





Fertility and the COVID-19 crisis: do gender roles really matter?

Malina Voicu  and Delia Bădoi 

Research Institute for Quality of Life, Romanian Academy, Bucharest, Romania

ABSTRACT

The recent COVID crisis has had many consequences on social life. This paper focuses on potential effects of the COVID-19 pandemic on fertility intentions. We employ a theoretical approach, analysing the nexus between fertility and the COVID crisis through the lens of gender roles. The purpose of our analysis is to frame the theoretical paths and to prepare a background for further in-depth analysis based on empirical data. We show that biological reduction of fertility is less likely to occur but that behavioural mechanisms in couple's decision-making will drive the impact on fertility intentions. The health emergency, economic crisis and social distancing will lead to an adjustment of fertility behaviour, while gender roles and social values will moderate the impact of the pandemic.

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Introduction

The recent outbreak of COVID has had a vast array of consequences on social life. Some of these can be easily noticed in daily life, while others may occur in the near future. Fertility belongs to the latter category, as demographers predict that we will need at least nine months from the beginning of pandemic to figure out its impact on fertility, if any (Stone 2020a). However, any effects of COVID will stay with us and put an imprint on population structure for quite some time.

Biological as well as behavioural mechanisms contribute to the reshaping of fertility in cases of epidemics (Boberg-Fazlic *et al.* 2017). The first category refers to those physical conditions impeding conception or leading to stillbirth or maternal death. The second mechanism deals with individual decision-making, adults of fertile age adjusting their

CONTACT Malina Voicu  malina.voicu@iccv.ro  Research Institute for Quality of Life, Romanian Academy, Calea 13 Septembrie 13, Bucharest, Romania

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behaviour to the health emergency and the economic costs of the crisis (Grant *et al.* 2004). This paper argues that the impact of the COVID-19 pandemic on fertility will be mainly based on behavioural mechanisms triggered by the ‘side effects’ of the health emergency, social distancing and economic crisis, with changes in gender roles and social values being the core mechanisms mediating the resize of fertility. Nevertheless, the crisis caused by the COVID-19 outbreak has raised new questions about the pre-existing social context and the gendered impact on fertility (Stone 2020b; Verdery and Greenaway 2020).

This paper attempts to investigate the impact of COVID-19 pandemic on fertility by looking through the changes in norms and social values that emerged and the new gender issues and adjusted gender roles within couples. In this regard, we inquire why and how gender and care work may lead to resized fertility. The analytical approach of the paper is focused on individual mechanisms and rather theoretical as empirical data are not yet available (Beine *et al.* 2020).

We present first the biological and behavioural mechanisms leading to the resizing of fertility during and post-pandemic. We then look at direct and mediated effects of the pandemic on fertility intentions, and we propose several hypotheses and an analytical strategy. We conclude by showing that the mediated effects of changes in gender roles and social values are at the core of fertility resizing during the pandemic.

COVID pandemic and fertility

From the biological perspective, infection with SARS-CoV2 has a low mortality rate as compared with the Spanish flu, SARS, MERS or Ebola, but the transmission rate is moderate to high (Petersen *et al.* 2020), with the infection having more severe effects on older adults, men and patients with co-morbidities (Beam Dowd *et al.* 2020). Unlike the Spanish flu, which hit mainly young adults (20–45 years old) or Zika, which was particularly dangerous for pregnant women (RCOG 2020), the current pandemic seems to have milder biological outcomes on women of fertile age; neither severe effects on pregnancy nor vertical transmission from mother to child have been documented. Based on the existing data after the first six months of pandemic, one can say that the biological impact of COVID on fertility is rather marginal (Karimi-Zarchi *et al.* 2020).

So-called behavioural mechanisms are based on a couple’s decisions regarding reproductive behaviour which can lead to the postponement

of births (*delayed fertility*) or an increase in births (*replacement fertility*), the second being reported mainly when the health emergency has a high death toll, particularly among children (Boberg-Fazlic *et al.* 2017). The COVID mortality rate is not very high and is predominantly concentrated to adults above 60 years of age. Therefore, it is less likely that a compensation mechanism will lead to a growth in births.

Besides the biological impact on population, an epidemic brings other disruptions to social and economic life. The literature discusses *collateral survivors*, those who, although they survived the event, are left with deep trauma, their lives being severely affected (Stone 2020a). Collateral survival includes a wide range of life disturbance, from becoming sick to losing a family member or a job. Such disturbances, with their direct or indirect effects on fertility, can originate from the health emergency, economic crisis or social distancing. Figure 1 summarises the direct and mediated effects of the pandemic on fertility intentions.

Health emergency, social distancing and economic crisis: direct effects

Health emergency

The health emergency, namely the active spread of the disease and its impact on healthcare systems, may impact fertility decisions directly,

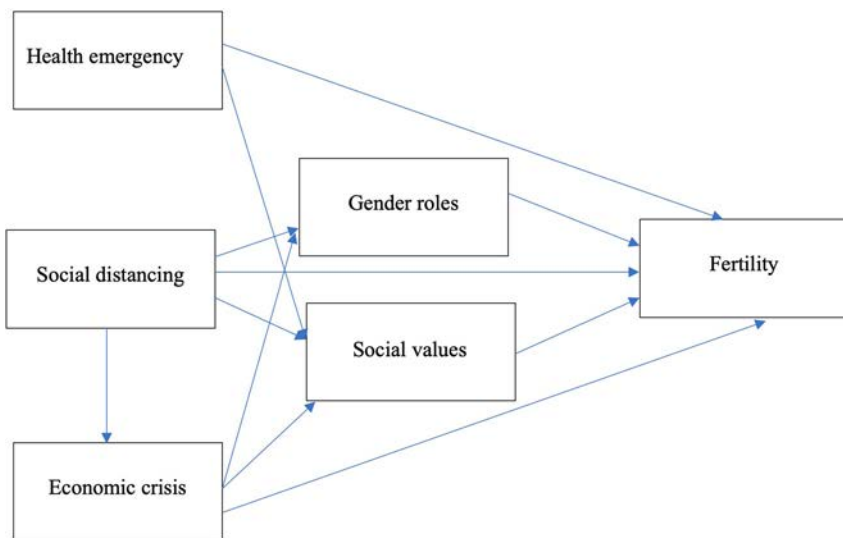


Figure 1. Direct and indirect effects of COVID 19 pandemic on fertility.

for several reasons. Individuals can decide to postpone conceiving due to anxiety and mental distress rooted in the fear of themselves or their partner becoming sick. While health systems around the world are giving priority to COVID cases, other health conditions are not being properly addressed (Hall *et al.* 2020; Vieira *et al.* 2020). Analyses of the Spanish flu crisis show that reduced access to health services for sexual reproduction, pregnancy assistance and mental health care services increased the risk of miscarriage, sexually transmitted infections and infant mortality (Hall *et al.* 2020). Therefore, one can expect that the lack of access to general health services, to health emergency and preventive health care and to reproductive health services will have potential effects on fertility decisions (Stone 2020a; Campbell 2020; Hall *et al.* 2020).

Social distancing

Social distancing is a main containment measure and refers to reducing social and physical contact between people (Oosterhoff *et al.* 2020). It involves limiting the size of public gatherings, maintaining a distance of at least 1.5 to 2 m between individuals, teleworking, distance learning and closure of non-essential businesses, schools and day care services. Imposing social distancing measures, limiting social interactions, prohibiting large gatherings and wearing protective equipment in public spaces can lead to disturbance of the matrimonial market. A combination of containment measures and social isolation limits possibilities of socialisation and interpersonal relations, negatively impacting psychological well-being and family relations (Vieira *et al.* 2020; Aassve *et al.* 2020). Virtual social interactions using technological devices cannot fully substitute interpersonal contact, with a negative impact on fertility intentions in the medium-term, as happened in past pandemics (Boberg-Fazlic *et al.* 2017; Mamelund 2004). Moreover, the psychological burden produced by 'stay-home' isolation and uncertainty about the future negatively impact fertility decisions (Yuill 2020; Lebel *et al.* 2020). As the quality of couples' relationships deteriorate due to anxiety and psychological trauma, the likelihood of couple dissolution and of reduced fertility increase (Campbell 2020; Vieira *et al.* 2020). On the other hand, isolation and staying home can provide the opportunity to spend additional time with one's family and one's partner, improving the quality of the relationship and stimulating people to extend their families (Szabo *et al.* 2020; Ahmed *et al.* 2020).

Furthermore, social distancing has important economic consequences, with the closure of non-essential businesses leading to an economic crisis and disruption of the labour market. The closure of schools and of public care facilities transfers the responsibility of care provision from public services to families, while the containment measures meant to protect elderly individuals puts additional pressure on those family members who are active in the labour market, too (Wenham *et al.* 2020; Scharff 2020).

At the same time, the decision to conceive depends also on the opportunity costs of having children. Although well-educated women have the lowest costs of motherhood, they may avoid or postpone it due to potential loss to their career or the incompatibility of work and childbearing (Joshi 1990, 2002; Grant *et al.* 2004). From this point of view, ‘stay-home’ and home-office policy can boost fertility among women with higher educational attainment because it may provide opportunities for work-family reconciliation. If there is already a child within a family and both parents need to adjust their work schedule to accommodate extra childcare, the opportunity costs of an additional birth may go down, especially when there are already babies or toddlers in the family. Thus, based on the classic economic theories of fertility, opportunity costs can predict a growth of births among educated women with young children.

Economic crisis

The economic crisis and uncertainty regarding the future which followed the lockdown and the containment measures have led to economic insecurity, unemployment and a drop in incomes for a large share of the population (ILO 2020b). Economic crises are associated with the resizing of fertility intentions as couples avoid conceiving in such circumstances (Boberg-Fazlic *et al.* 2017; Beine *et al.* 2020; Aassve *et al.* 2020). As unemployment rises, both men and women working in industries affected by the crisis may reconsider their intentions. Furthermore, women are more economically vulnerable than men as they are highly engaged in the hardest-hit industries, such as retail trade, manufacturing, food and accommodation services, cleaning and cooking services (ILO 2020b). Likewise, the data available from EIGE (2020) show that about 26.5% of women, compared with 15.1% of men, across the European Union are in a precarious job (EIGE 2020).

Gender roles and social values: mediated effects

Mediation occurs when the effect of the antecedent variable on the target variable is transmitted through a third intervening/mediating variable (Fritz and MacKinnon 2007). In our analysis, health emergency, social distancing and economic crisis play the role of antecedent variables, while fertility intentions are the target variable. Two mediations stand in between: gender roles and social values. Besides their direct impact, health emergency, economic crisis and social distancing can contribute to the reshaping of gender roles and lead to values change, which in some instances may lead to the adjustment of fertility intentions.

Gender roles

Three mechanisms are contributing to the reshaping of gender roles during the COVID pandemic by changing the relationship between paid and unpaid work within couples: unemployment and parental leave, additional care work and additional housework. As partners' commitment to unpaid work is influenced by their position in the labour market and by the use of external care services (Hofacker *et al.* 2011), the COVID pandemic is challenging the existing division of tasks within couples through the disruption of the labour market and the lack of access to external care services.

The impact of these challenges on gender roles can be framed within two theoretical approaches: gender identity perspective and rational choice theory. The first approach builds on the idea that gender identity is central to personal identity (Carter 2014); individuals engage in activities which fit with their identity and allow them to 'do gender' (West and Zimmerman 1987). According to rational choice approach, women and men are rational actors who tend to maximise outcomes by allocating resources in the most effective ways, leading to gender specialisation, with the partner having a better position in the labour market spending less time on housework (Becker 1993). In a similar vein, when time is considered a resource available to a household, the partner spending fewer hours in the labour market will get extra work at home (Geist 2005).

Because women are more often employed in precarious positions and their income is lower than that of their male partners, they have lower bargaining power and are more exposed to unemployment during the COVID pandemics; the labour market trends provide support to this

statement. According to Eurostat (2020), quarantine and isolation are impacting the employment of men and women differently. In the majority of European countries, the share of absence from work was higher among women than among men (Lithuania, 17.1% of women, compared with 6.5% of men; Hungary, 13.2% of women, compared with 5.5% of men; Poland, 12.1% of women and 5.1% of men; Latvia, 12.0% of women and 5.0% of men). Thus, women are more likely to focus on the private area and to allocate additional time to tasks within the family and household (Forett *et al.* 2010) because of their lower bargaining power and because the role of carer is central to women's identity, while the breadwinner role is attributed to the male identity (Hoang and Yeoh 2011). In the circumstances of the pandemic, women may resume the domestic area, switching easily from breadwinner to carer and housemaker roles.

In many countries, social distancing has cut families' access to external care services. Increased demand for housework has also occurred as many non-essential businesses closed, and households should refrain from outsourcing services like laundry, home cleaning or cooking. Building on the assumptions of the 'doing gender' approach, one can predict the further involvement of women in housework as the literature points out that it is the reduction of total amount of housework which balances the time spent by partners in housework and seldom additional involvement of the male partner (Dotti Sani 2014).

The rational choice approach leads to a different assumption: partners divide house and care work depending on their position in the labour market and on the time available. For instance, as women are the majority of frontline workers in healthcare and care-related services (Gender Statistics Database 2019; Wenham *et al.* 2020), accounting for 70% of the global health workforce (Boniol *et al.* 2019; ILO 2020a), they cannot contribute more than they did before the pandemic to housework and care work, thus, their partners are more likely to assume a higher share of unpaid work. On the other hand, in industries where both partners switch to a home office due to the pandemic, they have more time to spend with their family because they do not need to waste time travelling to their office and have reduced alternatives for leisure activities. Research conducted during the pandemic in United States, Australia and Italy revealed that men have increased their share of housework and childcare, the change being greater in cases of care work (Carlson *et al.* 2020; Del Boca *et al.* 2020; Hand *et al.* 2020), although women still have the lion's share of unpaid work.

Social values

Social values change occurs as the outcome of existential insecurity as well as due to the reshaping of gender roles. A health emergency threatens individual health and wellbeing, leading to existential insecurity and triggering the authoritarian reflex, namely the return to traditional – authoritarian values (Inglehart 2018). Moreover, Thornhill *et al.* (2010) showed that societies with a high degree of vulnerability to infectious diseases foster traditional gender roles. Economic insecurity has a similar impact, as has already been documented (Inglehart 2018). One of the cultural shifts which occur in this context resides in the return to traditional family patterns and traditional divisions of gender roles: man breadwinner – woman homemaker. Family gives priority to biological survival, and this requires full involvement of women in care work and breeding (Inglehart 2018). Thus, the impact of the health emergency on fertility is being mediated by the reshaping of gender norms and social values.

The values change can also be rooted in the adjusting of gender roles, women being now even more involved in house and care work than men are. The transition from the dual breadwinner model to the one of male breadwinner – women housemaker requires the adjustment of gender role attitudes due to the control mechanism, which ‘help[s] individuals to adjust their attitudes to match their behaviour’ and to maintain meaning (Kroska and Elman 2009: 379). Thus, when women switch roles or give more weight to their homemaker/caregiver roles, they and their partners need to adjust their attitudes, potentially leading to a reshaping of their value orientations.

The mediated/indirect effects of the pandemic on fertility are complex and embedded in the interplay between culture and structure. Traditional gender culture refers to the patriarchal relations, gendered division of work within the household, prevalence of traditional marriage and high fertility that accompany a high mortality rate, especially among children (Cunningham *et al.* 2005; Hareven 1987). Therefore, we can assume that fertility intentions will rise due to the pandemic as, due to social distancing, women have more time to spend on children and housework, and the world will revert to the traditional family model. Such results find support also in the Second Demographic Transition (SDT), which connects the decline of fertility in contemporary societies with increased opportunities of women for employment and changing gender norms concerning family formations (Lestaegehe 2010).

However, SDT holds true only in part, the literature pointing to a U-shaped relationship between fertility and gender equality, with high fertility occurring either when gender equality is low or when it is high (Esping-Andersen and Billari 2015). The U shape occurs because gender equality is a multidimensional concept, referring to gender relations within private and public areas as well as role similarity/dissimilarity (Constantin and Voicu 2015). Thus, men and women have similar or different roles at home or outside it, and the shifts in gender balance at home and on the labour market occurred at different moments of the modernisation process. Inglehart and Norris (2003) point out that gender equality is reached first in the labour market, while gender equality at home is the next step. As similar roles for men and women in the labour market heads to decreased fertility, equal sharing of tasks at home leads to the growth of fertility (Goldscheider *et al.* 2015).

Therefore, to understand how pandemics may lead to the resizing of fertility, we should disentangle the relation between gender culture and gender structure, the concept of *gender arrangements* providing a good background for this endeavour. Gender arrangements deal with the interconnection between gender culture and gender order. The first includes cultural models, values and norms regarding gendered divisions of spheres of work and care and power relations and dependencies between women and men, while the second concept refers to institutions (e.g. welfare state, family/household, labour market) and gender structures (e.g. division of labour, power) (Pfau-Effinger 1998). Gender culture and gender order are embedded in one another, and in some contexts a mismatch between the two leads to cultural change (Pfau-Effinger 1998). However, cultural change does not occur in thin air; it requires the active involvement of certain social actors to bring about (Pfau-Effinger 2005), conflict and negotiation heading to new gender arrangements suitable to the new context.

Thus, we can expect that the pandemic will bring a shift of gender culture, with an impact on fertility, under several circumstances. Such change will require social actors interested in challenging the existing gender order and in negotiating a new status quo. Moreover, the new circumstances should last long enough to require the renegotiation of gender order and should be coherent with the existing gender order; otherwise, the mismatch between culture and structure will not be large enough to challenge existing gender arrangements. The tools needed to bring about this change will not be found unless they belong to the existing cultural toolkit (Swidler 1986).

So far, we are at the beginning of the pandemic, and its unfolding is hard to predict, including whether the reshaping of gender order will build on existing arrangements, engendering the impact of the existing order on fertility. For instance, for couples sharing equally the tasks on the labour market and at home, the pandemic may have no impact on fertility. The same is to be expected under fully traditional gender arrangements, when there is a strict gender division within the family and there is a need to renegotiate it. Therefore, the arrangement that is most exposed to renegotiation is the one in which women are active in the labour market, but the division of work at home is uneven. As indicated in the literature referred (Pfau-Effinger 1998, 2005) this arrangement has the highest likelihood of being challenged by a pandemic, with effects on fertility as women search to reduce their domestic burden.

Hypotheses and analytical strategy

Based on the theoretical assumptions formulated above, we propose several hypotheses regarding the factors reshaping fertility:

(H1) There is no direct effect of COVID-19 infection on fertility.

(H2) The health emergency and economic crisis have a direct negative impact on fertility, while the indirect effects are mediated by gender roles and social values.

(H3) Social distancing has a direct negative impact on fertility.

(H3.1) The effect of social distancing is moderated by education and birth rank, with motherhood increasing the likelihood of having additional children among highly educated women.

(H3.2) The indirect effects of social distancing are mediated by changes in gender roles and social values.

(H4) There is a U-shaped relationship between gender culture (gender roles and social values) and fertility, with higher level of traditional gender culture and lower level of traditional gender culture being associated with high fertility.

An analytical strategy for testing these hypotheses requires data allowing investigation of intra-individual changes occurring due to the COVID-19 pandemic. Thus, the research design should make use of individual panel survey data. Moreover, testing direct and indirect effects of various independent variables on fertility requires structural equations

models applied to panel survey data, with latent growth models providing the proper framework to study intra-individual changes of fertility under the impact of the COVID pandemic. The ideal candidate dataset for implementing this research design would be a panel survey such as the Gender and Generation Program, German Family Panel (Pairfam), Understanding Society in the UK, which provide data on fertility and social demographic variables as well as on gender roles and social values. Cross-national comparisons will allow understanding of how different contextual variables are related to the pandemic, including how containment measures and family policies may interfere with individual variables in reshaping fertility during the COVID pandemic.

Conclusions

This paper focuses on potential effects of the COVID crisis on fertility. As data regarding the dynamic of fertility during the pandemic are not yet available, we employed a theoretical approach analysing the nexus between fertility and the COVID crisis through the lens of gender roles and social values. The purpose of our analysis was to frame the theoretical approach and to prepare the background for further in-depth analysis based on empirical data. In the end, we proposed several hypotheses and an analytical strategy to test them.

The experiences of previous epidemics indicate that the resizing of fertility can occur as the outcome of biological and behavioural mechanisms. We showed that biological reduction of fertility is less likely to occur, while behavioural mechanisms involving couples' decision-making will impact fertility intentions. While the path from the pandemic to fertility intentions can be either direct, with the health emergency, economic crisis and social distancing making people adjust their behaviour, or mediated by changes in gender roles and social values, both types of effect bear the imprints of pre-existing gender arrangements. Empirical data on fertility during the COVID crisis will be available in 2021, and hopefully panel data on fertility, family behaviour and social values will help with testing the theoretical framework sketched by this paper.

The framework proposed by this paper can be adapted and used not only for understanding the impact of COVID 19 pandemic, but also to explain the impact of economic crises on fertility, as the path from economic crisis to fertility remains the same even when health emergency is absent. Moreover, further research may apply this framework to

empirical data suitable for comparison between the impact of 2008–2010 economic crisis with the one caused by the pandemic. This will enable the disentangling of the economic, medical and social effects of the pandemic and will shed lights on how economic versus social and biological factors impact on fertility.

This paper proposes a framework useful to link fertility with various critical historical moments and to understand the impact of ‘critical junctions’ on fertility decisions. This is only the first step of a broader project that should consider not only the impact of changes produced by some crisis, but also how these sudden changes interfere with the existing culture and structure leading to the readjustment of individual behaviour.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Notes on contributors

Mălina Voicu is Research Professor at the Research Institute for the Quality of Life, Romanian Academy. She studied Sociology and Psychology and she holds a PhD in Sociology. Her research interests focus on demographic change, population aging, gender studies, social policies, and social values. She published several volumes as author or editor, among them: *Support for the welfare state in post-communist Romania* (Expert Projects, 2005, awarded with Dimistri Gusti Prize by the Romanian Academy), *Religious Romania* (Institutul European, 2007), *Mapping values orientations in Central and Eastern Europe* (Brill, 2010, Loek Halman co-editor), *Values, economic crisis and democracy* (Routledge, 2016, Ingvill Mochmann and Herman Dülmer co-editors). Her work was published in international peer-reviewed journals, like *European Sociological Review*, *Social Indicators Research*, *Ethnic and Racial Studies*, *International Sociology*, *Current Sociology*, *Democratization*, *Social Compass*.

Delia Badoi holds a PhD in Sociology from Ecole des Hautes Etudes en Sciences Sociales (EHESS, Paris) and the University of Bucharest. She is a Research Fellow at the Research Institute for Quality of Life (Bucharest) where she investigates labour market policy, digitalisation and social change in a research project that pursues employment strategies in the context of the new risks caused by the process of labour digitalisation. She recently obtained a research fellowship from the Centre for Excellence Women and Science, Leibniz Institute for Social Sciences in Cologne, for a research project on gender regimes and flexible employment in higher education and scientific research. Her recent publications: *The digital labour in the context of the COVID-19 crisis: A case study on the delivery platform workers* (2020, *Quality of Life Review*); *Gender regimes and precariousness in the neoliberal academy: The specific case of Romania* (2019, *Journal of Gender and Feminist studies*).

ORCID

Malina Voicu  <http://orcid.org/0000-0002-0488-7222>

Delia Bădoi  <http://orcid.org/0000-0002-7298-9087>

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