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Insights from Georgia

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Gender Gap in Life Expectancy and Its Socio-Economic Implications

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What is Behind the Large Gender Gap in Life Expectancy in Georgia?

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Abstract

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Today women live longer than men virtually in every country of the world. Although scientists still struggle to fully explain this disparity, the most prominent sources of this gender inequality are biological and behavioral. From an evolutionary point of view, female longevity was more advantageous for offspring survival. This resulted in a higher frequency of non-fatal diseases among women and in a later onset of fatal conditions. The observed high variation in the longevity gap across countries, however, points towards an important role of social and behavioral arguments. These include higher consumption of alcohol, tobacco, and fats among men as well as a generally riskier behavior. The gender gap in life expectancy often reaches 6-12 percent of the average human lifespan and has remained stubbornly stable in many countries. Lower life expectancy among men is an important social concern on its own and has significant consequences for the well-being of their surviving partners and the economy as a whole. It is an important, yet underdiscussed type of gender inequality.

What is Behind the Large Gender Gap in Life Expectancy in Georgia?

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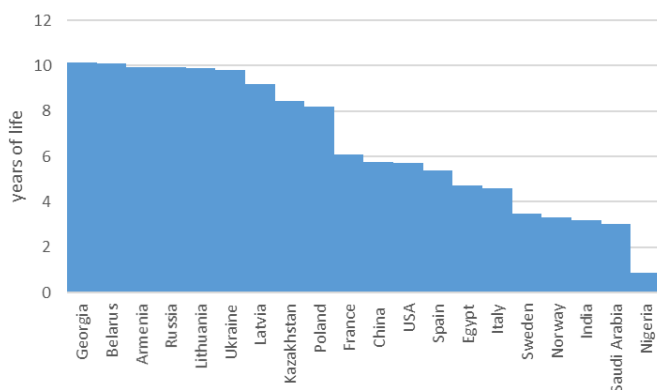
Nearly everywhere in the world women tend to live longer than men. Immediately before the Covid-19 pandemic in OECD countries, women outlived men on average by 5.4 years. This gender gap was similar in upper-middle-income and low-middle-income countries, ranging between 4.7 and 5.9 years. However, when one looks at Europe and Central Asia countries (excluding high-income countries), the gender gap in life expectancy (GGLE) widens significantly to 8 years on average. In Georgia, the GGLE reached a striking 9.9 years before the pandemic. Research suggests that both economic and social factors may affect differences in GGLE between countries. In this policy brief, we provide some insights into why GGLE may be so high and rising in Georgia.



Gender Gap in Life Expectancy and Its Socio-Economic Implications

Today, women on average live longer than men across the globe. Despite the universality of this basic qualitative fact, the gender gap in life expectancy (GGLE) varies a lot across countries (as well as over time) and scientists have only a limited understanding of the causes of this variation (Rochelle et al., 2015). Regardless of the reasons for this discrepancy, it has sizable economic and financial implications. Abnormal male mortality makes a dent in the labour force in nations where GGLE happens to be the highest, while at the same time, large GGLE might contribute to a divergence in male and female discount factors with implications for employment and pension savings. Large discrepancies in life expectancy translate into a higher incidence of widowhood and a longer time in which women live as widows. The gender gap in life expectancy is one of the less frequently discussed dimensions of gender inequality, and while it clearly has negative implications for men, lower male longevity has also substantial negative consequences for women and society as a whole.

Figure A. Gender gap in life expectancy across selected countries

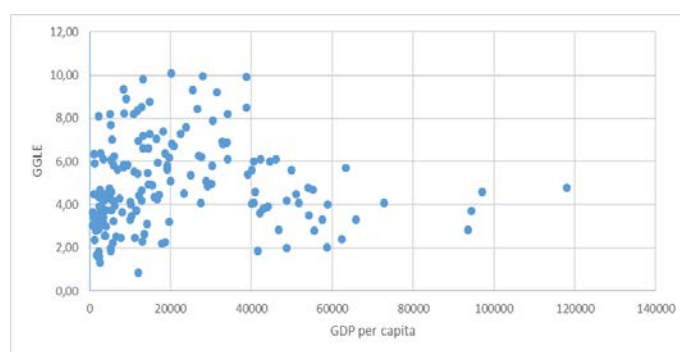


Source: World Bank

The earliest available reliable data on the relative longevity of men and women shows that the

gender gap in life expectancy is not a new phenomenon. In the middle of the 19th century, women in Scandinavian countries outlived men by 3-5 years (Rochelle et al., 2015), and Bavarian nuns enjoyed an additional 1.1 years of life, relative to the monks (Luy, 2003). At the beginning of the 20th century, relative higher female longevity became universal as women started to live longer than men in almost every country (Barford et al., 2006). GGLE appears to be a complex phenomenon with no single factor able to fully explain it. Scientists from various fields such as anthropology, evolutionary biology, genetics, medical science, and economics have made numerous attempts to study the mechanisms behind this gender disparity. Their discoveries typically fall into one of two groups: biological and behavioural. Noteworthy, GGLE seems to be fairly unrelated to the basic economic fundamentals such as GDP per capita which in turn has a strong association with the level of healthcare, overall life expectancy, and human development index (Rochelle et al., 2015). Figure B presents the (lack of) association between GDP per capita and GGLE in a cross-section of countries. The data shows large heterogeneity, especially at low-income levels, and virtually no association from middle-level GDP per capita onwards.

Figure B. Association between gender gap in life expectancy and GDP per capita



Source: World Bank

Biological Factors

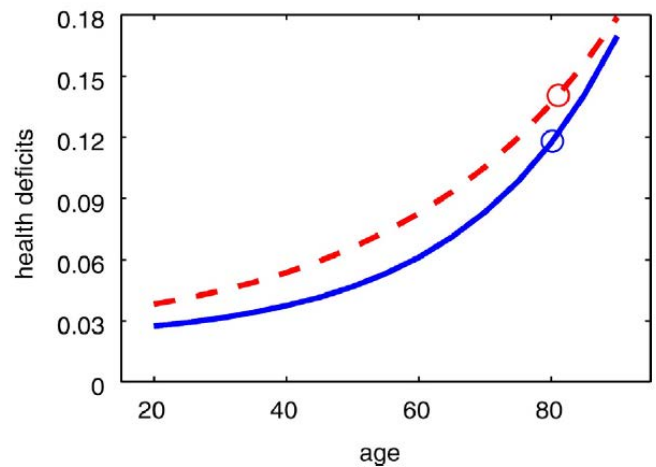
The main intuition behind female superior longevity provided by evolutionary biologists is



based on the idea that the offspring's survival rates disproportionately benefited from the presence of their mothers and grandmothers. The female hormone estrogen is known to lower the risks of cardiovascular disease. Women also have a better immune system which helps them avoid a number of life-threatening diseases, while also making them more likely to suffer from (non-fatal) autoimmune diseases (Schünemann et al., 2017). The basic genetic advantage of females comes from the mere fact of them having two X chromosomes and thus avoiding a number of diseases stemming from Y chromosome defects (Holden, 1987; Austad, 2006; Oksuzyan et al., 2008).

Despite a number of biological factors contributing to female longevity, it is well known that, on average, women have poorer health than men at the same age. This counterintuitive phenomenon is called the morbidity-mortality paradox (Kulminski et al., 2008). Figure C shows the estimated cumulative health deficits for both genders and their average life expectancies in the Canadian population, based on a study by Schünemann et al. (2017). It shows that at any age, women tend to have poorer health yet lower mortality rates than men. This paradox can be explained by two factors: women tend to suffer more from non-fatal diseases, and the onset of fatal diseases occurs later in life for women compared to men.

Figure C. Health deficits and life expectancy for Canadian men and women



Source: Schünemann et al. (2017). Note: Men: solid line; Women: dashed line; Circles: life expectancy at age 20.

Behavioural Factors

Given the large variation in GGLE, biological factors clearly cannot be the only driving force. Worldwide, men are three times more likely to die from road traffic injuries and two times more likely to drown than women (WHO, 2002). According to the World Health Organization (WHO), the average ratio of male-to-female completed suicides among the 183 surveyed countries is 3.78 (WHO, 2024). Schünemann et al. (2017) find that differences in behaviour can explain 3.2 out of 4.6 years of GGLE observed on average in developed countries. Statistics clearly show that men engage in unhealthy behaviours such as smoking and alcohol consumption much more often than women (Rochelle et al., 2015). Men are also more likely to be obese. Alcohol consumption plays a special role among behavioural contributors to the GGLE. A study based on data from 30 European countries found that alcohol consumption accounted for 10 to 20 percent of GGLE in Western Europe and for 20 to 30 percent in Eastern Europe (McCartney et al., 2011). Another group of authors has focused their research on Central and Eastern European countries between 1965 and 2012. They have estimated that throughout that time period between 15 and 19 percent of the GGLE can be



attributed to alcohol (Trias-Llimós & Janssen, 2018). On the other hand, tobacco is estimated to be responsible for up to 30 percent and 20 percent of the gender gap in mortality in Eastern Europe and the rest of Europe, respectively (McCartney et al., 2011).

Another factor potentially decreasing male longevity is participation in risk-taking activities stemming from extreme events such as wars and military activities, high-risk jobs, and seemingly unnecessary health-hazardous actions. However, to the best of our knowledge, there is no rigorous research quantifying the contribution of these factors to the reduced male longevity. It is also plausible that the relative importance of these factors varies substantially by country and historical period.

Gender inequality and social gender norms also negatively affect men. Although women suffer from depression more frequently than men (Albert, 2015; Kuehner, 2017), it is men who commit most suicides. One study finds that men with lower masculinity (measured with a range of questions on social norms and gender role orientation) are less likely to suffer from coronary heart disease (Hunt et al., 2007). Finally, evidence shows that men are less likely to utilize medical care when facing the same health conditions as women and that they are also less likely to conduct regular medical check-ups (Trias-Llimós & Janssen, 2018).

It is possible to hypothesize that behavioural factors of premature male deaths may also be seen as biological ones with, for example, risky behaviour being somehow coded in male DNA. But this hypothesis may have only very limited truth to it as we observe how male longevity and GGLE vary between countries and even within countries over relatively short periods of time.

Economic Implications

Premature male mortality decreases the total labour force of one of the world leaders in GGLE, Belarus, by at least 4 percent (author's own

calculation, based on WHO data). Similar numbers for other developed nations range from 1 to 3 percent. Premature mortality, on average, costs European countries 1.2 percent of GDP, with 70 percent of these losses attributable to male excess mortality. If male premature mortality could be avoided, Sweden would gain 0.3 percent of GDP, Poland would gain 1.7 percent of GDP, while Latvia and Lithuania – countries with the highest GGLE in the EU – would each gain around 2.3 percent of GDP (Łyszczarz, 2019). Large disparities in the expected longevity also mean that women should anticipate longer post-retirement lives. Combined with the gender employment and pay gap, this implies that either women need to devote a larger percentage of their earnings to retirement savings or retirement systems need to include provisions to secure material support for surviving spouses. Since in most of the retirement systems the value of pensions is calculated using average, not gender-specific, life expectancy, the ensuing differences may result in a perception that men are not getting their fair share from accumulated contributions.

Policy Recommendations

To successfully limit the extent of the GGLE and to effectively address its consequences, more research is needed in the area of differential gender mortality. In the medical research dimension, it is noteworthy that, historically, women have been under-represented in recruitment into clinical trials, reporting of gender-disaggregated data in research has been low, and a larger amount of research funding has been allocated to “male diseases” (Holdcroft, 2007; Mirin, 2021). At the same time, the missing link research-wise is the peculiar discrepancy between a likely better understanding of male body and health and the poorer utilization of this knowledge.

The existing literature suggests several possible interventions that may substantially reduce premature male mortality. Among the top preventable behavioural factors are smoking and



excessive alcohol consumption. Many studies point out substantial country differences in the contribution of these two factors to GGLE (McCartney, 2011), which might indicate that gender differences in alcohol and nicotine abuse may be amplified by the prevailing gender roles in a given society (Wilsnack et al., 2000). Since the other key factors impairing male longevity are stress and risky behaviour, it seems that a broader societal change away from the traditional gender norms is needed. As country differences in GGLE suggest, higher male mortality is mainly driven by behaviours often influenced by societies and policies. This gives hope that higher male mortality could be reduced as we move towards greater gender equality, and give more support to risk-reducing policies.

While the fundamental biological differences contributing to the GGLE cannot be changed, special attention should be devoted to improving healthcare utilization among men and to increasingly including the effects of sex and gender in medical research on health and disease (Holdcoft, 2007; Mirin, 2021; McGregor et al., 2016, Regitz-Zagrosek & Seeland, 2012).

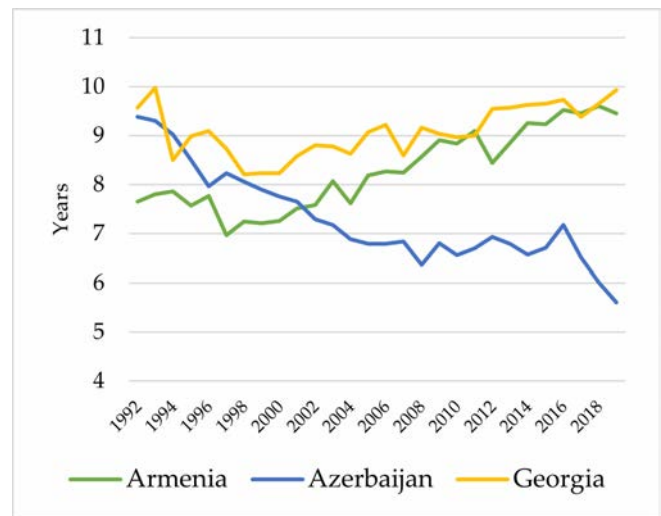
What is Behind the Large Gender Gap in Life Expectancy in Georgia?

In OECD nations, the life expectancy disparity between genders stands at approximately 5.4 years, as per 2019 data prior to the Covid-19 pandemic. However, in Europe and Central Asia, excluding high-income countries, this difference expands to 8 years. Notably, even within this group of countries Georgia surpasses others with a remarkable 9.9-year gap in life expectancy between men and women (WDI, 2019).

GGLE in Georgia has been historically high, higher than in other countries in the South Caucasus, fluctuating between 8 and 10 years, with an increasing trend since 1998 (Figure 1). Moreover, men in Georgia have the lowest life expectancy among the countries in the region –

68.5 years in 2019, as compared to 70.4 and 70.2 years in Armenia and Azerbaijan, respectively.

Figure 1. Gender gap in life expectancy at birth in South Caucasus countries



Source: World Bank, World Development Indicators.

Figure 1 clearly depicts a noteworthy declining trend in the gender gap in life expectancy in Azerbaijan from 1992 to 2005, followed by a period of stabilization and another wave of decline in 2016. In contrast, Armenia and Georgia experienced a consistent increase in the gender gap since the early 2000s. This shift was propelled by the rapidly growing male life expectancy in Azerbaijan, surpassing that of other South Caucasus countries, with a notable increase of 2.7 years between 2013 and 2019, compared to only 1.3 and 0.6 increase in Armenia and Georgia, respectively. Concurrently, female life expectancy witnessed increases of 1.9, 1.6, and 1 year for Armenia, Azerbaijan, and Georgia, respectively.

Such high GGLE in Georgia warrants a closer look at gender gaps in behavioral factors and health outcomes, which the high-level GGLE may stem from. In this section, we intend to present some stylized facts about these indicators for Georgia without claiming a causal effect on GGLE.



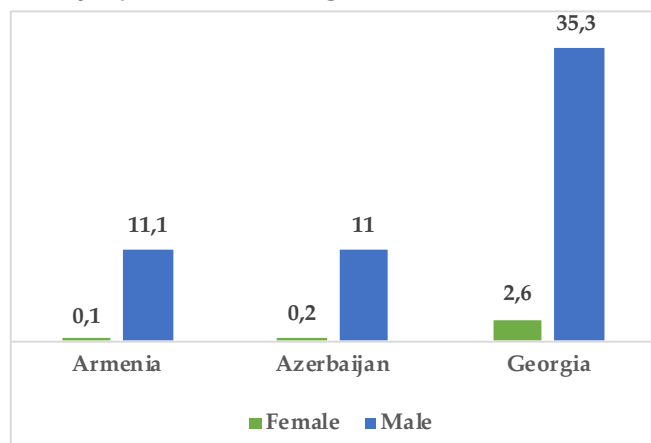
The Gender Gap in Behavioural and Health Indicators in Georgia

Harmful Behaviours

There is a consensus in the literature that smoking is one of the largest identifiable factors contributing to GGLE. In Georgia, 50 percent of men smoke, while only 7 percent of women do so. The number for men is higher than the world average by nearly 13 percentage points and higher than in other South Caucasus countries by 5-7 percentage points.

Drinking alcohol is another factor contributing to life expectancy. Studies consistently link heavy episodic drinking with adverse health outcomes, and some find that even occasional drinking can negatively impact health. STEPS Survey evidence from individual countries (e.g. Belarus, Ukraine) suggests that a high share of men engaging in heavy drinking can be associated with high GGLE (at least for some countries; STEPS Survey 2016). In Georgia, 35.3 percent of men engage in heavy episodic drinking (Figure 2).

Figure 2. Share of women/men that engage in heavy episodic drinking



Source: STEPS Survey, 2016. Note: Heavy drinking denotes having 6 or more drinks on a specific occasion in the past 30 days.

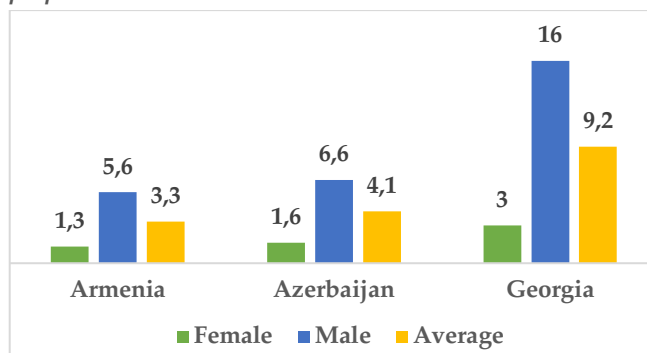
Heavy episodic drinking rates were nearly 3 times higher for Georgian men relative to men in Armenia and Azerbaijan, and the gender gap between men and women for this type of behavior

was very large in Georgia (32.7 percentage points) in 2016.

Mortality Rates from Suicide

Another reason behind the large gap in life expectancy may be the exceptionally high difference in suicide mortality rates among men and women in Georgia, at the level of 13 percentage points. This is 1.9 times higher than the world average gender gap in suicide rates (6.9 percentage point gap in 2019 according to the World Development Indicators), and also significantly higher than the gaps in other South Caucasus countries (Figure 3).

Figure 3. Suicide mortality rate per 100,000 population in 2019



Source: World Bank, World Development Indicators.

Environmental Factors

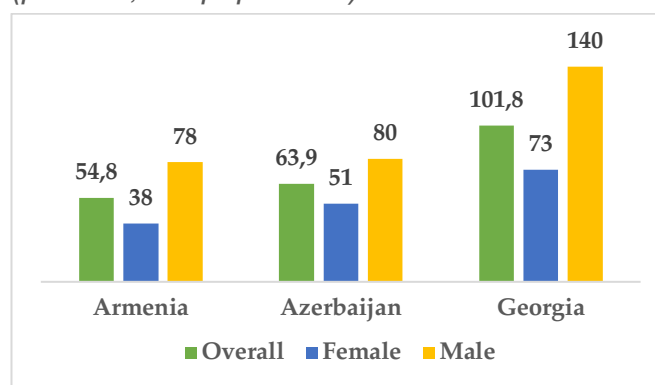
Figure 4 shows that Georgia has the highest gender gap in mortality rate among the South Caucasus countries attributed to household and ambient air pollution. Georgia's gap is also much higher than the world average (which stands at around 27.3, with a mortality rate of 128.8 persons per 100,000 for men and 101.5 for women). The mortality rate due to pollution among women in Georgia is much lower than the world average, while for men it is substantially higher. A polluted environment is, undoubtedly, a significant contributor to life expectancy, and having higher than the world or regional average indicators likely contributes to the GGLE in Georgia.

In addition, according to the Center on Emission Inventories and Projections, approximately 82 percent of Georgia's total particulate matter



emissions originate from the industry and energy sectors. Agriculture accounted for 86 percent of ammonia emissions, while industry contributed to 95 percent of sulfur oxide emissions. These sectors are primarily dominated by men, who, as of 2020, constitute 63 percent of employed individuals in agriculture and 70 percent in industry. In the construction sector, where working conditions have only started to improve in recent years, 96 percent of employees are men.

Figure 4. Mortality rate attributed to household and ambient air pollution, age-standardized (per 100,000 population) in 2016



Source: World Bank, World Development Indicators.

Policy Recommendations

Overall, the current analysis of the data suggests that more research is needed to uncover the causality and precise mechanisms behind the large gender gap in life expectancy in Georgia vis-à-vis other countries in the region and relative to the world average. However, even at the early stages of research one would recommend closely monitoring both male and female smoking patterns in Georgia; increasing efforts to address heavy drinking behavior among men; and tackling the problem of air pollution in big cities and urban areas.

Special attention must be paid to suicide rates. Policy interventions could include increasing awareness of the existence of helplines for suicidal people, carrying out more effective outreach and social awareness campaigns to help potential victims and public expenditures on prevention

and treatment of mental health diseases. Finally, addressing gender norms and perceptions related to masculinity could potentially help reduce both harmful behaviors and suicide rates among men.

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