FERTILITY TRANSITION FROM TRADITIONAL TO MODERN MODEL IN MOLDOVA: EXPLORATION IN BASE ON THE "GENERATION AND GENDER SURVEY"

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ABSTRACT

In Moldova, like in other countries of Eastern Europe, after the 1990s, fertility transition from the traditional model to the modern one is occurring. A stable fertility decline was observed up to 2004, while the total fertility rate settled at 1.7-1.8 births per woman in the following years. Although the indicator is higher compared to other states, the factors determining this level and the likely future trends are essential questions to be asked. We assume some of the sociodemographic characteristics of women, the socioeconomic and cultural context impact the reproductive behavior and determine whether to keep the traditional model or switch to the modern one. The research is conducted to highlight the differences in women's reproductive behavior and the sociodemographic characteristics that impact the number of children born.

The research is based on the" Generations and Gender Survey" conducted in Moldova in 2020. A detailed profile of women's reproductive behaviour was presented on the base of four identified clusters, which characterize the fertility transition from the traditional to the modern model. Findings reveal that the traditional model of reproductive behavior with a large family or, at most, with two children is prevalent. Medium and high education, late age at marriage and urban residence of women have a negative effect on the number of children ever born. The study quantifies the heterogeneity of reproductive behavior and has important implications for the scientific perception of current trends and prospective fertility dynamics in Moldova.

Keywords: *fertility transition, reproductive behavior, traditional fertility model, modern fertility model, Moldova*

În Moldova, ca și în alte țări din Europa de Est, după anii 1990 are loc tranziția fertilității de la modelul tradițional la cel modern. Scăderea stabilă a fertilităţii a fost observată până în 2004, în anii următori rata totală de fertilitate s-a stabilit la un nivel de 1,7-1,8 naşteri pe femeie. Deși acest indicator este mai înalt în comparație cu alte state, factorii care determină acest nivel și tendințele viitoare posibilele prezintă o întrebare de cercetare importantă. Presupunem că caracteristicile sociodemografice ale femeilor, particularitățile contextului socioeconomic și cultural au un impact asupra comportamentului reproductiv și determină fie păstrarea modelului tradițional, fie trecerea la cel modern. Pentru a răspunde la aceste întrebări, a fost realizată o cercetare pentru a evidenția diferențele în comportamentul reproductiv al femeilor, precum și caracteristicile sociodemografice care influențează numărul de copii născuți vreodată (mediul de reședință urban sau rural, nivelul de educație, vârsta la primul contact sexual, vârsta la prima căsătorie, vârsta la prima naștere, lungimea intervalelor protogenezic și intergenezic).

Lucrarea se bazează pe cercetarea ”Generațiile și Gender” realizat în Moldova în anul 2020. Pe baza a patru grupuri identificate a fost prezentat un profil detaliat al comportamentului reproductiv al femeilor, care caracterizează tranziția fertilității de la modelul tradițional la modelul modern. Constatările arată că în Moldova modelul tradițional al comportamentului reproductiv predomină fie cu o familie numeroasă, fie cu cel mult doi copii. Nivelul mediu și înalt de educație, vârsta târzie la căsătorie și reședința în mediul urban ale femeilor au un efect negativ semnificativ asupra numărului de copii născuți. Studiul cuantifică eterogenitatea comportamentului reproductiv și are implicații importante în percepția științifică a tendințelor actuale și a dinamicii prospective a fertilității în Moldova.

Cuvinte cheie: *tranziția fertilității, comportamentului reproductiv, model tradițional al fertilității, model modern al fertilității, Moldova.*

После 1990-х годов В Молдове, как и в других странах Восточной Европы, происходит переход рождаемости от традиционной модели к современной. Устойчивое снижение рождаемости наблюдалось вплоть до 2004 г., а в последующие годы суммарный коэффициент рождаемости установился на уровне 1,7-1,8 рождений на одну женщину. Несмотря на то, что этот показатель выше, чем в других странах, вопрос о факторах, определяющих этот уровень и о возможных будущих тенденциях представляет особую важность. Мы предполагаем, что социально-демографические характеристики женщин, особенности социально-экономического и культурного контекста влияют на репродуктивное поведение и определяют либо сохранение традиционной модели, либо переход к современной. Чтобы ответить на эти вопросы, было проведено исследование, направленное на выявление различий в репродуктивном поведении женщин, а также социально-демографических характеристик, влияющих на число рожденных детей (проживание в городской или сельской местности, уровень образования, возраст начала половой жизни, возраст вступления в брак, возраст при рождении первого ребенка, длина протогенетического и интергенетического интервалов).

Работа основана на данных исследования «Поколения и гендер», проведенного в Молдове в 2020 г. На основе четырех выявленных кластеров был представлен подробный профиль репродуктивного поведения женщин, характеризующий переход рождаемости от традиционной модели к современной. Результаты показывают, что в Молдове преобладает традиционная модель репродуктивного поведения либо с многодетной семьей, либо максимум с двумя детьми. Среднее и высшее образование, поздний возраст вступления в брак и проживание в городе эти характеристики женщин оказывают отрицательное влияние на число рожденных детей. Исследование дает количественную оценку неоднородности репродуктивного поведения и имеет важное значение для научного восприятия текущих тенденций и перспективной динамики рождаемости в Молдове.

Ключевые слова: *переход рождаемости, репродуктивное поведение, традиционная модель рождаемости, современная модель рождаемости, Молдова.*

JEL Classification: *J13, J29, J33.*
UDC: *614:612.6(478)*

INTRODUCTION

In Moldova, as in other countries in the Eastern European region, the modification of reproductive behavior models occurred very quickly after the 1990s, influenced by the socioeconomic, cultural and ideational transformations that took place after the breakup of the USSR and the achievement of independence. The specific characteristics of the second demographic transition, such as the postponement of births to older ages and the increase in the mean age of the first birth, became more pronounced, confirming the hypothesis regarding the convergence in fertility dynamics (Sobotka, 2017), while the persistence of the national specificity demonstrates the complex nature of this process.

Trends in fertility postponement are well documented in Central and Eastern Europe. However, Moldova was often omitted from comparative studies due to the low reliability of the population statistics or the low interest in the small European country. However, the case of Moldova is unique if we consider the territorial location bordering the EU and the high territorial mobility of the population.
The fertility postponement in Moldova follows the general pattern characteristics for most countries that have completed or are in the process of fertility transition (Frejka, 2012). At the current stage, Moldova is going through the second phase of the transition, which is highlighted by the continuous

decrease in fertility among younger women and its increase at older ages (Gagauz, Grigoraș, 2017). Compared to other ex-Soviet countries in the European region (Russia, Ukraine, Belarus and the Baltic States), Moldova's fertility transition proceeds slower. The age profile of fertility has an intermediate character of the transition from the early model to the late one (Grigoraș, 2019). Births delayed to older ages partially recover, causing the fertility of young cohorts to decline. However, the fertility level in Moldova is higher than in other European countries due to the higher birth intensity of rural women and their high share in the total population (Gagauz et al., 2021). The fertility transition, which is also associated with total fertility rates declining, unfolds differently within distinct social groups of women, with some adopting modern reproductive behavior more quickly while others still follow the traditional pattern. No studies address this issue, and the current paper aims to fill this gap.

The article presents the specific reproductive behavior of Moldovan women in the fertility transition from the traditional to the modern model. Their characteristics such as place of residence, education, age of onset of sexual activity, age at first marriage, age at first birth, and length of the protogenetic and intergenetic intervals are analyzed. Considering the complexity and versatility of the fertility transition, we applied a holistic approach using cluster analysis to generalize this process and obtain a limited number of significant types of reproductive behavior.

The paper is organized as follows: first, a brief description of Moldova's socioeconomic situation and cultural context is provided. Then the theoretical framework and the analysis of the previous studies that constitute methodological support for exploring the fertility transition in ex-socialist countries are presented. Data and the method for developing the typology of women's reproductive behavior are presented. In the subsection related to the presentation of the empirical results, the four clusters of women are analyzed, which characterize the transition process from the traditional to the modern model. Some research limitations are mentioned.

SOCIOECONOMIC, CULTURAL AND INSTITUTIONAL CONTEXT OF FERTILITY TRANSITION

After gaining independence in 1991, Moldova faced a long-lasting socioeconomic crisis, which significantly affected the population's living standards and increased the risk of poverty. Despite multiple reforms over three decades, it has failed to achieve significant socioeconomic progress and ensure a decent standard of living for the country's population. In 2021, the GDP per capita was USD 3753.9, or USD 15637 in purchasing power parity, two times lower than in Romania and three and a half times lower than in Germany. Moldova is one of the poorest countries in Europe, with every fourth household living below the poverty line (poverty headcount ratio at national poverty lines). The number of children in the family is a predictor of exposure to poverty, with over 40% of all families with three children having incomes below the poverty line (NBS, 2021).

A low level of urbanization (42.3% at the beginning of 2022) determines the population's lifestyle. Socioeconomic, cultural and demographic disparities between the urban and rural areas significantly impact population reproduction in Moldova. In the urban environment, the level of education and the employment rate of the population, including women, is higher. Families in the urban environment often face problems combining professional and family roles, which presents a constraining factor for the realization of reproductive intentions (Chistruga-Sînchevici, 2021). In rural areas, families with children have little access to extra-familial education services and limited employment opportunities, affecting human capital development.

The low level of employment, especially in rural areas, determines the high share of uninsured beneficiaries of maternity and childcare benefits and has a negative impact on the financial situation of families after the birth of a child. Of the total number of single benefit beneficiaries for the birth of

a child in 2020, about two-thirds were uninsured people, and of the beneficiaries of monthly allowances - about 45%. The ratio between the monthly allowance and the subsistence minimum (2020) for insured persons was approximately 104.6%, while the uninsured being 82.9% (NBS, 2020).

The reproductive behavior of Moldovan women is associated with the relatively low rate of contraceptive use. According to GGS data, more than half of married or cohabiting women (55.1%) use contraceptive methods, including 42.2% using modern methods of contraception. The financial inaccessibility of modern methods of contraception and the low level of public awareness are the main reasons for their low prevalence. Oral hormonal contraception is used by a small proportion of women (5%), the intrauterine device (10%) and the condom (21%) being more common (Gagauz, 2022). Unmet need in contraception constitutes 21% for women who are married or in union (Koops, 2022). Abortion remains one of the methods of birth control within the family. Despite a reduction, the abortion rate is relatively high (29 per 100 live births in 2021).

The family occupies a superior position in the lives of individuals, regardless of their demographic characteristics: age, sex, ethnicity, social status, and level of education. The ideal number of children in the family is much more than two. According to the GGS study, over half of respondents (52.6% of men and 57.5% of women) support the idea that the ideal number of children is three and more, and 44.0% of men and 40.2 % of women consider the ideal number of children to be two (Gagauz, 2022). The role of women in society can be characterized as modern in the public sphere and predominantly traditional in the private sphere, with women returning to the leading role in raising and educating children and performing household tasks (Kellum, 2020; Gagauz & Chivaciuc, 2021).

Moldova is a multi-ethnic country, with the largest share of the total population belonging to Moldovans/Romanians (80.6%), Slavic ethnic groups - Ukrainians, Russians and Bulgarians (12.4%), Gagauz people (Turkic people) present 4.5%, other ethnic groups account for 2.5%. Over 90% of the population declare themselves Orthodox (NBS, 2017).

The synergistic impact of all economic, social, institutional and cultural factors determines the specific peculiarities of the fertility transition from the traditional to the modern model in Moldova, while the differences between social groups within society, the prevalence of some or other reproductive behaviors present an indispensable component of this process.

THEORETICAL FRAMEWORK OF RESEARCH

The theoretical framework of the research constituted the theory of the second demographic transition (Lesthaeghe, van de Kaa, 1986) which assumes a complex adaptation of the entire demographic behavior model to a changing lifestyle, which, as a rule, results not only in a change of the age-specific fertility rates but also in fertility decrease, especially at the initial stage of the transition (Zaharov, 2012).

More than two decades after the emergence of the second demographic transition theory, regional differences in the fertility transition are found to be determined by deep-rooted cultural traits and patterns of social organization over time, as well as by much older systems of kinship and family organization specific to each country (Lesthaeghe, 2014). The fertility transition experience of different regions and countries shows an extensive array of combinations of second demographic transition features and timing profiles, this heterogeneity being equally contingent on historical path dependency and diverging contemporary socioeconomic and cultural evolutions (Lesthaeghe, 2020).

Given that in the countries of Central and Eastern Europe, the demographic changes associated with the second demographic transition began in the 90s period of the last century, there is a significant lag in the dynamics of fertility indicators compared to Western countries where fertility transition has

ended or is at its final stage. Some national peculiarities leave an imprint on this process. It is predicted that eastern European countries "are likely to experience further increases in pre-marital cohabitation and in the accompanying feature of higher fertility outside wedlock. However, diversity in degrees of cultural acceptance will result in persistent regional differences as well" (Lesthaeghe, 2020).

In addition to the second demographic transition theory, the research is also based on the Theory of Conjunctural Action (Johnson-Hanks et al, 2017), which emphasizes the role of the social context in which the individual interacts. Demographic events are interpreted as "social facts", the results of social action that occurred under the impact of the social structure and context. Demographic contexts involve social factors that very the fertility level of different groups of women. Although modeled as synchronic structures, conjunctures are in constant flux (Johnson-Hanks, 2007). Thus, reproductive behavior is not an abstract one, it is influenced by several specific factors such as the woman's level of education, employment, access to family planning services, the existence of a partner, the benefits of childcare leave at the time, etc. For example, women who were enrolled in the educational system for a longer time and then devoted themselves to professional careers when they were ready to start a family and give birth to a child did not find the right partner. This while women with a low level of education and limited access to family planning services faced an unplanned birth although they wanted to control their fertility. Employment or housing conditions, divorce or the death of the partner also present some life conjunctures with an impact on fertility as many other events, the overlapping of which can cause the decline or increase of fertility.

Unlike the theory of the second demographic transition, which explains the fertility transition through macrosocial changes, the Theory of Conjunctural Action draws attention to the role of life circumstances (conjuncture), which influence individuals' decisions regarding childbirth. Therefore, it comes with explanations of fertility differences at the meso- and micro levels. Although certain scientific records regarding the impact of the vital conjuncture on the distinct reproductive behavior are not presented in this paper, we do not omit its implications at the individual and general level.

LITERATURE REVIEW

Several comparative studies have concluded that although there is convergence in terms of the trajectory and structure of fertility transformation in the transition from the traditional to the modern model, the tempo of fertility is a primary factor for diversity (Billari, 2017; Matysiak et al., 2021). For the countries of Central and Eastern Europe, this region is forecast to converge with cohort fertility levels of around 1.75-2 children per woman, the proportion of women who have not given birth to any children during their reproductive life of 10-20 %, as well as emphasizing the model of families with two children (Zeman et al. 2018).

Among the essential sociodemographic characteristics of the population that influence the fertility transition, higher or lower fertility levels, is the ratio between the urban and rural population (Kulu, 2014) and the population's education (Brzozowska, 2015). In the urban area, the fertility transition starts earlier, the fertility level is lower and more intense in the late ages, and the postponement of first births is determined by the transition from traditional to modern reproductive behavior model (Kulu, 2013; Buelens, 2021). Among women with a high level of education, the traditional type of reproductive behavior is not widespread (Бурлуцкая &Терещенко, 2018).

Unlike Western European countries, in Central and Eastern Europe the association between the level of education and the probability of having children of ranks higher than one is negative. The transition to the second/third birth appears as negative for Hungary, Russia, Ukraine (Sobotka, 2017). In Romania, women with higher education try to make up for the postponement of their first birth by having at least one child by the age of 30, but in most cases, they limit their offspring to only one

child. Thus, a persistent negative effect of the higher level of education on the probability of having a second child is observed (Mureșan, 2010).

Recent studies demonstrate that differences in the intensity and tempo of fertility are observed not only between regions and countries, but also at the subnational level. Spatial variations of fertility timing in European regions and how they have changed in the last three decades confirm that there is no clear relationship between fertility intensity and the average age at motherhood, significant spatial variations are found, including within countries. Also, postponement transition was not equal in onset and speed within countries (Buelens, 2021). According to data for Slovakia for the last three decades after the collapse of the socialist state (Šprocha et al., 2022), it turns out that economic factors are identified as important for explaining spatial differences in fertility rate, along with some cultural factors that determine changes in fertility tempo.

The current study complements the empirical studies on the particularities of the fertility transition in Eastern European countries using GGS data from Moldova. Based on the identified clusters, specific characteristics of the types of reproductive behavior associated with the traditional or modern model are presented.

RESEARCH DATA AND METHODS

The research is based on the "Generations and Gender" Survey conducted in Moldova in 2020. The nationally representative sample included 10 036 respondents aged between 15 and 79 from 153 localities (GGS, 2020). Given that the age at first marriage and at first birth are the main indicators of the fertility postponement and, therefore of the fertility transition from the traditional model to the modern one (Sobotka, 2008; Brzozowska, 2021) they were selected as criteria for clustering.

The sub-sample consisted of women aged 20-49 who had given birth to at least one child (N=2079). The respondents who mentioned the month and year of first marriage registration and the month and year of the first birth were selected (N=1546). Cases with errors were excluded. Women who are currently in their first partnership and have given birth to at least one child were added to this number (N=85). Thus, the sub-sample consisted of women aged 20-49 who registered their first marriage or are in their first partnership and gave birth to at least one child (N= 1631).

The typology development technique was based on hierarchical cluster analysis by the Ward method (Elmer, 1999). Four types of reproductive behavior were identified, being analyzed as separate subsamples through the lens of the main sociodemographic characteristics of women. Statistical procedures available in SPSS, such as descriptive analysis and frequencies according to different sociodemographic variables, were used. The attributes of clusters/models of reproductive behavior in relation to the others were analyzed. To identify the most suitable model several clustering tests were performed.

The early age of marriage, of the first partnership, and of the first childbirth were considered characteristics for the traditional model of reproductive behavior. The childbearing postponement was viewed as a feature of the modern model. Thus, to highlight the clusters, four sets of age at first birth and first marriage/first partnership combination were identified (Table 1). The traditional model of reproductive behavior assumes that the first marriage occurs by age 22, and the birth of the first child – by the age of 23. Women who met these criteria were divided into two types of reproductive behavior. The first was considered "traditional with a large family" which included women who gave birth to three or more children, and the second was "traditional with at most two children". The modern type of reproductive behavior was divided into "transitional to modern" and "modern", differentiated by the calendar of births and marriages. Thus, the "transitional to modern" type implies the first marriage between the ages of 22 and 23 and the first birth between the ages of 22 and 24. In

contrast, the "modern" type is associated with the first marriage at 24 and over and first birth at 25 and over. The selection criteria values correspond to the observed trends in the age structure of women at marriage and childbearing.

Table 1.

Criteria for clustering by the type of reproductive behavior (N= 1631)

Nr.	Types of reproductive behavior	Age at first marriage	Age at first birth	Number of observations
1.	Traditional with large family	Up to age 22 de ani	Up to age 23 de ani	342
2.	Traditional with at most two children			574
3.	Transitive to modern	ages 22-23	ages 22-24	495
4.	Modern	24 +	25+	220
Total				**1631**

The descriptive statistics in Table 2 show the percentage distribution of women by cluster and according to marital status (at the time of the interview), age group, education level and area of residence. A small number of women declared cohabiting relationships, which limited the possibilities of analyzing this variable. Only in the fourth cluster (modern) does the number of cases present a higher proportion (21%), while in the first three, their share is insignificant (less than 5%). Given that living together with a partner is a precursor to marriage in Moldova and does not replace legal marriage, a low proportion of married women indicated the experience of partnership within the GGS.

Table 2.

Cluster's descriptive statistics

Clusters	Married (number)	In partnership (number)	Age groups, %			Education[5],%			Residence, %	
			20-29	30-39	40-49	Low level	Medium level	High level	Rural	Urban
Traditional with numerous family	330	12	11,3	22,4	26,2	33	21,3	9,1	23,3	7,2
Traditional with at most two children	558	16	53,2	26,3	38,4	39,9	42,1	20,3	43,9	33
Transitive to modern	484	11	33,0	36,1	23,9	19,2	28,2	50,3	29,7	47,3
Modern	174	46	2,4	15,2	11,5	7,9	8,5	20,3	3,1	12,5
Total	**1546**	**85**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

[5] *The low level of education, according to the classification given by the National Bureau of Statistics, involves at most secondary education; the medium level- at least secondary/high school education and at most college education, and the higher level - at least higher education (cycle I).*

Each cluster was analyzed separately in terms of women's sociodemographic characteristics such as the area of residence, level of education, the mean age of sexual relations onset, the mean age at first marriage/partnership, the mean age at first birth, the length of proto- and intergenic intervals.

Table 3.

Statistical tests to compare the differences between the key clusters' characteristics

Independent variables (predictors)	Dependent variable – Cluster "Traditional with numerous family" = 0 Cluster "Modern" = 1			Dependent variable – Cluster "Traditional with at most two children" = 0 Cluster "Transitive to modern" = 1		
	B	Sig.	Exp(B)	B	Sig.	Exp(B)
Education level (higher education)	.934	.000	2.545	.856	.000	2.354
Place of residence (urban)	1.609	.000	4.998	.429	.012	1.536
Protogenetic interval	.334	.076	1.396	.990	.000	2.692
Age of first sexual intercourse	.795	.001	2.214	.362	.013	1.436
Constant	-4.419	.000	.012	-4.768	.000	.008
Observations number	374			840		
Nagelker R Square	.378			.273		

A series of binomial logistic regressions were performed to test the statistical significance of the socio-demographic characteristics of women with different types of reproductive behavior identified. For this purpose, the models were compared: the "traditional with large family" and the "modern" type. The logistic regression model was statistically significant, $\chi 2(4) = 118.354$, $p < .0005$, and explained 37.8% (Nagelkerke R2) of the variance in predictor variability of reproductive behavior. The four independent variables registered a significant statistical difference: the place of residence, the level of education, the protogenetic interval, and the age of first sexual intercourse (Table 3).

Comparing the models "traditional with at most two children" and "transitive to modern", demonstrated that the logistic regression is statistically significant, $\chi 2(4) = 191.137$, $p < .0005$. The model explained 27.3% (Nagelkerke R2) of the variance in predictor variability of reproductive behavior. Statistically significant differences were recorded for the four independent variables (predictors).

It should be noted that the traditional model with at most two children also included women from rural areas, who gave birth to their first child at younger ages, until 22 years old (at the moment of the study). By the end of the reproductive period, they may give birth to more than two children and engage in the traditional model with a large family. Given the fact that the share of these women is insignificant in the total number of women in the cluster (40 cases, 6.9%) they were not excluded from the cluster.

Age is a key indicator that determines the probability of having children and their number. Even with the same characteristics, such as the place of residence or education level, the likelihood of having children/achieving reproductive intentions is higher for women aged 35-49. For this reason, female reproductive behavior is analyzed in general for women aged 20-49 and by separate age groups to provide a detailed typology's description.

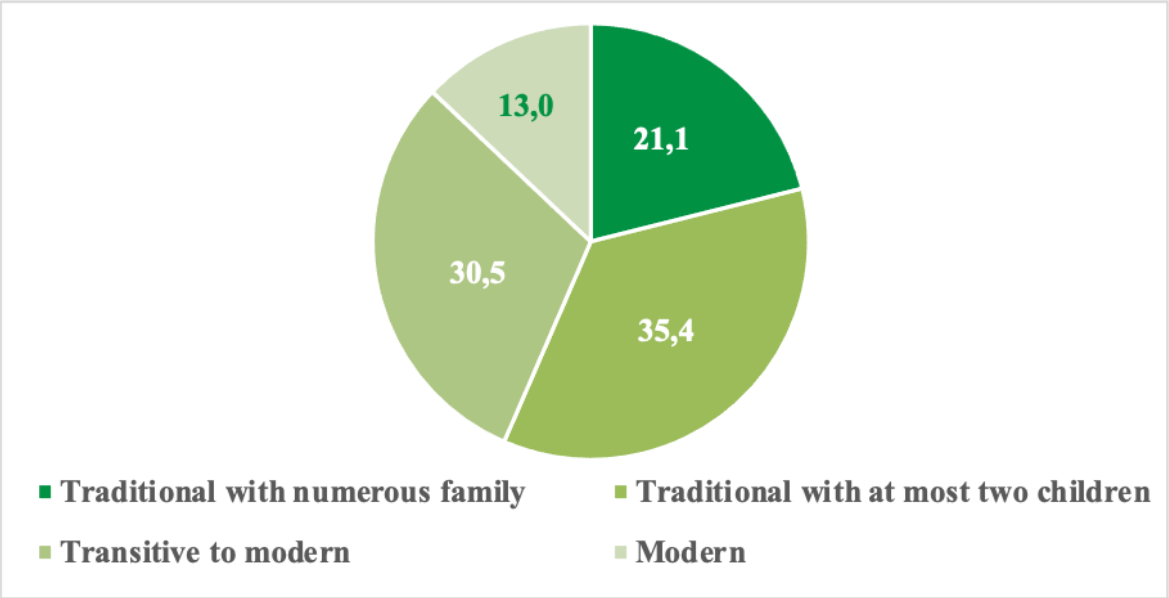
MAIN RESULTS

The four clusters of women that differ in characteristics of reproductive behavior according to the weight in the total selected sample are presented as follows: the first cluster, "the traditional model with a large family," comprised 21.1% of women; the second cluster, "the traditional model with at most two children" turned out to be the most numerous (35.4%); the third "transitional to modern" cluster, was also quite considerable (30.5%); while the "modern model", smallest by size included 13% of women *(Figure 1)*.

Figure 1.

Typology of Moldovan women's reproductive behavior models, in %

Source: developed by authors based on Generations and Gender data, 2020



Type I "traditional with numerous family".

This type of reproductive behavior is more specific to rural women (80%) with a medium and low level of education, respectively, 48.8% and 40.6%. The average number of children born during reproductive life is 3.4 children per woman.

The first births occur early, the average age of the mother at the first birth being 19.8 years, and the early onset of sexual relations before the age of 18 is characteristic for about 40% of the respondents, while between the ages of 18 and 23 it amounts to 60%. Often, marriage occurs because of an unplanned pregnancy and the protogenetic interval (the period between marriage and the first birth) less than 9 months is recorded for 59.7% of women. The birth of subsequent children occurs in short succession - "one after another", the median interval between the first and second birth being 3.1 years.

In the cluster of the traditional type with a large family, women aged 35-49 make up 64.5%, while those aged 25-34 - 35.4%.

Type II – "traditional with at most two children".

As in the previous cluster, marriage and the birth of the first child occur at young ages, but rigorous control over subsequent births is observed, with most women giving birth to at most two children (75.4%). The average number of children born is 1.87 per woman.

The average age at first marriage is 19.7, and the average age at first birth is 20.3. The model stands out by recording the greater distance between the first and the second birth (the median age is 4.02). About 47.9% of respondents record protogenetic intervals of up to 9 months, 42.1% – more than nine months to 2 years and 10% – more than two years. For these women, the onset of sexual relations towards the age of majority is characteristic. Those who started sexual relationships between 18 and 23 years record 65.8%, while towards the early ages of up to 18 years 34.3% of the respondents, and only 6.5% towards the age of 24 and above. Like the "traditional with a large family" model, the "traditional with at most two children" is more specific to women from villages (71% of the total number of women in this cluster). Most respondents have secondary education - 57%, low-level education - 29% and only 10% - higher education.

Within this cluster, women aged 35-49 constituted 51.3%, those in the active reproductive period - ages 25-34 (34.2%), and ages 20-24 (14.5%).

Type III, "transitive to modern".

Compared to previous clusters, marriage at older ages and more rigorous birth control takes emphasis, which causes women to have fewer children on average. Women marry around 23-25 years (average age at first marriage – 23.4) and give birth to their first child on average at age 24, recording a more extended period of married life without children. Sexual relations start even later, after age 19. The "transitive to modern" model includes women with two children in a proportion of 60.6%, one child - 30.9%, and three children or more - 7.9%. The average number of children born per woman is 1.8. There is more stringent control over first births, as evidenced by a longer protogenetic interval. For 39.9% of the respondents, this is from ten months to two years. At the same time, 37.2% of women record the protogenetic interval of even more than two years. Successive births occur at longer intervals, with at least 4.2 years between the first and second births. For women who have also given birth to their third child, the intergenetic interval of 5 years is recorded.

Compared to the previous models, there is a higher proportion of women with higher education in this cluster. Thus, women with secondary education make up 44%, and those with higher education - 39.9%. More than half of the women (53.7%) are from cities. About half of the respondents of this cluster are those aged 25-34 (51.6%), 35-49 years old record 48.3%, and the youngest respondents aged 20-24 number 1.4%.

Type IV, "modern"

it is characterized by marriage at older ages and the late birth of the first child. More women in this cluster have one child - 45.4%, two children - 41.4%, while 13.2% have three children and more. The onset of sexual relations occurs later compared to the first three types of reproductive behavior, the average age being 20. There was a higher share of respondents who were initiated into sexual relations between the ages of 18 and 23 (69.2%) and 17.4% at age 24 and over. Early onset up to age 17 is characteristic for only 13.4% of women in this cluster. Entry into the first partnership occurs at the age of 23+. Specific to this cluster is the high share of women who gave birth to their first child out of wedlock (17.1%). The average age at first marriage is 28.7, and 29.3 for a first birth. The average protogenetic interval is 1.2 years; pregnancy before marriage (protogenetic interval up to 9 months) is characteristic for 43% of women, more than 9 months to 2 years – 39.1% and more than two years – 18%. The average interval between the first and second birth is four years. Most women have higher

education - 44.8% and secondary education - 44%. Compared to the "transitive to modern" model and the other models, the proportion of urban women in the "modern" cluster is higher - 60.9%. Women aged 35-49 are found in a ratio of 73.6%, those aged 25-34 – 26.4%.

On base of clustering criteria, the respondents were assigned to previously highlighted types according to age group and place of residence (Table 4). The results demonstrate a proportional presence of women who fall into the traditional type of reproductive behavior either with a large family or with at most two children in the age groups 20-34 and 35-49, which constitute more than half of the total number of women. Among women who have realized their reproductive intentions (35-49 years), 27.2% referred to the "transitive to modern model" and 14.9% to the modern one. Young women (ages 20-34) register a higher proportion of those who fall into the "transitive to modern" model (36.5%), while only 6.7% belong to the "modern" model.

The clustering of women by place of residence once again underlines the fact that the "traditional type with a large family" has lost its position in the urban area, while the "transitional to modern" and "modern" ones prevail, constituting about 60%. It is remarkable that in the rural area, the "traditional with at most two children" type is present in the highest proportion (43.9%).

Table 4.

Results of clustering by women's age groups and place of residence, in %

Nr.	Types of reproductive behavior	Age groups		Residence	
		20-34	35-49	Rural	Urban
1.	Traditional with large family	17.1	24.7	23.3	7.2
2.	Traditional with at most two children	39.7	33.2	43.9	33.0
3.	Transitive to modern	36.5	27.2	29.7	47.3
4.	Modern	6.7	14.9	3.1	12.5
Total (%)		**100**	**100**	**100**	**100**

DISCUSSION AND CONCLUSIONS

The typology of reproductive behavior models demonstrates some particularities of the fertility transition from the traditional to the modern type in Moldova. The main factors influencing fertility transition are the place of residence and the education level of women. The persistence of traditional model, either with a large family or with the limitation of at most two children, was found both among the older (ages 35-49) and the younger generations (ages 20-34), especially in rural areas and among women with a low level of education. Traditionally, the fertility of rural women is higher than that of urban women, being determined by the lifestyle and the lower level of education of rural residents. The preservation of cultural traditions, higher social control of reproductive behavior, and reduced opportunities to modernize living conditions make the fertility transition from the early to the late model slower.

Identified patterns show that changes in reproductive behavior appear in postponing marriage and the first birth to older ages (tempo effect), causing a decrease in the number of children of higher

ranks and an increase in the proportion of families with a small number of children (quantum effect). Having children at young ages leads to a more significant number of children born during the reproductive period, while postponing births leads to a decrease in the number of children born. This finding correlates with other research (Sobotka, 2018).

The recording of the long time gap between the registration of marriage and the birth of the first child specific to the "modern" model of reproductive behavior elucidates the rational choice of the moment of childbirth and the control of fertility characteristic of women with a higher level of education. At the same time, a higher share of women who declared themselves in partnership relations confirms the hypothesis regarding the diversity of family models in the second demographic transition and the increase in the share of children born out of wedlock (Lesthaeghe, 2020).

Considering the slow pace of socioeconomic modernization in Moldova, the high level of migration of the population, especially the young and well-educated ones, the high level of poverty, as well as the uncertainty regarding the future, we assume that the fertility transition will stagnate or unfold at a slow pace, the total fertility rate will remain at the level of 1.7-1.8 children per woman. At the same time, the gap in fertility indicators between Moldova and other ex-Soviet countries in the European region, where the fertility transition started after the 90s of the last century, may increase.

Our study has some limitations. We analyzed fertility histories of women between 20 and 49, born in different periods. Their reproductive activity started in the later 1980s - the beginning of the 1990s. The older generations' reproductive behavior was impacted by families' policies implemented in the Soviet Union; those who were in the most active reproductive ages in the late 1900s and early 2000s faced a severe socioeconomic crisis that could negatively affect the number of children born. Reproductive behavior of the youngest generations is more affected by cultural and value changes. Thus, they were exposed to different historical, structural, and cultural contexts that may have influenced reproductive behavior. In addition, various circumstances that determine individual histories of childbearing, marriage and partnership, whether it is an unplanned pregnancy, separation from a partner, or divorce, also had a particular impact on women's reproductive behavior and the number of children born.

Another limitation of our study refers to the use of retrospective data. Although we can expect that the vast majority of respondents correctly reconstruct fertility histories, we cannot rule out the possibility of misreporting.

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