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# ECONOMY *and* SOCIOLOGY

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*founded in 1953*

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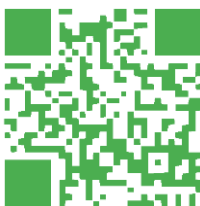


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## Aims and Scope

“*Economy and Sociology*” is a high-level scientific platform that discusses the most current economic and social issues at the regional and national levels. Over the years, the Journal has proven to be an academic publication that announces the results of original scientific research with added value to the development of economic and sociological science. By involving a large research community in a peer-review process, the Journal aims to provide an access to quality research papers covering theoretical and applied aspects of economics and sociology.

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# ON THE MOLDOVAN ECONOMY'S POTENTIAL OUTPUT AND OUTPUT GAP: EVIDENCE FROM THE HODRICK-PRESCOTT FILTER

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## SUMMARY

This paper introduces the notion of an economy's potential output, its output gap and its output gap rate, analyses the properties of the Hodrick-Prescott filter drawing from the studies in the literature, and proceeds to estimate and discuss Moldova's potential output, its output gap and its output gap rate utilising a methodology which can be used in other economies. The data for our empirical work comprise annual data on: 1. Moldova's nominal GDP and the annual rate of growth or real GDP over the period 2010-2022; and 2. The latest forecasts of these indicators for the period 2023-2026. Data earlier than 2010 are not comparable as they were compiled under a different methodology. We use this data set to generate a time series of the evolution of Moldova's real GDP in average prices of 2010 over the period 2010-2026. We apply the Hodrick-Prescott filter with the two different values of the filter's smoothing parameter suggested by the studies in the literature for the decomposition of annual data. As it is well-known that the estimates of the filter are sensitive to the value of the smoothing parameter, we use the average of the two estimates in order to calculate the Moldovan economy's potential output, output gap and output gap rate through time. Our calculations suggest that, over the period analysed, Moldova's potential output has grown at a modest rate which is not sufficient for the country to converge to the EU average and attain its EU aspirations. The paper concludes by discussing a number of recent economic developments in Moldova, the required policy response to attain Moldova's EU aspirations and areas for further work.

*Keywords:* Potential output, output gap, Hodrick-Prescott filter, Moldova

## INTRODUCTION

An economy's potential output, its output gap and its output gap rate are important indicators for macroeconomic analysis and surveillance and among the economic indicators to be included in the Economic Reform Programme document that all EU candidate countries are obliged to submit annually to the European Commission's Directorate-General for Economic and Financial Affairs. The aim of this paper is to analyse the notion of an economy's potential output and an economy's output gap, discuss the properties of the Hodrick-Prescott filter which is widely used in empirical work in economics in order to decompose an economy's output into a trend component and a cyclical component and provide estimates of Moldova's potential output, its output gap and its output gap rate by utilising primary Moldovan data and forecasts.

The paper Note is organised as follows: Section 2 introduces the notion of an economy's potential output and the concepts of an economy's output gap and its output gap rate. Section 2 discusses also the inter-relationship between an economy's output gap and inflation and notes briefly the various methods used to estimate the output gap in an economy and their relevance to the case of the Moldovan economy. Section 3 introduces the Hodrick-Prescott filter and analyses its properties as well as its advantages and weaknesses drawing from

the available studies in the economic literature. Section 4 introduces the primary data for our empirical work which comprise annual National Accounts data on: 1. the evolution of Moldova's nominal GDP and the annual rate of growth or real GDP over the period 2010-2022 as compiled by Moldova's National Bureau of Statistics; and 2. The forecasts of these two economic indicators for the period 2023-2026 produced by the Ministry of Economic Development and Digitalization. It is notable that historical data earlier than 2010 are not comparable as they were compiled under a different compilation methodology. Section 4 uses this data set to generate a time series of the evolution of Moldova's real GDP in average prices of 2010 over the whole period 2010-2026. Section 5 proceeds to use the Hodrick-Prescott filter with the two different values of the filter's smoothing parameter suggested by the studies in the economic literature for the decomposition of annual data. As it is well-known that the estimates derived by the use of the Hodrick-Prescott filter are sensitive to the exact value of the smoothing parameter used, we use the average of the two estimates in order to calculate the Moldovan economy's potential output, output gap and output gap rate through time. Section 6 concludes by discussing briefly a number of recent economic developments in Moldova, the required policy response to attain Moldova's EU aspirations and areas for further work.

## ON AN ECONOMY'S POTENTIAL OUTPUT, THE OUTPUT GAP AND THE OUTPUT GAP RATE

By an economy's potential output we refer to the highest sustainable level of an economy's real Gross Domestic Product (GDP).

The concept of an economy's potential output is closely linked to issues of sustainability. In general an

economy's output is produced through the combination of the economy's factors of production (such as its land, labour, capital, and entrepreneurial ability). The issue of sustainability arises because of the existence of natural or institutional constraints. There are clearly limits to:

- the number of workers and the total hours that these workers can work efficiently in an economy;
- the quality and sustainability of the capital equipment used through time in an economy; and
- the entrepreneurial and organizational skills that turn the economy's inputs into output.

Potential output is linked to the notion of an economy's so-called Non-Accelerating Inflation Rate of Unemployment (NAIRU). If the actual unemployment rate in an economy falls below the NAIRU then inflation tends to accelerate, while if the actual unemployment rate remains above the NAIRU, then inflation tends to drop. If the economy is at its potential output then the unemployment rate is at its NAIRU level.

An economy's output gap is defined as the difference between the economy's actual GDP minus the economy's potential GDP.

If actual GDP > potential GDP then the economy's

output gap is positive; the economy operates at a level higher than its sustainable level and, other things being equal, inflationary pressures intensify. A positive output gap is called an "inflationary gap".

If actual GDP < potential GDP then the economy's output gap is negative; the economy operates at a level lower than its sustainable level. A negative output gap is called a "deflationary gap". Inflation, other things being equal, has a tendency to drop.

Finally an economy's output gap rate is defined as the economy's output gap divided by the level of its potential GDP, i.e. by the relationship:

$$\frac{(GDP_{actual} - GDP_{potential})}{GDP_{potential}}$$

It should be stressed that an economy's potential output is an unobservable variable which cannot be measured directly. It can only be estimated through the use of various estimation methods. These estimation methods include:

- Production function methods, which link an economy's output to its factor inputs. It should be noted here that, for the case of the Moldovan economy, the use of the production function method to derive estimates of the Moldovan economy's potential output is hampered by the non-availability of reliable data on the Moldovan economy's stock of capital through time.
- Statistical methods, of which the most commonly used in empirical macroeconomic analysis is the Hodrick Prescott filter.

## ON THE PROPERTIES OF THE HODRICK-PRESCOTT FILTER

The Hodrick-Prescott (1997, 1981) filter is widely used in empirical macroeconomic analysis to decompose a given time series,  $y_t$  into:

1. a trend component,  $\tau_t$ ; and
2. a cyclical component  $c_t$ .

Formally the Hodrick-Prescott filter fits a trend component to the data so as to minimise the following expression:

$$\sum_{t=1}^T [(y_t - \tau_t)]^2 + \lambda \sum_{t=2}^{T-1} [(\tau_{t+1} - \tau_t) - (\tau_t - \tau_{t-1})]^2$$

Where  $y_t$ ,  $\tau_t$  are the time series and the fitted trend component respectively, and  $\lambda$  is a positive parameter.

In the above expression:

- The first term is the sum of the squared deviations between the actual series and the trend component.
- The second term penalizes variations in the growth rate of the trend component. The parameter  $\lambda$  controls the smoothness of fitted trend: in particular as the value of  $\lambda$  approaches infinity, the fitted trend component approaches a linear trend.

The Hodrick-Prescott filter is a special case of a smoothing spline Page and Trindale (2010). With regard to the exact value of  $\lambda$  to be used in empirical work, the seminal paper of Hodrick and Prescott (1997) suggested the value of 1600 when working with quarterly data, and the value of 14400 when working with monthly data. Regarding annual data the value of 6.25 is frequently used following the analysis of Ravn and Uhlig (2002). Alternatively the paper by Backus and Kehoe (1992) suggests that the value of 100 should be used for empirical work with annual data.

As Kydland and Prescott (1990) note intuitively the trend fitted by the application of the Hodrick-Prescott filter may be thought of as the trend that a researcher would draw by hand through the data plot.

The main advantage of the Hodrick-Prescott filter is its simplicity, which also explains its wide use in applied empirical work: all that is required is the actual time series itself.

The weaknesses of the Hodrick-Prescott filter include the following:

1. Empirical results critically depend upon the value of the smoothing parameter,  $\lambda$ ;
2. Studies in the literature have indicated that the Hodrick-Prescott is sub-optimal at the endpoints of the time series analysed [Baxter and King (1999)]. As Mise, Kim and Newbold (2005) emphasised the Hodrick-Prescott filter is characterized by a high end-sample bias. In order to mitigate this end-of-sample bias in empirical work using the Hodrick-Prescott filter, the researchers frequently include projections along with all the available historical data so as to extend the time series under analysis; and
3. Being a purely statistical method the Hodrick-Prescott filter cannot capture or reflect actual economic processes through time, including the ongoing structural changes in the economy.

The economy's output gap and/or the Hodrick-Prescott filter have been discussed in a number of earlier studies of the Moldovan economy. The study by Pârțachi and Mija (2011) assessed the response of monetary policy to the economy's output gap. The paper by Jaba et al (2014) used the Hodrick-Prescott filter to analyse the impact of the economic crisis on the money transfers

remitted through the banking system of Moldova. The paper by Pelipas, Kirchner and Weber (2015) provided an assessment on whether the output gap is a useful indicator for the conduct of monetary policy in Moldova. The article by Mija (2019) analysed the use of a number of econometric methods including the Hodrick-Prescott filter to assess the inflation pressures in the economy.

## PRIMARY DATA FOR THE EMPIRICAL WORK

The primary data for our empirical work comprise annual National Accounts data on:

1. The evolution of Moldova's nominal GDP and the annual rate of growth or real GDP over the period 2010-2022 as compiled by Moldova's National Bureau of Statistics. These indicators are compiled following the 2008 System of National Accounts methodology and exclude the Transnistrian region. It is notable that historical data earlier than 2010 are not comparable with this series as they were compiled under a different compilation methodology; and
2. The forecasts of the above-mentioned two economic indicators for the period 2024-2026 produced by the Ministry of Economic Development and Digitalization. This Ministry is the institution responsible for the macroeconomic forecast underpinning Moldova's Annual Budget and Moldova's Medium-Term Budget Framework.

The historical data are augmented by the forecasts in order to extend our sample of observations for our analysis and also in order to mitigate the end-sample bias of the Hodrick-Prescott filter.

The above-mentioned data are presented in the first two columns of Table 1 below. Column 3 of Table 1 uses the data in the first two columns to calculate estimates rounded to the first decimal of the evolution of Moldova's real GDP in average prices of 2010.

**Table 1**

*Estimates and forecasts of the evolution of nominal GDP, the annual growth of real GDP and real GDP in average prices of 2010*

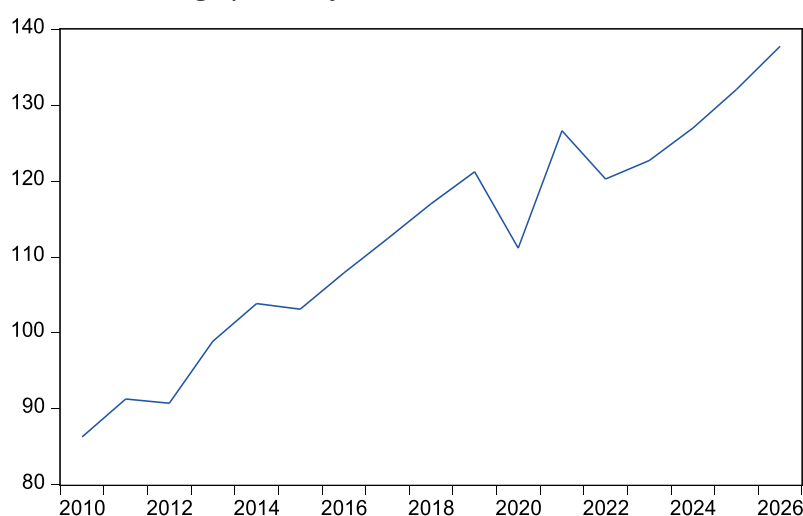
	<b>GDP nominal</b> <i>MDL billion, current prices</i>	<b>Annual growth rate of real GDP</b> <i>%</i>	<b>GDP real</b> <i>MDL billion in prices of 2010</i>
2010	86,3	7,1	86,3
2011	98,8	5,8	91,3
2012	105,5	-0,6	90,8
2013	119,5	9,0	98,9
2014	132	5,0	103,9
2015	146,7	-0,7	103,1
2016	159	4,6	107,9
2017	176	4,2	112,4
2018	189,1	4,1	117,0
2019	206,3	3,6	121,2
2020	199,7	-8,3	111,2
2021	242,1	13,9	126,6
2022	274,2	-5,0	120,3
2023	312,4	2,0	122,7
2024	342,1	3,5	127,0
2025	378,3	4,0	132,1
2026	418,4	4,3	137,8

*Source: National Bureau of Statistics, Ministry of Economic Development and Digitalization and own calculations.*

The data in Column 3 of Table 1 are reproduced in Graph 1:

**Graph 1**

*The evolution of real GDP in average prices of 2010*



*Source: Own calculations on historical data compiled by the National Bureau of Statistics for 2010-2022 and the forecasts of the Ministry of Economic Development and Digitalization for 2023-2026.*

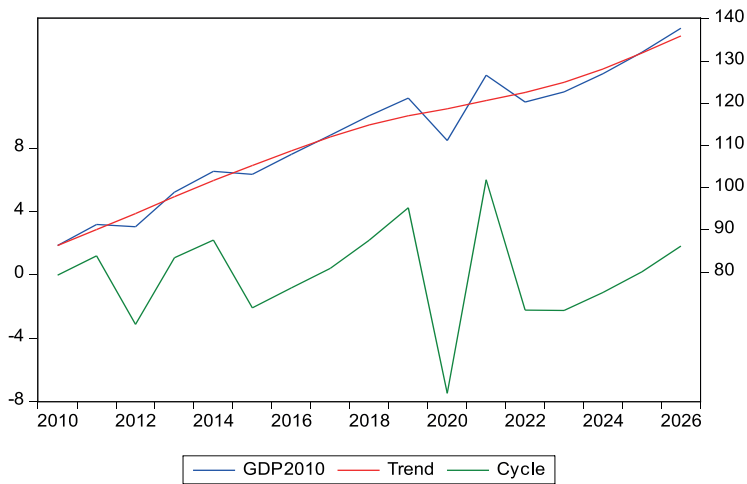
## EMPIRICAL ESTIMATES

Graphs 2 and 3 below portray graphically the Hodrick-Prescott decomposition of the trend and cyclical component of Moldova’s real GDP series presented in

column 3 of table 1 with the two values of the smoothing parameter  $\lambda$  suggested in the economic literature, namely  $\lambda=6.25$  and  $\lambda=100$ .

### Graph 2

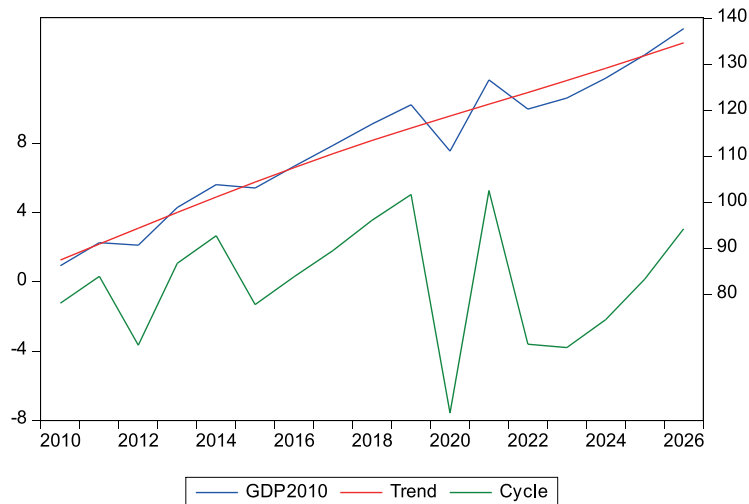
Hodrick-Prescott decomposition of trend and cycle with  $\lambda = 6.25$



Source: EViews generated estimates and graph

### Graph 3

Hodrick-Prescott decomposition of trend and cycle with  $\lambda = 100$



Source: EViews generated estimates and graph

Since the empirical estimates generated by the Hodrick-Prescott filter are sensitive to the exact value of the smoothing parameter  $\lambda$  we use the average of the two

estimates generated by placing  $\lambda=6.25$  and  $\lambda=100$  in order to calculate estimates of the Moldovan economy’s output gap and its output gap rate.

The results of our empirical work are summarized in Table 2.

**Table 2**

*Selected economic indicators*

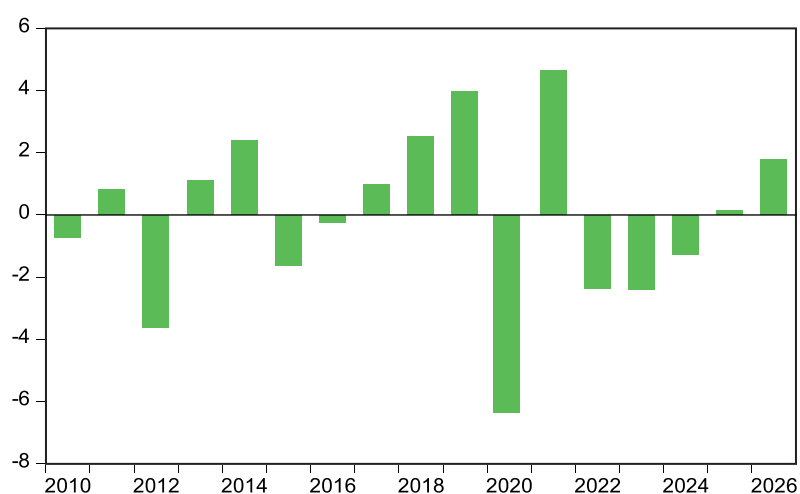
	<b>GDP real</b> <i>MDL billion</i>	<b>HP trend</b> $1\lambda = 6.25$	<b>HP trend</b> $2\lambda = 100$	<b>HP trend</b> <i>average</i>	<b>Output gap</b> <i>MDL billion</i>	<b>Output gap</b> <i>rate %</i>
<b>2010</b>	86,3	86,3	87,5	86,9	-0,6	-0,7
<b>2011</b>	91,3	90,1	91,0	90,5	0,8	0,8
<b>2012</b>	90,8	93,9	94,4	94,2	-3,4	-3,6
<b>2013</b>	98,9	97,9	97,8	97,8	1,1	1,1
<b>2014</b>	103,9	101,7	101,2	101,4	2,4	2,4
<b>2015</b>	103,1	105,2	104,4	104,8	-1,7	-1,6
<b>2016</b>	107,9	108,7	107,6	108,2	-0,3	-0,3
<b>2017</b>	112,4	112,0	110,6	111,3	1,1	1,0
<b>2018</b>	117,0	114,9	113,5	114,2	2,9	2,5
<b>2019</b>	121,2	117,0	116,2	116,6	4,6	4,0
<b>2020</b>	111,2	118,7	118,8	118,7	-7,5	-6,4
<b>2021</b>	126,6	120,6	121,3	121,0	5,6	4,7
<b>2022</b>	120,3	122,5	123,9	123,2	-2,9	-2,4
<b>2023</b>	122,7	125,0	126,5	125,7	-3,0	-2,4
<b>2024</b>	127,0	128,1	129,2	128,7	-1,7	-1,3
<b>2025</b>	132,1	131,9	131,9	131,9	0,2	0,1
<b>2026</b>	137,8	136,0	134,7	135,3	2,4	1,8

*Source: Own calculations on historical data compiled by the National Bureau of Statistics for 2010-2022 and the forecasts of the Ministry of Economic Development and Digitalization for 2023-2026*

Graph 4 below illustrates the evolution of the output gap rate over the whole period.

**Graph 4**

*The estimated evolution of the output gap rate*



*Source: Own calculations on historical data compiled by the National Bureau of Statistics for 2010-2022 and the forecasts of the Ministry of Economic Development and Digitalization for 2023-2026*

It is notable that our calculations suggest that:

- Over the period Moldova's potential output grew by an average cumulative annual growth rate of slightly over 2,8 %. While this growth record is not insignificant, it is not sufficient for a successful convergence to the EU's average in line with Moldova's European aspirations.
- The largest two deviations in Graph 4 occurred in: (1) the year 2020 when the economy was adversely affected by the COVID-19 pandemic shock (registering an output gap rate estimated at -6,4%); and (2) the year 2021 when the economy rebounded strongly after the significant real GDP drop of 2020 (registering an output gap rate of 4,7 %).
- The current cyclical position of the Moldovan economy is below its potential output. The latest forecast by the Ministry of Economic Development and Digitalization foresees that real GDP will register sustained growth over the period 2023-2026. However, our calculations indicate that the negative output gap of the Moldovan economy will close only in 2025, while in 2026 the output gap rate will be around 1,8 %.

We will examine the reliability of the above estimates in the concluding section below which provides also a brief discussion of recent macroeconomic developments in

the Moldovan economy and the required policy response to attain Moldova's EU aspirations.

## DISCUSSION AND CONCLUSION

In this paper we have provided estimates of Moldova's potential output, its output gap and its output gap rate utilising a methodology which can be readily used for other countries.

It is notable that over the recent past the Moldovan economy has been subjected to several external shocks. It is well known that these shocks include droughts, the adverse consequences of the COVID-19 pandemic, the significant acceleration of inflation driven by the growth in the international prices of food and energy, the disruptions to the Moldovan economy due to the war in Ukraine and the energy crisis. Given the relatively small sample of the observations we have analysed and the recent volatility in the Moldovan economy, our calculations should be considered indicative and interpreted cautiously. However our analysis provides

firm evidence of the need to accelerate the Moldovan economy's potential output growth in order for the country to be able to attain its EU aspirations. This is likely to require structural reform measures aiming at stimulating the Moldovan economy's potential output.

A natural area for further work will be to use the methodology in this paper in order to update the estimates of Moldova's potential output, its output gap and its output gap rate as time passes by and/or the forecasts of real GDP are updated as these three indicators are important variables for macroeconomic analysis and surveillance. Another area for further work is the use of the Hodrick-Prescott filter on the time series comprised of quarterly real GDP estimates.

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## FOR A SOCIOLOGY OF THE MEDITERRANEAN

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## SUMMARY

The great metamorphosis of the main sociological factors challenges us to abandon the presumption of colonization and the paradigm of the clash of civilizations and invites us to become aware of the changing demographic, political, economic, and cultural reality, and commits us to adopt a new analytical paradigm to understand and manage the transformation. The article proposes a synthetic analysis of this change, starting with statistical data on the migration of populations from the poorest countries on Earth to the richest ones. The analysis focuses on what is happening in the vast area of the Mediterranean. The history of the Mediterranean, this is the hypothesis put forward in the article, could help us to reflect innovatively on the demographic and cultural dynamics that are taking place in a particularly significant way. The reason for which it is hypothesized that the Mediterranean could be the privileged social place where we can reflect on the metamorphosis we are experiencing lies in the long tradition of welcoming diversity and in the capacity for the coexistence of religions, cultures, and civilizations that, over the centuries, have been the force thanks to which the whole world has been dominated, despite the clashes that historiography has unquestionably shown us. The article shows the important commitment of the leaders of the different world religions in generating spaces for encounters and dialogue between cultural diversities that cannot be analyzed within the paradigm of confrontation but require to be understood within the paradigm of confrontation and responsible coexistence. The work done so far clearly shows the possibility of dialogue between diversities, as well as pointing the way forward to socialize all different cultures to be together, without clashing for dominance; in this task, the reflections of Pope Francis and Edgar Morin on the concepts of brotherhood and fraternity appear particularly useful.

**Keywords:** *Mediterranean, sociology, culture, civilization, peace, innovation*

## INTRODUCTION

To reflect on the sociology of the Mediterranean means, first of all, to recognize the particular centrality of this sociocultural space, in which some of the most important visions of the world and of life, to which we still owe much, have been sedimented; it also means to recognize the efforts made by the Mediterranean peoples who, despite differences and inevitable clashes, have made possible the coexistence of multiple value constellations and made the best use of the advantages generated by ethnic and cultural *blending*. The Mediterranean is a historic space where different cultures were born and different civilizations took root: think at least of Phoenician, Egyptian, Cretan, Mycenaean, Roman, Carthaginian, and Arab. Along the way, a special role was played by religions: from the original polytheistic (in particular, Greek and Romans) to the later monotheistic (Jewish, Christian, and Islamic). On this sea in the middle of the lands (etymological meaning of Mediterranean) there have been clashes and encounters, which have left traces that are still alive.

The invitation to reflect on the Mediterranean as a complex social space is justified by the recent displacements of people seeking a decent life outside the borders of their home countries and hoping to find/build it in one of the richest areas on Earth. Without knowing the magnitude of the displacements, their internal composition, and the real aspiration of those emigrating, this phenomenon is perceived as an invasion aimed if not in intention, at challenging, undermining, and defeating the Judeo-Christian civilization to which the wealthier countries refer.

The Catholic Church – and the other religions based in Mediterranean Europe – concerned with the phenomenon are urging, first and foremost their faithful

believers, to clean up the widespread and dangerous cognitive vision, which leads to confusing reality and truth with counterfactual narratives and perceptions falsified by unjustified fears. But it has long been known that «A great deal of intelligence can be invested in ignorance when the need for illusion is deep» (Bellow, 1976, 127).

For some years now, sociology has been reflecting on social change in terms of metamorphosis (Beck, 2016, 32). In this new perspective, the processes of globalization can no longer be understood in terms of colonization, but must be understood in terms of cooperation and collaboration between diversities that are already inevitably in contact. If in the colonization phase, movements started from the richest and most technologically advanced countries and headed toward the poorest and least technologically developed ones, the reverse is happening in recent decades. This time the wealth moving is not that of capital and goods, but it is that of human capital and people (who demand respect and recognition and who cannot be stopped either by armies or defensive laws).

Pope Francis has shown that he has understood this metamorphosis very well, to the point of sub-linearizing, on more than one occasion, that we are living in an age of transformation and not in times of change (Pope, 2019b). Within this conviction, he wrote *Laudato si'* (May 24, 2015) and *Fratelli tutti* (October 3, 2020), addressing, in the first, the urgent transformation of lifestyles that are destroying creation and exploiting the poorest people on earth, and asking, in the second, that we all feel like brothers and sisters, beyond geographical boundaries and social differences (origin, nationality, colour and religion). If one were to read the two Encyclicals from a

sociological perspective, one could say that Pope Francis calls for a revision of the dominant *weltanschauung* and a restructuring of behaviour toward the environment, toward communities, toward people, and even toward oneself. To see oneself differently means to understand transformation and to place oneself in the condition to change. In this sense, change does not mean renouncing the cultural heritage to which one has been socialized (the set of processes of personal and social identity formation); it means, conversely, changing the contents of the socialization processes themselves (e.g., no longer

the right to exploit creation for the exclusive economic interest; no more competing to excel over others; no more individualism and supremacism; no more growing social inequality; no more legitimization of mechanisms of class closure and social exclusion; no more the logic of money and profit). As we shall see later, it is a matter of changing in terms of civilization (the competitive and destructive content) while preserving the best of collective cultural values (the collaborative and innovative content).

## SOCIO-DEMOGRAPHIC REALITY

A first important factor for reflection concerns demography: in this field, numbers give a first measure of reality. According to the statistical data made available by the various UN reports, the world is experiencing a decisive demographic change. The populations of the

richest countries on the planet have decreasing birth rates, while those of the poorest countries (Africa, especially) and non-Western countries (Asia, specifically) have increasing birth rates. The result of this dynamic is well represented by the data in Table 1.

**Table 1**

*Population trends, by Continents; UN source (values expressed in millions and percentages)*

Regions	1800	1900	2000	2023	2050
<b>Europe</b>	203 20.8	408 24.7	729 12.2	750 9.6	628 7.0
<b>Nord–America</b>	7 0.7	82 5.0	307 5.1	370 4.7	398 4.4
<b>Latin–America</b>	24 2.5	74 4.5	511 8.5	650 8.3	809 9.1
<b>Asia</b>	635 64.9	947 57.4	3.634 60.8	4.700 60.1	5.268 59.1
<b>Africa</b>	107 10.9	133 8.1	767 12.8	1.300 16.6	1.766 19.8
<b>Oceania</b>	2 0.3	6 0.4	30 0.5	43 0.5	46 0.5

Source: [https://www.un.org/en/development/desa/population/publications/pdf/popfacts/PopFacts\\_2011-2.pdf](https://www.un.org/en/development/desa/population/publications/pdf/popfacts/PopFacts_2011-2.pdf)

## DATA SOURCES AND USED METHODS

The data in the Table allow us to make some observations:

1. to date, the Asian population accounts for 60 percent of the world's population and the African population for about 17 percent; by 2050, together they will come to account for 80 percent of the total, when Europe and North America will account for only 11.4%;
2. in 1900, the century in which the welfare society was structured, albeit majority Asian population lived in widespread poverty (in the period 1982-2012, the poverty rate in India fell from 60% to 22%, and in China it fell from 84% to 13%);
3. in less than a quarter of a century, from 2000 to 2023, Africa's population increased from 767 million to 1.3 billion, and is projected to reach 1.766 billion by 2050;
4. in the same time frame, the European population has grown by only 20 million and, nevertheless, will fall to 628 million.

To enrich the demographic picture it may be useful to keep in mind that the average age of the European population is 43 years (the highest in the world), while in African countries it is 20 years (the lowest in the world); in North American countries the average age is 39 years and in Central and South American countries it is 31 years; in Asian countries the average age is 32 years. In other words, our Continent and the West have an old population.

One has to wonder whether such a demographic dynamic—which makes one imagine the shifting of the axis of influence from old Europe to a world for too long kept on the margins of economic, political, cultural and religious interests can be overlooked in the analysis of factual reality and whether it should not, instead, prompt reflection on how to stand together and how to find collaborative, cooperative and innovative solutions, if only to reduce the destructiveness of the inevitable environmental impact of such socio-demographic growth.

Therefore, one must ask oneself:

- a. will it ever be possible to stop/change this situation democratically;
- b. if the population of the poorest countries grows at these rates, who and how will be able to meet the connected demand for essential goods;
- c. if contact between different cultures and value constellations occurs at such a high rate, what-if any outcome can be imagined in the absence of dialogue.

Another factor challenging resistance to metamorphosis concerns trends in wealth production and distribution (GDP). After a very long European and North American dominance (the U.S. economy has excelled since 1871), the area of greatest wealth produced is becoming Asia: China, already the second economic power, despite the difficulties due to law enforcement policy adopted against the covid-19 pandemic, will become the first economy in the world between 2030 and 2036; in that same period, India will become the third largest economy in the world, overtaking first Germany and then Japan. Africa continues to present itself as the poorest area on Earth, and future forecasts are not optimistic. Yet, the world's wealth, which rose from 1.38 trillion in 1960 to 33.85 trillion in 2000 and 101.00 trillion in 2022, will come to double in 2037, touching 206 trillion (see: [WorldBank, 2023](#); [Cebr, 2023](#)). Thus, the world is not getting poorer, so any argument aimed at justifying the need to keep out, from the distribution of global wealth, the last people at the table of wealth, lest the richest people be forced to reduce their portions. In sociology, this strategy of giving even more to those who already have much and taking

away, even what little they have, from those who already have very little is referred to as the *St. Matthew effect* ([Merton, 1968](#)).

Using common-sense language, it is possible to distribute in a less unequal manner the wealth that has already been produced and, at least, that which is expected to be produced in the coming years. After the long feudal and quasi-feudal period of the monarchies (where privilege was justified by an alleged will of God and a not always realized good of the people), the inequality of the industrial age has been justified by the individualistic property principle and, more recently, by the exclusionary property principle of knowledge (with patents and licenses, which keep out the population poorer). For religions, as we read in the documents they are endorsing in these last decades, such inequality is no longer sustainable (moreover, the *St. Matthew effect* would give no hope). Less still is the mechanism of the zero-sum society sustainable ([Thurow, 1980](#)), in which the costs have been passed on to the poorest and least autonomous countries in political choices, coercing

populations living in poverty either to emigrate (these are the economic emigrants) or to live in permanent hardship (these are the ones who adapt to an indecent society)<sup>1</sup>.

A further factor in the metamorphosis pertains to digitization and the spread of the world wide web, which have made the entire world a kind of “global village” (to use a well-known expression of sociologist Marshall McLuhan), within which cultural diversities—although geographically distant—come into contact, recognize each other, and demand respect. In 2022, 67.1 percent of the world’s population (5.34 billion people) owned a smartphone and 62.5 percent (just under 5 billion) had a connection to access the web; 58.4 percent (4.62 billion) were active social media players<sup>2</sup>. The digitization of production processes and computer-mediated communication make possible the virtuous collaboration of distant economic systems and the ideational and pragmatic sharing between unrelated people and social groups (I refer to the functional mechanisms of communities of practice and networks of loose social

ties). The sense of belonging that is generated within the new digitized contexts has little to do with traditional mechanisms, which essentially required direct contacts and synchronic spatial practices.

This means that one can belong to the Mediterranean context without living there in the geographic space that defines it. It also means that it is easier to educate oneself to hear the demands for recognition from the distant, acting in a shared context culturally and, for believers, religiously.

Here, too, systemic inequality shows its effects: one-third of the world’s population (2.7 billion people) still does not have access to the Web; while in high-income countries 92 percent of the population is connected, in low-income countries is only 26 percent; the highest percentage is in Europe (with 89 percent) and the lowest is in Africa (with 40 percent), as shown the ITU (2022a; 2022b). The causes of the digital divide lie in the economic unaffordability of infrastructure costs, network access, and the acquisition of the necessary devices.

## THE MEDITERRANEAN CIVILISATION

Having reasoned in terms of a clash of civilizations (Huntington, 1993; Huntington, 1996) has channeled thinking along a substantially sterile path, because it has facilitated the spread of a tunnel vision (think of the rhetoric of invasion, politically exploited to legitimize measures of refolement and to justify inevitable failures) that has prevented consideration of such determinant variables as: (1) de-natality and aging in Western countries; (2) territorial contiguity, which makes border closures impossible; (3) globalization of markets, which necessitates the free movement of men and women as well; and (4) the failure of attempts to export democracy, without caring about the inevitable and significant revision of different cultural heritages and a substantial rethinking of wealth distribution mechanisms.

Delegitimizing differences has facilitated deafness toward new demands for recognition and has found in the storytelling of invasion and clash of civilizations an effective strategy for thinking in defensive terms, on the one hand, and in self-accusatory mode, on the other hand. To think that European civilization must be defended at all costs, without admitting revisions of its modernized and technologized lifestyles, generates a climate of continuous confrontation; on the other

hand, to think that that same civilization has been guilty of all the nefarious deeds in human history, produces a generalized weakening of the cornerstones of the great culture sedimented over the centuries and a renunciatory attitude toward the great technological advances generated by scientific knowledge in the last Western centuries. Another strategy needs to be pursued, characterized by critical reflection and not by the renunciation tout court of the West (after all, in the Mediterranean those who move do so to become Western or, at least, to enjoy the advantages of being Western).

As historical research has abundantly shown, the Mediterranean is the sea where cultures and civilizations have hybridized and enriched each other to the point of producing great and lasting fruits. The Mediterranean system has generated high cultural elaborations and valuable deposits of scientific knowledge, both of which are the fruit of the peaceful encounters between native intelligence and intelligence from other countries and cultures (see Braudel, 1949; Braudel & Duby, 1999; Abulafia, 2012); it is decidedly reductive and ungenerous to speak only of the damage caused and, consequently, to legitimize the alleged collapse of Mediterranean and Western civilization in general. It would be more just and credible to reflect on the historical capacity to be together

<sup>1</sup> An indecent society humiliates the people who live in it, portraying them as not even worthy of basic human rights and freedom of movement (for a proper analysis, I refer to Margalit, 1996).

<sup>2</sup> It is useful to know that the annual growth rate of smartphone owners is 1.8% (95 million), that of connections is 4.0% (192 million) and that of social media users is 10.1 per cent (424 million new social players); source: <https://wearesocial.com/it/blog/2023/01/digital-2023-i-dati-globali/>

with others, the ability to exchange the best. The current situation, to which Pope Francis invites us to look, cannot be understood by re-manifesting within the rhetoric of confrontation and invasion, but must be framed within a much more challenging relational perspective, aimed at the meeting of differences and mutual recognition, with the awareness of having to “square the circle” (as it has been written: *spes contra spem*)<sup>3</sup>.

Squaring the circle means the task of drawing, with ruler and compasses, a square that has the same area as a circle; metaphorically, it is the attempt to hold differences together. Ralf Dahrendorf (1996) wrote a valuable essay on the task of squaring the circle, wanting to show the difficulties in holding together economic growth, social cohesion, and freedom. For the German scholar, the task of squaring the circle falls to the Western world and, first and foremost, to Europe. The solution requires the adoption of creative strategies and the

commitment of all territorial intelligences (especially, but not only, those of goodwill). European politics bears the greatest responsibility in the search for the solution: it must assume responsibility for devising and sustaining a welcoming institutional framework that is at the same time respectful of the Westernized context in which the Mediterranean is the undisputed protagonist.

To remain engaged in devising measures to counter migratory flows is too small thing<sup>4</sup>.

For all that, the Catholic Church and Pope Francis invite to reflect also theologically on the context of the Mediterranean certainly not to throw overboard the great theology produced within it, but to open it up and compare it with other theologies and seek what unites and not what divides. To succeed in this would be a great squaring of the circle.

## MIGRATIONS OF PEOPLE AND CULTURE

To articulate meaningful reflections, it may be helpful to know that 15 of the world's 20 richest countries are European and that the 15 poorest countries are African (and largely belong to West Africa). The Eleventh Report of the International Organization for Migration states that «the number of international migrants has grown from 84 million globally in 1970 to 281 million in 2020, although when global population growth is taken into account, the proportion of international migrants has only increased from 2.3 percent to 3.6 percent of the world's population». This indicates that almost all the world's population (96.4 percent) reside permanently in the country where they were born and from which they leave for temporary, longer, or shorter trips, for tourism, study or work<sup>5</sup>.

It is also interesting to know that the global volume of migrants' remittances has risen from 126 trillion in 2000

to \$702 trillion in 2020 (despite the covid-19 crisis, which caused the value to drop by 2.4 percent). This indicates that migrants are working and producing for the countries of migration and, with remittances, helping their families and the economies of their countries of origin. Perhaps the latter dynamic could easily be seen as the most effective strategy referred to as “helping them at home”.

As a result of certain journalistic information and biased political misinformation, there is a tendency to think that there is only one way of entry into Europe and that Italy is the country most affected by the phenomenon; in reality, as official ministerial documents inform, there are different routes followed by migrants and our country is not the only port of call. The routes are (Ministry of Foreign Affairs and International Cooperation, 2022):

1. the central Mediterranean, with arrivals by sea to Italy and the island of Malta; this route is traveled by people mostly from sub-Saharan Africa and North Africa, transited via Tunisia and Libya (since 2020, the number of people using this route has grown significantly);
2. the Eastern Mediterranean, with arrivals in Greece, Cyprus and Bulgaria; traveled largely by migrants from Syria (since 2016 these flows have significantly reduced, following EU-Turkey cooperation agreements);

<sup>3</sup> «The Mediterranean is precisely the sea of *meticcio* [cross-breeding] – if we do not understand cross-breeding, we will never understand the Mediterranean –, a sea that is geographically closed with respect to the oceans, but culturally always open to encounter, dialogue and mutual enculturation. Nevertheless, there is a need for renewed and shared narratives that – starting from listening to the roots and the present – speak to people's hearts, narratives in which it is possible to recognise oneself in a constructive, peaceful and hope-generating manner» (Pope Francis (2019a); see also: Bongiovanni, Tanzarella (eds.) (2019).

<sup>4</sup> As a result, the Mediterranean has become the largest mass grave on planet Earth: 26,000 migrants have died in the last 10 years, according to the International Organisation for Migration (IOM) Report, data as of 2022. For evidence of Europe's commitment to countering the flows, see the institutional page: <https://www.consilium.europa.eu/it/policies/eu-migration-policy/central-mediterranean-route/#action>

<sup>5</sup> Source: <https://worldmigrationreport.iom.int/wmr-2022-interactive/>

3. the Western Mediterranean, with irregular arrivals in Spain, both by sea and land, from the enclaves of Ceuta and Melilla (North Africa); travelling by this route by migrants proving mainly from Algeria and Morocco, but also from sub-Saharan Africa;
4. West Africa, with irregular arrivals in the Canary Islands and transits through Morocco, Western Sahara, Mauritania, Senegal, and Gambia (in recent years, it is the route with increasing flows);
5. the flow of refugees from Ukraine, because of the Russian-Ukrainian crisis, must be considered a special and hopefully temporary ca-so.

According to the data provided by the XXXI Immigration Report 2022, edited by Caritas and Migrantes, most foreign citizens residing in Italy are people of the Christian religion (2.8 million, 53.0 percent of the total); those of the Islamic religion are 1.5 million (29.5 percent

of the total); those of the Catholic religion are 892,000 (17.2 percent). These are values and percentages that represent well the multi-religious composition of the broad Mediterranean context, so the rhetoric of ethnic and religious invasion appears exaggerated.

## THE ROLE OF RELIGIOUS LEADERS IN PROMOTING PEACE

For several decades (from 27th October 1986), top representatives of the world's major religions have been meeting to reflect and pray for peace, taking responsibility to stand together and dialogize. One is convinced that dialogue among religions can help build the space needed to generate mutual recognition and find behaviours to hold differences together. One is also aware that dialogue is the only tool – a real strategy – to rebuild the multifaceted identity in which the Mediterranean has lived since the first moments of its rich history (the first meeting “Mediterranean, frontier of peace”, desired by Pope Francis, was held in the city of Bari, between 18 and 23 February 2020, attended by the patriarchs and heads of the Churches of the Middle East and the bishops overlooking the Mediterranean).

In truth, these meetings have a history that goes back to the period 1952-1956, when the mayor of Florence, Giorgio La Pira, conceived and organized five “International Conferences for Peace and Christian Civilization”, to reaffirm that the sole and most powerful foundation of the values of peace and social justice was to be sought in the spirit of fraternity, to the strengthening of which the link between the three great religions of the Book should contribute so much. Already in the 1950s, in a particularly conflict-ridden and dangerous historical moment for world peace, La Pira said he was convinced of the specific importance of the Mediterranean context:

«The historical conjuncture we are experiencing, the clash of interests and ideologies that shake humanity in the grip of an incredible infantilism return to the Mediterranean a capital responsibility [...] for the simultaneous realization of a world made on a human scale by men made on a world scale [...] We think that the Mediterranean remains what it was: an inexhaustible source of creativity, a living and universal hearth where men can receive the lights of knowledge, the grace of beauty and the warmth of fraternity» (in [Bizzeti, 2020](#)).

The Bari meeting (19-23 February 2020) is part of the vein opened by Giorgio La Pira, who placed great hope in the peoples of the Mediterranean, and must be read

within the commitment, repeatedly proposed by Pope Francis, to find a shared strategy aimed at «guarding one another in the one human family».

The commitment of religious leaders and the invitation to the faithful of religions born in the Mediterranean context (it is clear that the delimitation is only due to the theme of this article) can be read, sociologically, as anchoring some of the historical characteristics of the Mediterranean context: its ontological internal differentiation, the long coexistence of polytheistic systems, the habit of seeing the entry of so many and diverse foreigners, the journeys to new and unknown territories, the birth of the society of law; but also the many artistic, philosophical, and cultural elaborations that have placed the other than oneself at the centre of the search for similarities but also for innovative differences. Yet, despite this chaotic movement – not always peaceful, as noted above – from which multiple identities have sprung, the Mediterranean has included, preserved, and innovated diversity, finding in one way or another the square.

A new social actor is emerging in the ongoing reflection on peaceful coexistence in the Mediterranean: women. One is convinced that the characteristics peculiar to the ‘feminine’ are more appropriate to generate new spaces for dialogue. The incidence of women within family dynamics, their role in socializing religious values, their general propensity for cohesion and care, and their ability to hold together differences and otherness do not escape. Clearly, to have the full contribution of the ‘feminine’, a strategy of strengthening her presence in religious, political, and social decisions becomes indispensable. Otherwise, it will remain within the space of good intentions and inconclusiveness.

Before closing these few pages, it seems appropriate to clarify two concepts, both related to the goal of peace in the Mediterranean context: brotherhood and fraternity.

There is a conception of peace as an existential condition, understood as a personal and intimate experience (being at peace with oneself) and a conception of peace as

a systemic condition, indicating a situation of agreement with others around us and with the entire external environment (deep longing of all human beings of all times). The former is the result of working on oneself, on one's needs, on one's aspirations, on one's discouraging defeats and exhilarating achievements, on one's conscience and existential values; the latter is the result of a shared vision, of a politics of encounter, of revising the mechanisms of social inequality and creating a climate of fraternity. Fraternity is what this world needs. Universal fraternity is practically unattainable and sociologically dangerous-because it excludes all those who are not brothers or who are not recognized as such.

Fraternity is a concept that transcends actual blood ties and includes the unacquainted, the distant, everyone else who is different from us. The concept of brotherhood is small scale (close ties, between family-relatives and sodalists), while that of fraternity is larger scale (includes loose ties, between distant and different). Although in the religions of the Book brotherhood is a uniting sentiment (the condition of all being children of Abraham and worshippers of the one creator God) it has not prevented betrayal, strife, deception, and killing. Being brothers is not a guarantee of harmony, sharing, solidarity, or even recognition (there is no need to recall the various biblical stories, which support what is being asserted). Perhaps because of the awareness of these evidence, in recent years a reflection has been developing aimed at clarifying the distinction between brotherhood and fraternity (Courban et. al., 2021).

Sociologically, fraternity is an original relationship: we all share the same origin and environment (think of the world system and social ecology), we can only be together if we are able to build collaborative (tight and loose) social ties. Brotherhood tends not to overstep the boundaries of sibling bonds between brothers, while fraternity facilitates outreach to others, even if not brothers, recognizing them as fraternal.

Already in the title of the Encyclical "Fratelli tutti" (2020), Pope Francis adds «on fraternity and social friendship» hoping for the creation of a fraternal and friendly society, Pope Francis induces us to think, sociologically, of the need for a society where interpersonal and globalized relationships are generative of a climate of «open fraternity»<sup>6</sup>.

Recently, french sociologist Edgard Morin (2019) published an interesting reflection on the importance of fraternity, believing it to be the fundamental resource

for emerging from the condition of social deafness that is characterizing globalized human societies. Morin recalls that the current Western and Mediterranean world was generated by two great revolutions: the American and French revolutions. The first posited happiness as an innate and inalienable right, making it clear that property is the sine qua non of happiness, so those who are incapable of ownership have no right to happiness. The second revolution found in the vindication of freedom, equality, and fraternity its strong and distinctive point; in the later "Declaration of the Rights of Man and of the Citizen" fraternity finds no place, leaving it to the ethics of reciprocity, which sociology and anthropology point to as the golden rule present in all human societies.

For Morin it is precisely the third term of the revolutionary triad that must be placed at the centre of social reflexion. Morin also thinks of fraternity as a biological state (being brothers), but he makes it clear that it is more an anthropological, philosophical, ethical-social, and political awareness. He sees its absence in social dynamics as the victory of individualism and the exploitation of creation for purely speculative purposes. The long underestimation of fraternal dynamics, the derision to which they have been subjected by those who said they were convinced of the supposedly iron Darwinian law of the competitive market, have been used to hide the true human nature: cooperation and collaboration, altruism, and generosity (Tomasello, 2009; Godelier, 2007; Godelier 2021). The French sociologist sees the urgency of building a new societal paradigm in which the awareness that we are all bound to one destiny generates a fraternal society. A society where we are not all in the same boat, but we all sail on the same sea, sharing the same condition of castaways in peril. The perduring denial of such an obvious common condition can only hope for a miraculous solution to reality<sup>7</sup>.

To better clarify what the condition of fraternity is, it helps to refer to the concept of empathy (Stein, 1917). Psychologist Martin Hoffman (2000) defines it as an «affective response [fraternal affectivity, to reprise the distinction proposed in this article] more appropriate to another person's situation than to one's own», and places it at the basis of any moral behaviour. It is not to be taken as an ironic note to recall that Adam Smith, before he was convinced of the alleged law of individual butcher's utility, had already written similar words (between 1752 and 1759) when he was professor of moral philosophy in Glasgow<sup>8</sup>.

<sup>6</sup> Point 5 of the Encyclical reads the tribute to Grand Imam Ahmad Al-Tayyeb, with whom the pope had met in Abu Dhabi (4th February 2019), to sign the Document on Human Brotherhood for World Peace and Common Coexistence and to recall that «God has created all human beings equal in rights, duties and dignity, and has called them to live together as brothers and sisters».

<sup>7</sup> «Only a God can now help us find a way out», as Heidegger stated in a famous interview at Spiegel magazine, September 23, 1966.

<sup>8</sup> «How selfish soever man may be supposed, there are evidently some principles in his nature, which interest him in the fortune of others, and render their happiness necessary to him, though he derives nothing from it except the pleasure of seeing it. Of this kind is pity or compassion, the emotion which we feel for the misery of others, when we either see it, or are made to conceive it in a very lively manner. That we often derive sorrow from the sorrow of others, is a matter of fact too obvious to require any instances to prove it; for this sentiment, like all the other original passions of human nature, is by no means confined to the virtuous and humane, though they perhaps may feel it with the most exquisite sensibility [...] Pity and compassion are words appropriated to signify our fellow-feeling with the sorrow of others.» (Smith, 1759, Part I, Section I, Chapter I).

## DISCUSSION AND CONCLUSION

The Mediterranean context must make itself aware of its past, take responsibility for the power it is given, and reinforce respectful behaviours toward diversity and weaknesses, which in recent decades are advancing demands for recognition and challenging the maintenance of the latent sociocultural pattern. In sociology, this process is referred to as crossing the latent threshold.

The function of maintaining the latent sociocultural model (the set of values and behavioural norms that social institutions, through socialization processes, preserve and transmit to new generations and outsiders entering the system) is important for two related reasons: for the maintenance/preservation of the integration of the system of reference and for the management of change/mutation of the system itself. Any attempt to cross/raise the latency threshold generates both on a regional and global scale-inevitable social conflicts, which if not resolved, but only repressed will make all forms of dialogue between the parties impossible.

Social systems that do not want to become aware of the highly transformative situation that is being experienced and do not engage in managing this kind of challenge because they believe they can keep the latency threshold under control are normally doomed to succumb. Conversely, systems that see the situation and commit themselves to identifying measures for the interpenetration of cultures and civilizations transform, but do not succumb.

Intelligent cultures, religions, and political systems analyse factual reality and reflect it together on the way (Morin would say) to go, to get out of the sterile opposition between different social instances and the destructive madness in which global society stubbornly remains.

The generation/management of a society of differences and different identities (Castells, 1997) is the task of the social actors present in the Mediterranean context if they are still interested in remaining/fulfilling the role of competent global actors<sup>9</sup>

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<sup>9</sup> The sociologist Richard Sennett (2003) calls «character» the relational capacity of the personality; on a social scale, the character of Mediterranean men and women, if we remain convinced of the specificity of the Mediterranean context, is the ability to connect with the outside world, treating «with respect the perceived need in others when acting together»; it is the art of treating others with «social honour».

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# MEMORY OF THE SOVIET PERIOD IN MOLDOVA: THE INFLUENCE OF SOCIAL TRAUMA AND CONTEMPORARY POLITICS

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## SUMMARY

While some research on post-Communist nostalgia convincingly explains it as a reaction to the hardships of the transitional period, others argue that this nostalgia also encompasses the yearning for a particular form of sociability and social values. Our research on the memory of the Soviet past in the Republic of Moldova shows that nostalgic sentiments persist in the society. The empirical data comprises 12 semi-structured interviews, including in-depth biographical interviews and a focus discussion group with six participants. The research focuses on those who socialized in the Soviet Union and experienced its disintegration as young adults or adolescents. The interviews were conducted in 2023. The results were interpreted based on the cultural trauma theory by Jeffrey Alexander and Piotr Sztompka, as well as Svetlana Boym's conceptualization of restorative and reflexive nostalgia. The main findings show that post-Soviet hardships significantly influenced attitudes toward the Soviet era. The frequent comparisons of Soviet and post-Soviet living conditions highlight the profound impact of the transition stage's difficulties on nostalgia and more favorable remembrance of the USSR. Additionally, the research shows that the political context significantly influences Soviet memories. The nostalgia of the interviewees does not indicate a desire to return to the USSR. Instead, it reflects the shock of abrupt social change, underscoring its significant impact on their lives. Although some interviewees hope that the Soviet Union can be restored (restorative nostalgia), understanding that the Soviet past will never return, mixed with ironic and bittersweet feelings (reflexive nostalgia), is more common.

*Keywords:* Moldova, post-Communist nostalgia, post-Soviet memory, cultural trauma

## INTRODUCTION

The past thirty years since the collapse of the Communist regimes in Eastern Europe have been marked by nostalgic sentiments in the former Communist countries. The rise of nostalgia has drawn the attention of specialists in politics, philosophy, social theory, and journalism, sometimes producing anxiety about the possible restoration of the regime and condemning and shaming the agents of nostalgia. However, theoretical and empirical studies challenged these alarmistic and moralistic attitudes, offering a more nuanced approach both to nostalgia and post-Communist societies. What became clear is that nostalgia cannot be interpreted simply as a desire to come back (for example, back to Communism), and it can no longer be viewed as an "equivalent of bad memory" (Scanlan, 2004, p.4). Rather, it is a strategy for coping with the present. Moreover, nostalgia is a symptom, characterizing not the past but the present and anticipation of the future. Linda Hutcheon compares nostalgia's work with Mikhail Bakhtin's term "historical inversion" when "the ideal that is not being lived now is projected into the past" (Hutcheon & Valdés, 2000, p.31). In turn, the present is felt and imagined as wrong, complicated, unfair, unruly, etc., causing emotional discomfort and distress. At the same time, the past is edited and reconceptualized. In that sense, forgetting is an essential part of memory work and is actively involved in nostalgia's formation. It helps to remove all that is not fitting to the desired picture of the past, and it cleans the field for the work of imagination. Thus, nostalgia is a kind of memory work, referring to the past and re-envisioning it under new circumstances.

Despite numerous works dedicated to post-Communist nostalgia, there is no unanimous opinion on how to interpret it. On one hand, much research convincingly explains nostalgia as a reaction to the hardships of the transitional period, to its insecurity, unemployment, poverty, value crisis, overturned social hierarchies, and high crime rate. On the other hand, scholars argue that post-Communist nostalgia cannot be reduced to a longing for security and stability or to sentiments of the aging populace about their youth. It also encompasses the yearning for a particular form of sociability and values related to the meaning of life and human dignity (Todorova, 2010, p. 7). Moreover, some studies of post-communist countries reveal that success in overcoming and reassessing their past does not always correlate to the presence and quality of nostalgia. In the book *Post-Communist Nostalgia*, the editors call for a nonjudgmental approach to uncovering nostalgia and reconsidering it in a more unbiased and complex way (Todorova & Gille, 2010).

My research on memory and oral history of the Soviet past in the Republic of Moldova shows that nostalgic sentiments are persistent in the society. Moldova's nostalgia takes distinct forms and has a complex nature and resists a simple explanation. This paper focuses on how the abrupt breakdown of the USSR and the subsequent collapse of the social order have influenced contemporary recollections of Soviet times. It argues that the memory of the Soviet past has been shaped by the sudden collapse of the USSR, along with its social and economic consequences, and the inefficiency of social transformation and adaptation, which created social trauma for certain groups in society. Consequently, nostalgia emerged prominently in response to the prolonged transitional difficulties.

## IMPORTANCE AND RELEVANCE

Studying how Soviet nostalgia affects Moldovan citizens today is important for several reasons. First, while there are numerous studies on nostalgia in post-Communist regions, the case of Moldova remains under-researched and underrepresented in the literature. This research aims to help fill this gap. Second, examining post-Soviet nostalgia provides insight into how nostalgia has persisted long after the regime's collapse, allowing us to think further on other factors contributing to its long-term existence. At the same time, one of the crucial reasons to approach this topic now is Moldova's socio-political situation. Amid social polarization regarding Moldova's future development—whether to join the European Union or to remain in the Commonwealth of Independent States—nostalgic sentiments are no longer seen as mere personal feelings but are subject to social scrutiny. Today, those who harbor nostalgia for the Soviet era may face social ridicule, criticism, and ostracism, highlighting a phenomenon that demands attention from social scientists.

A significant factor in making personal memory and feelings important social markers is that Soviet nostalgia has been politicized by current political discourse. Politicians have used nostalgia to navigate political

battles and exacerbate tensions within a polarized society since the pro-Western government came to power in 2020, even before the Russian-Ukrainian conflict in 2022. Conversely, political opponents may also exploit the sentiments of those who disagree with the authorities for their own interests.

Furthermore, Soviet nostalgia in Moldova's society warrants attention due to its possible connection with other social characteristics, such as the Russian language and Slavic heritage. In this case, one sees how identity markers are co-opted for political purposes. Such associations risk alienating segments of the population who feel a strong cultural or linguistic connection to Russia or Slavic traditions, even if their nostalgic sentiments are not politically motivated. This situation potentially leads to new forms of inequality.

By examining how nostalgic sentiments find their way into the hearts and minds of Moldovan citizens today, one can further explore and predict how these feelings might be perceived and utilized by different socio-political agents. In addition, Moldova's persistent nostalgia can give us insights into the broader challenges faced by other post-Communist countries undergoing similar transitions.

## LITERATURE REVIEW

Most studies on the memory of the Soviet era in Moldova focus on examining the opposition between two approaches to Moldova's past, pan-Romanianists and Moldovanists, and the resulting memory policies and memory politics (Sultani, 2020; Cușco, 2012). These studies emphasize issues such as identity crisis, statehood legitimacy, the lack of shared history, and social polarization regarding the past (King, 2000; Ihrig, 2008; Kushko & Taki, 2003). Another area of research focuses on two significant historical traumas in Moldovan history: Holocaust and Soviet repression. Studies have explored the silencing of Moldova's responsibility for the Holocaust in Bessarabia and Transnistria (Solonari, 2002a, Dimitru, 2016, Tulbure, 2016, Suveica, 2017, Sineaeva-Pankowska, 2018, Felcher, 2020) and the impact of Soviet deportations (Grati & Cojocaru, 2023).<sup>1</sup>

Often, memory and attitudes toward the past are assessed as stable entities formed based on data, such as history textbooks (Solonari, 2002b; Anderson, 2006; Worden, 2011) or specific positions (e.g., pan-Romanianists and Moldovanists, discussed in almost all research above).

Some research compares Moldova's memory of WWII with other Eastern European countries with similar backgrounds, such as Poland and Moldova (Sineaeva-Pankowska, 2019).

A body of texts is dedicated to memorial culture in Moldova, including monuments, memorials, the ideas behind them, and the analysis of museum exhibitions (Fel'ker, 2020; Felcher, 2021; Fuksova, 2019, 2020, 2024). Some works examine memory representation in different regions of the country, for example, in Transnistria (Voronovich & Fel'ker, 2020). Another substantial part of the research focuses on commemorative memorial ceremonies, particularly those related to the victims of Stalinist deportations, Holocaust commemorations, and the end of the Second World War. Thus, these research show that the dates of May 8 and 9, Europe Day and Victory or V-E Day, have remained a source of continuous debates, public clashes, and contention over public space (Cușco, 2012; Suveica, 2017; Fel'ker, 2020; Voronovici & Fel'ker, 2020).

<sup>1</sup> Additionally, there are some critical research on the so-called competition over the number of victims in these two events in Moldova's historiographic discourse (Suveica, 2017).

But studies on memory in Moldova do not address, with rare exceptions (Greacu, 2019), the perspectives of ordinary people. Existing research focuses more on prescriptive modes of remembrance, neglecting individual and collective memory's dynamic, selective, and retrospective nature. As a result, Moldovan society is frequently missing in many memory studies, along with its numerous voices. Mostly, ethnography on memory concentrates on particular communities, such as history teachers, historians, memory activists, or museum associates (Anderson, 2006; Fuksova, 2019).

In addition to academic studies, memory activists in Moldova have made efforts to preserve oral history. Projects focused on gathering oral history on Stalinist deportations and Holocaust in Moldova, led by Alexey Tulbure<sup>2</sup> and Ghenadie Popescu,<sup>3</sup> should be mentioned here, as well as state initiatives to collect testimonies of Communist repression in Moldova (Birladeanu & Cojocaru, 2018). However, much of the collected data remains unanalyzed and, due to language barriers, is accessible only to a limited audience, even within Moldova. Moreover, while post-Communist nostalgia is well-known and extensively studied across Eastern Europe, research on this phenomenon in Moldova is scarce.

My study tries to fill gaps in the understanding of the collective memory of the Soviet era in Moldovan society. It focuses on individual and collective memory instead of state-prescribed memory modes, highlighting that memory is not rational but emotional. It examines Soviet nostalgia and shows how memories are often influenced by experiences during of the USSR's collapse, subsequent difficulties, and the current political situation. The paper focuses on specific recurrent topics in the respondents' narratives of the past, such as ethnic and linguistic aspects, current political views, deportation, social

welfare, and life conditions during the Soviet and post-Soviet periods. These aspects are the most influential in shaping nostalgia of the Soviet time.

Memory of the Soviet past in Moldova is filled with nostalgia, which I interpret within the framework of the theory of cultural, or social, trauma developed by sociologists Jeffrey Alexander and Piotr Sztompka. Jeffrey Alexander argues that cultural trauma is constructed by society. This trauma must be regarded not on the basis of the actual harm of the events but on whether these phenomena are believed to be harmful (Jeffrey, 2004, pp.9-10). Piotr Sztompka emphasizes that cultural trauma may occur as a reaction to a social change accompanied by four 'traumatogenic traits': suddenness, comprehensiveness, fundamentality, and unexpectedness (Sztompka, 2004, p.159). As an illustration, Sztompka refers to the 'Revolution of 1989,' which led to the downfall of the Communist regime in East-Central Europe. Considered a positive shift by the rest of the world, this change was experienced as a traumatic event for many members of society living through it and it may affect the memory of the previous time and produce nostalgia.

Another useful theoretical tool for understanding Moldova's memory of the Soviet times is Svetlana Boym's concept of restorative and reflexive nostalgia (Boym, 2001). Restorative nostalgia is linked to nationalist sentiment and aims to restore the past in some way, while reflexive nostalgia tends to treat the past more critically. The latter acknowledges that its perception of the past is rather selective and emotional and uses references to the past as a means of reflecting on its own identity, sometimes ironically. My research shows that elements of both types of nostalgia are present within Moldova's society, which adds complexity to understanding how memory works in this case.

## DATA AND METHODS

The empirical base consists of 12 semi-structured interviews, including in-depth biographical interviews with a family history perspective (Bertaux & Delcroix, 2000; Semionova, 1998; Doktorov, 2012), as well as a focus discussion group with six participants. The interviews were conducted in Moldova during the second half of 2023. This article focuses on interviews with older respondents, those who witnessed the collapse of the USSR and keep their memories about it.

The interviews were conducted in Russian. The gender distribution of the respondents is almost equal, with slightly more women: 10 female and 8 male interviewees. The geographic scope includes Chisinau, Gagauzia, and the northern part of Moldova. Among the secondary data are sociological studies on contemporary Moldova (see bibliography), news websites about modern politics in Moldova, and other conversations with local residents.

The research was conducted within the framework of grounded theory (Glaser & Strauss, 1967) and incorporated elements of ethnographic research, discourse and content analysis, a case study approach, and historical analysis. The limitation of the research lies in the difficulty of generalizing data from one case to another and the restriction of interviewees to those who could speak Russian. The method chosen for working with the transcripts of semi-structured interviews was thematic coding (Flick, 2018, p. 259). In the analysis, in addition to research codes, "in vivo" codes were taken into account, i.e., self-definitions and self-descriptions used by respondents to characterize and evaluate themselves, their activities, and colleagues (Strauss & Corbin, 1990). Respondents' names were changed to maintain anonymity.

<sup>2</sup> The Institute of Oral History of Moldova, <https://oralhistory.md/ru>. Accessed June 19, 2024.

<sup>3</sup> Deportari, [www.deportari.md](http://www.deportari.md). Accessed June 19, 2024.

## MAIN RESULTS AND DISCUSSION

### MOLDOVA'S SOVIET PAST: HISTORICAL CONTEXT

Soviet power was established in Moldova twice. The first instance was in June 1940 when, as a result of the Molotov-Ribbentrop Pact, the Soviet Union occupied the former Romanian territories of Bessarabia and northern Bukovina. Subsequently, Bessarabia was united with the Moldavian Autonomous SSR, which geographically corresponds to today's Transnistria. In turn, Bukovina became part of the Ukrainian SSR. This newly formed Soviet region was named the Moldavian SSR. To establish new power in the region, the Soviet authorities started by purging dissidents. The local NKVD was responsible for mass arrests, killings, and incarceration. Additionally, collectivization led to further arrests and deportations. According to the data, 26,173 people from Bessarabia, Northern Bukovina and Hertza county were forced to migrate to Siberia and Kazakhstan in 1941 (Cașu, 2010, p. 52).

The territories were soon retaken by Romanians who had allied with Germany against the Soviet Union. The Nazi and Romanian armies ruled the region until August 1944, when they were pushed back. Between 1941 and 1944, the Holocaust took place in the region, claiming the lives of approximately 380,000 Bessarabian and Transnistrian Jews and Roma (Suveica, 2017, pp.388-289).

During the Jassy–Chisinau offensive, the Soviet Army successfully attacked Axis forces, destroying them and pressuring Romania to switch sides from the Axis to the Allies. As a result of fierce battles, Bessarabia was heavily damaged. The Soviet Union reclaimed it, rebuilding infrastructure and re-establishing Soviet power.

Collectivization and deportations resumed in 1949. Mass deportations in July 1949 affected about 35,000 people, most called *kulaks* (Cașu 2010, 53). These deportees had to build their households from scratch at the new places. Although many returned after Stalin's death, with some regaining their property partially, others did not survive the harsh initial conditions in which they were left without shelter. Moreover, the postwar 1946-1947 famine, exacerbated by heavy state taxation, also claimed many lives.

During this time, the region was Russified, the Romanian language was turned into Cyrillic and called 'Moldovan.' The local Soviet historiography started developing the idea of Moldova's total independence from the Romanian nation. The region underwent rapid collectivization and overall industrialization; many specialists came from across the USSR to work in the industrial sector. The language they used was primarily Russian. Politically, the Soviet system was incorporated at every social level, with local authorities and security services largely composed of the local population maintaining the Soviet order in the region.

After Stalin's death, life in the region began to stabilize. Political persecution and repression slowed, except for an anti-religious campaign initiated by Nikita Khrushchev in the early 1960s.

After Khrushchev came several decades of Brezhnev's economic stagnation until Gorbachev's perestroika sparked a national movement. It ultimately expedited Moldova's exit from the USSR.

### TRAUMA AND ITS INFLUENCE ON MEMORY

The disintegration of the Soviet Union was sudden, unexpected, and comprehensive in its impact on society. Based on Sztompka's theory, one may consider that it was incredibly traumatogenic for the Soviet republics. The consequences produced by this social trauma and the traumatic symptoms in the post-Communist countries mentioned by Sztompka are also evident in the post-Soviet region. The complete collapse of the former axiological paradigm in society, political, social, and economic crises, the breakdown of social institutions (family, education, health care, public transport, etc), unemployment, inflation, deindustrialization, rising crime rates, corruption, mass migration, and other consequences of the Soviet Union's fall were felt across the entire post-Soviet space. It led to the social trauma embodied in distress syndrome, pessimism about the future, political apathy, trauma of collective memory, and a nostalgic image of the past.

Being a historically agrarian region and going through rapid industrialization in the north of the country, and forcible collectivization of the south during the Soviet period, Moldova faced severe hardships after the Soviet break-up. The country went through deindustrialization and liquidation of the collective farms, while these two economic branches were the main sources of jobs for the country's population. There were abandoned industrial plants and collective farm fields.

Although people were initially enthusiastic about the break-up of the USSR, they soon felt vulnerable. During post-Soviet times, a large part of the population was forced to migrate for work. Women predominantly worked in caregiving roles, while men worked in construction. Many labor migrants were unable to see their families for years, leading to a situation where many children became 'social orphans,' and the elderly were often left behind, resulting in a new social trauma

(Yanovich, 2013; Vaculovschi, 2023; Turcan, 2023). Those who could not find employment as labor migrants survived as best they could. The population that was already at their pre-retirement age suffered the most, not being able to adjust to the new social conditions. Typically, they relied on remittances sent from abroad. But some of the elderly lost contact with their emigrated children and were forced to survive on a meager pension. They nostalgically remembered their Soviet past, when they lived a stable and secure life and were valued as specialists, had a sense of dignity, and held onto certain values shared by society at large.

The mass migration, reflecting the long-lasting economic stagnation within the country, has persisted through to the present. The recent analysis of the population dynamics over the past three decades in Moldova shows that the country continues to experience a long-term population decline, primarily attributed to high levels of emigration. From 1991 to 2021, the country experienced

high depopulation due to migration outflows, with premature mortality exacerbating the natural decline (Tabac & Gagauz, 2020). After the COVID-19 pandemic, a new intensification of emigration has been registered (Vaculovschi, 2023; NBS, 2022). The World Bank's data shows that Moldova has remained one of the poorest countries in Europe for the last two decades (WBM, 2023).

This research shows that Soviet nostalgia plays a crucial role as a coping mechanism in the face of the emerging inequalities and uncertainties that accompany Moldova's transition to a democratic system. The perception of reduced dignity and stability further reinforces feelings of nostalgia, indicating that it is not just a longing for the past but a response to present-day socio-political circumstances. It also may be interpreted as the evidence that the democratic regime in Moldova failed to provide some social groups with a sense of dignity and belonging to a new society.

## POLITICAL CONTEXT

The recollection of the Soviet past is influenced by the discourse of the USSR that remains relevant in Moldovan politics today. This rhetoric is used by both ardent critics of the Soviet past and those who treat the Soviets more favorably. The memory of the Soviet Union has become instrumentalized by Moldovan politicians. Those who advocate for Moldova's EU membership and distancing from Russia's political influence may portray the USSR as an undesirable future for Moldova, suggesting that this fate would inevitably repeat without taking proper actions towards Eurointegration. This perspective evokes strong emotions among both proponents and opponents of Moldova's political Europeanization. As a response, Eurointegration's opponents have increasingly favored the USSR due to dissatisfaction with the authorities. In effect, the USSR is not perceived as the past; rather, it is seen as a lasting and relevant political entity.

Contemporary Russia is often perceived as if it were the USSR, both by pro-Soviet and EU advocates. For instance, Russian-speaking Soviet citizens who arrived in Moldova during that period are still often referred to as 'Russians' today, while, conversely, Russian-speaking is associated with 'Soviets.' The potential political success of opposition groups favorable to building relationships with Russia is seen as a return to the USSR, prompting respondents to reminisce about the missed benefits

of Soviet life, benefits like access to cheaper goods, a sense of security, guaranteed employment and welfare benefits, and the freedom to travel within the former USSR countries.

Moreover, a new wave of increased attention to the Soviet past has emerged in response to current political events. The war in Ukraine, subsequent state of emergency, and the sanctions against Russia that have impacted Moldova's economy, causing rising gas and electricity prices and inflation. In addition, upcoming presidential elections, recent discord with Gagauzia<sup>4</sup> and long-lasting tension with Transnistria, and political reforms related to preparing the country to EU membership all play significant roles in shaping current perceptions of the Soviet past.

The sense of social trauma, coupled with ongoing political processes that revive the discourse of the Soviet Union as a viable future, significantly influences memories of the Soviet era. For instance, individuals already nostalgic for the USSR tend to selectively emphasize aspects of Soviet life they believe are absent or significantly worse in contemporary society, searching the past for more arguments to solidify their position. Conversely, those who want to see Moldova in the EU focus solely on the negative aspects of the past.

<sup>4</sup> The bashkan of the Gagauzia region has not been approved by the central authorities in Chisinau for a year. Recently, the unauthorized leader of Gagauzia began seeking support from Russian authorities.

## SUSCEPTIBILITY TO TRAUMA

However, there is no uniform understanding of trauma across all social groups, and each group has its own susceptibility to trauma, influenced by factors like age, ethnicity, religion, education, profession, financial status, gender, and geography.<sup>5</sup> These factors add layers of complexity to memory formation, leading to diverse perspectives within distinct social groups. This paper focuses on those people who were socialized in the Soviet Union and experienced its disintegration as young adults or adolescents. They typically have a more articulated position about the Soviet past and their recollections are supported by strong emotions.

Among the factors mentioned, ethnicity should be highlighted. In general, Moldovan memory of the Soviet past intertwines with Romanian/Moldovan (depends on an individual's self-identification), Gagauz, Ukrainian, Russian, and Jewish ethno-cultural perspectives, with the latter two being the least represented in the sample. While there is no clear tendency toward more favorable or critical views based solely on ethnicity, one may say that those who self-identify as Romanians more often hold pan-Romanianism's views, so their attitude to the Soviet past would be heavily negative even if their personal experience did not support that.

Moreover, the very definition and self-definition of one's ethnic identity may indirectly point toward the Soviet past and its reception. Respondents may define their ethnicity and their language as either Moldovan or Romanian, and this often -- but not necessarily -- reflects their views on the Soviet past. Those who support Eurointegration are more likely to self-identify

as Romanian and view the Soviet Union in a purely negative light, while those who self-identify as Moldovan more often assess the USSR in different ways, varying from neutral to critical or positive.

In contrast, the Gagauz people generally remember the Soviet past more favorably. Their positive experiences in the USSR include an active social life, better healthcare, and education. The Gagauz republic is mostly comprised of rural areas. While social life was active during Soviet times, revolving around local collective farms, it has faded since the USSR's dissolution. This often leads to nostalgia for the more active social life, such as the local cinema club in a village. Additionally, many local medical aid stations were closed, which makes the elderly associate the Soviet era with a better and more secure social life.

At the same time, their opinion is significantly influenced by post-Soviet events, such as discrimination based on language<sup>6</sup> and ethnicity, as well as an incident of open aggression, like the so-called march on Gagauzia (*pokhod na Gagauziuu*) conducted by far-right Moldovan nationalists in early 1990, remembered by the Gagauzi as an existential threat coming from the Chisinau authorities, even though it was stopped at the last moment. Another factor contributing to the Gagauz people's favorable view of the Soviets is the widespread negative oral history regarding the Romanian pre-war presence in the region. Some of the elder generations still remember the corporal punishment in school and occasional cruelties executed by the Romanian authorities.

## RECOLLECTIONS OF STATE VIOLENCE

The theme of Stalinist deportations, which occupies a significant place in Moldova's public memory and historiography, manifests ambiguously in recollections. Responses vary, ranging from neutrality and forgiveness to clear negativity and judgment. Some Moldovans and Gagauz people who remember the deportations recall them in a positive way, neutralizing the aspect of state violence.

Consider the example of Tatiana (b. 1940), whose earliest memories begin with a departure from her native village to Siberia. She recalls the long train and the barracks where they lived just after arrival. She

says that she enjoyed living in a large community, emphasizing the value of international communal life and mutual support. Yet she neglects the circumstances that brought these people together. Reflecting on her life in Siberia, Tatiana remembers this period of her life the best. She enjoys talking about her school years, recalling her school and favorite teachers. It was during this time that she first learned Russian, and she often refers to the people she met during that period as "Russians." She recalls, "These Russians were very hospitable, and the teachers respected us. After classes, our teachers clothed us and followed us to the yard's doors. I was very happy about our teachers, and I remember them until now."

<sup>5</sup> The distinctive mode of remembrance in Transnistria is related to the region's specific historical context. Generally, the memory of the USSR's collapse assumes a subtler manifestation in this region, being overshadowed by the more pronounced impacts of the military conflict between Chisinau and Tiraspol in 1992, as well as the region's pursuit of independence. Due to its uniqueness, which requires more space to be explained, this paper mostly excludes the analysis of Transnistria's memory.

<sup>6</sup> The Gagauz are mostly bilingual, speaking both Gagauz and Russian. Although they learn Romanian in schools, the language usually remains part of their passive knowledge.

The Russians were very respectful; they visited us in our barracks. I would have liked to stay there [she meant the time after the amnesty], but my father wanted to go home” (Tatiana, interview #1). Here, memory selects the positive moments of the past while leaving behind the problematic ones. The interviewee prefers to stay within her child’s perception of the situation, rather than adopting an external viewpoint. The past remains critically not analyzed and produces a nostalgic picture. In turn, Tatiana does not want to remember the USSR’s collapse and the time after, she became emotional and sad. And based on indirect statements it became clear that the time was hard for her in many ways.

In contrast, some respondents view the repressions as pure state violence. Ludmila (b. 1949) uses the word “repression” many times in her narrative talking about deportations. While she generally viewed her life in the Soviet Union positively, she admits that she reevaluated it entirely after the USSR’s collapse. The transitional period brought a series of disappointments: first with Soviet ideology, and then with Romanian nationalism. She felt deceived by politicians and admits that she has stopped participating in all political life, including voting (Ludmila, int. #2).

At the same time, some interviewees from younger generations, who inherited their knowledge on deportations from family members, have internalized these stories and feel them as part of their identity. Talking about the Soviet past, one interviewee begins with the statement, “I am from deportees...” (Andrei, b. 1974, int.# 3). During the conversation, he partially explains his current political views and his identity, relying on the deportation story of his family.

To extract the underlying logic from this statement, one might interpret it as follows:

1. “That was Stalin” = it was something exceptional, or we can/should make an excuse for Stalin;
2. “It happened everywhere, and in Russia as well” = since it happened everywhere, including Russia, it might have been right, or, at least, unavoidable;
3. “It was about the rich people” = it was fair, a restoration of social justice;
4. “It was an order, not like now” = it might have been hard, but it was represented social order, in contrast to today.

This interpretation is to some degree speculative, as many statements were not made directly, yet it tells us a lot. Notably, even the deportations in the late 1940s are explained through the prism of the post-Soviet transitional period.

## MISSING SOCIAL WELFARE AND PEACE OF MIND FOR THE FUTURE

According to the interviews, the most missed aspects of the Soviet past include education, community engagement, shared values, confidence in the future, freedom of movement within the Soviet borders, and the opportunity to find a job in one’s hometown or country, without the need to migrate for employment. Additionally, many people nostalgically mention the industrial infrastructure lost after the Soviet Union

Estimating their forced migration, some respondents, like Tatiana, admit that while it was a difficult time for their parents initially, it soon became better, and life went on as usual in the new place. Deportation is perceived as a temporary period of hardship that preceded stable times, seen as the price for future stability. When prompted to explain the reason for the Soviet deportations, some responded that it was a political necessity to create collective farms. While they do not approve of this measure and understand it as inherently unfair, they perceive state violence as something inevitable, almost a kind of fate.

Another attempt to explain Soviet violence as inherent to the world order puts the responsibility on their own community and neighborhood. It is often emphasized that it was the neighbors who reported on people to the police out of dishonest motives, such as revenge, jealousy, greed, and the desire to earn something, which is interpreted as part of human nature. One interviewee explains why neighbors reported on her family: “These people were poor! Their houses were not like ours!” (Tatiana, int. #1).

Another explanation of the deportation frames it as Stalin’s supposedly wrong decision. When asked about political pressure in Soviet society, one interviewee claims, “It was safe if you didn’t break the rules! And we went to work singing! -- But what about deportation? -- That was Stalin, and it happened everywhere, in Russia as well. It was about the rich people. It was an order, not like now” (Alexander, b.1947, FDG).

collapsed. The criminalization of society and the spike in alcoholism are other frequently mentioned factors that make respondents miss the Soviet era. Due to the challenges posed by labor migration, which often leaves the elderly and children behind, memories of the Soviet Union often favorably recall the opportunity to work at home and the job allocation system of that time.

While the interviewees elsewhere admit that their Soviet life was economically limited, they still note that it was sufficient to live well. Typically, statements acknowledge some lacks of Soviet life but then turn to positive compensations. For example, Alexander (int.#4, FGD) says, “Under the Soviet rule, we did not have a lot of money, but everything was cheap.” Other interviewees mention that shortages were compensated by their own household production and a quiet and interesting communal life. Q: “But was it a shortage?” A: “We had our own household, instead.” Another interviewee adds, “But it was happier and more interesting to live” (FGD).

A frequently repeated saying, heard across different parts of the country, goes, “It was communism; we did not notice it. Everything was cheap.” Or, slightly differently, “To be honest, we lived under Communism but just did not get it” (Oleg, b.1966, #5). In some cases, these statements are complemented by clarifications such as, “We had a small salary, but we had everything” (FGD) or “We lived like under socialism. There was everything, and everything was harmonious, everything was for human needs. And we had everything. Yes, the clothing was simpler, but there was not a big difference, and you felt that you had money. And now?” (Nina, b. 1962 #9). Shortages were not forgotten. Instead, what makes this memory interesting that the negative aspects have been taken into account, but the post-Soviet period is regarded as a still more disadvantaged time, “Nowadays, there is everything in stores; you just need money. This is in contrast to Soviet times when wages were stable, but with some shortages” (Oleg, int. #5). What is important for this paper’s argument is that this retrospective estimate of the late Soviet Union as a tranquil, unproblematic, and secure life rests on the opposition to the post-Soviet turbulent times, underlying a binary opposition: *then* and *now*.

Among the benefits often cited by respondents, education and a ‘peace of mind for the future’ stand out. Notably, these aspects are mentioned across generations, from people in their 80s to those in their 30s. The ‘peace of mind for the future,’ often described as ‘confidence in tomorrow’ (*uverennost’ v zavtrashnem dne*) appears crucial to many, and its importance is also rooted in its juxtaposition in the following time. Apparently, for those who experienced the Soviet era, the uncertainties and insecurities of post-Soviet period have become synonymous with stress and exhaustion. As a result, this period is perceived as full of disadvantages: “After the USSR, there was nothing good, only chaos” (FGD).

One interviewee shares her recollections of the Soviet times with nostalgia about the stability of the social system, “Everything was cheap, and there was no unemployment. Those with even a specialized secondary education were confident they would find a job because of the job referral system. <...> Purchasing housing was much easier. There were even condominiums. <...> My parents were even going to buy a car. Of course, not everyone could afford it, but if someone wanted it,

it was possible. Moreover, people’s relationships [were better]! And [the freedom of] movement within the Soviet Union!” (Irina, b.1975, int.#7). A subsequent in-depth interview with Irina proves that her estimate is also retrospective. She graduated from a prestigious university as a translator. However, her graduation coincided with the collapse of the Soviet Union. Irina was unable to find a job in her field and she has made her living through unskilled labor.

Social equality, often mentioned as a missed feature of Soviet life, is relevant here as well. “There were no very rich or very poor individuals, actually. All people felt more or less equal. Even if people had more, no one would show that. Any person who wanted to achieve something could work, earn money, and build their own house, and all the people would help them” (Nina, int.#9). Notably, some nostalgic feelings come even from people who are now very critical about the USSR. Larisa (b.1976) admits that she is very happy about her Soviet childhood. Talking about her early years, she admits that only positive feelings remained from that period, “I do not see anything bad for me [at that time]. [...] I remember it with nostalgia” (Larisa, int.#6).

The interviewees often express nostalgia for the sense of belonging, the value of their work, and the feeling of contributing to a society that characterized their Soviet life. Elena (b.1952) nostalgically recalls working as a teacher in the late USSR. She believes everyone should have a calling and contribute to society, and she remembers that her contribution made her happy. In contrast, losing her position in the 1990s was a very challenging time for her financially and emotionally. It made her feel worthless. After finding a job as a nanny at a local kindergarten, she partially felt a sense of restored self-esteem. Working with children whose parents had left for jobs abroad, she noticed the children’s feelings of being abandoned and unloved, and she made it her mission to help them. Despite the challenging life circumstances and low pay, this work comforted her emotionally. But the sheer number of children left behind only deepened her feelings of negativity and despair about the USSR’s collapse. Elena admits that she never reconciled herself to the new conditions and considers her Motherland the Soviet Union, confessing that the Soviet hymn evokes strong feelings in her.

Trust in Soviet school and university education, as well as in the figure of the dedicated Soviet teacher, are also frequently mentioned. These memories are often personalized: those who were taught by Soviet teachers remember their educators with appreciation as formative influences. For instance, Tatiana (int.#1) recalls her teachers in a Siberian village with deep gratitude. The image of the Soviet teacher could be so inspiring that some people chose their professions based on it, like Marina, who was so impressed by Igor Razgodin’s painting “A Village Teacher” (1957) that she aspired to become a teacher in a village.

*“First of all, I was impressed by an image created by a Soviet painter at school. I don’t remember the name of the painter, but I vividly recall this painting. It depicted a young woman with a slightly blurred background, wearing a scarf on her head and carrying books in her hands. She represented the ideal teacher to me. I don’t know why! It was something innate. I desired to become a village teacher. In addition, growing up in this city, which was a small village at that time, I was aware that good teachers were needed in villages. (Marina, b.1953 int. #10)*

Although the Soviet Union featured an iron curtain and closed borders, the free movement between the former republics and cheap public transport meant that for many people there was a sense of comparative ease of travel. According to Elena (b. 1952), the transportation system in the USSR was cheap and accessible, while the new system is private and expensive. She recalls how in Soviet times, she could travel to her relatives in Ukraine every summer, while today it became too expensive for her. In addition to financial aspect of traveling, another interviewee emphasized bureaucratic difficulties, expressing it as follows, “You could travel to any part of the USSR with one passport!”

The feeling of shared values and openness among members of society was mentioned many times, usually in contrast to the current moment. “After the collapse, people started dividing everything. They became black and white, red and white, and so on...” (FGD). The case of the provincial town exemplifies social anomie and isolation. For example, former teachers who have lived on the same street for many years were a community during Soviet times but felt isolated in the post-Soviet era. The small town, now half-empty, does not provide the same social scene. Consequently, these women find themselves locked in their town, street, and finally, their houses, feeling abandoned.

To sum up, interviews reveal that the most missed aspects of the Soviet past include education, community engagement, shared values, confidence in the future, freedom of movement, and local employment

opportunities. Nostalgia often centers on the stability, affordability, and sense of community provided during the Soviet era, contrasting sharply with the uncertainties and hardships of the post-Soviet period. While acknowledging the modest economic means of Soviet life, interviewees stress that it was sufficient for a good life. They recall how shortages were managed through household production and a supportive community. Education and ‘peace of mind for the future’ emerge in the narratives as particularly important, mentioned across generations, and rooted in the sense of security that contrasted with the stress and exhaustion of the post-Soviet era. The ability to move freely and affordably within the Soviet Union and the sense of shared values are also fondly remembered. These aspects reflect the unity and common identity shared by Soviet citizens, who perceived themselves as part of a large supranational group of Soviet people.

This nostalgic view highlights a binary opposition between the perceived tranquility of the Soviet past and the turbulence of the post-Soviet present. The nostalgia expressed by the interviewees does not indicate a desire to return to the USSR. Instead, it reflects the shock of abrupt social change and the trauma of the transitional period’s hardships, underscoring the significant impact of this historical shift on their lives. In Boym’s terms, these might be classified as reflective nostalgia, yet with elements of restorative nostalgia, when the interviewees consider the USSR as a bigger social entity to which they were proud to belong.

## DISCUSSION AND CONCLUSION

This paper is part of a larger research project on the memory of the Soviet era in Moldova. It focuses on individuals who came of age in the late Soviet period, spent their formative years there, and those, who spent in the USSR their early youth and still have memories are based on firsthand experiences. The study reveals that the memory of the Soviet Union among these people is complex and ambiguous. Their recollections can be critical yet nostalgic in some aspects, ironic and forgiving, selectively focused, and influenced by the post-Soviet transitional economic and social hardships and the country’s current political climate.

A significant limitation of the results is the language of the research. The language of the research was Russian, which excluded Romanian speakers or those who did not wish to speak Russian, posing a substantial limitation for generalizing the results to the entire Moldovan society.

It is likely that Romanian-speaking individuals would be more critical of the Soviet period.

Nevertheless, the data is valuable for understanding the memory of a segment of Moldova’s society. The research shows that post-Soviet hardships, including political tensions, societal conflicts, and financial difficulties, significantly influenced attitudes toward the Soviet era.

However, despite longing for Soviet times, individuals mostly acknowledge that there is no return to the past. The results introduce a new perspective by broadening the conventional understanding of how the turbulent transitional period evoked a longing for the stability of the late Soviet era. In particular, while the majority of research on post-Communist nostalgia focuses on its potentially negative sociopolitical consequences, seeing a restorative nostalgia, using Boym’s terms, the research shows that nostalgia includes the positive aspects when

used as a tool that may help individuals preserve their identities and cope with socio-economic difficulties they faced in the transitional period. Thus, Moldovan feelings mainly belong to reflective nostalgia, which does not have explicit political claims. At the same time, there is a risk that nostalgia will be politicized in society further and lead to other consequences.

The knowledge gained would be significantly enhanced if more Romanian-speaking people were included in the study. Furthermore, the research should be continued when the economic and socio-political situation changes.

As we can see, the nostalgia of the Soviet times revealed in Moldova's society might be two-fold. Although there are some hopes that the Soviet Union can return somehow, that might be characterized as restorative nostalgia, according to Boym's classification. However, it is rather wishful thinking that is not supported by an actual determination to take any actions in that direction. More common is a kind of reflexive nostalgia, when missing the past is mixed with an ironic, bittersweet feeling that going back to that past is impossible. For some people, this nostalgia helps to explain their feelings of abandonment and not belonging to the present reality.

The saying, "We lived under communism, but just didn't get it," reminds us that the values of Soviet life were only genuinely understood in retrospect. The frequent comparisons of Soviet and post-Soviet living conditions highlight the profound impact of the transition stage's protracted difficulties on people's nostalgia for the past. In addition, it is essential to remember that these results study the memory of the respondents who mostly lived in the Soviet Union of the late period. It was a time of economic stagnation, but socially, it might be called 'calm' as no considerable turbulent events happened in Moldova at that time. Notably, wanting the past restored is often complemented with irony, including self-irony, and an awareness of drawbacks of the Soviet economy.

The memory of the Soviet past is not a one-dimensional glorification. It is also a critical reflection, where people remember the good things but simultaneously admit that they would never want to go back. Some even retrospectively acknowledge their naivety at that time, a testament to the complexity of societal memory.

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## List of Interviewees

1. Tatiana, b. 1940
2. Ludmila b. 1949
3. Andrei, b. 1974
4. Focus Group Discussion (FGD) with six people:
  - 1) Egor b.1954
  - 2) Maxim b.1960
  - 3) Olga b.1953
  - 4) Alexander b.1947
  - 5) Irina, b.1976
  - 6) Ilia, b. 1975
5. Oleg, b.1966
6. Larisa, b.1976
7. Irina, b.1976
8. Elena b.1952
9. Nina b. 1962
10. Marina b. 1953
11. Igor b.1943
12. Lilia b.1949
13. Nikolai b.1931

# POSSIBLE TRAJECTORIES OF INSTITUTIONAL POLICY FOR LOCAL DEVELOPMENT

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## SUMMARY

Relationships between the actors sharing a territory are very important when one wants to conduct an analysis centered on local development and its sustainability. In fact, these actors - and the social relationships they build and support - choose the most appropriate resources to enable development mechanisms. At the same time, the actors decide what are the costs of sustainable development and who should participate in the efforts to stimulate growth and share successes. In other words, local development policies require a strong and high-profile intervention by the public actor, even when their realization necessarily involves collaboration with private actors. Based on these statements the aim of this paper is - from one side - to highlight the strategies that enable actors to support institutional development and growth of their area, with particular reference to the implementation of invisible factors such as social capital, the construction and socialization of new knowledge, the good practices of territorial management based on the principles of good governance. On the other hand, we want to show - more closely and specifically - what are the correlations (we hope the positive ones) between the work of the Public Administration and the development level of an area, whereas the current system's complexity requires that the structural measures of the Public Administration should be guided by the objective of pursuing higher levels of efficiency.

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**Keywords:** *sustainability, governance, good governance, public administration, development*

## INTRODUCTION

This paper aims to reflect on the importance of good governance as an enabling tool for territorial development. The experience of Italian local development is also well known in the international literature, due to issues related to corruption, illegality, or what Banfield in 1958 called *amoral familism* (Polazzi, 2022; Bagnasco, 2022; Mocetti, & Rizzica, 2021). Over the years, many legal instruments and regulations have been adopted (such as the Transparency and Anti-Corruption Act); however, much is also being done to improve efficiency and transparency in public administration to promote citizens' trust and active involvement in the management of public affairs, which fosters accountability and fairness in decisions.

Evidently that the analysis of economic development and sustainability in different European countries shows significant differences in the policies adopted. For example, while Spain focuses on innovation and strengthening the tourism sector to foster economic growth, or Romania shows more significant interest

in attracting foreign investment for infrastructure development, Italy focuses on exporting high-quality products and sustainable agriculture. These very brief observations indicate that these approaches directly influence the local population, leading to different economic opportunities and levels of well-being (Fava et al., 2021; Zaharia et al., 2021; D'Adamo, 2023).

Therefore, we believe that the Italian experience can offer important implications and applications for other European countries regarding good governance. Through the legislative and institutional reforms implemented over the years, Italy has demonstrated that it can successfully address challenges such as corruption and conflicts of interest. Lessons learned can be used as best practices to improve transparency and accountability and promote integrity in the public sector in other European contexts, thus helping to strengthen citizens' trust in institutions (Campelli & Golem, 2023; Butera, 2023).

## LITERATURE REVIEW

The institutional issues have been attracting the attention of local development scholars since the early days when this type of studies has established. Institutional issues have attracted the attention of local development scholars from the earliest days when this type of study emerged. Since then, experiential approaches and endogenous development have been based on a bottom-up view through processes of local resource enhancement.

In this context, new development models begin to relate more and more to the systemic optic, aware of the close ties between business and the local environment, so that the local specificities become the key factor for the location of the enterprises and development forecasts. On the other hand, the local system is required to adapt to the changes coming from the external environment, while maintaining its originality (which is only partly and not always to be understood as original identity), to use it as a strategic factor for the production of new values, new knowledge and innovation (Becattini & Rullani, 1993).

From this perspective, the task of the local political process is to activate the promotion of local resources and support local enterprises in their attempts to innovation and development. “The development model that results from all of these beliefs is focused on the enhancement use of local resources, environmental and social sustainability, institutional capacity building and the logic based on the net-working and on the concepts of consultation and socio-economic partnership (in this direction should be all the tools provided by the EU for regional development)” (Vespasiano & Martini, 2008, p. 12).

The fate of local development seems to be in the hands of the actors who “make relationships” and want to achieve a common interest. “The development must be understood as the result of collective action made possible by the sharing of own territory and by the idea of development envisioned for it. Among other things, sharing also facilitates the reflection on the selection of resources that must be mobilized to initiate and support the development”<sup>1</sup> (Vespasiano & Martini, 2008, p. 34).

In this perspective, for example, the Italian National Sustainable Development Strategy (UN Agenda 2030, <https://www.agenziacoesione.gov.it/>) is based on a multidimensional method to overcome economic, environmental and social inequalities and thus pursue sustainable, balanced and inclusive development. This approach implies a wide range of instruments, including budgetary policies and structural reforms.

But the *main actors of development are those who live in the territories*. They are the ones who know the needs

and expectations; the availability for change and also the resistance to it; the strength of the traditional identity and the weaknesses of the daily conflict (Vespasiano, 2005: 46).

However, in explaining the success of some areas and the decline and stagnation of other ones, the mechanisms of creation and transmission of knowledge played a crucial role; next to the calculation of the conveniences of actors and companies, one has also begun to consider the existence of invisible factors (variously known as: embedded, submerged, tacit, implicit) that the production system of a certain territory shares often without being aware of it.

The local production systems development literature has documented many different conditions in which these invisible factors appear. It is so spoken about external economies, benefits of cooperation in the context of stable and repeated relationships, trust as the glue of a local division of labor, community spirit in the relationships between economic operators who share the same vision of things and the same story; of increasing returns triggered by localized dynamic learning; of sharing knowledge, professional practices and rules of social behavior.

International literature describes this system of not reproducible local conditions with the term (not easily translatable) of *milieu*, which is formally defined as the set of internal conditions and resources that defines the characteristics of a territory and can determine the majority of possible changes and the concrete spreading of the development<sup>2</sup> (Governa, 1999).

The key to understanding the potential of an area arises from the assumption that, before the accumulation of capital, the decisive factor is represented by knowledge (Brusco, 1994, p. 68) and, in particular, the mix between codified knowledge, knowledge and local (or localized) knowledge (Rullani, 1989, p. 137) - capable of supporting innovative long-term processes. This localized knowledge is the differential based not on economies of scale, but on economies of culture<sup>3</sup>.

The competitive advantage of a territory and of a system of companies that knows how to build networks is given by the possibility of organizing learning forms and knowledge dissemination collective forms on a local basis: moving from one company to another, from a competitor already on the market to a new-company, from a worker to another one, the same knowledge is used frequently, without additional cost and with an increase of the value of the product.

<sup>1</sup> For a review of the debate, see Becattini (1989a, 1989b), Becattini & Rullani (1993), Grabher (1993).

<sup>2</sup> Therefore milieu is characterized not only by territory but also by the role of individuals within it and by the relationships they have with the outside: these elements constitute the identity of the system because they generate local living conditions and potential resources that are formed and layered over time and can not be produced or reproduced at will, and even transferred from a local system to another one.

<sup>3</sup> In fact, the analysis of local interests increasingly emphasizes that the success of an enterprise depends not only on the interaction with other enterprises in the local-area, but also - and perhaps decisively - on the interactions with the socio-cultural and institutional context.

This mechanism is called the *multiplier effect of knowledge* and with it the learning rate of the local system can become a criteria by which to read the competitive differentials.

In relation to this aspect, it is known that in the current processes of globalization and internationalization, the meaning that sees the territory as a physical or geographical location moves towards an approach that considers and values the intangible resources that flow from it, such as knowledge, design, art, style and creativity (we think about the indispensable synergy between territoriality and Made in Italy).

- ✓ becoming a depository of localized knowledge, that is dependent on the experience of those who work or live in the local context, and is shared by various stakeholders;
- ✓ acting as a catalyst for externalities, locally produced due to physical proximity, sharing of the local context, symbols, and codes that are implicit in the experience localized.

The local systems are capable of exercising more productive and innovative capacity if they create a continuous and more intensive interaction between the two spheres of knowledge and can activate their own substrate of values, knowledge, traditions, and institutions. In this perspective, the competitive advantage is outside of enterprises and must be attributed to the location of its units.

With this in mind, one becomes aware that society contaminates the economic actors of the market, leaving an imprint on the way they make choices and actions, but at the same time, society provides them with additional resources useful in the competition. In such a vision, the environment is not a simple container but a structured space. Through the social capital, the action of the actors is contextualized, and the context is transformed into the active force and productive resource.

Following this approach, the local dimension is stated as a key factor in the evolution of the system because the fundamental process of conversion and regeneration of knowledge takes place locally; a local system, thus understood, is not a closed system but a loop of continuous learning.

Particularly, its active role in the incremental process of knowledge useful for development increases substantially along two lines (Rullani, 2004):

It is evident that the capital is not an item transferable from one area to another (this is possible with the financial, physical and human capital); as already argued, in fact, social capital is presented in a “situational way” because each area is different from another one and has its own characteristics that differentiate and distinguish it and that keeps the capital in a state of latency for a long time, or putting it in slow motion or immediately (Bonfanti, 2008).

To conclude, the cognitive process of a territory is socialized and collective, founded on a relational organization between the actors. In this way, the local context becomes an open system of interactions for the production and dissemination of its own social capital which becomes the real differential of the territory and its entrepreneurship (Martini et al., 2024).

## DATA SOURCES AND USED METHODS

### THE ROLE OF INTERMEDIATE INSTITUTIONS

Institutions play a central role in any development process and in the production of public policies, at least for two reasons. They represent the channels by which one can make forms of policy integration that constitute the distinctive element of local development policies. The territory that receives such policies is neither a geographical area, a conglomerate of enterprises, an administrative authority, nor a cultural enclave, but an institutional construct whose boundaries are delineated through political, organizational, and administrative decision-making processes. (Lanzalaco, 2009, p. 37).

Without “local development agencies and organizations” as Pichierri Angelo (2002, p. 107) defined them- that is, districts, territorial agreements, strategic plans, local action groups, local tourist systems, etc. - there are no territories and territorially defined entities. The territories coincide with these institutions, and it is for this reason that the institutional dimension is constitutive of the same territory. In this sense, the institutions incorporate the interdependencies and the idiosyncratic ties that are created between the citizens, enterprises, families and estates (economic, environmental, cultural, etc.) (Pasqui, 2005, pp. 31-42, 127-134).

Secondly, the local development policies are integrated policies, which are based on coordination between different policy areas - agriculture, urban planning, tourism, infrastructure, cultural heritage, etc. - within a territory. And, again, the policy integration processes are through policy institutions, activating forms of inter-sectoral coordination between administrative organizations that already exist, but also creating new ad hoc institutions with the specific aim to reduce fragmentation and increase the degree of consistency between the various sectorial policies (Lanzalaco, 2009, p. 37).

Particularly, the intermediate institutions or meso-institutions have an important role in the process of territory building (Martini & De Luca Picione, 2022). These are institutions and organizations located at the micro and macro level. The main function of intermediate institutions is to generate intermediate forms of *idiosyncratic standardization* of economic and social behavior. On the one hand, they generate compliance and consistency in order to share development projects; on the other hand, they do not impose universalistic rules but generate different local regulatory orders and are strongly rooted in the territory (Martini & De Luca Picione, 2022, p. 38).

The intermediate institutions - those that Pichierrri (2002) calls the local development organizations - have three distinctive features that are linked together and that are the result of a process of institutional stratification and sedimentation that occurred in the last two or three decades. The first one is to gravitate together, and in a not programmed way, on the same territory. The second one is that the relationships between these overlapping institutions are joint, that is they are not inserted into a hierarchy of authority: their regulatory activities interfere with each other, in a chaotic way. The third one is that these institutions have different boundaries and areas: the territory is defined and constituted in different ways generating a form of polycentrism as "variable geometry" (Lanzalaco 2009, p. 38).

However, these distinctive features of the institutions for local development may generate a series of not always positive effects and require a rethinking of these same tools of government and local development policies.

Particularly, we are witnessing a kind of hyper-local projects, that is the exponential growth of institutions and development projects (local, tourism, rural, urban, sustainable) that overlap each other without any perceptible total design. Therefore, while the intermediate institutions push towards forms of

standardization and homogenization (idiosyncratic), the perverse effect generated by the conjunction of all these pressures is the shattering of a development model in a myriad micro-localist projects. This creates a double problem of institutional sustainability (Lanzalaco, 2009, p. 39).

On one hand, it generates an overload of frantic decision-making activities (that in the medium or long term may not be sustainable in terms of both time and skills) for both politicians and officials and for representatives of associations representing. On the other hand, the plurality of decision-making places leads to the fragmentation of decision-making and administrative processes. This also creates confusion among the public and private actors, eroding the unity and homogeneity of development paths, which is the main threat to the institutional identity of a territory.

There is a high risk of project dissonance, so the actors operating in a given territory should be subject to inconsistent patterns between them. In this scenario forms of territorial disintegration of development projects can emerge tacitly - and, above all, in a non-governed and non controlled form<sup>4</sup>.

The disruption of spatial development patterns can erode the social order on which these production systems are reproduced because it ignores the interdependencies between sustainability and the different dimensions of development.

The output of all this is that there is a systematic bias (although with some significant exceptions) of the local development policies: polycentrism has replaced the narrow localism, the culture of quality has taken over the exhibition of luxury and the exaltation of local folklore, absence of a tourism policy compensates an ineffective mixture of heterogeneity of the area as a distinctive mark of it.

In short, the fragmentation of territorial identity is the other side of the dispersion of local development projects in countless streams of financial disbursements.

In the analysis of local development policies and factors of their success / failure one must ask what is the role and the influence of the features of the system of institutions, organizations and agencies responsible for the development and implementation of local development policies. In this regard, Lanzalaco (2009, p. 41) identifies at least two lines of institutional policy for local development, in order to contain the possible negative effects.

<sup>4</sup> All this is a big problem for areas characterized by the presence of small and medium-sized enterprises for at least two reasons. First, these enterprises depend both on the decisions and strategies developed by public decision-makers for the environment in which they are constrained idiosyncratically. The project dissonance creates uncertainty and drastically reduces the possibility of rationally directing entrepreneurial activity based on clear and predictable development paths. Secondly, because if it is true that the development is a multidimensional concept reducible to the single economic dimension (Borghini & Chicchi, 2008), this is especially true in particular for the areas of small and medium enterprises in which the family friendship networks, and associative structures have a key role.

## POSSIBLE TRAJECTORIES OF INSTITUTIONAL POLICY FOR LOCAL DEVELOPMENT: FROM GOVERNANCE TO GOOD GOVERNANCE

First of all, given the scarcity of financial resources for local institutions - particularly since 2013, when the abundant and generous donations of funds ended - the primary objective is to save money and avoid waste of resources in the expensive institution, building process (inefficient and, above all, ineffective). In other words, one must put a stop to the process of indiscriminate proliferation of projects and agencies whose primary purpose is to provide funding "to give to just anyone and anywhere" rather than promote focused and consistent projects.

To prevent these forms of institutional opportunities, one can move into directions arising *from* and being added *to* the first line that we have just identified. One can think about a drastic simplification of the system of institutions and organizations of local development with the dual purpose of saving resources and creating homogeneous development projects. This process should not necessarily lead to forms of centralized planning, but one might be in search of unitary and unifying design forms that minimize fragmentation and dispersion of resources and policies.

The second line of action consists of the strengthening of integration processes between the different policies (policy integration) to reduce the weight of economic and distribution size and to give, instead, the appropriate importance to the other dimensions of local development (the environmental and landscape protection, welfare, policies for immigrants, for the family, the labor market, vocational training, for the enhancement cultural heritage and protection of professionalism) to give to the political and development process a real multidimensional character. To conclude, the institutional sustainability of local development policies seems to establish itself as a determining factor for their effectiveness. In fact, the power of policies is expressed not only through their prescriptive will but also through legislative ability. For this reason, the one who has the power to "define" and enforce policy becomes a crucial figure because they also have the power to legitimize a specific way of looking for the reality on which one wants to operate (Orlandini, 2010, p. 131).

For these reasons, it is important to reflect on the concept of governance (described as a form of execution of power) and even more of his political imperative: "good governance" that has acquired a major role, as a part of development policies (Martini & Serluca, 2012; Serluca & Martini, 2023).

The concept of governance is not new. It is as old as human civilization. Simply speaking, "governance": refers to the processes of decision-making and decision implementation (if done).

On the base of these considerations, analyzing governance means analyzing formal and informal actors involved in decision-making and decision implementing process, and the formal and informal structures that are created to implement those decisions.

The other actors involved in governance vary depending on the level of government under discussion. In rural areas, for example, other actors may include influential land lords, associations of peasant farmers, cooperatives, NGOs, research institutes, religious leaders, finance institutions political parties, the military. etc. The situation in urban areas is much more complex. Figure 1 provides the interconnections between actors involved in urban governance. At the national level, in addition to the actors, mentioned above, media, lobbyists, international donors, multi-national corporations, etc. may play a role in decision-making or in influencing the decision-making process.

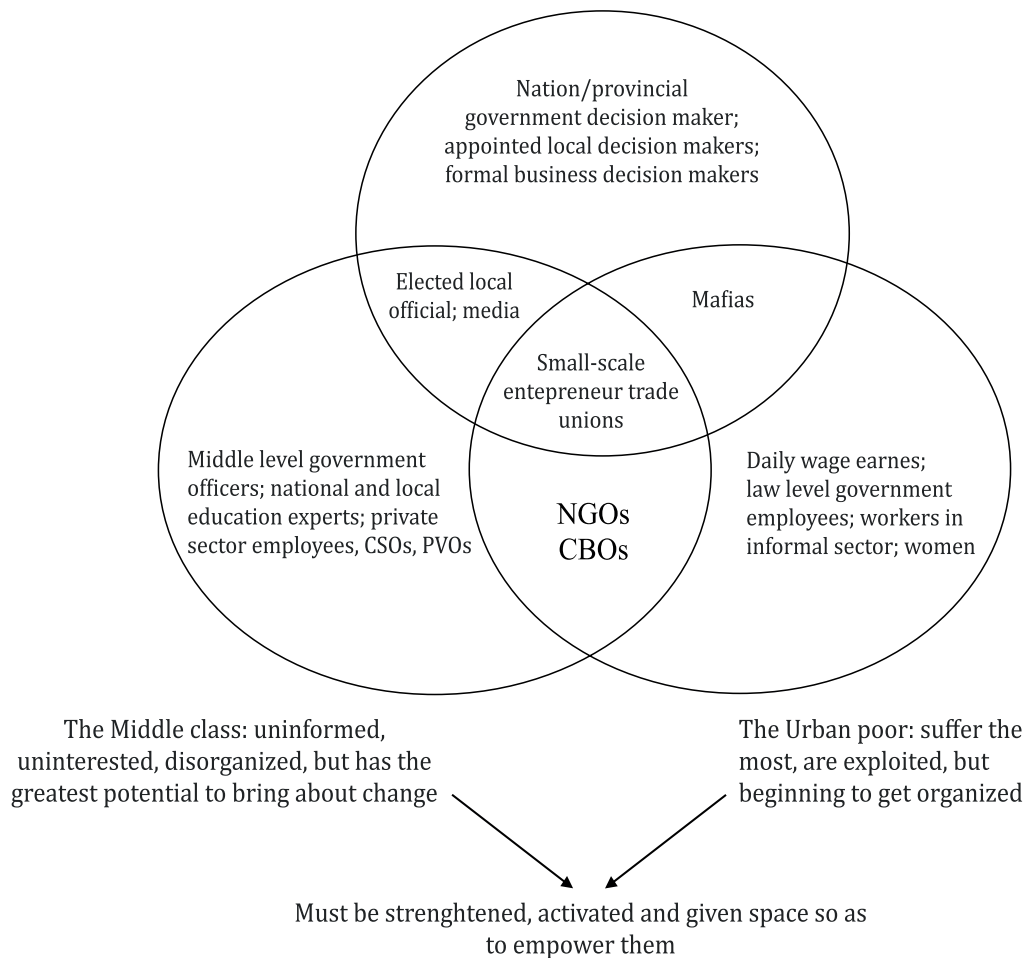
All these actors are grouped together as part of the civil society. In some countries in addition to civil society, organized crime syndicates such as the land mafia may also influence decision-making, particularly in urban areas and at the national level. In some rural areas locally, powerful families may make or influence decision-making.

Informal decision-making is often the result of corrupt practices or leads to corrupt practices (UNESCAP, 2009).

The complexity of the figure suggests that the governance mechanism needs to run a constant interconnection between the actors and the management of their power forms. It may happen that often, the discursive practices and the rhetorical processes of decision-making vehicledirects (within the local plan) the ideas and ideologies developed at the international level. This highlights not only the transnationality of the formation of an ideology and the policies of good practice but also the ambivalences and paradoxes of a transnational context and the hegemony of the forces not easily controlled by the local environment (Minicuci & Revanello, 2011, p. 33). A situation of this type can occur as a synonym for a crisis of governance.

Not surprisingly, the concept of good governance was used for the first time in 1989, that is the year of the publication of the report of the World Bank in Africa, where the lack of development of the continent was attributed to a crisis of governance, which in this case, it became a problem to analyze and to try to solve. From here emerged in all its normative force the policy of good governance that in the nineties became the new paradigm of development (Orlandini, 2011, p. 131).

**The Urban elite:** shape the city; formally and informally; is well organized.



**LEGENDA**

- CSOs: Civil society Organizations
- PVOs: Private Voluntay Organizations
- NGOs: Not Governamental Organizations
- CBOs: Congressional Budget Offices

Fonte: UNESCAP, 2009. <https://www.unescap.org/resources/what-good-governance>

The policy of good governance:

- emphasizes the role of public managers in providing high-quality services,
- supports the enhancement of managerial autonomy,
- measures individual and organizational performance.

It also recognizes the importance of providing the resources and technologies that managers use to achieve their institutional goals, and the importance of being “receptive to competition and a philosophy of openness”

whereby public officials should “make” their own purposes (differentiating them from those of the private sector) (Agere, 2000, p. 1).

From this new paradigm a range of perspectives serve to frame a government structure that has been the focus of debate in the political arena in both the academic, are and outside:

1. the relationship between governments and markets;
2. the relationship between governments and citizens;
3. the relationship between governments and private and voluntary sectors;
4. the relationship between elected representatives (politicians) and appointed (civil servants);
5. the relationship between local government institutions and residents of urban and rural areas;
6. the relationship between the legislative and executive power;
7. the relationship between nation states and international institutions.

By analyzing these prospects, many theorists and practitioners of public management from academia have formulated several different processes and procedures to obtain the so-called good governance and defined the principles and assumptions that underlie the same (Agere, 2000, p. 1).

### ***Participation***

Participation by both men and women is a fundamental feature of good governance. Participation could be either direct or through legitimate intermediate institutions or representatives. It is important to point out that representative democracy does not necessarily mean that the concerns of the most vulnerable in society would be taken into consideration in decision-making. Participation needs to be informed and organized. This means freedom of association and expression on the one hand and an organized civil society on the other hand.

### ***Predictability***

Good governance requires fair legal frameworks that are enforced impartially. It also requires full protection of human rights, particularly those of minorities. Impartial enforcement of laws requires an independent judiciary and an impartial and incorruptible police force.

### ***Transparency***

Transparency means that decisions taken and their enforcement are done in a manner that follows rules and regulations. It also means that information is freely available and directly accessible to those affected by such decisions and their enforcement. It also means enough information is provided via easily understandable forms and media.

### ***Responsiveness***

Good governance requires that institutions and processes try to serve all stakeholders within a reasonable timeframe.

### ***Consensus oriented***

There are as many viewpoints as there are actors in the society. Good governance requires mediation of the different interests in society to reach a broad consensus in society on what is in the best interest of the whole community and how this can be achieved. It also requires a broad and long-term perspective on what is needed for

Particularly, the concept of good governance must be based on eight fundamental principles: participation, consensus orientation, accountability (responsibility), transparency, responsiveness, effectiveness and efficiency, equality and inclusiveness, predictability (state of law) (UNESCAP, 2009):

sustainable human development and how to achieve the goals of such development. This can only result from an understanding of the historical, cultural and social contexts of a given society or community.

### ***Equity and inclusiveness***

A society's well-being depends on ensuring that all its members feel that they have a stake in it and do not feel excluded from the mainstream of society. This requires all groups, but particularly the most vulnerable, to have opportunities to improve or maintain their well-being.

### ***Effectiveness and efficiency***

Good governance means that processes and institutions produce results that meet the needs of society while making the best use of resources at their disposal. The concept of efficiency in the context of good governance also covers the sustainable use of natural resources and the protection of the environment.

### ***Accountability***

Accountability is a key requirement of good governance. Not only governmental institutions but also the private sector and civil society organizations must be accountable to the public and to their institutional stakeholders. Who is accountable to whom varies depending on whether decisions or actions taken are internal or external to an organization or institution. In general, an organization or an institution is accountable to those who will be affected by its decisions or actions. Accountability cannot be enforced without transparency and the rule of law.

In this scenario, there are three actors involved in the management of good governance: government, civil society, and the market.

The government must provide citizens with the services promised and play an appropriate role in the economic management of the country; the market ensures the mobility of factors of production, competition, and

the free exchange of information, and citizens are the passive recipients of an institutional environment where they can best interact with each other and with the government.

The interaction among these three entities ensures the minimization of corruption, the consideration of minorities, the participation of the weaker in decision-making and therefore sustainable human development. Thus, good governance implies an efficient state,

a mobilized civil society, and a productive market. In other words, good governance is facilitated by effective governments that create a legal and political environment conducive to economic growth and to equitable distribution of wealth. This in turn depends on a “lively” civil society, which should be able to mobilize communities and groups, facilitate political and social interactions, and generate social capital and cohesion (Agere, 2000, p. 10).

## WHAT IS THE ROLE OF PUBLIC ADMINISTRATION TO PROMOTE DEVELOPMENT

Public Administration (PA) plays a crucial role in economic and social local development. Law on local authorities (Testo Unico sugli Enti Locali) gives local communities, municipalities, and provinces the task of promoting development<sup>5</sup>.

As a result of the administrative decentralization policy, the municipality decides on the allocation of public funds collected, the levels of taxation and redistribution of wealth, and the efficiency of services offered (Ricci et al., 2010, p. 207). However, if one needs to focus on public policies (Howlett & Cashore, 2020; Ramazzotti, 2021) and interventions at the local level, PA defines macro-strategic directions and supports other decentralized entities (Brusconi & Vecchi, 2009).

The concept of a public administration system<sup>6</sup>, not only at a national level but also integrated into international cooperation and coordination, has become increasingly urgent and binding in recent years to rapidly identify bold, credible and effective policies.

PA can be understood in a structural dimension concerning the system of institutions that make up the State; these institutions are governed by standard rules and standardized homogeneous ways of operation. However, institutions are assigned a function that is institutionally aimed at satisfying the public needs<sup>7</sup>, which emerges from the territorial reality.

Three different types of policies to achieve its goals can be attributed to PA (D'Alessio et al., 2008, p. 35):

- *development policies* to ensure a level of quality of life adequate growing demand for the well-being of citizens;
- *policies of redistribution* of wealth to ensure the interests of all classes of the community are managed;
- *stabilization policies* when economic imbalances are created (inflation, unemployment, financial crises, political instability), those same imbalances that characterize the performance of our economy.

The close correlation between the activity of the PA and the growth (and development) of an area led the PA to seek the best conditions to maximize their objectives, which are not essentially new (development and promotion of macroeconomic reforms, strengthening the framework legislative, definition and implementation of policies for the companies, strengthening of the efficiency, accountability and internal accountability, etc.). However, different logics should guide today: the economic context (crisis), the social context (attention and pressure of public opinion), the political context (the consent form of parties and political movements), the institutional context (approval of reforms) (Borgonovi, 2010, p. 173) impose structural measures, in order to pursue higher levels of efficiency together with the containment requirements of public expenditure (Amatucci, 2000; Rebor, 2019; Cucciniello et al., 2018).

In the context of limited resources, the Public Administration (PA) must apply the brakes on certain expenditures, such as personnel expenses and the purchase of goods and services. At the same time, the PA must step on the accelerator for those same expenses that stimulate economic development, urban renewal or the revitalization of degraded areas, and the creation of social capital (Borgonovi, 2010, p. 174) fielding actions to define the necessary conditions to support the local development, the attraction of investments, and direct resources in the area.

In setting priorities to consider in defining local policies and guidance at the national level, the framework is the Quadro Strategico Nazionale 2007-2013<sup>8</sup> (QSN 2007-2013) (Ministry of Economic Development, 2007). The document proposes a comprehensive strategy aimed at the integration of the different actors involved in the promotion of paths to innovation, competitiveness and economic, social and territorial cohesion (Chamusca et al., 2024).

<sup>5</sup> Legislative decree n. 267/2000 – Art. 3 - Autonomy of provinces and municipalities:

- Local communities (municipalities and provinces) are autonomous.

- The municipality is the local authority that represents their community, looks after the interests and promotes development.

- Province, a local intermediate authority among municipality and region, representing their community, looks after the interests, promotes and coordinates the development.

<sup>6</sup> “...highlighting precisely articulation, the abundance, diversity, and specificity of thousands of government and local authorities, functional bodies, agencies, and firms characterized by different legal forms and degrees of organizational and economic autonomy”. See Borgonovi E., 2010, pag. 173.

The national strategic framework identifies four broad objectives:

1. to develop knowledge networks;
2. to enhance the quality of life, safety and social inclusion in the territories;
3. to enhance the productivity of sectors, services and competition;
4. to internationalize the economy, society, and governments.

They are the points of reference for the selection of action most appropriate and effective, available in priorities, goals, and targets. Based on these statements, the question that arises concerns the levers on which the PA should act:

### **1. New techniques of the government of the PA**

The process of introducing standards and business principles, e.g., efficiency, effectiveness and economy, began several years ago (Legislative Decree no. 29/1993, Leg. 286/1999) and made the necessary use of tools and techniques typical of private companies, even if the scenario is different and more complex (Ricci, 2005, p. 20). “The concept of government of the PA must be rethought from the perspective of governance not only innovative but in a broader sense of governance (or good governance, as mentioned previously). [...] We must move from an administration focused on the acts and proceedings to a “people-oriented” administration” (Borgonovi, 2010, p. 176). This means clear programming and the ability to oversee management processes and procedures, measuring the impact and effectiveness of decisions and actions. Planning entails establishing goals before setting out, evaluation criteria, and alternative proposals, appraising the consequences of each alternative and selecting the best alternative, to be used (Manjo, 2024, p. 110)

### **2. Increasing levels of transparency and quality of information through appropriate accountability systems**

Accountability means “giving account” of the use of public resources about the results achieved and the social needs of the community (AIDEA, 2008; Ricci, 2005) because PA uses resources that come from the contribution of citizens and thus requires a precise accounting of the use of these resources.

### **3. Ways of delivering local public services**

Although resources are scarce, people need more diversified services and high quality. The legislature has always given special attention to public services<sup>9</sup>, seeking to delineate the role of local management in the delivery activity, considering that public services are not substitutable and are managed by public monopolies. Identifying “quality standards”, at least for homogeneous categories of facilities and services<sup>10</sup>, is the most important.

### **4. The ability to attract public and private capital**

This capacity, on a public level, is linked to the skills and competencies of the PA to act on funding and calls on the European Community. However, the attraction of private capital in a territory is mainly linked to productive investment (Atkinson, 2021) but also to public administrations’ capacity to make a territory palatable or acquire innovative financing instruments such as project financing<sup>11</sup>.

### **5. Making a change IN culture and behaviour**

A crucial role is attributed to the leadership, which must be an active player in setting and sharing goals, using the resources referred to it and enhancing them. The political sphere has the task of interpreting the community’s needs and defining priorities for action; instead, the administrative sphere has the task of the concrete implementation of the decisions and programs. Only if there is sharing of objectives and awareness of the path to achieving that will it produce real behavioural changes.

The role that public administration must play in promoting the quality and competitiveness of a territory passes through the ability of administrations to adapt to changes in the context, not only regulations, which local administrations are called to confront (Comite, 2024). This shift has led from abstract discussions about the responsibility of public administration to a more pragmatic and managerial approach, focused primarily on tools, techniques, and procedures capable of effectively considering social and environmental variables (Borgonovi, 2005).

In Italy, the situation still needs to be improved<sup>12</sup>. This delay will be addressed through the National Recovery and Resilience Plan (PNRR), which addresses some weaknesses that have afflicted our economy and society for decades: persistent territorial disparities, gender disparities, weak productivity growth, and low investment in human and physical capital (Ametta, 2023).

<sup>7</sup> The qualification of a need as a public need is being assessed on: - the political opportunity to act - the social acceptability of public, - the cost-effectiveness of public action. Borgonovi E., *Principi e sistemi aziendali per le amministrazioni pubbliche*, Egea, Milano, 2005, p. 128.

The presence of a public service always records the presence of a common good, every time a service is public means it has been deemed worthy of a general interest, an interest that the community puts on everything, over every member of the community itself. Ricci P., *Il soggetto economico nell’azienda pubblica*, RIREA, Milano, 2010, p. 42.

<sup>8</sup> Community Strategic Guidelines 2007-2013 and Operational Programmes 2007- 2013, which are explicit in Decision 2006/702/EC and Regulation (EC) No 1083/2006 of the European Council, promote a harmonious, balanced, and sustainable development community, suggesting a series of lines within which member states are required to prepare their own national strategic framework for 2007-2013 (Mazzara et al., 2010, p. 422).

The PNRR is not just a traditional investment program. Still, it is designed as an actual transformative project, in which resource allocations are accompanied by a substantial package of reforms necessary to overcome the historical barriers that have hindered the development of public and private investments in recent decades and the structural weaknesses that have long slowed growth

and led to unsatisfactory employment levels, especially for young people and women. The PNRR, therefore, envisages an integrated set of investments and reforms aimed at improving the country's equity, efficiency, and competitiveness, promoting investment attraction, and generally increasing the confidence of citizens and businesses (Mueller, 2020).

## DISCUSSION AND CONCLUSION

From a strictly operational point of view, territorial development strategies could be as follows (Garzoni, 2009: 97-98):

- a) Territory portfolio strategy, aimed at identifying areas for investment, leveraging synergies by sharing resources or transferring knowledge;
- b) Economic and financial strategy of the territory to identify the most appropriate sources of funding needed for infrastructure and investments;
- c) Organizational strategy of the territory, concerning the choice to develop structures and operational mechanisms for the effective organization of the network of actors operating in the territory;
- d) The social strategy of the territory that refers, to environmental issues and compliance with certain work conditions and production activities' performance (activation of social capital networks).

We face a complex and lengthy implementation process, as each phase is essential for its completion and final success. Hence, there is a need for careful use of tools, which must meet specific requirements, such as consistency with the culture and existing skills in the administration, as well as integration with the mandatory planning and control tools already in use in local administrations, in order not to develop documents extraneous to the practical strategies and operational possibilities of public administration.

More recently, expectations of local administrations have increased, so they play a more active role in pursuing environmental and social equity, contributing to economic development, and limiting and correcting environmental degradation (Borgonovi & Rusconi, 2008).

Whoever wants to address the local development process must address local resistance to transform it into an actual engine of development: without it, or against it, it is impossible to initiate or support any local development process (Vespasiano & Martini, 2008, p. 131).

The strategy is to invest in self-feeding circuits that can benefit from the development of the system, trying to adopt a "sum greater than zero" approach, where one actor's interest is reflected in another's interest (Vespasiano & Martini, 2008, p. 105). Good governance is a rugged ideal to achieve in its entirety. However, to ensure human and sustainable development, all protagonists' actions must aim to transform this idea into reality.

<sup>9</sup>You can see: Farneti G., *La nuova disciplina dei servizi pubblici locali dopo il referendum e la manovra estiva*, in Azienditalia, 10/2011, Ricci P., Landi T., *La governance delle società per azioni dei servizi pubblici locali: attualità e prospettive*, in Azienda Pubblica n. 2, Rimini, Maggioli, 2009.

<sup>10</sup>Outside the system of citizen's chart had improved the quality of public services considerably reducing costs through the adoption of the spirit of continuous improvement of the cultural characteristic of quality systems. In Italy, however, wanting to "comply with the obligation of the law", it was decided to set the standard not just to continuously improve the level of quality, but rather to define the upper limit under which they could not take the penalties. Hinna L., *La riforma: una lettura in chiave manageriale*, in *Gestire e valutare le performance nella PA*, Hinna L., Valotti G. (a cura di), Maggioli Editore, 2010, p. 96.

<sup>11</sup>Project finance is not so much a new funding instrument, but rather a new philosophy and a new culture in the financing of public infrastructure, based on the feasibility of the project and its economic prospects, or on an attitude of the project to return - through income generated - the signed debt; the evaluation of the company requesting the loan, its financial position and its guarantees, take a back seat. (Amatucci, 2000)

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# THE RELATIONSHIP BETWEEN RENEWABLE ENERGY CONSUMPTION AND HUMAN DEVELOPMENT

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## SUMMARY

This article examines the relationship between renewable energy consumption and human development indicators in Moldova. The analysis, spanning from 1995 to 2021, employs econometric techniques, including Ordinary Least Squares (OLS) and Two-Stage Least Squares (2SLS) regression, to investigate the impact of renewable energy on the Human Development Index (HDI). The findings reveal a positive correlation between renewable energy consumption and HDI, indicating that increased adoption of renewable energy is associated with improvements in human development. Specifically, the study finds that a one-percentage-point increase in renewable energy consumption leads to approximately a 1.6% increase in HDI. Moreover, the article discusses Moldova's energy policy landscape, highlighting initiatives and policies aimed at promoting renewable energy development and achieving sustainability goals. The conclusions drawn from this study emphasize the critical importance of prioritizing renewable energy solutions. Such prioritization is deemed essential for driving sustainable development, fostering economic growth, bolstering energy security, and mitigating the adverse impacts of climate change. The study underscores that Moldova's experience and policy initiatives could serve as a valuable model for other nations aiming to enhance their human development through sustainable energy practices. This research argues for a continued and intensified focus on the integration of renewable energy, highlighting its fundamental importance within national and international strategies aimed at achieving ambitious human development and sustainability goals. This involves a reassessment and expansion of current commitments, considering not only the ecological benefits, but also the long-term economic and social impact, thereby strengthening a sustainable future for future generations.

*Keywords:* sustainable development, renewable economy, HDI, renewable energy promotion policies, Moldova

## INTRODUCTION

A remarkable trend in the global economy in recent decades has been the rapid growth of renewable energy (RE). This development was catalyzed by the oil shocks of the 1970s, when global oil prices experienced a spectacular rise, prompting importing countries to increase government intervention to control consumption and diversify energy supply, thus increasing energy independence.

By the late 1990s, interest in the development of renewable energy sources (RES) was fueled by concerns about global climate change. During the 2000s, the rapid rise in the prices of energy commodities, especially oil, further intensified this trend.

As a result of these events, renewable energy technology experienced a rapid expansion. According to data provided by REN22 in 2023, Renewable electricity represents 30% of total electricity generation. International Energy Agency (IEA) forecasts indicate a 50% increase in demand for renewable energy by 2030 (REN21, 2017).

In parallel, in many countries of the world, the share of "clean" energy in total electricity production significantly exceeds the global average of 20%. For example, in Denmark, this proportion reached 67% in 2023 (International Trade Administration, 2024), while in Germany, it reached 60% (Fraunhofer Institute for Solar Energy Systems ISE, 2024). In turn, in Portugal, Greece, Spain and the United Kingdom, this proportion varies between 20% and 24% (REN21, 2019).

The subject of renewable energy is of even more pressing importance for Moldova, considering that the country has no energy resources of its own and is practically

completely dependent on imports of fossil fuels and electricity (The integrated national energy and climate plan of Moldova for the period 2025-2030, 2024). Therefore, measures to encourage the use of energy resources available in the country such as biomass, renewable solar and wind energy sources become imperative.

Renewable energy is derived from inexhaustible resources such as wind, solar radiation and water flows. These natural resources are exploited to produce energy in a sustainable and environmentally friendly manner.

Renewable energy can be accessed in a variety of countries regardless of their geographic location, while traditional energy sources are only available to certain regions. This characteristic makes renewable energy very attractive to many states, including Moldova, which aspire to energy independence, sustainability and long-term cost reduction. For this reason, Moldova establishes its trajectories for the development of the renewable energy sector, aiming to ensure access to autonomous and sustainable energy sources.

In this analysis, we will focus on renewable energy as a cornerstone for economic development, paving the way toward sustainable growth and enhanced living standards. Investments in renewable energy infrastructure not only create job opportunities but also stimulate economic expansion, leading to higher income levels and fostering economic stability (Nemet, 2006).

Additionally, the accessibility of renewable energy sources plays a pivotal role in advancing human development. Unlike traditional energy sources, renewable energy technologies like solar and wind power often feature de-

centralized distribution networks, making energy more reachable to remote and underserved communities (International Renewable Energy Agency, 2019). Increased energy access translates into greater economic productivity, improved healthcare services, and enhanced educational opportunities, thereby contributing to comprehensive human development.

The environmental sustainability offered by renewable energy further strengthens its impact on human development. By emitting fewer greenhouse gases and reducing environmental pollution, renewable energy technologies contribute to cleaner air and water, mitigating public health risks and enhancing overall well-being (United Nations Development Programme, 2020).

Moreover, transitioning to renewable energy enhances energy security, a critical aspect of human development. Diversifying energy sources decreases reliance on imported fossil fuels, ensuring a stable and dependable energy supply (International Energy Agency, 2020). This stability not only supports economic activities but also secures access to vital services, reinforcing societal resilience against energy crises or disruptions.

Investments in renewable energy offer significant environmental benefits, such as reducing greenhouse gas emissions and supporting land reclamation and biodiversity (Dhar et al., 2020). However, challenges include the intermittent nature of sources like solar and wind, leading to reliability issues, and the need to manage environmental impacts like habitat disruption (Gayen et al., 2024). Economic and policy barriers, such as high initial costs and regulatory hurdles, also pose significant challenges to the expansion of renewable energy capacities (Hamburger & Harangozo, 2018).

Nevertheless, the pursuit of renewable energy fosters education and innovation, driving progress in human capital development. Investments in education and research and development within the renewable energy sector spur technological innovation and cultivate skilled labor (Jacobsson & Lauber, 2006). By nurturing a culture of innovation and knowledge-sharing, renewable energy initiatives contribute to higher levels of education and innovation, propelling societies toward greater heights of human development.

## RENEWABLE ENERGY LANDSCAPE IN MOLDOVA

Moldova's renewable energy sector has experienced notable growth in recent years, driven by governmental initiatives, international collaborations, and advancements in technology. Wind, solar, biomass, and hydropower are prominent renewable energy sources being developed in the country. The government has implemented various

policies to incentivize renewable energy deployment, including feed-in tariffs and investment incentives. Despite progress, challenges such as limited infrastructure and financing constraints persist, hindering the sector's full potential.

## DATA SOURCES AND USED METHODS

The dataset spans from 1995 to 2021, inclusive. Table 1 provides a concise overview of the variables. Due to limited data availability, the analysis couldn't be extended beyond this timeframe. All variables, except Total Solar Irradiance (TSI), were sourced from the World Bank Open Source Data.

We regard the Human Development Index (HDI) as a suitable metric for measuring welfare in Moldova. The HDI is derived from the life expectancy index, education index, and GINI index. Moldova's HDI, with a mean of 705.5926 and a range of 617 to 776 across the observed years, mirrors progress in vital areas like life expectancy, education, and living standards.

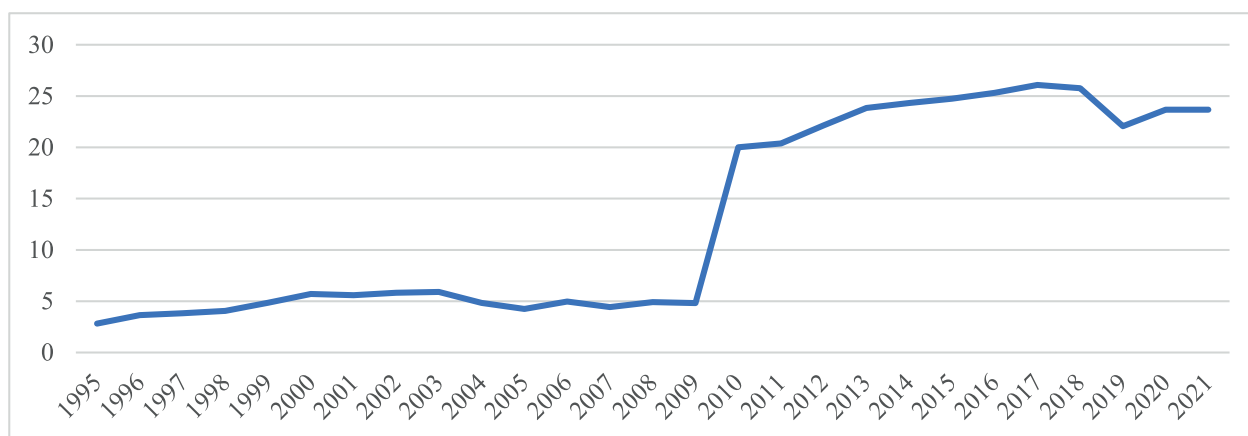
A higher HDI indicates greater human development, implying improved access to healthcare, education, and economic opportunities for the populace. Moldova has prioritized efforts to enhance HDI through governmental policies and development initiatives, aiming to elevate living standards and boost citizen well-being.

Despite advancements in some areas, Moldova encounters challenges in sustaining HDI improvements across all dimensions. Economic disparities, healthcare accessibility, and educational quality remain concerns, impacting the overall HDI score and underscoring the necessity for targeted interventions to address structural issues.

Renewable Energy Consumption (% of total final energy consumption) emerges as a significant focus of our analysis, revealing a notable trend illustrated in Figure 1: a substantial surge from 5% in 2009 to 20% in 2010. This remarkable increase warrants investigation into its driving forces, which may include policy interventions, technological advancements, or shifts in governance. Remarkably, this upswing coincides with Moldova's transition from a communist regime to a more liberal governance structure in 2009. Further exploration of these dynamics will be crucial for our subsequent analysis.

**Figure 1**

Renewable Energy Consumption (% of total final energy consumption) in the Republic of Moldova



Source: The World Bank, <https://data.worldbank.org/country/MD>

The Total Solar Irradiance (TSI) data was obtained from Copernicus' Climate Data Store, specifically utilizing RMIB's (Royal Meteorological Institute of Belgium) data on TSI for the precise coordinates of Moldova. TSI represents the total solar power received per unit area at the Earth's atmosphere's top. In the context of Moldova, TSI serves as a crucial metric for assessing solar energy availability and the potential for solar power generation. With an average TSI of 1361.349 W/m<sup>2</sup> observed across the country, Moldova enjoys relatively consistent levels of solar radiation throughout the year. This solar

resource offers opportunities for leveraging solar energy technologies to meet energy needs, mitigate greenhouse gas emissions, and bolster energy security.

TSI data provides valuable insights for policymakers, energy planners, and renewable energy developers in Moldova. By comprehending the spatial and temporal fluctuations of solar irradiance, stakeholders can optimize the deployment of solar energy systems, such as photovoltaic panels and concentrated solar power plants, to maximize energy output and economic advantages.

**Table 1**

Variable Description

Variable	HDI	Renewable energy consumption (% of total final energy consumption)	Total Solar Irradiance (1 Astronomical Unit)	Total greenhouse gas emissions (kt of CO <sub>2</sub> equivalent)	Nitrous oxide emissions (thousand metric tons of CO <sub>2</sub> equivalent)	Annual freshwater withdrawals, total (% of internal resources)
Obs	27	27	27	27	27	27
Mean	705.5926	13.05704	1361.349	12990.59	966.7258	65.60742
Std. Dev.	54.1126	9.616174	0.3889613	1551.056	173.7366	32.96014
Min	617	2.84	1360.896	11426.03	741.3358	51.66667
Max	776	26.07	1362.274	18557.85	1474.54	211.3333

Source: The World Bank, <https://data.worldbank.org/country/MD>, Copernicus DOI, Dewitte, S., & Nevens, S. (2021): <https://doi.org/10.24381/cds.85a8f66e>

To investigate the influence of renewable energy consumption on welfare indicators in Moldova, we initially employ a *standard Ordinary Least Squares (OLS) regression*, regressing the Human Development Index (HDI) on Renewable Energy Consumption, as depicted in the primary equation below.

Where  $y$  is the natural log HDI,  $R$  is Renewable Energy Consumption in year  $t$  and  $X$  are other controls as showed in columns 2 and 3 in Table 2.  $\delta$  is the main coefficient of interest, given that it presents the effect of renewable energy consumption on the HDI. We later employ 2SLS.

## MAIN RESULTS AND DISCUSSION

Table 2 reveals that while there seems to be a positive correlation between renewable energy consumption and HDI in Model 1, this connection becomes less evident when additional variables are incorporated into the analysis. Other variables like total greenhouse gas (GHG)

emissions, nitrous oxide emissions, and freshwater withdrawals display inconsistent or statistically insignificant relationships with HDI across various models, with results that are largely economically insignificant.

**Table 2**  
OLS Results

	1	2	3
<b>Renewable Energy</b>	0.0067896***	0.0069638	0.0058522
<b>Total Greenhouse Gas Emissions</b>		-2.19e-06	1.13e-06
<b>Nitrous Oxide Emissions</b>		-0.0001044	-0.0000386
<b>Annual Freshwater Withdrawals</b>			-0.0007672
<b>Constant</b>	6.467488	6.594643	6.552693
<b>Number of obs</b>	27	27	27
<b>Procedure</b>	OLS	OLS	OLS
<b>F-statistic</b>	67.94	26.06	27.88
<b>R-squared</b>	0.6999	0.7727	0.8182
<b>Root MSE</b>	0.04359	0.03956	0.03617

Source: \*\*: 5% sig. \*\*\*: 1% sig. P-values based on regression analysis. Elaborated by the author based on data from: The World Bank, <https://data.worldbank.org/country/MD>, Copernicus DOI, Dewitte, S., & Nevens, S. (2021): <https://doi.org/10.24381/cds.85a8f66e>

We proceed with 2SLS regression, an econometric technique designed to address endogeneity issues and ensure robust estimates of the relationship between renewable energy consumption and welfare outcomes. Endogeneity arises when independent variables correlate with the error term in regression analysis, leading to biased and inconsistent parameter estimates. In our study, focusing on the impact of renewable energy consumption on welfare outcomes such as the Human Development Index (HDI), endogeneity may arise from omitted variables, reverse causality, or measurement errors.

2SLS regression tackles endogeneity by employing instrumental variables (IVs) to instrument for the endogenous variables. In our analysis, we utilize Total Solar Irradiance (TSI) as an instrument for Renewable

Energy Consumption, which is relevant to our context. We assume TSI is an exogenous instrument and does not directly affect HDI apart from its relationship with the main regressor. However, it's worth noting that TSI may not encompass all forms of renewable energy and primarily focuses on solar power generation, but due to data constraints, this was our optimal choice.

The results for this 2SLS analysis are presented in Table 3. In Column 3, the coefficient for renewable energy consumption is 0.0161518. This indicates that a one-percentage-point increase in renewable energy consumption of total energy consumption is associated with an approximate 1.6% increase in HDI. In simpler terms, as renewable energy consumption rises, there is a corresponding positive impact on HDI.

**Table 3**  
2SLS Results

	1	2	3
<b>Renewable Energy</b>	0.0208114***	0.0148306**	0.0161518**
<b>Total Greenhouse Gas Emissions</b>	-	0.0000524	0.0000513
<b>Nitrous Oxide Emissions</b>	-	-0.0005753	-0.0006536
<b>Annual Freshwater Withdrawals</b>	-	-	0.0007105
<b>Constant</b>	6.284405	6.238264	6.263893
<b>Procedure</b>	IV	IV	IV
<b>Number of obs</b>	27	27	27
<b>R-squared</b>	-	0.1739	0.0052
<b>Root MSE</b>	0.13881	0.0696	0.07638

Source: \*\*: 5% sig. \*\*\*: 1% sig. P-values based on regression analysis. Elaborated by the author based on the data from: The World Bank, <https://data.worldbank.org/country/MD>, Copernicus DOI, Dewitte, S., & Nevens, S. (2021): <https://doi.org/10.24381/cds.85a8f66e>

We now explore the energy policy of Moldova, which has undergone significant evolution towards promoting and developing renewable energy sources. In this regard, various policies and measures have been adopted and implemented to stimulate investments in renewable energy infrastructure and facilitate the use of this source across the country (The energy strategy of the Republic Moldova until 2030, 2013).

An essential pillar of this policy is Law No. 10 of February 26, 2016, which outlines the regulatory framework for electricity derived from renewable sources (Law of the republic of Moldova regarding the promotion of the use of energy from renewable sources, 2016). This law establishes clear and transparent rules for renewable energy producers and consumers, thereby encouraging the development and implementation of projects in this field.

Another important instrument is the Integrated National Plan for Energy and Climate (INPEC) 2025-2030, which aims to promote energy efficiency and renewable energy sources in Moldova. This plan sets ambitious targets and concrete measures for the development of the renewable energy sector, including stimulating private investments and research in the field (The integrated national energy and climate plan of Moldova for the period 2025-2030, 2024).

In line with the INPEC, Moldova aims to achieve a share of 27% renewable energy in final energy consumption by 2030. Additionally, the strategy includes national

objectives for 2030, such as improving energy efficiency by 20% and reducing CO<sub>2</sub> emissions by 25%.

Through these initiatives, Moldova seeks to create a competitive and environmentally sustainable energy sector integrated into European infrastructure and energy markets. This approach aims to ensure an adequate level of energy security and affordable prices for consumers.

To achieve these objectives, Moldova aims to align its policies as closely as possible with the overall objectives of the European Union's energy and climate policy, reflected in recent legislation such as the European Green Deal, Fit for 55, and REPowerEU, the Paris Agreement, and commitments made within the Energy Community (Energy Strategy of Moldova 2050, 2022). It is recognized that the energy sector is responsible for a significant proportion of national greenhouse gas emissions, which is why it is considered a priority area for future actions.

Thus, Moldova's policy for the development of renewable energy is in continuous evolution and implementation, with a particular focus on reducing dependence on traditional energy sources and contributing to global efforts to combat climate change by adopting clean and renewable energy sources. This orientation reflects the country's firm commitment to building a sustainable and competitive energy future, thus contributing to the sustainable development of the entire society.

## CONCLUSION

In conclusion, the analysis highlights the significant impact of renewable energy consumption on human development, confirming the positive relationship between the use of renewable energy and human development indicators. By employing robust econometric techniques, such as instrumenting renewable energy consumption through total solar irradiance, we have demonstrated that increased adoption of renewable energy positively influences human development indicators in Moldova.

Following the study carried out by 2SLS analysis, it was found that the coefficient for renewable energy consumption is 0.0161518. This result indicates that an increase of 1 percentage point in the consumption of renewable energy from the total energy consumption is associated with an increase of about 1.6% in the Human Development Index (HDI).

In light of these findings, decision-makers, stakeholders, and communities are encouraged to prioritize and accelerate the adoption of renewable energy solutions.

By harnessing the economic, social, and environmental benefits of renewable energy, countries can advance their agendas for sustainable development and achieve tangible improvements in human well-being and quality of life.

Energy policy in the field of renewable energy is crucial for sustainable development in Moldova. Effective policies in this area significantly impact the environment, economy, and society. By promoting renewable energy, Moldova can reduce its dependence on traditional energy sources, enhancing energy security and reducing greenhouse gas emissions. Additionally, renewable energy investments create new business opportunities and jobs, driving economic growth and innovation. These investments also improve energy access in rural and isolated communities, enhancing quality of life and reducing social disparities. Thus, developing and implementing coherent renewable energy policies are vital for Moldova's sustainable development and achieving its environmental, energy, and economic goals.

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# BEYOND DIRECT NUTRITION EDUCATION: THE GROWING IMPORTANCE OF POLICY, SYSTEMS, AND ENVIRONMENTAL CHANGE STRATEGIES IN THE USDA'S SNAP-ED PROGRAM

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## SUMMARY

The Supplemental Nutrition Assistance Program Education (SNAP-Ed) in the United States has undergone a significant evolution in recent years, shifting from the singular focus on direct nutrition education to a more comprehensive approach that incorporates policy, systems, and environmental (PSE) change strategies. This transformation reflects a growing recognition of the need for a multi-level, multi-sector approach to effectively address the complex issues of food and nutrition insecurity in diverse communities across the nation. The 2025 SNAP-Ed Plan Guidance issued by the United States Department of Agriculture (USDA) underscores this shift by placing increased emphasis on PSE interventions and community engagement. These new priorities aim to promote nutrition security and health equity on a broader scale, moving beyond individual behavior change to create supportive environments that make healthy choices more accessible and sustainable for SNAP-eligible populations. Successful PSE interventions implemented through SNAP-Ed have demonstrated significant potential for creating lasting, population-level changes in food environments and dietary behaviors. These strategies have shown promise in improving access to healthy foods, enhancing nutrition environments in schools and communities, and fostering collaboration among various stakeholders to address systemic barriers to healthy eating. The authors observe that meaningful community engagement and participation are crucial for ensuring that interventions are culturally appropriate, relevant, and sustainable. As SNAP-Ed continues to evolve, ongoing research and evaluation will be essential to refine PSE strategies and maximize their impact on nutrition security and health equity across diverse populations.

*Keywords:* SNAP-Ed, policy, systems, and environmental change strategies, nutrition security, health equity, community engagement, USDA

## INTRODUCTION

The Supplemental Nutrition Assistance Program Education (SNAP-Ed) promotes nutrition security and health equity among low-income individuals in the United States (USDA, 2022). While traditionally focused on direct nutrition education (Rivera et al., 2016), SNAP-Ed has shifted towards policy, systems, and environmental (PSE) change strategies (Burke et al., 2022; Elsaesser et al., 2022). Key milestones include the Healthy, Hunger-Free Kids Act of 2010, SNAP-Ed Plan Guidance documents, and the 2018 Farm Bill (USDA, 2022). This article examines the evidence base for PSE approaches, their potential to advance nutrition security and health equity, and offers recommendations for future research and practice.

### **Rationale for the Study**

SNAP-Ed's shift toward PSE change strategies requires better understanding of their impact on social determinants of health and disparities (USDA, 2024). Food insecurity disproportionately affects low-income communities and communities of color, perpetuated by systemic inequities (Elsaesser et al., 2022) necessitates a comprehensive approach targeting policies, systems, and environments (Burke et al., 2022). The 2025 SNAP-Ed Plan Guidance emphasizes PSE strategies, which have potential for sustainable, population-level changes (USDA, 2022; Haynes-Maslow et al., 2019). However, more research is needed on effectiveness, challenges, and best practices (Burke et al., 2022). Success depends on

community engagement, cross-sector partnerships, and policy support (Haynes-Maslow et al., 2019). Examining these approaches is crucial for creating an equitable and sustainable food system supporting all communities' health and well-being.

### **Background**

SNAP-Ed has evolved over four decades from a small-scale nutrition education effort to a comprehensive nationwide initiative promoting nutrition security and health equity. Key milestones include the Food Stamp Act of 1992 and the Healthy, Hunger-Free Kids Act of 2010, which introduced the Social-Ecological Model as a guiding framework. Subsequent guidance has prioritized policy, systems, and environmental (PSE) approaches alongside traditional education strategies, reflecting the need for comprehensive, population-level improvements. The 2018 Farm Bill expanded SNAP-Ed's scope to include physical activity promotion. SNAP-Ed's evolution balances top-down policy guidance with bottom-up innovation by state and local implementers. The upcoming 2025 SNAP-Ed Plan Guidance is expected to further emphasize PSE approaches, community engagement, and health equity, building on past successes while encouraging continued innovation in promoting nutrition security and health for all (USDA, 2024).

**Table 1***A timeline of key milestones in the evolution of SNAP-Ed*

Year	Milestone
1981	USDA's Food and Nutrition Service (FNS) begins funding nutrition education programs for Food Stamp Program participants (the predecessor to SNAP)
1992	Food Stamp Act of 1992 establishes optional state nutrition education grants
1998	Kentucky launches one of the first state nutrition education programs funded by the Food Stamp Program
2000	FNS publishes the first guidance for states on nutrition education for the Food Stamp Program
2004	The Food Stamp Nutrition Education Systems Review report is released, providing recommendations for improving the effectiveness and accountability of nutrition education programs
2008	The Food, Conservation, and Energy Act of 2008 renames the Food Stamp Program as the Supplemental Nutrition Assistance Program (SNAP) and expands nutrition education funding
2010	The Healthy, Hunger-Free Kids Act of 2010 establishes SNAP-Ed as a nutrition education and obesity prevention grant program, and introduces the Social-Ecological Model as a framework for SNAP-Ed programming
2013	SNAP-Ed Guidance introduces the Interpretive Guide to the SNAP-Ed Evaluation Framework, providing standardized metrics for evaluating SNAP-Ed programs
2016	SNAP-Ed Guidance further prioritizes policy, systems, and environmental (PSE) approaches and provides additional resources and support for implementing these strategies
2018	The Agriculture Improvement Act of 2018 (Farm Bill) expands the scope of SNAP-Ed to include physical activity promotion and encourages the use of multi-level, community-based strategies
2021	USDA releases the SNAP-Ed Toolkit website, providing a comprehensive collection of resources and best practices for SNAP-Ed program planners and implementers
2024	USDA FNS releases the Fiscal Year 2025 SNAP-Ed Plan Guidance, further emphasizing the importance of PSE approaches and community engagement in SNAP-Ed programming

Source: A select list of milestones in the history of SNAP-Ed program.

Research demonstrates SNAP-Ed's effectiveness in enhancing food security and promoting healthy choices within limited budgets (Rivera et al., 2016). While successful, Long et al. (2012) propose policy measures to further boost its nutritional impact. Multi-level interventions are emphasized by Draper et al. (2021) and Burke et al. (2022), highlighting SNAP-Ed's role in fostering sustainable, population-level changes. Eicher-Miller et al. (2020) show SNAP-Ed's unique contribution to food security, while Haynes-Maslow et al. (2019) explore effective practices and barriers in implementing PSE change initiatives. Caldwell et al. (2022) underscore SNAP-Ed's impact on dietary outcomes and health equity, emphasizing evidence-based strategies. The program's adaptability is demonstrated through school-based implementations during the pandemic (Francis et al., 2021) and multi-level interventions improving dietary behaviors (Slagel et al., 2022). Kuo (2019) reflects on SNAP-Ed's role in addressing food insecurity in Los Angeles County.

### **Direct Nutrition Education Approaches**

SNAP-Ed has traditionally focused on direct nutrition education strategies (Ventura et al., 2022; Vance et al., 2020), but these approaches have limitations in addressing systemic factors contributing to food insecurity (Haynes-Maslow et al., 2019). Social, economic, and physical environments significantly influence food choices and health outcomes, particularly affecting low-income communities and communities of color (Moore et al., 2023). Recognizing these limitations, SNAP-Ed has adopted a more comprehensive approach by integrating policy, systems, and environmental (PSE) change strategies (Tompkins et al., 2021). This shift reflects an understanding that promoting nutrition security requires a multi-level, multi-sectoral strategy beyond individual behavior change (Ventura & Whaley, 2022). Embracing this comprehensive approach can better tackle systemic factors contributing to food insecurity, leading to sustainable and equitable improvements in health outcomes (Holston et al., 2020).

### ***The PSE Turn in SNAP-Ed***

PSE change strategies in SNAP-Ed aim to create sustainable, population-level changes in environments shaping food and physical activity choices, recognizing that individual behavior is heavily influenced by living contexts (Fornaro et al., 2022). Examples include advocating for policies to increase healthy food access, collaborating with schools to establish healthy food procurement policies, and improving the built environment. The emphasis on PSE approaches has grown significantly, reflecting a broader shift towards addressing social determinants of health. Key milestones include the 2010 Healthy, Hunger-Free Kids Act, the 2013 and 2016 SNAP-Ed Guidance documents, and the 2018 Farm Bill. These milestones expanded SNAP-Ed's scope and emphasized multi-level interventions, PSE approaches, and innovative, community-based strategies.

### ***The Social-Ecological Model (SEM): A Framework for PSE in SNAP-Ed***

The Social-Ecological Model (SEM) can be a powerful theoretical frame for PSE approaches in SNAP-Ed, recognizing that behavior is influenced by multiple levels of factors (Naja-Riese, 2019). This framework emphasizes community-level interventions to create supportive environments for healthy choices (Slagel et al., 2022). Community engagement ensures interventions are responsive to local needs (Riviera et al., 2017). Organizing PSE approaches by SEM levels provides a comprehensive framework for SNAP-Ed interventions from individual to societal levels.

**Table 2**

*The hierarchy and associated types of interventions, key objectives and limitations*

Level of Social-Ecological Model	Type of Intervention	Key Findings	Limitations
<b>Individual</b>	Nutrition education and skill-building programs	Improvements in knowledge, attitudes, and self-efficacy related to healthy eating and physical activity	Limited evidence on long-term behavior changes and health outcomes
<b>Interpersonal</b>	Family-based interventions and peer support programs	Positive changes in family food environments and social support for healthy behaviors	Need for more research on the effectiveness of peer-led interventions and the role of social networks in behavior change
<b>Organizational</b>	School wellness policies and workplace health promotion programs	Increased availability of healthy food options and opportunities for physical activity; improvements in organizational practices and environments	Challenges in measuring the impact of organizational changes on individual behavior and health outcomes; limited evidence on the sustainability of interventions over time
<b>Community</b>	Healthy food retail initiatives and community-wide campaigns	Increased access to healthy foods in underserved neighborhoods; positive changes in community awareness and norms related to healthy eating and active living	Need for more rigorous evaluations of community-level interventions, including assessment of health and equity impacts; limited evidence on the cost-effectiveness of interventions
<b>Societal</b>	Advocacy for nutrition-related policies and systems changes	Successful passage and implementation of policies that support healthy eating and active living, such as sugar-sweetened beverage taxes and complete streets policies	Challenges in attributing policy and systems changes to specific interventions; need for more research on the long-term impact of policy changes on health outcomes and equity

Source: An SEM structuring of intervention in the SNAP-Ed program

As SNAP-Ed continues to evolve and expand its focus on PSE approaches, the SEM remains a valuable framework for guiding the development and implementation of comprehensive, community-driven strategies that promote nutrition security and health equity.

**Table 3**

*The summarized comparison between the direct approaches and PSE based indirect approaches*

<b>Feature</b>	<b>Traditional Direct Education</b>	<b>Policy, Systems, and Environmental (PSE) Change</b>
<b>Focus</b>	Individual behavior change	Changing the environments, policies, and systems that shape individual behavior
<b>Target Audience</b>	SNAP-Ed eligible individuals and families	Communities, organizations, and institutions that serve SNAP-Ed eligible populations
<b>Intended Outcomes</b>	Improved knowledge, skills, and behaviors related to healthy eating and physical activity	Increased access to healthy foods and opportunities for physical activity; improved nutrition and health-related policies and practices
<b>Activities</b>	Nutrition education classes, cooking demonstrations, grocery store tours, one-on-one counseling	Developing and advocating for policies that support healthy eating and active living; working with community partners to create healthier environments; implementing organizational wellness programs
<b>Sustainability</b>	Limited, as individual behavior changes may not be maintained without ongoing education and support	High, as changes to policies, systems, and environments can have a lasting impact on communities and populations
<b>Reach</b>	Limited to individuals who participate in direct education activities	Broader, as PSE changes can impact entire communities and populations, including those who may not participate in direct education
<b>Evaluation Metrics</b>	Short-term changes in knowledge, attitudes, and behaviors; participation rates in education activities	Long-term changes in health outcomes, food and physical activity environments, and nutrition-related policies and practices; reach and impact of PSE interventions
<b>Evidence Base</b>	Strong evidence for the effectiveness of direct education in improving individual-level knowledge and behaviors	Growing evidence for the effectiveness of PSE approaches in creating sustainable, population-level changes in nutrition and health outcomes
<b>Equity Considerations</b>	May not address the underlying social and environmental determinants of health that contribute to disparities	Can help to reduce disparities by addressing the structural barriers to healthy eating and active living in underserved communities
<b>Examples</b>	A series of nutrition education classes for SNAP-Ed eligible adults; a cooking demonstration at a local food pantry	Working with corner store owners to increase the availability of fresh produce in low-income neighborhoods; advocating for school wellness policies that promote healthy eating and physical activity

Source: Comparison of direct and PSE based SNAP-Ed interventions

### Health Equity through PSE Changes

Health disparities, particularly affecting low-income communities and communities of color, are intricately linked to food and nutrition insecurity (Sa'aid et al., 2020). These disparities are exacerbated by limited access to healthy food options and higher prevalence of diet-related chronic diseases in marginalized populations (Troutman et al., 2012). PSE change strategies address these disparities by focusing on upstream factors shaping food and physical activity environments (Balis & Strayer, 2019). These strategies can reduce barriers to healthy eating and active living, promoting equitable access to health resources (Wippold et al., 2021). PSE approaches also facilitate equitable access to nutrition education in community-based settings (Frankish et al., 2017). Engaging community members in planning and implementing interventions ensures efforts are tailored to local needs, fostering sustainability,

and promoting health equity (Sirdenis et al., 2019). As SNAP-Ed expands its focus on PSE approaches, prioritizing health equity and community involvement will be crucial in addressing social determinants of health and promoting equitable access to nutrition security resources (Washburn et al., 2022).

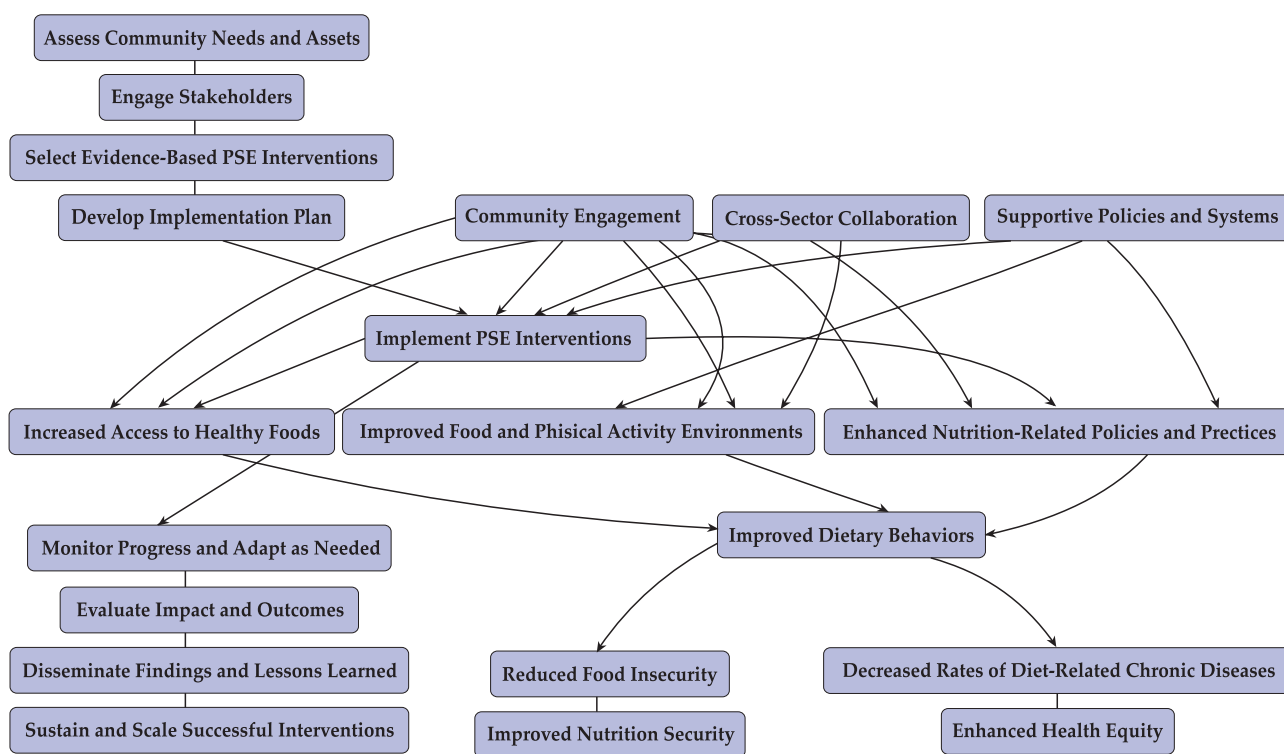
The “Healthy Corner Store Initiative” in Philadelphia, the “Healthy Food Financing Initiative” (HFFI) in New Orleans, and the “Workplace Wellness Initiative” in Iowa exemplify successful PSE interventions in SNAP-Ed. In Philadelphia, SNAP-Ed funding supported training for corner store owners to increase healthy food availability in low-income areas, resulting in improved food options and purchasing behaviors (Mayer et al., 2019). The

New Orleans HFFI used SNAP-Ed funding to advocate for and implement a program supporting healthy food retailers in underserved communities, leading to increased food access and positive economic impacts (Ulmer et al., 2012). In Iowa, the Workplace Wellness Initiative utilized SNAP-Ed funds to assist employers in creating healthier work environments, resulting in increased adoption of wellness policies and improved employee health behaviors (Stluka et al., 2019). These examples demonstrate how PSE interventions in SNAP-Ed can create sustainable, community-level changes that promote nutrition security and health equity by addressing environmental and policy factors influencing food access and health behaviors.

**Implementing PSE Strategies: Challenge and Opportunities**

**Figure 1**

*A typical PSE intervention process and outcomes*



PSE change approaches have the potential to significantly enhance nutrition security and health equity (Burke et al., 2022). A typical implementation process follows the general approach given in Figure 1.

The diagram illustrates how SNAP-Ed PSE interventions can contribute to nutrition security and health equity through various pathways. PSE interventions lead to intermediate outcomes such as increased healthy food access, improved food and physical activity environments, and enhanced nutrition-related policies. These contribute to long-term outcomes including improved dietary behaviors, reduced food insecurity, and decreased di-

et-related chronic diseases, supporting improved nutrition security and health equity. Moderating and mediating factors like community engagement, cross-sector collaboration, and supportive policies influence the interventions’ impact. Implementing PSE strategies faces challenges including limited resources, political opposition, and cross-sector collaboration needs (Ventura et al., 2022). Strategies to overcome these barriers include fostering diverse partnerships (Rohan et al., 2019), utilizing data and evidence (Holston et al., 2020), and engaging community members throughout the process (Moore et al., 2023). As SNAP-Ed expands its PSE focus,

prioritizing partnerships and collaboration is crucial for driving enduring, equitable changes in nutrition security and health outcomes (Vance et al., 2020).

It is clear from the diagram that partnerships and collaborations are crucial for successful PSE interventions, requiring coordination across sectors and stakeholders (Sreedhara et al., 2020). These partnerships, involving diverse stakeholders, can overcome barriers and drive sustainable changes in nutrition security and health equity (Washburn et al., 2022; Cunningham-Sabo et al., 2022). Effective partnerships are built on trust, shared vision, and mutual accountability (Tompkins et al.,

2021). Strategies for successful partnerships include clear goal setting, open communication, leveraging strengths, community engagement, and regular evaluation (Minkler et al., 2018; Tompkins et al., 2021). Examples like the “Farm to School” initiative (Joshi et al., 2019) and “Healthy Corner Store” initiative (Minkler et al., 2018) demonstrate the effectiveness of such collaborations. As SNAP-Ed expands its focus on PSE approaches, prioritizing partnerships will be crucial for driving enduring, equitable changes in policies, systems, and environments influencing nutrition security and health outcomes (Vance et al., 2020).

## MAIN RESULTS AND DISCUSSION

The 2025 SNAP-Ed Plan Guidance emphasizes policy, systems, and environmental (PSE) change strategies as key components of SNAP-Ed programming. It prioritizes interventions that create sustainable, population-level changes in various environments, focusing on increasing access to healthy food options, improving the built environment for physical activity, and creating healthier school and workplace environments. The guidance stresses community engagement and partnerships in planning, implementing, and evaluating PSE interventions to ensure responsiveness to local needs and build sustainability. This emphasis on PSE approaches has significant implications for food and nutrition security efforts in the United States. By addressing upstream determinants of health, SNAP-Ed programs can create more equitable and sustainable access to healthy food options, aligning with the broader public

health shift towards addressing social determinants of health and promoting health equity. The success of these efforts depends on continued funding, support, leadership, and ongoing engagement with communities and stakeholders.

As the largest nutrition education program in the U.S., SNAP-Ed has the potential to lead in promoting comprehensive, systemic solutions to food and nutrition insecurity. By prioritizing PSE approaches and engaging diverse partners, SNAP-Ed can build evidence for creating sustainable, equitable changes in nutrition environments and outcomes, serving as a model for other public health initiatives. Realizing this potential requires ongoing investment, innovation, and leadership from SNAP-Ed programs and their partners, as well as adaptability to changing needs and evidence over time.

## CONCLUSION

SNAP-Ed has evolved from focusing on direct nutrition education to a comprehensive approach incorporating PSE change strategies. The 2025 SNAP-Ed Plan Guidance emphasizes PSE interventions and community engagement, addressing social determinants of health and promoting equity. PSE approaches can create lasting improvements in nutrition security and health equity by targeting upstream factors shaping access to healthy food and physical activity opportunities. Their success

depends on continued support, investment, and cross-sector partnerships. Community engagement is critical in designing and implementing responsive, sustainable interventions. Realizing the guidance’s vision requires ongoing commitment from all stakeholders. By investing in PSE strategies and empowering communities, we can create a more equitable future where all have access to necessary resources. SNAP-Ed has the potential to lead this charge towards a healthier, more equitable society.

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# CHALLENGES AND OPPORTUNITIES OF DIGITAL INTEGRATION IN MARKETING: A BUSINESS PERSPECTIVE IN EMERGING ECONOMY

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## SUMMARY

The rapid digitalization of marketing practices has significantly transformed the way businesses engage with their customers, particularly in the B2C segment. However, the adoption and integration of digital marketing strategies remain uneven across different regional and economic contexts. This study focuses on the Republic of Moldova, an emerging market where businesses face unique challenges and opportunities in implementing digital marketing tools. The research aims to explore how local companies navigate the complexities of digital transformation while addressing market-specific factors such as consumer behavior, resource limitations, and infrastructural barriers. Using a case study approach, in-depth interviews were conducted with representatives from five companies of varying sizes operating in the B2C sector. The research examines the extent to which these businesses utilize digital tools, including customer relationship management (CRM) systems, social media platforms, and branding strategies, to attract and retain customers. Special attention is given to the integration of online and offline channels, the role of end-to-end analytics in optimizing marketing effectiveness, and the challenges associated with implementing these technologies in a resource-constrained environment. The study also investigates the strategic decisions companies make regarding digital investments and the trade-offs between automation, customer engagement, and operational efficiency. By providing insights into the digital marketing practices of Moldovan companies, this research contributes to a better understanding of digital transformation in emerging markets. The findings are particularly relevant for business practitioners and policymakers seeking to enhance digital competitiveness in similar contexts, offering practical recommendations for overcoming barriers and maximizing the benefits of digital marketing integration.

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*Keywords: digital marketing, b2c market, business specifics, case study*

## INTRODUCTION

Currently, digital marketing plays a key role in promoting products and services, providing companies with the ability to effectively engage with their target audience through digital channels (Caliskan et al., 2021; Saura et al., 2023). However, the successful application of digital tools requires not only their integration into existing business processes but also the adaptation of marketing approaches based on the specifics of the business, target audience, and market conditions (Chen & Qi, 2019). This necessitates a deep understanding of factors such as product type, consumer behavior, and unique market characteristics that directly influence the effectiveness of marketing strategies (Kannan & Li, 2017).

Moldovan companies, especially small and medium-sized businesses, often face limited financial and technological resources, which significantly impact the speed and depth of digital technology adoption (Gagauz & Gagauz, 2023). This article presents the findings of a study on their capacity and potential to implement modern marketing technologies, identifying the connections between business characteristics and marketing campaigns with a focus on digital technology

integration and strategy adaptation in different business contexts. In particular, it examines how differences in products and services, target audience, and other key business aspects influence the selection of marketing channels, tools, and tactics. This approach allows for the identification of best practices for various conditions and helps determine how they can be adapted to achieve maximum effectiveness (Rust & Huang, 2019).

The objective of this study is to explore the specificities of digitalizing marketing strategies in Moldovan B2C companies, with a focus on the ability to track the complete customer journey, as well as identifying key barriers and opportunities in the digital transformation process. The study's findings will be valuable for marketers, entrepreneurs, and researchers aiming to enhance the effectiveness of their marketing efforts in a highly competitive and rapidly changing digital landscape (Lamberton & Stephen, 2016; Chaffey & Ellis-Chadwick, 2019).

## THEORETICAL FRAMEWORK

Using the resource dependence theory (Pfeffer & Salancik, 2003) and the Technology Acceptance Model (TAM) proposed by Fred Davis (Davis, 1989), this study analyzes the behavior of organizations and their ability to adapt to changing external conditions. Resource dependence theory helps explain how organizations seek to minimize their dependence on critical resources and reduce uncertainty in a dynamic market environment. In the face of high competition and technological changes, organizations are compelled to adopt various strategic solutions aimed at strengthening their positions and mitigating external threats (Hillman et al., 2009; Davis & Adam Cobb, 2010). This theory is particularly relevant in interpreting case study data as it allows for a deeper analysis of companies' decisions regarding marketing strategies, such as integrating websites with ERP systems, using end-to-end analytics, and implementing other digital tools.

The application of the Technology Acceptance Model (TAM) complements this analysis by providing a theoretical framework for understanding the factors that influence the adoption of digital marketing tools. According to TAM, the key drivers of technology adoption are perceived usefulness and ease of use. In the context of digital marketing, perceived usefulness is assessed by businesses in terms of improved performance, increased sales, enhanced customer engagement, and strengthened competitiveness. The higher the perceived usefulness

of digital tools, the more likely organizations are to adopt them. For example, businesses that recognize the importance of digital technologies in achieving marketing goals are more inclined to integrate them into their processes.

Ease of use also plays a significant role. If digital marketing tools are easy to integrate into existing business processes and employees can quickly acquire the necessary skills, the chances of successful adoption are substantially increased. In this context, tools such as social media, search engine optimization (SEO), contextual advertising, email marketing, and other strategies are considered. Applying TAM in the study provides insights into why some businesses more rapidly adopt digital marketing technologies while others remain cautious (Fedorko et al., 2018; Ritz et al., 2019; Buvár & Gáti, 2023).

These theoretical approaches together provide a comprehensive understanding of organizational strategic behavior and readiness to implement digital tools. Resource dependence theory highlights external pressures and strategic priorities, while the Technology Acceptance Model reveals internal motivators and barriers related to the perception and use of digital technologies. As a result, a deeper understanding of decision-making processes is achieved, enabling the development of effective recommendations for creating marketing strategies adapted to modern conditions.

## RESEARCH METHODOLOGY

The research methodology is based on case studies that enable a detailed analysis of the marketing strategies of specific companies, including the implementation of digital technologies and the integration of online and offline processes. This approach not only helps identify best practices but also sheds light on the barriers companies face in the digitalization process, allowing for the development of more practical recommendations for improving marketing approaches (Verhoef et al., 2015).

In-depth interviews were conducted with business owners and marketers representing companies of various sizes operating in the B2C segment. The selection of companies for the case studies was based on several key criteria. First, the willingness of managers and business owners to engage in open communication, give interviews, and share relevant information about their marketing strategies, digitalization processes,

and the use of analytical tools was considered. Second, companies with significant market experience and advanced practices in digital marketing were chosen. The interviews focused on assessing the integration of online and offline channels, the use of CRM and ERP systems, as well as the practice of implementing omnichannel strategies. This approach provided access to detailed data necessary for an in-depth analysis and objective evaluation of the state of digital marketing in these companies. The study was conducted in July 2024, focusing on companies located in the Chisinau municipality. Selection criteria included the companies' experience in digital marketing and their openness to participating in the study. The characteristics of the studied case studies are presented in Table 1, which displays the key parameters of the companies: type, industry, age, and market segment.

**Table 1***Characteristics of the case studies*

<b>Name of the company</b>	<b>Size of the company</b>	<b>Field of activity</b>	<b>Age of the enterprise</b>
Automall	large	importer of automotive spare	16 years
GBS	large	importer of automotive spare parts and passenger vehicles	29 years
Medpark	mediul	trade in medical services	13 years
BRAVOMOTORS	micro	car repair and spare parts sales	14 years
Energy Fitness	medium	trade in sports services	14 years

## MAIN RESULTS

Based on the systematized data regarding the business specifics of the companies included in the case studies (Table 2), all enterprises are focused on the B2C segment, which requires direct interaction with end consumers and a deep understanding of their needs and preferences. This imposes certain requirements on marketing strategies, especially in the context of creating personalized experiences and enhancing customer loyalty. Most companies target a broad audience, necessitating large-scale marketing efforts to reach a wide customer base. However, the nature of product and service consumption varies depending on the business specifics, requiring adjustments in marketing approaches. For companies like Automall, BRAVOMOTORS, and Energy Fitness, periodic consumption of products and services dictates cyclical marketing campaigns, a focus on customer retention, and the development of repeat sales. In these cases, the success of marketing strategies often depends on seasonal factors, customer reviews, and price competitiveness. For example, in Automall and BRAVOMOTORS, quick purchases and intense price competition highlight the importance of responding swiftly to customer needs and maintaining high customer satisfaction.

GBS and Medpark face one-time consumption scenarios where each purchase decision carries significant weight. In such cases, marketing efforts focus on building trust, strengthening the brand, and emphasizing high product and service quality. This is especially important for Medpark, where purchase decisions may be emotionally charged, and high standards of quality and confidentiality are key factors influencing consumer choice.

Differences in consumption specifics are also reflected in the approaches to marketing communications. For companies with periodic consumption, it is crucial to focus on building long-term customer relationships and maintaining engagement through regular updates and special offers. On the other hand, companies with one-time large sales, such as GBS, should concentrate on targeted marketing strategies where brand trust, high quality, and the emotional aspect of the choice are key elements.

Moreover, the level of maturity in marketing strategies varies significantly depending on the type of business and nature of consumption. For companies with high consumption frequency, such as Automall and BRAVOMOTORS, managing mass marketing flows and customer reviews is essential. Meanwhile, for Medpark and GBS, critical elements include a personalized approach, project management, and service quality, where each interaction can significantly impact brand perception.

Thus, the presented data demonstrate the need for a differentiated approach to marketing strategies depending on the business specifics and consumption patterns. Companies targeting the mass market should focus on large-scale marketing campaigns, while businesses with one-time but significant sales should emphasize trust, personalization, and brand reinforcement.

**Table 2***Business specifics of the companies included in the case study*

	<b>Automall</b>	<b>BRAVOMOTORS</b>	<b>Energy Fitness</b>	<b>GBS</b>	<b>Medpark</b>
Main product	Products	Services	Services	Products	Services
Industry specifics	<ul style="list-style-type: none"> <li>• Wide audience</li> <li>• Quick purchases</li> <li>• Price competition</li> <li>• Emotional impact</li> <li>• Low sales volume</li> </ul>	<ul style="list-style-type: none"> <li>• Wide audience</li> <li>• Quick purchases</li> <li>• Price competition</li> <li>• Emotional impact</li> <li>• Small quantity</li> <li>• Meeting deadlines</li> <li>• Project management</li> <li>• Process transparency</li> <li>• Personnel qualifications</li> </ul>	<ul style="list-style-type: none"> <li>• Wide audience</li> <li>• Low sales</li> <li>• Personal approach</li> <li>• Community participation</li> <li>• Flexible subscriptions</li> </ul>	<ul style="list-style-type: none"> <li>• Wide audience</li> <li>• Low sales</li> <li>• Personal approach</li> </ul>	<ul style="list-style-type: none"> <li>• Relationship and trust</li> <li>• Emotional impact</li> <li>• Purchases</li> <li>• High qualification requirements</li> <li>• High quality standards</li> <li>• Confidentiality</li> <li>• Project management</li> </ul>
	Periodic consumption	Periodic consumption	Periodic consumption	One-time consumption	One-time consumption
Specifics of consumption	Products	<ul style="list-style-type: none"> <li>• Seasonality</li> <li>• Mass Marketing</li> <li>• Importance of Reviews and Testimonials</li> </ul>	-	<ul style="list-style-type: none"> <li>• Large slow purchases</li> <li>• Emotional impact</li> <li>• Narrow audience</li> <li>• Emphasis on quality</li> <li>• Brand</li> </ul>	-
	Services	-	<ul style="list-style-type: none"> <li>• Complex and long production cycle</li> <li>• Intangibility</li> <li>• Continuity of production and consumption</li> <li>• Heterogeneity</li> <li>• Irrecoverability</li> <li>• Seasonality</li> <li>• Price competition</li> </ul>	<ul style="list-style-type: none"> <li>• Emotional Component</li> <li>• Quick Purchase Decisions</li> <li>• Mass Marketing</li> <li>• The Importance of Reviews and Testimonials</li> </ul>	<ul style="list-style-type: none"> <li>• Complex and long production cycle</li> <li>• Emotional component</li> <li>• Slow purchasing decisions</li> <li>• Mass marketing</li> <li>• Continuity of production and consumption</li> <li>• Importance of reviews and feedback</li> </ul>

Source: developed by the author based on the case studies, 2024.

The analysis of data on the marketing objectives of the companies revealed that lead generation is a priority for all the businesses considered. In a highly competitive environment, attracting new customers becomes a key factor in sustaining and growing a business. In most cases, marketing efforts are focused on social media (SMM) and lead generation, highlighting the importance of these channels in reaching the target audience.

The active use of social media stands out as a common element in all companies' strategies, demonstrating the significance of social networks for customer engagement and increasing their involvement. In addition to attracting new customers, companies also focus on retaining existing ones, as evidenced by the use of customer relationship management (CRM) systems. The use of CRM reflects a strategic approach to long-term customer relationships and maintaining repeat sales.

Branding is also given special attention as an important tool for building trust and enhancing loyalty. For instance, companies like Automall, Energy Fitness, and MedPark actively work on strengthening their brands through PR and influencer marketing, which helps bolster their market positioning.

However, the strategies of different companies vary in terms of CRM integration and personalized marketing. For example, MedPark does not include CRM in its

strategy, which may indicate a focus on initial customer acquisition, especially in a more specialized and niche market. Meanwhile, BRAVOMOTORS actively uses CRM to extend services and offer new products, helping to increase customer retention and encourage repeat purchases.

Another important aspect is the regularity and depth of customer interactions, which vary among companies. Energy Fitness and MedPark demonstrate a high level of activity in this regard, actively gathering feedback and using it to improve their services. This emphasizes the importance of consistent customer engagement and involvement for achieving sustainable results. In contrast, companies like GBS and Automall are limited in regular contacts, which may impact customer retention and the personalization of offers.

Thus, despite the overall focus on lead generation, approaches to customer relationship management and personalized marketing efforts vary significantly. Companies that actively use CRM and data for personalized interactions, such as BRAVOMOTORS and Energy Fitness, achieve higher retention rates and repeat sales. At the same time, the absence of such practices, as seen with MedPark, may indicate a focus on one-time, highly emotional purchases, where initial customer acquisition is the primary objective.

**Table 3**  
*Marketing efforts of companies*

	Energy Fitness	Automall	BRAVOMOTORS	GBS	Medpark
CRM customer relationship management	<ul style="list-style-type: none"> <li>Referral program</li> <li>Incentives for early contract renewal</li> <li>Target target profiles based on existing clients</li> </ul>	<ul style="list-style-type: none"> <li>Discount programs from 5 to 15%</li> <li>Incentives for renewal</li> </ul>	Target audience profiles based on existing clients	<ul style="list-style-type: none"> <li>Offer to "switch" to a newer model in 2-3 years</li> <li>Trade IN</li> </ul>	<ul style="list-style-type: none"> <li>Additional sales (after ECO)</li> <li>Repeat (control) analyses at a discount</li> </ul>
Personalized Marketing. Using customer data to customize communications and offers	Special subscriptions	No	Program for planning repairs based on maintenance regulations	No	No
Regular contacts: personalized emails, SMS or newsletters	Control and stimulation of consumption of services	Up to 4 SMS mailings per year	Only as part of scheduled repairs	No	No
Collecting feedback and using it to improve products and services	Constantly	Survey by Google Forms	Once a year	Constantly	Constantly

Source: developed by the author based on the case studies, 2024.

To maximize customer flow and profits, companies' marketing strategies include temporary promotions, thoughtful pricing, advertising campaigns, partnership programs, and influencer marketing (Table 4). Seasonal promotions are a key element for all companies as they allow for significant sales increases during periods of high demand. For example, Medpark uses seasonal promotions to offer discounts on tests and consultations, attracting additional customer traffic.

Pricing based on the LTV (Lifetime Value) metric is actively employed by automotive companies like Automall and GBS, helping to maximize profit from each customer through long-term relationships. This approach allows for better customer segmentation and the offering of personalized pricing solutions, enhancing customer loyalty.

**Table 4**

*Maximizing customer flow and profits*

	<b>Energy Fitness</b>	<b>Automall</b>	<b>BravoMotors</b>	<b>GBS</b>	<b>Medpark</b>
<b>Temporary promotions</b>	<ul style="list-style-type: none"> <li>• Free trial visits</li> <li>• Cards for paid one-time visits</li> </ul>	<ul style="list-style-type: none"> <li>• Sales</li> <li>• Seasonal promotions</li> </ul>	Seasonal promotions	Seasonal promotions	<ul style="list-style-type: none"> <li>• Seasonal promotions for tests</li> <li>• Seasonal promotions for consultations</li> </ul>
<b>Pricing</b>	Cards 60%	Based on LTV	Based on LTV	Based on LTV	
<b>Advertising campaigns to attract new customers</b>	Facebook, Google Search, Instagram	Facebook, Google Search, Instagram	Google Maps, Instagram, TikTok	Facebook, Google Search, Instagram	Facebook, Google Search, Instagram
<b>Affiliate programs</b>	No	Invitro, InterAuto	No	No	No
<b>Influencer Marketing</b>	No	DieselOK	No	No	No

*Source: developed by the author based on the case studies, 2024.*

In today's digital world, having a functional, aesthetically pleasing, and well-optimized website is not just desirable but a critically important aspect of business success. The website serves as the central point of interaction between the company and its customers in the digital space. It acts as a platform for showcasing products and services, facilitates initial customer engagement, and supports brand recognition. Additionally, the website provides opportunities for collecting data on visitors and their behavior, which is crucial for understanding customer needs and preferences. Website analytics help optimize marketing strategies, tailor content and offerings to the target audience, and improve user experience. Optimizing the website for conversions directly impacts sales and the return on marketing investments.

Automall stands out among the other companies with its use of influencer marketing, which helps boost brand recognition and strengthen trust in its services. Meanwhile, BRAVOMOTORS, in addition to traditional platforms like Google Maps and Instagram, actively uses TikTok to attract a younger audience, indicating an adaptation of their marketing strategy to current trends.

Moreover, most companies actively use Facebook, Google Search, and Instagram for advertising campaigns, confirming their aim to maximize reach through popular platforms. The exception is BRAVOMOTORS, which uses more niche approaches by tailoring communication channels to specific customer groups.

In contrast, companies using standalone CMS without ERP integration, such as BRAVOMOTORS and GBS, face data and analytics limitations that negatively impact their ability to obtain a complete picture of the customer journey and effectively manage marketing campaigns. The websites of these companies function more as online “business cards” with basic feedback collection capabilities but lack access to end-to-end analytics, limiting their ability to personalize and optimize the customer experience.

In terms of marketing effectiveness, key metrics include conversions from online promotions and the ratio of final online and offline conversions. These metrics help assess how many website visitors or mobile app users complete a desired action (purchase, subscription, form submission, etc.) after interacting with an online campaign. Such data enable companies to identify the most effective channels and approaches for attracting customers, which, in turn, leads to more efficient marketing budget allocation and increased overall profitability.

The example of Automall demonstrates how integrating all digital components into a single platform not only allows for efficient business process management but also provides seamless analytics, simplifying scaling and maintaining a consistent service standard. In contrast, companies like MedPark, whose website is a combination of different platforms under a single domain name, face challenges in data management and maintaining a cohesive customer experience. The lack of full integration reduces their ability to leverage end-to-end analytics and respond quickly to changes in customer behavior.

Thus, the choice of architecture and the level of web platform integration directly influence a company’s competitiveness. Those who invest in comprehensive management systems, like Automall, gain advantages in automation, standardization, and scalability, allowing them to effectively respond to market needs and increase profitability. On the other hand, companies with limited digital capabilities, like BRAVOMOTORS and GBS, remain more vulnerable to shifts in customer preferences and require additional efforts to maintain competitiveness in the digital environment.

**Table 5**  
*Characteristics of company websites*

<p><b>Automall</b> <a href="https://automall.md/">https://automall.md/</a></p>	<p>The website is not a standalone system but a web interface of a unified digital platform that includes ERP (enterprise resource planning), CRM (customer relationship management), and WMS (warehouse management system).</p> <p>The share of sales through the company’s own website accounts for 8-9% of total retail sales.</p> <p>On the online platform, processes such as customer registration, parts selection, payment, order processing for delivery or self-pickup, as well as internal logistics (warehouse item picking) and external logistics (customer delivery) are fully automated. This automation addresses issues related to the negative impact of human factors at all stages of customer interaction and reduces the business’s reliance on labor resources.</p> <p>As a digital platform, the company’s website provides end-to-end analytics, tracks the customer journey, and delivers high-quality primary data without gaps. The platform allows for setting up customer communication through system messages on the website and order status updates in the client’s personal account. This system handles the issue of scaling sales more efficiently than ad-hoc expansion of the sales department’s staff and is projected to ensure “consistent service quality” through the standardization and digitalization of processes within the system.</p>
<p><b>BRAVOMOTORS</b> <a href="https://bravo-motors.md/">https://bravo-motors.md/</a></p>	<p>The website is a standalone CMS (content management system) that is not integrated with the company’s ERP. The site serves as an online “business card” with basic feedback collection capabilities. End-to-end analytics is not available.</p>
<p><b>GBS</b> <a href="https://haval.md/">https://haval.md/</a> <a href="https://gbs.md/">https://gbs.md/</a></p>	<p>The website is a standalone CMS (content management system) that is not integrated with the company’s ERP. The site serves as an online “business card” with basic feedback collection functionality. End-to-end analytics is not available.</p>

<b>Energy Fitness</b> <a href="https://www.efitness.md/">https://www.efitness.md/</a>	<p>The company's website is a standalone platform, separate from the local CRM (customer relationship management) system. The analytics gathered from the web platform is limited to the website statistics. End-to-end analytics is achieved through manual data integration between the internal CRM system and the data collected at the end of the sales funnel on the website. The exception is leads collected from the membership card order forms, but even those leads require manual processing.</p>
<b>MedPark</b> <a href="https://medpark.md/">https://medpark.md/</a>	<p>The website is a standalone CMS (content management system) that is not integrated with the company's ERP. The site serves as an online "business card" with basic feedback collection capabilities. However, one of the pages includes an embedded web application interface - a "personal account." Essentially, these are two different platforms combined under a single domain name. End-to-end analytics is not available.</p>

Source: developed by the author based on the case studies, 2024.

To analyze the practices and strategic approaches of the studied companies, it is essential to examine each aspect of conversions and the factors influencing their effectiveness.

*Automall.* The primary target conversion is a full purchase through the website, including order placement and payment. The share of online orders in the best months reaches up to 10% of total sales. This is limited by the consumption culture, where customers prefer to research and select products online but complete the purchase in the company's office, where they feel more trust and confidence. Interestingly, companies that sell spare parts exclusively online are perceived with greater skepticism by customers and generate less trust, leading to lower conversions.

*BRAVOMOTORS.* The key conversion on the company's website is a phone call to the office. About 15% of all calls to the office come directly from the website. This indicates that the web platform primarily serves as an informational resource, helping customers connect with the company for more detailed discussions and decision-making offline.

*Energy Fitness.* The final touchpoints on the website include signing up for a trial visit, booking a membership, and calling the club's reception. These conversions account for approximately 10-12% of total site actions, highlighting the importance of the website as a tool for attracting new customers and booking services.

*MedPark.* The key conversion points on the website are booking through the my.medpark.md portal or calling the reception. Online booking also includes the option to pay, which significantly speeds up and simplifies the service process. However, the mandatory authorization deters a significant number of clients, limiting online bookings to 5-10% in the best months.

*GBS.* The customer journey on the website can end with a call to the office, booking a test drive, or submitting a request to purchase a car from stock. However, only 5-7% of clients complete these conversions online, while the majority prefer to visit the showroom in person to make a final decision on-site.

Based on the information provided above, despite the availability of advanced online platforms, most customers still prefer to finalize their purchases and make important decisions offline. This underscores the need for integrating online and offline approaches to enhance conversion rates and improve the customer experience. In the B2C segment, companies like Automall aim for online purchases but face the challenge of customer preferences for offline interactions.

High levels of website engagement are also observed at BRAVOMOTORS and Energy Fitness, which use their web platforms to attract customers to offline actions (e.g., calls, booking visits). However, there are barriers to online conversions, such as MedPark's mandatory website authorization, which significantly reduces interest in online booking.

The studied companies demonstrate significant differences in the level of implementation and use of end-to-end analytics (Table 6). For example, Automall and GBS have fully implemented end-to-end analytics using Google Analytics and call tracking, allowing them to track the complete customer journey and assess the effectiveness of marketing campaigns. These systems can link data on sales, revenue, and profit with unique customer identifiers, providing a complete picture of the digital customer journey.

BRAVOMOTORS and Energy Fitness, on the other hand, lack access to fully integrated end-to-end analytics, significantly limiting their ability to accurately evaluate the results of marketing efforts. For instance, BRAVOMOTORS does not have call tracking, and the website is not integrated with systems capable of transmitting sales and profit data to analytical platforms, making it difficult to build a complete picture of effectiveness.

Companies use different analytical tools to track conversions and assess campaigns. For example, MedPark uses Facebook Pixel and Google Analytics to obtain data on conversions from social networks and search engines but faces challenges in integrating online and offline data, leading to gaps in analytics,

complicating the understanding of the full customer journey, and reducing the accuracy of ROI evaluation.

Energy Fitness and MedPark also struggle with data integration between online and offline segments. Limitations of their internal platforms prevent them from creating a complete picture of customer interactions with the business, negatively impacting the optimization of marketing strategies. For MedPark, an additional challenge is the reliance on subcontractors for data analysis, which limits flexibility and control over marketing processes.

GBS, using a combination of Google Analytics, Facebook Pixel, and call tracking, demonstrates a higher level of integration. The system dynamically generates phone numbers to track calls, allowing the CRM system to accurately attribute conversions and return data to analytical systems to build a complete picture of the customer journey. However, such a complex structure requires constant setup and maintenance, increasing costs and demanding a high level of competency from internal teams.

**Table 6**

*Companies' approaches to data analysis, end-to-end analytics*

<b>Automall</b>	End-to-end analytics is available and implemented through Google Analytics. After a purchase is made, the company's website sends sales, revenue, and profit data to the analytics system (Google Analytics), which is linked to the external customer ID that the website received from Google Analytics. In this way, sales information is exported, and a complete digital picture is formed within Google's analytics system.
<b>BRAVOMOTORS</b>	End-to-end analytics is not available. The company does not have call tracking set up, the website does not process sales, and it does not send sales and profit data back to the analytics system.
<b>GBS</b>	End-to-end analytics is available and implemented through two integrations: Google Analytics + call tracking and Facebook Pixel + call tracking. Different advertising platforms and campaigns are linked to dynamically generated phone numbers that are created for the dynamic phone number field on the company's website. When a visitor clicks the call button, the internal program captures not only the customer's phone number but also a reference that the CRM system uses to attribute this conversion, thanks to the call tracking integration. Additionally, the CRM system receives the customer's external ID, which, after completing all sales and marketing activities, is returned along with the sales data to the external analytics system, where a complete digital picture of the customer journey is formed.
<b>Energy Fitness</b>	End-to-end analytics is not available. Continuous data is accessible in two separate segments: online and offline. These limitations are due to the shortcomings of the platform on which the company's internal program is built. It lacks the ability to import conversion identifiers, and upon completing the sales cycle, it cannot return sales and profit data to external analytics systems linked to the previously obtained identifier.
<b>MedPark</b>	End-to-end analytics is partial, using Google Analytics and Facebook Pixel, and only applies to conversions that originate from social networks, search engines, and partner sites and result in the 10% of registrations on the website. The analytics are handled by a subcontractor company. In all other cases, customer interactions occur offline, leading to a break in identification.

*Source: developed by the author based on the case studies, 2024.*

Most companies face several barriers to effective end-to-end analytics, including a lack of skills, system integration challenges, and high implementation and maintenance costs. The limited flexibility of certain

databases prevents the alignment of online platforms with local systems, leading to data gaps and distorting analytical insights.

## DISCUSSION

The integration of online and offline channels with seamless transitions between them (omnichannel approach) has the potential to significantly improve the user experience and increase conversions (Hossain et al., 2020). However, implementing such an approach requires not only the coordination of data and interactions across all channels but also an increased level of personalization in online interactions, which helps reduce barriers to purchasing in the digital environment. This is supported by research indicating that a successful omnichannel strategy requires combining data from various sources to create a comprehensive customer profile (Verhoef et al., 2015; Kumar et al., 2021).

In the B2C segment, where products and services can be easily evaluated and purchased online, the primary goal of marketing strategies often lies in driving direct online purchases or service bookings. For this purpose, mass customer acquisition tactics through digital channels are employed, which become the main tool for sales and interaction. In such cases, companies focus on broad reach and the automation of request processing (Chen & Qi, 2019). However, in B2C segments where consumers are cautious about online purchases, trust and confidence become key factors. Building trust through positive reviews, quality guarantees, process transparency, and high service levels contribute to conversion growth (Gao et al., 2019). In this context, creating relevant and targeted content that addresses customer needs and solves their problems becomes critically important for audience engagement and increased sales (Kotler et al., 2018).

Differences in company marketing strategies highlight the importance of a flexible approach based on industry specifics and target audience characteristics. For companies with a niche audience, trust and quality of interaction are vital, whereas businesses targeting a mass audience focus on large-scale marketing campaigns and process automation to achieve effective reach (Rust & Huang, 2019).

To achieve maximum marketing effectiveness and a deep understanding of consumer behavior, a fully digitalized marketing cycle that tracks the customer journey at every stage—from initial interaction to final purchase—is a key element (Kannan & Li, 2017). However, the study found that none of the B2C companies analyzed have a fully integrated system. This shortcoming indicates significant gaps in digital transformation that hinder companies from personalizing their offerings, optimizing the customer experience, and ultimately increasing conversions (Chaffey & Ellis-Chadwick, 2019).

The lack of digital tool integration leads to fragmented data, making it difficult to conduct in-depth analysis of customer behavior and promptly adjust marketing strategies. In the context of increasing competition and rising consumer expectations, the ability of companies to track and manage all customer touchpoints becomes critically important. This requires the collection and analysis of data from various online and offline channels, the use of end-to-end analytics, and the automation of marketing activities (Deloitte, 2020).

Companies that have already implemented end-to-end analytics enjoy significant advantages over their competitors, as this tool provides a holistic view of all business processes—from marketing to sales and customer service. This allows management to understand how changes in one aspect impact others, enabling more informed and balanced decision-making (Järvinen & Karjaluoto, 2015).

Companies where leadership has deep marketing knowledge are particularly successful in developing and implementing marketing strategies. Such companies demonstrate a more qualified approach to using digital tools and analytics, allowing them to innovate and improve business processes (Lamberton & Stephen, 2016). However, most companies face significant challenges when implementing new tools for customer data identification and analysis. The main barriers remain a lack of skills, integration complexity, and high implementation and maintenance costs (Chen & Nath, 2018). Additionally, the discrepancy between expectations from new technology adoption and actual results can lead to disappointment and skepticism regarding investments in these areas (Gartner, 2021).

As other studies show, for successful omnichannel strategy implementation, companies need to overcome several challenges, including the complexity of integrating various systems and channels, managing large volumes of data, and adapting employees to new processes (Cai & Choi, 2023; Verhoef et al., 2015). This requires a systematic approach that includes staff training, internal process optimization, and the adoption of advanced analytical tools.

Some limitations of the study should be noted. Since it is based on a case study and is limited to the analysis of a small number of companies, it limits the generalizability of the findings to a wider range of companies or other industries. In addition, the study relies on data provided by companies, which may affect the objectivity and completeness of the information. In particular, the subjective answers of respondents may affect the results of the analysis.

## CONCLUSION

All of the studied companies actively integrate various marketing tools and strategies, striving for a comprehensive approach that combines attracting new customers with retaining and developing relationships with existing ones. The diversity of approaches and tools used highlights the companies' efforts to adapt to the constantly changing market demands and consumer behavior.

Companies that have successfully integrated digital management systems such as ERP and CRM demonstrate high operational efficiency and reduced reliance on external resources, aligning with the principles of resource dependence theory. These companies gain significant advantages, including process automation and enhanced analytics, allowing them to more accurately manage marketing strategies and respond quickly to market changes.

The application of the Technology Acceptance Model (TAM) also confirmed that perceived usefulness and ease of use of digital tools are key factors for their successful adoption. Simplifying authorization processes and improving technology integration can significantly

increase the level of acceptance and use, which, in turn, contributes to more effective marketing campaigns. For example, companies that have optimized customer interaction processes and made technologies more accessible show better retention and conversion results.

Furthermore, the study highlights the importance of the omnichannel approach, which involves seamless integration of online and offline channels. This allows for an improved customer experience, the creation of a unified and continuous customer journey, and increased conversions. Companies focused on creating such a journey are better able to meet their customers' needs and enhance their loyalty.

Overall, to improve the effectiveness of their marketing strategies, companies should focus on strengthening the integration of digital systems, simplifying technology adoption processes, and aiming for omnichannel strategies. This will enable them to more flexibly adapt to market changes, better understand customer behavior, and meet their needs in the context of today's competitive environment.

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# LONG-TERM FISCAL IMPLICATIONS OF AGING: THE CASE OF MOLDOVA

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## SUMMARY

Moldova's population is shrinking and aging rapidly. In line with a scenario developed by the Center for Demographic Research, population is expected to count 1.96 million in 2040. The share of population aged 60+ is set to rise from 25% in 2023 to 29% in 2030 and 33% in 2040. According to Moldova's National Transfer Accounts, the population aged 60+ absorbs 40% of the public outflows and contributes only 20% to the inflows. If the 2019-2022 age-specific trends in and profile of public flows prevail in the next one-and-half decade, this may lead to severely negative consequences for the public finance, with the debt-to-GDP ratio exceeding 80% by 2040. The policy scenario in which the Government relies on tax policy alone to control the rise of debt-to-GDP ratio up to 50% only requires a growth in budgetary revenues from the current 28% of GDP to about 34% by 2040. Considering permanent changes in the demographic structure and competitiveness implications, such a policy is infeasible. Stimulating the employment while keeping taxation constant but without addressing productivity is not a feasible response either. A combination of labor productivity growing faster, of full employment of NEET youth and of steady growth in labor employment of working age adults, especially of women, is a more adequate responses to fiscal challenges posed by Moldova's demographic aging.

*Keywords:* demographic aging, national transfer accounts, inter-generational economy, fiscal sustainability.

## INTRODUCTION

As Moldova's demographic aging continues, significant policy questions emerge regarding the long-term fiscal implications of this trend. What budgetary impacts can be anticipated from the increasing demand for pensions and healthcare for the older people? Will the demographic pressures place an excessive burden on the national budget? What options are available to the government to address these challenges?

In this policy-oriented paper, we integrate the results of the Moldovan National Transfer Accounts (NTA) with demographic and economic projections to assess the impacts of aging on the public budget expenditures, revenues, deficits and public debt. By doing so, we provide a significant empirical contribution to the policy debate on the fiscal impact of aging in Moldova. Our

methodological approach is similar to that used in case of El Salvador (Pena, 2019). However, we explicitly model a labor and productivity-based production function, incorporate age-specific employment rates and adopt a different scenarios design.

Section 2 of the study provides an overview of the economic literature on the fiscal consequences of aging. Section 3 discusses key insights from the Moldovan NTA and demographic projections. Section 4 explains the modeling approach and the construction of scenarios. Section 5 presents the results and examines their sensitivity to alternative assumptions regarding demographic and economic perspectives. The final section concludes with a discussion of policy implications.

## LITERATURE REVIEW

With many countries experiencing demographic aging, the fiscal impact of aging has become an important topic in the contemporary economic literature. It identifies three main mechanisms through which aging influences fiscal sustainability.

First, increased life expectancy and declining birth rates lead to rising dependency ratios, meaning fewer workers support a growing number of retirees. In Moldova, the migration of the working-age population further exacerbates the naturally rising dependency ratio. These demographic transformations contribute to straining pension systems, especially those based on pay-as-you-go (PAYG) model. Because of the rising dependency, these systems may become unsustainable, leading to larger budget deficits and potential insolvency (Lee & Mason, 2011). Alternatively, a PAYG system might remain sustainable only by continuously reducing the pension-wage replacement rates, which undermines financial incentives for personal contributions and encourages

informal work arrangements – a pattern which has been pervasive in Moldova over the past three decades.

Second, since older individuals require more medical care than the younger ones, population aging typically drives up public and private healthcare costs. This feature has been empirically observed in Moldova as well (Gagauz & Prohntchi, 2022). This places additional burden on public healthcare systems, potentially leading either to higher taxes or to reallocation of government spending from other areas, such as education or infrastructure, or a combination of the two, in order to cover the rising health expenditures (Breyer et al., 2010).

Third, reduction in the working-age population can lead to a slowdown in economic growth, further exacerbating fiscal pressures. In this framework, a smaller labor force results in lower productivity and reduced tax revenues, undermining efforts to maintain fiscal balance. However, this channel is not univocally validated in

the economic literature. For instance, (Borsch-Supan, 2013) finds that statistical evidence on this issue is not necessarily convincing. Some authors, such as (Lindh & Malmberg, 1999), find that older workers may indeed be less productive than the prime-age adults, but they are not necessarily much less productive than the youngest cohorts. This concurs with simulation results of (Bloom, Canning, & Fink, 2011) who find that that OECD countries are likely to see modest – albeit not catastrophic – declines in the rate of economic growth due to demographic aging over the period 2005-2050. However, in certain countries, such as Bulgaria, even under the most optimistic assumptions, it is evident that demographic transformations will exert sustained fiscal pressure and will significantly depress economic growth

(World Bank, 2013). The magnitude and duration of this demographic stress makes Bulgaria a particularly relevant comparator for Moldova.

To mitigate the economic challenges associated with aging, policy analysts, such as (OECD, 2013) suggest a policy mix that includes raising the retirement age, promoting higher immigration, and encouraging higher labor force participation among older individuals. Other sources, such as (Groupoftwenty, 2019), advocated for shifting the tax burden from labor to consumption and, in some cases, adjusting the overall tax burden. Reviewed studies consistently emphasize that proactive policy adjustments are crucial for addressing the fiscal challenges posed by aging populations, with a focus on sustainability and economic resilience.

## DEMOGRAPHIC PROJECTIONS AND NTA DATA

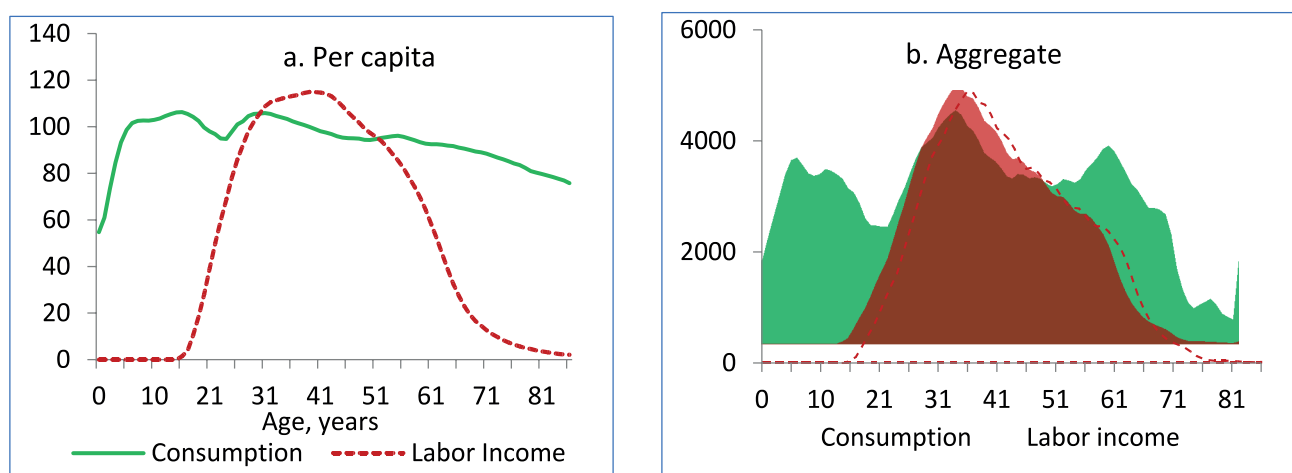
We use a set of demographic projections developed by the Center for Demographic Research (CDR) at the National Institute for Economic Research of Moldova (CDR, 2024). CDR projections include three scenarios. According to the “low” scenario, Moldova’s population will decline to 1.84 million by 2040 (from 2.42 million in 2023), with the proportion of the population aged 60+ rising to 33.7% (from 25.2% in 2023). In the “medium” scenario, the population is expected to reach 1.96 million by 2040, with the share of population aged 60+ at 33.1%. The “high” scenario is slightly more optimistic, projecting

a population of 2.1 million and a share of older people of 31.3% by 2040.

The most updated published results for Moldovan NTA refer to 2021 (Prohnițchi, 2023). For this article, the author has developed a 2022 NTA. According to the NTA, the lifecycle surplus in Moldova begins relatively late in life – around the age of 30 - and lasts only until the early 50s (Figure 1, panel a). Furthermore, the overall surplus created by productive generations is quite shallow (Figure 1, panel b.).

### Figure 1

*Per capita and aggregate age profile of consumption and labor income, th. MDL, year 2022*



Source: estimated by author.

To finance current consumption, generations at deficit rely on intra-temporal transfers from surplus generations or on inter-temporal transfers based on own assets. The deficit / surplus is financed / used in line with the following accounting equation (United Nations, 2013):

$$C - Y_L = (YN_A - S) + (\tau_g^+ - \tau_g^-) + (\tau_f^+ - \tau_f^-) \quad (\text{eq.1})$$

where:

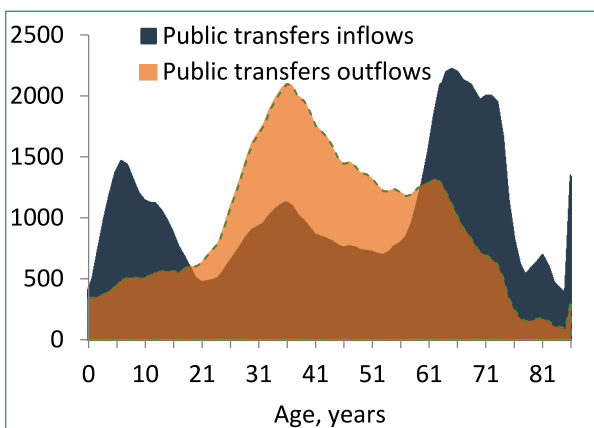
- $C$  – consumption of public and private goods and services;
- $Y_L$  – labor income;
- $YN_A$  – net income from owned assets;
- $S$  – savings;
- $\tau_g^+$  – public transfers received (public inflows, such as pensions, public health-care, public education, etc.);
- $\tau_f^+$  – private transfers received (private inflows);
- $\tau_g^-$  – public transfers sent (public outflows, mainly referring to taxes);
- $\tau_f^-$  – private transfers sent (private outflows).

Equation 1 applies equally to individual ages, to age-groups or to the entire population. International evidence suggests that public transfers tend to favor older generations (Lee & Mason, 2011). Moldova confirms this pattern, as the main contributors of the public transfers are generations aged from early 20s to late 50s which finance 70% of the outflows (Figure 2). The population aged 60+ receives more than 40% of total inflows (and contributes around 20% to total outflows).

It is worthwhile noting that in the period 2019-2022 the share of those aged 60+ in total public inflows has grown slowly but steadily, from 39.5% in 2019 to 40.6% in 2021, 40.7% in 2021 and 40.8% in 2022. As shown in the Figure 3, pensions and health-related transfers represent the main types of public inflows that older generations benefit of and which are the main drivers behind their recently growing share in public inflows.

**Figure 2**

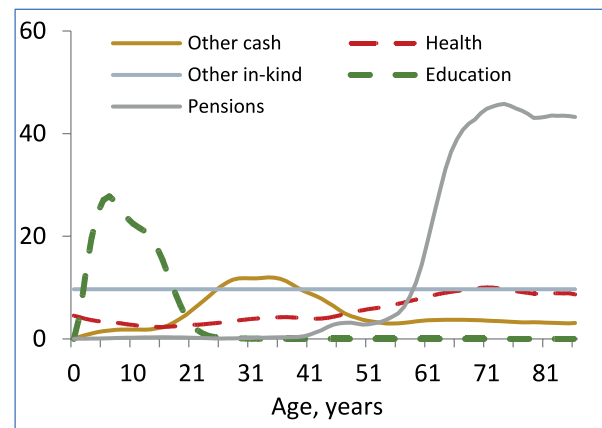
Age profile of the aggregate public transfer flows, th. MDL, year 2022



Source: estimated by author.

**Figure 3**

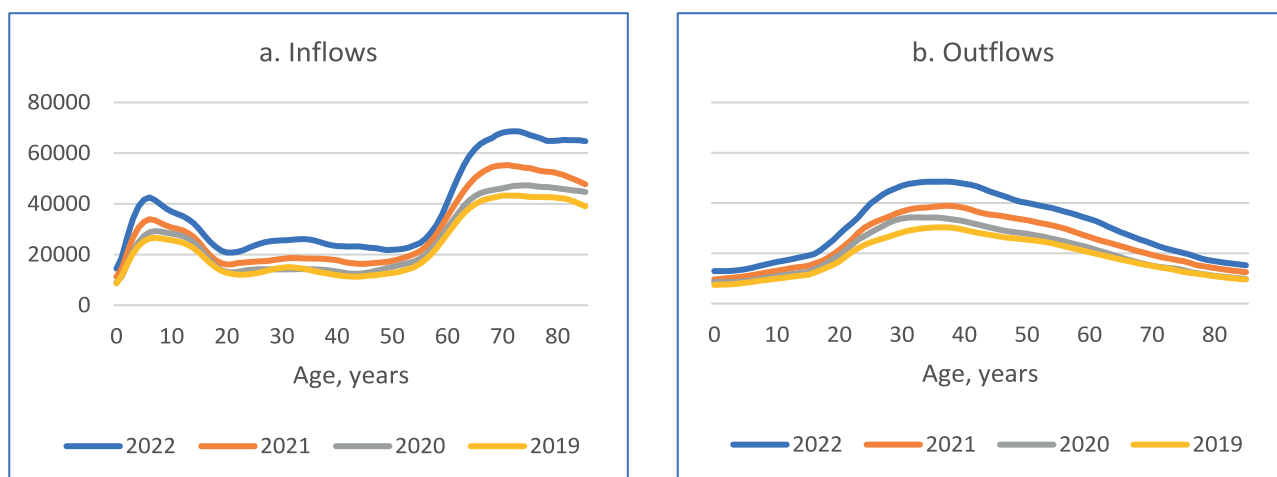
Age profile of the per capita public transfer inflows by type, th. MDL, year 2022



Source: estimated by author.

## Figure 4

Per capita age profiles of public transfer flows by year, MDL



Source: estimated by author.

According to Moldova's NTA series for 2019-2022, the shape of the per capita age profiles of the public transfers inflows (Figure 4, panel a.) and outflows (Figure 4, panel b.) has remained rather stable. A significant shift, though, is a sizeable upward movement of the age profiles for both types of flows. These shifts are due to underlying inflation pressures leading to automatic indexation of benefits (inflows) and tax contributions (outflows), but also due to growing nominal and real economic indicators. At the same time, no significant cross-age shifts have taken place over the 4-year time period.

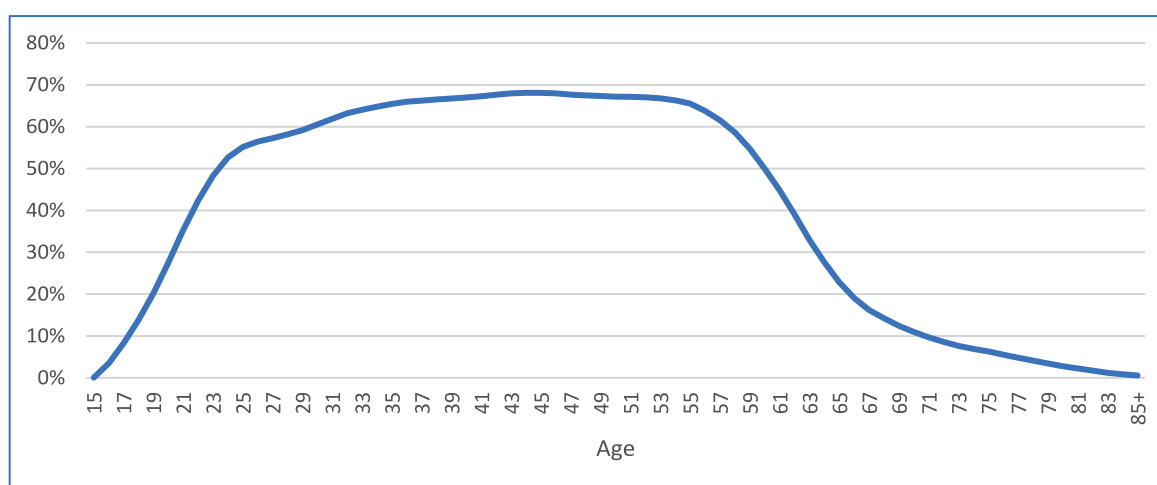
Yet, the sizeable vertical displacement of the age profile of public inflows for older generations which is easy to be spotted in the left panel of the Figure 4, gives rise

to questions related to the long-term sustainability of the public flows. This concern is particularly relevant considering the demographic aging expected to accelerate in the next decade or so. In conducting our projections, we assume that the shape of the age profiles of public flows remains constant, but the profiles continue rising uniformly due to inflation and economic growth.

A key element used in our projections is the age-specific employment rate (ASER). We estimated the ASER using the same data source used for deriving the NTA – the Households Budget Survey (NBS, 2024). To smooth out the inevitable statistical noise, we use the average ASER for the period 2019-2022 so that to get the “well-behaved” curve illustrated in Figure 5.

## Figure 5

Age-specific employment rate in Moldova, %, average 2019-2022



Source: estimated by author.

## MODELLING APPROACH AND SCENARIOS

Our projections horizon is the year 2040. Following the approach proposed by (Pena, 2019), the value of national public current expenditures for each period  $t$  over the projections' period is determined as a sum of the public transfer inflows of five components which are typically included in the NTA: education, health, pensions, other in-kind transfers and other cash transfers.

$$E^t = \sum_{i=1}^5 C_i^t \quad (\text{eq.2})$$

For each component, the aggregate value of inflow is determined as the sum over all ages  $v$  of the nominal per capita age-specific inflows multiplied by population of age  $v$ :

$$C_i^t = \sum_{v=0}^{85+} \alpha_{v,i}^{t-1} * g_{v,i} * cpi^t * P_v^t \quad (\text{eq.3})$$

Where:

- $\alpha_{v,i}^t$  – value of age-specific public inflows for the age  $v$  in the period  $t$ ; initial values are the 2022 values taken from NTA;
- $g_{v,i}$  – real growth rate of the age-specific public inflow component  $i$  for age  $v$ ; these rates are calibrated based on the 2019-2022 NTA and are assumed constant for all scenarios (calibrated constants or averages of age-specific constants used in simulations are provided in Table 1);
- $cpi^t$  – consumers price index in period  $t$ ; year-specific values are constant for all scenarios, declining from 104.8% in 2023 to 103.5% in 2040, for an average of 104.0% for the entire period;
- $P_v^t$  – population of age  $v$  in period  $t$ , according to the CDR demographic projections.

**Table 1**

*Constants used in simulations, all in %*

Constant	value
Average consumers price index	104.3
Average GDP deflator index	103.9
Real growth rate of per capita expenditure for education for 1-7 years age group	5.0
Real growth rate of per capita expenditure for education for 8-22 years age group	1.1
Real growth rate of per capita expenditure for education for 23+ years age group	0.0
Real growth rate of per capita expenditure for health, average for all ages	6.0
Real growth rate of per capita expenditure for pensions for ages 62 and below	0.0
Real growth rate of per capita expenditure for pensions for ages 63+	3.6
Real growth rate of per capita expenditure for other in-kind transfers for all ages	6.0
Real growth rate of per capita expenditure for other cash transfers for all ages	4.0
Baseline real growth rate of per capita public outflows, average for all ages	4.0
Public debt interest rate	2.4

Source: calibrated by the author.

Nominal value of overall public outflows (budgetary revenues) is determined by summing up the age-specific per capita outflows multiplied by population and augmented by real growth parameter and inflation rate.

$$R^t = \sum_{v=0}^{85+} \beta_v^{t-1} * gr_v^o * grad_s * cpi^t * P_v^t \quad (\text{eq.4})$$

Where:

- $\beta_v^t$  – age-specific outflows for the age  $v$  in period  $t$ ; initial values of the parameter for the year 2022 are taken from the NTA;
- $gr_v^o$  – real growth rate of the age-specific public outflows for the age  $v$  calibrated according to the NTA for the period 2019-2022;
- $grad_s$  – growth-adjusting parameter in the scenario  $s$ ; this parameter changes only in the “fiscal” scenarios; values of all parameters by scenarios are presented in Table 2.

We determine the value of nominal and public debt as:

$$GDP^t = GDP^{t-1} * G^t * def^t \quad (\text{eq.5})$$

$$D^t = D^{t-1} (1+rn^t) - PS^t (1 + \frac{rn^t}{2}) \quad (\text{eq.6})$$

$$PS^t = \sum_{v=0}^{85+} \sum_i (R^t - C_i^t) \quad (\text{eq.7})$$

Where:

- $GDP^t$  – nominal GDP in the period  $t$ , the initial value in 2023 is MDL 300.5 billion;
- $G^t$  – real growth rate of the GDP in the period  $t$ ;
- $def^t$  – GDP deflator index for the period  $t$ ; this is constant in all scenarios, and varies from 104.4% in 2024 to 103.4% in 2040 for an average of 103.9%;
- $D^t$  – value of public debt in period  $t$ ; the initial value for 2023 is set at MDL 102.2 billion, in line with the public debt reports released by the Government;
- $rn^t$  – effective nominal interest rate on public debt; this is constant in all scenarios and is assumed to decline from the calibrated value of 5.2% in 2023 to 2.5% in 2040;
- $PS^t$  – primary balance in period  $t$ .

Real growth rate of the GDP is determined by growth rate of the number of workers  $L^t$  and worker’s productivity growth rate  $w^t$  (equation 8). This is essentially a production function approach with only one factor. On its turn, is determined by the product of age-specific employment rate ( $aser_{v,s}^t$ ) and population  $P_v^t$  summed over all ages from 16 to 85+ (equation 10).

$$G^t = l^t * w^t \quad (\text{eq.8})$$

$$l^t = L^t / L^{t-1} \quad (\text{eq.9})$$

$$L^t = \sum_{v=16}^{85+} aser_{v,s}^t * P_v^t \quad (\text{eq.10})$$

The parameter can vary by scenario  $s$ .

In order to assess the impact of the aging itself, one needs a “baseline” scenario in which the declining population would remain structurally stable (i.e., does not get older). Many combinations of fertility rate, age-specific migration rates and age-specific mortality rates – which are not subject of our enquiry - can lead to such evolution. In our baseline, the population declines to 1.96 million by 2040 (“medium” scenario) but the average age stays constant at 40.2 years. This artificial – and admittedly concocted - demographic scenario is called “stable” in the simulations (Table 2). Yet it is necessary

for evaluating the impact in a counterfactual framework. We develop three impact scenarios – called “Low normal”, “Medium normal” and “High normal”, based on the corresponding CDR demographic projections (Table 2). The word “normal” in scenarios’ names refers to economic evolution, with the annual labor productivity expected to grow by 4% per year, just as in the “stable” scenario. A key question pertaining to the impact scenarios is whether the fiscal impact does significantly depend on which of the three CDR demographic projections eventually materializes.

**Table 2**

Parameters values by scenario, %

		Parameter				
		Demographic projection	2040 implicit average employment rate, %	Annual labor productivity growth rate, %	Public outflows adjustment parameter	
<b>Scenarios</b>	<b>Baseline</b>	Stable	45.8	4	1.000	
	<b>Impact</b>	Low normal	CDR low	40.9	4	1.000
		Medium normal	CDR medium	40.8	4	1.000
		High normal	CDR high	41.2	4	1.000
	<b>Policy</b>	Fiscal normal	CDR medium	41.2	4	1.009
		Fiscal slow	CDR medium	41.2	3	1.011
		Employment normal	CDR medium	71.2	4	1.000
		Employment fast	CDR medium	59.8	5	1.000

Source: author's assumptions.

We also run four policy scenarios, in which demographic conditions evolve along the CDR “medium” projection. In fact, these policy scenarios are simulated as goal-seeking scenarios, in which the goal is the level of the debt-to-GDP ratio.

The “fiscal normal” policy scenario asks how much, other conditions being equal, should the public outflows increase in order for Moldova to meet by 2040 the same level of debt/GDP as in the baseline.

To check the sensitivity of results of the “fiscal normal” scenario to changes in economic conditions, the “fiscal slow” scenario asks the same question, but assumes that the productivity will grow 3% per year, instead of 4%.

“Employment normal” policy scenario asks how much should the employment rate grow under normal fiscal and economic conditions in order for the Government to meet the same target of the debt-to-GDP ratio.

“Employment fast” scenario is similar to the “employment normal” scenario, but assumes a higher growth rate for the productivity parameter (5% instead of 4%). The purpose of this scenario is, again, to evaluate the sensitivity of results with respect to future economic conditions.

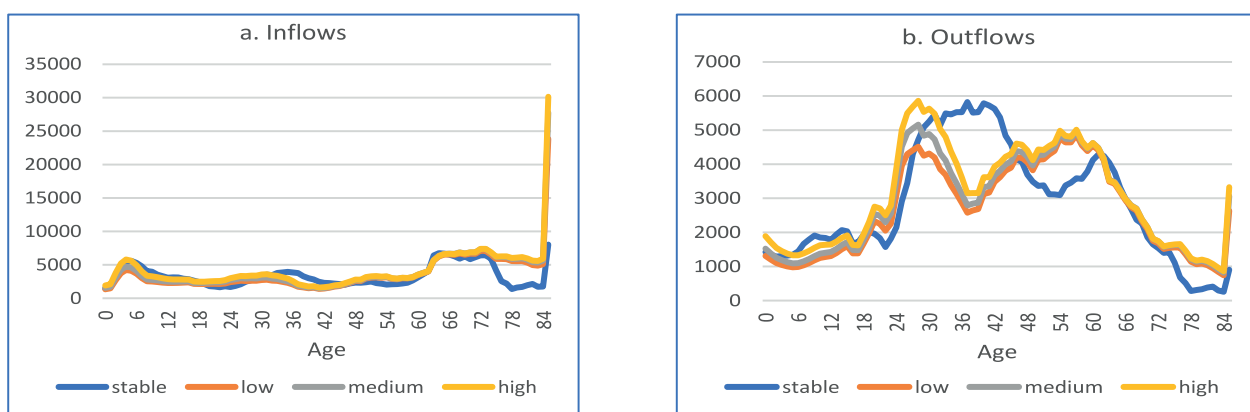
## SIMULATION RESULTS

Simulation results show that the expected demographic aging will trigger significant structural shifts in the aggregate public inflows, with the older population absorbing significantly larger proportion of the public resources (Figure 6.a). According to the baseline scenario, in the year 2040 the share of the population aged 60+ in total public inflows is 40.5%. Even in case of the demographically most favorable evolution (the CDR “high” scenario), this share gets to 50.9% by year 2040. In the “medium” scenario, the share is 53.1%, while in

the “low” scenario – 53.7%. At the same time, the fiscal burden on the older people, as measured by their share in public outflows, will increase slower: from 19.2% in the baseline, to 22.2% in the “high”, to 23.7% in the “medium” and to 24.4% - in the “low” scenario. These figures clearly tell that, under the assumption of stable age profiles of future per capita inflows, the fiscal impact differences among the three demographic scenarios should be rather negligible.

**Figure 6**

*Simulated aggregate age profiles of total public flows by scenario in 2040, billion MDL*



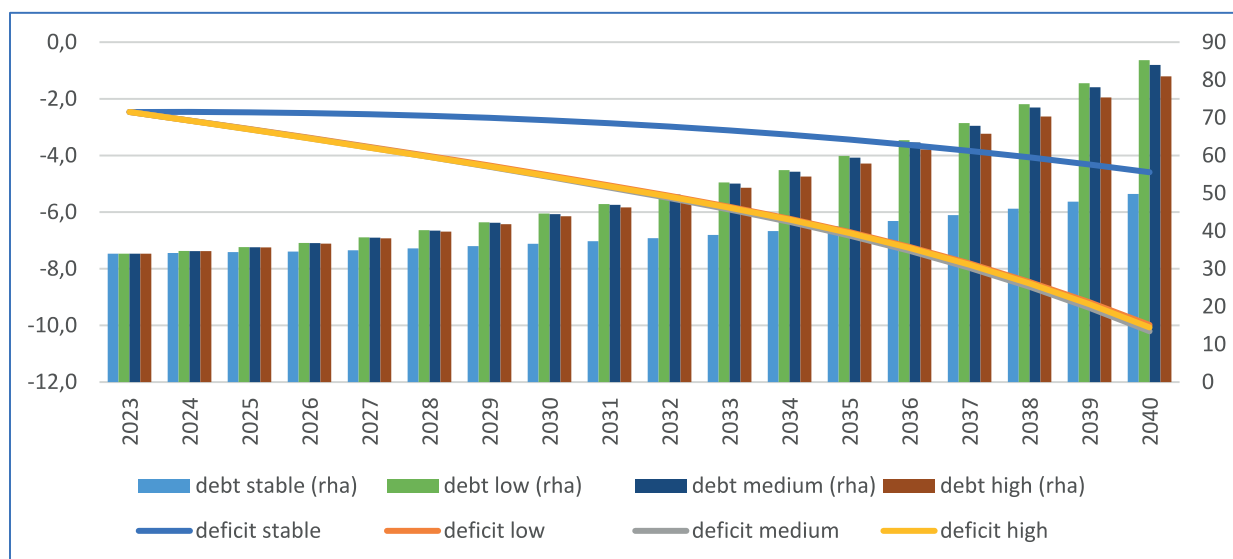
Source: simulation results.

On the background of stable per capita outflows, the budgetary expenditures relocations caused by aging result in a continuously worsening deficit-to-GDP ratio (Figure 7, the lines series). Independently of the demographic scenario, the fiscal impact is significant and lasting; in 2040, the average deficit in the three demographic scenarios is 10% of GDP, compared to only 4.6% in the baseline.

Reflecting chronic primary deficits caused by demographic aging, the burden of the public debt should be expected to grow strongly. In the baseline scenario the debt-to-GDP grows up to 50% by 2040. Compared to this rather moderate growth, in the “high” scenario the debt/GDP ratio gets to 81.0%, in the “medium” one – to 84.0%, while in the “low” one – 85.3% (Figure 7, bars series).

**Figure 7**

*Simulated evolution of the public budget deficit and public debt by scenario, % of GDP*



Source: simulation results.

It is clear that which scenario exactly of demographic aging materializes causes little difference to the magnitude of impact on public debt. In all cases the debt level will be quite above the IMF 70% benchmark of debt distress (International Monetary Fund, 2023) and even more so above the Maastricht convergence criteria benchmark of 60% used by Euro-area members (European Council, 2024). This worsening of fiscal stance is largely the consequence of rapid growth in

pensions and health-services demand determined by growth of the underlying receiving population.

Turning to the policy scenarios, recall that the “fiscal normal” policy scenario assumes the “medium” demographic evolution and asks by how much should the public outflows (i.e. budgetary revenues) grow for the public debt not to exceed the baseline ceiling of 50%. Simulations suggest that in order to meet this

target, the level of taxes (as measured by share of total NTA public outflows to GDP) must increase from 28.5% in 2023 to 34% in 2040. By any accounts, this is a significant growth in the tax burden which, if pursued, may involve multiple negative consequences, including loss of country's attractiveness for foreign investment, depressed incentives for labor and negative feedback impact on the underlying model assumptions regarding the hypothesized growth in labor productivity.

Should the economy annual growth rate slow down a bit, the required growth in fiscal burden would be even larger. Simulation results of the "fiscal slow" scenario show that public outflows must increase up to 41.1% by 2040, which certainly is not an actionable policy target.

In the "employment normal" scenario, the 2040 target of 50% debt-to-GDP ratio requires a significant growth of total employment rate from the current value of 40% up to 71.2%. In light of the expected demographic structure, attaining such a level of employment is hardly feasible, considering that it involves a significant increase in youth and older people employment. Assuming a maximum possible employment rate of 97% for the adult population in the age category 23-62 years, attaining the overall employment rate target of 71.2% would require all adults being employed at maximum level and the youth aged 15 to 22 years to increase employment rate from the current average of 20% to 44% by 2040. At the

same time, the employment rate of retired population aged 63+ will need to grow from 15% to 35%. In line with official statistical figures, the rate of youth 15-24 "not in employment, education or training" (the NEET group) represents about 14% of this population (NBS, 2024). Considering this, doubling the youth employment rate looks achievable only at the expense of education enrollment rate and with long-term losses in human capital quality. In case of population aged 60+, achieving a 35% employment rate is challenging for reasons related to health conditions and productivity losses caused by age-related factors.

However, should firms and government undertake more labor productivity-enhancing investments ("employment fast" scenario), the situation would change significantly. If the labor productivity grows by 5% rather than the 4% in the normal case, the 50% debt-to-GDP target rate is achievable with a steady growth of employment rate from the initial 40% to 60% in 2040. For instance, this can be achieved if the employment rate of the youth aged 15-22 years expands from 20% to 30% (and thus completely using up the labor potential of the NEET youth) and if the adults in the age category 23-62 increase their employment rate from 64% to 90%. In this scenario, there is no need for any increase in the employment rate of the older generation compared to the baseline.

## CONCLUSION

As population 60+ accounts for a significant bulk of the public transfers to the population and a disproportionately small share in total taxes raised per economy, the demographic aging of Moldova has significant fiscal long-term implications.

Growing needs for pensions and healthcare services are expected to lead to exceedingly high fiscal imbalances. The mere continuation of the 2019-2022 trends in public outflows and inflows, coupled with demographic aging perspectives, will lead to a series of chronic budgetary deficits that will likely send the public debt above 80% of GDP by the year 2040. The impact on debt does not vary greatly from "low" to "medium" to "high" demographic scenario underlying the economic projections.

Even a significant increase in the fiscal burden, while reducing the pace of debt growth, does not appear to eliminate entirely the imbalance. Simulations show that in order to meet the 50% debt-to-GDP benchmark, the share of budgetary revenues would need to increase from 28% to 34% of GDP by 2040. Such a tightening of the fiscal policy looks politically infeasible and economically counter-productive. Any external shock abating even mildly the economy from its growth trajectory would require even higher tax burden.

At the same time, a policy option stimulating the growth in employment alone but not addressing the labor productivity is not a feasible response either. Under constant taxation conditions, meeting the target of 50% of the debt-to-GDP ratio would require a boost in employment rate from 40% in 2023 to 71% in 2040. This would require all adults being in employment, the youth employment rising from 20% to 40% rate and the retired people employment rate rising from 15 to 35%. Under any of the three demographic scenarios, this policy is exceedingly burdensome and hardly feasible, especially considering associated losses in the youth educational enrollment and in the welfare of older generations that such a policy would entail.

Achieving long-term debt sustainability looks more realistic by adopting a policy mix stimulating both an accelerated growth in labor productivity and a more feasible path of gains in employment rate. With the labor productivity growing at an annual rate of 5% (instead of 4%) and with the employment rate expanding linearly from 40% in present to 60% in 2040, the debt sustainability objective looks well within reach.

Such a policy mix would require, *inter alia*, incentives for the youth to leave their NEET status, such as indemnities for territorial and inter-sectorial labor mobility, and more adequate career advisory services preventing them from entering the NEET group.

In case of adults, the employment policy should target especially rural women willing to pursue their professional plans rather than performing home-related work. Rural women employment rate is only 37% compared to 45% of rural men; and in case of rural population aged 25-34 years, the employment rate of women is only 42% compared to 53% of men. As empirical evidence suggests, two key barriers undermining rural women employment is poor quality

(rather than lack) of childcare services and the outright lack of care services for older generations (German Economic Team, 2023). Addressing these constraints is in itself an investment endeavor creating jobs both directly (educators, teachers, caregivers, administrative staff) but more so indirectly, by allowing an earlier and broader return of women to labor market.

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# GENDER DIFFERENCES IN PARITY-SPECIFIC FERTILITY TRANSITION MODELS

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## SUMMARY

Most demographic studies focus on the reproductive behavior of women, leaving a gap in the understanding of male demographic fertility. New fertility patterns in recent decades and the increasing involvement of men in family planning and the number of children within a couple have provided solid grounds for analyzing male reproductive behavior in investigating fertility determinants. The study aims to explore the differences in parity patterns between men and women in Moldova, comparing the age at which men become parents for the first time, the number of biological children over their lifetime, and the transition to the first, second, and third child. Using data from the Generations and Gender Survey conducted in 2020, the research focuses on cohorts of men and women born between 1950 and 1989. To test the hypotheses that men have a longer reproductive lifespan, start their reproductive activity later than women, and registers a higher number of biological children, the following methodologies are employed: Analysis of the mean number of biological children for selected birth cohorts 1950-1985; Determination of the proportion of men who remain childless by the end of life and the proportion of women who remain childless by the end of the reproductive period; Evaluation of the transition to the birth of children of different parities for men and women using probability models. The results indicate significant gender differences: men become parents, on average, three years later than women and have a lower average number of children over their lifetime. Additionally, the proportion of men who remain childless throughout their lives is significantly higher compared to women who have completed their reproductive period. These findings suggest substantial differences in the reproductive behavior of men and women, contributing to a broader and more complete picture of population dynamics and fertility trends.

*Keywords: male fertility, parity patterns, biological children, GGS, Moldova*

## INTRODUCTION

The majority of demographic studies focus on women's reproductive behavior, leaving a gap in the understanding of male demographic fertility. New fertility models in recent decades, along with men's increased involvement in family planning and decisions about the number of children within couples, have provided strong reasons for analyzing male reproductive behavior.

In Moldova, the fertility model has undergone a dynamic transformation over the past three decades. The period after 1990, witnessed significant changes in the timing and occurrence of life transitions among young adults. A sharp decline in the total fertility rate was recorded during the 1990s, as it dropped from 2.1 to 1.44 children per woman between 1990 and 2003, and in 2023, it reached 1.6 children per woman of reproductive age. Demographic forecasts predict that the number of births will continue to decrease in the coming decades due to the population's structure and the entry into reproductive age of the few generations born in the late 1990s and early 2000s. (Gagauz, et al., 2021). If in 2023, a total of 24,033 thousand children were born in Moldova according to official statistical data (NBS, 2023), according to the I-low scenario of projection elaborated by Center for Demographic Research (Gagauz, et al., 2021), this number may decrease until 2040, reaching only 15.8 thousand. The decline in fertility in Moldova is driven by the decreasing proportion of women giving birth to higher-order children (three or more) and the increasing share of women who have not given birth to any children by age 30. The postponement of births to older ages is one of the leading causes of the reduction

in the number of children born. Meanwhile, women's educational level and place of residence stand out as key factors in the fertility transition from the traditional model to the modern one, associated with birth control and childbearing outside of marriage (Grigoraş & Gagauz, 2022).

The traditional focus of fertility analysis is on women, to whom this behavior is automatically attributed. Existing studies have as main purpose the dynamics of fertility, the characteristics of fertility transition (Grigoraş, 2019), and the typology of reproductive behavior (Grigoraş & Gagauz, 2022), with the main fertility measures being, in fact, indicators of female fertility. Consequently, the subject of male reproduction in Moldova has been marginalized until now. The reasons for excluding men from the analysis of fertility indicators are primarily due to the limitations of available official data sources. For instance, in cases where children are born to unmarried women, the biological father may not be declared on the "birth certificate", leading to a lack of accurate data. Therefore, researchers often have to rely on representative sociological surveys in which men are asked about the number of biological children. In this context, using data from the Generations and Gender Survey (GGS) provides an opportunity to develop a comparative analysis of the number of biological children reported by men and women. This allows for a deep analysis of parity models and the transition to the first, second, and third child among men and women.

Although Moldova is in line with the process of fertility transition toward the modern model of reproductive

behavior (which is characterized by changes in reproductive behavior appearing in postponing marriage and the first birth to older ages (tempo effect), causing a decrease in the number of children of higher birth orders and an increase in the proportion of families with a small number of children (quantum effect), (Grigoraș & Gagauz, 2022), there are some particularities. Family and children hold an essential place in the priorities of young people. Both men and women exhibit high reproductive aspirations. The results of the GGS (2020) study, highlighted that the ideal number of children in a family for men is 2.6, while for women, it is 2.7 (UNFPA, 2020). Marriage is often seen as a necessary step before having children. Thus, men and women tend to plan the moment they become parents based on when they get married, and delaying marriage leads to postponing the first birth, which influences the total number of children a couple may have. The results of the sociological study on the prevalence of cohabitation without marriage registration among young people in Moldova and the factors influencing these arrangements showed that childbirth is primarily associated with marriage rather than partnership. This association is driven by the deep-seated desire for long-term and stable relationships, which plays a significant role in family planning in Moldova (Gagauz, 2021). The delay in men and women

marrying is causing a shift in the timing of becoming a parent for the first time. As a result, women and men who marry earlier may start having children sooner, which can impact the total number of children they have (Lesthaeghe, 2020).

The persistence of the traditional breadwinner model among Moldovan men, where they are the main providers of family income, can influence decisions regarding starting a family, registering a marriage, and, not least, fulfilling reproductive intentions. Studies show that limited opportunities to combine professional and family roles lead men to continue being the primary supporters of the family (Gagauz, 2021).

Studying demographic fertility from the perspective of men provides a more complete understanding of reproductive behaviors and gender dynamics in the process of realizing reproductive intentions and the transition to parenthood. The study highlights differences in fertility patterns, comparing the age at which men become parents for the first time, the biological number of children over their lifetime, and the transition to the first, second, and third child. Thus, including men in fertility studies will allow for the development of more equitable and effective demographic policies.

## LITERATURE REVIEW

The research on fertility chiefly focuses on the patterns among women. However, recent studies have emphasized the importance of integrating male perspectives to gain a more comprehensive understanding of fertility transition dynamics (Oláh, Kotowska, & Richter, 2018), (Keilman, Tymicki, & Skirbekk, 2014).

Recent research on male and female fertility trends since the 1970s in 14 European countries, shows that male fertility has been lower than female fertility in recent periods but was higher in several countries in the 1970s (Dudel, Cheng, & Klüsener, 2020). In most European countries, the percentage of men who remain childless is higher than that of women. Childlessness is higher in countries where the mean age at marriage is high, and entry into motherhood is, on average, more delayed. However, in Central and Eastern Europe countries such as Bulgaria, the Czech Republic, Estonia, Hungary, Lithuania, Poland, Romania, and Russia, the percentage of childless women aged 40-44 remains low ( $\leq 10\%$ ). On the other hand, the lifetime childlessness rate among men is increasing, with over 23% of men aged 45-49 remaining childless in some European countries such as Finland, Italy, Germany, the United Kingdom, and the Czech Republic (Miettinen, et.al., 2015).

Studies on fertility differences between men and women suggest that since the 1960s, fertility rates among men have been lower than those of women in most European countries. A marked increase in childlessness and a de-

cline in progression to second births have contributed to decreased completed fertility for both sexes, especially in cohorts born after 1960 in Serbia (Nikitović, et.al., 2024).

Age disparities between mothers and fathers can impact fertility differences between men and women, (Fox, et.al., 2019). With regard to age-specific fertility, researchers demonstrate very different male and female fertility patterns resulted from the effect of age. Male fertility is found to have a later and lower peak, and remaining higher than that of female's with increasing age. Men are also observed to start having their first births later as compared to women. Moreover, the first birth distribution of men is found to be more dispersed than that of women in many populations (Dudel & Klüsener, 2019), (Schoumaker, 2019), (Szoltysek, et.al., 2017).

The results of a study based on the GGS dataset from Russia (2004), investigated gender-specific fertility differences in terms of age, timing, and parity patterns. The study found out that although men generally become fathers later, their fertility patterns are similar to those of women. Additionally, the results indicate that Russian men end their reproductive period at the same age as women, and a longer reproductive span does not lead men to have more children than women (Alich, 2007).

A study on the impact of sociodemographic factors on male fertility transition in the Czech Republic revealed that men are more likely to become fathers if they are in

co-residential partnerships, primarily through marriage, have higher education, and live independently. On the other hand, being a student, not being in a relationship, and having a significantly older partner reduce the likelihood of becoming a father. The study used a

longitudinal approach and found that the factors influencing men's path to fatherhood have changed, (Kyzlinková & Šťastná, 2018) keeping our audience engaged and interested in the evolving research.

## BACKGROUND

Moldova experienced significant socioeconomic crises after the collapse of communism in 1989 and subsequently gained independence in 1991. This is especially true for cohorts of men and women born in the 1970s who reached adulthood during this period. Political changes, along with the transition to a market economy, led to the emergence of economic uncertainty, unemployment, and a lower standard of living, which influenced marital and reproductive behavior (Gagauz, 2012).

The profound social and economic changes that followed led the generations of reproductive age to delay or reduce the number of births in response to the uncertainty and instability of the period (Gagauz & Grigoraș, 2018). Although the studies did not focus on men, the experiences are reflected on the entire population (men and women cohorts).

The age difference between men and women at marriage is a significant factor in the fertility transition. This age

gap can influence the age at which couples have their first child, determining their reproductive behavior. According to the GGS report (UNFPA, 2020), in Moldova, by the age of 24, only 14.9% of men are married, compared to 46.1% of women. This significant difference shows that women tend to marry earlier, which increases the probability of them starting their reproductive lives before men. In the 25-29 age group, almost half of men (46.7%) are married, but this proportion is still lower than that of women. In the 25-44 age group, nearly two-thirds (66.67%) of women are married. This difference in the timing of marriage creates a gap between the onset of reproduction for men and women, which has a significant impact on fertility by sex. At the same time, a widespread phenomenon characterizes reproductive behavior in Moldova—the birth of children outside of marriage. In this context, every fourth woman aged 15-49 declared the birth of a child out of wedlock (26.0%), (UNFPA, 2020).

## RESEARCH METHODOLOGY

The study explores differences in fertility patterns between men and women in Moldova, using data from the Generations and Gender Survey (GGS) conducted for the first time in 2020. It contains detailed information on the demographic and social events of the population in the Republic of Moldova. The data was weighted to ensure the representativeness and accuracy of the results. Thus, the analysis focuses on cohorts of men and women born between 1950 and 1989, with a total sample of 7,501 respondents. The age distribution ranges between 30 and 70 years. The valid number of cases for men is 3,345 (47.4% of the sample), and women represent 3,706 valid cases (52.6%). To analyze men's reproductive behavior compared to women's, we compare the number of biological children reported by male respondents by birth cohort and compare them with women from the same birth cohort. Biological children are defined as those offspring born directly from an individual through a biological procreation relationship. This category includes all children who are direct descendants of biological parents, without considering aspects related to adoption or other forms of non-biological parenthood. All cases of reporting biological children for men under 15 years and for women under 14 years were excluded.

To compare the number of biological children, a specific syntax was developed: the sum of the number of biological children reported by respondents for their current partner (dem42, dem44, dem46), each previous partner (lhi08\_, lhi10\_, lhi12\_\*) and previous partners with whom they did not cohabit (lhi19), (Jin, Grunwald & Rijken, 2024). The analysis addresses the event of the birth of a first, second and third biological child (in a data set expressed in the month and year of birth). The average number of biological children was analyzed for each selected birth cohort, allowing for a comparison between men and women. The statistical package SPSS was used for analyzing and managing demographic variables, as well as for developing the specific syntax related to the biological number of children.

The probability method was applied to analyze transition patterns to parenthood. This method allows the estimation of the probability distribution function and the analysis of the time until the occurrence of a specific event, in this case, the birth of a child of a specific order. The probabilities of a particular event occurring were determined separately for men and women to compare fertility trajectories between genders.

## THE RESULTS OF RESEARCH

The results show that for the cohorts born in 1950 and the mid-1960s, the age at first birth exhibited relative stability for both sexes; however, the differences between genders remain evident (Fig.1). Men born in 1950 had an average of 2.77 children, while women had an average of 2.44. Towards the end of that decade, there is a general trend of decreasing the average number of children among both men and women.

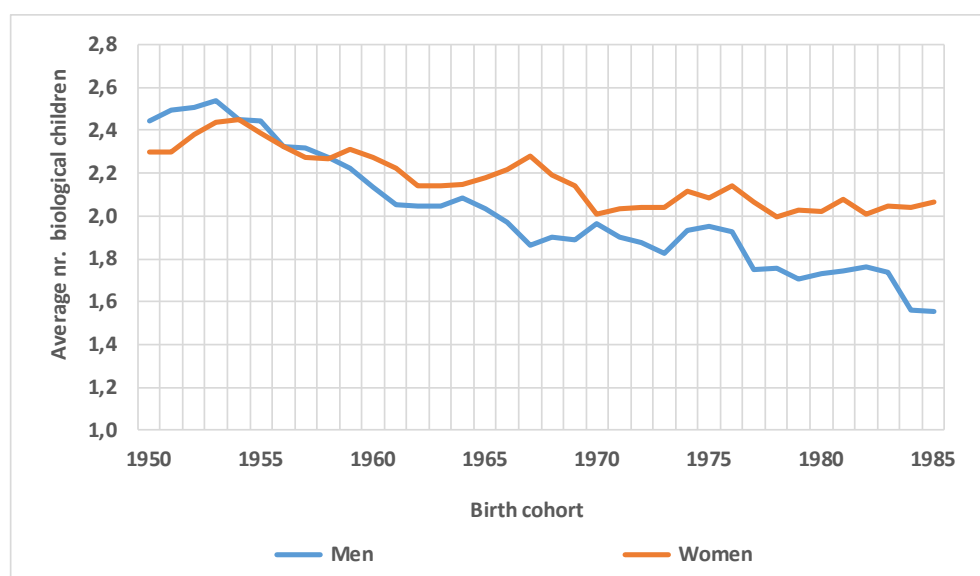
The reproductive behavior of the cohorts of women and men born in the mid-1960s, when they reached reproductive age, was influenced by the family policies of the 1980s, which affected fertility, leading to a higher average number of biological children (in 1966: for men – 2.33, and for women – 2.34). During this period,

a significant difference was recorded in the number of biological children, with an increase for women and a decrease for men, which could be caused by differences in the cohort sizes of men and women.

The cohort born in 1985, which had not yet completed their reproductive period at the time of the interview, indicates a more pronounced gender difference, especially among men. The differences observed in the younger cohorts may be attributed to the tendency of men to fulfill their reproductive intentions at a later age than women. This trend, combined with the socio-economic uncertainty and instability of the period, contributed to the continued decline in the mean number of biological children.

### Figure 1

*The mean number of biological children over cohorts 1950-1985*



Source: Moldova, GGS (2020)

Thus, men tend to become parents for the first time around 25. At the same time, women reach this threshold around the age of 23, reflecting distinct socio-cultural norms regarding gender roles and the transition to parenthood.

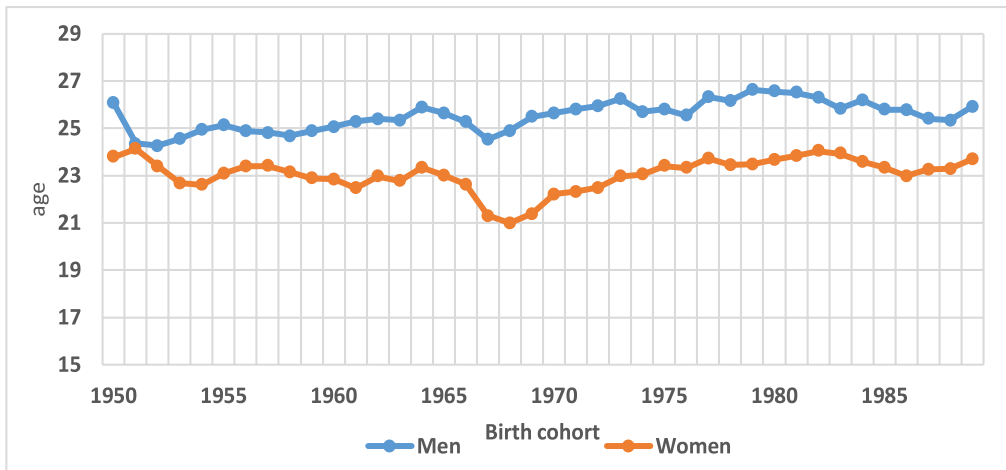
There has been an increase in the age at first birth for cohorts born in the 1970s, attributed to changes in demographic behavior and the onset of the second demographic transition. Age patterns have shown a downward trend for cohorts born between 1980 and 1985, representing a solid indication of the establishment of the fertility transition, and the age difference between men and women has increased.

Results from local studies analyzing birth patterns in female cohorts revealed that an early fertility pattern was characteristic for female cohorts born in the 1960s and early 1970s. Moreover, in these cohorts, the birth model was rejuvenated and influenced by family policies in the 1980s, which decreased higher-order births at older ages. This behavior led to the emergence of a delayed fertility pattern, in which first births occurred later, and the total number of children decreased (Gagauz & Grigoraș, 2018).

In general, the sex-specific age difference in the analyzed cohorts is stable, maintaining a difference of about three years.

### Figure 2

Mean age at first marriage (birth cohorts 1950-1989)



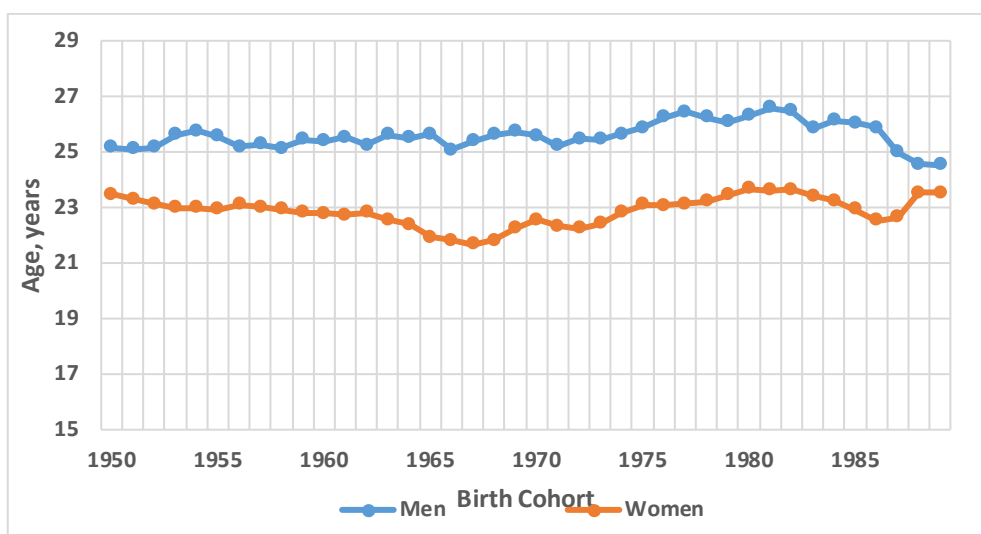
Source: Moldova, GGS (2020)

Generally, men tend to marry later than women, resulting in a delay in the time when men start having children compared to women. The age at first marriage for different cohorts highlights specific gender differences. For those born in the 1950s-1960s, the age at first marriage was significantly lower (Fig.2). However, for those born in the 1980s, the average age at first marriage has increased considerably. Up to the mid-1960s, an early marriage pattern is observed, with men marrying around the age of 25 and women around the age of 23. From the mid-1970s to the mid-1980s, the age at first marriage increased to 26 years for men and 24 years for women, with an average age difference of two years between men’s and women’s first marriages.

The age gap can be explained by that aspect that males become sexually mature approximately two years later compared to their female counterparts. According to marriage market theories, relatively stable ages at first birth and “historical perpetuation” generate a stable age distance within the range of two to three years. This age gap is only widened or closed if high barriers (economic or social) to enter a (marital) partnership are imposed on men or women, e.g. payment of high bride money or dowry; the achievement of a certain social position etc. (Shephard, 2019). Even if the presented models did not account for such factors, the results suggest that these barriers are significant in Moldova.

### Figure 3

Mean age at first birth (birth cohorts 1950 to 1989)



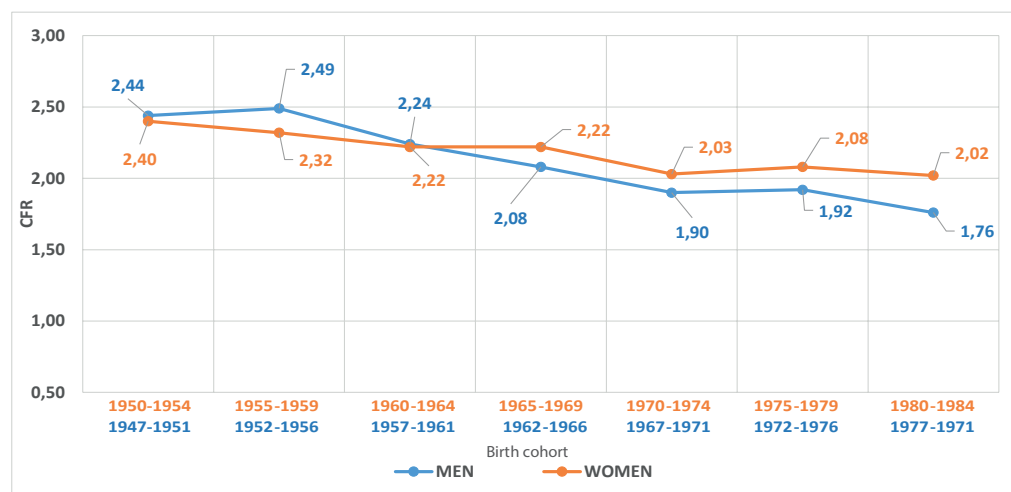
Source: Moldova, GGS (2020)

Men tend to become parents for the first time three years later than women. To compare male and female cohorts, the group of women born between 1950-1954 was compared with the group of men born between 1947-1951 (Fig.4). After making this adjustment, the differences between the two groups became significantly

smaller. However, both male and female cohorts show a trend of decreasing numbers of biological children. For the cohorts born between 1977 and 1981, the average number of children for men was 1.76, while for women born between 1980 and 1984, it was 2.02.

**Figure 4**

*Sex differences in Cohort Fertility Rate*



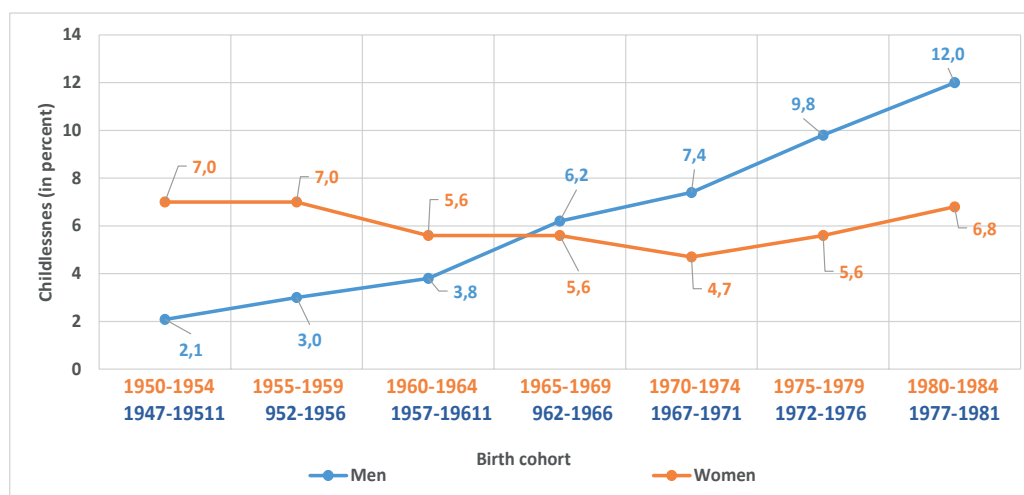
Source: Moldova, GGS (2020)

In Moldova, it is uncommon for women to stay childless, as most women aim to have at least one child during their reproductive years. The percentage of women who have not had children by the end of their reproductive period is compared to the percentage of men who are three years younger and have not had biological children in their lifetime. There is a variation in the percentage of childless women across different generations born between 1950 and 1984, ranging from 7% to 5.6% (Fig.5). In contrast, the percentage of men born between 1947 and 1966 is significantly lower but shows an increasing trend, from

2.1% to 6.2%. These differences can be attributed to the sizes of the cohorts as well as other relevant factors that have influenced the demographic structure of the male population. The reversal of the percentages of childless women and men in the cohorts born in 1970 indicates changes in the reproductive behavior of both men and women. Research from various countries has shown that voluntary childlessness is more common among men than women. The decision to have children generally has a greater impact on women's lives, as they tend to be more eager to have children (Szalma, et.al., 2015).

**Figure 5**

*Reported childlessness (women birth cohorts 1950 to 1984, men birth cohorts 1947-1981)*



Source: Moldova, GGS (2020)

The distribution of men and women by the number of biological children reveals similar changes between the sexes. Families with two children are predominant among both men and women. A characteristic specific to men is the realization of reproductive intentions later in life, which leads to a higher proportion of persons who do not have any children in the younger cohorts born between 1980 and 1984 (22%), who were aged 36-40 at the time of the interview (Fig.6,7).

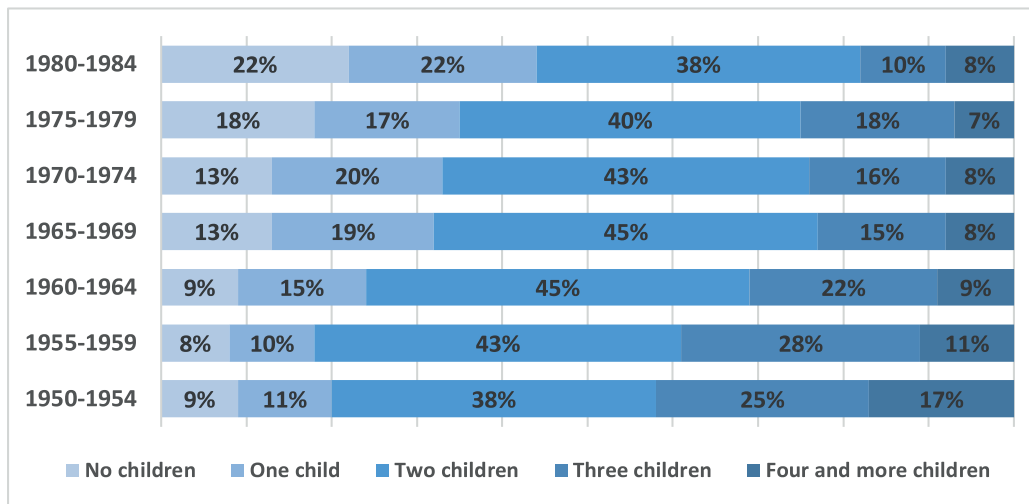
Compared to women, the proportion of men without children is increasing and is significantly higher among both mature and younger cohorts. The proportion of men who have had no children by the age of 46-50 (the cohorts born between 1970 and 1974) is 13% (although this proportion may decrease due to the aging reserve and the unlimited reproductive capacity of men). There is a notable increase in the proportion of men with one child, rising from 11% in the cohorts born between 1950 and 1954 to 20% in the cohorts born between 1970 and 1974.

At the same time, it is observed that men experience a faster reduction in the number of biological children of the third birth order and more. If the cohorts born between 1950 and 1954 reported a proportion of 41%, in the cohorts born between 1970 and 1974, this proportion has decreased to 24%. In a comparative aspect, women exhibit a more rapid reduction in the number of children of the fourth rank and more, while the decrease in the number of children of third birth order is more gradual.

The fact that men are having children later in life suggests a shift in priorities, especially among younger generations. More younger men are not having children, which could have important effects on family life and government policies that support families. Also, there is a significant decrease in the number of men with three or more children, compared to women. This shows a change in family preferences and a reconsideration of traditional roles within the family.

**Figure 6**

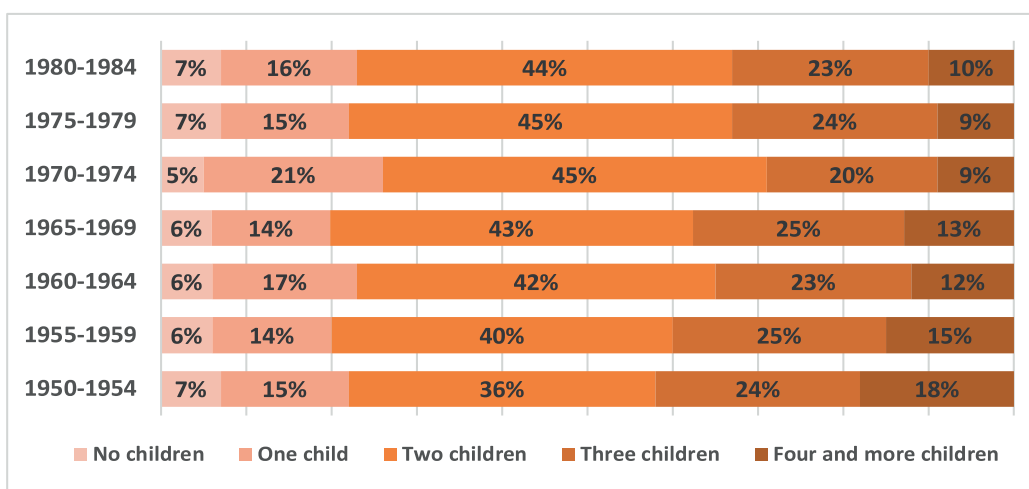
*Men - Parity-specific distributions (birth cohorts 1950 to 1984)*



Source: Moldova GGS (2020)

**Figure 7**

*Women - Parity-specific distributions (birth cohorts 1950 to 1984)*



Source: Moldova GGS (2020)

## SEX DIFFERENCES IN PARITY-SPECIFIC TRANSITION MODELS.

The transition to parenthood highlights specific characteristics of reproductive behavior depending on the sex variable, serving as a relevant indicator of reproduction. The data demonstrate significant disparities in the likelihood of having a child at a certain age throughout life for men and women in Moldova.

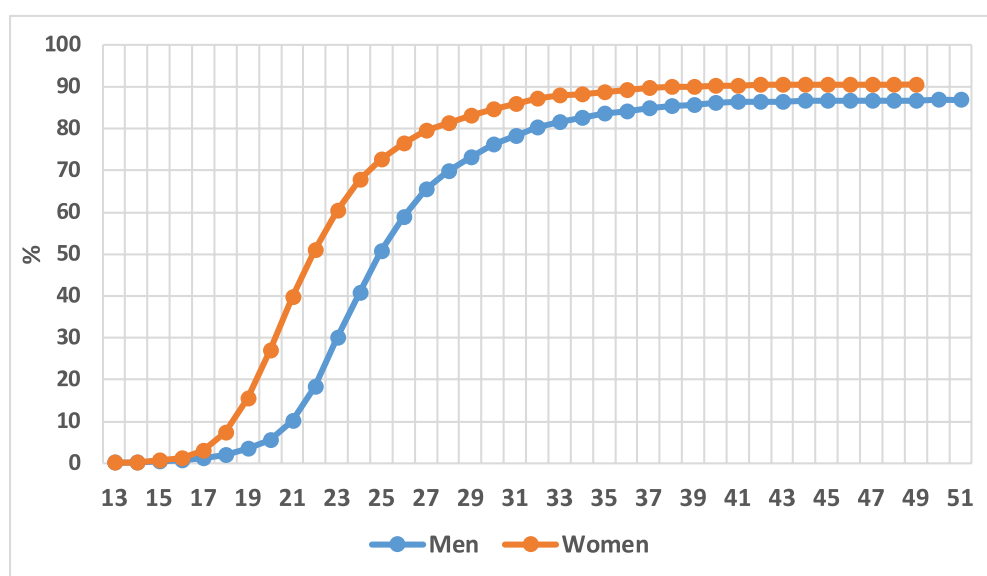
The results showed that women become mothers earlier than men become fathers, and we explored the impact of gender on the likelihood of having biological children of different birth orders by a certain age. We chose men and women aged 35-60 to calculate the probabilities of having biological children of different birth orders. These respondents either completed or were close to the end of their reproductive process, allowing us to track the probabilities of having biological children of different birth orders over their reproductive lifetimes

and highlighting fertility differences based on gender. The population selected for analysis, recorded during the demographic GGS study, refers to cohorts born between 1960 and 1985.

Thus, the probability of having a first child at the age of 22 for women is 50%, while for men it is below 20% (Fig.8). Starting at age 23, the probability of having a first child for women begins to increase, reaching 80% at the age of 27, whereas men reach this point at the age of 31. The gap reaches its minimal values by the age of 33, and by the age of 35, it stabilizes at 90% for women and 82% for men. By the end of the reproductive period for women aged 40-49, the probability of having a first child is 90%, while for men, by the age of 50, the probability is 87%, indicating that men have a more extended reproductive period than women.

**Figure 8**

*Probability of having the first child,*



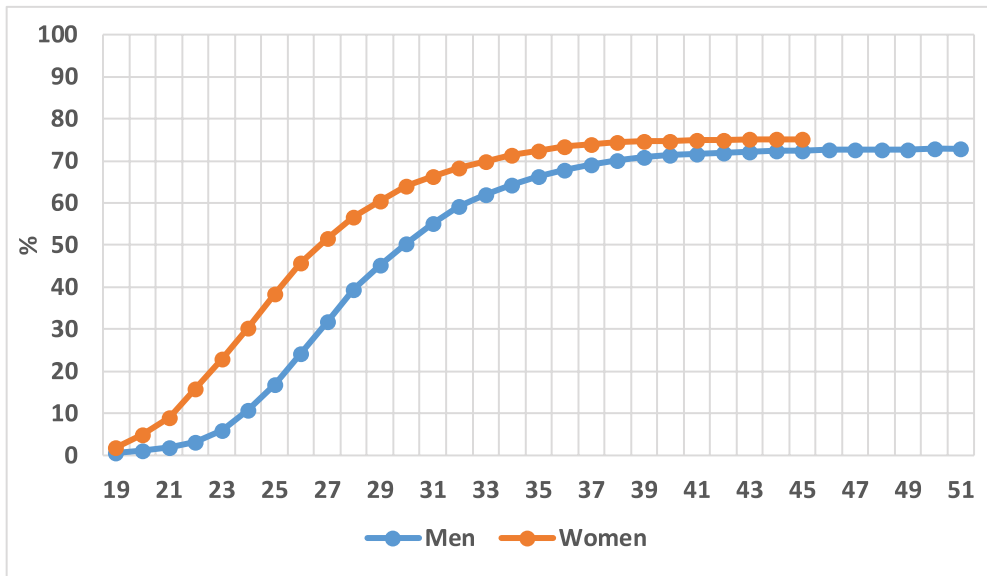
Source: Moldova GGS (2020)

The probability of having a second child at a certain age shows significant differences based on age, with distinct probabilities for men and women. The most notable differences occur at younger ages, up to and including 28 years (Fig.9). Women tend to have a second child at a younger age compared to men. For women, the probability of having a second child at age 27 is 50%, while men reach this probability around 30.

At 33, the probability of having a second child for women is 70%, while men achieve this proportion by age 38.

From age 35, the probability of having a second child for both men and women starts to become similar, and the differences decrease. After age 35, the gap between the two probabilities gradually narrows, indicating that most men and women have had a second child by this age. By age 40, 75% of women and 71% of men have had a second child. The probability curve for men transitioning to a second child declines more slowly. It extends over a longer period, reflecting the tendency of men to become parents for the second time at older ages, with a 71% probability by age 51.

**Figure 9**  
Probability of having a second child

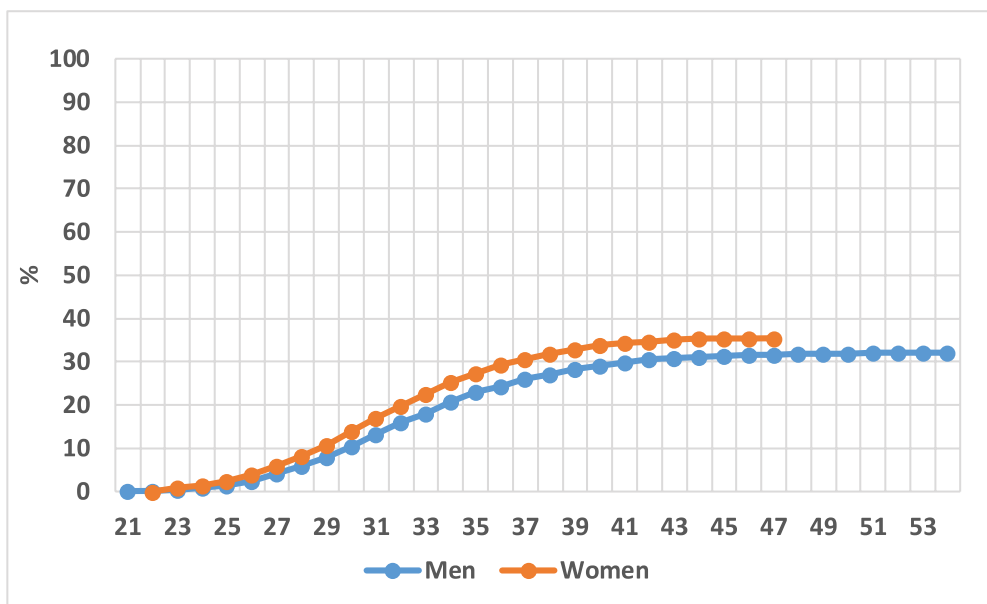


Source: Moldova GGS (2020)

The transition to having a third child in Moldova shows a shift towards older ages, with variations of up to 9% in the 29-34 age range (Fig.10). By the age of 36, approximately 30% of women have a probability of having a third child, whereas the probability curve for men reaches 20%. A characteristic feature for both men and women is that

the probability curves extend into older ages. On one hand, the fertility curve for women is limited to age 47, reaching a probability of 35%. On the other hand, the probability of having a third child for men extends until the age of 54, reaching 30%.

**Figure 10**  
Probability of having a third child.



Source: Moldova GGS (2020)

We find that a significant portion of the reproductive intentions of both women and men are fulfilled by age 37, considering that the probability of having a first child is 90% for women and 85% for men. By 39, 75% of women and 71% of men have a second child. By the age of 40, 35% of women and 29% of men have a third child.

## DISCUSSION

This study examined the differences in parity-specific transition models between men and women in Moldova, focusing on cohorts born between 1950 and 1989, although older generations (1941-1949) could have been included. The longitudinal approach allows for a comprehensive analysis of fertility dynamics by tracking reproductive behavior across life stages and transitions to different birth orders. However, ensuring the quality and reliability of data on male fertility is more challenging than for women, as men need a clearly defined reproductive period like women (15-49 years). Furthermore, since the study relies on self-reporting, there is a risk of underreporting the number of biological children by men. Data may be influenced by memory recall and respondent honesty, as it is easier to link mothers with their children than fathers, especially in cases of children from different relationships or unplanned children.

Significant differences and changes in the demographic fertility levels of men highlight a notable decrease in the number of biological children of the male and female cohorts born in 1950-1980. The average number of biological children among men born in 1950 was high, at 2.44, but this number rapidly declined in younger cohorts, reaching 1.76 children for men born in 1980. Compared to men, women experienced a slower reduction in childbearing, with fertility dropping from 2.40 children for women born in 1950 to 2.02 children in cohorts born in 1980.

The results elucidate that men become parents, on average, three years later than women and have fewer children over their lifetime. Moreover, the proportion of men who remain childless throughout their lives is moderate (13%), compared to women. For females who have completed their reproductive period, childlessness remains low (5%), consistent with similar findings in Eastern European countries (Miettinen, et al., 2015). Despite this, the two-child family remains the predominant model for men and women across all cohorts. The declining proportion of individuals with higher-order births in younger cohorts suggests a

broader trend toward smaller families and lower fertility.

The probability of having a first child is significantly higher for women at younger ages. However, by age 35, gender differences start to diminish, and by age 39, most men and women have at least one biological child. In Moldova, men typically end their reproductive period by age 54, while women conclude theirs around age 47, particularly for second and third children. Contrary to findings from Russia results (Alich, 2007), where men end their reproductive period around the same time as women (age 49), fertility patterns in Moldova show more significant differentiation between male and female reproductive behaviors.

Neither the evaluation of the aggregate indicators, nor the transition to the first, the second and the third birth allude to the assumption that men from Moldova, have more children during their lifespan, even if men have the biological ability to become fathers at older ages. Being in agreement with other longitudinal studies on transition to fatherhood of male cohorts, the main manifestation of changes in reproductive behavior for young cohorts was the postponement of childbearing to older ages which started with the cohorts born in the late of 1960 (Dudel, et al., 2020); (Kyzlinková & Šťastná, 2018), (Zeman, Beaujouan, Brzozowska, & Sobotka, 2018).

The fertility pattern of Moldovan men is influenced by two main aspects. First men typically become fathers three years later than women, as they complete their reproductive period at older ages. Second, the prevalent preference for families to have two children in Moldova further contributes to explain particularities of reproductive behaviour of men.

The results of this study underscore the importance of examining parity-specific fertility transitions for both men and women during periods of declining fertility, particularly in research on demographic patterns. Moreover, these findings emphasize the need to study the socio-demographic and economic factors contributing to the differences in fertility behavior between men and women in Moldova.

## CONCLUSION

The study has contributed to a deeper understanding of fertility trends by gender and transition to parenthood, offering a comparative perspective on these processes. The research highlights the need for a longitudinal approach and a detailed analysis of gender-differentiated reproductive behavior to clarify fertility dynamics and their influence on demographic sustainability.

To sum up, Moldovan men reported fewer biological children than their female counterparts. The special approach of comparing the number of biological children of female birth cohorts with male birth cohorts three years older elucidates more minor sex differences. Additionally, the proportion of men who remain childless throughout their lives is significantly higher compared to women who have completed their reproductive period. Moldovan men's fertility pattern can be characterized by

the onset of reproductive activity at older ages, having fewer children on average than women, and ending their reproductive period later in life. These findings suggest substantial differences in the reproductive behavior of men and women, contributing to a broader and more complete picture of population dynamics and fertility trends.

The consistent trend of families having two children and a decrease in the number of higher-order births among younger generations indicates a broader shift towards smaller families and declining the total number of biological children. The convergence in declining fertility among men and women suggest solid foundation for more effective and targeted policies aligned with contemporary demographic realities.

## ACKNOWLEDGEMENTS

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# DETECTING AND THREATENING IN THE RUSSIAN-UKRAINIAN WAR: A GAME THEORY PERSPECTIVE

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## SUMMARY

Russia's full-scale invasion of Ukraine in 2022 marked a significant turning point in the post-World War II history of Europe, with the realist and idealist views on international relations offering contrasting interpretations of its underlying sources. On one side, realist scholars argue that Russia invaded Ukraine because of the West's aggressive stance in promoting democracy, NATO enlargement, and EU expansion. On the other side, idealist scholars argue that Russia invaded Ukraine because of the West's appreciation for partnership and thus failure to come up with a compelling deterrence strategy, making the costs of war outweigh the benefits of anything else Russia could have gained either internally or externally. While each perspective provides valuable insights, neither captures entirely the complex dynamics of foreign affairs, which frequently straddle a middle ground between the conflictual and cooperative states of nations. This paper takes on a game theory approach to bridge the gap between the realist and idealist views on international relations, with the analysis of two scenarios: a limited deterrence game, viewing the conflict as a proxy war between NATO and Russia, and an extended deterrence game, seeing the conflict as a direct war between Russia and Ukraine with potential help from NATO. The findings offer a nuanced understanding of the dynamics between Russia, Ukraine, and NATO with practical significance, suggesting that NATO should have employed a strategy of decisive support for Ukraine, as anything less allowed Russia to underestimate the consequences of the full-scale invasion.

*Keywords:* Russian-Ukrainian war, NATO, game theory, strategy, international relations, realism, idealism

## INTRODUCTION

Dawn broke, and with it, the biggest military invasion seen in Europe since World War II. It was 24 February 2022, and Russian troops were crossing into Ukrainian territory from Russia in the east, from Belarus in the north, and from Russian-annexed Crimea in the south. As the conflict unfolded, the whole world was asking if the Russian-Ukrainian War was a failure of Western deterrence<sup>1</sup> or a consequence of perceived Western aggression.<sup>2</sup>

This question is yet to be fully answered. On one side, realist scholars argue that Russia invaded Ukraine because of the West's aggressive stance. For example, one of the most prominent of these viewers, John Mearsheimer, argues that NATO threatened Russia by constantly expanding closer to Russian borders (Mearsheimer, 2014, p. 1). This left Russia with no other choice but to invade in order to protect itself. However, on the other side, idealist scholars argue that Russia invaded Ukraine because of the West's failure to come up with a compelling deterrence strategy, making the costs of invasion outweigh the benefits of anything else Russia could have gained either internally or externally. For example, one of the most prominent of these viewers, Michael McFaul, thinks that the invasion of Ukraine and the use of the Cold War rhetoric with NATO as the main enemy in internal politics brought considerable benefits like creating cohesion and fostering support for

the Russian President Vladimir Putin (McFaul, 2014, p. 170). This implies that the West didn't deny benefits and impose costs enough to change Russia's course of action. While comprehensive, both theories fail to fully explain the roots of the Russian-Ukrainian war.

The realist perspective tends to depict nations as inherently self-interested and thus usually uncooperative. In contrast, the idealist one tends to depict nations as cooperative and thus occasionally overlooking national interests. However, the reality typically lies somewhere in between these two extremes, with countries balancing competition and partnership. For example, nations can determine preferred courses of action for interacting with other nations by assigning probabilities and weighing the benefits and costs associated with the attack and defense in strategic games. This paper uses mathematical modeling to find the optimal strategy that NATO could have taken to prevent the Russian-Ukrainian war by considering both the conflictual and the cooperative state of nations in order to bridge the gap between the realist and idealist perspectives. The findings offer a nuanced understanding of the dynamics between Russia, Ukraine, and NATO with practical significance, suggesting that NATO should have employed a strategy of decisive support for Ukraine, as anything less allowed Russia to underestimate the consequences of invading Ukraine.

1 In the weeks after the invasion, media sources published articles centered around explanations for why Western deterrence failed in Ukraine. See Braun, A. (2022, February 24). Western deterrence has failed in Ukraine. *The Globe and Mail*. <https://www.theglobeandmail.com/opinion/article-western-deterrence-has-failed-in-ukraine/>; Schadlow, N. (2022, March 20). Why deterrence failed against Russia? *The Wall Street Journal*. <https://www.wsj.com/articles/why-u-s-deterrence-failed-ukraine-putin-military-defense-11647794454>; Drezner, D. W. (2022, March 27). Why did deterrence fail in Ukraine? *The Washington Post*. <https://www.washingtonpost.com/outlook/2022/03/27/why-did-deterrence-fail-ukraine/>; and Collins, L. (2023, February 20). U.S. deterrence failed in Ukraine. *Foreign Policy*. <https://foreignpolicy.com/2023/02/20/ukraine-deterrence-failed-putin-invasion/>.

2 Before the invasion on 24 February 2022, Russian President Vladimir Putin addressed the Russian nation, using threats to Russian security coming from Western countries as a pretense to announce the special military operation in Ukraine. See President Vladimir Putin. (2022, February 24). Address by the President of the Russian Federation. *Official Internet Resources of the President of Russia*. <http://www.en.kremlin.ru/events/president/transcripts/67843>.

## CURRENT THEORIES

Vladimir Putin is undeniably responsible for initiating and leading the Russian-Ukrainian war. However, thinkers are still debating about the motivation behind these actions. Realism and idealism are the two prevailing theories offering contrasting explanations for the crisis's roots and progression.

Some realists think the blame for the Russo-Ukrainian conflict lies with the hostile West, which assertively expanded towards the East. In this view, the war represents nothing more but power struggles between Russia and the West, with both sides seeking to advance their own influence in the region. According to the article "Why the Ukraine Crisis is the West's Fault" by John Mearsheimer, "the West's triple package of policies – NATO enlargement, EU expansion, and democracy promotion" threatened Russia's power in its sphere of influence. Moreover, the aggressive acts of invading Abkhazia and South Ossetia in Georgia in 2008 or Crimea in Ukraine in 2014 were fueled by Russian resentment over a supposedly broken Western promise made in the early 1990s, saying that NATO would not continue to expand towards Eastern Europe when 12 countries were actually added in three subsequent rounds of NATO enlargement since then (Mearsheimer, 2014, pp. 1-2). For example, during NATO's 1995 bombing campaign in Bosnia, then-Russian President Boris Yeltsin said, "It would be a major political error on the part of those who are now insisting on expanding NATO... It will mean a conflagration of war throughout all Europe," highlighting worries over the growing NATO influence.<sup>3</sup> Now, in the morning of 24 February 2022, current Russian President Vladimir Putin said, "In response to our proposals, we invariably faced either cynical deception and broken promises... while the North Atlantic alliance continued to expand despite our protests and concerns [with] its military machine moving and [...] approaching our border," again emphasizing Russia's stance against NATO expansion.<sup>4</sup> In this view, there was no other choice left for Russia but to invade in order to reassert control over its near abroad.

However, this perspective that places blame solely on the West for the Russo-Ukrainian has a couple of major flaws. For example, these kinds of realist arguments overlook the significant progress achieved in international cooperation since the end of the Cold War. In May 1997, NATO and Russia signed the Founding

Act on Mutual Relations, Cooperation, and Security,<sup>5</sup> a path to NATO-Russia cooperation in "build[ing] a stable, peaceful and undivided Europe ... to the benefit of all its people" together. Furthermore, the treaty acknowledged that NATO and Russia "share the goal of overcoming the vestiges of earlier confrontation and competition, as well as strengthening mutual trust and cooperation" in a world where the two entities "no longer consider each other as adversaries" (Founding Act on Mutual Relations, Cooperation, and Security, Preamble). Then, in September 2002, NATO and Russia continued on the path of cooperation by agreeing to create a NATO-Russia Council,<sup>6</sup> where "the individual NATO member states and Russia have worked as equal partners on a wide spectrum of security issues of common interest" (NATO-Russia Relations: A New Quality, Preamble). All these changes came about as mutually beneficial agreements rather than mere attempts to appease Russia during NATO's growth. Moreover, according to previously secret documents that came to light in recent years, "Contrary to Russian allegations, there was never a formal deal about NATO expansion" (Sarotte, 2014, p. 92). Therefore, the claims that Russia invaded Abkhazia and South Ossetia in Georgia in 2008 and Crimea in Ukraine in 2014 solely because it wanted to retaliate against NATO's expansion are misleading. Building up to that point in time, cooperation with NATO was reaching new heights on top of the fact that there was no broken promise to begin with. Indeed, a main flaw of realists is their perception of the world as inherently self-interested and thus usually uncooperative.

Some idealist scholars think the blame for the Russian-Ukrainian war lies with the lenient West, which lacked a compelling deterrence strategy. In this view, the war is nothing more than the result of the West being unable to make the costs of invasion outweigh the benefits of anything else Russia could have gained, either internally or externally. According to the article "Faulty Powers: Who Started the Ukraine Crisis?" by Michael McFaul, during the last decades, Russia had exhibited a complex interplay of cooperation and confrontation with the West, with the shifts in this relationship not necessarily following the timeline of policy shifts in the approach of the West towards Russia (McFaul, 2014, p. 167). This suggests that the changes in Russian foreign policy are most likely the "result of internal political dynamics, [with] the shifts beg[ining] when Russian

3 In September 1995, then-Russian President Boris Yeltsin criticized the growing influence of NATO in Eastern Europe, which supposedly ignored Russia in its efforts to create a post-Cold War approach to international security. See Williams, C. J. (1995, September 9). Yeltsin lashes out at NATO strikes in Bosnia. *The Los Angeles Times*. <https://www.latimes.com/archives/la-xpm-1995-09-09-mn-44006-story.html>.

4 Ibidem (2).

5 The treaty consisted of five primary sections explaining the fundamental principles of the relationship, including the mechanisms to facilitate military and political cooperation between NATO and Russia. See *Founding Act on Mutual Relations, Cooperation, and Security between NATO and the Russian Federation*, NATO-Russia, May 27, 1997, retrieved from NATO. [https://www.nato.int/cps/en/natohq/official\\_texts\\_25468.html](https://www.nato.int/cps/en/natohq/official_texts_25468.html).

6 The NATO-Russia Council, in which the meetings took place in the equal and individual partners format, replaced the Permanent Joint Council for consultation and cooperation created by the 1997 NATO-Russia Founding Act, in which the meetings took place in the bilateral NATO+1 format. See *NATO-Russia Council*, NATO-Russia, May 28, 2002, retrieved from NATO. [https://www.nato.int/cps/en/natohq/topics\\_50091.html](https://www.nato.int/cps/en/natohq/topics_50091.html).

President Vladimir Putin and his regime came under attack,” not in response to the actions taken by the West (McFaul, 2014, p. 169). More specifically, the invasions of Abkhazia and South Ossetia in Georgia in 2008 and Crimea in Ukraine in 2014, along with the portrayal of NATO as the primary adversary for Russia, yielded significant benefits in internal politics like diverting attention from fraudulent elections, garnering support for the regime within Russia, and fostering cohesion against the common enemy taking the shape of the West. For example, an analysis of the approval ratings of authorities reveals that instances of Russian aggression led to periods when Russian President Vladimir Putin’s approval rating in the country experienced a significant rating rise from unusually low levels in the mid-60% range to more typical levels in the high 80%.<sup>7</sup> In this view, Russian President Vladimir Putin might have thought that the potential gains of securing nationwide support would outweigh the potential losses from engaging in aggression if those even existed.

However, this perspective that places the fault with the lenient West which lacked a compelling deterrence strategy also has significant shortcomings. For example, even though the West still cooperated with Russia, it did

impose economic and political sanctions in response to Russian aggression over the last decades.<sup>8</sup> However, it might be that there were miscalculations about how strong or weak the impact of these sanctions would be in the cost-benefit analysis done either by Russian President Vladimir Putin or by the West. It doesn’t seem that the error was fully made by the West, considering the economic and political sanctions should’ve theoretically affected Russia because of the hold on the newly started partnerships with other NATO countries worldwide. However, it doesn’t seem that Russia fully made the error either, considering how practically the West has fallen short in decreasing collaboration in response to Russian aggression previously. For example, Germany went on to build the Nord Stream 2 pipeline with Russia after the annexation of Crimea in 2014.<sup>9</sup> This seems like a paradox. However, it can be explained by the fact that the West overvalues while Russia undervalues the importance of partnerships between countries worldwide and between each other. Indeed, a main flaw of the idealists is to depict nations as valuing teamwork and occasionally overlooking national interests, thereby neglecting the approaches of some countries that have demonstrated a predisposition to prioritize national interests over international norms.

## PROPOSED THEORY

The realist perspective tends to depict nations as inherently self-interested and thus usually uncooperative. In contrast, the idealist one tends to depict nations as cooperative and thus sometimes overlooking national interests. However, the actual dynamics of international relations are much more nuanced, usually falling somewhere in the middle of these two perspectives. Countries are ultimately self-interested but also recognize the value of partnerships, alliances, and cooperation in the face of larger threats and shared interests. For example, former United States ambassador to Russia Michael McFaul pointed out that the US needs to advance both its realist and idealist agendas, which are not necessarily mutually exclusive.<sup>10</sup> This paper hypothesizes that game theory provides a way to bridge the gap between the realist and

idealist perspectives. The preferred courses of action for interacting with other nations are determined by assigning probabilities and weighing the benefits and costs of attack and defense in strategic games, which automatically takes into account both the conflictual and cooperative states of nations. Moreover, the outcomes of different strategies can be computed with their respective probabilities for occurring, which is of practical significance to deciding on the best course of action NATO could have taken to prevent the Russian-Ukrainian war. Only a limited number of papers apply game theory to the Russian-Ukrainian war and even less so to the context of comparing the idealist and realist theories. Moreover, most papers consider the games to be between Russia and NATO rather than between Russia and Ukraine or Russia and Ukraine with

7 Russian President Vladimir Putin’s approval rating increased from 61% in August 2021 to 83% in March 2022 after Russia invaded Ukraine, from 61% in November 2013 to 86% in June 2014 after Russia annexed Crimea from Ukraine, from 78% in April 2007 to 88% in September 2008 after Russia backed up South Ossetia and Abkhazia against Georgia. See Levada Center. (updated till March 2024). Approval of the authorities. *Levada Center*. <https://www.levada.ru/en/ratings/>.

8 After the annexation of Crimea in Ukraine in 2014, a series of sanctions, which progressed in severity from Tier 1 (diplomatic) to Tier 2 (individuals and entities) and finally to Tier 3 (economic), were applied. See European Council of the European Union. (2024) Timeline - EU sanctions against Russia. *European Council*. <https://www.consilium.europa.eu/en/policies/sanctions-against-russia/timeline-sanctions-against-russia/>.

9 The German companies E.ON SE and BASF SE/Wintershall Holding GmbH, the Anglo-Dutch Royal Dutch Shell plc, the Austrian OMV AG, and the French ENGIE S.A. signed a shareholder agreement with the Russian company PJSC Gazprom to implement the Nord Stream 2 project in order to supply Russian natural gas to the EU market. See *Nord Stream AG welcomes shareholder agreement for additional gas supply infrastructure through the Baltic Sea*, Nord Stream-Gazprom, September 4, 2015, retrieved from Nord Stream. <https://www.nord-stream.com/press-info/press-releases/nord-stream-ag-welcomes-shareholder-agreement-for-additional-gas-supply-infrastructure-through-the-baltic-sea-470/>.

10 This is a summary of the argument rather than an exact wording of what was said by former United States ambassador to Russia Michael McFaul. See Whitmore, B. (2021, April 14). Realism, idealism, and the reset. *Radio Free Europe*. [https://www.rferl.org/a/Realism\\_Idealism\\_And\\_The\\_Reset/2012521.html](https://www.rferl.org/a/Realism_Idealism_And_The_Reset/2012521.html).

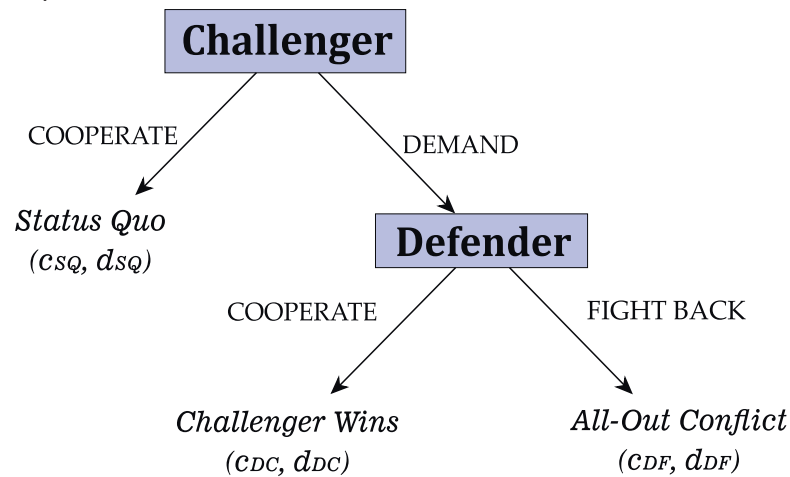
NATO, failing to fully account for the regional dynamics of Eastern Europe as well as the will of the Ukrainian people. This paper hopes to overcome these limitations by taking on the analysis of two scenarios — a limited deterrence game, viewing the conflict as a proxy war between NATO and Russia, and an extended deterrence game, seeing the conflict as a direct war between Russia and Ukraine with potential help from NATO.

In a simplistic approach, some could see the conflict between Russia and Ukraine as a proxy confrontation between NATO and Russia with the options of either maintaining peace or initiating a proxy war between each other. To explore this, a limited deterrence game was used. Russia takes the role of the challenger, which has the two choices of 1) invading Ukraine (demand) and 2) not invading Ukraine (cooperate), while NATO takes the role of the defender, which has the two choices of 1) help Ukraine via military and humanitarian aid (fight back) and 2) send thoughts and prayers (cooperate). If the

challenger (Russia) chooses to cooperate, the status quo is maintained, resulting in payoffs of  $c_{SQ}$  for the challenger and  $d_{SQ}$  for the defender. However, if the challenger chooses to demand (invade), the defender (NATO) has the two options of 1) surrendering, resulting in payoffs of  $c_{DC}$  for the challenger and  $d_{DC}$  for the defender, or 2) fighting, leading to payoffs of  $c_{DF}$  for the challenger and  $d_{DF}$  for the defender.<sup>11</sup> The extensive form of the game is presented in Figure 1.<sup>12</sup> Notice that this approach captures only two big players represented by NATO and Russia and only binary choices given by cooperation and demanding/fighting back. This simplification may not fully capture the complexity of the situation. For example, if the West does not offer aid, in this modeled game, Ukraine faces an automatic loss, while in reality, Ukraine has the option to fight alone for a hopeful win. Regardless, this simplified model serves as a starting point for understanding the dynamics between Russia and Ukraine, which is backed up by NATO.

Figure 1

Extensive Form of the Simple Game



To analyze the equilibrium and, thereby, the optimal strategies for the game, the preferred states of the world and/or their payoffs for each of the players were established. **It was assumed that the challenger (Russia) prefers  $c_{DC} > c_{SQ} \geq c_{DF}$ .** Clearly,  $c_{DC} > c_{DF}$  and  $c_{DC} > c_{SQ}$  because otherwise Russia would have no interest in Ukraine. Then, it seems reasonable to assume  $c_{SQ} \geq c_{DF}$  because the costs of the war coming from economic and political sanctions as well as from human and infrastructure losses can significantly surpass the potential benefits of winning control over

Ukraine. **Also, it was assumed that the defender (NATO) prefers  $d_{SQ} > d_{DF} \geq d_{DC}$ .** Clearly,  $d_{SQ} > d_{DC}$  and  $d_{SQ} > d_{DF}$  because Ukraine would not have any problems with being invaded otherwise. Then, it seems reasonable to assume  $d_{DF} \geq d_{DC}$  because the costs of losing control over Ukraine might outweigh the costs of the war coming from human and infrastructure losses. Given these preferred states of the world for both Russia and NATO, two equilibriums were found given by 1) the unstable one in which both players cooperate and 2) the stable one in which both players demand/fight back.<sup>13</sup>

11 This is an adaptation of a game proposed by Jhon Harsanyi for modeling conflicts between two actors. See Harsanyi, J. C. (1977). *Rational behavior and bargaining equilibrium in games and social situations*. New York, USA: Cambridge University Press.

12 The extensive form of a game captures the sequence of choices, the potential outcomes with associated payoffs, and the information available to the player at decision points. This is a schematic approach to the construction of the game described above. See Kuhn, H. W. (1953). *Extensive games and the problem of information*. Princeton, NJ: Princeton University Press.

13 Stable and unstable are used in the mathematical sense. For an intuitive analysis, we ignore the equality signs between the payoffs: At node 2, the defender chooses to fight back because  $d_{DF} \geq d_{DC}$ . Then, at Node 1, the challenger chooses to cooperate because  $c_{SQ} \geq c_{DF}$ , anticipating that the defender will choose to fight back. Thus, we get the equilibrium given by the Status Quo. For a complex analysis, we consider the equality signs between the payoffs. We have the same thought process as above, except at node 2, the defender chooses to fight back with probability  $p_d$  instead of 1, and at node 1, the challenger chooses to demand with probability  $p_c$  instead of 1, anticipating that the defender will choose to fight back with some known probability. Thus, we get the equilibrium given by the Status Quo or the All-Out Conflict. This requires more mathematical analysis, which we are not going to go into here because it goes beyond the scope of the paper.

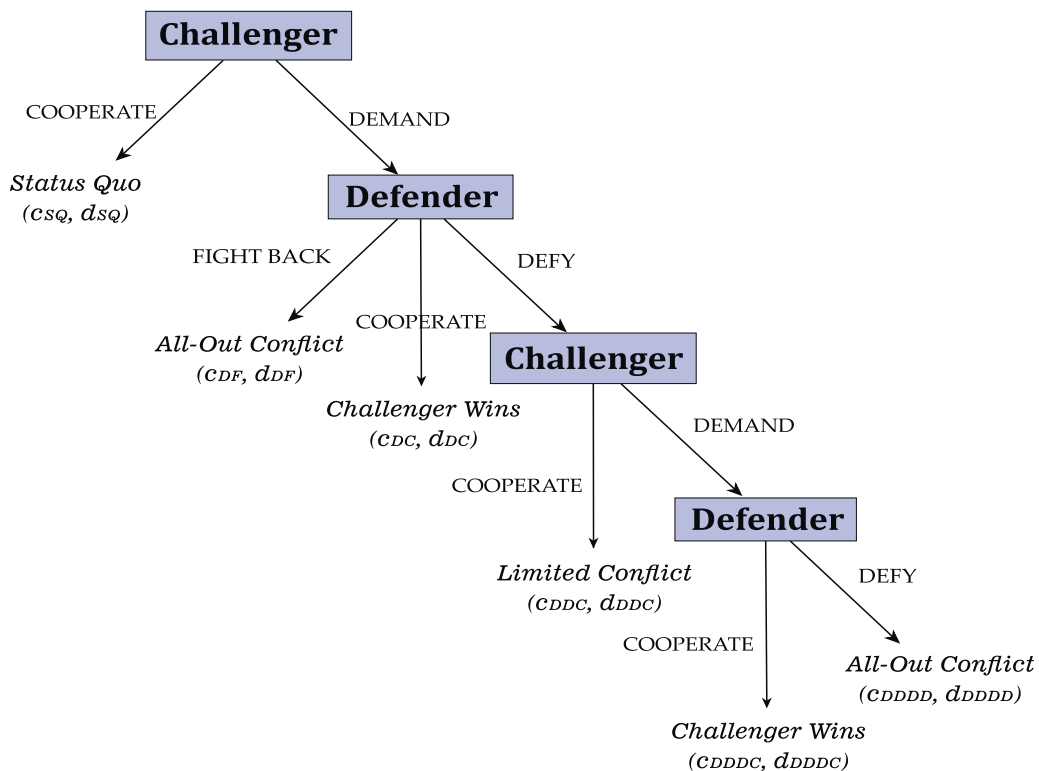
The Status Quo equilibrium where Russia and NATO both cooperate would be better. However, it might not be possible by default, given that Russia showed signs of not being willing to cooperate before by displaying signs of aggression in Eastern Europe. Translated into the game above, this means Russia assessed that the probability of NATO cooperating and thereby reaching the Status Quo equilibrium was high. Given this, Russia might have believed that the probability of demanding and then ending up in the Challenger Wins spot was high, too. This would result in losing Ukraine. Then, the best strategy for NATO would be not to cooperate by consistently supporting Ukraine in resisting Russian meddling in its affairs in order to make the probability of NATO cooperating, and thereby reaching the Status Quo equilibrium, seem low. Given this, Russia might believe that the probability of demanding and then ending up in the Challenger Wins spot will also be low. Paradoxically, Russia and NATO could move the All-Out Conflict to the Status Quo equilibrium by threatening each other enough to give up cooperation.

In a more complex approach, some could see the conflict between Russia and Ukraine as a direct confrontation, with the options of either maintaining peace or initiating a direct war between each other, with Ukraine potentially being or not helped by NATO. To explore this, an extended deterrence game was used. Russia takes the

role of the challenger, which has the two choices of 1) invading Ukraine / continue invading Ukraine (demand) and 2) not invading Ukraine / giving up on invading Ukraine (cooperate), while Ukraine takes the role of the defender, which has the three choices of 1) fighting with help from NATO via military and humanitarian aid (fight back), 2) fighting without help from NATO (defy), and 3) give up fighting (cooperate). If the challenger (Russia) chooses to cooperate, the status quo is maintained, resulting in payoffs of  $c_{SQ}$  for the challenger and  $d_{SQ}$  for the defender. However, if the challenger chooses to demand (invade), the defender (Ukraine) has the three options of 1) surrendering, resulting in payoffs of  $c_{DC}$  for the challenger and  $d_{DC}$  for the defender, 2) fighting back with help from NATO, leading to payoffs of  $c_{DF}$  for the challenger and  $d_{DF}$  for the defender, or 3) enter an escalation cycle, resulting in different payoffs depending on whether the challenger decides to give up or engage in the escalation cycle.<sup>14</sup> The extensive form of the game is presented in Figure 2.<sup>15</sup> Notice that this approach captures Ukraine alongside the two big players represented by NATO and Russia with more than just the binary choices given by cooperation and demanding/fighting back. Hence, this adaptation addresses the weakness of the previous game, allowing for a better understanding of the dynamics between Russia and Ukraine backed up by NATO.

**Figure 2**

*Extensive Form of the Adapted Game*



<sup>14</sup> This is an adaptation of a game proposed by Frank Zagare and Marc Kilgour for modeling the Cuban Missile Crisis. See Zagare, F. C., & Kilgour, D. M. (2000). *Perfect deterrence*. Cambridge, UK: Cambridge University Press.

<sup>15</sup> Ibidem (13).

To analyze for the equilibrium and, thereby, the optimal strategies for the game, the preferred states of the world and/or their payoffs for each of the players were established. **It was assumed that the challenger (Russia) prefers**  $c_{DC} > c_{DDDC} > c_{SQ} > c_{DDC} \geq c_{DF} > c_{DDDD}$ . Clearly,  $c_{DDDC} > c_{SQ}$  and  $c_{DC} > c_{SQ}$  because otherwise Russia would have no interest in Ukraine. Also, it seems reasonable to presume  $c_{DC} > c_{DDDC}$  because a world where you win directly is better than a world where you have to use resources only to end up in the same situation. Moreover,  $c_{SQ} > c_{DDC}$  because Russia used resources only to end up in what could be argued to be a similar situation to the Status Quo. Then, it seems reasonable to assume  $c_{DDC} \geq c_{DF}$  and  $c_{DDC} > c_{DDDD}$  because the costs of the war coming from economic and political sanctions as well as from human and infrastructure losses can significantly surpass the potential benefits of winning control over Ukraine. Moreover,  $c_{DF} > c_{DDDD}$  because a world where you directly get into an all-out conflict is better than a world where you have to use resources only to end up in the same situation. **Also, it was assumed that the defender (NATO) prefers**  $d_{SQ} > d_{DDC} > d_{DF} > d_{DDDD} \geq d_{DC} > d_{DDDC}$ . Also, it seems reasonable to presume  $d_{SQ} > d_{DDC}$  because Ukraine used resources only to end up in what could be argued to be a similar situation to the Status Quo. Clearly,  $d_{DDC} > d_{DF}$  and  $d_{DDC} > d_{DDDD}$  because Ukraine would not have any problems with being invaded otherwise. Moreover,  $d_{DF} > d_{DDDD}$  because a world where you directly get into an all-out conflict is better than a world where you have to use resources only to end up in the same situation. Then, it seems reasonable to assume  $d_{DDDD} \geq d_{DC}$  and  $d_{DDDD} > d_{DDDC}$  because the costs of losing control over Ukraine might outweigh the costs of the war coming from human and infrastructure losses. Moreover,  $d_{DC} > d_{DDDC}$  because a world where you win directly is

better than a world where you have to use resources only to end up in the same situation. Given these preferred states of the world for NATO, Ukraine, and Russia, three equilibriums were found given by 1) the unstable one in which both players cooperate and 2) the two stable ones in which both players demand/fight back.<sup>16</sup> Like before, the Status Quo equilibrium in which Russia and NATO both cooperate would be better. However, this might not be possible by default, given that Russia showed signs of not being willing to cooperate before by displaying signs of aggression in Eastern Europe. Translated into the game above, this means that Russia assessed that the probability of NATO not helping Ukraine to fight back, and thereby, the whole game becoming a version of the simple game analyzed above, except now with the two players being Ukraine and Russia instead of NATO and Russia,<sup>17</sup> was high. Given this, Russia might have believed that the probability of demanding and then ending up in the Challenger Wins spot, either with Ukraine backed up by NATO or Ukraine alone, was high, too. Then, the best strategy for Ukraine would be not to give up fighting. And then, the best strategy for NATO would be not to cooperate by consistently supporting Ukraine in resisting Russian meddling in its affairs in order to make the probability of NATO cooperating, and thereby reaching the Status Quo or Limited Conflict equilibrium, seem low. Given this, Russia might believe that the probability of demanding and then ending up in the Challenger Wins spot, either with Ukraine backed up by NATO or Ukraine alone, will be low, too. Like before, paradoxically, Russia and Ukraine, with help from NATO, could move the All-Out Conflict equilibrium to the Status Quo equilibrium by threatening each other enough with no cooperation. This is a powerful deterrence strategy.

## REPLIES

Some might argue that the mathematical models proposed above rely on strong assumptions, which might oversimplify the complexity of the situation. For example, both games analyze the Russia-Ukrainian war as an isolated event in which Russia is presumed to be the challenger while NATO alone or supporting Ukraine is presumed to be the defender. However, this specific confrontation exists within a broader geopolitical context marked by a history of friction between NATO,

Ukraine, and Russia. Therefore, it is possible to interpret the Russia-Ukrainian war as part of a larger strategic game where NATO could have provoked Russia, fundamentally altering the dynamics and the roles in both games presented above.

While the counterargument holds merit, examining the history of confrontations between Russia and NATO shows that Russia showed clear signs of not cooperating by engaging in aggression long before NATO showed

16 Stable and unstable are used in the mathematical sense. For an intuitive analysis, we ignore the equality signs between the payoffs: At node 4, the defender chooses to defy because  $d_{DDDD} \geq d_{DC}$ . At Node 3, the challenger chooses to cooperate because  $c_{DDC} \geq c_{DDDC}$ , anticipating that the defender will choose to defy. At Node 2, the defender chooses to defy because  $d_{DDC} > d_{DF}$  and  $d_{DDC} > d_{DC}$ , anticipating that the challenger will choose to cooperate. Then, at Node 1, the challenger will choose to cooperate because  $c_{SQ} > c_{DDC}$ . Thus, we get the equilibrium given by the Status Quo. For a complex analysis, we consider the equality signs between the payoffs. We have the same thought process as above, except at node 4, the defender chooses to fight back with probability  $p_{DD}$  instead of 1, then at node 3, the challenger chooses to demand with probability  $p_{CC}$  instead of 1, anticipating that the defender will choose to defy with some known probability, then at node 2 the defender chooses to defy with some probability  $p_D$  instead of 1 and fight back with some probability  $p_F$  instead of 0, anticipating that the challenger will choose to demand with some known probability, and then at node 1, the challenger chooses to demand with probability  $p_C$  instead of 1 anticipating that the defender will choose to defy or fight-back with some known probabilities. Thus, we get the equilibrium given by the Status Quo or the two All-Out Conflicts. This requires more mathematical analysis, which we are not going to go into here because it goes beyond the scope of the paper.

17 Notice that the analysis of the game captures the trend of Ukraine choosing to fight alone even when it will not be helped by NATO.

signs of not cooperating by expanding toward Eastern Europe. For example, an armed conflict broke out between Moldova and its self-proclaimed breakaway state, Transnistria, in 1992. Even though this was de jure an internal war of Moldova, multiple sources argue it became de facto an external war joined by Russia, which was “exerting full control over the proclaimed breakaway state Transnistria [and thereby the conflict]” through Russian troops present on the ground as well as the transfer of weapons and public utterances to Transnistria (O’Reilly & Higgins, 2008, p. 71). This was part of a larger plan of Russia to destabilize Moldova in order to challenge its existing political order and keep it under its sphere of influence.<sup>18</sup> A similar armed conflict happened with South Ossetia in 1991. Moreover, it is important to note that both of these wars in which Russia

was aggressive by meddling with the affairs of sovereign countries happened before NATO supposedly was aggressive too by expanding towards Eastern Europe. Considering these historical events, it is plausible to view Russia as the challenger not only within the broader geopolitical game but also within the isolated game of the Russia-Ukrainian war. However, this doesn’t mean that the proposed mathematical models don’t oversimplify the complexity of the Russian-Ukrainian dynamic. Like any analytical tool, game theory involves certain simplifications like removing uncertainty — players acting under complete information about each, removing decisions made simultaneously — players make choices sequentially, and more. Of course, these assumptions might not be true in real life. Further research is needed to make the games address these kinds of weaknesses.

## CONCLUSION

Assuming states lean toward being fully conflictual or fully cooperative removes certain dynamics from the picture of international relations. In contrast, assuming that states are rational by switching to the choices with the best payoffs helps capture a multitude of dynamics in the pictures of international relations as states can be fully cooperative, fully conflictual, or a mix of the two, all depending on different probabilities, with all these scenarios being open to analysis. Therefore, by assigning probabilities and evaluating the costs and benefits of strategic actions, game theory provides a nuanced approach that accounts for both partnership and confrontation among nations. In particular, game theory offers a way to bridge the gap between the realist and idealist perspectives on the Russian-Ukrainian war, offering a nuanced understanding of the dynamics between Russia, Ukraine, and NATO with practical significance and also suggesting that NATO should have employed a strategy of decisive support for Ukraine,

as anything less allowed Russia to underestimate the consequences of the full-scale invasion. During the initial two decades following the collapse of the Soviet Union, there was little consideration in the West regarding the necessity of deterring Russia. The prevailing perception was that Russia, with its economic and military vulnerabilities, lacked the capacity to achieve its global aspirations, which made the question of deterring Russia no longer a pressing concern (Renz, 2023, p. 8). However, the analysis done by this paper revealed that decisive deterrence would have been the optimal strategy for NATO to prevent the Russian-Ukrainian war. While it is impossible to change the past, there is still an opportunity for the West to embrace decisive deterrence in the present in order to prevent future conflicts of a similar nature, thereby helping maintain stability and security in the international arena. Most importantly, there is still an opportunity for the West to be more decisive about helping Ukraine now.

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<sup>18</sup> The European Court of Human Rights has declared that the authorities of the Russian Federation contributed both militarily and politically to the creation of a separatist regime in Moldova. See European Court of Human Rights. (2004, July 8). *Ilascu and Others v. Moldova and Russia*. <https://hudoc.echr.coe.int/fre#%7B%22itemid%22:%5B%22002-4244%22%5D%7D>.

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