list-style-type: none"> Existence of a holistic innovation strategy tailored to the ICT sector Forward looking competition policy, law or regulation applied to digital markets or spectrum management processes Policies and regulations for e-commerce transactions in place Strategy, policy, or initiative focusing on IoT Tax exemptions for the telecommunications and digital sectors 	100	60

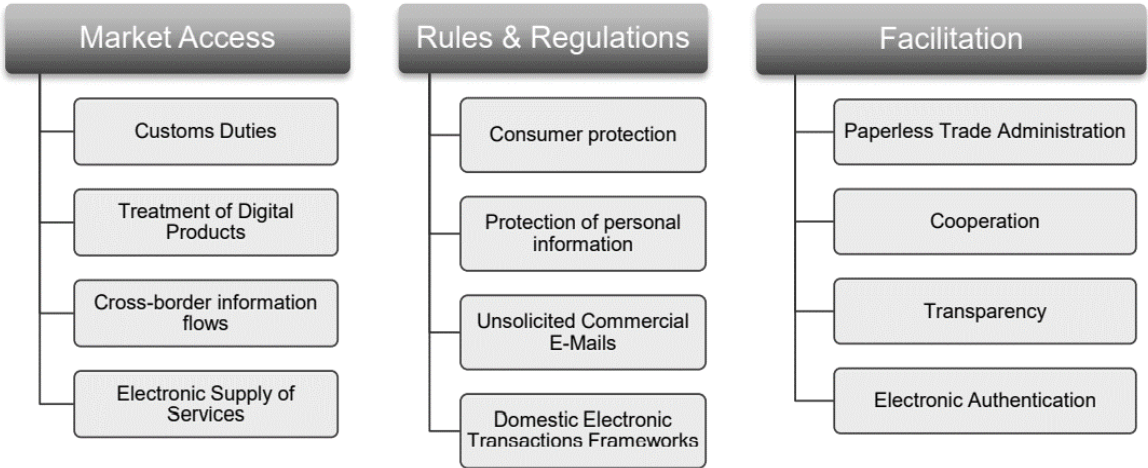
Source: ITU (2021b)

It is worth pointing that the Benchmark identifies policy tools like cybercrime, consumer protection, data protection, e-commerce transaction frameworks and others as key for regulatory collaboration in ICT. Another enhancement that is noticed in the second version of 2021 is the gender-sensitive indicator of “Broadband plan/initiative includes promoting the provision of broadband services to women and girls” under pillar 3 (ITU, 2021b).

When it comes to e-commerce provisions in Regional Trade Agreements (RTAs), a study by Gaitan (2020), commissioned by CUTS International Geneva, examined 84 RTAs, as of June 2019. The study identified three categories of provisions that are often included in RTAs: Market Access; Rules and

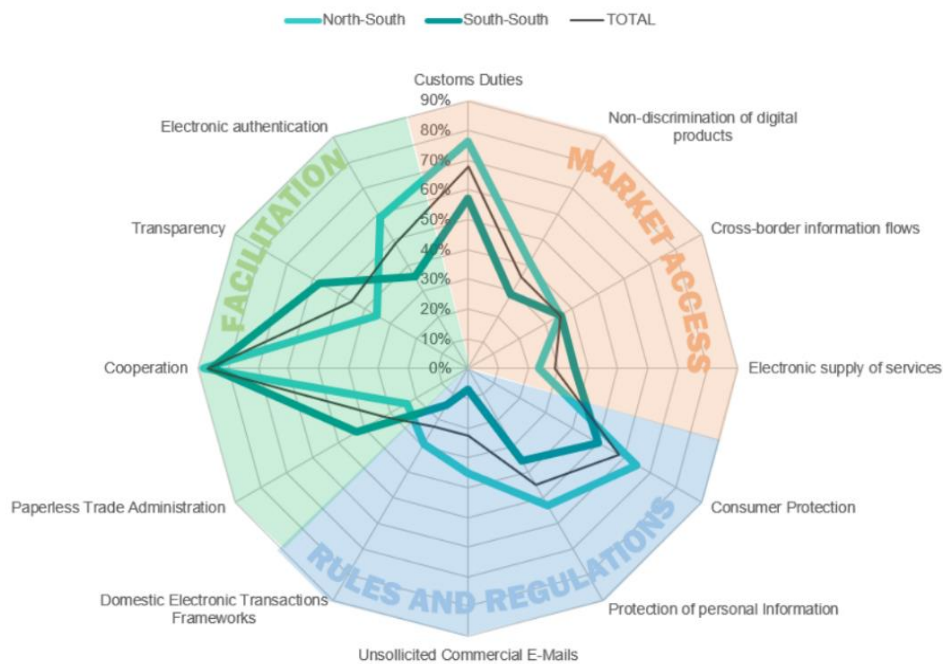
Regulations, and Facilitation (Figure 11). It is worth noticing that the “Rules and Regulations” category corresponds to policies to promote business and consumers trust in figure 9. Out of the 84 RTAs, Gaitan focused on analysing e-commerce provisions in 32 RTAs where small and non-emerging developing countries participated. Figure 12 below provides an overview of the extent to which each of the 12 issues and 3 categories of figure 11 has been included as a share of the total RTA sample. The figure also shows variations in issue inclusion between North-South and South-South RTAs, as an issue may have been deemed of greater relevance by the parties based on their different or similar development levels.

Figure 11: E-commerce Framework in RTAs by category and sub-category



Source: Gaitan (2020)

Figure 12: Share of sampled RTAs with e-commerce provisions, by topic and type



Source: Gaitan (2020)

It is worth mentioning that the thematic framework of the ongoing Joint Statement Initiative (JSI) negotiations on E-commerce among several WTO members is overall inspired by e-commerce provisions and chapters in RTAs with a broader scope. It covers, for example, e-payments facilitation and services, open internet access, open government data, online platforms and competition, etc. The e-commerce JSI negotiations framework can be considered the

broadest inter-governmental regulatory framework so far sought (see table 1 below). Its conclusion may have a vast influence on global e-commerce development dynamics. Despite this, Ismail (2021b) found only two gender-inclusive provisions put forward by Canada to be considered under the Preamble and the subsection on protecting personal information.

Table 1: Summary of issues subject to e-commerce JSI negotiations

Sections/Issues	Sub-Issues	
A. Enabling E-Commerce	A.1 Facilitating electronic transactions	Electronic transaction frameworks; electronic authentication and e-signatures; electronic contracts; electronic invoicing; and [electronic payment services/ Facilitation of e-payment].
	A.2 Digital trade facilitation and logistics	Paperless trading; <i>de minimis</i> ; unique consignment reference numbers, customs procedures; improvements to trade policies; single windows data exchange and system interoperability; logistics services; enhanced trade facilitation; use of technology for the release and clearance of goods; and provision of Trade Facilitating and Supportive Services.
B. Openness And E-Commerce	B.1 Non-discrimination and liability	Non-discriminatory treatment of digital products; interactive computer services -limiting liability; interactive computer services - infringement.
	B.2 Flow of information	[Cross-border transfer of information by electronic means / Cross-border data flows]; Location of computing facilities ;[Financial information / Location of financial computing facilities for covered financial service suppliers]
	B.3 Customs duties on electronic transmissions	
	B.4 Access to Internet and data	Open government data; [Open internet access / Principles on Access to and Use of the Internet for [electronic commerce/Digital Trade]; and Access to Online Platforms/ Competition
C. Trust And E-Commerce	C.1 Consumer protection	Online consumer protection; unsolicited commercial electronic messages.
	C.2 Privacy	[Personal information protection / Personal data protection].
	C.3 Business trust	Source code; ICT products that use cryptography
D. Cross-Cutting Issues	D.1 Transparency, domestic regulation and Cooperation	Transparency; electronic availability of trade-related information; Domestic regulation; Cooperation; and Cooperation mechanism.
	D.2 Cybersecurity	
	D.3 Capacity building	Options for capacity building and technical assistance
E. Telecommunications	E.1 Updating the WTO Reference Paper on Telecommunications Services	Scope; definitions; competitive safeguards interconnection; universal service; licensing and authorisation; telecommunications regulatory authority; allocation and use of scarce resources; essential facilities; Resolution of disputes; and Transparency
	E.2 Network equipment and products	Electronic commerce-related network equipment and products
F. Market Access	Services market access; temporary entry and sojourn of electronic commerce-related personnel; Goods market access	
Annex 1: Scope And General Provisions	Preamble; Definitions; Principles; Scope; Relation to other agreements; General exceptions; Security exception; Prudential measures; Taxation; Dispute Settlement; and Committee on Trade-Related Aspects of Electronic Commerce	

Source: Ismail 2021b, updated based on the Consolidated Negotiating Text – September 2021, INF/ECOM/62/Rev.2. (Note: The square brackets are as per the consolidated document, and their use reflects differences in proposals).

We finally look at UNCTAD's eTrade Readiness Assessments and the e-trade for All initiative. They give a glimpse at the state of the e-commerce ecosystem in developing countries and regions and their capacity to further digital transformation, based on seven policy pillars which start with developing an e-commerce development strategy. The remaining six pillars target specific policy groups. They cover the following: ICT infrastructure, payment solutions, trade facilitation and logistics, legal and regulatory frameworks, skills development, and access to finance (Table 2).

According to the UNCTAD report "Fast-tracking implementation of eTrade Readiness Assessments" (2020), so far, the assessments have been addressing gender-related capacity building in a specific manner, as shown in the framework in Figure 13 below under pillar (5) skills development. UNCTAD (2020) also mainly referred to widening gender gaps in internet access and use and financial access and opportunities in LDCs. In conclusion to the report, UNCTAD indicated the need for further gender considerations investigation and research in targeted countries and pointed to the role undertaken by the e-Trade for Women Initiative launched in 2019. The initiative supports women entrepreneurs in developing countries to empower them and support their more significant influence on e-commerce ecosystem policies³.

Figure 13: Thematic items under each policy area used to assess eTrade Readiness implementation performance

Thematic item	Policy area (No. of rated thematic items)
S1a- Strategy development (done or ongoing)	E-commerce readiness and strategy formulation (5)
S1b- Strategy development (looking for support/expressed interest)*	
S2a- Policy coordination and dialogue (committees/working groups)	
S2b- Policy coordination and dialogue (e-commerce associations)	
S2c- Policy coordination and dialogue (eT Ready dissemination)**	
S2d- Policy coordination and dialogue (eT Ready monitoring)**	
S3- Availability of new e-government services ¹⁷	
S4- E-commerce statistics availability	
I1- ICT infrastructure development	ICT infrastructure and services (4)
I2- Mobile Internet connectivity	
I3- Internet affordability	
I4- Access to electricity	
T1- Street addressing	Trade facilitation and logistics (3)
T2- E-commerce logistics	
T3- Implementation of the Trade Facilitation Agreement	
L1- Regulatory review and gap analysis	Legal and regulatory framework (3)
L2- New laws and regulation initiatives	
L3- Awareness and sensitization	
P1- Financial inclusion	Payment solutions (4)
P2- Interoperability of e-payments	
P3- Trust in online transactions	
P4- New e-payment options and innovations	
S1- Skills gap review	Skills development (5)
S2- Education and training	
S3- Digital innovation	
S4- Gender-related capacity building	
S5- Public sector capacity development	
F1- New financing opportunities	Access to financing (2)
F2- Finance for digital entrepreneurship	

Source: UNCTAD (2020)

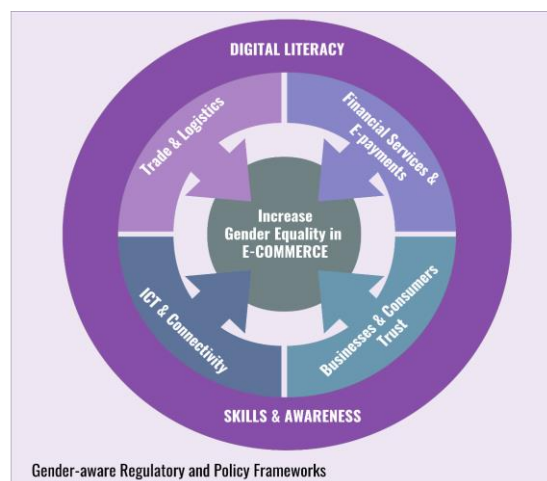
To conclude this section, it can be observed that gender-specific concerns and challenges remain far from enjoying the integration it deserves in the various e-commerce policy, regulatory, and assessment frameworks. It remains insufficient to secure future jobs for women whose global labour force participation rate was close to 46%⁴, compared to 74% for men in 2019⁵.

3.2 E-commerce Policy Enablers: A Framework for Integrating Gender Considerations

“The complexity of e-commerce stems from how many different policy areas it cuts across. This means that the fruits of a carefully designed gender-responsive policy in one area can be nullified by another gender blind or gender-neutral policy in another area,” state Ismail & Al. (2020). A holistic approach to integrating gender in various e-commerce related policies is necessary to ensure sustainable impact. Therefore, we recall here figure 9 (page 10) on E-commerce Ecosystem Core Elements and Relevant Policies. We plant this figure into a *de facto* gender structured economy and society (UNCTAD, 2014), where gender gaps and inequalities are considered in e-commerce regulations and policy formulation processes. But also where digital literacy and skills development is an across-policy target, as it is not only widening the gaps between women and men but also between the developed and developing world if the needed skills are not acquired at the

same speed as e-commerce acceleration. See the updated figure below (Figure 14).

Figure 14: A holistic approach to enabling e-commerce for gender equality and women empowerment



Source: Authors

Based on this approach, we develop the below framework, where some policy recommendations and tools are suggested to address the various categories and aspects of gender inequalities mapped under Chapter 2, under critical e-commerce enabling ecosystem policies recognised as a priority at the beginning of this chapter.

⁴ WorldBank data:
<https://data.worldbank.org/indicator/sl.tlf.cact.fe.zs>

⁵ WorldBank data:
<https://data.worldbank.org/indicator/SL.TLF.CACT.MA.ZS>

Table 2: An analytical and policy framework for addressing gender gaps and barriers relevant to key e-commerce enabling policies

Key E-commerce Enabling Policies	Relevant Gendered Gaps and Barriers			
	Capabilities and Skills	Resources and Opportunities	Security, Privacy and Trust	Regulatory and Policy Recommendations
1) ICT and Infrastructure	<ul style="list-style-type: none"> • IT and ICT literacy gaps. • Cultural and social stereotypes about women's limited capabilities to learn ICT and acquire ICT skills. • Lack of skills and understanding of the uses of emerging ICT technologies. • Lack of needed language skills. 	<ul style="list-style-type: none"> • Gender connectivity gap (access and affordability of internet connection – Mobile and fixed). • The gender pay gap in various sectors and subsequent gaps in access and affordability of ICT hardware and digital services. • Limited financial resources are available for women entrepreneurs to adopt e-commerce ICT applications in their businesses and receive the necessary training on their use. 		<ul style="list-style-type: none"> • Promoting investments in connectivity Infrastructures in rural areas and remote areas with a significant percentage of women consumers and/or producers. • Foster competition in ICT hardware and services sectors to reduce costs. • Promote « Corporate Digital Responsibility - CDR» where giant tech companies develop programmes to promote women and women-led businesses access to ICT hardware and the Internet at affordable prices. • Incorporate digital skills in education systems. • Raise awareness on the potentials of e-commerce for girls and women and publicise digital champions among women. • Provide technical and vocational training on e-commerce ICT applications and uses targeting sectors with high potential for women-led businesses. • Supporting vocational training for formal and informal women-led e-commerce businesses and tech start-ups.
2) Trade Facilitation and Market Access	<ul style="list-style-type: none"> • Women traders' limited awareness of cross-border trade regulations and market standards. 	<ul style="list-style-type: none"> • Poor postal infrastructure in rural and remote areas. • The informality of women-led businesses. • Limited access to information on market opportunities. 		<ul style="list-style-type: none"> • Adopting Government E-procurement platforms and measures to support women entrepreneurs as e-commerce suppliers of goods and services. • Supporting Women's access to government e-services. • Facilitating women's access to customs regulations and export markets standards. • Prioritising women's businesses as suppliers of e-commerce goods and services.
3) Electronic Payments	<ul style="list-style-type: none"> • Lack of awareness on characteristics and guarantees of secure online payments. 	<ul style="list-style-type: none"> • Women financial inclusion and control challenges. • Women's lack of collateral and prevalence of subsistence 	<ul style="list-style-type: none"> • Limited trust in e-payments and cash prevalence. 	<ul style="list-style-type: none"> • Reforming discriminatory regulations in terms of salary/pays, pension, taxes and opening bank accounts. • Financing, microcredit and crowdsourcing for women's businesses.

	<ul style="list-style-type: none"> • Vulnerability to frauds. 	<ul style="list-style-type: none"> • The informality of women businesses and lack of access to governments, banks and micro-credit suppliers. 	<ul style="list-style-type: none"> • Vulnerability to online frauds due to lack of digital skills and awareness of precautions against online threats. 	<ul style="list-style-type: none"> • Promoting payment security knowledge and awareness among women. • Applying tax incentives for women-led e-commerce small businesses and start-ups and promote their formalisation.
4) Business and Consumers Trust				
A- Consumer Protection	<ul style="list-style-type: none"> • Lack of technical knowledge and skills to understand online threats to consumers 	<ul style="list-style-type: none"> • Gender gaps in general literacy • Gender gaps in online literacy 	<ul style="list-style-type: none"> • Women consumers' limited awareness of online consumer rights, and aftersales policies and recourse mechanisms. 	<ul style="list-style-type: none"> • Including gender-specific provisions in online consumer protection laws, as appropriate • Providing faster redressal mechanisms for women consumers • Improving awareness of online consumer rights among women through targeted campaigns
B - Data and Privacy	<ul style="list-style-type: none"> • Lack of awareness of existing personal data protection laws 	<ul style="list-style-type: none"> • Limited adoption of comprehensive and effective Personal Data Protection laws 	<ul style="list-style-type: none"> • Patriarchal attitudes regarding women's privacy and the need to be protected. • Women's particular vulnerability to abuse and harassment. • Absence of Personal Data Protection or the lacking of provisions addressing gender-specific privacy-related crimes. 	<ul style="list-style-type: none"> • Adopting Personal Data Protection laws. • Including gender-specific provisions in Personal Data Protection Laws imposing strengthened penalties for any illegal transfer and/or use of women online personal data for abuse and/or harassment. • Raising awareness on existing Personal Data Protection rules and regulations.
C - Cybersecurity	<ul style="list-style-type: none"> • Lack of information, knowledge and understanding of cybersecurity threats and how to mitigate them. 	<ul style="list-style-type: none"> • Limited financial resources and affordability of cybersecurity technologies and applications. 	<ul style="list-style-type: none"> • Absence of Personal Data Protection or the lacking of provisions addressing gender-specific cybercrimes in a specific society. 	<ul style="list-style-type: none"> • Adopting cybersecurity laws. • Including gender-specific provisions in cybersecurity laws imposing strengthened penalties for cybercrimes to which women are particularly vulnerable depending on the country and society. • Raising awareness on existing cybersecurity rules and how to evoke them. • Providing women-led businesses with affordable cybersecurity applications.

Source: Authors

SECTION 4

Conclusion

Over the past decade, e-commerce has become a vital component of the global economy and a powerful accelerator for economic development. During the COVID-19 pandemic, e-commerce growth has been significant due to the rise in digital platforms and online marketplaces. Women have been active players in the e-commerce sector as consumers and entrepreneurs/traders. But, despite the advances in e-commerce, there is a gender digital divide whereby women face lower inclusion and several economic and social challenges in the sector. Women cannot engage fully in our increasingly digital societies and may be subject to exacerbated inequalities, specifically in the e-commerce sector, unless they have equal and affordable access to technology hardware devices and the Internet, as well as to the required skills for engaging in online economic activities and content development.

The digital gender divide also has a detrimental influence on countries' economic growth and development possibilities. Hence, in an expanding global digital economy, e-commerce policies should be viewed as a tool for women's empowerment towards achieving development goals. Therefore, particularly developing countries and LDCs, have an interest in including gender considerations and addressing women's challenges relevant to critical e-commerce enabling policies.

Examining the existing major e-commerce policy frameworks provides an insight into the gender considerations necessary for women's

economic empowerment. The ITU G5 Benchmark, UNCTAD's eTrade Readiness Assessments, the ongoing JSI negotiations on trade-related aspects of e-commerce among a group of WTO Members and e-commerce provisions adopted in Regional Trade Agreements endeavor to provide several e-commerce policy frameworks as mentioned in the study.. These policy frameworks do not follow a common structure, and their policy focus, underlying objectives and considered measures are different. However, together they provide a comprehensive menu of needed policies and regulations from the national to international levels that can be utilised to devise a comprehensive framework addressing the multiple challenges faced to enable e-commerce while also empowering women within specific country circumstances.

After assessing the various frameworks, several gender inequality aspects in e-commerce can be noted, such as (i) weaknesses in the capabilities domain, i.e., education and digital skills; (ii) access to resources and opportunities, i.e., lack of connectivity and digital access, access to finance, time use, decision making and; (iii) the security domain, i.e., vulnerability to online frauds and cyber-violence. E-commerce policy frameworks must adopt gender-specific policy interventions to improve women's access to hardware and connectivity, empower women entrepreneurs with enhanced e-commerce skills, support women's access to finance and payment

solutions, and promote their security and trust in online businesses processes.

Accordingly, this study proposes a holistic framework for integrating gender considerations in all e-commerce related policy areas. The framework starts by identifying four key e-commerce policy enablers, namely: (i) ICT and infrastructure; (ii) trade facilitation and market access; (iii) electronic payments; (iv) consumer and business trust, which includes addressing consumer protection, data protection and cybersecurity threats. Under each of the four key e-commerce enablers, the framework addresses the relevant gendered gaps grouped in three categories, i.e., capabilities and skills, resources and opportunities, and security, privacy, and trust. The framework sets the e-commerce ecosystem into our gendered structured societies. Hence, it provides a comprehensive and structured gap analysis

and proposes some concrete policy and regulatory recommendations on how to bridge gender gaps and enable e-commerce for all.

This framework, while applicable to all countries irrespective of their levels of development, is particularly relevant for developing countries and LDCs where gender gaps are much wider. It can be a useful tool to facilitate a holistic ecosystem approach towards gender equality in e-commerce. The resulting women economic empowerment will significantly contribute to the growth and sustainable development in developing countries and LDCs by unlocking the vast economic potential of women. Through a holistic framework, women empowerment in e-commerce will eventually lead to a virtuous cycle of greater women inclusion in the digital economy, enhanced economic performance, societal development, and gender equality.

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