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## **Sex-selective Abortion in Azerbaijan: Exploring Institutional Dynamics and Responses**

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**CESD PRESS**

**December 2022**

## **Abstract**

Azerbaijan has been gradually ranked lower in terms of its gender equality indicators like the political empowerment and estimated earned income of women (Gender Gap Report, 2022). Sex selective abortion has considerably risen in the past thirty years in and currently Azerbaijan holds the highest level globally. If the sex ratio at birth (SRB) is higher than the natural range, then there is sex-selective abortion taking place.

A stratification is seen through the regions of Azerbaijan in terms of the SRB. Most of the regions with highest SRB are in southern regions. Half of the fourteen economic regions in Azerbaijan have seen a decrease in the SRB within the past ten years, three have seen an increase and four have not experienced a significant change.

High levels of sex-selective abortion have impacted the demography of Azerbaijan, but it has not had long-term social and economic effects. The employment rate for women and the number of girls enrolled into education has increased throughout all regions. However, looking through a more general scope, over thirty years of sex-selective abortion has had an impact on the demographic distribution, to the extent that women make up less of the population under 30 years old on average than men. Although the number of women employed has seen a steady increase, the gender gap in the labour force has only marginally decreased in five years with more women than men in the working age population who are unemployed. The number of abortions after 12 weeks has also seen a faster increase as compared to the total number of abortions.

## Introduction

In recent years gender equality has been suffering in Azerbaijan as seen from key indicators in the Gender Gap Report of 2022 by the World Economic Forum which ranks a total of 146 countries. Azerbaijan is ranked 135<sup>th</sup> in terms of political empowerment of women, 92<sup>nd</sup> in estimated earned income of women and 93<sup>rd</sup> in enrolment in secondary education of girls (Gender Gap Report, 2022).

A balance in a population's gender is a vital aspect for its development and reproduction. Although the current number of men and women in a society may be close to equal, a deeper analysis is needed to understand the ability of a country to reproduce its population. The sex ratio at birth is an indicator which explores this issue, as it shows the number of boys born for every 100 girls born in a country. Studies into population census of various countries before the introduction of ultrasound technology has revealed that more boys are usually born than girls, thus making the natural range 102-105 boys per 100 girls born. Any number outside of this range is indicative of sex-selective abortion (Tong, 2022).

Azerbaijan became a free market economy after gaining its independence from the Soviet Union in 1991, and this brought with it many benefits, such as the availability of new technology. The usage of ultrasound technology became prevalent throughout Azerbaijan after its independence, coinciding with the rise in the sex-ratio at birth (SRB). The Gender Gap Report of 2022 published by the World Economic Forum placed Azerbaijan 146<sup>th</sup> out of 146 countries regarding the SRB (Gender Gap Report, 2022). According to Azerbaijan's State Statistical Committee, its SRB in 2022 was 116 boys born per 100 girls, which is well above the natural range of 102-105 boys: a clear indicator of sex-selective abortion taking place in Azerbaijan.

Socio-cultural factors are seen as the cause for son-preference in Azerbaijan, as boys are more favoured by families. Boys are seen as the ones who will take care of their parents when they reach their old age, continue the family name, protect the country as well as the family, and are perceived as less of a financial burden. On the other hand, girls are seen as 'birds of passage' who leave their family for another when they get married, will not be able to contribute to the family financially when they grow older, and the family will face difficulties associated with raising girls. Having a boy is a source of honour for some families. However, socio-cultural factors are difficult to quantify and usually do not represent the point of view of the whole population. This study aims at looking at the issue of SRB at a region-specific level in Azerbaijan, comparing the SRB within its various administrative regions. This will help identify the parts of Azerbaijan which have the highest SRB and would allow for better policy implementation at the micro level in areas which require it the most.

The SRB has been higher than the natural range since Azerbaijan has gained its independence, which is indicative of large-scale antipathy toward female children. To explore this issue further, statistics on females in the labour force and enrolment into primary and secondary education will be analysed to see if high SRB is indicative of a more general ostracization of women in Azerbaijani economic and social life, specifically in the regions of Azerbaijan where the SRB is high.

## Literature review

The term “missing women” came to prominence with an essay written by Amartya Sen in 1990 for *The New York Review of Books* where he made an estimated calculation of how many women were missing in Asia due to sex-selective abortion which was caused by a myriad of socio-cultural reasons which leads to son preference in countries such as India and China. Amartya Sen estimated that 100 million women were ‘missing’ in Asia. This was a ground-breaking study which made academics research this phenomenon in different parts of the world (Sen, 1990).

The sex ratio of a population can be altered by other factors, such as neglect of the child which consequently falls into illness, or infanticide, however these do not influence the sex ratio at birth. The biological range for the sex ratio at birth is approximately 102-105 boys per 100 girls born (Hamilton, 1967). The only way in which the sex ratio at birth can be changed is through sex-selective abortion, thus the sex ratio at birth is the main indicator of sex selective abortion in a country. The reason for higher male births than female is attributed to an evolutionary response to the higher mortality rates among boys when they are born (Fisher, 1930).

In recent decades, the fertility rate has been seeing a decrease around the world. In communities where males are more revered than females, sex selective abortion allows for a smaller family and male children at the same time. In India, this practice of sex-selective abortion is prevalent among more highly educated women, this contradicts the idea that sex-selective abortion takes place among the uneducated and poor parts of the population (Nagpal, 2013). This pattern is somewhat prevalent in Azerbaijan as well, as the least educated portion of females are less likely to have induced abortions as compared to women who have more education, however the women who have the highest level of education in Azerbaijan are also less likely to have an abortion. The cause of this phenomenon may be attributed to less access to abortion services among the least educated population of women and access to more reliable forms of birth control among women with higher education (PHRC, 2013).

China has been struggling with high levels of sex-selective abortions, which although have recently seen a decreasing trend, is still over the natural range with around 110 boys per 100 girls born in 2020. China still sees a practice of sex-selective abortion in all areas of the society from urban to rural regions (Tang, 2021). Although the initial reason for sex-selective abortion was seen as the one-child policy implemented in 1980 and ended in 2016, the high levels of SRB have persisted (Mei & Jiang, 2022). This is attributed to the Confucian values and the patriarchal system of the families in China (Hesketh et al., 2011).

High levels of sex ratio at birth have been attributed to the same reasons – high value of sons in the communities and low economic potential of females in the society. Although countries such as India or China have seen extensive research in the context of sex-selective abortion, post-Soviet countries in the South Caucasus have received less attention. There is a phenomenon that the neighbouring countries of Azerbaijan, Armenia and Georgia have been experiencing high levels of sex-selective abortion since the dissolution of the USSR and their independence in the beginning of the 1990s (Michael et al., 2013).

In his article which was published in 2009, Christophe Z. Guilmoto puts forward a theoretical framework for the prevalence of high sex ratio at birth in certain countries in the world (Guilmoto, 2009). There are three mechanisms according to Guilmoto: the availability of technology to identify and determine the gender of the foetus, the existence of antipathy towards girls and son preference in the communities, and lastly, a low fertility rate which makes parents choose to have a son over a girl. If all three of these mechanisms are available, then sex selective abortion takes place.

Géraldine Duthé specifically focused on the problem of high sex ratio at birth in the Caucasus (Duthé, 2012). The paper applied the theoretical framework of Guilmoto on the countries in Caucasus, Azerbaijan, Armenia, and Georgia, due to the high sex ratio at birth in all three countries. Duthé puts forward that as a result of demographic surveys conducted in all three countries, a strong son preference is present in the society. Additionally, with the dissolution of the USSR and influx of previously unavailable ultrasound technology from the Western world, gender determination became easy – seen from the sharp rise in the sex ratio at birth after 1990. All three countries have also been experiencing low fertility rates, and from the women who had participated in the demographic surveys in all three countries, around 60% stated that they chose to abort their foetus as they do not want another child.

The case of Azerbaijan has been explored within the scope of sex-selective abortion as it has been listed alongside China and India as countries which have the highest global sex ratio at birth (Garenne and Hohmann, 2014). Azerbaijan has been ranked last among 146 countries on having the highest sex ratio at birth in the Global Gender Gap Report of 2022 carried out by the World Economic Forum (Gender Gap Report, 2022). A study carried out by the UNFPA in 2019 has shown that there is a deep socio-culturally embedded antipathy toward female children in Azerbaijan which drives the sex ratio at birth to such high levels (Guthridge, 2019).

The UNFPA report (Guthridge, 2019). suggests that there are interconnected reasons behind the high sex ratio at birth in Azerbaijan. Firstly, among the socio-cultural factors are the stereotypical perceptions about female children and their fate when they grow older. According to a Demographic Health Survey conducted by the Ministry of Health of Azerbaijan (PHRC), 2013), females are seen as ‘birds of passage’ who will leave the family home when they get married, seen as burdens to the family’s finances as they apparently incur more cost of raising. Males, on the other hand, are considered breadwinners who sustain and bring honour to the family, as well as defend the nation. Men are also expected to be caretakers of their parents when they reach an old age, as well as carrying on the family name.

There has been limited research done on the topic of sex-selective abortion in Azerbaijan, and the existing literature mainly focuses on the South Caucasus on a regional basis, as sex selective abortion seems to present in all three countries of Azerbaijan, Armenia, and Georgia. It is for this reason that this paper aims to look at the sex ratio at birth not only at the country level, but also in different regions of Azerbaijan, to see if there is a differing attitude throughout the country towards sex selective abortion and a general antipathy towards girls.

## **Methodology**

This study aims at looking at the possible impact of sex-selective abortion on the regional level of Azerbaijan, as well as identifying in which regions this issue is most prevalent, if any. Studies undertaken by the UN and other international organisations analyse data on sex-ratio at birth according to the country level in Azerbaijan. The results are indicative of a problem which shows a non-declining trend of sex-selective abortion. However, identifying the problem is not enough, as a deeper regional analysis will be favourable for better policy implementation.

As its hypothesis, this study aims to show that there is a variation among the different regions in Azerbaijan based on the sex ratio at birth. This would show that sex selective abortion and son preference is not the status quo in all areas and peoples of Azerbaijan.

This study mainly relies on data provided by The State Statistical Committee of the Republic of Azerbaijan and surveys and data accumulation conducted with collaboration of members of various departments in the Centre for Economic and Social Development (State Statistical Committee of Azerbaijan Republic, 2022). The sex distribution of the demography of Azerbaijan is analysed to highlight the effect that sex selective abortion has been having on the population. The total abortion rate is also analysed and compared to the abortion rate after 12 weeks (the period of pregnancy where the gender of a foetus is known), to see if there were an increasing trend which would support claims of increasing sex selective abortion. The sex-ratio at birth for the past ten years in Azerbaijan's various economic and administrative regions is analysed to see if there is a general trend in regions where the sex ratio at birth is specifically high and look at this issue at a micro level. These regions are then further analysed by looking at their economic and social development through the scope of gender to see if the sex selective abortion has an impact on the social and economic life of women.

### **Economic analysis:**

The number of men and women who are employed and in the working age population is analysed to identify if there are barriers of entry for women in Azerbaijan. The regions are also analysed further to see if son preference has had a deeper and long-term impact on women in the workforce. This would be evident from a decrease in the number of women joining the labour market. The number of women and men in the labour force for the previous five years of the regions with high sex ratio at birth are analysed in order to determine the gender gap and to see if the regional population which practices sex-selective abortion also puts barriers on women's participation in the workforce. The regions with high sex selective abortion are expected to have less women participating in the workforce or observe a declining trend throughout the years. The presence of sex-selective abortion shows an attitude of antipathy towards women and underestimation of their roles in society, thus a diminishing participation in the labour force would be reflective of this attitude.

**Social analysis:**

The number of male and female students in Azerbaijan is analysed to highlight the short-term impact of sex selective abortion on the demographic structure of the country. To analyse the extent of the social impact of sex-selective abortion on a regional basis, enrolment in primary and secondary education is taken as a comparative index.

The regions which seem to have higher sex ratio at birth are chosen and compared to its enrolment rates for the past ten years to see if gender selective abortion has had a deeper and long-term social impact on the communities which have antipathy towards girls. High levels of sex-selective abortion would mean that families are reluctant to have girls and conform to the traditional view that women are more dependent on the family, rather than being able to support themselves and the family as well. This traditional thinking acts as a barrier for women to pursue higher education and explore career options, as they are perceived as housewives who will leave their family after marriage to rear children and take care of the family of their husbands, thus leaving no time for a career and thus making the goal of pursuing education pointless.

## Analysis of the demography of Azerbaijan and the problem of sex-selective abortion

The main consequence of sex selective abortion is an imbalance in the sex distribution of the population. In the long term, an imbalance in the population can have a negative impact on the social and economic lives of women. A decrease in the number of women in a society can lead to bride kidnapping and coerced marriages. Violent crimes and rape towards women can increase (Barot, 2012).

Analysis of the sex distribution of the population of Azerbaijan in 2022, as seen from Figure 1 shows that the total percentage for men and women is balanced at 50% each. This would normally be indicative of a near perfect balance in the population. However, deeper analysis shows that this total percentage does not reflect the reality of the distribution. An imbalance in the sex distribution is seen up until the age group of 25 to 29.

*Figure 1: Age and Sex distribution of the population of Azerbaijan in 2022*

Age groups	Number (thousands)		Sex distribution (%)	
	women	men	women	men
0	52.1	60.2	46.4	53.6
1 to 4	255.1	290	46.8	53.2
5 to 9	387.9	444.5	46.6	53.4
10 to 14	351.9	408.9	46.3	53.7
15 to 19	290.3	330.9	46.7	53.3
20 to 24	311.9	349.1	47.2	52.8
25 to 29	405.1	433.2	48.3	51.7
30 to 34	469.7	467.5	50.1	49.9
35 to 39	440.3	424.8	50.9	49.1
40 to 44	366.1	361.3	50.3	49.7
45 to 49	317.4	296.9	51.7	48.3
50 to 54	332.5	300.4	52.5	47.5
55 to 59	338.3	296.2	53.3	46.7
60 to 64	305.7	268.3	53.3	46.7
65 to 69	191.1	156.7	54.9	45.1
70 to 74	117.9	88.8	57	43
75 to 79	50.5	34.2	59.6	40.4
80+	98.1	62.6	61	39
<b>Total</b>	<b>5081.9</b>	<b>5074.5</b>	<b>50</b>	<b>50</b>

*Source: State Statistical Committee of the Republic of Azerbaijan (2022)*

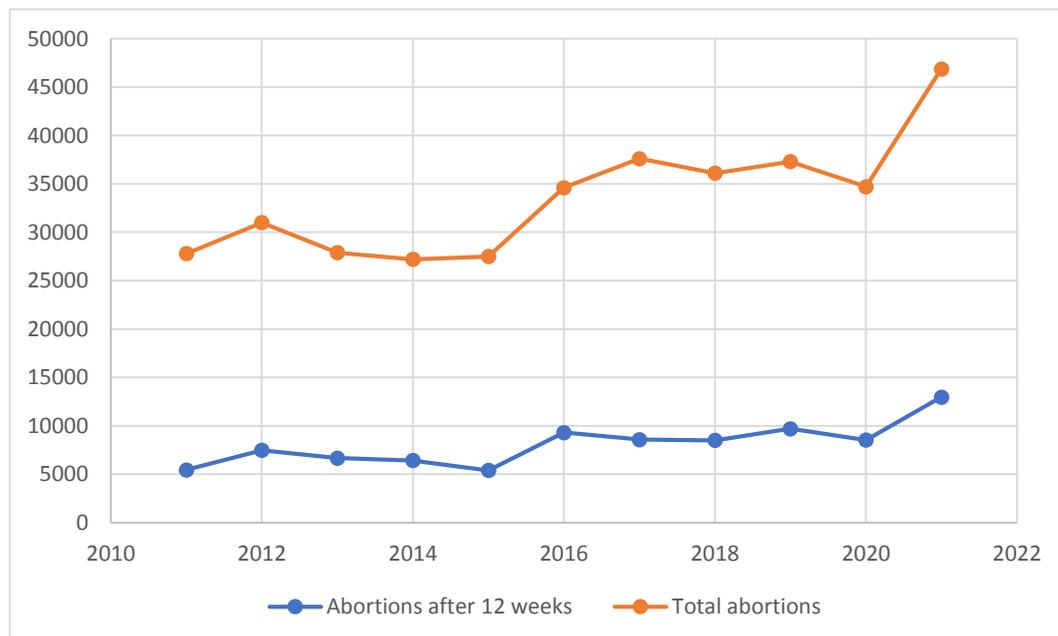
Calculating the average sex distribution for the age groups until 29 shows that women compose 46.9% of the population, whereas men make up 53.1%. This figure is well over the natural range of 102-105 girls per boys, which shows that each age group up until 25 to 29 has

experienced some level of sex selective abortion. The finding of 46.9% of women show that on average there have been 113 boys born per 100 girls for the past 30 years. The balancing of the total average in the sex distribution of the population at 50-50% is due to high male mortality rates which becomes more evident as the age of males increase (see Figure 1).

To explore this phenomenon of sex selective abortion, figures regarding the abortion rate has been obtained from the State Statistical Committee of the Republic of Azerbaijan. As seen in Figure 2 below, the total number of abortions have been increasing for the past ten years. The gender of a foetus is usually determined by ultrasound after 12 weeks of pregnancy, therefore the statistics for abortions after 12 weeks should be analysed to identify the trend in sex-selective abortion.

It can be observed that the abortions after twelve weeks follow the same increasing trend as the total number of abortions. However, deeper analysis of the data shows that the total number of abortions have increased by 1.69 times in ten years, whereas the number of abortions after twelve weeks have increased by 2.38 times. Although the same fluctuations are evident in Figure 2 for both, such as a general increase after 2015 and not reaching the levels of 2011, the abortions after 12 weeks are increasing at a faster rate than the total number of abortions. This shows that sex-selective abortion is not declining in Azerbaijan.

Figure 2: Number of abortions in Azerbaijan



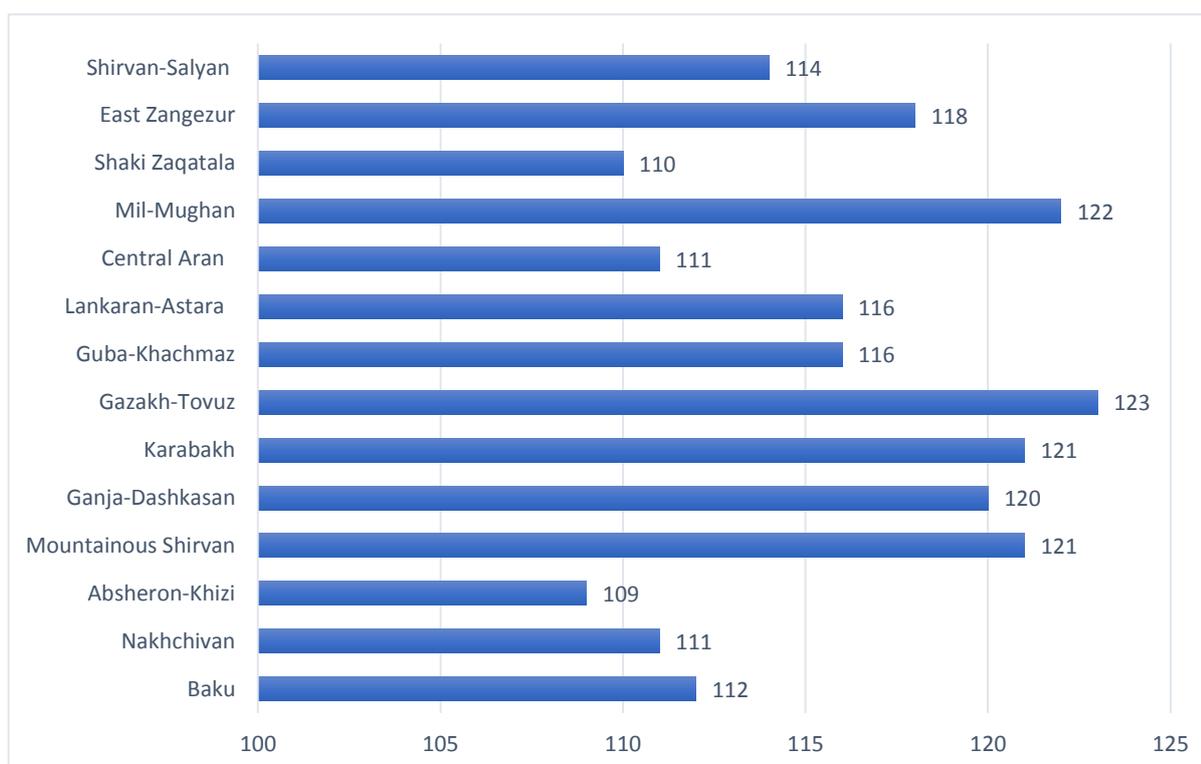
Source: State Statistical Committee of the Republic of Azerbaijan (2022)

## Analysis of the SRB in different regions of Azerbaijan

It is seen that sex-selective abortion has been taking place in Azerbaijan for the past thirty years at an increasing rate, as the imbalance in the sex distribution of the population becomes higher as the age group decreases (see Figure 1). To explore this phenomenon further and see the extent of the impact on the population's life, the sex ratio at birth (SRB) is analysed among various regions of Azerbaijan to see if this trend is prevalent in the micro level within the country. Economic and social indicators for these regions are compared with the SRB to see if regions with high SRB suffer more with relation to indicators such as women's participation in the labour force or girls' enrolment into primary and secondary education.

Looking at the statistics from Figure 3, it can be ascertained that there is a variation among different economic regions of Azerbaijan with regards to its SRB. However, it is also clear that none of the economic regions of Azerbaijan had an SRB within the natural range of 102 – 105 boys per 100 girls in 2021, indicative of sex-selective abortion being practiced in all the economic regions of Azerbaijan. The lowest figure belongs to the economic region of Absheron-Khizi with 109 and the highest is Gazakh-Tovuz with 123.

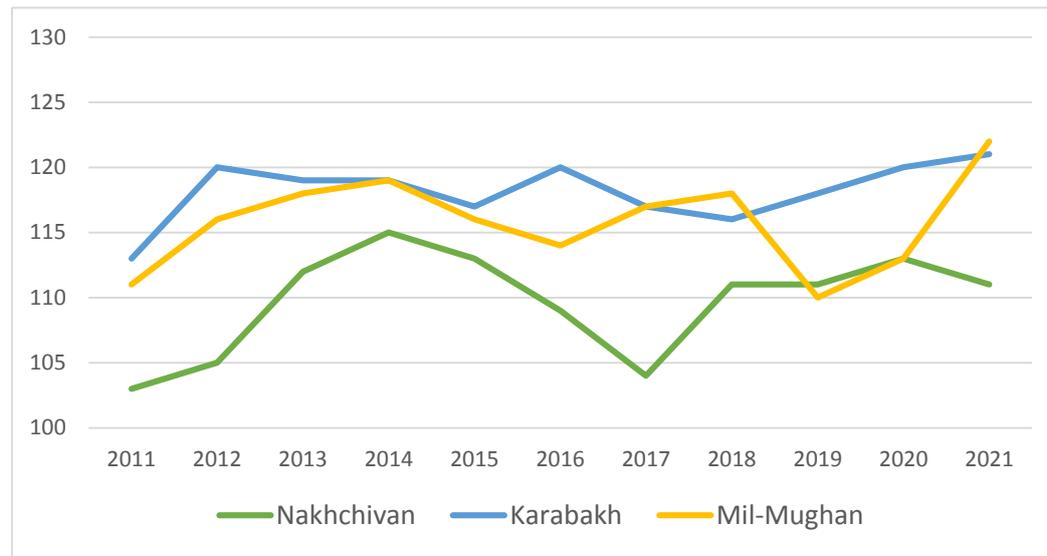
Figure 3: Sex ratio at birth in Azerbaijani economic regions (2021)



Source: State Statistical Committee of the Republic of Azerbaijan (2022)

To further analyse this phenomenon, the SRB of the past 10 years for the economic regions of Azerbaijan will be explored to see if there is any tendency present among these regions. Figures 4, 5 and 6 are representations of the trends which are present in the SRB of the past ten years in Azerbaijan's economic regions. These figures further support the thesis that the SRB differs among the regions and specific regions have shown fluctuation throughout the years.

Figure 4: Economic regions with a positive trend in SRB

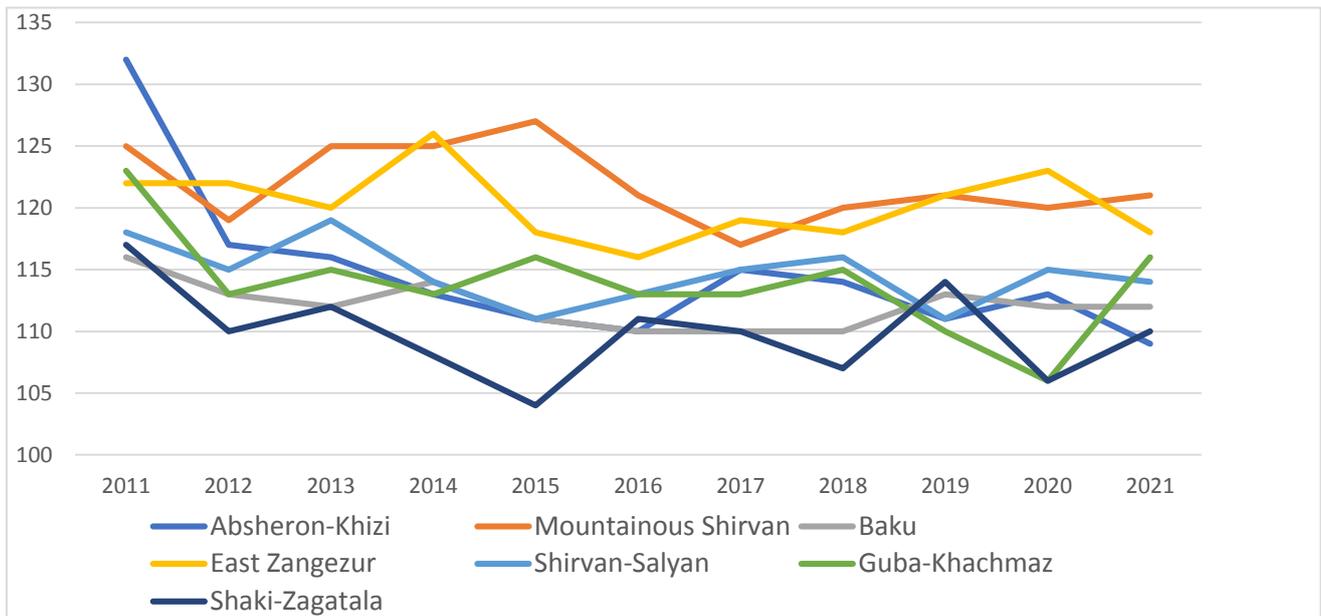


Source: State Statistical Committee of the Republic of Azerbaijan (2022)

Figure 4 shows the economic regions of Nakhchivan, Karabakh and Mil-Mughan. These regions have had an SRB which has increased in the past ten years. Nakhchivan was the only region within the natural range with around 103 boys born per 100 girls, however it saw a rapid increase and reached a level of 111 in 2021. Although Karabakh and Mil-Mughan regions were higher than the natural range in 2011, their SRB increased to alarming levels of over 120 boys per 100 girls. These are the problematic economic regions of Azerbaijan with regard to the high level of sex ratio at birth, which is indicative of very high levels of sex selective abortion taking place.

In Figure 5 there are seven economic regions which have seen a decline in the SRB in the past ten years. Although Shaki-Zagatala reached the natural level with around 104 in the year 2015, it rose to around 110 in 2021, still lower than the initial 117 boys per 100 girls in 2011. The other six regions also faced periodical spikes in the SRB, however they reached lower levels in 2021 as compared to 2011, which is a sign of decreasing trend and improvement in the SRB in these seven economic regions.

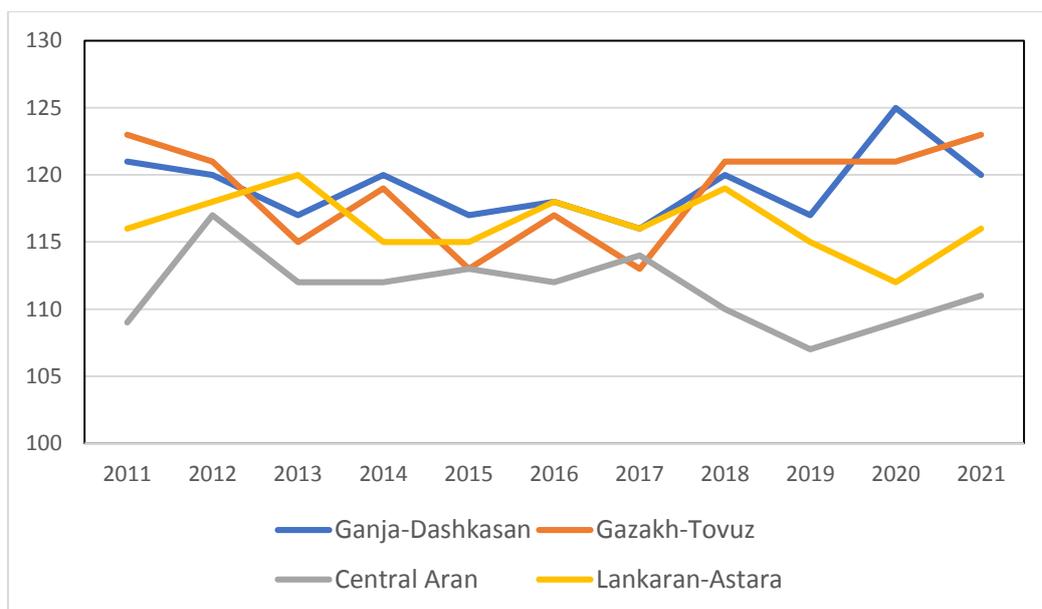
Figure 5: Economic regions with negative trend in SRB



Source: State Statistical Committee of the Republic of Azerbaijan (2022)

Lastly, Figure 6 encompasses four economic regions of Azerbaijan which have not seen any significant changes in their SRB. Although certain shifts are evident in the SRB, ultimately the figures had not changed significantly for these regions when comparing the figures from 2011, reflecting a lack of improvement. The Central Aran region changed from an SRB of 109 to 111 in the period of ten years, when Lankaran-Astara following certain fluctuations had reached the same level of SRB as it had in 2011 which was 116.

Figure 6: Economic regions with no significant difference in SRB

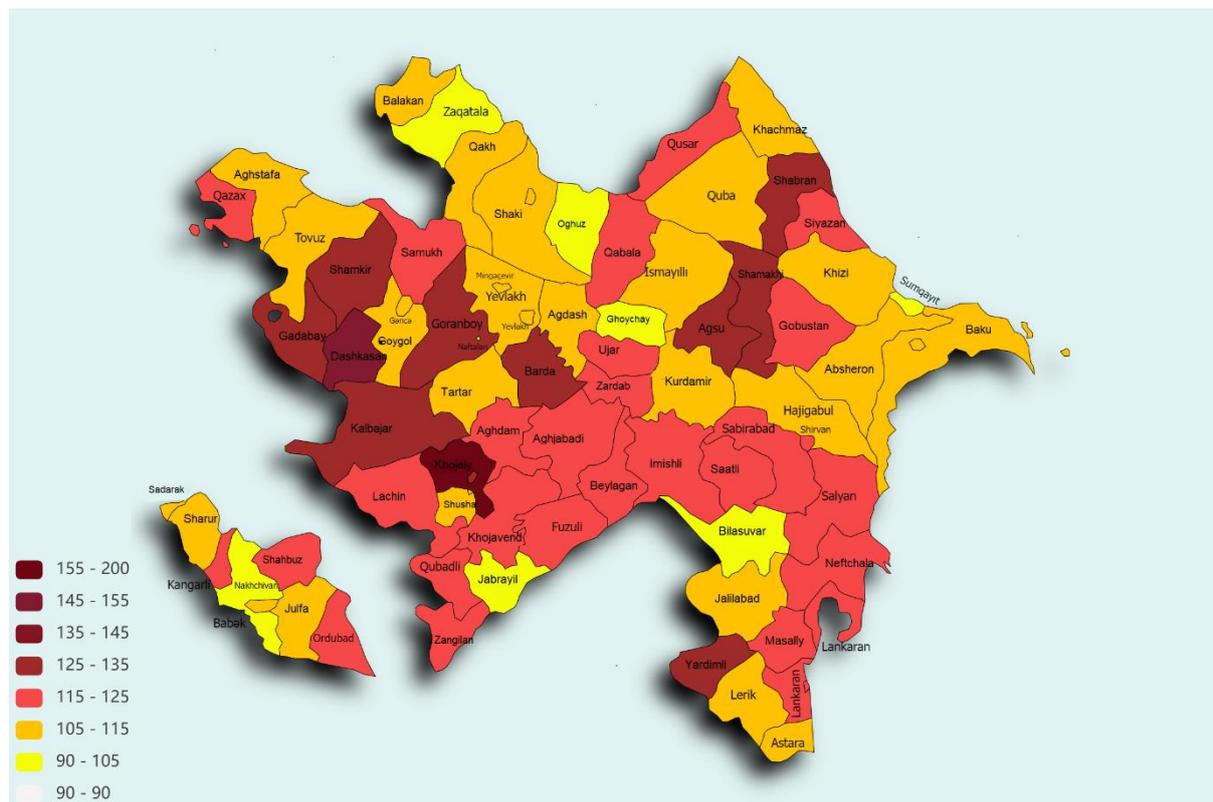


Source: State Statistical Committee of the Republic of Azerbaijan (2022)

Out of the fourteen economic regions in Azerbaijan, seven of them seem to be in a gradual decline regarding the SRB, indicating a change in attitude towards sex-selective abortion. The other seven economic regions however include three which have seen an increase and four which have not seen significant change over the last ten years. This is reflective of a strong antipathy towards female children in these regions as the SRB either increases or does not change. Although the regions in Figure 5 are showing a negative trend, the current level of SRB is similar to that of the regions in Figure 4 which have seen an increase.

Further analysing the level of SRB in Azerbaijan, the figures from the administrative regions show an additional trend – that most of the regions in the south show a higher level of SRB as compared to the North as seen in Figure 7. It is noteworthy that the administrative regions in and around Karabakh (South-West of Azerbaijan) had been occupied for more than thirty years by Armenians, and the figures of SRB are those of internally displaced persons registered in occupied territories but living in other regions. Nonetheless, a trend is visible that 21 out of 27 administrative regions with SRB between 115 and 125 are concentrated in the southern region of Azerbaijan. Although there are regions with higher SRB, they are more spread out and not concentrated in one specific area of Azerbaijan.

Figure 7: Map of Azerbaijan's level of SRB in its administrative regions in 2021



Source: State Statistical Committee of the Republic of Azerbaijan (2022)

The map in Figure 7 shows that the skewed sex ratio at birth is stratified among different regions of Azerbaijan. Specifically, the southern regions of Azerbaijan suffer from sex-selective abortion more than the northern regions.

Although the statistics support the thesis that there is a variation among different regions of Azerbaijan regarding the SRB, the results are not very hopeful. There are only 7 administrative regions out of a total of 77 which are in the natural range, the rest being higher than 105, thus indicating that sex-selective abortion took place in approximately 90% of the country's administrative regions in 2021.

## Economic impact

To analyse the situation of women in the workforce of Azerbaijan, macro indicators such as the working age population and the number of men and women employed in the country can be compared to portray a general idea of how many men and women can work, but do not.

Figure 8: Working age population of Azerbaijan

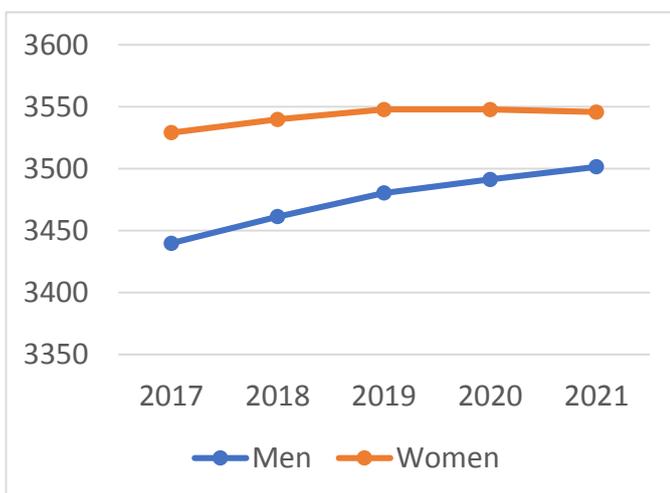
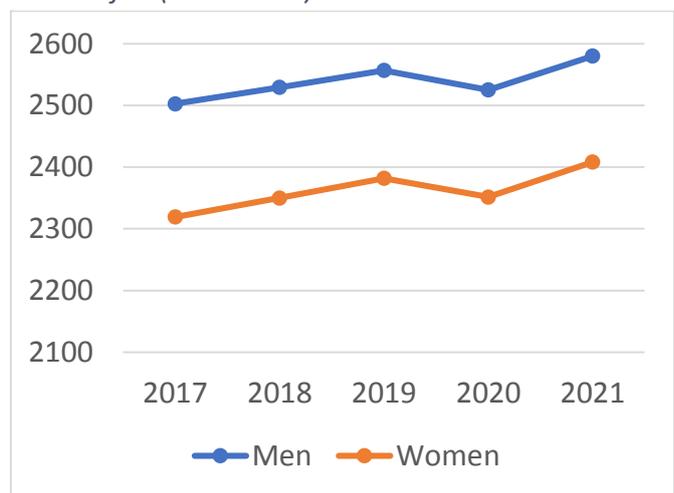


Figure 9: Number of employed men and women in Azerbaijan (thousands)



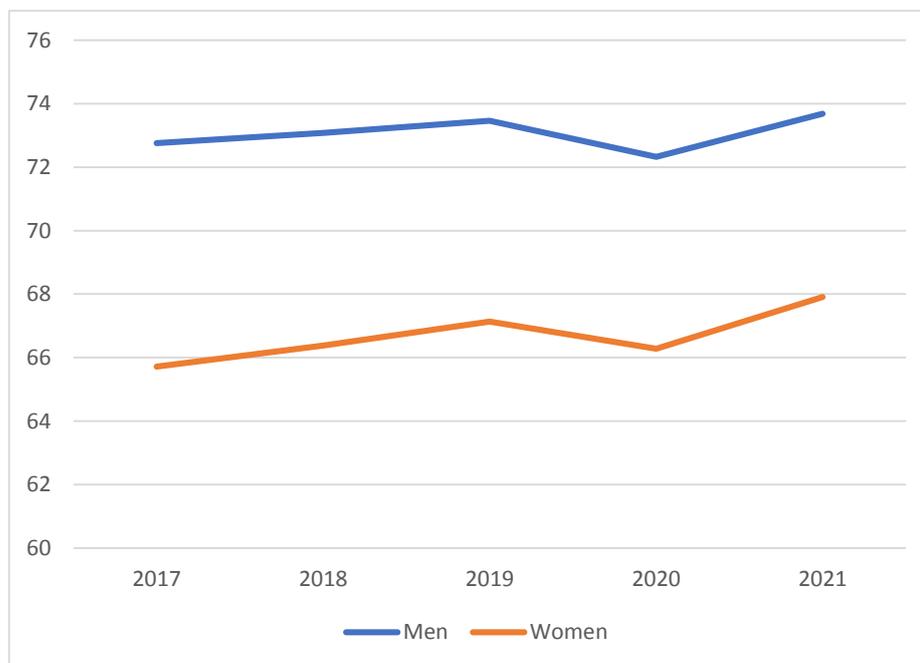
Source: State Statistical Committee of the Republic of Azerbaijan (2022)

It is clear from Figures 8 and 9 that as the working age population for men and women has increased, so has the number of men and women employed (excluding the year 2020 which saw a decrease in the number of employed men and women which can be attributed to the Coronavirus pandemic). This would initially be a sign of no barriers of entry for women in the labour force, however, upon further analysis it is seen that there are more women in Azerbaijan who are in the working age population than men but there is a smaller number of women employed than men.

Looking at Figures 8 and 9, it can be deduced that in 2021 there were 200,000 more women than men who were in the working age population but were unemployed, meaning there were more unemployed women than men in Azerbaijan, and this trend has not changed significantly.

This factor is also evident in Figure 10, which shows the employment rate in Azerbaijan. The past five years has shown an approximately six percent gender gap in the labour force, and this figure has only marginally improved as the gender gap in 2017 was 6.37%, whereas in 2021 this gap decreased slightly to 5.78%. This is reflective of the social tendency towards women, which may be attributed to the perceived traditional role of women as housewives in Azerbaijan. Although the steady increase in the number of women employed throughout the country's regions is a good sign, a significantly larger number of women are still unemployed as compared to men, which shows that there is more room for improvement.

Figure 10: Employment rate in Azerbaijan (percentage)

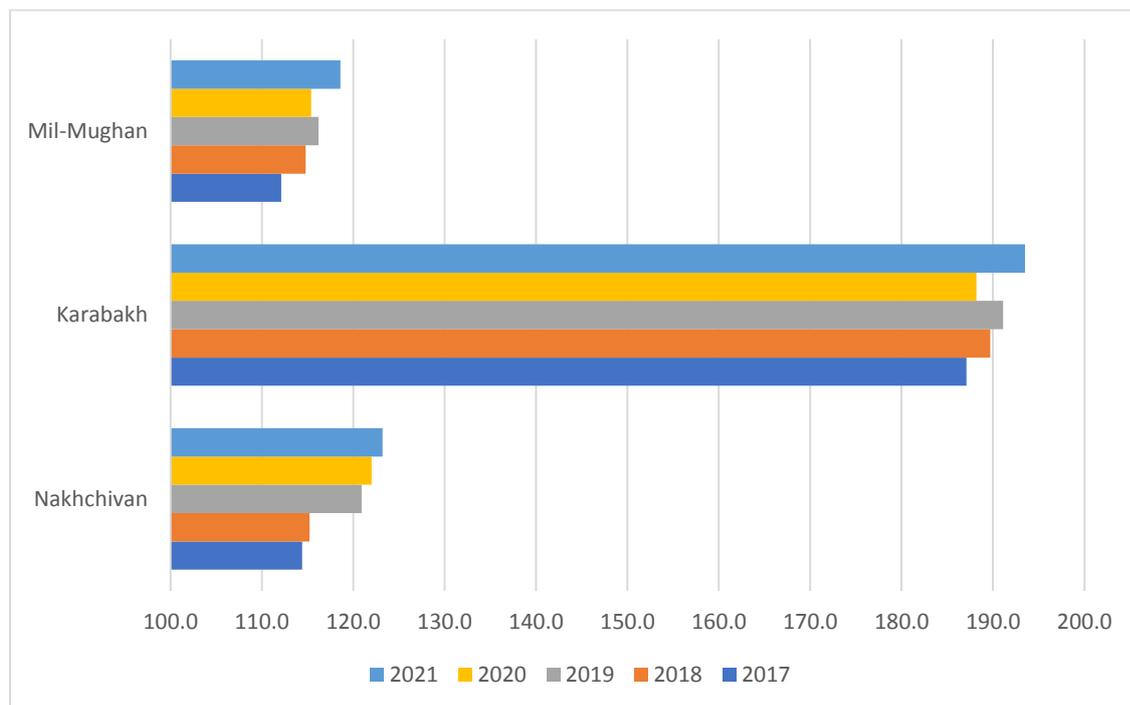


Source: State Statistical Committee of the Republic of Azerbaijan (2022)

To see if the high SRB in Azerbaijan has had an impact on the regional population's economic life, the number of women in the workforce is analysed in each economic region. As only the data for the previous five years is available by the State Statistical Committee, these statistics are grouped together in a similar manner as Figures 4, 5 and 6 to see if the trends in SRB in these economic regions coincide with the possible increase or decrease of women in the workforce as an economic indicator of development. Regions with increasing SRB imply an existing antipathy towards women, thus women may experience barriers of entry into the workforce, as opposed to regions with decreasing SRB, which shows a changing attitude towards women in society.

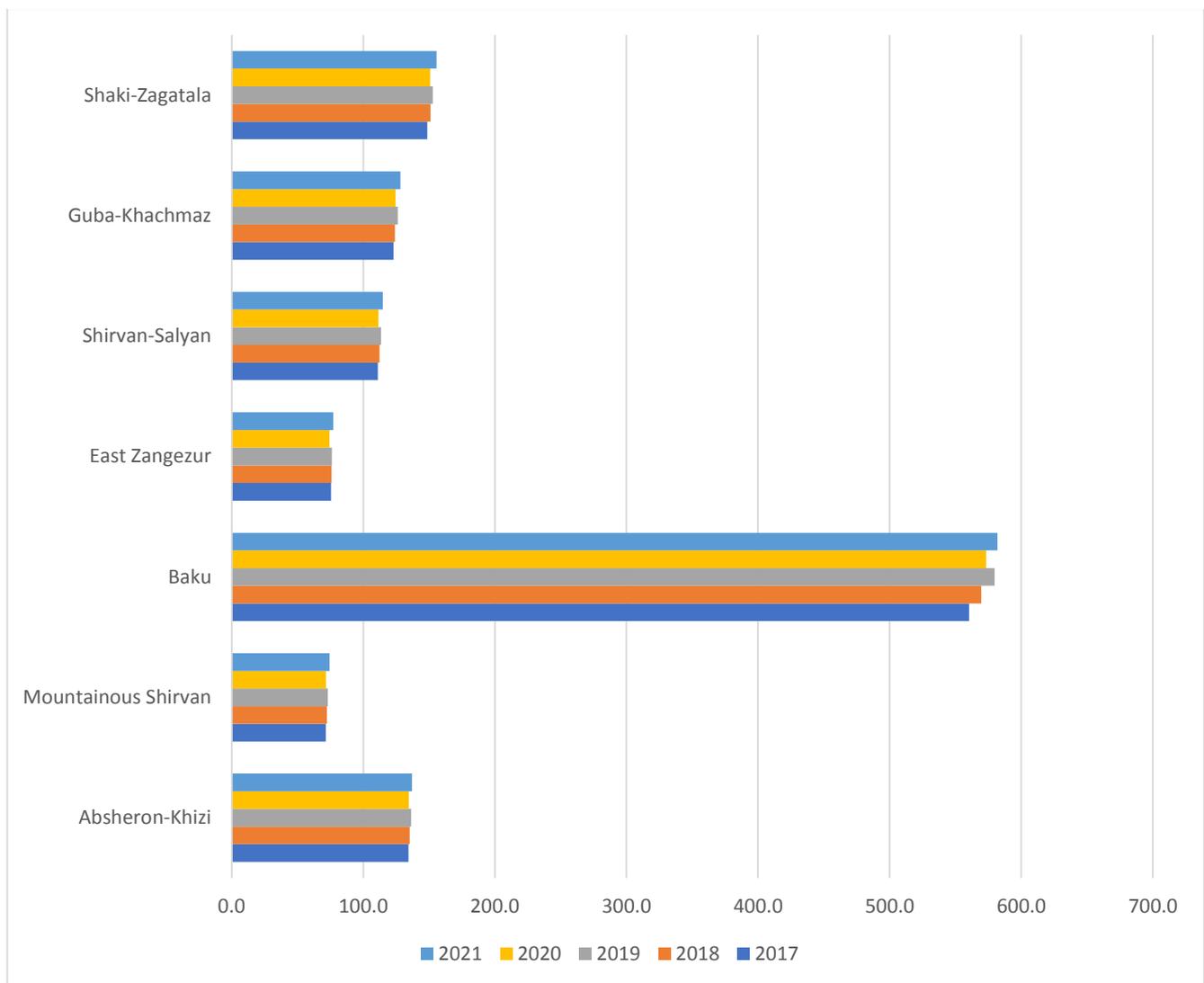
Mil-Mughan, Karabakh and Nakhchivan are grouped together in Figure 11, as these regions have experienced an increase in their SRB, thus an increase in sex selective abortion. Lankaran-Astara, Central Aran, Gazakh-Tovuz, Ganja-Dashkasan are seen in Figure 13, as these regions have experienced no significant change in their SRB. The remaining seven economic regions are grouped together in Figure 12 as they have experienced a decreasing SRB.

Figure 11: Number of women employed in economic regions that have an increasing SRB



Source: State Statistical Committee of the Republic of Azerbaijan (2022)

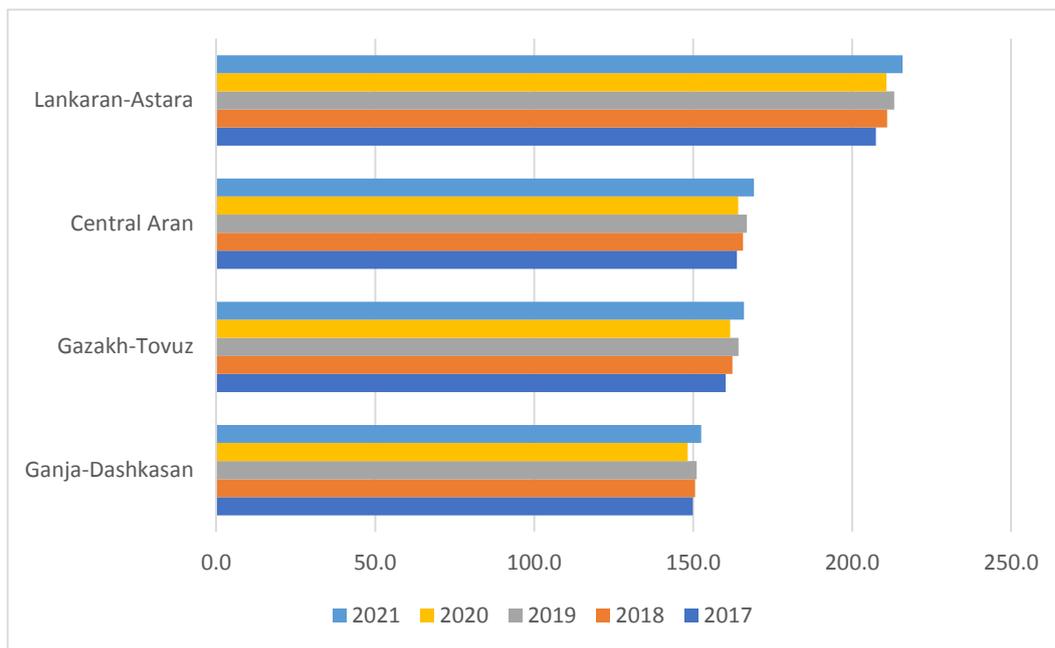
Figure 12: Number of women employed in economic regions that have a decreasing SRB



Source: State Statistical Committee of the Republic of Azerbaijan (2022)

It is noteworthy that all fourteen of the economic regions of Azerbaijan have had an increase in the number of women employed in the past five years (excluding a slight decrease in 2020 caused by the Coronavirus pandemic), even in the regions where boys are more favoured than girls, and sex-selective abortion is being practiced at a high rate. As a decrease is not evident in the number of women being employed, especially in regions where there is a strong antipathy towards female children (evident from high SRB) such as Nakhchivan, Mil-Mughan and Karabakh, further analysis of the labour market can be undertaken to see if there are any general barriers for women in Azerbaijan in entering the workforce.

Figure 13: Number of women employed in economic regions with no significant change in SRB



Source: State Statistical Committee of the Republic of Azerbaijan (2022)

The steady increase in the number of women joining the workforce does not reflect a sense of antipathy towards women in the workplace at first glance. This does not coincide with the proposition that high levels of sex selective abortion have had an impact on the economic life of women in the regions of Azerbaijan, as economic regions such as Mil-Mughan, Karabakh and Nakhchivan seem to have increasing number of women in the workforce, even though their level of SRB have also increased.

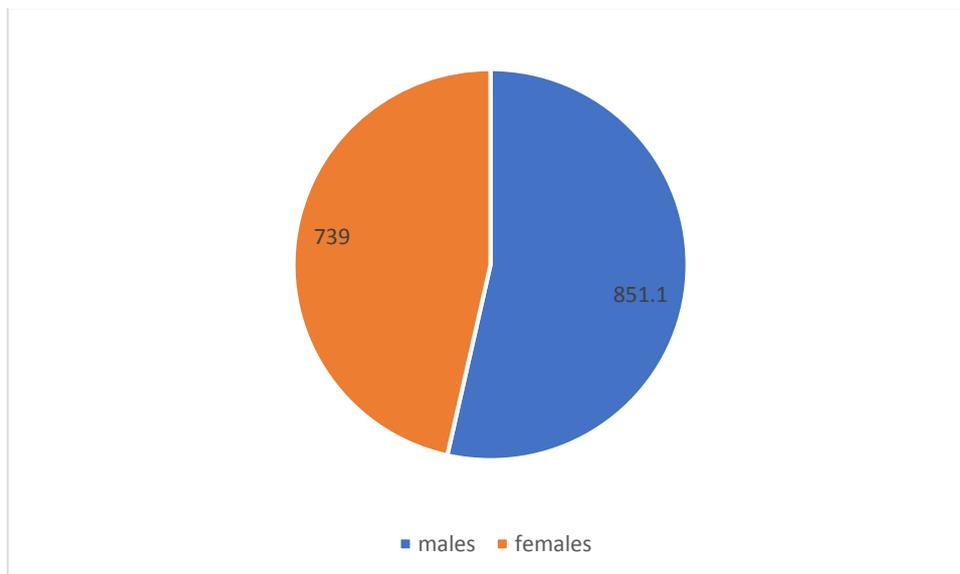
However, this does not specifically dismiss the idea that the antipathy these regions have toward women is not reflected in the economic lives of women. The increase of the number of women in the workforce may be described as a result of the steady increase in the population of Azerbaijan. The increase in population means that there is also an increase in the number of liberal minded families as well, who do not oppose the idea of women having a job.

## Social impact

Antipathy towards women in the society is most expected to be felt in the field of education. As sex selective abortion decreases the number of girls in a society, their absence can be directly seen in the lack of girls in primary and secondary education. Figure 14 clearly shows this problem.

The pie chart highlights the difference in the number of males and females who have enrolled into primary and secondary education in Azerbaijan in 2021. The proportion is 46.5% of female children to 53.5% male children. This difference accounts to 112,100 more male students than female. This is an alarming rate of disproportion which is evident in the educational institutions of Azerbaijan. The results of practicing sex selective abortion are clearly seen in the disproportionate number of students.

*Figure 14: Number of male and female students enrolled into primary and secondary education in 2021 in Azerbaijan (thsd)*

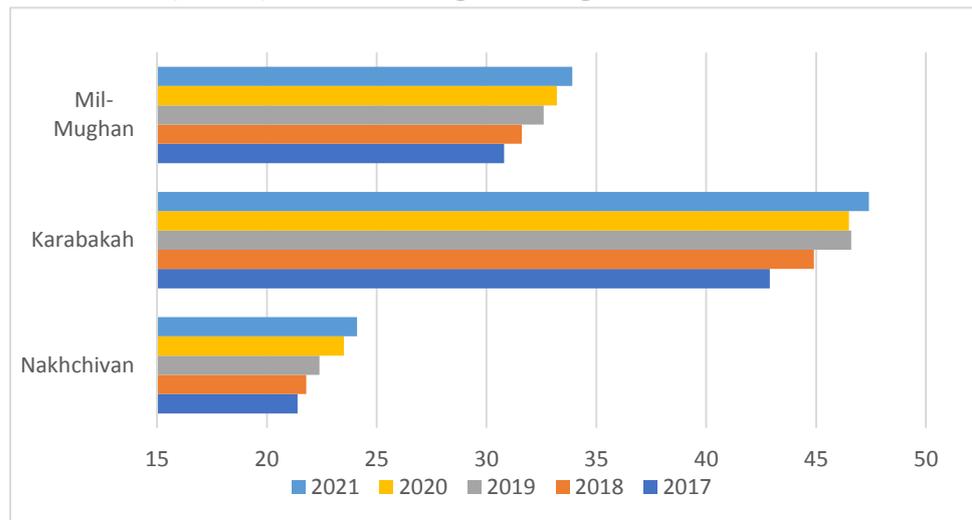


*Source: State Statistical Committee of the Republic of Azerbaijan (2022)*

To further assess the social impact of high SRB on a regional basis the number of girls enrolled in the past five years in primary and secondary school is analysed. As the educational system is divided into three periods in Azerbaijan (1-4<sup>th</sup> grade, 5-9<sup>th</sup> grade and 10-11<sup>th</sup> grade), these statistics are grouped together for simplicity and to represent the whole educational period a child undergoes in Azerbaijan. Thus, the number of female students enrolled in school is indicative of all age groups until the university age for each year.

As the high levels of SRB in Azerbaijan is reflective of sex-selective abortion, this antipathy towards female children is expected to be visible in the level of enrolment among female students. For matters of comparison, the enrolment statistics from fourteen economic regions have again been grouped together as seen in Figures 4, 5 and 6: regions which have had an increasing level of SRB seen in Figure 15, regions which have had no significant change in the level of SRB represented in Figure 16, and regions which have had a decrease in SRB seen in Figure 17.

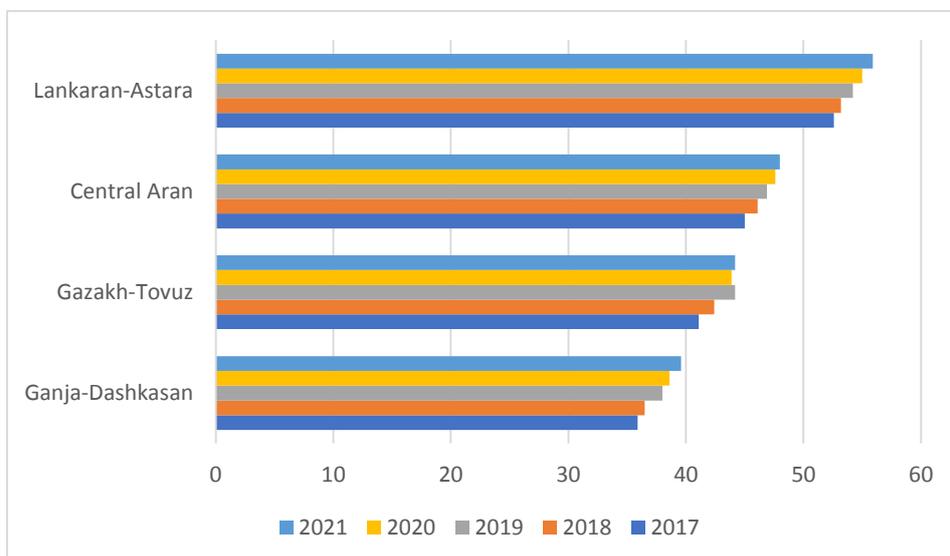
*Figure 15: number of girls enrolled into primary and secondary education (thsd) in increasing SRB regions*



Source: State Statistical Committee of the Republic of Azerbaijan (2022)

The number of female students has steadily increased throughout the past five years as seen in Figures 15, 16 and 17. This shows that there are no barriers of entry for girls to enrol into primary and secondary education. However, the ramifications of sex-selective abortion are already evident when comparing the number of female students with that of males.

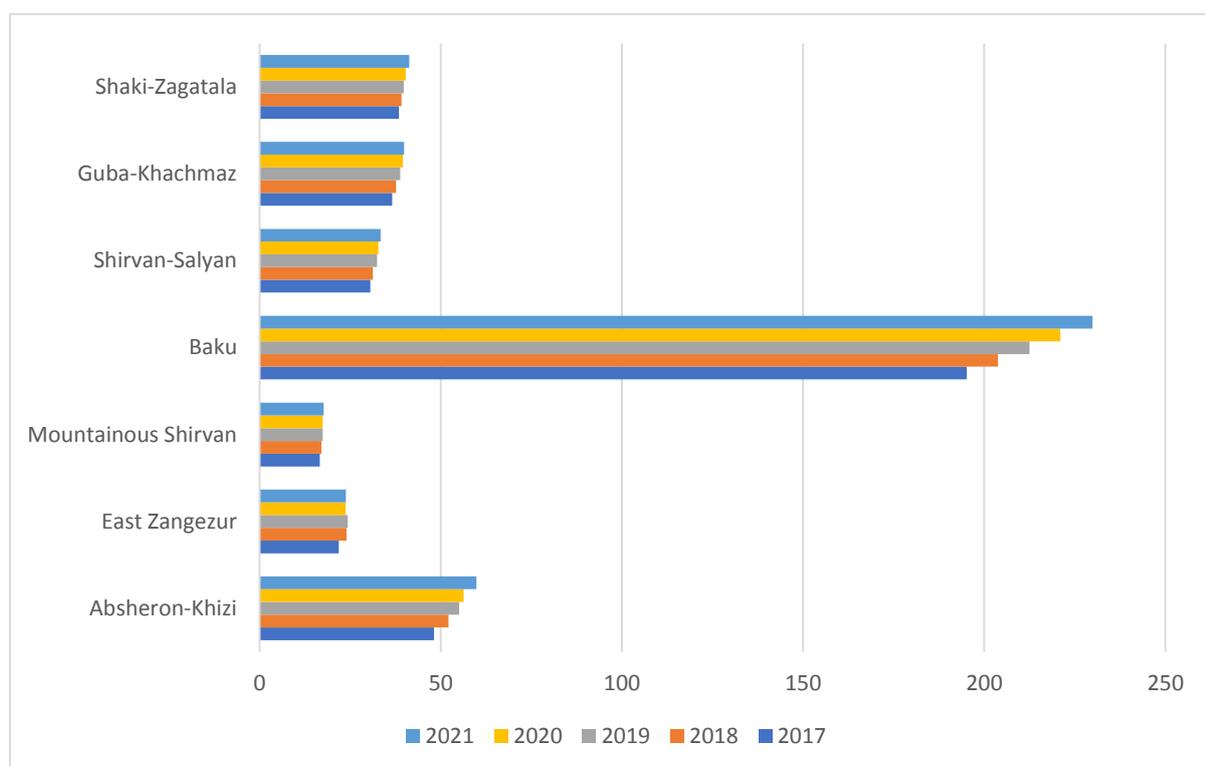
*Figure 16: number of girls enrolled into primary and secondary education (thsd) in regions with no significant change in SRB*



Source: State Statistical Committee of the Republic of Azerbaijan (2022)

Similar to the interpretation of the economic indicator in Figures 11, 12 and 13, the social indicator does not seem to support the idea that regions which have experienced no change or an increase in their SRB do not have barriers for girls to enrol into primary and secondary education. The 46.5% proportion of girls in the educational institutions also seem to coincide with the average number of girls which are present in Azerbaijan in the respective age groups (as seen from Figure 1), which further supports that girls are not barred by their families of attending school.

*Figure 17: number of girls enrolled into primary and secondary education (thsd) in decreasing SRB regions*



Source: State Statistical Committee of the Republic of Azerbaijan (2022)

Even though this is a good indicator for Azerbaijan, that girls are not specifically targeted due to their gender and forced not to attend school, it may not be representative of the reality. By law, children are required to be enrolled into primary and secondary education by their families in Azerbaijan. This is the reason for the similarity of the percentage of girls in school, and the percentage of the population they make as seen in Figure 1. However, in some rural areas of the country, gender discrimination persists, and families opt for registering their girls in school but not sending them. Although this is not the norm all over Azerbaijan, demographic health surveys have showed that there are families with clear attitudes on what their daughter must do, and education is not part of it as it is not crucial for their future life as housewives

(PHRC, 2013). Thus, some families send their daughters to school, and take them out some time towards the end of their secondary education.

The increase in the number of girls in education taken on its own is a positive indicator and shows that the public do enrol their children into primary and secondary education, whether this is due to their own initiative or government enforcement of the law. But the fact that the imbalance is already being felt in the sex distribution of primary and secondary schools is cause for concern on its own. The increase in the number of girls enrolling into educational institutions is also influenced by the steady increase in population of Azerbaijan and does not necessarily imply that families are being more accepting of the idea of their daughter receiving education and consequently move onto higher education.

## Conclusion and recommendations

Analysis of the SRB in Azerbaijan's various economic and administrative regions for the past 10 years have shown that there are diverse trends present. None of the economic regions have an SRB within the natural range of 102-105, and only 7 administrative regions are within the natural range. The most problematic areas of Azerbaijan according to the SRB are in the south and west, where there are the most concentration of administrative regions with SRB of higher than 115.

Out of the fourteen economic regions, seven have shown signs of improvement regarding the SRB, as a gradual decrease is seen. The remaining seven economic regions either showed no significant change or an increase in their SRB. Looking at the social and economic indicators of these regions, it is ascertained that there has been a steady increase in the number of women employed as well as the number of female pupils. Although the hypothesis of there being a variation in the SRB among the different regions of Azerbaijan is proven, the idea that there would be negative social and economic implications in the regions with higher SRB is disproven. This is seen from the gradual increase across all regions in terms of female employment and education.

However, looking at the economic and social factors on the country level it can be seen that there are some forms of gender discrimination which is still pervasive. Although female employment seems to increase throughout the years, the working age population and the employment rate highlights the economic problem. The gap between the working age population and number of people employed in 2021 was 200,000 higher for women, meaning there are more women than men who can work but are unemployed. This highlights a significant portion of the female population who faces barriers in being utilised in the labour force, and it can be further seen in the gender gap, around 6% higher for men, in the employment rate which has not changed significantly in the past five years.

The social factor also disproves the hypothesis that regions with higher SRB have lower levels of girls being enrolled into primary and secondary education. It is seen that there is a gradual increase in all fourteen economic regions in the number of girls which are enrolled into schools. However, an imbalance is seen when comparing the number of girls to boys in schools. In 2021, the proportion of girls to boys enrolled in school was 46.5% to 53.5%, which accounts for over 100,000 more boys than girls. This imbalance is explained by the shifting sex distribution in the population of up to 30 years age group, which coincides with the period when sex-selective abortion started to take place in Azerbaijan (the early 1990s). The number of abortions has also been steadily increasing, specifically abortions taking place after 12 weeks are increasing at a faster rate than the total number of abortions.

It can be deduced that although regional analysis of data pertaining to females has shown that there has been a steady increase in the number of women employed and girls enrolled into schools, this could be due to the gradual increase in the population. Comparing these statistics on a country level with the male population shows an imbalance in the labour force where more males are employed, and there is a significant number of women in the working age population but not in the labour force – thus showing signs of barriers of entry for women. Also, as primary, and secondary education is compulsory in Azerbaijan, a steady increase in female enrolment into schools is evident, which minimizes the discrimination against girls receiving education. However, the effects of sex-selective abortion are already being seen with the sex imbalance in the population. Unless prevented, this trend will cause for hundreds of thousands of more men in the population and a reduction in the number of women.

Looking at the high sex ratio at birth, which shows widespread sex-selective abortion throughout the regions of Azerbaijan, certain steps must be taken to solve this issue. Due to the sensitivity of the topic, and Azerbaijan's predominantly conservative communities, easing the population into the topic with information campaigns and workshops seems to be the most effective approach. Initially a campaign to inform the population of the problems that sex selective abortions will cause can be undertaken, such as coerced marriages, trafficking of women or girls, rape, and other violence against women. Another information campaign may be undertaken to inform women of their reproductive rights, as well as right to health, which would allow them to go against pressure to abort a female foetus and create the way for them to use contraception in order to decrease the number of unwanted pregnancies which would result in abortions.

A government initiative whereby financial incentives for female children may increase the number of girls being born. This may include a one-time payment, or a form of educational scholarship for girls, to combat the idea that girls are a financial burden. Efforts to promote the birth of girls may include initiatives such as extra payment made to the family after the birth of the second child, or a scholarship scheme for girls regarding their higher education. Some families believe that spending money on a girl's university education will be a waste as they will not work afterwards, however, if the amount is decreased it will make the families reconsider sending their daughters to university. This can also make it easier for girls to fund their own education with part time jobs.

An information campaign on television and social media which highlights the impact that sex-selective abortion can have on the society may be undertaken. This will show the imbalance the population may suffer and the socio-economic consequences of this imbalance such as women and girl trafficking, increased violence towards women, and the limitation of women's economic activity.

## References

- Barot, S., 2012. A Problem-and-Solution Mismatch: Son Preference and Sex-Selective Abortion Bans. [online] Guttmacher Institute. Available at: <<https://www.guttmacher.org/gpr/2012/05/problem-and-solution-mismatch-son-preference-and-sex-selective-abortion-bans>> [Accessed 19 October 2022].
- Duthé, G, et al. 2012 “High Sex Ratios at Birth in the Caucasus: Modern Technology to Satisfy Old Desires.” *Population and Development Review*, vol. 38, no. 3, pp. 487–501. *JSTOR*, <http://www.jstor.org/stable/41857402>. Accessed 19 Dec. 2022.
- CESD Research Group, A preliminary assessment of the impact of the COVID-19 pandemic on Azerbaijani economy, <https://cesd.az/new/wp-content/uploads/2020/08/Impact-of-COVID-19-on-Economy-CESD-Paper.pdf>
- CESD Research Group, Foreign debt of Azerbaijan in 2018: realities and perspectives, [http://cesd.az/new/wp-content/uploads/2018/02/Azerbaijan\\_Foreign\\_Debt\\_2018.pdf](http://cesd.az/new/wp-content/uploads/2018/02/Azerbaijan_Foreign_Debt_2018.pdf)
- Fisher R, *The General Theory of Natural Selection*, Oxford, UK: Clarendon Press, 1930.
- GARENNE, M. and HOHMANN, S., 2014. GENDER SATURATION IN THE SOUTHERN CAUCASUS: FAMILY COMPOSITION AND SEX-SELECTIVE ABORTION. *Journal of Biosocial Science*, 46(6), pp.786-796.
- Guilmoto, CZ. 2009. “The sex ratio transition in Asia”, *Population and Development Review*, 35(3):519-550.
- Guthridge, S., 2019. PREVENTING SON PREFERENCE AND UNDERVALUING OF GIRLS IN EASTERN EUROPE AND CENTRAL ASIA. UNFPA.
- Hamilton WD, Extraordinary sex ratios, *Science*, 1967, 156(3774): 477–488.
- Hesketh, T., Lu, L. and Xing, Z.W. (2011) “The consequences of son preference and sex-selective abortion in China and other Asian countries,” *Canadian Medical Association Journal*, 183(12), pp. 1374–1377. Available at: <https://doi.org/10.1503/cmaj.101368>.

- Mei, L. and Jiang, Q. (2022) “Sex-selective abortions over the past four decades in China.” Available at: <https://doi.org/10.21203/rs.3.rs-1392935/v1>.
  
- Michael, M. et al. (2013) “The mystery of missing female children in the caucasus: An analysis of sex ratios by birth order,” *International Perspectives on Sexual and Reproductive Health*, 39(02), pp. 097–102. Available at: <https://doi.org/10.1363/3909713>.
  
- Nagpal, S. (2013) “Sex-selective Abortion in India: Exploring Institutional Dynamics and Responses,” *McGill Sociological Review*, 3, pp. 18–35.
  
- (PHRC), Public Health and Reforms Centre., 2013. Demographic and Health Survey. Baku, Azerbaijan: Ministry of Health (MoH).
  
- Public Administration in EU Eastern Partner Countries: Comparative Report 2011, [https://eceap.eu/wp-content/uploads/2017/10/11\\_Review\\_No11.pdf](https://eceap.eu/wp-content/uploads/2017/10/11_Review_No11.pdf)
  
- Sen A, More than 100 million women are missing, *New York Review of Books*, 1990, 37(20):61–66.
  
- State Statistical Committee of the Republic of Azerbaijan, 2022, the demographic distribution of the population of Azerbaijan.
  
- State Statistical Committee of the Republic of Azerbaijan, 2022, abortion rates in Azerbaijan.
  
- State Statistical Committee of the Republic of Azerbaijan, 2022, the economic participation of women
  
- State Statistical Committee of the Republic of Azerbaijan, 2022, number of girls and boys enrolled into primary and secondary education
  
- Vugar Bayramov, Ending Dependency: How is oil revenues effectively used in Azerbaijan, Baku, 2009, <https://www.cesd.az/documents/book.pdf>
  
- Tang, M. (2021) “Addressing skewed sex ratio at birth in China: Practices and challenges,” *China Population and Development Studies*, 4(3), pp. 319–326. Available at: <https://doi.org/10.1007/s42379-020-00075-1>.

- Tong, Y. (2022) *Sidebar: Sex ratios around the world*, *Pew Research Center's Religion & Public Life Project*. Pew Research Center. Available at: <https://www.pewresearch.org/religion/2022/08/23/sidebar-sex-ratios-around-the-world/> (Accessed: December 16, 2022).
  
- World Economic Forum, 2022. *Gender Gap Report*. [online] Available at: <http://reports.weforum.org/globalgender-gap-report-2022>.> [Accessed 19 October 2022].