Changes in reproductive behavior and birth patterns during the COVID-19 pandemic in Sakartvelo (The Republic Georgia)

Nino Mateshvili

University of Northern Iowa

Let us know how access to this document benefits you

Copyright ©2022 Nino Mateshvili

Follow this and additional works at: https://scholarworks.uni.edu/etd

Part of the Human Geography Commons

Recommended Citation

Mateshvili, Nino, "Changes in reproductive behavior and birth patterns during the COVID-19 pandemic in Sakartvelo (The Republic Georgia) [რეპროდუქციული ქცევასა და შობადობის ცვლილებები კოვიდ-19 პანდემიის დროს საქართველოში]" (2022). Dissertations and Theses @ UNI. 1220.
https://scholarworks.uni.edu/etd/1220

This Open Access Thesis is brought to you for free and open access by the Student Work at UNI ScholarWorks. It has been accepted for inclusion in Dissertations and Theses @ UNI by an authorized administrator of UNI ScholarWorks. For more information, please contact scholarworks@uni.edu.

Offensive Materials Statement: Materials located in UNI ScholarWorks come from a broad range of sources and time periods. Some of these materials may contain offensive stereotypes, ideas, visuals, or language.
An Abstract of a Thesis

Submitted

in Partial Fulfillment

of the Requirements for the Degree

Master of Arts

Nino Mateshvili

University of Northern Iowa

May 2022
ABSTRACT

Because of the increased frequency and extent of large-scale disasters, including health events, there is a need to better understand the impacts of these disasters on key demographic processes. In particular, in the European countries, including the Republic of Georgia (Sakartvelo), which already face demographic problems, such as aging population and decreasing birth rates, researchers and policymakers are concerned with the impact of the COVID-19 pandemic on demographic indicators and processes, such as birth rates and reproductive behavior. That is why it is very timely to collect and analyze initial evidence establishing the impacts of the COVID-19 pandemic as a global disaster on fertility variables and explore the implications of the pandemic for the reproductive behavior of the population exemplified by Sakartvelo.

This research aims to capture the changes in birth trends and the reproductive behavior of young people aged 18-35 in Sakartvelo during the COVID-19 pandemic. The connection between pandemic death rates and the demographic recovery process due to losing family members, including children and friends, influences fertility. Furthermore, during the earlier influenza pandemic (1889-90), Bertillon noticed a dip in the birth rate after a massive death spike around nine months later, which was replicated later during different disasters like earthquakes or famine.

This study utilized an online non-probability survey with a convenience sampling technique to collect 255 responses from young people in Sakartvelo focusing on reproductive dispositions and the perceived impact of the COVID-19 pandemic on birth
planning. The survey was conducted in November-December 2021. We used quantitative analysis methods such as central tendency measures and crosstabs for data analysis. In addition, long- and short-term fertility trends reported by the National Statistics Office of Georgia were examined.

We found that the economic crisis caused the most pronounced changes in reproductive disposition during the COVID-pandemic. They have been reflected in postponing the fertility plans among young people in Sakartvelo. Also, the mild severity of the virus and high death rates among the 65+ population due to COVID-induced health complications have promoted the short-term delay in reproductive behavior based on the changes in attitudes towards having a child among young people.

High number of COVID cases and deaths, worsening economic situation points out the failure in the pandemic management in Sakartvelo. Policymakers should be concerned about how the pandemic and its economic consequences will affect population dynamics and opposite in the future. Elaborating on the pandemic policy should include a thorough demographic analysis beyond the health indicators like the character of virus spread or the impact of lockdown measures.
ფართომასშტაბიანი კატასტროფები, განსაკუთრებით მათიჯანდაცვაში გაზრდილი სიხშირის და მასშტაბის გამო, საჭიროა, უკეთ გავიგოთ მთავარ დემოგრაფიულ პროცესებზე ამ მოვლენის ზემოქმედების შესახებ. ევროპის ქვეყნებში, მათ შორის საქართველოში, სადაც იმანათლების გამომცხადებლით, ადამიანის ფიზიკური და სოციალური დემოგრაფიული პარამეტრები წარმოცემის წესით, მასალამია, მოსახლობის დავალება და მოქმედობის შემთხვევის, ქვეყნებისა და პოლონოვანების შემთხვევის ფორმატში, როგორც COVID-19 ქალაქების გავლენით, გამოთვალებით მასშტაბის გამო და მთავარ დემოგრაფიულ ჟანსამყოფები, როგორიცაა მოსახლობის და რეპროდუქციული ქცევით. შესაძლოა იმის შემთხვევაში ამ გალოსის ნებისმიერ სოციალურ გამოცდილების შეცვლის წინაშე, საქმეში გამოიყუროთ ახალგაზრდების და შობადობის მოქმედობის შემთხვევაში, საქართველოში.
პანდემიის დროს (1889-90 წწ.), ბერტილომს შენიშნა შობადობის მასიური სიკვდილიანობი და ახალგაზრდების გარშემოთქვაა, რაც მოქცევის ორგანიზაცია საერთაშორისო ადგილობრივი შობადობის ფუნქციონირების დროს, როგორც მნიშვნელოვან, და მიმდევრობა.

მოცემული იმავე-ჯგუფი შეფასება არჩევისთვის „convenience“, ან 3.წ.

სხვადასხვა მიწისძვრები და შიმშილი. მოცემულმა ურ არაა ურ „convenience“, ანუ ე.წ.

ე.წ. „convenience“. არაა ურ „convenience“, ანუ ე.წ.

ხელსაყრელ შერჩევის ტექნიკ ას საქართველოში მცხოვრები 255 ახალგაზრდისგან შევაგროვეთ პასუხ ები.

ამით უიმარებს აბსოლუტურ შობადობის შემოღებამ და მათ მოქ ახალგაზრდა ვირჯი-19 პანდემიის გაგრძელებაში შობის უორდხლი ახალგაზრდა ტექნოლოგიურად. გამოვლინდა 2021 წლის ნოემბრ-დეკემბრი. მონაცემთა ანალიზით გამოვიყენეთ რაოდენობრივი ანალიზის მეთოდები, როგორც ცენტრალური ტენდენციის საზომები და ჯვარედინი ჩანართები (ე.წ. კროსტაბულაცია).

აღმოჩნდა, რომ ვირუსის მსუბუქი მიმდინარეობა, მაგრამ იკვდილიანობის მაღალი მაჩვენებლები 65+ პოპულაციაში, COVID-19-ით გამოწვეული ჯანმრთელობის გართულებების გამო, ხელს უწყობს გამოვლინდა საერთაშორისო აბსოლუტური შობადობის მაჩვენებები. ამით უიმარებს აბსოლუტური შობადობის ჩატარებაში ნაყოფიერების გეგმები.
კოვიდ შემთხვევის და დაღუპულთა სიმრავლი, ეკონომიკური მდგომარეობის გავრცელება საქართველოში, პანდემიის მართვის წარუმატებლობაზე მიუთითებს.

პოლიტიკის შემქმნელები უნდა აინტერესებდეთ, თუ როგორ იმოქმედებს პანდემია და იმის ეკონომიკური შედეგები მოსახლეობის მოძრავობის ფორმირებაზე და პოლიტიკის პროექტებს შემუშავება უნდა მოიცავდეს საფუძვლიან სოციალურ-პოლიტიკურ ანალიზს.

პანდემიის მართვა უნდა შესთავაზოს ინფორმაციით და შეუძლიათ ჯანმრთელობის ანტივირუსულ აქციებს განხორციელება საოფესიო, საჯანგო და სამედიცინო ზომებში (მაგ. „ლოკალიზაცია“) ზომებში გავლენა.
CHANGES IN REPRODUCTIVE BEHAVIOR AND BIRTH PATTERNS DURING THE COVID-19 PANDEMIC IN SAKARTVELO (THE REPUBLIC OF GEORGIA)

[რეპროდუქციული ქცევასა და შობადობის ცვლილებები კოვიდ-19 პანდემიის დროს საქართველოში]

A Thesis
Submitted
in Partial Fulfillment
of the Requirements for the Degree
Master of Arts

NINO MATESHVILI
University of Northern Iowa
May 2022
This Study by: Nino Mateshvili

Entitled: Changes in Reproductive Behavior and Birth Patterns During the Covid-19 Pandemic in Sakartvelo (The Republic of Georgia)

[რეპროდუქციული ქცევასა და შობადობის ცვლილებები კოვიდ-19 პანდემიის დროს საქართველოში]

has been approved as meeting the thesis requirement for the

Degree of Master of Arts

Date Dr. Andrey N. Petrov, Chair, Thesis Committee

Date Dr. Alex Oberle, Thesis Committee Member

Date Dr. Lisa Tabor, Thesis Committee Member

Date Dr. Mary Losch, Thesis Committee Member

Date Dr. Jennifer Waldron, Dean, Graduate College
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>LIST OF TABLES</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>v</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LIST OF FIGURES</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>vi</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CHAPTER 1 INTRODUCTION</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>THE GOAL, RESEARCH QUESTION, AND OBJECTIVES</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CHAPTER 2 LITERATURE REVIEW</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Disasters and Population : Impacts of Disasters on Population Dynamics</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Birth Trends, Reproductive Disposition, and Behavior in Sakartvelo</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>19</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Impacts of Disasters on Birth Trends and the Importance of Indirect Factors</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>22</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Impacts of COVID-19 on Youth Fertility Planning</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>23</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Impacts of COVID-19 on Birth Rate Trends and the Desire for Parenthood</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>24</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CHAPTER 3 METHODOLOGY</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>26</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Online Survey and the Survey Instrument</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>27</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sampling</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>29</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The Geography of the Study and the Survey Timeline</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>31</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data Validation and Analysis</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>32</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Drawbacks of the Survey</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>35</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CHAPTER 4 THE SURVEY RESULTS</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>38</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The Survey Coverage</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>38</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The Demography Block</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>40</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Changes being Observed in Reproductive Disposition and Motivation During the COVID-19 Pandemic, Affecting the Reproductive Behavior</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>43</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Attitude Towards Marriage</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>43</td>
</tr>
</tbody>
</table>
LIST OF TABLES

Table 1. The List of Initially Defined Facebook Groups and Pages ........................................ 31
Table 2. Level of Education Among the Respondents – 2021 vs. 2017 vs. Population Census 2014 (Geostat) .......................................................................................................................... 43
Table 3. Ideal Number of Children - Main Trends (2021) .......................................................... 48
Table 4. Ideal Number of Children – Men vs. Women (2021) ....................................................... 49
Table 5. Reproductive Perceptions Among Married Respondents (2021) ................................. 57
Table 6. Rates of Using Contraceptives by Marital status (2021) ............................................. 58
Table 7. Rates of Using Contraceptives (2021) ........................................................................ 59
Table 8. Changes in Public Opinions about the Ideally Desired Number of children while COVID-19 Pandemic .............................................................................................................. 60
Table 9. Key Factors Impacting Opinions about Having Fewer Children during the COVID-19 Pandemic ........................................................................................................................................ 61
Table 10. Birth Trends in Muslim-dominated Communities in Sakartvelo, 2016-2020 ... 67
LIST OF FIGURES

PAGE

Figure 1. Survey Participants by Age, 2021 vs. 2017 .................................................. 42
Figure 2. Population Distribution in the age range 18-35, Geostat 2022......................... 42
Figure 3. Ideal Age of Marriage for Men and Women (2021)........................................ 45
Figure 4. Ideal Age of Marriage for Men and Women (2017)........................................ 45
Figure 5. Ideal Number of Children - 2021 vs. 2017.................................................... 51
Figure 6. Desired Number of children among Men and Women, 2021 vs. 2017.............. 53
Figure 7. Expected Number of children for those who have no child, 2021 vs. 2017..... 55
Figure 8. Rates of Employment by Sex, pre-pandemic vs. during the pandemic.......... 62
Figure 9. Change of Income ......................................................................................... 63
Figure 10. Fear of COVID-19 Virus vs. Status of Being Exposed................................. 65
Figure 11. Fear of Covid-19 vs. Status of Being Vaccinated......................................... 65
Figure 12. Religious Activities before and during the COVID-19 Pandemic ................. 69
Figure 13. Religious Activities (2017)........................................................................... 69
Figure 14. Population Natural Growth in Sakartvelo 2014-2022 ................................. 73
Figure 15. Dependence between the N of Monthly Births, COVID-cases and COVID-deaths, 2021 ........................................................................................................ 74
Using an authentic name – Sakartvelo – in this work aims to support the process of its international recognition started on Dec 21, 2020, when Lithuania (Lietuva as its original name) became the first country of its official acknowledgment in the world.
CHAPTER 1
INTRODUCTION

During the COVID-19 pandemic, researchers and policymakers focused mainly on temporary outcomes (concern about the likelihood of being infected and the risk of dying due to COVID-19) and short-term goals to reduce the virus spread and mortality. These measures are undoubtedly crucial for the population's well-being with the high death rates. However, from the demographic perspective, studying the changes in birth rates and the population's reproductive behavior is essential to realize the pandemic's immediate and longer-term consequences.

Reproductive behavior and birth rates are leading indicators of the population's potential to restore demographic balance. This study is essential for Sakartvelo — the country with all circumstances indicating the demographic crisis: the decreasing birth rates since 2014, slowly declining but relatively higher death rates (with some spikes from time to time), aging population (percentage of the population aged 65 and over — the highest 15% in 2021) and high emigration rates (the highest - 105 107 emigrants in 2019, negative net migration since 1994) (Geostat, 2022).

The study's primary focus is to examine the demographic data from Jan 2020 to Jan 2022 in Sakartvelo. The study aims to describe the relationship between the speed of the pandemic (cases and deaths) and monthly births and conduct an online survey of the young population on crucial social and economic factors during the COVID-pandemic that impacted reproductive decisions.
THE GOAL, RESEARCH QUESTION, AND OBJECTIVES

The main goal of this research is to capture the current impacts of COVID-19 on women's and men's attitudes toward having a child in Sakartvelo. It intends to identify differences in COVID-19 effects on childbearing behavior among different people, specifically by economic status, age, sex, and health-related personal experiences during the pandemic.

Research Questions

• What is the evidence of changing reproductive behavior (attitude towards childbearing) during the COVID-19 pandemic in Sakartvelo?
• What are short-term reproductive behavior impacts associated with changes in attitudes toward reproduction/having a child during the COVID-19 pandemic?
• What intersectionality exists among Georgians regarding reproductive behavior towards childbearing during the COVID-19 pandemic?

Objectives

• Collect official demographic data (focus on birth trends and all related factor-variables that can have a negative or positive effect on them) of the pandemic period (2020-2022) to document any changes in birth rates in Sakartvelo;
• Conduct a survey to collect data about reproductive dispositions and behavior during the COVID-pandemic; to identify socioeconomic and socio-cultural factors that appeared in the survey responses;
• Compare the reproductive behavior during the COVID-19 to its pre-pandemic characteristics.

Importance of Demographic Research

Historically, the number of populations, sex-age structure, or ethnic composition has been directly attached to the existence of Sakartvelo in various administrative forms in a very unstable, multicultural, multireligious, and complex Caucasus region. Observing and understanding the characteristics of demographic changes and vulnerabilities are essential to realize or predict how these factors influence future outcomes for Sakartvelo and globally, for the whole region.

Sakartvelo and other neighboring countries experienced civilian confrontations based on ethnic nationalism and endogenous or exogenous military interventions due to conflicts of interests or ideology among political players during the last 30 years. Furthermore, the rise of nationalism and ethnic conflict in the Caucasus region and the lack of evidence-based knowledge and preparedness were the reasons for collapsing the Soviet Union (Bostovska & Perovic, 2018).

Apart from just statistics, the population composition and dynamics are evidence of society's potential to make crucial decisions and take responsibility to change the course and maintain long-term sustainable economic and political development. For instance, having a numerous population with a formed idea and a desire to build an independent democracy was decisive in March 1991. As Dobbs (1991) mentions, in a
non-binding republic-wide referendum, an overwhelming majority of 3.3 million Georgian citizens voted in support of secession from Moscow/USSR.

Correspondingly, focusing more on demographic research is crucial to assessing the current challenges, understanding the outcomes, and determining future strategies. Applying this approach to the following research attempts to describe the non-health-related consequences of the COVID-19 pandemic in Sakartvelo, creating an example of building evidence-based knowledge to define the COVID-pandemic's broader implications. The study aims to identify the indirect effects of the pandemic. It might impact areas of life that are not solely health-related and may also affect those not directly affected by the virus. The following research attempts to find a way to improve the demographers' communication with various audiences to help spread information about the multiple impacts of the COVID-pandemic on society, especially in Sakartvelo. We need to be more vocal in conveying the non-health implications of this pandemic on society which can drive longer-term demographic, social, and economic crises. It might be a tiny hint to pay attention to non-health-related impacts to consider the various aspects when designing new policies or creating mitigation measures by policymakers in Sakartvelo.
CHAPTER 2
LITERATURE REVIEW

This literature review covers the works capturing a connection between population features, demographic parameters, and disease spreads, explaining a connection between humans' reproductive behavior and pandemics or other kinds of disasters that hardly happen, reflected in shocks of birth rates in different countries. Gathering a variety of visions to study the issue is the chapter's primary focus. There is a lack of complex and systematic studies of the pandemic demography - research of major disruptive events altering key demographic processes like birth trends and demographic behavior during the COVID-19 pandemic. It boosts the motivation to carry out the present research even further.

Disasters and Population: Impacts of Disasters on Population Dynamics

There is a vast record of natural and man-made disasters that affect populations, economies, and the environment, hinder societies' normal function and development regime and cause short- and longer-term consequences. Usually, disasters highlight the disparities among the group(s) of the population(s) with higher risks of poor demographic, social, economic, or health outcomes, in other words, vulnerabilities, mainly as the results of particular circumstances revealed during the disastrous events. Research organizations or governments try to collect disaster data immediately, such as morbidity and mortality statistics, infrastructure and environmental assessment, nutritional assessment, and health or shelter needs (Morton & Jankins, 2011).
Because hazards and populations are not equally distributed across countries, mapping disasters at regional levels more accurately display the population vulnerabilities considering the disaster type and frequency (Maynard-Ford et al., 2008). According to the natural hazards mapping project that covered Latin America and the Caribbean in the 1900 to 2007 period, Brazil’s disaster profile includes drought, landslides, floods (63% of total), and storms, while in Mexico, all disaster types, except tsunami/tidal waves occur (dominant is windstorm – 40% of total). Flood disasters mainly happen in coastal Brazil, eastern Argentina, southern Mexico, Colombia, and the Atlantic coast of Costa Rica. Volcanic events are limited to the western coasts of South and Central America. According to the author, combining the disastrous event’s profile of countries and their population highlights the high correlation between the density and the sheer number of disasters. Accordingly, many smaller countries experience more disasters per 100 square kilometers (km2) than larger countries (Maynard-Ford et al., 2008).

A few examples are given from the near past to realize the scale of disasters’ effects and their outcomes. Hurricane Andrew hit the southern tip of Florida in August 1992. Luckily, it was not a very deadly hazardous event. However, the socio-economic and environmental loss was enormous: more than 250,000 people were left homeless, 82,000 businesses were destroyed or damaged, and about 100,000 residents permanently left the area. It severely impacted the environment as it passed through the US largest wetland Everglades. The most dramatic effect of the storm was the
significant structural damage to trees caused by the strong winds (National Park Service, 2019).

In 2004 and 2005, the US experienced two of the most destructive hurricane seasons in its whole history. More than half of the hurricanes from six each year were Category 3 or stronger. Three of the hurricanes in 2004 have been among the ten costliest since 1900, and the hurricane Katrina, which made landfall in Louisiana in 2005, was the costliest and deadliest in US history (Smith & McCarty, 2009). Smith and McCarty (2009) collected the data to examine the evacuation characteristics during the 2004 Hurricane season in Florida, which was impacted by several determinants. Due to a lack of information about the socioeconomic and demographic data about the Hurricane effects, they conducted a series of household surveys at the state and local levels (funded by the Florida Legislature). According to the survey results, most respondents evacuated once, and in Southeast Florida, they moved from their homes twice. People with mobile homes evacuated the most. Also, multifamily had a high mobility rate during evacuation than single families. They have found that the motivation to evacuate timely was based on having a household member younger than age 18, and women tend to evacuate more than men. Furthermore, similar to other study results, the main reason for not evacuating among Floridians was a belief that a hurricane is not a severe threat or that the current location is safe (Smith & McCarty, 2009).
A commonly practiced anthropogenic disaster like war can cause the most immediate massive social, economic, health, and environmental harm. For example, 17 to 20 million lives were taken during World War I (1914–1918). World War II (1939–1945) resulted in 50 to 56 million deaths (some sources even mention 80 million). Moreover, 15 million refugees worldwide have had to leave their homes due to conflicts or persecution. Environmental damage is usually caused by oil, chemicals, landmines, or unexploded ordnance during wars. It takes a long time before it is repaired; The highly polluted water, air, and soil threaten many people's livelihoods and mainly cause the migration of entire populations (Bonn International Center for Conversion (BICC)). The United Nations Office for the Coordination of Humanitarian Affairs has focused on developing policies to reduce the harm caused by the usage of explosive weapons in settlements. Using the explosive weapons for wide-area effect can have a severe humanitarian impact. Usually, ninety-two percent of the population are killed and injured when explosive weapons are used in populated areas. Except for the death and injuries, we usually face longer-term harm. People lack access to healthcare and psycho-social services due to the destroyed healthcare infrastructure in the area; People usually relocate because of the destruction of households or other essential services such as water, food, and electricity (Bagshaw, 2017).

According to the Pew Research Center, the Great Recession of 2007–2009 was one of the most significant drop-offs in the US economy (after World War II). Unemployment rates doubled during the two years from four percent to nine percent,
households’ income decreased by three to five percent, and it took ten years to return to the original benchmarks. The recovery from the Great Recession was slow and of low magnitude; for example, it fell short in lifting the incomes of many households. Overall, the median U.S. household income increased by fifteen percent from 1991 to 2000, while only an eleven percent increase was recorded from 2009 to 2018 (Bennett et al., 2019). Furthermore, the analysis showed a high coincidence between the magnitude of fertility and leading economic indicators such as per capita income, housing price, and share of the working-age population during the Great Recession in the US. For example, the number of births per one thousand women (general fertility rate) peaked in 2007 – at 69.9, and in 2008 it dropped to 68.8 due to the economic recession - the falloff in fertility coincides with worsening economic conditions (Taylor et al., 2010).

The list of disasters caused by human action increases and includes biological weapons such as viruses, bacteria, or fungi, quickly causing large numbers of deaths. Biological agents capable of secondary transmission can lead to epidemics (WHO, 2022). Throughout the history of pandemic disasters, the COVID-19 virus has been distinguished by the uncertainty about its origin, whether natural or manmade. Here we talk more about the character of pandemic disasters and the population as two interdependent determinants.

A pandemic is an epidemic with a higher magnitude of the outbreak, which spreads internationally and affects many people, usually revealing many cases, days of
morbidity resulting in disabilities, health vulnerabilities, or death. Significant pandemic mitigation and public health measures have been developed globally throughout history. However, pandemics cannot be avoided due to changing patterns of infectious diseases and the epidemiological transition (Samal, 2014) related to population demographic characteristics such as density and mobility.

Researchers report different patterns of influence caused by population density on COVID-19 spread. For example, the study shows the high correlation between density and basic reproductive numbers of COVID-19 in the US counties, even in areas where residents depend more on private modes of transportation (Wong & Li, 2020). Contrasts between the countries of East Asia, the Western world, and Oceania occurred in one of the studies, which mainly depend on differences in the level of "daily encounters with more people" and "the extent of a country's values of individual freedom over collective benefit" (Garland et al., 2020, p. 6). Accordingly, based on specific demographic features and the principles of keeping the populations' well-being, individual countries and their governments have responded differently to the virus by setting up restrictions. The most commonly used practices are mass testing and vaccination, contact tracing, isolation of positive cases and their contacts, restricting public gatherings, physical distancing, mandated face mask-wearing, and closures of schools and nonessential businesses or complete lockdowns. One of the studies explored the effectiveness of restricted population mobility against the spreading of the COVID-19 virus based on examining data from 175 countries (Askitas, 2021). The results
showed that the most effective interference in spreading COVID-19 are those aiming to decrease contact in large groups, such as forbidding public events and restrictions on private gatherings or reducing the frequency of contact, such as school and workplace closures. The measures described above significantly hinder the virus outbreak and maintain the balance in well-being, health, and population size to sustain the country's normal functioning.

Furthermore, natural disasters, wars, or rapidly changing socio-cultural circumstances define the population behavior. Last (2014) describes the population declining during World War II and the baby boom afterward. He reviews examples from the later history - women's "desired fertility" metric has decreased in the US. In 2011, 58% of women said an ideal family would have 0 to 2 children.

Moreover, in reality, 20.4% of women completed their childbearing years with no children, and 16.9 % had only one child. Based on the same US example, rural-urban migration and lifestyle changes, increased access to women's education, and career life or birth control are among the factors that created the "American One-Child policy" (Last, 2014). Furthermore, authors like Kramer (2020) or Buchanan and Rotkirch (2013) recall demographic and economic crises worldwide. They assume that parents or parents-to-be need to feel secure in their decision to have a child and need consistent guarantees based on government policies to support them (Buchanan et al., 2013).
Considering the described lenses of the interconnection of the COVID-pandemic and the role of the population, the presented study will focus on observing and identifying factors affecting specifically the changes in population reproductive behavior that might be a driver for various changes post-pandemic Sakartvelo.

**Birth Trends, Reproductive Disposition, and Behavior in Sakartvelo**

According to Tsuladze (2012), Sakartvelo has been in the 3rd phase of demographic transition since the 1960s. The main characteristics of this phase of transition are decreasing birth trends (close to the death rates) and relatively high mortality. The population can only replace itself from one generation to another (Tsuladze, 2012). Ghlonti (2012) mentions that based on USAID research conducted in 2010, Sakartvelo will face a demographic catastrophe – the population will decline by 1 170 000 people by 2050.

Balbo (2009) notes that the decline in birth rates is primarily due to reducing second-order births. The household income, education level, psychological well-being, and couples' satisfaction regarding the distribution of duties significantly affect the second birth decision-making (based on Generations and Gender Survey (GGS) examining respondents' opinions in three different periods: now, within three years and ever).

When the demographic crisis lasts for decades, it is crucial to explore the trends of demographic behavior, including reproductive disposition and behavior, to see the character of the change considering different circumstances and time frames.
Khmaladze (1981) separates marriage and reproductive dispositions as key preceding motivators of making decisions about having children, creating a public "demand of having babies" in a country with declining birth trends.

Tsuladze et al. (1997) describe a broad range of factors that affect the reproductive disposition, which determines the individuals' behavior: couples' relationships, living/housing conditions and level of urbanization, health conditions (especially reproductive health), age of marriage, duration of the marriage, Number of children in their parents' families, place of birth, ethnicity and religious believes, socialization.

Gambashidze (2017) conducted a study that examines all the principal indicators and evolution of reproductive disposition and behavior in Georgia among the young population aged 18-35. Based on the online-survey results and the comparative cross-sectional analysis of accessible information from all the surveys in her research paper, here are Some Aspects of the Evolution of Reproductive Behavior in Sakartvelo (Gambashidze, 2017):

- Mean Ideal Number of Children > Mean Desired Number of Children > Mean Expected Number of Children – it has been showing a consistent pattern for decades and does not have significant ups and downs;
- Ideal and Desired Numbers of Children have a decreasing tendency from the 1980s till 2017. The significant drop happened in the 1990s in parallel to decreasing birth rates; the Georgian population showed the high vulnerability and sensitivity
toward main factors that affected the trends, like social, political, and economic transitions after leaving the Soviet Union. The speed of decline gets slower after 1999, but variables still decrease;

- The Ideal, Desired, and Expected numbers of children are getting closer to each other, and the expected number of children has been the same for a long time. The author assumes that living conditions have not been enough motivators to realize even the desired size of family (to have the desired number of children) for a long time in Sakartvelo. Young generations have become more pragmatic, and they are trying to match their reproductive plans to the real possibilities;

- The 2017 survey showed that more than half of the respondents come from small families, and most of them would like to have fewer children compared to others.

This study has provided a framework to build the survey for the given research considering some of the thematic blocks to develop comparability for the better clarification of the character of potential changes in reproductive behavior during the COVID-19 pandemic. By adding questions to the survey instrument to measure the relationship between the healthcare difficulties, fears or the severity of the disease, and reproductive behavior to evaluate the potential effects, it will be an attempt to create a descriptive, explanatory analysis model for pandemic demography.
Impacts of Disasters on Birth Trends and the Importance of Indirect Factors

During the earliest influenza pandemic in 1889-90, the first medical statistician Jacques Bertillon noticed a dip in the birth rate after a massive death spike around nine months later. A birth rebound followed the decrease a few months later (Richmond & Roehner, 2018). By moving the birth curve nine months to the left, it has transformed into a conception curve parallel to the pandemic and inverted through a change in its sign – the amplitude of the death curve was higher in peak than the amplitude of conceptions. Authors define it as "a general property: whether the mortality is due to influenza, food scarcity or earthquakes, the amplitude of the birth trough is always smaller than the amplitude of the death peak" - the so-called "death-no birth" effect (Herteliu et al., 2018, p. 1052). Similar correlations occurred while coupling famine/influenza/earthquake death and birth curves. Also, by observing the biological effects of famine and influenza resulting in birth reduction and birth shocks of earthquakes in Japan, they found an important point: the suffering of those who do not die is the most important. The authors gave this as an example of, i.e., "collateral sufferer" (Herteliu et al., 2018, p. 1052).

Stone (2020) mentions that illness, quarantine, and death significantly impact conception, pregnancy, and birth. Death rates can have a critical role in the demographic recovery process due to losing family members, including children and friends, influencing fertility. According to the observation of the US example, all kinds of
disasters have very predictable immediate adverse effects on birth rates nine months later (Stone, 2020).

Based on these perspectives reviewed above, there are similar findings regarding the immediate impacts of the death peaks on the birth rates in different countries. Therefore, the presented study will examine and compare the curves of interdependent COVID-19 death and birth peaks in Sakartvelo.

**Impacts of COVID-19 on Youth Fertility Planning**

Investigation of the first effect of the COVID-19 pandemic on youth’s (18-34 age group) fertility plans in developed European countries (Italy, France, Germany, Spain, and the UK) appeared in the early phase of the pandemic. The results showed that the proportion of still-planners increased mainly among individuals aged 25-29 and 30-34, compared to their younger counterparts aged 18-24 (Luppi et al., 2020). The authors examined the associations between the level of education and socioeconomic status - having a tertiary education means a high probability of abandoning the original fertility plans during the crisis in developed countries. Also, the insecurity of incomes due to the current economic crisis increases the probability of changing their fertility plans in Italy and the UK (mainly abandoners) and Spain (mostly postponers).

A cross-sectional study in Italy shows that 37.3% abandoned intentions of having a child due to the future economic climate. Only 4.3% tried to achieve pregnancy among the respondents during the first phase of the pandemic (Ullah et al., 2020). According to
the research, previous studies suggest that 0.25 to 2 births were added per each death toll in 1 to 5 years after an epidemic. The reduction of 1 birth in 1918 during Spanish flu was followed by an increase of 1.5 conceptions one year later, resulting in a baby boom. All these facts support examining the relationship between the socioeconomic changes and reproductive intentions among the young population in Sakartvelo during the COVID-19 pandemic.

Impacts of COVID-19 on Birth Rate Trends and the Desire for Parenthood

The research conducted in Italy (De Rose et al., 2021) aims to compare the birth rates of three industrial cities between Nov-Jan of 2019 (early pandemic) and 2020 (during the pandemic). The results showed that the birth rates decreased by 55%, 12%, and 33%, respectively. Among the possible reasons that affected declining birth rates except economic and social crises observed in the pandemic are: changes in individual and social habits, increased load on mental health, different restrictions, and reduced sexual desire.

Cocci et al. (2020) conducted a web survey among Italian men and women aged 18 and 46 (the survey was created using Google Forms and posted on social networks, 1482 respondents participated). They found that for those planning to have a child before the pandemic (18% of all participants), 37.3% abandoned the intention based on worries of future economic difficulties and consequences (Cocci et al., 2020). Among most participants (81.9%) who did not intend to conceive, 11.5% showed a desire for parenthood during quarantine – mainly because of the will for change and need for
positivity. Only 4.3% of the participants tried to get pregnant. Moreover, people of older ages desired parenthood before and during the pandemic.

Western European countries with demographic problems, such as population aging and decreasing birth trends, are more motivated to study the COVID-19 effects on the population than others. Sakartvelo stands among them with the need for more research to fill the gaps in collecting and analyzing specific demographic data. None of the state entities (except Geostat conducting population census and providing general demographic data registry), organizations, or active researchers have implemented a demographic study in Sakartvelo. There is a lack of knowledge, especially with the specific focus on the demography of disasters. The given project tries to create a model for a particular interdisciplinary socio-demographic study aiming to reveal new knowledge using alternate data collection and analysis methods and connect it to the existing experiences in Sakartvelo.
CHAPTER 3

METHODOLOGY

In most demographic studies, researchers use mainly quantitative research methods. Based on the existing research practices, considering the geographic distance from the target study area and the importance of accuracy, comparability, and comprehensiveness, considering the study objectives, the most proper methods to evaluate the complex pandemic impacts and changes in reproductive behavior in Sakartvelo have been identified:

- Collecting and analyzing (secondary data) the accessible official demographic data to capture the current COVID-pandemic related changes in birth patterns in Sakartvelo in 2020-2022 as a baseline for the survey;

The primary sources for demographic and COVID-19 data are:

- National statistics office of Georgia (Geostat, 2022);

- National Center for Disease Control and Public Health of Georgia (HEALTH, 2022).

- COVID-19 Data Repository by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University (GSSEGisandData, 2022).

- Conducting the online survey to collect detailed information about different factors raised due to pandemic that potentially affect the public attitudes toward having a child(s), to find evidence of changes happening in reproductive behavior portrayed in pandemic birth trends, to identify short- and long-term side-effects
of the pandemic in connection with the childbirth, to evaluate intersections between opinions of different groups;

- Analyzing the current results and comparing them to the pre-pandemic characteristics of reproductive behavior in Sakartvelo identified in the past 2017 research to better understand the problem. In order to achieve comparability, we tried to design the research by using a similar survey and sampling method, the resembling survey instrument (three thematic blocks have been the same measuring attitudes towards marriage, reproductive behavior, and collecting primary demographic), and the study covered the same group of population - young men and women aged 18-35, living in Sakartvelo. However, the different duration of the survey (one week in 2017 vs. two months), using different Facebook groups or pages as a communication platform, and different age clusters among the respondents have been additional circumstances suspect the comparability between the two survey data. In the section of the survey results, we have presented some general comparisons as an attempt to identify some changes that might be describing ongoing demographic trends also observed in some official general demographic statistics during the pandemic.

**Online Survey and the Survey Instrument**

An online quantitative survey has advantages, such as no need for a researcher's physical presence in real-time and place in long-distance conditions, saving time and money, and a higher potential of reaching a more significant number of people. Also,
the respondents have a higher level of convenience in managing the response time and place by themselves. Finally, online survey platforms offer a responsive design that automatically adjusts surveys to display them across any device. The automated data collection process has also been an essential plus side, not requiring data entry of responses.

The bilingual (Georgian/English) structured self-completion questionnaire has been used with mainly closed and semi-closed questions and a few open-ended questions (see the appendix). The survey questionnaire has been created based on the instrument used for the research survey conducted in 2017 to study the reproductive disposition and behavior in Sakartvelo (Gambashidze, 2017). Additionally, it has included questions measuring the influence of the COVID-19 pandemic on their decisions about having children. In sum, it has contained 34 questions and approx. fifteen minutes were needed to complete it online.

**The main content of the survey:**

- Attitude toward the marriage – "before and during" the pandemic - an ideal age for marriage for men and women, an actual age for marriage (based on the respondent's experience), marriage status (for not-married respondents': their marriage plans considering the pandemic);

- Reproductive disposition and behavior – "before and during" the pandemic – ideal number of children, preferred number of children, the expected number of children, realized an (actual) number of children, the frequency of usage of
contraception during the pandemic, reasons affecting respondents' plans to have a child.

- Healthcare and safety - "during" the pandemic – number of people infected by the COVID-19 you know personally, level of fear of being infected by the virus ("How much are you afraid of being infected by the COVID-19?"), status of ever being infected by the COVID-19 (if yes, describe the severity of the disease), family members (status toward the respondent) being infected by COVID-19 (if yes, describe the severity of the disease), number of loss of family members due to COVID-19, acceptance/status of being vaccinated (in case of a negative answer, description of the reason has been asked);

- General social and demographic information – sex, age, ethnicity, education, place of residence (region, city/village);

"Before and during" pandemic – religion (also the frequency of involvement in religious service as one of the determinants of reproductive disposition/attitude towards having a child), employment status, income;

**Sampling**

The online quantitative non-probability survey engages an online convenience sampling technique in recruiting respondents (Fricker, 2008). More specifically, the sampling has included 255 residents of Sakartvelo of all sexes and ethnicity within the age group of 18-35 – already or potentially the most active subjects of generational reproduction. Also, the same age range used in previous studies makes it easier to
compare some trends and outcomes to the previous survey results. We attempted to recruit the survey responses from the whole country through the Facebook (Fb) platform via initially selected regional Fb groups and pages (Table 1) that mainly belong to the local governments. They use the Fb pages actively to spread any news related to their activities, and accordingly, they have close public attention from the population of the region. None of the pages or groups has fewer than 10,000 followers, group members, or page “likes”. Also, all of them are active pages, which means that the group/page administrator posts at least one news every day, and page followers or group members can post anytime without waiting for the page administrator’s permission. To spread the word about the survey, I used a Fb post with initially approved the survey description and invitation text by IRB, University of Northern Iowa. I used to post it twice a week for two months – November and December 2021.
Table 1. The List of Initially Defined Facebook Groups and Pages

<table>
<thead>
<tr>
<th>FB-Page/Group address</th>
<th>Target region</th>
<th>Page/Group owner</th>
<th>N of members/Followers (people)</th>
<th>Number of page likes</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="https://www.facebook.com/KakhetiMkhare">https://www.facebook.com/KakhetiMkhare</a></td>
<td>Kakheti</td>
<td>Gov</td>
<td>11,125</td>
<td>10,882</td>
</tr>
<tr>
<td><a href="https://www.facebook.com/groups/qutaisi/mall">https://www.facebook.com/groups/qutaisi/mall</a></td>
<td>Imereti</td>
<td>public</td>
<td>22,800</td>
<td></td>
</tr>
<tr>
<td><a href="https://www.facebook.com/imeretismxare">https://www.facebook.com/imeretismxare</a></td>
<td>Imereti</td>
<td>Gov</td>
<td>19,990</td>
<td>15,695</td>
</tr>
<tr>
<td><a href="https://www.facebook.com/adjarilebi">https://www.facebook.com/adjarilebi</a></td>
<td>Adjara</td>
<td>public</td>
<td>116,451</td>
<td>100,529</td>
</tr>
<tr>
<td><a href="https://www.facebook.com/supremecouncil.ge">https://www.facebook.com/supremecouncil.ge</a></td>
<td>Adjara</td>
<td>Gov</td>
<td>10,598</td>
<td>10,343</td>
</tr>
<tr>
<td><a href="https://www.facebook.com/groups/1444751345751607">https://www.facebook.com/groups/1444751345751607</a></td>
<td>Guria</td>
<td>public</td>
<td>24,600</td>
<td>NA</td>
</tr>
<tr>
<td><a href="https://www.facebook.com/samegrel0GEO">https://www.facebook.com/samegrel0GEO</a></td>
<td>Samegrel0-Zemo Svaneti (Samegrel0)</td>
<td>public</td>
<td>55,314</td>
<td>48,994</td>
</tr>
<tr>
<td><a href="https://www.facebook.com/samegrel0zemoswanetismxare">https://www.facebook.com/samegrel0zemoswanetismxare</a></td>
<td>Samegrel0-Zemo Svaneti</td>
<td>Gov</td>
<td>38,853</td>
<td>36,778</td>
</tr>
<tr>
<td><a href="https://www.facebook.com/groups/13773386647689">https://www.facebook.com/groups/13773386647689</a></td>
<td>Samegrel0-Zemo Svaneti (Svaneti)</td>
<td>public</td>
<td>25,300</td>
<td>NA</td>
</tr>
<tr>
<td><a href="https://www.facebook.com/lechkhumebeli">https://www.facebook.com/lechkhumebeli</a></td>
<td>Rakheveli</td>
<td>public</td>
<td>26,656</td>
<td>26,710</td>
</tr>
<tr>
<td><a href="https://www.facebook.com/RachaLechkhumiKveemoSvaneti">https://www.facebook.com/RachaLechkhumiKveemoSvaneti</a></td>
<td>Rakheveli</td>
<td>public</td>
<td>17,227</td>
<td>16,800</td>
</tr>
<tr>
<td><a href="https://www.facebook.com/Qartli.ge">https://www.facebook.com/Qartli.ge</a></td>
<td>Shida Qartli</td>
<td>Media/News Company</td>
<td>52,007</td>
<td>39,486</td>
</tr>
<tr>
<td><a href="https://www.facebook.com/shidakartiismxare">https://www.facebook.com/shidakartiismxare</a></td>
<td>Shida Qartli</td>
<td>Gov</td>
<td>13,892</td>
<td>13,542</td>
</tr>
<tr>
<td><a href="https://www.facebook.com/TV4.ge">https://www.facebook.com/TV4.ge</a></td>
<td>Svaneti</td>
<td>TV channel</td>
<td>82,892</td>
<td>85,576</td>
</tr>
<tr>
<td><a href="https://www.facebook.com/KvemoQartli">https://www.facebook.com/KvemoQartli</a></td>
<td>Svaneti</td>
<td>Gov</td>
<td>8,637</td>
<td>8,321</td>
</tr>
<tr>
<td><a href="https://www.facebook.com/Mtskhetanetil">https://www.facebook.com/Mtskhetanetil</a></td>
<td>Svaneti</td>
<td>Gov</td>
<td>12,718</td>
<td>12,295</td>
</tr>
<tr>
<td><a href="https://www.facebook.com/SamtkekheJavakheti">https://www.facebook.com/SamtkekheJavakheti</a></td>
<td>Svaneti</td>
<td>Gov</td>
<td>10,184</td>
<td>9,826</td>
</tr>
<tr>
<td><a href="https://www.facebook.com/groups/42798917731163">https://www.facebook.com/groups/42798917731163</a></td>
<td>Tiblisi</td>
<td>public</td>
<td>45,100</td>
<td>NA</td>
</tr>
<tr>
<td><a href="https://www.facebook.com/batumilebi">https://www.facebook.com/batumilebi</a></td>
<td>Batumi</td>
<td>public</td>
<td>106,461</td>
<td>84,050</td>
</tr>
<tr>
<td><a href="https://www.facebook.com/kutaisi">https://www.facebook.com/kutaisi</a></td>
<td>Kutaisi</td>
<td>public</td>
<td>221,274</td>
<td>205,417</td>
</tr>
<tr>
<td><a href="https://www.facebook.com/groups/openrustavi">https://www.facebook.com/groups/openrustavi</a></td>
<td>Rustavi</td>
<td>public</td>
<td>39,000</td>
<td>NA</td>
</tr>
</tbody>
</table>

The Geography of the Study and the Survey Timeline

Most of the respondents live in big(ger) cities of Sakartvelo – Tbilisi, Rustavi, Kutaisi, and Batumi. Also, a significant portion of those who have defined themselves as residents of "urban" areas have been presented mainly in administrative centers of municipalities of Kakheti, Kvemo Kartli, Shida Kartli, and Imereti regions. Only 6% of the survey participants live in rural areas.
Data Validation and Analysis

Before starting the survey data analysis, it is essential to implement critical data validation protocols, such as de-duplication and cross-validation of survey data. De-duplication implies identifying multiple responses from the same person, while cross-validation is verifying that participants meet the eligibility criteria for the study (Dewitt et al., 2018).

Qualtrics online survey platform was used for the survey. It offers an automated built-in function of collecting IP addresses and capturing the start and end times of the survey. For de-duplication, we checked all IP addresses. IP addresses are four-quadrant identification numbers for devices linked to the Internet, and decimal markers separate each quadrant from the others. Usually, the fourth quadrant is unique to the device. In our study, no duplication has been recorded. Also, we looked through the answers for "Q24: Your age" to check the participants' eligibility to fit the target age group - no exceptions occurred. However, we excluded 31 responses from the analysis - most of them did not complete one thematic block and answered mainly just 1 item. The rest of the respondents have answered at least According to the Pew Research Center, the Great Recession of 2007-2009 was one of the most significant drop-offs in the economy for the US after World War II. one theme block and their answers have been counted for analysis.

For generating the dataset, we downloaded "Tab-separated values" in a .tsv format file from Qualtrics. It can be easily portable into other programs like MS Excel.
Because the responses contained special characters like Kartuli/Georgian alphabet, the TSV data format has been appropriate - Qualtrics TSV exports use UTF-16 encoding, which is designed to accommodate all of the world's known writing systems.

We have used the descriptive quantitative statistical analysis, including bivariate analysis techniques such as frequency and percentage response distributions and central tendency measures (the mean, median, and mode) (Bryman, 2012). Also, we have addressed some inferential bivariate data analysis methods that include associations between two or more variables (mainly by using crosstabs).

Data analysis methods in the survey:

Our database included twelve automatically generated columns. The most significant ones are tracking the respondents’ IP addresses, the survey progress by an automated recording of the duration, start, and completion time, and creating the cumulative progress scores (0 – not completed, 100 – completed), considering the number of completed questions. Those have been useful for sorting the data for the cross-validation and de-duplication described above.

The data from the general demographic thematic block tracking sex, age, ethnicity, education, and place of residence were mainly used as descriptive information to characterize the sample presented in the survey. Also, some of them were used as independent variables for grouped comparisons, for example, to contrast the distribution of specific reproductive attitudes or fear of virus among men and women.
Mainly frequency, percentage, and crosstabs were used for data collected in three thematic blocks measuring the attitudes towards marriage, the reproductive dispositions and behavior, and healthcare experiences during the pandemic. For closed questions with several options of possible answers, we have calculated the frequencies of responses for each option and then calculated summary frequencies for each topic (question) in percent. As for crosstabs, the variables from the first three thematic blocks were mainly used as dependent variables, and columns from the last block of the questionnaire like sex, employment status, or age are mainly independent variables.

We have used Microsoft Excel, especially the PivotTable toolbox, which provides an extensive data analysis and visualization toolkit (mainly using tables, charts, or diagrams). PivotTable is used to query the data, subtotaling (mainly in %) and aggregate data by different categories, creating custom calculations and formulas. The most valuable subsets of data were filtered, sorted, grouped, and conditionally formatted to focus on specific information. In other words, Excel PivotTable helped to create crosstabs for categorical data or frequency of action captured in the survey data (Microsoft, 2022). Open-ended questions or questions with the option of "other" with a type-in answer were reviewed, categorized, and quantified the responses by simplifying the formulations, and counting the frequencies, finally presented as a percent.
Drawbacks of the Survey

Online surveys have been used more frequently lately than traditional interviews, panel sampling, or mail-in and telephone surveys, mainly because of their low costs, fast turnaround times, and potentially more accessibility to the larger groups despite the geographic distance or time difference. The exact reasons have been crucial while decision-making about using an online web survey for my research.

Even though all of the traditional or online surveys have their advantages, none of them has been flawless. Here are the main concerns related to the online web survey and describe the measures that have been taken to mitigate the adverse effects.

- **Tend to have a lower response rate** (Bryman, 2012) - The survey was intended to be accessible for only a month, but because of a slow public involvement, it has been open and shared on the initially chosen Facebook groups/pages for two months - Nov 2021 to Jan 2022.

- **In a non-probability survey, the probability of a given population member ending up in the sample is unknown.** Partially a problem of unequal access to the Internet (the digital divide), but also the problem of the second-level digital divide manifests as disparities in usage style and frequency. That is why the non-probability purposive sample is not formally generalizable. Additionally, before conducting the survey, I performed background research about internet coverage and Facebook usage in Sakartvelo. According to the report (Geostat, 2020), almost 84% of households have an internet, which has increased by 5%
compared to the previous year. The same indicator for cities is 91% and for villages 75%. The majority - 89% of people in the age group of 15 or over have been using the internet daily or almost daily during the last three months, 10% - at least once a week. The level of internet usage among men and women has been similar, 89% and 90% correspondingly. Also, 95% of internet users use the Internet mainly for social media (Geostat, 2020). According to the 2019 statistics of Facebook users by country, the Number of Georgian users was 2,524,000 (World Population Review, 2021), approx. 68% of our total population (3,713,804 people (Geostat, 2016)).

Moreover, considering the overall median age of Facebook users – 25-34 years - the Number of Facebook users from Sakartvelo potentially include all the Georgian population within the age group of 15-34 (1 032 900 people (Geostat, 2016)). That has improved the solidity of using Facebook as the communicational platform. Besides, based on the background study of Facebook groups and considering the geographic coverage (each regional government Fb page with more than 10,000 followers, group members or page “likes) and people's presence, I have selected official public Fb pages of local governments and thematic Fb groups that mainly represent the points of interest for the general public, including the young people, from relevant regions (see the Table 1 given above, page 31).
• Requires better motivation because, for example, they are paying for the Internet, and they have to be online to finish the survey. In that case, they need to be provided with an exceptionally persuasive participation request (Bryman, 2012). To encourage a better understanding of the meaning of participation in this online survey, I have provided the public comprehensive textual information (as a Facebook post), initially approved by the Institutional Review Board (IRB) of the University of Northern Iowa, considering all ethical issues (see annexes).

• Confidentiality and anonymity issues – In the consent of the survey (initially approved by IRB), all the information related to confidentiality and anonymity has been declared. Reading the consent was highly encouraged for all the participants before starting the survey. Accordingly, all the respondents would know that we did not request their names, but we asked for some indirect demographic identifiers (age, sex, education, and others). We have also stated that individual results will never be shared with anyone. Although, we have mentioned that confidentiality will be maintained to the degree permitted by the technology used. Specifically, no guarantees can be made regarding the interception of data transmitted electronically.

• Multiple replies by the same individual – no multiple responses were identified in the data validation de-duplication stage.
CHAPTER 4

THE SURVEY RESULTS

In the following chapters, I present the survey results describing and analyzing the trends or changes identified among the population of age 18-35 regarding their reproductive disposition and behavior. Also, I have included the results compared to the recent previous 2017 survey data to enrich readers' understanding of pre-pandemic reproductive behavior in Sakartvelo. It has been helpful for a better understanding of the changes captured during the COVID-19 pandemic in Sakartvelo. The narrative is mainly descriptive analysis enrolling the summary statistics of categorized data, cross-tabulation analysis, and elements of interpreting, sorting, and quantifying some content. The results are mainly presented visually by graphs and tables.

The Survey Coverage

In total, 255 people participated in the survey. Not all of them completed the survey.

- See the progress of completion of the survey below:
- 24 Respondents – answered only Q1 and closed the survey.
- 3 respondents – answered only Q1 and Q2 questions and closed the survey.
- 2 respondents – answered Q1, Q2, and Q3 questions and closed the survey.
- 2 respondents answered only the first four questions and closed the survey.

_Note: 31 responses are not considered because of the minor contribution to the survey._
• 9 respondents - finished only the 1st section of the survey and declared their opinion about the marriage (Q1-16 - an ideal age of marriage for women and for men, current marital status, their age when they got married for the first time, their husband's/wife's age when they got married, their will to get married in next five years).

• 38 respondents – mainly finished the first and second sections of the survey and expressed their opinion about the marriage (Q1-Q6) and the reproductive disposition now or pre-pandemic (Q7-Q15).

• 4 respondents - reached the 3rd section and answered questions including Q17.

• 5 respondents - completed three sections of the survey and reached Q23 in the last part of the survey.

• 1 respondent - completed three sections and partially covered the last section, including the Q27.

• 7 respondents - almost finished the whole survey – reached Q31 or Q32.

• 160 respondents – completed the entire survey (4 sections grouping 34 questions).
The Demography Block

The survey contains Q23-Q34 that aims to collect general demographic data (sex, age, ethnicity, education, address), economic status, and information about people's religious affiliations and involvement in religious lifestyles that can affect their reproductive behavior and motivation to have a child(ren).

Geography of the responses (Q27):

The majority of the participants – 85% live in urban areas, mainly big(ger) cities of Sakartvelo – Tbilisi (60%), Rustavi, Kutaisi, Batumi (in sum 10%). Only 6% define their place of residence as a city. The rest in the "urban" category represents administrative centers of municipalities in Sakartvelo, mainly from Kakheti, Kvemo Kartli, Shida Kartli, and Imereti. For the comparison, 80% were Tbilisi residents (living in the capital) in 2017, 13% resided in other cities, and 6% were rural.

The respondents (14%) defining themselves as rural residents are mainly from Kvemo Kartli, Kakheti, and Adjara regions, and only one or two respondents have presented other regions. Because of the considerable contrast between urban and rural - 86% / 14%, the survey results mainly reflect the opinion among participants from urban places.
Respondents by sex, age, and nationality:

The majority of the 157 participants (who have described their sex in the survey – Q23) were women – 80%, consequently 20% of men (In 2017, the proportion was 72% / 28%). Due to the small sample size and men's lower representation in the survey, we have high sampling variability, especially while examining sex differences in the survey results. The high variability means that our sample results are less likely closer to the actual population average. However, considering the research purposes, we present the data analysis, including the sex comparisons, that might be useful in developing further research based on the comparison with the census population distribution for key demographics that affect the data interpretation. Responses might also help identify issues, define ranges of alternatives, or collect other sorts of non-inferential data.

The plurality of participants are aged 29-31; the second biggest cluster is the age of 24, and the third group is 26-28 (Figure 1 and Figure 2). The age distribution pattern among respondents in 2021 seems close to the general population pattern (Geostat, 2022) shown in Figure 2. However, the respondents’ distribution does not match for age between the two surveys – much younger respondents were presented in 2017 than now.
The majority of the survey participants are ethnic Kartvelians (Georgians) – 92%, ethnic Azerbaijaniains - 6%, 2% defined their nationality as "other" (Q25). Also (Q28), most of the respondents (80%) are Orthodox Christians, 10% are Muslims, and the other 10% identify themselves either as an Atheist, Agnostic or non-religious (19.7% identified themselves as non-religious in 2017).
Respondents by Education (Q26)

Among the survey participants, the majority – 76% have a higher education, and most are women. The higher education rate is dominant among the male respondents, as well. The second biggest group is uncompleted higher education or current students, where mainly men are presented (Table 2). Overall, most of the respondents have higher education in both surveys. The same pattern is observed in the results of the population census (Geostat, 2014 General Population Census Results, 2014).

Table 2. Level of Education Among the Respondents – 2021 vs. 2017 vs. Population Census 2014 (Geostat)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncomplete secondary school</td>
<td>0%</td>
<td>1%</td>
<td>9%</td>
<td>1%</td>
<td>8%</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
<td>8%</td>
</tr>
<tr>
<td>Secondary school</td>
<td>0%</td>
<td>4%</td>
<td>39%</td>
<td>2%</td>
<td>34%</td>
<td>2%</td>
<td>3%</td>
<td>37%</td>
<td></td>
</tr>
<tr>
<td>Vocational</td>
<td>6%</td>
<td>5%</td>
<td>16%</td>
<td>4%</td>
<td>19%</td>
<td>4%</td>
<td>2%</td>
<td>17%</td>
<td></td>
</tr>
<tr>
<td>Uncomplete higher education/student</td>
<td>18%</td>
<td>31%</td>
<td>NA</td>
<td>5%</td>
<td>23%</td>
<td>NA</td>
<td>8%</td>
<td>25%</td>
<td>NA</td>
</tr>
<tr>
<td>Higher education</td>
<td>76%</td>
<td>58%</td>
<td>25%</td>
<td>88%</td>
<td>73%</td>
<td>28%</td>
<td>86%</td>
<td>69%</td>
<td>27%</td>
</tr>
</tbody>
</table>

Changes being Observed in Reproductive Disposition and Motivation During the COVID-19 Pandemic, Affecting the Reproductive Behavior

Attitude Towards Marriage

One of the most critical issues in the study of reproductive behavior has been marriage, the age of marriage, and the study of the demographic significance of marriage, as the issues listed are closely related to the reproduction of the population.
Questions 1-6 in the survey focus on collecting information about the public attitude toward marriage.

As Gambashidze defines it, the construct of marriage in Sakartvelo is a socio-demographic process conditioned and regulated by socio-cultural norms. Marriage is a legal or customary relationship between a woman and a man that regulates their relationship with their children. It determines the place of each of them in public life (Gambashidze, 2017).

Overall, the range of 25-29 has been the most commonly named ideal marriage age for women among the survey respondents - more than half -52% of the respondents assume so, while 38% think that the ideal age for marriage is 30-34 for men (twice more women – 46% - agrees on that opinion than men – 24%). Most of men respondents assume that their best marital age is 25-29, and the same result occurs among women. Opinions about the "no particular preferred age for marriage" for both sexes have been pretty much the similar among men and women (17%-18% for both sexes, which was relatively lower in 2017 – 9.6%-12.7% range). None of the women support the idea of marriage under 18; only three respondents have mentioned that under 18 is the preferred age for women to get married. Besides, only a minor portion of people think that the preferred age of marriage is after 35 for both sexes. Finally, the same portion of men and women agree that there is no preferred age for either of the sexes for marriage. For further comparison, see the charts below (Figure 3 and Figure 4).
Figure 3. Ideal Age of Marriage for Men and Women (2021)

Figure 4. Ideal Age of Marriage for Men and Women (2017)
Actual Age of Marriage

While observing the actual age of marriage among individuals, we can have an idea about public orientation and perception of marriage under the particular circumstances that last long enough to shape the trend in society.

As the survey shows, the average actual age of marriage for all the participants is 24.36. The maximum recorded age of marriage among the respondents is 35 for men and 32 for women. The lowest actual age of marriage occurs among women – one case of marriage at the age of 16 and one at the age of 17 (both are lower than the legal marriage age of 18 in Sakartvelo), and three cases of marriage at the age of 18. The minimum actual marriage age for men is 19 only in one case.

Actual Marriage Status

Based on the results (Q3, Q4, Q5), most respondents have never been married (47% in total) – 59% of women and 62% of men. The second significant portion of the survey participants is married – 45% in sum. We have identified a pattern – more women are married than men (the pattern was the same in 2017 – 19% women vs. 13% men among married respondents), and more males have never been married than women. The average age of the first marriage for married women has been the age of 24.5 (22.5 in 2017); their husbands' average age was 27.5. The average marriage age for men is 24.8 (23.64 in 2017), and their wives' average age is 23.3. Compared to 2017, the share of married respondents is almost doubled.
The questions Q7-Q15 aim to collect information about a reproductive disposition now and pre-pandemic in Georgian society. The analysis of all the key factors is given below.

**Ideal Number of Children**

The Ideal Number of children describes respondents' opinions about the number of children in the family under ideal socioeconomic or cultural circumstances. According to Tsuladze, the ideal number of children in a family in Sakartvelo reflects the collective aspirations, the social norm in the individual's consciousness (Tsuladze, 2012). Furthermore, Gambashidze describes it as a socially normalized complete need for having children (Gambashidze, 2017).

The ideal number of children is used to evaluate individuals' motivation for having children. A higher ideal number of children means a greater chance of its realization, which positively impacts birth rates in a society. If, for some reason, such as a pandemic and the associated long-term socioeconomic crisis, people are under severe pressure, naturally, their need to have children can change dramatically. We examine the survey data to see how the COVID-19 pandemic affects people's reproductive and family-planning motivation, reflecting their reproductive behavior.

According to the current survey results, the mean ideal number of children is 2.95 (a bit higher than in 2017 – 2.94 and relatively higher than the globally accepted replacement level fertility rate - 2.1 children per family (The Pledge for Racial and Ethnic Equity, 2022). The most commonly named (in total approx. 38% of respondents) ideal
number of children is 3 (share of respondents having the same position in 2017 was 10%-higher) – see the Table 3.

Table 3. Ideal Number of Children - Main Trends (2021)

<table>
<thead>
<tr>
<th>Ideal N of Children</th>
<th>in %</th>
</tr>
</thead>
<tbody>
<tr>
<td>two children</td>
<td>13.95%</td>
</tr>
<tr>
<td>two or three children</td>
<td>13.02%</td>
</tr>
<tr>
<td>two or more children</td>
<td>2.79%</td>
</tr>
<tr>
<td>three children</td>
<td>30.23%</td>
</tr>
<tr>
<td>three or four children</td>
<td>2.79%</td>
</tr>
<tr>
<td>three or more children</td>
<td>4.65%</td>
</tr>
<tr>
<td>four children</td>
<td>7.44%</td>
</tr>
<tr>
<td>four or more children</td>
<td>0.47%</td>
</tr>
<tr>
<td>as many as god gives</td>
<td>1.40%</td>
</tr>
<tr>
<td>depends on family's desire of having kids, also financial, mental and psychological effort</td>
<td>12.56%</td>
</tr>
<tr>
<td>I do not think about it in advance</td>
<td>1.86%</td>
</tr>
</tbody>
</table>

Note: Sub-categories such as "two(three/four) or more children" refer to a higher probability of having two(three/four) children than more. Accordingly, they belong to the "two(three/four) children" category.

We get 30% of respondents who assume that two children are ideal (14% - two children are ideal, 13% admit two or three children, 3% - "two or more children are ideal" – the probability of realizing having two children is higher). Finally, four children have been ideal for approx. 7% of respondents (same as in 2017).
Compared to the 2017 survey results, proportionally fewer respondents assume having three children is ideal, and the percent share of those has decreased from 50% to 38%. Moreover, those who think two children are ideal have increased from 22% to 30% during the pandemic. We see negative changes in trends in people's attitudes toward having more children during the pandemic.

Table 4. Ideal Number of Children – Men vs. Women (2021)

<table>
<thead>
<tr>
<th>Ideal N of Children</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0%</td>
<td>1%</td>
</tr>
<tr>
<td>1</td>
<td>3%</td>
<td>1%</td>
</tr>
<tr>
<td>2</td>
<td>29%</td>
<td>9%</td>
</tr>
<tr>
<td>3</td>
<td>26%</td>
<td>33%</td>
</tr>
<tr>
<td>4</td>
<td>9%</td>
<td>7%</td>
</tr>
<tr>
<td>5</td>
<td>3%</td>
<td>2%</td>
</tr>
<tr>
<td>7</td>
<td>3%</td>
<td>0%</td>
</tr>
<tr>
<td>9</td>
<td>0%</td>
<td>1%</td>
</tr>
<tr>
<td>1 or more</td>
<td>0%</td>
<td>1%</td>
</tr>
<tr>
<td>2 or 3</td>
<td>18%</td>
<td>13%</td>
</tr>
<tr>
<td>2 or more</td>
<td>0%</td>
<td>4%</td>
</tr>
<tr>
<td>3 or more</td>
<td>3%</td>
<td>7%</td>
</tr>
<tr>
<td>4 and more</td>
<td>0%</td>
<td>1%</td>
</tr>
<tr>
<td>5 and more</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>7 or more</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>as many as god gives</td>
<td>0%</td>
<td>1%</td>
</tr>
</tbody>
</table>

Trends by sex: If we look at trends (Table 4) of men versus women, we will find out that 33% of female respondents think that ideally, the family should have three
children versus 26% of male respondents. A more significant portion of men (29%) considers two children ideally. The second noticeable portion of female respondents says that ideally, a family should have two or three children (the position mainly supports the idea of having two children rather than 3). No one accepts the opinion about not having children among male respondents; only 1% of women think there is no need to have children. Also, 7% of female respondents assume that having three or more children is ideal for a family, while only 3% of men accept that opinion. Furthermore, 17% of women think that the Number of children in a family depends on the couple's desire and financial, mental, and psychological conditions versus 6% of men, who share the same opinion.

Also, the graph below (Figure 5) shows the trends in 2017 and now during the COVID-19 pandemic. We see that the key trends are the same, but the opinion among men and women has not been as homogenous as it was in 2017. We see the opinion about having three children is more or less similar for both sexes. However, the positions have split about having two children – 1/3 of males are sure about having two children ideally, while only 9% of women have been clear about that.

According to Figure 5, 46% of women's responses are grouped as "other," whereas 13% of women would ideally have two or three children. For the other 15% of female respondents, it is difficult to name a particular ideal number of children flatly because it depends on various circumstances, such as the couple's preference and their financial, mental, and psychological conditions. The survey results show that both sexes
have been negatively affected by the current multidimensional crisis accompanying the COVID-19 pandemic, which has decreased their readiness to have more children.

Figure 5. Ideal Number of Children - 2021 vs. 2017

The majority of surveyed men are practically anticipated to have fewer children, and women's position seems more promising. For the comparison, 11% of respondents would like to have as many children as possible/the couple would like or "as many as god wishes for them" in 2017. Now 15% of respondents report that the number of
children depends on the family's will to have children and the financial, mental, and psychological effort they can provide. It seems that socioeconomic and mental stability for individuals and families has always been significant. However, during the pandemic, the importance of all these issues have raised while shaping the public attitude about an ideal number of children.

**Desired Number of Children**

Question Q8 of the survey - "How many children would you like to have" - aims to examine respondent opinion about the desired number of children during the COVID-19 pandemic. It is one of the essential indicators of reproductive behavior and usually characterizes the "need to have a child" in an individual's family due to personal aspirations. Statistically, the average desired number of children is less than the ideal number.

The average desired number of children in the current survey was 2.64, which has decreased compared to 2017. Three children are the most desired Number (36%), two children are the second most preferable (27%), and four children are the next most desirable option for 7% of the survey respondents. The average desired Number is much lower than an ideal number of children (2.95) but still higher than the replacement level fertility rate - 2.1 children per family, which seems quite promising under the pandemic crisis.
For the comparison, the same trend is identified now and in the survey 2017, but the proportion of people willing to have three, two, and four children have decreased, correspondingly by approx. 8%, 3% and 5%.

It is evident that the positions among 170 men and women (who have answered the questions in this section) have become more contradictory compared to the results in 2017 – more women would desire to have three children than men. More than 35% of male respondents prefer to have two children versus 24% of women. According to the UNICEF’s multi indicator cluster study results in 2018, women in Sakartvelo would like to have 2.8 children before their first childbearing (Ketting & Lomaia, 2019).

Figure 6. Desired Number of children among Men and Women, 2021 vs. 2017
Almost 15% of women and 6% of men answer the option "other" - they wish two or more children to have. Only 3% would prefer to have three or more children (most men (3%) than women (0.7%)). Another 3% do not think about it in advance, and almost 5% of respondents would prefer to have no children (almost twice more than in 2017). See the Figure 6 above.

Compared to 2017, during the COVID-19 pandemic, more men have become encouraged to have fewer (two) children. In comparison, women seem more stable in maintaining their position about having three children. Although the share of female respondents, who think that having two or more children is preferable, or they do not know it in advance, has expanded three times and pointed up the negative influences during the pandemic.

**Expected Number and Actual Number of Children**

According to Tsuladze (2012), the expected number of children predicts birth rates, and it has a prognostic character, with a high probability of being close to reality (Gambashidze, 2017). Typically, this indicator is a stable measure and is often realized at almost 100%, especially among married couples. It is essential to examine the expected Number of children for individuals already having a child and for the people not having a child yet, considering their current marital status, to understand how people's reproductive behavior has changed during the COVID-19 pandemic.

Among 224 survey participants, 210 responded: "How many more children do you plan to have (if you do not have a child yet, how many children are you planning to
The question aims to measure the expected number of children among people aged 18-35 during the COVID-19 pandemic in Sakartvelo.

Of all the survey participants, one hundred twenty-nine respondents do not have a child yet. Their position has been decisive in evaluating the amount of their potential contribution to the population replacement and growth, especially considering the COVID-pandemic. One hundred nine participants have named the specific number of children they plan to have, and the average expected number of children has been 2.48 children based on the results. Furthermore, 29% of people from the above category plan to have two children, 26% - 3 children, and 9% four children have been planning to have. For the comparison, see the graphs below (Figure 7).

![Graph 7: Expected Number of children for those who have no child, 2021 vs. 2017](image)

Figure 7. Expected Number of children for those who have no child, 2021 vs. 2017

The average expected N of children - 2.48 - is higher than the replacement level fertility - 2.1 children per woman/family and considering the changes in trends currently dominated by mainly two expected children, followed by three (in 2017 it was three and
two children, accordingly). Additionally, married people are usually considered highly inclined to have more children than others. According to the survey results, individuals with two or three children are expected to have mainly one more child. The majority of people with one child are planning to have two children, followed by one child as the second the most desired number. Married respondents or people living with a partner having no child (in sum 11%) intend to have mainly two and three (the 2nd most desired) children, followed by one child or no child. Generally, married people are close to entirely realizing an expected number of children.

Compared to 2017, we see signs of the negative influence of the COVID-19 pandemic crisis on people's reproductive attitudes and reproductive behavior, which means they plan to have fewer children now than five years ago. The share of people without children intending not to have a child compiles 10% among the respondents. Also, the share of planners having three children drops to 26% and moves to second place. Two children as a preferred number are considered by 29% of respondents, which is less than in 2017. The number of people who are unsure about the number of children they would plan to have is almost twice as high now as in 2017.

Usually, researchers combine the actual number and the expected number of children to have a clear picture to predict the potential of population reproduction in the future. The survey shows that 60% of respondents with no child are planning to have 2.38 children; among the other 40%, the most significant share (21%) has only one child and is planning to have an average of 1.48 more children. Correspondingly, others
have two and three children, 14% (intend to have one more child) and 4% of respondents.

People living with partners are usually more capable of realizing their reproductive plans. Even though the mean expected number of children is low, the possibility of implementing their reproductive plans seem positively realistic considering their preferable ideal or desired number of children if the pandemic crisis will not last long (Table 5).

Table 5. Reproductive Perceptions Among Married Respondents (2021)

<table>
<thead>
<tr>
<th>People who are married, or have been living with a partner and have:</th>
<th>Average Ideal N of children</th>
<th>Average Desired N of children</th>
<th>Average number of (more) children they expect to have</th>
</tr>
</thead>
<tbody>
<tr>
<td>one child</td>
<td>2.88</td>
<td>2.67</td>
<td>1.48</td>
</tr>
<tr>
<td>two children</td>
<td>2.89</td>
<td>2.78</td>
<td>1.00</td>
</tr>
<tr>
<td>three children</td>
<td>3.67</td>
<td>3.80</td>
<td>1.86</td>
</tr>
</tbody>
</table>

In sum, they are 40% of all the 210 respondents, who have answered the question Q9. Note: the people with three children have been only 4% of respondents, and the data is not considerable.

It is essential to analyze how the rates of using contraception have changed among people of different marital statuses. About how often they use contraceptives, 49% of 189 respondents say that they have never used them – the main reason is that most of them have never been married. They usually are not actively involved in sexual life, considering Georgian society's moral norms and traditionality (Table 6).
Table 6. Rates of Using Contraceptives by Marital status (2021)

<table>
<thead>
<tr>
<th>How Often do you use contraceptives?</th>
<th>Never been married</th>
<th>Divorced</th>
<th>Married</th>
<th>I live with a partner</th>
<th>Widowed</th>
<th>Grand Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>67%</td>
<td>40%</td>
<td>34%</td>
<td>27%</td>
<td>100%</td>
<td>49%</td>
</tr>
<tr>
<td>Sometimes</td>
<td>10%</td>
<td>20%</td>
<td>33%</td>
<td>36%</td>
<td>0%</td>
<td>22%</td>
</tr>
<tr>
<td>Regularly during last 2 years</td>
<td>23%</td>
<td>40%</td>
<td>34%</td>
<td>36%</td>
<td>0%</td>
<td>29%</td>
</tr>
<tr>
<td>Total</td>
<td>100% (90)</td>
<td>100% (5)</td>
<td>100% (83)</td>
<td>100% (11)</td>
<td>100% (1)</td>
<td>100% (190)</td>
</tr>
</tbody>
</table>

Note: In the last row, the number in brackets shows the summary counts of each category.

Nearly 29% say that they have been using contraception regularly during the last two years – more than half of them have been married or living with a partner. Others (42%) have never been married or are divorced, but they have been involved in sexual relationships and have been using contraceptives regularly during the last two years. Lastly, 21% of respondents say that they sometimes use contraceptives – mostly, they are married individuals. According to the statistics, contraceptives among individuals living with a partner (or married) decreased by 8% between 2010 and 2019 in Sakartvelo (Ketting & Lomaia, 2019) – which means more people try to have children.
According to the results (Table 7), the proportion is slightly different among married people who never use contraceptives, sometimes or regularly. That might be related to the pandemic – due to the crisis, more people would like to postpone their fertility plans.

Factors Contributing to Reproductive Behavior during the COVID-19 Pandemic

Questions 11 – 15 aim to reveal the opinion about the power of the COVID-19 influence on their reproductive disposition and motivation during the pandemic. The results of the combined analysis of questions (Q11 and Q15) - "Would you say that the ideal number of children for your family has increased, decreased, or stayed the same over that past year or two?" and "If you are now planning to have fewer children than
you were planning before the Covid-19 pandemic, please, what are the primary reasons that you have changed your plans – describe up to 3" are presented here. The majority of the respondents believe that the COVID-19 pandemic has not affected the number of children they would ideally like to have (no effect on their reproductive disposition). For 12%, the ideal number of children has increased during the past year or two.

Approximately 9% of the respondents say they want fewer children than before the pandemic (see Table 8).

Table 8. Changes in Public Opinions about the Ideally Desired Number of children while COVID-19 Pandemic

<table>
<thead>
<tr>
<th>Q11 - Would you say that the ideal number of children for your family has increased, decreased or stayed the same over that past year or two?</th>
<th>Count of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased – I want more children now than I did a couple of years ago</td>
<td>12%</td>
</tr>
<tr>
<td>Stayed the same</td>
<td>78%</td>
</tr>
<tr>
<td>Decreased - I want fewer children now than I did a couple of years ago</td>
<td>9%</td>
</tr>
<tr>
<td>Grand Total</td>
<td>100%</td>
</tr>
</tbody>
</table>

Due to the Covid-19 pandemic, 20% of respondents mention financial problems, fear of maintaining good health, and instability in the country (political and socioeconomic) as the key factors impacting their decisions of having fewer children or postponing plans. Other 80% say that the COVID-19 has not influenced their will or plans to have children or have not stated any position (Table 9).
Table 9. Key Factors Impacting Opinions about Having Fewer Children during the COVID-19 Pandemic

| "I am planning to have fewer children now, than before the Covid-19 pandemic, because (of)"
<table>
<thead>
<tr>
<th>1st reason</th>
<th>2nd reason</th>
<th>3rd reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>A lots of cases of domestic violence has appeared during the pandemic</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Fair of keeping a good (children’s) health</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Financial problems</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>High cost of reproductive healthcare</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Instability in the country/unhealthy environment</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Limited access to the kid's daycare services</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Lack of time/overfatigue/stress</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Social circumstances/problems</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>COVID-19 pandemic (waiting the end of it)</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Unemployment</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

"The pandemic has not changed anything" or "no opinion" | 165 |

**Employment and Income Before and During the COVID-19 Pandemic**

Based on the respondents' comments defined in Table 9, financial problems have been one of the essential hindering factors. Therefore, it would be interesting to examine changes in people's financial and employment conditions before and during the COVID-19 pandemic (Q31-Q34).

Most of the respondents have been employed as before as during the pandemic, but the share of employed individuals decreased from 75% to 67%. The second considerable portion is students, which expands from 6% to 14% during the pandemic. Unemployment rates have not changed much – they remain around 6-7%. According to
the results, most men have lower rates before the pandemic in employment distribution by sex (Figure 8).

![Rates of employment by sex, pre-pandemic vs. during the pandemic](image)

**Figure 8. Rates of Employment by Sex, pre-pandemic vs. during the pandemic**

During the pandemic, the picture has slightly changed – the portion of employed men has increased, while the share of employed women decreased by 11%.

Unemployment rates have decreased for men, while the opposite applies to women-respondents. Also, the share of students among both sexes has risen, and self-employment among women has increased during the pandemic.
To evaluate the income, most of the respondents have had more than 1300 Gel/month or more (category "very high") as before as during the pandemic. However, the share of these people has decreased by 3%. The portion of respondents with "high" income – 800-1300 Gel/month has dropped from 30% to 23% during the pandemic - they can afford entertainment and recreation costs. A similar situation is described with the "medium" income – it dropped down to 24% during the pandemic (Figure 9).

Based on our results, incomes have increased compared to 2017. However, considering the rapidly growing inflation rates and the lower power of purchase, the respondents were challenged to decide among values given as choices for the question and the description (content). For example, in personal conversation, several
respondents mentioned that the income options' descriptions are no longer valid at this stage of the COVID-19 pandemic. Accordingly, their choices are based on the numbers, not the definition. For example, for a person who has chosen the "High income (800-1300 Gel)", the definition "we can afford entertainment and recreation costs" is not feasible.

Questions Q16-Q22 in the survey are designed to collect data about individuals and their families' healthcare and safety experiences in pandemic to understand better its possible influences on their reproductive intentions and behavior (connection with Q11 and Q15). Based on the survey results, COVID-19 infections have not affected peoples' ideal Number of children and reproductive intentions. Most of the respondents (58%) have not experienced COVID-19 exposure, and 42% of respondents have been COVID-positive by the survey completion time (Figure 10). Mainly they had a mild illness – some of the various signs and symptoms of COVID 19, such as fever, cough, sore throat, malaise, headache or muscle pain, without shortness of breath, dyspnea, or abnormal chest imaging.
Based on the results, among those to whom COVID-19 has never been exposed, fear is higher than among the respondents who have experienced it. Additionally, 61% of respondents have had at least one family member exposed to COVID-19 (majority of the family members from this category have been sons (47 cases), mother/fathers-in-law, and parents - vulnerable age groups).

Expectedly, the level of fear and the vaccination rates match each other – the higher the level of fear, the more vaccinated people we have (Figure 11).
However, considering the COVID vaccination rate – 33.8%\(^1\) (fully vaccinated) in Sakartvelo, most Georgians are motivated not to be vaccinated. The Georgian Orthodox Church has played a massive role (Sakartvelos Sapatriarko / Patriarchate of Georgia 2021).

According to the survey data, among 167 respondents (who have answered both Q21 and Q29 about vaccination and the intensity of participation in religious services), 75% have been fully vaccinated. Only 13% of them have been actively involved in a religious lifestyle. In contrast, 25% of 46 non-vaccinated individuals have been religious and attended church services every week or several times a month. Due to the small sample and the high variability, connecting the survey findings with the trend described above is difficult. The issue needs further research.

### Changes Related to Religious Activities during the COVID-19 Pandemic

We have already mentioned that religion and religious activism informing public opinion about reproduction has been crucial in Sakartvelo. As an illustration of the notion, we can see the trend (Table 10) - the highest birth rates we do have in Kvemo Kartli and Adjara regions dominated by the Muslim societies characterized by high fertility rates.

---

\(^1\) John Hopkins University Vaccine International Tracker, data for Sakartvelo (Georgia), by Mar 22, 2022- https://coronavirus.jhu.edu/vaccines/international
Table 10. Birth Trends in Muslim-dominated Communities in Sakartvelo, 2016-2020

<table>
<thead>
<tr>
<th>Capital, Regions</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tbilisi</td>
<td>16784</td>
<td>14906</td>
<td>16161</td>
<td>16022</td>
<td>15271</td>
</tr>
<tr>
<td>Adjara Autonomus Republic</td>
<td>5977</td>
<td>6108</td>
<td>5800</td>
<td>5703</td>
<td>5599</td>
</tr>
<tr>
<td>Guria</td>
<td>1535</td>
<td>1471</td>
<td>1272</td>
<td>1174</td>
<td>1075</td>
</tr>
<tr>
<td>Imereti</td>
<td>7784</td>
<td>7574</td>
<td>6757</td>
<td>6040</td>
<td>5873</td>
</tr>
<tr>
<td>Kakheti</td>
<td>4870</td>
<td>4722</td>
<td>4159</td>
<td>3872</td>
<td>3828</td>
</tr>
<tr>
<td>Mtskheta-Mtianeti</td>
<td>1180</td>
<td>1205</td>
<td>1067</td>
<td>946</td>
<td>926</td>
</tr>
<tr>
<td>Racha-Lechkhum-Kvemo Svaneti</td>
<td>327</td>
<td>341</td>
<td>328</td>
<td>284</td>
<td>259</td>
</tr>
<tr>
<td>Samegrelo-Zemo Svaneti</td>
<td>4797</td>
<td>4436</td>
<td>3972</td>
<td>3473</td>
<td>3286</td>
</tr>
<tr>
<td>Samtskhe-Javakheti</td>
<td>2349</td>
<td>2178</td>
<td>2107</td>
<td>1904</td>
<td>1912</td>
</tr>
<tr>
<td>Kvemo Kartli</td>
<td>6892</td>
<td>6693</td>
<td>6179</td>
<td>5845</td>
<td>5530</td>
</tr>
<tr>
<td>Shida Kartli</td>
<td>4074</td>
<td>3659</td>
<td>3336</td>
<td>3033</td>
<td>2961</td>
</tr>
<tr>
<td>Sakartvelo</td>
<td>56569</td>
<td>53293</td>
<td>51138</td>
<td>48296</td>
<td>46520</td>
</tr>
</tbody>
</table>

Source: https://www.geostat.ge/en/modules/categories/319/births

Overall, 80% of the survey participants are orthodox Christians, 10% - are Muslims, and another 10% mention that he/she is either non-religious/agnostic or an atheist.

The intensity of the population's involvement in religious services was more frequent right before the pandemic than in 2017. Most of the respondents carry out religious activity either only on major holidays (45%), or every weekend (10%) and several times a month (8%). It would rarely practice (43%), or participants would consider themselves non-religious (34%) in 2017.

Overall, 80% of the survey participants are orthodox Christians, 10% - are Muslims, and another 10% mention that he/she is either non-religious/agnostic or an atheist.
Changes during the pandemic: In sum, 167 respondents answered the questions about their participation in religious activities/services respectively before and during the COVID-19 pandemic. Noticeably, the portion of people (45%) who used to attend the religious services before the pandemic only the significant holidays has decreased to 7%. Another 3% decline is observed in the share of people attending the religious services weekly. The portion of respondents who would rarely or never attend the religious services has increased from 14% to 40%. The COVID-pandemic has influenced people's religious practices, portrayed in the declining intensity of their involvement in religious services. Also, respondents (7%) with low religious activity (mainly people who used to attend only the primary holiday services or would say that they have never been actively involved in a religious lifestyle) have changed their self-identification as non-religious (Figure 12 and Figure 13).
Figure 12. Religious Activities before and during the COVID-19 Pandemic

Figure 13. Religious Activities (2017)
It would be interesting to look at the significant segment of respondents changing their opinion or position during the pandemic in future analysis. 13% of people attending the religious services every weekend changed the frequency of their participation in religious activities to several times a month, and another 13% changed their religious lifestyle due to safety during the pandemic (to avoid being in crowded places like a church or other religious entity). Besides, approx. 30% of people who used to be actively involved in religious services several times a month have decreased their participation for only significant holidays because of COVID-19. Furthermore, approx. Twenty percent of people who would attend only major religious ceremonies have changed their religious lifestyle mainly due to the pandemic. People choosing the option “other” have explained that the pandemic does not affect their participation in religious activities. They have not been involved in it actively even earlier than the pandemic.

In this chapter, we tried to describe the main discoveries of the presented survey by categorizing, analyzing, comparing, and combining the new knowledge to evaluate the COVID-19 influences on reproductive behavior among young Georgians. Despite the limited survey coverage and small sample size, we have identified significant findings to develop further discussion considering the research purpose.
Presented descriptive results aim to evaluate the demographic implications of the COVID-19 pandemic in Sakartvelo by reporting the pattern changes and characteristics without the most explicit predictions or determination of cause and effect. For this research, it is also essential to place the findings within the context of the overall demographic dynamics in Sakartvelo and changes in population reproductive behavior captured during the COVID-19 pandemic in the demographic studies conducted in different countries (see more details in the literature review section). These can be useful for understanding the nature of changes in reproductive behavior and birth trends in Sakartvelo, reinforced by the survey findings as feedback from a group of 18-35 years old adults with the highest potential for involvement in reproductive activities.

The healthcare insecurities - the number of exposure and COVID-death rates with other factors, such as restrictions or lockdowns, physical isolation practices, economic crisis, or limited access to supplies during the COVID-19 pandemic - affect the coital frequency, which is reflected in decreasing birth numbers, increasing deaths and the negative natural growth; or they can change the demand for children, which causes longer-term fluctuation in birth trends (Luppi et al., 2020).

As described in the literature review section, decreasing birth rates have been recorded in various countries during the COVID-19 pandemic (Richmond & Rohner 2018;
Luppi et al., 2020; Ullah et al., 2020). Monthly numbers of births have mainly tended to decrease in Sakartvelo during the pandemic. Generally, the number of births has been permanently decreasing since 1994 except for 2003-2009 when we see the 7-years positive trend. This shift was mainly related to the change of government (the "Rose Revolution" - Tbilisi 2003) and reformatory, institutional, economic, social, infrastructural improvements (Dobbins, 2014), which affected the sense of a "better life" in Sakartvelo and was reflected in positive reproductive behavior. Another recession in birth rates started in 2010 due to the Russian invasion in 2008 in Sakartvelo and all accompanying problems. In parallel, the number of deaths has been moderately stable with minor ups and downs but high enough to provide only minimum positive and negative natural growth (especially in 2000-2007 because of high death rates – see Figure 14).
After 2007, the negative population natural growth was captured again in 2020-2021 during the pandemic. The main reason has been the increased death numbers among the 65+ population due to diseases of the circulatory system provoked by the COVID-19 (Geostat, Deaths, 2022).

I have used Bertillon's coupling method to examine the dependence between the number of monthly births, COVID cases, and COVID deaths from January 2020 to March 2022. The highest monthly number of births has been in July 2020 - 4384 babies, which is usually the result of the typical seasonality of pre-pandemic marriage activities in August-September, followed by the high number of first children within a year (Geostat, 2022). As soon as COVID-19 started spreading among the population and
spiked slowly, the number of births has permanently decreased and reached its lowest - 3420 births per month in February.


Figure 15. Dependence between the N of Monthly Births, COVID-cases and COVID-deaths, 2021

Different from the Bertillon birth effect (Richmond & Roehner, 2018), we have identified an increased monthly birth trend (with few drops) instead of the expected temporary decline in birth rate through nine months after the first significant spike of COVID-deaths in Sakartvelo. The COVID-19 pandemic as a health-related long-term obstructive circumstance has not had a substantial adverse effect on the reproductive behavior of the young population in Sakartvelo. The survey results illustrate that: most of the respondents mention that the pandemic has not caused any changes in their
opinions or plans about the number of children they would like/plan to have. The fear of COVID-19 exposure has not been strong enough to be perceived as an alarming event that potentially could affect their reproductive behavior or their opinion about the number of children they would like/plan to have. The level of fear has also been low among those who have been infected by COVID-19, but because of the mild severity, the fear has not been developed either. For that 9% of respondents who have changed their mind and have been willing to have fewer children during the pandemic, the main drivers are the financial problems, the instability and unhealthy environment in the country, or the fear of ensuring their/children' good health. For the comparison, similar changes are described in Italy, UK, and Spain - the insecurity of incomes due to the current economic crisis increased the probability of changing their fertility plans during the pandemic (Luppi et al., 2020).

Finally, despite the several spikes in COVID cases and deaths, after the 1st quarter of 2021, the numbers of births have been increasing, and after the 3rd quarter, they have remained stably high. This could be a clear illustration of how the society responds to the crisis by learning the character of the crisis, adapting the "crisis mode," and slowly going back to pre-pandemic "normal condition." It is crucial to mention that after the appearing rebound pattern, the birth curve has not reached the highest rate captured in July 2020 before the widespread COVID-19 in Sakartvelo yet.

For a better understanding of the character of pandemic birth trends, I have looked at the changes in numbers of children by birth order. Compared to the previous
years' total numbers of first children in 2019, 2020, and 2021 have been decreasing and compiled, correspondingly, from 18,421 (38% of annual N of births) to 17,655 (38% of annual N of births), and to 17,203 (37% of annual N of births) children (Geostat, 2022). There was the same trend for second and third children – they have been decreasing, as well. The share of second children was approximately 36% in 2019-2021. It is essential to mention that most children have been born among married families – 65% in 2019, 64% in 2020, and 63% in 2021. The proportion has been steadily decreasing since 2014, related to the increasing numbers of divorces and expanding practices among couples living together without marriage in Sakartvelo (Gugushvili, 2015). We have an increased number of children born under non-registered "marriages" – growth from 31% in 2014 to 34% in 2019. The Covid-19 pandemic has hindered marriages excessively due to restrictions related to banning big gatherings, including weddings and funerals in Sakartvelo, and also because of limited access to the civil registry services. That is why the share of the Number of births under "non-registered marriages" has become 36% and 38%, correspondingly, in 2020 and 2021 during the COVID-19 pandemic.

Pandemic isolation for families has resulted in postponing divorces in Sakartvelo. According to Geostat, the number of annual divorces has decreased from 11205 to 7643 in 2020, mainly related to the lockdowns and lack of access to the civil registry services (Geostat, divorce, 2021). Also, in 2021 the rate of divorces has returned to the similar rate as described in 2019 (it is mainly related to the increased number of "divorce-postponers" due to restrictions in 2020, who realized the plan in 2021). It is mainly
related to weakening the COVID-19 restrictions in Sakartvelo (Geostat, Marriages, 2022).

It is essential to explore the changing demographic behavior based on the altered motivation of having children or opinions about the age of marriage in society.

According to the survey, the mean ideal number of children is 2.95, followed by the desired number of children of 2.64, which are still higher than the replacement level fertility rate – 2.1 children. The survey also showed that men had changed their opinion during the pandemic. They are willing to have fewer children than women, which might be related to another finding of the survey - men's economic role and probably some pressure has increased during the pandemic and possibly encouraging them to think of having fewer children. Also, the ideal and desired number of children has been higher among those who already have two children than respondents with a child. However, the expected number of children is higher among the people with one child than others.

Based on the survey results, the majority of the respondents think that the 25-29 range is ideal for women and 30-34 for men to get married. According to Geostat, the average age of the first marriage has been slowly increasing since 1994, and for men, it has reached 31.5 and 29 for women in 2021 (Geostat, 2022). The most common opinion among the survey participants matches the current picture about the age of marriage, which gives us a hope that the motivation for marriage among young people has remained the same and it does not negatively affect reproductive disposition in reproductive disposition Sakartvelo.
To summarize, this research opens new lenses to look more into the problem of reproductive motivations, dispositions, and behavior led by the hindering circumstances that occurred during the pandemic such as the healthcare challenges, unemployment, inflation, access to the different supplies, limited social and religious interaction, for developing ideas for the future in-depth demographic research with a primary focus on exploring better evidence to model predictions for the pandemic reproductive behavior.
CHAPTER 6

CONCLUSIONS

In response to the first research question, *what is the evidence of changing reproductive behavior (attitude towards childbearing) during the COVID-19 pandemic in Sakartvelo?* we have captured the changing reproductive behavior based on the survey results, reflecting the general decreasing birth numbers during 2020-2021. Compared to the 2019 official birth rate (Geostat, 2022), there was a 4% decrease in 2020 and a further 1% decrease in 2021. It indicates that the COVID-19 pandemic has been a shock that has affected reproductive behavior. Alterations in reproductive disposition caused by the raised economic crisis have been reflected in reproductive behavior as a postponing the plans of having children among young people aged 18-35 in Sakartvelo.

For the majority of the respondents, the wages/monthly income increased during the COVID-pandemic. However, with decreasing power of purchase due to high inflation, their plans about having children have been postponed for an undetermined period – for example, married respondents with zero or one child have at least sometimes or regularly addressed contraception during the pandemic.

*What are the short-term impacts on reproductive behavior caused by changes in attitudes toward reproduction/having a child during the COVID-19 pandemic?* - the mild severity of the COVID-19 illness (for more details, see the survey results) and high death rates, mainly in the 65+ population, due to COVID-induced health compilations (Geostat, Deaths, 2022) have promoted the short-term delay in reproductive behavior, based on
the changes in attitudes towards having a child among young people (18-35). For example, on the one hand, most of the respondents believe that the COVID-19 pandemic as a healthcare-altering circumstance has not affected the number of children they would like to have (no effect on their reproductive disposition). However, for 20% of respondents, the key factors impacting their decisions to have fewer children or postpone it during the pandemic are financial problems, fear of keeping their children's good health, and instability in the country (political and socioeconomic). Although, because of the rapidly changing character of these modifiers, it has mainly short-term effects on reproductive disposition. Decreasing the number of births between Jul 2020 and Feb 2021 (the first half of the pandemic) and the rebound later in the first three quarters of 2021 illustrate the short-term impacts of COVID-19 in Sakartvelo.

From a longer perspective, reproductive behavior seems more promising. As a survey results showed, the ideal, desired, and expected number of children decreased compared to the 2017 survey results. However, they are still higher than the replacement level of fertility (2.1 children per family).

What intersectionality exists among Georgians regarding reproductive behavior towards childbearing during the COVID-19 pandemic? We have made exciting findings: women want more children than men, and married people with two children would like to have more children than non-married individuals or married persons with one child. Although, the potential for realizing reproductive plans shortly (expected N of children) is higher among the people with one child than others. People have become
"postponers" mainly not because they have been afraid of the COVID-19 pandemic as a long-term obstructive health circumstance but due to their financial instability or other socio-economic conditions. An indication of this has been the survey results that revealed the men's desire to have fewer children - the increased economic pressure among male respondents during the pandemic has likely encouraged them to think of changing their reproductive dispositions.

In contrast, during the COVID-19 pandemic, twice as many women (17% versus 6% of men) indicated the importance of a couple's interest in having children; their financial, mental, and psychological stability have been crucial while shaping an attitude about the number of children they would ideally have. Zero-tolerance has been identified among men as having no children, while only 1% of women preferred this option. Additionally, we have captured the uncertainty about the desired number of children among women - the share of female respondents who do not know how many children they want to have has expanded three times since 2017. Regarding the ideal age of marriage as one of the critical drivers of reproductive behavior, the majority of the respondents thought that the 25-29 range is ideal for women and 30-34 for men to get married. According to Geostat, the average age of the first marriage has been slowly increasing since 1994: for men, it has reached 31.5, for women - 29.0 in 2021 (Geostat, 2022).

The conclusion is established on the discussion narrative developed considering the existing literature survey and the findings of this study. Except for the commonly
adapted practices of statistical data examination in pandemic studies (e.g., Bertillon’s effect), focusing on population health consequences, we developed the study engaging the online survey with a specific focus on demographic indicators and their changes during the COVID-19 pandemic. Correspondingly, we explored the demographic implications of the COVID-19 pandemic more in-depth. Except for the general demographic effects of the pandemic, we contributed specific knowledge about COVID influences on reproductive behavior. As a result, the crisis disturbed birth rates in Sakartvelo. Similar to western European countries described in the literature review, it encouraged people to postpone their fertility plans during the COVID-19 pandemic.

Regarding the further findings based on the survey results, we identified economic instability as the main reason for the fertility plan’s postponement during the pandemic than the virus itself (virus-related experiences, such as fear of being exposed, the severity of illness, or life loss). As a result, specific reproductive deviation from the traditional behavior of having the first child “sooner” has been identified corresponding to the married respondents (especially those with no child) addressing more regular contraception during the pandemic. Their higher potential of realizing fertility plans declined, considering the instabilities during the COVID crisis.

Policy Implications

Because of the frequency and extent of large-scale disasters in recent years, there is an increased interest for better understanding of the impacts of major harmful events altering key demographic processes. The situation is more critical for countries with
ongoing demographic crises, such as Sakartvelo. According to the Sakartvelo Government, Resolution N5586-IIb passed by the Parliament of Georgia in 2017 intends to support the demographic safety of the country; the government also pledged to prioritize family support to increase fertility (Resolution of Parliament of Georgia, 2017). The Government tried to implement special programs to help families during the pandemic. For example, the Georgian Government has provided social allowances for six months to support families with more than three children under the age of 16 and other vulnerable groups in Sakartvelo (Government of Georgia / Report on activities carried out against COVID-19, 2021). However, these temporary measures do not ensure the long-term economic security of families. From that perspective, this research has been timely to collect, analyze, and summarize evidence establishing how the COVID-19 pandemic as a global disaster impacts fertility and to examine responses showing the pandemic affects the reproductive behavior of the population of Sakartvelo, as an example. The study will support all the parties interested in researching pandemic consequences to develop case-specific research methods and instruments for implementing better pandemic management and elaborate on case-specific demographic or economic policies. It will also help guide Sakartvelo national policies for short- and long-term response to the COVID-19 pandemic’s consequences.

Besides, because of a lack of active human geographers or demographers working on population issues especially considering the crisis in Sakartvelo, this study will be an "investment in population data collection systems to provide scientific
evidence in the wake of disasters will broaden the depth and scope of disaster research, advance understanding of demographic changes, and inform policy interventions" (Frankenberg et al., 2014, 1).

Limitations and Future Directions

This study has presented empirical findings based on the official statistics and survey data analysis of COVID-19 influences on the reproductive behavior and birth trends in Sakartvelo. The study discussion and results are not free of limitations inherited from the research methods chosen for this thesis. This includes sample design, sample size and structure, and biases associated with the online mode of response collection. At the same time, this thesis initiated a debate that can guide future research efforts and reinforce the interest in this research area in Sakartvelo. Because the study is based on demographic research principles which use the online survey, directions for future studies rely on the set of limitations discovered and organized around these two directions.

Limitations

The research questions and objectives have been developed based on the existing study about the demography of ongoing COVID-pandemic worldwide. Due to the limited amount of research focusing on demographic issues than health-related problems (mainly policy-related - how to avoid a virus spreading widely and high death rates), our horizon has been limited in developing more comprehensive research. At the same time, limited prior research became a motivator for me to try to fill the gap in
pandemic demographic research. Choosing Sakartvelo as a study area was based on personal biased interest, which could be an additional limitation for the study due to the lack of variety of data and scientific information. At the same time, it was derived from the eager will to contribute somehow to the field in my home country.

Due to distance from the target study area and other potential benefits like the higher potential of accessibility to a bigger audience, a higher level of usefulness and adaptability, and automated data collection, an online non-probability survey has been chosen as a method. Based on the experience, two main limitations appeared related to the online survey: the insufficient sample size and high sample variability (the smaller the sample, the higher the sample mean variability among the sample and general data), which affect the validity of the comparison and data generalization.

Lower rate of completing the entire survey, unequal sex representation (men/women), and place of residency (geographic coverage) that were supposed to be independent variables for categorized analysis of the survey data have been among the list limitations of the survey. Also, some technical issues occurred while using the online survey platform – one of the questions was presented with an incomplete list of choices in the survey. Although several tests were run before conducting the survey, the error was not identified before launch. Correspondingly, it affected the quality of collected data.

In addition, the non-probability design, low response rate, and lack of representativeness are the key factors limiting generalizability, which means our sample
results are less likely to be closer to the actual population average; we cannot generalize the data. Furthermore, the comparison between the survey results in 2021 and 2017 also lacks comparability in demographic distribution. All the comparisons presented in the survey can be used only to interpret and evaluate the general picture of demographic changes in Sakartvelo and to develop hypotheses for future research or policymaking.

Except for the commonly used online survey practices, the purpose of the research would be another justification for using the online survey method. This research attempts to create the basic exploratory, an inductive research model for the pandemic demography. The study intends to identify and describe the changes in births and reproductive behavior during the COVID pandemic among youth in Sakartvelo without highly accurate statistical measurements to generate a hypothesis for future research.

**Future Directions**

Focusing more on demographic research is essential to assess the challenges, understand the outcomes of massive hindering processes like a pandemic, and develop future strategies. The presented research project illustrates building evidence-based knowledge by identifying the indirect effects of the pandemic to inform future research and policymaking. The study focuses on problems of demography that are not affected by health-related implications of the COVID-19 virus, but rather the pandemic’s impacts on society. This kind of approach would be helpful for societies like Sakartvelo under a
demographic crisis. Considering the failure in the pandemic management and the worsening economic situation in Sakartvelo, policymakers should be concerned about how the pandemic and its economic consequences will affect population dynamics and opposite in the future. Elaborating on the pandemic policy should include a thorough demographic analysis beyond the health indicators like the character of virus spread or the impact of lockdown measures. Due to uncertainty in decision-making, a more permanent monitoring system based on collected evidence of population health and related demographic issues will be needed to manage the pandemic crisis.
REFERENCES


APPENDIX

THE SURVEY INSTRUMENT (QUESTIONNAIRE)
Changes of Reproductive Behavior and Birth Patterns during the COVID-19 Pandemic in Sakartvelo (the Republic of Georgia)

Survey Questionnaire

Consent

The research study “Changes of Reproductive Behavior and Birth Patterns during the COVID-19 Pandemic in Sakartvelo (the Republic of Georgia)” is being conducted by Nino Matashvili, under the supervision of Dr. Andrey Petrov, at the Department of Geography (College of Social and Behavioral Sciences) at the University of Northern Iowa (US). The study involves Georgian citizens - males and females of the age group of 18-35 completing an online survey that will approximately takes 15 minutes. The study aims to capture the public opinion about immediate impacts of Covid-19 on birth trends, to investigate and to understand the changes in reproductive behavior, the all possible factors (social, economic, mental) stimulating unusual peaks or drops in birth curves during the pandemic.

The study is voluntary. You can choose not to answer some of the questions. The study risks are minimal, although you may feel some discomfort while answering the questions. There will be no compensation for your participation and there are also no direct benefits to you personally, but we believe the study will help Georgian society to better understand the changes of reproductive behavior while pandemic, reflecting in the number of child-births.

The online survey is confidential. We will not request your name, but we’ll ask for some demographic information (age, sex, education, address(town/city/village, municipality, region)), etc.). Your confidentiality will be maintained to the degree permitted by the technology used. Specifically, no guarantees can be made regarding the interception of data transmitted electronically. Individual results will never be shared to anyone. Grouped and analyzed results of the survey will be presented in the research thesis, the article and the presentation, or the data may be used or shared with others interested in the topic for other research studies later.

If you have questions about the study, please, contact the UNI master student Nino Matashvili, conducting the survey at matushyn@uni.edu. If you have more questions about the research participants’ rights, please, contact the Interim IRB Administrator at rebeca.rinehart@uni.edu or call (+1)319-273-6482. If you are interested in completing the survey, click “Yes” below. If not, you may simply close your browser.
თანხმობის ფონი


ვენესუელი ქვეყნის მხარეები ბრძოლით არ უთანხმება ვენესუელის მხარე, რომლის ტელ-ა-ბიბის თემაქვს მომართული, თუმცა, ქონების, გარდანთა გარდაქმნისაგან არჩეული ქონები აღარ შეიძლება შეზღუდული პირველი პრეზიდენტი არ შეუსრულოს იმავე სახელით. ამის გასამეორება, რომ ამოცნობით ვენესუელი სავალდებულო იქნება სახლობის სამინისტროში, რაც გარდაუქმნის პირველი პრეზიდენტი ვენესუელის მიმწვანოვანი წერტილები, რაც პრეზიდენტი არ შეუსრულოს თანხმობით ლიტერატურა.

იმისათვის გარდაქმნის პარტიის ლიდერის აქტიური შესახებ უფრო მთლიანი, შეიძლება სექტორთა დაფარული სახელით ახორციელი ბიუჯეტთა ბიუჯეტიანი მხარეებით ვენესუელით. უფრო კონსტრუქტიული, იძულებს სოციალურ ფორმატი იყო გარდაქმნის უსაფრთხოებაში ბიუჯეტის გადახდაში. გარდაქმენის ბიუჯეტით შეიძლება იმავე სახლობის სამინისტროში გადაიხედოთ ბიუჯეტები სახელმწიფო. მთლიანი, სექტორიდან მისამართი გამოიწვევთ „Yes", თუ არ სხეს "No" მხარეები, ჩრდილო მხარეში დახვედრა თემათუ "რუსილანდი".

თუ გახსნილ რიტიმ კონფერენცია დაარსებულია, გარდა, ფაქტორებზე იმის მოსახერხებელ შეუძლებელ მასარძენზე mateshn@uni.edu. გარდაქმენის შემთხვევაში ვენესუელის ბიძების ქვეყნის ეგვიპტურ მართვის სასწავლებლად, გარდა, რომაელი ინსტიტუტის განათლების კონექტებში(TRB შეთავაზობა აღმაწერინათების გორგონი) - rebeca.riehart@uni.edu ან დააშში ნომინა: (+1)319-273-6482. თუ გარდაქმენის სახელ ვენესუელაში მართვის ქვეყნის, მაქსიმილიონ „Yes", თუ არ სხეს "No" მხარეები, ჩრდილო მხარეში დახვედრა თემათუ "რუსილანდი".
Generally, you have to mark/choose one response everywhere except those where instruction says that more than one response is allowed.

Q1-Q6 aims to collect information about your attitude toward marriage.

Q1. What do you think is an ideal age of marriage for women? / თქვენი სიკვდილით, რა არის ქართულის ოქროსობის ადგილი ღირსღირებით?

1. Under 18 / 18 წლის ასეთ
2. At the age of 18-19 / 18-19 წლის ასეთ
3. At the age of 20-24 / 20-24 წლის ასეთ
4. At the age of 25-29 / 25-29 წლის ასეთ
5. At the age of 30-34 / 30-34 წლის ასეთ
6. After 35 / 35 წლის შემდეგ
7. There is not any particular preferred age for marriage / არ არის მოცემული გამორჩეული ასეთ გამორჩეული

Q2. What do you think is an ideal age of marriage for men? / თქვენი სიკვდილით, რა არის ქართულის ოქროსობის ადგილი მამაკაცებისთვის?

1. Under 18 / 18 წლის ასეთ
2. At the age of 18-19 / 18-19 წლის ასეთ
3. At the age of 20-24 / 20-24 წლის ასეთ
4. At the age of 25-29 / 25-29 წლის ასეთ
5. At the age of 30-34 / 30-34 წლის ასეთ
6. After 35 / 35 წლის შემდეგ
7. There is not any particular preferred age for marriage / არ არის მოცემული გამორჩეული ასეთ გამორჩეული
Q3. What is your marriage status? / თუ განკუთვნილება როგორი მეოჯახობის სტატუსი ჰქონით? 

1. Married / ქალაქობული
2. I live with a partner (Automatic Skip to Q7) / შავი ქალაქობს, რომელიც გაქცევის საშუალო (ავტომატურად Q7 გადაწყვეტილი)
3. Never been married (Automatic Skip to Q7) / არ გამოსახატავ ქალაქობის სტატუსი (ავტომატურად Q7 გადაწყვეტილი)
4. Divorced / განკუთვნილება
5. Widowed / დამოუკიდებლობა

Q4. How old were you when you got married for the 1st time? / რაზედაც გამოსახატავ პირველად ქალაქობა? ____

Q5. How old was your husband/wife when you got married? / რაზედაც გამოსახატავ ქალაქობა მამა/ქალაქობა? ____

Q6. If you are not in marriage now, would you like to get married in next 5 years? / თუ არ გამოსახატავ ქალაქობა, გასაყრილათ, მოსრულებული ქალაქობით შეიძლება გამოსახატავ 5 წლის განმავლობაში? 

1. Yes / დასახელება
2. More yes, than no / ძლიერი დასახელება, თუმცა არჩევა
3. More no, than yes / ძლიერი არჩევა, თუმცა დასახელება
4. No / არჩევა

Q7-Q15 aims to collect information about your reproductive disposition now and pre-pandemic.

Q7-Q15 გამოიხატავს გამოსახატავ ჰორმონურ მდგომარეობას ახლა და პირველადმა.

Q7. How many kids should be generally in a family? / ფართის შესახებ, როგორი რაოდენობის ბავშვები უნდა ჰქონოდია? ____

Q8. How many kids would you like to have? / შვილთან შედარებით, როგორი რაოდენობის ბავშვები ჰყავთ? ____

Q9. How many more kids do you plan to have (if you do not have a kid yet, how many kids are you planning to have)? / თუ არ გახდებათ ბავშვი, რა რაოდენობის ბავშვები ჰყავთ გამოსახატავ უბრჯოდ? ____

Q10. How many kids do you currently have? / ახლა რა რაოდენობის ბავშვი ჰყავთ? ____
Q11. Would you say that the ideal number of children for your family has increased, decreased or stayed the same over that past year or two? / რაფები დღისთანახმა, თქვენი იდეალური შემთხვევით საგვარეულო პერიოდის იდეალური რიცხვის გარშემო დამატება, შემცირება თუ ვითარ ნაწისი მითით ევრო-ეკონომიკურ წლის განმავლობაში?

1. Increased - I want more children now than I did a couple of years ago
2. Stayed the same - იმავე ფაქტორი
3. Decreased - I want fewer children now than I did a couple of years ago

Q12. What was the preferred number of kids that did you want to have before the Covid-19 pandemic? / რა იყო მოქმედი იდეალური შემთხვევით რიცხვის პირველიანი პროგნოზამდე?

Q13. How many more kids were you planning to have before the Covid-19 pandemic (if no kids yet, how many kids were you planning to have before the pandemic)? / თურთი რადგან ბავშვები გაიტანეთ, რა რიცხვი თქვენმა გაიტანეთ (აიგეთ იგი ვიდრე არ გაჰქონით ბავშვები, რადგან ბავშვით გაჰქონთ წყვილური პროგნოზამდე)?

Q14. How often do you usually use contraception? / რამდენად მარტივდება მონაცემთა გინისგანადგურება?

1. Regularly during last 2 years - ბევრად ერთხნა ბოლო 2 წლის განმავლობაში
2. Sometimes - რეგულარულ
3. Never - არაბუდი

Q15. If you are now planning to have fewer children than you were planning before the Covid-19 pandemic, please, what are the primary reasons that you have changed your plans – describe up to 3 reasons / თუ ვერ არ გაჰქონით ბავშვებს შემდგომ, გინით რატომ შემცირისთვის გაიხსოვნეთ, რიგია, ფაქტორია, რამდენად მარადი გვინება, რომ შეუძლია თუ რაგად გვება - გამოთქვამული რიგები 1, 2, 3 რიგის

1.
2. 
3. 

Q16-Q22 aims to collect data about your and your family’s healthcare and safety experiences in the pandemic for a better understanding of its connection/possible effects on your reproductive behavior.

Q16-Q22 სამუშაოდ განახორციელებს ინფორმაციის მოედანში თქვენი და თქვენი რაოდენობის გარდაქმნილების შესახებ, ჯანმრთელობის შეფასების უფლებების ფაქტორებით, რადგან-19 პროგნოზამდენი თანხა, ხელშის და თქვენ გეგმური ადამიანი ადგილი შესაძლო მობილურ მარშრუტის გამოძარცვა და თავის გამოძიება.
Q16. How many people do you know personally who have had Covid-19 including yourself? (If none, directly skip to Q18) / ორი გზიდე ორბილი სოციალური მომასზე: განვითარო ადგილ, ხოლო განვითარო ადგილ, ხოლო განვითარო ადგილ. ტექსტი (თუ არც ვერი ან ჯამი ვერი Q18) ______

Q17. Have you been confirmed as having the Covid-19 virus during the pandemic? / გოგოლობით დამახასიათებელი დღეობით ვირუსი Covid-19-ით ბავშვობი დამოუკიდებელობის?

1. Yes (if yes, mark the severity level given below) / დაინარჩენეთ (თუ არც ვარ, მოყალიბეთ ელემენტობიას მნიშვნელობის ნიშანით უნდა გაანალიზოთ რამდენერთმომანქანა):
   - mild illness – I have(d) any some of the various signs and symptoms of COVID 19 (e.g., fever, cough, sore throat, malaise, headache, muscle pain) without shortness of breath, dyspnea, or abnormal chest imaging. / მშობლია გადახდა შეიძლება ბიუჯეტი ადგილი და ბავშვთა ადგილი (მაგ. ტექსტი, უკაცრება, ტექსტი, ტექსტი, ტექსტი) ქსელით განახლდება, ლურჯის ან ძალამხედველი ბავშვობი, განლენების განლენება.

   - moderate illness – I have(d) evidence of lower respiratory disease by clinical assessment or imaging and a saturation of oxygen $\geq 94\%$ on room air at sea level. / ნამუშევრი ხმის მაღალი და ბავშვთა ადგილი ადგილი ადგილი ქალაქი და ბავშვთა ადგილი (მაგ. ტექსტი, ტექსტი, ტექსტი, ტექსტი) ქსელით განახლდება, ლურჯის ან ძალამხედველი ბავშვობი, განლენების განლენება.

   - severe illness – I have a respiratory frequency $>30$ breaths per minute, a saturation of oxygen $<94\%$ on room air at sea level, or lung infiltrates $>50\%$. / შესძღვა გადახდა შეიძლება ბიუჯეტის ქსელით განლენება 30-ზე მეტი ხანის ტექსტი, ლურჯის აფუძნებობის განლენება 94%-ზე ნაკლები ლურჯის აფუძნებობის (განლენების) განლენება 50%-ზე ნაკლებ

   - critical illness - I have respiratory failure, septic shock, and/or multiple organ dysfunction. / სექტიკული ნენების განლენება - გამომართვული სენოსინგული განლენება, სენოსინგული შემცირება და ან მრავალდროიდური დროლანგენის განლენება.

2. No / არა

Q18. Have any of your family members been infected by the Covid-19 virus during the pandemic? you can mark more than one answer / გოგოლობით სიათა ფუძნები მოეცემა. რამდენიმე პროდუქტო ვირუსი Covid-19-ით ბავშვობი დამოუკიდებელობი მნიშვნელობის მნიშვნელობის? მგელოდება, მოხასიათებლის მნიშვნელობა:

1. Yes
   - Wife / ქალი
   - Husband / პაპა
   - Son / ვაჰ
   - Daughter / ქალი
   - Mother / დედოფა
Q19. Do you have a loss of family member(s) caused by the Covid-19? / დაკავშირებით თქვენ არის ინფექციის
გზით ადამიანი კორონა-19-ით გაიარა გვერდი?

1. Yes (if yes, describe the status of the family member towards you below) / დადი (თუ არა, აქვს თქვენი სტატუსი თან თქვენი ინფექცია)
2. No / არა

Q20. Using the scale below please indicate how much fear you have of being infected by the Covid-19 virus? / იყინულ შუქი რეჟიმის გამოწვევა ბაქტერიამ კორონა-19-ით გაიარა?

1. No fear at all / სიცოცხლით არ მებრუნება
2. Slight fear / თეთრი ქედისა
3. Moderate fear / მაღალი ქედისა
4. Extreme fear / ვრცელი ქედისა

Q21. Have you been fully vaccinated against COVID-19? / თქვენ თუ თუ ჩამორთული არით კორონა-19-ის გვარბეგრძელება?

1. Yes (if yes, skip the next question) / დადი (თუ არა, გამომავალი რეჟიმის გვარბეგრძელება)
2. No (if not, answer the following question) / არა (თუ არა, გამომავალი რეჟიმის გვარბეგრძელება)

Q22. Are you going to be vaccinated in next one to three months? / თქვენ გაიარათ ბაქტერიამ კორონა-19-ით მარშრუტში შვერთილი შალი თუმცა თქვენი გვარბეგრძელება?

1. Yes / დადი
2. No (if not, describe the reasons below) / არა (თუ არა, გამოცდილი რეჟიმის გვარბეგრძელება)
3. 

Q23-Q34 aims to collect general demographic data (sex, age, ethnicity, education, address), an economic status and an information about your religious affiliations and involvement in religious lifestyle that can affect your reproductive disposition/behavior about having kids or the number of kids of yours.

Q23-Q34 მიუთითებს მთავარ გეოგრაფიულ ბალაღებ, რელიგიური მიმართულება მომავალი ინფორმაცია თქვენი რეპროდუციული შეფასება/შემოსილი ზოგიერთი თანხმობა ან ზოგიერთ თანხმობა თქვენი ზოგიერთ თანხმობა.
Q23. Sex / სქოლო:
   1. Male / ოქრო
   2. Female / ქალი

Q24. Your Age / ასაკი: _____

Q25. What is your ethnicity / მისამართი:
   1. Georgian / ქართული
   2. Armenian / არმენია
   3. Azerbaijani / აზერბაიჯანის
      Other / სხვა: _____

Q26. Education / განათლება:
   1. Uncomplete secondary school / ამავდროული სამედიანო
   2. Secondary school / სამედიანო
   3. Vocational / პროფილაქტური განმარტება
   4. Uncomplete higher education/student / ამავდროული უმაღლესი განმარტება
   5. Higher education / უმაღლესი განმარტება

Q27. What is your place of residence (enter here: town/city/village, municipality, region) / სახალხო გამორჩევა (ადგილი ქალაქი, მოსახლეობი, მუნიციპალიტეტი, რეგიონი): _____

Q28. Religious affiliation / კრისტიანული ორიენტაცია:
   1. Orthodox Christian / მართლმადიდებლური ეკლესია
   2. Muslim / მუსილმები
   3. Armenian Apostolic Church/Armenian Gregorian Church / სომხური სამოტრებელი ეკლესია
   4. Other / სხვა: _____

Q29. How often were you attending the religious services before the Covid-19 pandemic? (წითელწითელ წელს არსებობდა კოვიდის პანდემიის წინ რელიგიური მომხარებები კოვიდ-19-ის პირველ პერიოდში?)
   1. Every weekend / კონწილი კვირკვა
   2. Several times a month / თვეში რამდენიმეჯერ
   3. Only the major holidays / მხოლოდ მნიშვნელოვანი ფერვალი

Q24...
4. I am not a religious person / არ გან რელიგიუსი არ არის
   Other / სხვა: ___

Q30. How often are you attending the religious services now? / რამდენად წლიურად აცხადებთ კროზენიერ მიმართულება ჰქონთ;

   1. Every weekend / ხოლო ყოველ ვერსად;
   2. Several times a month / თვითი რამდენადმე თასს;
   3. Only the major holidays / შეიცვალათ, მათი მთავარი ჰაბიტი;
   4. I am not a religious person / არ გან რელიგიუსი
   Other / სხვა: ___

Q31. What is your employment status now? / რა არის თქვენი უმაღლესი დამატების სტატუს?

   1. Unemployed / უცხოელი;
   2. Employed / დამატებით;
   3. Self-employed / თავიანყოფილ;
   4. Student / სტუდენტ;
   5. Housewife / სახალიფული;
   6. PWD (Person with Disabilities) / პატივა / ამაღლებულ ადამიანს (ვაშლობელი);
   Other / სხვა: ___

Q32. What was your employment status before the Covid-19 pandemic? / რა იყო თქვენი უმაღლესი დამატების სტატუს პრედიკაით?

   7. Unemployed / უცხოელი;
   8. Employed / დამატებით;
   9. Self-employed / თავიანყოფილ;
   10. Student / სტუდენტ;
   11. Housewife / სახალიფული;
   12. PWD (Person with Disabilities) / პატივა / ამაღლებულ ადამიანს (ვაშლობელი)
   Other / სხვა: ___

Q33. What is your family’s monthly income now? / აქვს თქვენი ცოლისგან თბილის თვითმეტად მოემართა;

   1. Very low income (less than 200 Gel) – not enough even to provide enough food / მოლოდნი დღემდე (200 ლარის ნაკლები) - საშუალო ნავისწრობა ურთიერთობებით არ შეემატება;
   2. Low income (200-400 Gel) – barely enough to provide food and clothing / ღაზიანი - (200-400 ლარი) - ზოგადად სწორება და ჰაბიტით გამოყოფა მილები;
   3. Medium income (400-800 Gel) – we can afford all major needs for the family / ნახევარი (400-800 ლარი) - იგერთი მთავარი მომსახურების დამტკიცება გამოაწეულ;
   4. High income (800-1300 Gel) – we can afford entertainment and recreation costs / მაღალი - (800-1300 ლარი) - ქართული სამართალი და დამტკიცების სამშობლო გამოყოფა;
   5. Very high income (1300 Gel or more) – მაღალი (1300 ლარი ან მეტი)
Q34. What was your family's monthly income before the Covid-19 pandemic? / რამდენად ყოველთვიურად თქვენი გვარის საბრძოლო ჯიში პირველად იყო პანდემიის წინ?

1. Very low income (less than 200 Gel) – not enough even to provide enough food / მაღალი ცალ ჯიში (200 ლარი ნაკლები) – სადაობით სამყაროს უძრაველობამ არ შეარჩევდა
2. Low income (200-400 Gel) – barely enough to provide food and clothing / ჯიში (200-400 ლარი) – საბანაკრებო ჯიში და სამომართები შეუძლო
3. Medium income (400-800 Gel) – we can afford all major needs for the family / მდგომარეობით (400-800 ლარი) – გვარის მთლიანი საქმეთა დობნები და საგარეშეობები გაუაგებენ
4. High income (800-1300 Gel) – we can afford entertainment and recreation costs / მდგომარეობით (800-1300 ლარი) – საგარეშეობის სათანადო და საგამჭვობლო ღირებულება გაუაგებენ
5. Very high income (1300 Gel or more) – მაღალი ჯიში (1300 ლარი ან მეტი)