TOBİDER

International Journal of Social Sciences

ISSN:2587-2591
DOI Number:http://dx.doi.org/10.30830/tobider.sayi. 22.9

Volume 9/2
2025 p. 142-167

INTERSECTIONALITY OF SUSTAINABLE DEVELOPMENT DISCOURSE AND INEQUALITY: ASSESSING THE POSITION OF WOMEN IN DIGITAL ECONOMY

SÜRDÜRÜLEBİLİR KALKINMA SÖYLEMİ VE EŞİTSİZLİĞİN KESİŞİMSELLİĞİ: KÜRESEL ÖLÇEKTE VE TÜRKİYE'DE DİJİTAL EKONOMİDE KADININ KONUMUNUN DEĞERLENDİRİLMESİ

Şeyda Nur KOCA PEKER*

ABSTRACT

The development discourse legitimising the capitalist structure corresponds to the imperialist centre-periphery dependency. The dependence of peripheral countries on central countries in terms of socioeconomic and welfare levels expresses global inequality. This study argues that gender inequality exists in the digital economy and technology fields and that this problem is ignored in the development discourse due to socioeconomic differences between developed, developing and underdeveloped countries. The study uses statistical data compiled by international institutions regarding the limited position of women in digital economy in these countries. The presence of women in the digital economy is fundamentally related to the ability to use technology and the visibility of the field in the labour market. Women's access to digital technology tools and their educational levels in digital information technology, which are thought to be the main reasons for women's limited position in the digital economy, are discussed within the scope of this study.

Keywords: *Development Discourse, Intersectionality Approach, Gender Inequality, Digital Economy.*

ÖZ

Kapitalist yapıyı meşrulaştıran kalkınma söylemi, emperyalist merkez-çevre bağımlılığına karşılık gelmektedir. Çevre ülkelerin sosyoekonomik ve refah düzeyi açısından merkez ülkelere bağımlılığı küresel eşitsizliği ifade etmektedir. Bu çalışma, dijital ekonomi ve teknoloji alanlarında toplumsal cinsiyet eşitsizliğinin var

* Arş. Gör., Bitlis Eren Üniversitesi, Fen Edebiyat Fakültesi, Sosyoloji Bölümü, E-mail: kocaseyda@gmail.com, ORCID: 0000-0001-5707-202X, Bitlis, Türkiye

olduğunu ve bu sorunun ülkeler arasındaki sosyoekonomik farklılıklar nedeniyle kalkınma söyleminde göz ardı edildiğini savunmaktadır. Çalışmada, kadınların dijital ekonomideki sınırlı konumuna ilişkin uluslararası kuruluşlar tarafından derlenen gelişmiş, gelişmekte olan ve az gelişmiş ülkelerden istatistiki veriler kullanılmaktadır. Kadınların dijital ekonomideki yeri, temelde teknolojiyi kullanma becerisi ve dijital ekonominin işgücü piyasasındaki görünürlüğü ile ilgilidir. Bu çalışma, kadınların dijital ekonomideki sınırlı konumlarının temel nedeni olarak onların dijital teknoloji araçlarına erişimlerini ve dijital bilgi teknolojilerindeki eğitim düzeylerini ele almaktadır.

Anahtar Kelimeler: *Kalkınma Söylemi, Kesişimsellik Yaklaşımı, Toplumsal Cinsiyet Eşitsizliği, Dijital Ekonomi.*

Introduction

The direction of social change is in the direction of technical progress, modernisation, increased collective knowledge and the provision of welfare living conditions. However, it is important to note that social change does not result in social progress in all areas. For social change to result in social development and empowerment, it is a priority to prevent inequalities in the social, economic and political spheres, as well as the destruction of life and nature based on gender, race, ethnic group and economic status. The validity of the development discourse is only possible by ensuring welfare conditions and equality for all individuals and societies. It is thought that the persistence of inequality in social, economic and political spheres within social change leads to the reproduction of inequality in capitalist societies despite the discourse of development and the goal of achieving a welfare society. At the same time, it is thought that the belief that the gender inequalities that women have to experience in social, political and economic fields can be solved with modernisation has been lost. In fact, capitalist modernisation requires that societies develop policies that aim to reach a developed and prosperous level. Therefore, it is thought that achieving global development and welfare conditions in the structural structure in which capitalist modernisation exists is a contradictory situation in a society where inequalities are in question. As in all other fields of employment, the discourse of development can gain validity if there is no gender gap in the digital economy.

In this study, in which the position of women in the digital economy is addressed with global data, data on their positioning in the digital economy based on gender differences in developed, developing and underdeveloped countries are used. In order to measure the digital economy, first of all, data on internet usage, mobile phone usage as a technological device, education level and working population rates in the fields of digital economy and digital technology are presented according to gender variables in developed, developing and underdeveloped countries. On the other hand, for Turkey, a developing country, the data obtained in the digital economy and digital technology fields by gender variable are evaluated separately and comparably. As mentioned in the literature section of the study, there is a limitation regarding women's employment in

studies on the axis of digital economy and development discourse. Therefore, this article aims to contribute to the limited literature on the position of women in the digital economy. The study's theoretical basis is the development literature and the intersectionality approach of inequalities based on race, culture, ethnic group and socioeconomic status in feminist discourse. The study uses data from international institutions and organisations related to the gender gap in digital economy. On the other hand, this study will focus on data on access to digital technology tools, digital literacy and on the educational level in digital information technologies , which are considered the main reasons for the limited position of women in the digital economy in developed, developing and underdeveloped countries.

1. Conceptual Framework: Digitalisation and Digital Economy

In the social structure created by social change, the management of individual labour power is changing in the digital economy within the division of labour, mechanisation and information technologies. The change in the use of labour in production functions from an agriculture-based economy to steam machines and technology, corresponds to the "index of production techniques." (Soyak, 1996) In neo-classical theory. Marx expresses the social consequences of the methodological change of capital accumulation and the change in social relations of production as follows:

> Social relations are closely tied to productive forces. To provide new productive forces, men change their mode of production; to change their mode of production, to change the means of earning a living, they change all their social relations. The windmill gives you feudal lord society; the steam mill gives you industrial capitalist society (Marx, 1966).

The change in social relations of production essentially constitutes social change. However, social change does not necessarily mean development and progress. Weber (2020) believes that social change is ultimately technical progress rather than social progress. According to Khalsiah (2022), technology refers to all the tools that serve the application of knowledge to accomplish a human task. According to the study by Widyastuti, Nuswantoro, and Sidhi (2016), the use of information and technologies that form the basis of the digital economy in education helps the learning process, facilitates students' communication with the presence of virtual classrooms, and facilitates business systems in an educational institution. Essentially, the digital economy refers to all systems in which new financial flows of individuals, societies and governments are created by incorporating data and the internet into production and consumption processes (IMF, 2018).

Digitalisation, which corresponds to the change in the material form of the labour process after industrialisation, and the digital economy, which is an extension of it, are the result of the industrial revolution and globalising information technologies. The digital economy is "the result of processes of change brought about by information and communication technology that make technology cheaper and more powerful and standardise the development of business processes, as well as support innovation across all sectors of the economy" (OECD, 2015). According to the latest Organisation for Economic Co-operation and Development (OECD) (2020) report, the digital economy

refers to activities that use digital inputs, such as digital technology, infrastructure, services, etc. The development and use of information and technologies (ICT) is the most important factor that paves the way for the digital economy. Apart from the concept of digital economy, there are different conceptual usages on a global scale. Some of these are the knowledge economy, information economy, weightless economy, network economy, and new economy (Özcan, 2016). The main distinguishing factors of the digital economy, which corresponds to the digitalisation of production relations, are listed as follows: 'knowledge', 'digitalization', 'virtualisation', 'molecularisation', 'ıntegration/ınternetworking', "disintermediation", 'convergence', 'innovation', 'prosumption'[1], 'immediacy', 'globalisation', 'discordance' (Tapscott, 1996).

Essentially, the digital economy expresses the permanence of the internationalisation of productive capital in the social process on which the dynamics of globalisation are based. At the G20 Riyadh Summit in Saudi Arabia (2020), it was put on the agenda that the development of the digital economy could be supported by taxing the digital economy and promoting gender equality in an open, borderless structure. At the same time, it was stated that while household care labour, which creates an obstacle to women's positioning in business life, is an obstacle to achieving gender equality in business life, the digital economy is advantageous for women who are responsible for household care labour in terms of not being tied to a single field. However, since it is not a development that reduces women's responsibility for care labour in the household, digitalisation makes it possible for social classes to be determined by material relations as well as distinctions such as race, ethnic identity and gender to be visible on a global scale. The new sociality is thought to be the capitalism of societies with information and technologies and is thought to increase the persistence of social classes on a global scale.

2. Theoretical Framework: Development Literature and the Intersectionality of Gender Inequality

The main purpose of development is to create a prosperous and just society, but it has been orientated towards economic determinism that creates racial, ethnic, gender and class differences and deepens inequalities. The level of development corresponds to a commodity-centered phenomenon (Erbaş, 1999). John Tomlinson (2020), the author of Cultural Imperialism, argues that the discourse of development has become a global imperative. Within the global imperative of modernisation, the differentiation in the development levels of nations has led to the creation of a development discourse that aims to develop on a global scale in a structural structure where resources are not distributed equally. The Marxist thinker Castoriadis believes that the most important element of the rationality of modern society is economy, and, therefore, development, which should be considered holding an 'imaginary signification' (Koca Peker, 2023). As long as individual and social differences are in question, development, the desire to become a developed society and the fact that societies have equal material and skill

[1] The term prosumption involves the complex relationship between production and consumption. It is used to express that the consumer is also the producer and the complexity of the producer-consumer distinction.

resources is a phenomenon that reinforces centre-periphery dependency and deepens inequality, as stated by the dependency theorist Wallerstein (2011). The fact that the functioning of the modern capitalist world system depends on the division of labour is stated by Wallerstein (2011) as 'the world economy and the capitalist system go hand in hand, and since world economies lack the cement that unites a general political structure or a homogenous culture, it is the efficiency of the division of labour that holds them together'. Ultimately, theories of development in the neoliberal social order are based on economic reductionism. Therefore, it can be argued that the literature on gender inequality has shortcomings due to economic determinism. Considering that developed or underdeveloped is scientific and technical progress, the fact that the possession of resources increases inequality and dependency is similar to the gender inequality in women's labour force participation due to unchanging class differences in material relations.

The intersectionality of gender inequality, which forms the theoretical basis of this study, essentially refers to the inequalities and marginalisation of women in all areas of sociality due to their socioeconomic status, ideological integrity, race and ethnicity, along with the inequalities they are exposed to due to their gender. It is possible to see the intersectionality approach in third-wave feminist movements. The intersectionality approach is prominent in studies on the inequalities faced by women of colour and women in underdeveloped countries. Özkazanç (2017) associates the reflection of intersectionality in third-wave feminist movements with "the desire to create an inclusive feminist movement that is sensitive to differences between women, but still progresses on the basis of common values rather than identity, and to take part in broader political coalitions that articulate with other forms of oppression". Kimberle Crenshaw (2011), a black American feminist who was the first to use the intersectionality approach, metaphorically expresses intersectionality as an axis and intersection on the basis that Black women are subjected to inequality by both white women and men. Intersectionality, which expresses all the inequalities experienced by women in every field within the development discourse, is positioned within the discourse of "old wine in a new bottle" (Lutz et al., 2011). Development and prosperity on a global scale should only be possible through the use of material resources regardless of differences in race, culture, ethnic group, economic and political status, and gender. It is an indisputable fact that social change mediated by digitalisation in a society where masculine domination exists ignores racial, ethnic and gender inequality. For individuals and societies that lack access to information and technology, social change means that inequality is exacerbated and perpetuated:

> It is the gender, race and caste impacts of digitalization in the form of lack of equitable access to digital technologies and benefits, with large segments of the population in both the global North and South living in 'digital darkness'. Alongside the process of digitization of various aspects of our lives, digital inequalities and divisions have deepened with the onset of the pandemic and associated lockdowns due to lack of access to digital resources and literacy ("Women, Work, and the Digital Economy: Our new Issue", 2022).

Women have been restricted in their right to live in patriarchal sociality for centuries. In the patriarchal system, women are not compensated for their productive labour related to

care and housework within the household or for their income-generating productive labour in the sociality outside the household. The masculine domination that women are subjected to in the private sphere is also maintained in the public sphere. Women's participation in the labour force is primarily hindered by the widespread societal assumption that they are naturally responsible for unpaid domestic labour. Toksöz states the position of women's labour in development as follows: "Even if women enter income-generating work, work within the household does not end, and regardless of whether they earn cash income or not, women do most of the household food preparation, cleaning, child, sick, elderly care, and in rural areas, wood collection and water fetching" (Toksöz, 2018: 86). On the other hand, another reason for women's limited positioning in the digitalized labor market through part-time and flexible forms of work is their social obligations such as unpaid domestic and care labor. It is seen that the issue of whether the digital economy, which can be considered an instrument of the development discourse based on the imperialist line, will offer a new field or a solution to inequalities in the labour market where women are limited in local and global dimensions is frequently discussed in the literature.

3. Literature Review on the Position of Women in the Digital Economy

In terms of digitalisation being a mechanism that increases social differences, whether it has a structuring or depriving effect on women's labour force participation corresponds to an important problem discussed in the literature on women and the digital economy. The limitation of women's labour force participation within the development discourse is also maintained in the field of digital economy. As a postgraduate thesis study on the development discourse, digital economy and gender gap, Selci (2019) wrote "The Impact of Technological Developments on Women's Employment: The Case of EU Countries and Turkey" is included in the literature. In her study, Selci evaluates digital information technologies as a phenomenon that increased the female labour force between 2000 and 2015. It is stated that women's employment is concentrated exclusively in the service sector in the digital economy (Selci, 2019). In addition, in the study conducted by Nikulin (2017) on developing countries, it is stated that there was an effect that improves women's employment in information and communication technologies between 2000-2014, but there is still a gender gap.

Karakaş (2020) in her study "Digitalization and Women's Labor" expresses the limited position of women in the public sphere, in digital economy, as follows: "Since the data obtained in a system woven with gender inequality reflects this trend, artificial intelligence systems and algorithms based on this data reproduce the same inequalities and discrimination" (Karakaş, 2020). More than 55% of women play a role in the digital economy as "Content Specialist, Content Writer, Copywriter, Human Resources, Social Media Assistant, Social Media Coordinator, Talent Acquisition Specialist"; 55% and below are positioned as "Customer Representative, Customer Needs Specialist, Digital Marketing Specialist, E-commerce Specialist, Forecasting Analyst, Production Analyst". In addition, 45% and below are reported to be "Analytics Specialist, Business Development Representative, Chief Marketing Officer, Content Creator, Digital Marketing Consultant, Growth Manager, Business Partner, Production Owner, Sales

Development Representative, Software Quality Assurance Engineer". 35% or less of female individuals take roles as "Chief Strategy Officer, Data Consultant, Data Analyst, Head of Digital Business Network, Python Developer, and Quality Control Engineer" in the field of digital economy, while 25% or less take roles as "Artificial Intelligence Expert, Macro Data Developer, Cloud Storage Consultant, Cloud Storage Engineer, Data Engineer, DevOps Engineer, Enterprise Account Manager, Javascript Developer, Platform Engineer" (World Economic Forum, 2021).

In the study titled "Gendered Nature of Digital Inequality: Evidence for Policy Considerations" by A. Gillward and A. Partridge (2022), women's limited digital competence is associated with patriarchal social structures and political regulations. In the study conducted by Majid and Mustafa (2022) in Pakistan, the researchers state that women cannot access technology due to their socioeconomic and traditional domestic roles, while women who have gained a place in the labour market, which is limited in the field of digital economy, can participate in non-household work through telecommuting within the household where traditional domestic roles can be maintained. On the other hand, women's participation in non-household sedentary work has an effect that marginalises and stigmatises them in the social structure.

Khalsiah (2022), in another study , shows that education in the fields of information and technologies, especially for women who do not have information and technologies and do not work in an income-generating job, will play an important role in the development of governments. It shows that individuals without education in ICT will be marginalised in the changing labour market. On the other hand, another argument in the literature is that new technologies will negatively affect existing economic relations and result in massive job losses (Frey & Osborne, 2017).

In the study conducted by Von Dietrich and Garcia on women and the digital economy in Brazil, it is seen that the main challenge of the digital economy for women is that the labour force network in which gender inequality exists will diversify and the limited representation of women will be perpetuated (Rani et. al., 2022). In this regard, the dynamics of inequality are diversified by the fact that women cannot have information and technology (ICT) education due to their limited position in education and the labour force in the public sphere. In the report prepared by Gaib et al. (2017), it is stated that although most women in Indonesia, which is an underdeveloped country, are active internet users, their digital literacy is low and accordingly, the reason why they cannot play a role in the digital economy is due to the inadequacy of educational institutions and the influence of patriarchal culture. Unlike the studies in the literature, United Nations Women has an optimistic view that the digital economy can have an impact that can increase women's labour force participation rates and accelerate socioeconomic development on a global scale (UN Women, 2020). "Are Women Recognized in the Digital Economy? Experiences of Developed Economies" by V. Ristanovic, M. Sostar and M. Hak, there is a dominant view that women's participation in business life is

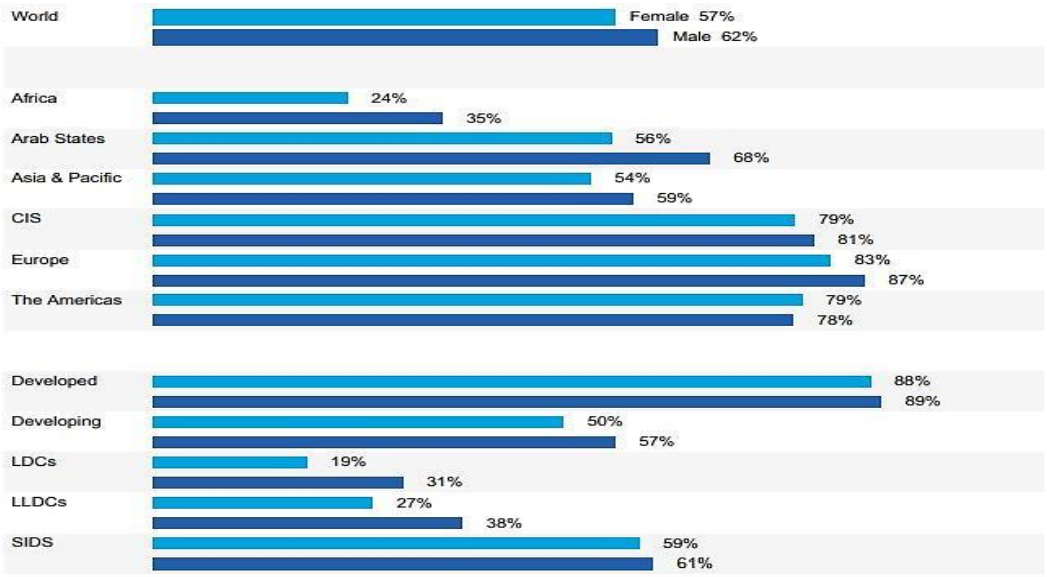
increasing in developed countries, gender image is becoming equalised day by day, and the masculine distinction between men's and women's work is changing (Ristanovic et. al., 2024).

In this study on developed countries, it is stated that gender equality exists in many areas. However, the position of women in the digital economy, which is a new field, is caught in the glass ceiling obstacle (Ristanovic et al., 2024). The increase in remote working during the global lockdown process due to the Covid-19 pandemic, which affects the development of the digital economy, can be said to revolutionise information and technologies in social change. In the study conducted by N. Silva (2022) in Sri-Lanka, it is stated that the use of digital tools and social media has increased during the Covid-19 pandemic and that women's participation in the digital economy has improved micro-scale entrepreneurship. In the study conducted by Anwar (2022) on African digital labour between 2015 and 2021, it includes the difficulties of being a working woman and poor in Africa, the poorest region on a global scale for women working in the digital economy, especially in the platform economy. In this study, where class differences created by gender and economic indicators are seen to cause intersectionality, it is stated that women are exposed to various precariousness and gender discrimination in the digital economy and their physical and psychological health is negatively affected due to high work intensity (Anwar, 2022). Following these studies, it is seen that the position of women in the digital economy depends on the level of social development, but women are still in a secondary position compared to men in the digital field as in every field.

3.1. Data on the Position of Women in the Digital Economy in Developed Countries

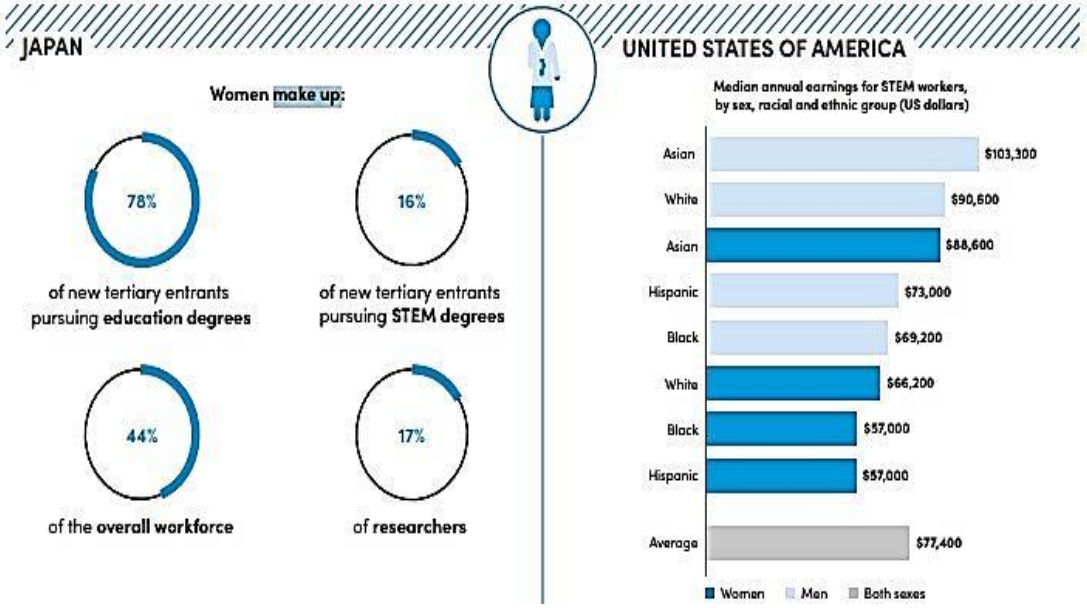
According to UNESCO, only 35% of students studying science, technology, engineering and mathematics globally are women (UNCTAD, 2023). Therefore, the main reason for the limitation of positioning as an entrepreneur or employee in the digital economy within the difficulty of having digital literacy is the lack of qualified education. McGuinness (2018) states that women in developed countries are better adapted to digital communities and the digital economy than the global average and that this is related to having digital literacy and that women's employment in the digital economy, especially in the field of cybersecurity, contributes to the development of nations in both security and economic areas.

Figure 1: Percentage of male and female population using the Internet, 2020 (International Telecommunication Union, 2021)



Accordingly, it is seen that there is an inequality between female internet use (57%) and male internet use (62%) on a global scale. African and Arab countries have the greatest impact on this unbalanced distribution. In African countries, which are underdeveloped and economically deprived, access to technological tools and the Internet is thought to be limited mainly due to financial reasons. On the other hand, in Arab countries, which are wealthy but have high-income inequality and a patriarchal social structure, women's access to technological tools and the Internet is limited, which can be said to be influenced by patriarchal society and governance, as in the underrepresentation of women in the entire public sphere.

Figure 2: Digital economy, education and women in Japan and the US (UN Women, 2022)



Such low rates can be said to be the basis of the development problems of developed countries. However, as long as the patriarchal social structure remains a force before and above the level of development, it is difficult to say that development and progress have a positive impact on women. On the other hand, Figure 2 shows that inequality in STEM fields in the US is not only based on gender differences but also racial and ethnic differences. As seen in the graph, the average annual earnings of those working in STEM fields is $77,400, but the average annual earnings of women in science, technology, engineering and mathematics (STEM) fields is $67,300 less than the average annual earnings of men. However, the main differences that cause the disparity in earnings are based on race and ethnicity. The United Nations Agency for International Development (USAID) states that in order to close the digital divide in developed countries, governments are providing support to increase women's digital financial inclusion. Australia, one of the developed countries, will donate twelve million dollars by 2028 to strengthen women's digital participation. In addition, Canada will donate approximately three and a half million dollars by 2027 to increase the economic resilience of women entrepreneurs. Similarly, developed countries such as Finland, Germany, Japan, the Republic of Korea, Sweden, the United Kingdom, and the Republic of Korea have targets to increase women's participation in digital finance (USAID, 2023). When we look at the positioning of women as employees in the digital economy in developed countries and the density of the population studying digital technologies, the following picture emerges:

Table 1: Density of women working and studying in the digital economy and digital technologies in developed countries[2]

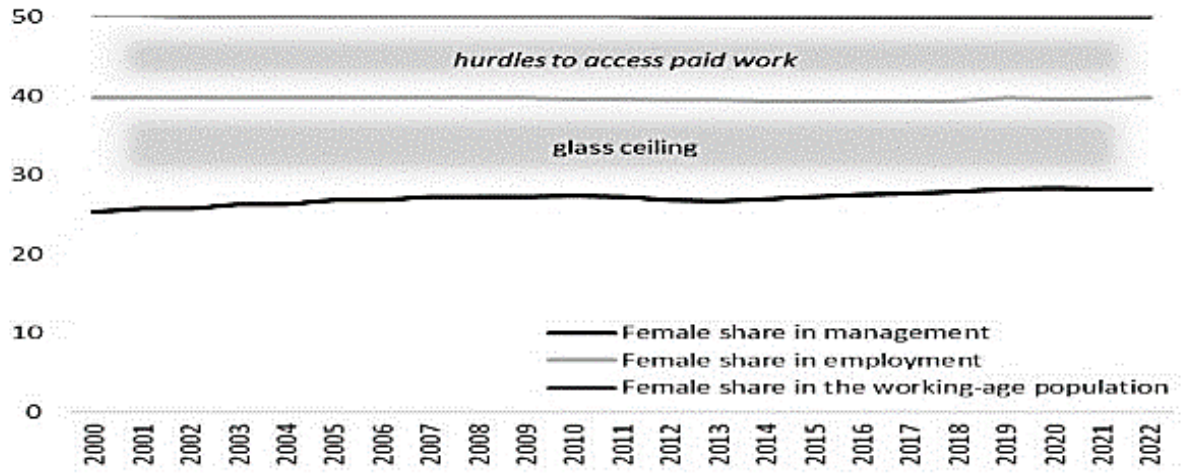
Developed countries	Proportion of women working with digital technology and expertise (%)	Proportion of women with education in information technologies (STEM) (%)
Russian Federation	63.2	-
Canada	57.6	11.63
Australia	55.1	10.23
Finland	54.5	12.39
United States of America	54.5	10.43
Germany	52.0	19.16
Sweden	51.3	15.68
Belgium	50.1	7.23
Netherlands	49.9	8.68
Republic of Korea	49.2	14.43
United Kingdom	49.0	17.53
France	49.0	14.49

[2] The percentage values in the table are taken from the Global Gender Gap 2021 report of the World Economic Forum and the table was created by the author.

Italy	47.6	15.72
Austria	47.3	14.29

Are Women Recognized in the Digital Economy? Experiences of Developed Economies, which provides information on how women are positioned in the digital sphere in developed European countries using European Commission's data for 2022, it is stated that women's internet usage is the highest in Finland, Estonia, the Netherlands, Sweden and Denmark, while women's internet usage is the lowest in Romania, Bulgaria, Poland and Hungary (Ristanovic et al., 2024). The proportional differences in women's digital use in developed countries stem from the limited role of women in ICT fields. In the study, it is seen that the low rate of women working in managerial positions in the digital economy is associated with the concept of the glass ceiling:

Figure 3: Glass ceiling barrier to working women between 2000-2022 (Ristanovic et. al., 2024)



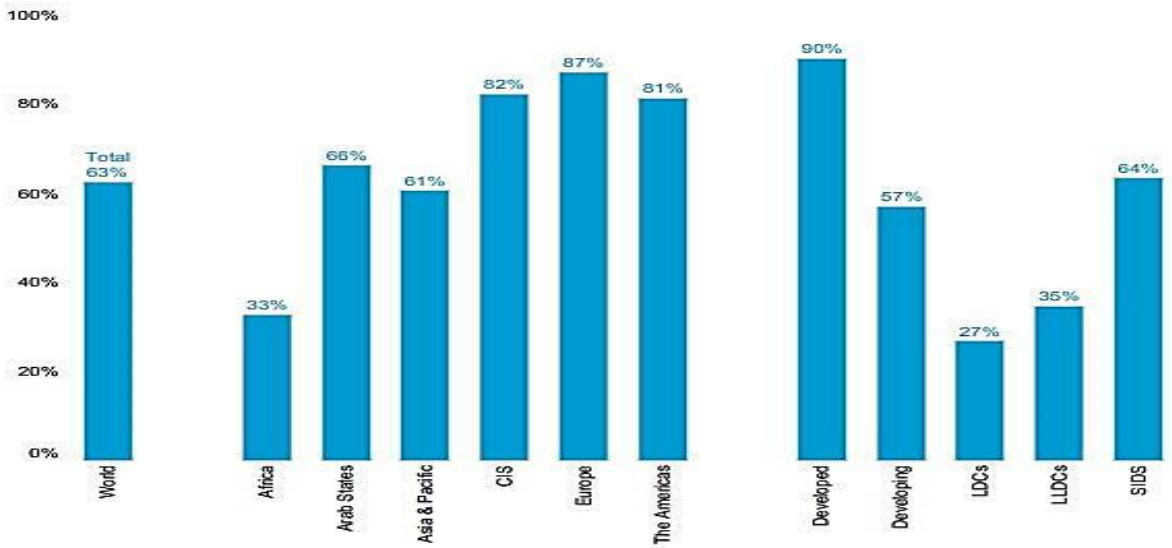
As seen in Figure 3, only 40 per cent of working-age women, who constitute approximately half of the population, are employed. On the other hand, the share of women working as managers remains below 30 per cent due to the glass ceiling barrier. According to the European Commission data used in the study, it is stated that only 2.5 million of the approximately 7 million managers in the European Union countries in 2022 will be women and women working as managers are mostly located in public institutions (Ristanovic et al., 2024). It is thought that the main reason that prevents women from working in managerial positions is that women are responsible for the care labour in the

household, which exists in the unchanging patriarchal family form. Therefore, it is seen that the intersectionality and inequality created by being a woman in digital spaces and being within the marginalised racial and ethnic group also exist in developed countries. Table 1 shows that in developed countries, women make up almost half of the workforce in jobs requiring digital technology and expertise. However, Figure 3 shows that they are still exposed to the glass ceiling in managerial jobs in the digital economy. Therefore, even if the level of development of the society is high and women are seen to be positioned in the digital economy, it is clear that they are positioned only in limited jobs and sectors.

3.2. Data on the Position of Women in the Digital Economy in Developing and Underdeveloped Countries

In developing and underdeveloped countries, the use of digital technologies and access to digital tools is limited for economic reasons:

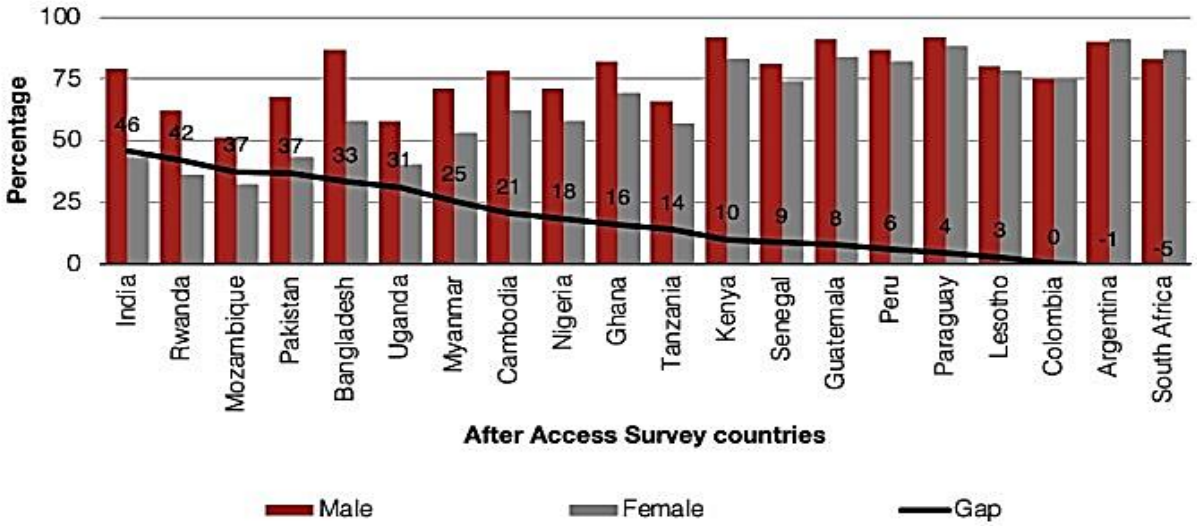
Figure 4: Percentages of internet usage by individuals according to 2021 data (International Telecommunication Union, 2021)



The Development Implications of Digital Economies study published by R. Bukht and R. Heeks in 2018 focuses on the challenges and policies needed in the development of the digital economy. It is stated that the structural challenges that prevent the development of the digital economy are technical structure barriers, software barriers and digital content limitations. In addition, it is stated that there is a lack of digital skills and digital literacy training, financial barriers, and human and institutional infrastructure deficiencies. On the other hand, Bukht and Heeks (2018) state that addressing infrastructure problems and providing digital literacy education are of primary importance in government policies to enable the digital economy. A. Tarek (2022) states that the main obstacles to the development of online commerce for developing countries are the lack of technology and

education and high unemployment rates. UN Women announced the theme of International Women's Day on March 8, 2023, as "DigitALL: Innovation and technology for gender equality" and that the priority theme of the 67th session of the Commission on the Status of Women was 'Innovation, technological change and education in the digital age for achieving gender equality and empowering all women' (UN Women, 2022).

Figure 5: Gender inequality in mobile phone ownership in Africa and the Global South (Gillwald & Partridge, 2022)



According to Figure 5, in India, Rwanda, Mozambique, Bangladesh, Uganda, Myanmar, Cambodia, Nigeria, Ghana, Tanzania, Kenya, Senegal, Guatemala, Peru, Paraguay, and Lesotho, mobile phone ownership is high among male individuals. In the context of gender inequality, women's inability to own mobile phones and digital tools exists. However, in Colombia, cell phone ownership is equal for both sexes. In Argentina and South Africa, on the other hand, women are more likely to own a cell phone, which is a digital tool. The reason for the situation in Argentina and South Africa, which differs from other African and Southern countries, is related to the higher GNP per capita. This assessment based on data on cell phone use is similar to internet use. The reasons why women do not use digital technologies and tools are stated as follows:

Table 2: Main reasons why women in 10 African countries do not use the internet (Gillwald & Partridge, 2022)

	Kenya	Mozambique	Ghana	Nigeria	Rwanda	South Africa	Tanzania	Lesotho	Uganda	Senegal
I don't know what the Internet is	35%	0%	43%	45%	6%	0%	0%	52%	0%	55%
No access device (computer/smartphone)	19%	77%	24%	10%	51%	35%	64%	13%	62%	13%
No interest/not useful	10%	13%	15%	22%	4%	7%	13%	12%	13%	13%
I don't know how to use it	24%	3%	10%	10%	0%	16%	14%	14%	10%	9%
Not available in my area (no mobile coverage)	3%	1%	2%	4%	31%	18%	1%	1%	4%	1%
Too expensive	2%	1%	2%	3%	4%	5%	1%	1%	3%	3%
No time, too busy	2%	0%	1%	3%	0%	3%	0%	2%	3%	2%
My spouse or parents do not allow me	1%	0%	1%	2%	1%	7%	5%	1%	1%	1%
Other reason	4%	4%	3%	2%	2%	9%	2%	4%	3%	3%

According to Table 2, the primary and secondary reasons why women do not use the internet are that they do not know how to use the internet. They do not have access to technology devices that they can access the internet. However, in addition to these, it can be said that the third reason women do not use the internet is that they find using the internet useful and interesting. The main disadvantages of being in underdeveloped countries and affecting all individuals regardless of gender are that the internet is out of the coverage area and expensive in their region. Another reason why women do not use the internet is the restriction of internet use by husbands or parents (2%), where the impact of the patriarchal social structure is visible. When we look at the positioning of women as employees in the digital economy and the density of the population studying digital technologies in developing and less developed countries, the following figure (Table 3) emerges:

Table 3: Density of women working and studying in the digital economy and digital technologies in developing and less developed countries[3]

Developing and Least	Developed Countries Proportion of women working with digital technology and expertise (%)	Proportion of women with IT education (%)
China	51.7	-
Lebanon	48.3	18.03
Turkey	36.2	14.24
Cameroon	36.0	16.07
Kenya	35.8	11.19
Iran	35.6	31.54
Iraq	32.5	-
India	29.2	26.93
Nigeria	28.9	5.82
Pakistan	25.3	-
Bangladesh	24.4	8.24
Afghanistan	19.3	-

[3] The percentage values in the table are taken from the Global Gender Gap 2021 report of the World Economic Forum and the table was created by the author.

Democratic Republic of Congo	17.8	11.8

3.3. Data on the Position of Women in the Digital Economy in Turkey

The ultimate way to reach findings on the gender-based digital economy in Turkey, a developing country, is to focus on data on women's and men's employment rates in the country, the distribution of employment across economic sectors, and women's advanced education levels in internet use and Information and Communication Technology (ICT), which are the basis for the digital economy. As noted by Knickrehm et al. (2017), the distribution of digital technologies is globally uneven. For digital economy, it is possible to measure the use of digital technologies, the Gross Domestic Product (GDP) and the prevalence of employment in digital technology, but it is recommended that governments develop education and employment data in ICT fields as a priority.

Table 4: Recent years' data and the reality in Turkey[4]

Year	Indicators	Female (%)	Male (%)	Total Population (%)
2023	Labour force participation rate	35.8	71.2	53.3
2023	Proportion of the working population	31.3	65.7	48.3
2023	Unemployed population rate	12.7	7.7	9.4
2023	Rate of unemployed young population	23.4	14.3	17.5
2023	Proportion of young people not in employment, education or training	29.7	15.6	22.4
2023	Proportion of workers in agriculture	18.5	12.8	14.6

[4] The data in the table created by the author constitute data from the World Labour Organization (ILOSTAT, 2023).

2023	Proportion of workers in the industrial sector	18.1	32.2	27.6
2023	Proportion of workers in the service sector	63.4	55	57.8
2023	Proportion of population with basic education or less	8.9	2.8	4.8
2023	Proportion of population with advanced education	36.2	25.3	28.8
2022	Informal employment rate	36.3	24.2	28.1
2022	Proportion of women in senior and mid-level management positions	19.6	-	-
2022	Average monthly earnings of employees	6352.6	7024.6	6804.1

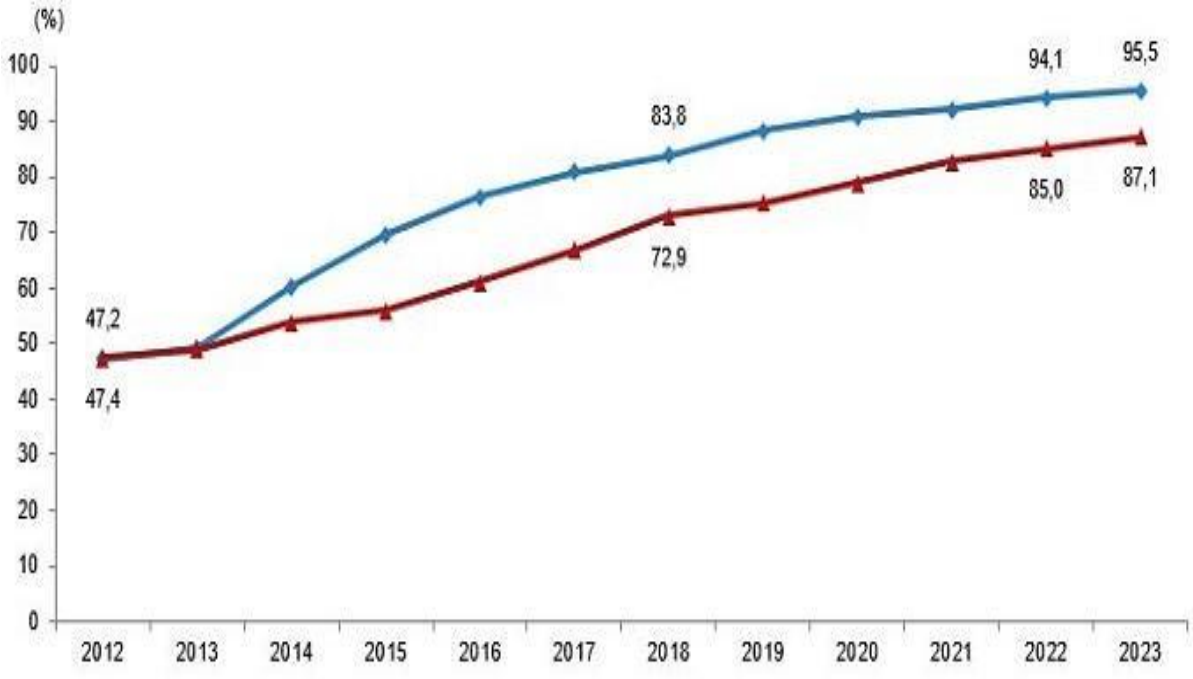
Table 4 presents employment, monthly earnings and educational attainment data for 2022 and 2023, differentiated by sector according to gender. Looking at the table, it can be said that the working female population represents a minority compared to the total population. First of all, the labour force participation rate for 2023 shows that 53.3 percent of the population participates in the labour force and only 35.8 percent of this percentage is the working female population. Again, when the working population rate for 2023 is analysed, it is seen that 48.3 per cent of the population constitutes the working population rate. It can be said that the reason for the percentage differences between the two indicators is unregistered employment. When we look at the data on the unregistered employment rate indicator for 2022, it can be said that it confirms this difference.

There are also differences in unregistered employment that reveal gender inequality; the high share of women in unregistered employment is similar to the 2017 data in Durmaz's (2018) study. While unregistered employment corresponds to the areas of work that women are forced to work since they have a subordinate status in the labour market, it can also be thought to correspond to employment known as uninsured employment, which women who lack a source of livelihood and receive social and economic state

support are forced to choose in order to avoid the deduction of the aid fee. In addition, it can be said that migrant women are employed informally due to the lack of work permits. On the other hand, looking at the average monthly earnings of employees for 2022, the unbalanced distribution of monthly earnings received by the employed population is thought to deepen the intersectionality of gender inequality.

The 2023 indicators of unemployed population rate, unemployed youth population rate and youth population not in employment, education or training show that female employment is low. It is seen that 12.7% of the unemployed youth population ratio is women, and 7.7% is men. In addition, the fact that the rate of young population not employed, educated, or trained is higher than the rate of unemployed young population constitutes a problematic issue related to the socioeconomic conjuncture of the country. The most striking result regarding participation in the digital economy is undoubtedly related to internet use and education level.

Figure 6: Internet access in households and internet use among individuals, 2012-2023 (TÜİK, 2023)



The positive trend seen in internet usage between 2012 and 2023 in the graph of TÜİK's 2023 Household Information Technologies (IT) Usage Survey in Figure 6 shows that internet usage in households (indicated in blue) has improved more than internet usage among individuals (indicated in red). Regarding internet use among individuals, it is seen that 87.1 per cent of individuals between the ages of 16-74 will use the internet in 2023. It is reported that 90.9% of this rate consists of men and 83.3% of women (TÜİK, 2023). It can be said that the main difference in internet use, which varies by gender, may be related to the level of digital literacy education. Table 5 provides information on the number of students studying in STEM fields based on gender:

Table 5: Number of Students by Fields of Education and Training, 2024[5]

	Female Students	Male Students	Total Students
Information and Communication Technologies (ICT)	7741	21595	29336
Database and Network Design and Management	578	1988	2566
Software and Application Development and Analysis	7163	19607	26770
Interdisciplinary Programs and Qualifications related to Information and Communication Technologies (ICT)	33486	64615	98101
Natural Sciences (Biology, Biochemistry, Environment, Physics, Chemistry, Earth Sciences), Mathematics and Statistics	60590	49424	110014

It can be said that 73.62% of male students and 26.38% of female students receive education and training in ICT fields, which are the education programs that form the basis for developing the digital economy. This difference is more pronounced in Database and Network Design and Management, Software and Application Development and Analysis, Interdisciplinary Programs and Qualifications related to Information and Communication Technologies (ICT). It is thought that the reason why the number of male students is almost more than twice the number of female students in the fields of education and training in Table 5 is due to the distinction between “women's work” and “men's work” in society. The increase in the female population in the labour market means more than just that women are positioned in all areas and/or levels of the economic system. The feminisation or informalisation of the service sector, which is referred to as women's work in the labour market, is expressed as a horizontal stratification of gender inequality. While women's work is determined according to the analogy of ‘housework’ in a patriarchal society, men's work includes a classification such as management, CEO, accountancy and jobs requiring expertise. In this regard, the fact that the number of male

[5] The data in the table constitute the data of the Council of Higher Education (YÖK, 2024) and the table was created by the author.

students in fields of education and training such as science, technology, engineering and statistics is in the majority and the number of female students is in the minority can be said to be the dominant view in the masculine society. Similarly, the fact that the indicator of the proportion of women in senior and middle management positions in 2022 in Table 4 corresponds to 19.6 per cent reminds us of the glass ceiling barrier since women cannot go beyond the jobs categorised as women's work in working life.

Discussion and Conclusion

The intersectionality of gender inequality and the Marxist concept of class is presented with global data. The level of development among developed, developing and underdeveloped countries is related to socioeconomic status, education and welfare level. Therefore, the differentiation of access to digital information technologies and tools across countries should basically be associated with socioeconomic status. Therefore, there is a proportional difference between developed countries and developing and underdeveloped countries in terms of the level of education in digital information technologies and access to tools within the scope of digital technology. The fact that women, who are marginalised due to characteristics such as identity, race, gender, and socioeconomic status in many areas, such as being a woman, being poor, not having a qualified education, cannot work and study in digital technology fields is a social problem that deepens the intersectionality of inequalities in the new sociality. The low rate of women's participation in the digital economy and education in the fields of digital information technologies on a global scale and inequality based on gender difference is problematic based on the context of gender inequality. Ultimately, due to the gender gap in the access to and use of digital information technologies and tools, the restricted labour network for women in the digital economy is also a result of gender inequality. On a global scale, the gender gap and internet usage graphs in Figure 1 and Figure 4 show that women's internet usage is lower than men's, which is a significant result in terms of the limitation in the digital economy. On the other handwomen taking jobs in lower-level jobs rather than in senior roles indigital economy showtheir limited position under the glass ceiling effect.

From the perspective of the imperialist development discourse, it is concluded that gender inequality exists on a global scale, even though the position of women in digital technologies and the digital economy differs deeply between developed, developing and underdeveloped countries. Presenting indicators of gender inequality in the digital economy, Gillward and Partridge (2022, 11) argue that inequality is based on differences in the use of the internet and technological equipment. Especially in Argentina and South Africa, which are developing and underdeveloped countries, it is seen that the problem of gender inequality is more effective than the welfare level of the country as the cause of the problem in the digital economy and digital technology. Tables 1 and 3 can be considered as the tables that present the most striking results of the study. Table 1 shows the proportion of women in developed countries, and Table 3 shows the proportion of

women in developing and underdeveloped countries who are employed and educated in digital technology and information technologies.

In developed countries in Table 1, the lowest rate of women working in digital technology is 47.3% (Austria). The highest rate is 63.2% (Russian Federation), while in Table 3, for developing and underdeveloped countries, the lowest rate is 17.8% (Democratic Republic of the Congo), and the highest rate is 51.7% (China). It can be said that the limited participation of women in the digital economy in developing and underdeveloped countries is due to the transportation problem of digital tools. In this regard, Figure 5 and Table 2 show the reasons for women's mobile phone ownership and not using the internet. First, Figure 5 presents the findings on gender inequality in mobile phone ownership in Africa and the Global South. In addition to the poverty factor, the reasons for the large gender disparity in mobile phone ownership in developing and less developed countries can be linked to the data in Table 2.

Table 2 focuses on the reasons for women's use of the Internet, and it can be said that it is due to the lack of knowledge of the tools and use of digital technology and limited digital literacy education. According to the information in Table 3, the highest rate is 31.54% (Iran) and the lowest rate is 5.82% (Nigeria) within the framework of the proportion of women according to education in the field of information technologies in developing and underdeveloped countries regarding digital literacy status.

As a developing country, the subordinate position of women in the digital economy in Turkey is mainly the result of low female labor force participation. Table 4 shows that women are insufficiently involved in all areas of the economy. The limited role of women in the labor market should be associated with traditional patriarchal social roles. Especially in eastern Turkey, women's social role is limited to care labor within the household. It is clear that the eastern part of Turkey is at a lower level of development than the western part. This shows that development and inequality are negatively correlated. On the other hand, in order for women to take part in jobs requiring expertise in digital economies, the level of education in information technologies should also be sufficient. Table 5 shows that women in the field of information technologies make up almost one third of men. The first step in eliminating gender inequality in digital technologies and the economy is possible with inequality in education. Therefore, three basic steps are suggested to address the inequality in digital technology in developing and underdeveloped countries:

- First of all, women are expected to receive digital literacy training.
- Training in digital information technology fields should be strengthened.

Policy developments which would strengthen women's employment should be prioritised.With the development of technology and the modernisation of societies, women are expected to be liberated from the inequalities and victimisation they have

been subjected to in traditional societies. However, the level of prosperity and development offered by capitalism creates obstacles to women's emancipation due to the inequalities created by the unbalanced distribution of resources. In the context of development and progress, empowerment can only be possible through equal distribution of resources, and the inequality created by differences in race, culture, ethnicity and socioeconomic status, which causes intersectionality and corresponds to a social problem, must be resolved.

References

Akkaya, H., & Gerçek, A. (2019). OECD ve Seçilmiş Bazı Ülkelerde Dijital Ekonominin Vergilendirilmesi: Türkiye İçin Çıkarımlar. *International Journal of Public Finance, 4*(2), 166-188.

Anwar, M. A. (2022). Platforms of inequality: gender dynamics of digital labour. *Gender & Development*, 747-764.

Bukht, R., & Heeks, R. (2018). *Development Implications of Digital Economies.* Manchester: Centre for Development Informatics, Global Development Institute.

Crenshaw, K. (2011). Demarginalising the Intersection of Race and Sex: A Black Feminist Critique of Anti-discrimination Doctrine, Feminist Theory, and Anti-racist Politics. In H. Lutz, M. T. Vivar, & L. Supik (Eds.), *Framing Intersectionality: Debates on a Multi-Faceted Concept in Gender Studies* (pp. 25-42). Ashgate Publishing.

Durmaz, N. (2018). "Tamamlanmamış Devrim"in Türkiye Yansımaları. In Ç. Ünlütürk Ulutaş (Ed.), *Feminist Sosyal Politika: Bakım, Emek, Göç* (pp. 67-98). İstanbul: NotaBene Yayınları.

Erbaş , H. (1999). Gelişme Yazını ve Geleceği. *Doğu Batı*(8), 9-25.

Frey, C. B., & Osborne, M. A. (2017). The future of employment: how susceptible are jobs to computerization? *Technological Forecasting and Social Change, 114*, 254-280.

Gaib , H., & Dkk. (2017). *Profil Perempuan Indonesia 2017.* Jakarta: KP3A.

Gillwald, A., & Partridge, A. (2022, Ekim 10-13). Gendered Nature of Digital Inequality: Evidence for Policy Considerations. *Researh ICT Africa*.

ILOSTAT. (2023). *Country profiles, Turkey.* Retrieved Ağustos 17, 2024, from International Labour Organization: https://ilostat.ilo.org/data/country-profiles/?ref_area=TUR

IMF. (2018). *Measuring the Digital Economy.* Washington: D.T.IMF.

International Telecommunication Union. (2021). *Measuring digital development: Facts and figures.* Cenevre: ITUPublications.

Karakaş, Ö. (2020, Nisan 30). *Dijitalleşme ve Kadın Emeği.* Retrieved Şubat 27, 2024, from Gelecek Yaşam: https://terrabayt.com/author/oznur/

Khalsiah. (2022). Boosting Of Women Education in Ed- Tech Sector Digital Economy Era. *III. Malikussaleh International Conference on Multidiciplinary Studies* , (pp. 1-4).

Knickrehm, M., Berthon, B., & Daugherty, P. (2017). *Digital disruption: The growth multiplier.* Retrieved Ağustos 19, 2024, from http://www.metalonia.com/w/documents/Accenture-Strategy-Digital-Disruption-Growth-Multiplier.pdf

Koca Peker, Ş. N. (2023). Kitap İncelemesi: Kültürel Emperyalizm. *Sosyoloji Dergisi*(46), 265-275.

Lutz, H., Vivar, M. T., & Supik , L. (2011). Framing Intersectionality: A Introduction. In *Framing Intersectionality: Debates on a Multi-Faceted Concept in Gender Studies* (pp. 1-22). Ashgate Publishing.

Majid , H., & Mustafa, M. (2022). Transformative digital spaces? Investigating women's digitalmobilities in Pakistan. *Gender & Development, 30*(3), 497-516.

Marx, K. (1966). *Felsefenin Sefaleti.* Ankara: Sol Yayınları.

McGuinness, E. (2018). *Women's Economic Empowerment in the Digital Economy.* Retrieved Ağustos 15, 2024, from USAID's ASEAN Connectivity through Trade and Investment (US-ACTI) project: https://www.nathaninc.com/wp-content/uploads/2019/03/WEE-in-the-Digital-Economy-White-Paper.pdf

Nikulin, D. (2017). The impact of ICTs on women's economic empowerment: In Catalyzing development through ICT adoption. *Springer, Cham*, 15-24.

OECD. (2015). *Addressing the Tax Challenges of the Digital Economy Action 1: 2015 Final Report.* Paris: OECD/G20 Base Erosion and Profit Shifting Project.

OECD. (2020). *OECD Digital Economy Outlook 2020.* Paris: OECD Publishing.

Özcan, P. M. (2016). Dijital Ekonominin Vergilendirilmesinde Karşılaşılan Sorunlar: BEPS 1 No.lu Eylem Planı Kapsamında Bir Değerlendirme. *Electronic Journal of Vocational Colleges*, 73-82.

Özkazanç, A. (2017). Duvarları Yıkmak, Köprüleri Kurmak: Yeni Küresel Feminizmin. (H. B. Temsilciliği, Ed.) *Türkiye'de Kadın Hareketi ve Kesişimsellik Yaklaşımı Kesişimsellik Tartışması*, pp. 24-36.

Rani, U., Castel-Branco, R., Satija, S., & Nayar, M. (2022). Women, work, and the digital economy. *Gender & Development*, 421-435.

Ristanovic, V., Sostar, M., & Hak, M. (2024). Are Women Recognized in the Digital Economy? Experiences of Developed Economies. *Studies in Business and Economics, 19*(1), 200-215.

Riyad Deklarasyonu. (2020, Ekim 21-22). *G20 Riyad Zirvesi.* Retrieved Ağustos 14, 2024, from https://www.consilium.europa.eu/media/46883/g20-riyadh-summit-leaders-declaration_en.pdf

Sarıgöl, P. (2020). Kesişimsellik Teorisi ve Farklılıkların Feminizmi. *Uluslararası İnsan Çalışmaları Dergisi, 6*, 331-352.

Selci, F. (2019, Temmuz 19). *Teknolojik Gelişmelerin Kadın İstihdamı Üzerindeki Etkisi: AB Ülkeleri ve Türkiye Örneği*. [Yüksek Lisans Tezi]. Çankırı: Sosyal Bilimler Enstitüsü.

Silva, N. d. (2022). Navigating the digital informal economy during the COVID-19 pandemic: vignettes of Sri Lankan micro- and small-scale entrepreneurs. *Gender & Development, 30*(3), 477-495.

Soyak, A. (1996). *Teknolojik Gelişme ve Özelleştirme.* İstanbul: Kavram Yayınları.

Tapscott, D. (1996). *The Digital Economy: Promise and Peril in the Age of Networked Intelligence.* McGraw-Hill.

Tarek , A. (2022). *Impacts of Country Development on E-Commerce Adoption: Egypt Case.* Zayed: Nile University.

Toksöz, G. (2018). *Kalkınmada Kadın Emeği,* (2. ed.). İstanbul: Varlık Yayınları.

Tomlinson, J. (2020). *Kültürel Emperyalizm* (2. ed.). (E. Zeybekoğlu, Trans.) İstanbul: Ayrıntı Yayınları.

TÜİK. (2023, Ağustos 29). *Hanehalkı Bilişim Teknolojileri (BT) Kullanım Araştırması, 2023.* Retrieved Ağustos 17, 2024, from Türkiye İstatistik Kurumu:

https://data.tuik.gov.tr/Bulten/Index?p=Hanehalki-Bilisim-Teknolojileri-(BT)-Kullanim-Arastirmasi-2023-49407

UN Women. (2020, Ağustos). *The digital revolution: implications for gender equality and women's rights 25 years after Beijing*. Retrieved Ocak 2, 2024, from https://www.unwomen.org/en/digital-library/publications/2020/08/discussion-paper-the-digital-revolution-implications-for-gender-equality-and-womens-rights

UN Women. (2022, Eylül). *Progress on the Sustainable Development Goals: The Gender Snapshot 2022.* Retrieved Ocak 03, 2024, from unwomen.org: https://www.unwomen.org/sites/default/files/2022-09/Progress-on-the-sustainable-development-goals-the-gender-snapshot-2022-en_0.pdf

UN Women. (2023, Aralık 22). *International Women's Day 2023: "DigitALL: Innovation and technology for gender equality".* Retrieved Ocak 04, 2024, from https://www.unwomen.org/en/news-stories/announcement/2022/12/international-womens-day-2023-digitall-innovation-and-technology-for-gender-equality

UNCTAD. (2023, Mart 08). *How to unlock women's potential in the digital economy.* Retrieved Ocak 03, 2024, from UNCTAD: Prosperity for all: https://unctad.org/news/how-unlock-womens-potential-digital-economy

USAID. (2023, Eylül 9). Retrieved Ocak 03, 2024, from Fact Sheet: https://www.usaid.gov/sites/default/files/2023-09/FINAL%20USAID%20Women%20in%20the%20Digital%20Economy%20Initiative%20Fact%20Sheet.pdf

Wallerstein, I. (2011). *Dünya Sistemleri Analizi: Bir Giriş.* (E. Abadoğlu, & N. Ersoy, Trans.) Ankara: İmge Yayınevi.

Weber, M. (2020). *Sosyal Bilimlerin Metodolojisi.* İstanbul: Küre Yayınları.

Widyastuti, D. A., Nuswantoro, R., & Sidhi, T. P. (2016). Literasi Digital Pada Perempuan Pelaku Usaha. *Jurnal ASPIKOM*, 1-15.

Women, Work, and the Digital Economy: Our new Issue [Editorial]. (2022) *Gender and Development*. https://www.genderanddevelopment.org/blog/women-work-and-the-digital-economy-our-new-issue/

World Economic Forum. (2021, Mart). *Global Gender Gap Report.* Retrieved Ocak 06, 2024, from World Economic Forum: http://reports.weforum.org/globalgender-gap-report-2021/dataexplorer

YÖK. (2024). *2023-2024 Öğretim Yılı Yükseköğretim İstatistikleri.* Retrieved Ağustos 17, 2024, from Yükseköğretim Kurulu: https://istatistik.yok.gov.tr/