



Gender Revolution in Kazakhstan? Implications for Fertility Intentions

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Abstract

The gender revolution perspective on the association between gender equality and fertility has been widely applied to the contexts of the developed countries both in Europe and East Asia. This study explores the applicability of the perspective to the context of Kazakhstan, which has relatively good progress in the first half of the gender revolution but is not necessarily developing the second half as in other contexts that have been studied previously. The study explored whether fertility intentions are positively associated with gender egalitarian attitudes or division of labour in the home for women who are in the labour force. In addition, whether alignment between attitudes and division of labour in the home was associated positively with fertility intentions was also explored. More egalitarian gender ideology and more equal sharing of domestic work were negatively or not at all related to fertility intentions in Kazakhstan. These results can be interpreted to mean that an unequal division of labour in the household may be taken for granted in the culture of Kazakhstan and may correlate somewhat with values that promote family expansion, regardless of whether women are in paid employment.

Keywords: Gender equality, gender revolution, gender ideology, division of housework and childcare, Kazakhstan



Introduction

The importance of gender equality for family fertility both public and private, is well-argued in contemporary fertility research (McDonald 2000 a, b; Neyer, Lappegård and Vignoli, 2013; Aassve et al., 2015). The gender revolution framework (Goldscheider et al., 2015) differentiates two stages of the progress of societies towards more gender egalitarian settings: the first is an increase in women's labour force participation and subsequent decrease in fertility due to work-family conflict, and the second is the increased involvement of men in household chores and childcare and subsequent rebound in fertility. However, this research mainly covers developed countries and thereby does not include a wide range of other contexts. As Mills (2010) points out in the analysis of different gender indices, gender equality measured by conventional indices may have a weaker effect on fertility in contexts other than developed countries. This is because the indices are primarily focused on institutions that are developed in OECD countries and do not include institutional reasons for underlying gender inequality in developing countries.

This study extends the existing literature on the association between gender equality and fertility intentions to the context of Kazakhstan, which has relatively good progress in many dimensions of the first half of the gender revolution but is not necessarily developing the second half as in other contexts. Kazakhstan is on similar level on many public gender equality measures as some Southern European countries (Gender Inequality Index (GII), 2020), and similar to these countries it is lagging in private sphere gender equality. However, in contrast to Southern Europe, Kazakhstan has not experienced lowest-low fertility in the past decade, which makes it an interesting comparison and a study case to the field.

Kazakhstan is a useful case study because there is a strong contrast between gender equality in public institutions (education and employment) and gender inequality in family institutions (norms and traditions governing a household). In many developing countries women's employment and education are seen as the main barriers to emancipation and gender equality. In contrast, the progress in gender equality in women's employment and education in Kazakhstan was substantial during the Soviet time, which was also accompanied by a generous maternity leave policy and provision of subsidized public childcare. This legacy can be seen in Kazakhstan's high ranking in GII 2019 (the higher the more gender-equal).

The turbulent 1990s and the transition to a market economy brought with it the process of nation-building and the search for self-identity in Kazakhstan. The void left by Communist ideology was to some degree filled by an increase in religiosity and revival of traditional ethnic cultural heritage. Related customs and practices help to support that gender equality is not developed in the private sphere to the degree that it is in the public sphere.

Kazakhstan occupies a unique location between the simple dichotomies of developed/developing country or Global North/Global South. In terms of women's role in the public sphere and access to educational and labour market opportunities, it has features of an advanced, wealthy country. But at the same time, traditional culture and patriarchal norms still play a more significant role in family institutions than in many developed countries.

An additional feature of the Kazakh context is its significant regional heterogeneity across a vast territory (ninth largest in the world). Thus, North and North-Eastern regions have closer ties with bordering Russia and have a significant proportion of Russians and other Slavic ethnic groups. In contrast, South and South-Western regions are distinguished by a higher proportion of ethnic Kazakhs and the regions are culturally and ethnically more tied to other Central Asian Republics. This presents an opportunity to assess the relationship between gender equality and fertility intentions in a context that is characterized by substantial variation in gender equality norms and attitudes as well as fertility behaviour.

The main question for the current study is about the applicability of Western theories related to gender equality and fertility, specifically the gender revolution theory, to the context of Kazakhstan. I, specifically, analyse whether women's and men's parity-specific fertility intentions are associated with 1) gender attitudes in combination with women's labour force participation; 2) more equal sharing of domestic work (either housework or childcare) in combination with women's labour force participation; 3) a match between gender attitudes and values and sharing of domestic work (either housework or childcare).

Theoretical perspectives and evidence

Gender equality and fertility

Several theoretical frameworks suggest a U-shaped pattern of the relationship between gender equality and fertility (McDonald 2000 a,b, 2013; Goldscheider et al., 2015; Esping-Andersen and Billari, 2015). The U-shaped pattern can be described as follows: initially countries begin in the stage when fertility is high and gender equality is low. Then, when gender equality in the public sphere (women's employment) increases, fertility goes down. But, a rebound in fertility is expected once private sphere gender equality (men's participation in household work and childcare) increases. Thereby, according to McDonald's gender equity theory (2000 a, b), if gender inequality in family-oriented social institutions is high, while there is gender equality in institutions such as employment, highly educated women in particular would have more difficulties in balancing employment and household responsibilities, which leads to lower fertility. But conversely, greater gender egalitarianism and gender equity at home will increase fertility.

Similarly, Goldscheider et al. (2015) likened different stages of how gender equality influences fertility behaviour to the concept of a gender revolution. Thus, the authors ascribe the first half to the significant rise in women's labour force participation, while relating the second half to the increased involvement of men in household chores and childcare. Negative trends in fertility that have been observed in many developed countries are associated with the first half of the gender revolution, while the second half of the gender revolution is assumed to be associated with increased fertility. However, they point out that regional and cultural norms along with public policy could influence the pace of transition.

Esping-Andersen and Billari (2015) propose another vision of how gender equality shapes fertility trends. First of all, they confront both Becker's New Home Economics and the Second Demographic Transition thesis, the latter of which proposes a decrease in fertility due to the postmodernist ideational change of "less family". The recent increases in fertility in developed countries are argued as evidence that predictions based on these two mechanisms have failed. They claim that on the way to achieving a so-called family equilibrium with higher gender equality a society goes through a "period of uncertainty and normative confusion as to what constitutes proper gender roles and identities in family life" (ibid, p. 6). Thereby, they also

propose a U-shaped relationship between gender equality and fertility. Further on, Arpino, Esping-Andersen and Pessin (2015) point out that a negative relationship between macro-level gender ideology and fertility persists until 70 percent of the population supports public gender equality, but after this threshold a positive relationship emerges.

Another angle on the U-shape relationship between gender equality and fertility is raised by DeRose (2021) who claims that the role of religion has not been integrated in the previous concepts and that potential conflict between “old natalism” (religion) and “new natalism” (gender equality) should be considered. However, using data from Europe and North America, it was found that a curvilinear relationship between gender equality and fertility persists regardless of whether country-level religiosity is high or low. Thus, it is claimed that country-level religiosity does not dampen the potential for stimulating fertility recovery by gender equity.

Quantitative research on mechanisms connecting gender equality and fertility intentions

Numerous quantitative studies on the relationship between gender equality and fertility intentions have been conducted in both Western and non-Western contexts. To better differentiate the findings and contexts they are presented separately.

Western contexts

Neyer, Lappegård, and Vignoli (2013) examined which type of equality matters for fertility intentions in the context of Eastern and Western European countries using data from the Generations and Gender Survey (GGS) and pointed out that there was no universal relationship between gender equality and fertility intentions. The researchers studied different dimensions of gender equality such as those related to employment, financial resources, division of household work, and childcare that reflect both public-level and family-level measures. Employment was found to be positively associated with short-term fertility intentions for both childless women and men. In contrast, it lost its positive and significant effect on fertility intentions among mothers. As regards to household work division, it was found that it did not matter for the fertility intentions of either childless women and men. However, it did matter for parents and there were clear gender differences. Mothers who have a more equal division of household work were more eager to have another child in the next three years than mothers who did not receive such support. On the contrary, the division of household work did not matter for fathers’

childbearing intentions. It was also found that a more equal division of childcare was positively associated with childbearing intentions among one-child fathers, while there was no significant association for one-child mothers. In contrast, a more equal division of childcare was positively associated with childbearing intentions for mothers of two children, while there was no significant association for fathers of two children. The results of this study clearly show that women's fertility intentions are sensitive to matters of gender equality, but that this rarely holds for men's fertility intentions. It is also clear that the results are dependent on the parity under analysis.

Not surprisingly, other studies represent conflicting findings depending on the measures of gender equality. Thus, Puur and colleagues (2008) studied fertility intentions in association with men's egalitarian attitudes in eight European countries and found that greater gender egalitarianism among men was positively associated with their short-term fertility intentions. The only exception was Estonia with no apparent difference between traditional and egalitarian men's fertility intentions. Riederer and colleagues (2019) found a positive association between the modernized division of household work and fertility intentions among childless women and men in Austria, Hungary, France, and Poland. A similar pattern was found for parents with one child, while the association was not found significant for people with two and more children. In contrast, Okun and Raz-Yurovich (2019) point out that it is usually women's work-family conflict that is analysed and they propose a new argument that men's own experience of work-family conflict could have a depressing effect on a couple's fertility intentions. They did not find support for this in the context of the UK.

In the contexts of Italy and Netherlands, Mills et al. (2008) found that unequal division of household work only significantly and negatively impacts women's fertility intentions when they already bear a heavy load in terms of working hours and number of children. While within the context of Finland Mietinnen et al. (2011) found a U-shape association, in a country that is already in the second phase of the gender revolution. They extended the gender revolution approach, which is primarily about women's conflict in reconciling work and family, to that of men. It was found that both egalitarian and traditional attitudes were positively associated with men's fertility intentions compared to men with intermediate gender attitudes. They also found that gender attitudes had less impact on proximate and more concrete fertility intentions than on

more distant fertility intentions and that egalitarian men may start parenthood at a later stage of life-course than traditional men.

Non-Western contexts

The gender revolution framework, or as Kolk (2019) refers to as “fertility-equality reversal theories”, have been primarily tested outside of Western contexts in East Asian settings. Kan and Hertog (2017) and Kan et al. (2019) tested the applicability of gender revolution concepts in East Asian contexts with a different measure – fertility preferences – and found a positive association of husbands’ greater involvement in housework with both his own and partner’s fertility intentions. Nevertheless, they point out the great influence of patriarchal Confucian family values and that any gender revolution in this context has been stalled rather than progressing. Yang (2017) found that husband’s time spent on household work is not connected to fertility intentions in China and pointed out a resurgence of some traditional gender norms. Similar to the previous research in East Asian contexts, it is argued that unique cultural contexts in each country may influence the relationship between housework division and fertility outcomes. Yoon (2017) found that a supportive environment (husband’s participation in housework) has a stronger effect on actual fertility behaviour than on fertility intentions. It was found that a more equal division of housework and childcare increase the likelihood of a second birth in Korea.

Gender ideology and gender equality in the private sphere

To the best of my knowledge, no previous study has tested whether a match between gender ideology and actual gender equality in household settings are associated with fertility intentions. However, the association between the match and actual fertility has been examined in a few studies. Goldscheider, Bernhardt, and Brandén (2013) analysed how the alignment between gender ideology and actual sharing of housework/childcare is associated with fertility transitions in Sweden. They compared actual sharing of domestic tasks with attitudes towards sharing of childcare and housework that were declared before entering parenthood. They found a negative association between a mismatch of gender ideology and actual household behaviour on second births, while no impact was found for the first and later births. They also point out that the key inconsistency was over the division of housework rather than the division of childcare. These findings suggest that women with attitudes supporting gender equality are less likely to have a second child when men not share housework equally.

In another study, Aassve and colleagues (2015) examined whether the mismatch between actual gender division of housework and gender attitudes mattered for explaining childbearing outcomes. They also found that an inconsistency between gender ideology and partners' actual gender division of household chores has a negative impact on progressions to a second birth among women in Bulgaria, Czech Republic, France, Hungary, and Lithuania.

Qualitative research on mechanisms connecting gender equality and fertility intentions

Qualitative researchers have also explored the link between gender equality and fertility intentions. Thus, Brinton et al. (2018) conducted in-depth interviews in Japan and Spain (very low fertility) and the United States and Sweden (sub-replacement but higher fertility). Surprisingly, concerns about gender inequality were not evident in the reasoning by both genders in all the countries. This led researchers to dig deeper and examine how gender relations are reflected in the discourses. Contrary to gender equity theory it was found that the reference to existing or anticipated work-family conflict was more pronounced in the American and Swedish samples than in the more gender-unequal Spanish and Japanese samples. It seems there is greater "taken-for-grantedness" of women's employment in Sweden and the US, while in the Japanese context a highly unequal household work division was taken for granted. Thus, for example, rather than questioning the division's fairness, Japanese women were rather eager to adapt their employment to their fertility intentions by leaving the labour market or working part-time. The researchers conclude that the "influence of gender inequality is more complicated in post-industrial settings than existing theory would suppose" (p.305).

Another study was conducted in Turkey (Kavas, 2019), which is culturally closer to the context of interest in this paper. The main focus was on how the division of housework and childcare was connected with fertility intentions and the extent to which the gender revolution framework is relevant to the gender equality-fertility relationship in Turkey. The respondents were differentiated into three groups: "double-burdened women", "traditional providers" and "equal sharers". The first group carried the lion's share of housework after a first child while still being attached to the labour market and were reluctant to continue childbearing. They articulated either reducing their fertility and leaving the labour market as an adaptation mechanism that Kavas (2019) associated with the first stage of the gender revolution. The second group did not express strong ideological commitment to private gender equality and were more adherent to traditional

Turkish norms and gender-appropriated behaviour. Their behaviour illustrated the “pre-gender revolution model”, where they were still proceeding through the first half of the gender revolution” (p.20). The third group fits into the second half of the gender revolution framework where women’s fertility intentions were positively related to higher involvement of the husband in housework and childcare. Kavas (2019) concludes that the gender revolution is still evolving in Turkey with quite a slow pace and points out that “the notion of husband’s help does not entail women’s commitment to egalitarian gender ideology” (p.22).

The context of Kazakhstan

Kazakhstan is one of the most successful Post-Soviet Central Asian States because it has achieved significant economic development due to rich oil and other mineral resources after the turn of the century. During the Soviet Union time, it experienced the highest level of “Russification” in comparison with other countries in the region. In the 20th century, Kazakhstan became a recipient country not only for ethnic Russians who migrated within Industrialization and Virgin Land Development programs but also a lot of forcedly moved populations such as those of Germans, Poles, Tatars, and Koreans. For a long period, ethnic Russians outnumbered ethnic Kazakhs, which led the Russian language and culture to become dominant. This, in turn, led to discrimination against local language, culture, and religion. After gaining independence in the early 1990s there was high outmigration of Russians and people from other European-origin ethnic groups, while at the same time a state program repatriated ethnic Kazakhs from the countries to where they had migrated in the first part of the 20th century. Nowadays, ethnic Kazakhs make up 68% of the country’s population (Kazakhstan Statistics Committee, 2019).

Independence and processes related to nation-building and self-identification after the collapse of the Communist ideology along with the shifts in ethnic composition led to a process of restoring previous ethnic cultural heritages, Kazakh traditional norms, and religion. Several studies (Telebaev, 2003; Aydingün, 2010; Yerekesheva, 2020) point out that there has been an increase in religiosity since Kazakhstan became independent and processes of searching for an understanding of Muslim norms. At the same time, the country has been secular by law and it was the only state in Central Asia that did not ascribe Islam a special legal status. Moreover, the State pays special attention to controlling the registration of religious organizations, not least of all to prevent any forms of radicalization. Aydingün (2007) points out that the revival of Islam in

post-Soviet Kazakhstan has been used as a nation-building project and that it is a cultural phenomenon rather than a religious one as a reaction to the former oppressive Soviet regime and the opportunity to revive Kazakh values and traditions. Yerekesheva (2020) argues that post-Soviet Kazakhstan has a so-called folk Islam that also incorporates some pre-Islam faiths of Kazakhs, and which is more flexible and has less orthodox features than other branches of the religion. Thus, “folk Islam’s attributes are a cultural rather than purely religious heritage and practice” (Yerekesheva, 2020, p.87).

As a result of the restoration of cultural and religious traditions, old cultural schemas of gender and family have likely strengthened. Thus, Snajdr (2005) claims that the return of traditional customs and structures have affected the conceptualizations of gender in post-Soviet Kazakhstan. The attitudes towards women’s roles can be seen in such traditions as “kalym” (in Kazakh), which literally means a price for a bride. The etymology of the word “kelin” (Kazakh translation of daughter-in-law) literally means “incomer” from a different kinship and positions her as having lower status in the family (Werner, 2003). Daughters-in-law are culturally expected to be subordinate to parents-in-law and this is especially articulated in the way that they are supposed to serve the rest of the household if they share accommodation. Women are strongly encouraged by the extended family to bear children and are assumed to do most of the household chores (Snajdr, 2005).

Fertility in Kazakhstan

Kazakhstan already experienced fertility decline during the 1950s, but the decline was even more visible in the turbulent 1990s, resulting in a nadir in the total fertility rate (TFR) of 1.8 in 1999 (Spoorenberg 2013, from TFR 2.9 in 1989). This was followed by a substantial increase up to 2.5 in the second decade of the 21st century (Spoorenberg, 2015). Moreover, Kazakhs differed in fertility levels from European-origin ethnic groups before and after the collapse of the Soviet Union. Ethnic differentials in fertility have been analyzed using different approaches and data (Agadjanian and Qian, 1997, Agadjanian, 1999, 2002; Kan 2012, Spoorenberg 2013, 2015, 2018). However, Spoorenberg (2018) found that fertility preferences on the number of children per woman were more homogenous in Kazakhstan with a lower number of children (a mode of two children) than in the other neighbouring Central Asian countries.

The decline of fertility particularly among Russians in Kazakhstan has been extensively related to the political transformation and factors related to obtaining a minority status by Russians (Agadjanian and Qian, 1997; Agadjanian, 1999; Agadjanian et al., 2008). Spoorenberg (2015) makes another point within the framework of the minority status hypothesis (Goldscheider and Uhlenberg, 1969) focusing on the increase in fertility among Kazakh women who used to belong to the minority group for a long time during the Soviet Union (Russians outnumbered Kazakhs in Kazakhstan during the Soviet time). Fertility differentials went hand in hand with the changes in the population composition (Kazakhs become the majority) that pushed the indigenous population to increase its fertility while searching for self-identification and its new status.

Gender Equality in Kazakhstan

If we look at public gender equality, the global gender indices rank Kazakhstan quite high. Thus, according to the Gender Inequality Index (GII, 2020), Kazakhstan is ranked 44 out of 162 countries (the higher, the more gender-equal); it ranks above the Russian Federation and Ukraine, as well as the combined average for Europe and Central Asia. This is largely driven by high scores in women's education and participation in the labour market. For example, there is a very high proportion of women who have at least some secondary education (99.3%) which is higher than in countries such as Turkey (50.2%), Spain (75.4%) or Italy (75.9%). Moreover, at the tertiary level, women outnumber men in Kazakhstan, and the female to male enrolment ratio has even increased in recent years (Khitarishvili, 2016).

At the same time, the labour force participation rate among women is 62.7% (GII, 2019) and the gender gap in employment is not more than 10 percentage points. The gap in the average wage of working women in comparison to men is large but has improved from 62% in 2006 to 68% in 2018 (Kazakhstan Statistics Committee). The gender wage gap increases when women enter prime child-bearing years and is associated with higher involvement in household work and childcare (Khitarishvili, 2016). Additionally, occupational segregation is quite marked and women make up more than 70% of employees in the health, education, and social services sectors, while their representation in the financial and private sectors is slightly more than half (Khitarishvili, 2016; Buribayev and Khamzina, 2019). Kazakhstan's economy is highly concentrated in oil, gas, and other mineral resources industries, where the wages are the highest

and the proportion of women is the lowest. Thus, Van Klaveren and colleagues (2010) point out that industrial segregation in Kazakhstan contributes to the gender wage gap.

Family-related policies such as maternity/parental leave and public institutions such as the provision of kindergartens can affect women's labour force participation as well as gender equality in public and private spheres. Leave allowances and their size are differentiated by a mother's employment status. Thus, the social payment in case of loss of income due to pregnancy and childbirth is given only to working mothers and covers 100% of income for 126 days (70 days before childbirth and 56 days after childbirth). Additionally, a fixed state lump sum is paid in connection with the birth of a child irrespective of a mother's employment status before childbearing. Also, a monthly social benefit is paid for child care for one year after birth and it depends on the previous income. Thus, working mothers get 40% of income while unemployed women receive a flat rate that varies by the order of a child. In the most recent 2016 Labor Code it was made possible for fathers to take one year of paid leave and receive a social benefit at 40% of income. But this parental leave cannot be shared between parents and they must choose who takes the full term. Additionally, a working position is held by the employee for the period of maternity/parental leave (one year) and can be further prolonged by keeping a position up to three years since birth but without further allowance (Electronic government of Kazakhstan web-site).

As regards public childcare provision, according to the Ministry of Education, participation rates for 3-6-year-olds in early childhood education and care (ECEC) was 95.2%, while only 31.7% of 1-3-year-olds attended preschools in 2018 (National Report, 2019, JSC IAC). The number of preschool institutions in Kazakhstan has been varying from 8,743 preschools at the time of the collapse of the Soviet Union in 1991 to as low as 1,120 preschools in 2004 and a substantial increase up to 10,314 preschools in 2018. However, the OECD policy review of ECEC (Litjens et al., 2017) in Kazakhstan points out that there are insufficient provisions and places available for children aged between 1 and 3. The report also points out significant disparities in availability, access, and use of preschools linked to geography (high regional variation but also rural-urban differentials in availability) and socio-economic status (the use of childcare for 1-3 year-old children ranges from 18.7 % among the poorest wealth quantile to 60.5% among the richest).

In summary, there is a relatively high level of gender equality in public institutions such as education and employment that is also accompanied by public/private preschools and maternity leave policies. However, the revival of cultural and religious norms may undermine gender equality in family institutions and thus could delay progress towards gender egalitarianism.

Regional heterogeneity in Kazakhstan

Kazakhstan is the ninth country in the world by territory size and regional heterogeneity appears in both gender equality and fertility behaviour. The main ethnic groups are Kazakhs (68.5%) who are predominantly Muslims, and Russians (18.9%) who are mostly Orthodox Christians. The rural population constitutes 41.5% and the urban population 58.5% of the country, which has slightly more than 18 million people (Statistics Committee, 2020). The Northern and Eastern regions that border Russia are culturally more connected to Russia and have a higher proportion of Russian and other Slavic populations than the other regions. In contrast, the Southern regions that border other Central Asian countries are culturally more connected to other Turkic and Muslim ethnic groups.

Expectations:

In this study, fertility intentions are studied for women and men separately, as the data do not allow to analyse the combined partners in a couple. Based on the theoretical framework of gender revolution it is expected that a greater contribution by men in the private sphere (housework and childcare) will be positively associated with fertility intentions, of women as well as men. However, based on the above described context, the applicability of gender revolution, or other fertility-equality reversal theories to the context of Kazakhstan is an empirical question. To explore this question, the following relationships will be assessed:

1. In partnerships in which women are working, more gender egalitarian attitudes among both women and men will be associated with positive fertility intentions among both women and men. Conversely, it is expected that in partnerships in which women are not working, more traditional gender attitudes will also be associated with positive fertility intentions among both women and men.
2. In partnerships in which women are working, a more gender equal sharing of domestic work (either housework or childcare) will be associated with positive fertility intentions

among both women and men. Conversely, it is expected that in partnerships in which women are not working, a more traditional division of domestic work (both housework and childcare) will also be associated with positive fertility intentions among both women and men.

3. Consistency between gender egalitarian attitudes and gender egalitarian division of labour in the household (either housework or childcare) will also be associated with positive fertility intentions among both women and men.

I will analyse the above-mentioned relationships with fertility intentions for men and women separately since parenthood has strongly gendered effects in terms of household and childcare work (Sanchez and Thomson 1997; Neyer et al., 2013). The analyses of the intentions to have a first, second or three or more children will also be done separately, because gender values as well as the division of housework and childcare may have different effects at different parties. A critical juncture for gender equality is marked with the birth of the first child (Sanchez and Thomson 1997; Neyer and Rieck 2009, Neyer et al., 2013).

Data and Methods

Data

The data used is the first wave of the Generations and Gender Survey (GGS) in Kazakhstan. The fieldwork was completed in 2018 and the data was released in 2020 (Dossanova et al., 2020). It has a sample of 16,000 respondents aged 18-79 (response rate 93%, 14,857), which includes both women and men. We restrict the sample to heterosexual men (age 18-49) and women (18-45) with a co-residential partner at the time of the interview who are not pregnant or sterilized and whose partner is not pregnant or sterilized. Thus, the restricted sample size is 3,933 people. The dataset allows differentiating between biological, step, or adopted children of current and past partnerships. Parity is specified based on the number of biological children a respondent has ever had and is defined as parity 0 (individuals with no biological children), parity 1 (individuals with one biological child), and parity 2+ (individuals who had two or more biological children).

Dependent Variable: The dependent variable was based on the following question: “Do you have the intention to have a child within the next three years?” The survey allows for five possible answers: (a) “definitely not,” (b) “probably not,” (c) “unsure,” (d) “probably yes,” and (e) “definitely yes.”

Independent Variables: Three main independent variables were generated: Housework Division Index (HDI), Childcare Division Index (CDI), and Gender Ideology Index (GII). They reflect gender equality (actual sharing of responsibilities) and gender ideology (attitudes and beliefs). The indices were created as an average of the answers to the relevant questions.

Housework Division Index is based on the questions about “preparing meals”, “vacuuming” and “doing laundry”. Respondents’ answers include “always me”, “usually me”, “equally me and partner”, “usually partner”, “always partner”, “always or usually someone else”. Based on the gender of respondents they were further transformed into answers “always woman”, “usually woman”, “woman and man about equally”, “usually man”, “always man”. The Cronbach’s alpha (a measure of internal consistency of a composite variable) for the scale of housework division is 0.869 (a criterion of 0.7 and above is universally considered high internal consistency).

Childcare Division Index is constructed using five questions: “dressing”, “stay with ill children”, “playing with children”, “doing homework with children”, “putting children to bed”. The questions were asked to people with co-residential children. Based on the respondent’s gender, initial answers were further transformed into answers “always woman”, “usually woman”, “woman and man about equally”, “usually man”, “always man”. Cronbach’s alpha for the scale is 0.812.

In both *Housework Division Index* and *Childcare Division Index*, a greater contribution by men (usually man/always man) were treated as more egalitarian within the index. The higher the index, the more gender-equal the share of responsibilities within the couple. Unequal sharing with men contributing more than women was very uncommon but labelled together with equal sharing. The index was treated as continuous variable and also mean-centred.

Gender Ideology Index is measured by a set of five Likert scales on gender values: “for whom having a job is more important”, “for whom looking after children is more important”, “whose task is to look after home and children”, “whose task is to earn money for the family”, “better at caring for children”. Respondents’ answers include “Men definitely”, “Men slightly”, “Both Sexes Equally”, “Women slightly”, “Women definitely”. For the questions “for whom looking after children is more important”, “whose task is to look after home and children”, and “better at caring for children” the reversed variables were created, thereby “women slightly/women

definitely” were treated as more traditional. The Cronbach’s alpha for the scale is 0.681 (close to the conventional criterion of 0.7). The higher the index the more gender-egalitarian views a respondent has. The index was treated as a continuous variable and also mean-centred. The scale has a higher Cronbach’s alpha than separate indices for public and private gender equality measures that were used to conduct sensitivity analysis. The sensitivity analysis also revealed that using separate public and private gender equality indices did not change the direction of the relationship or statistical power.

Categorical indices and matching variable

To assess the expectation related to consistency in attitudes and behaviour, I made a categorization of women and men instead of relying on continuous measures. The questions for household division and childcare (always woman, usually woman, equally women and men, usually man, always man, always or usually someone else) were first converted into dummy variables on egalitarianism (more traditional (0) / more egalitarian (1)). For this case, “Always or usually someone else” was treated as belonging to the more traditional division, since it does not indicate an increase in men’s contribution. The equal and non-conventional (when men do more) categories were classified as “egalitarian”. Two summary indices were then created that vary from 0 to 3 for housework (three questions index) and 0 to 5 for childcare (five questions index). This index was further transformed into more traditional (0 for housework and 0-1 for childcare), intermediate (1 for housework, 2-3 for childcare) and more egalitarian (2-3 for housework and 4-5 for childcare). The Gender Ideology Index was also converted into categorical variable with three levels. Finally, a matching variable was created that consists of the following levels: traditional match, intermediate match, egalitarian match, a mismatch between more egalitarian values and less equal behaviour, a mismatch between less egalitarian values and more equal behaviour.

Control Variables

The following demographic control variables were included in the models, depending on the parity: respondent’s age group (19-24, 25-29, 30-34, 35-39, 40+, for parity 0), respondent’s or female partner’s (in case of male respondent) age at last birth (19-24, 25-29, 30-34, 35-39, 40+, for parities 1 and 2+), age group of the youngest child (0-2, 3-5, 6-8, 9 years and older, for parities 1 and 2+). Socioeconomic status control variables include respondent’s education (lower

secondary and less; upper and post-secondary, not tertiary; tertiary), respondent's labour force status (employed; unemployed; homemaker (as defined in the dataset and corresponds to Russian questionnaire); maternal/parental leave; other (in education, senior/retired, but of reproductive age (some occupations can retire earlier than upper limit (49), permanently sick/disabled and etc.)), partner's labour force status (employed; unemployed; homemaker; maternal/parental leave; other (in education, senior, sick and etc.)), and an affordability index (Cronbach's alpha 0.65, a composite variable constructed on the questions whether a household can afford to keep the house warm, weeks of holiday, replacing furniture, new clothes, eating meat, entertaining family and friends, paying rent, mortgage, bills and debts).

Method

The categorical dependent variable "Do you have the intention to have a child within the next three years?" varies from 1 ("definitely not") to 5 ("definitely yes"). It was treated as an interval measure, where intentions move along a continuum of certainty from definitely not to definitely intending to have a/another child. This measurement strategy was validated by Thomson and Brandreth (1995) and Thomson (1997), as well as used by Billingsley and Ferrarini (2014). Ordinary least squares regression has been used for the analysis with interactions of key variables that allow the hypotheses to be tested.

Results

Table 1 presents linear regression results of intending to have a/nother child for women at different parities from models where the focus is on gender egalitarian attitudes, measured with a gender ideology index. Net of control variables, having more gender egalitarian attitudes was not statistically related to childbearing intentions for childless women or women with one child. For women with two or more children, however, intentions to have another child were lower when attitudes were more gender egalitarian. The key comparison according to labour force status is between being employed and being a homemaker. Including an interaction of the gender ideology index and labour force status did not conclusively improve the model fit for any parities, although there is some indication of a moderating effect on the relationship for parity 2+ (improvement according to AIC and a likelihood-ratio test, but not BIC). The slope for homemakers is $-.507$, whereas it is only $-.174$ ($0.427 + (-0.094) + (-0.507) = -.174$) for employed women. It seems then that more traditional gender attitudes are associated with women's

intentions to have another child when they are not in paid employment, but this does not hold for employed women. We do not find that gender egalitarian attitudes among working women at higher parities are associated with fertility intentions at all.

Table 1. Regression Results from Adjusted Ordinary Least Squares Models of Women’s Intention to Have a Child in the Next 3 Years, by women’s labour force participation, gender ideology, and parity, women

	Parity 0		Parity 1		Parity 2+	
	Model without interaction	Model with interaction	Model without interaction	Model with interaction	Model with interaction	Model with interaction
Gender Ideology Index	0.094	0.635	0.084	-0.268	-0.179***	-0.507***
Labour force status (ref. Homemaker)						
Employed	-0.211	-0.183	-0.363	-0.335	-0.126	-0.094
Unemployed	-0.209	-0.228	-0.025	0.018	0.019	0.068
Parental leave			-0.576**	-0.562*	-0.232*	-0.191
Other	-0.703	-0.715	-1.025**	-0.985*	0.018	0.038
Interaction (ref. Homemaker#Index)						
Employed#Gender Ideology Index		-0.641		0.340		0.427**
Unemployed#Gender Ideology Index		-0.549		0.636*		0.358*
Parent. leave#Gender Ideology Index				0.393		0.326
Other#Gender Ideology Index		-0.651		0.233		0.166
Constant	4.447***	4.439***	3.391***	3.316***	2.997***	2.932***
N	161	161	511	511	1,623	1,623
Adj. R-squared	0.13	0.12	0.21	0.21	0.15	0.15
aic	470.47	473.60	1651.00	1654.82	5396.23	5394.83
bic	504.37	516.74	1727.25	1748.02	5498.68	5518.84

* p<0.05, ** p<0.01, *** p<0.001

Models adjusted for age (in parity 0 models) or age at last birth (in parity 1 and 2+ models), age of the youngest child (in parity 1 and 2+ models), respondent’s education, affordability index (in parity 1 and 2+ models), partner’s education (in parity 1 models) and partner’s employment (in parity 2+ models).

Table 2 presents linear regression results of intending to have a/nother child for men at different parities from models where the focus is on gender egalitarian attitudes, measured with a gender ideology index. As for women, we do not see that gender egalitarian attitudes are related to fertility intentions for childless men or men with one child, but this also holds for fathers of two and more children (models without interaction). There is also no statistical difference between men who have partners that are homemakers vs. partners that are in paid employment. Including an interaction of the gender ideology index and labour force status did not conclusively improve the model fit for any parities, although there is some indication of a moderating effect on the

relationship for parity 2+ (improvement according to AIC and a likelihood-ratio test, but not BIC). The slope for partners of homemakers is -.286, whereas it is 0.083 for partners of employed women (although the interaction is not statistically significant). It seems then that more traditional gender attitudes are associated with men’s intentions to have another child when their partners are not in paid employment.

Table 2. Regression Results from Adjusted Ordinary Least Squares Models of Men’s Intention to Have a Child in the Next 3 Years, by women’s labour force participation, gender ideology, and parity, men

	Parity 0		Parity 1		Parity 2+	
	Model without interaction	Model with interaction	Model without interaction	Model with interaction	Model without interaction	Model with interaction
Gender Ideology Index	-0.217	0.105	-0.112	-0.597*	-0.034	-0.286*
Partner’s Labour force status (ref. Homemaker)						
Employed	-0.302	-0.341	0.147	0.250	0.035	0.082
Unemployed	-0.208	-0.305	-0.194	-0.066	0.204	0.324*
Parental leave			-0.179	-0.064	-0.293*	-0.289
Other	-0.274	-0.325	-0.693*	-0.440	0.110	0.050
Interaction (ref. Homemaker#Index)						
Employed # Gender Ideology Index		-0.459		0.647*		0.287
Unemployed # Gender Ideology Index		0.143		0.574		0.589**
Parental leave # Gender Ideology Index				0.370		0.074
Other # Gender Ideology Index		-0.652		0.717		-0.029
Constant	2.289**	2.210**	3.475***	3.272***	3.767***	3.704***
N	159	159	403	403	1,037	1,037
Adj. R-squared	0.11	0.11	0.19	0.19	0.13	0.14
aic	518.30	520.82	1256.34	1257.82	3417.40	3414.44
bic	561.27	572.99	1312.32	1329.81	3501.44	3518.27

* p<0.05, ** p<0.01, *** p<0.001

Models adjusted for age (in parity 0 models) or age at last birth (in parity 1 and 2+ models), age of the youngest child (in parity 1 and 2+ models), respondent’s education (in parity 2+ models), affordability index (in parity 0 and 1 models), partner’s education (in parity 0 and 2+ models) and respondent’s employment (in parity 0 models).

Table 3 presents linear regression results of intending to have a/nother child for women at different parities from models where the focus is on housework division, measured with a housework division index. Net of control variables, having more equal division of housework was not statistically related to childbearing intentions for childless women. For women with one child or women with two or more children, however, intentions to have another child were lower when housework division was more equal. Including an interaction of the housework division

index and labour force status did not conclusively improve the model fit for any parities. It seems then that more traditional division of housework is positively associated with women's intentions to have another child irrespective of their labour force participation status.

Table 3. Regression Results from Adjusted Ordinary Least Squares Models of Women's Intention to Have a Child in the Next 3 Years, by women's labour force participation, household division, and parity

	Parity 0		Parity 1		Parity 2+	
	Model without interaction	Model with interaction	Model without interaction	Model with interaction	Model without interaction	Model with interaction
Household Division Index	-0.130	-0.162	-0.263**	-0.235	-0.122*	-0.115
Labour force status (ref. Homemaker)						
Employed	-0.152	-0.140	-0.261	-0.270	-0.140	-0.142
Unemployed	-0.192	-0.185	0.018	0.027	0.036	0.026
Parental leave			-0.507*	-0.517*	-0.216	-0.208
Other	-0.655	-0.729	-0.927*	-0.913*	0.103	0.103
Interaction (ref. Homemaker#Index)						
Employed # Household Division Index		-0.026		0.003		-0.010
Unemployed # Household Division Index		0.111		0.158		-0.070
Parental leave # Household Division Index				-0.148		0.064
Other # Household Division Index		0.387		-0.458		-0.049
Constant	4.417***	4.427***	3.371***	3.380***	2.967***	2.960***
N	161	161	511	511	1,632	1,632
Adj. R-squared	0.13	0.12	0.23	0.23	0.15	0.15
aic	469.40	473.98	1641.41	1647.33	5433.89	5441.30
bic	503.30	517.12	1717.67	1740.53	5547.24	5576.24

* p<0.05, ** p<0.01, *** p<0.001

Models adjusted for age (in parity 0 models) or age at last birth (in parity 1 and 2+ models), age of the youngest child (in parity 1 and 2+ models), respondent's education, affordability index (in parity 1 and 2+ models), partner's education (in parity 1 and 2+models) and partner's employment (in parity 2+ models).

Table 4 presents linear regression results of intending to have a/nother child for men at different parities from models where the focus is on housework division, measured with a housework division index. Net of control variables, having more equal division of housework was negatively related to childbearing intentions for men at all parities. The key comparison according to labour force status is between having an employed wife/partner and having a wife/partner who is a homemaker. However, including an interaction of the housework division index and partner's labour force status did not conclusively improve the model fit for any parities (even though parity 0 shows some improvement according to AIC, it does not show it according to BIC and likelihood-ratio test). It seems then that more traditional division of housework is

positively associated with men’s intentions to have another child irrespective of their partner’s labour force participation status.

Table 4. Regression Results from Adjusted Ordinary Least Squares Models of Men’s Intention to Have a Child in the Next 3 Years, by women’s labour force participation, household division, and parity

	Parity 0		Parity 1		Parity 2+	
	Model without interaction	Model with interaction	Model without interaction	Model with interaction	Model without interaction	Model with interaction
Household Division Index	-0.240*	0.937	-0.144*	-0.024	-0.163**	0.007
Labour force status (ref. Homemaker)						
Employed	-0.176	-0.481	0.161	0.137	0.066	0.052
Unemployed	-0.222	-0.543	-0.185	-0.170	0.234	0.204
Parental leave			-0.187	-0.169	-0.279	-0.307*
Other	-0.253	-0.540	-0.628	-0.631	0.131	0.131
Interaction (ref. Homemaker#Index)						
Employed # Household Division Index		-1.122		0.002		-0.267
Unemployed # Household Division Index		-1.428		-0.275		-0.021
Parental leave # Household Division Index				-0.419		-0.206
Other # Household Division		-2.283*		-0.041		0.053
Constant	3.041***	3.378***	3.475***	3.523***	3.832***	3.861***
N	159	159	406	406	1,039	1,039
Adj. R-squared	0.12	0.14	0.19	0.20	0.14	0.14
aic	515.73	514.33	1261.68	1263.52	3413.45	3415.49
bic	555.63	563.43	1317.77	1335.63	3487.64	3509.47

* p<0.05, ** p<0.01, *** p<0.001

Models adjusted for age (in parity 0 models) or age at last birth (in parity 1 and 2+ models), age of the youngest child (in parity 1 and 2+ models), affordability index (in parity 1 models), partner’s education (in parity 0 and 2+models) and partner’s employment (in parity 0 models).

Table 5 presents linear regression results of intending to have another child for women at different parities from models where the focus is on childcare division, measured with a childcare division index. The sample size is slightly different for all parities from the models for household work division and gender values, because only women with co-residential children of 10 years and younger were included due to the specificity of the questions related to childcare. Net of control variables, having more equal division of childcare was not statistically related to childbearing intentions for women with one or two or more children. There is also no statistical difference between women who are homemakers vs. women in paid employment for those who have two and more children. However, for women with one child employed women have lower

intentions (with quite a strong effect size) than homemakers. Though, including an interaction of the childcare division index and labour force status did not conclusively improve the model fit for any parities.

Table 5. Regression Results from Adjusted Ordinary Least Squares Models of Women’s Intention to Have a Child in the Next 3 Years, by women’s labour force participation, childcare division, and parity, women

	Parity 1		Parity 2+	
	Model without interaction	Model with interaction	Model without interaction	Model with interaction
Childcare Division Index	0.116	0.291	-0.064	-0.177
Labour force status (ref. Homemaker)				
Employed	-0.486*	-0.540**	-0.168	-0.148
Unemployed	-0.142	-0.218	0.034	0.072
Parental leave	-0.636**	-0.675**	-0.276*	-0.259*
Other	-1.088**	-1.189**	-0.173	-0.223
Interaction (ref. Homemaker#Index)				
Employed # Childcare Division Index		-0.219		0.133
Unemployed # Childcare Division Index		-0.427		0.288
Parental leave # Childcare Division Index		-0.119		0.091
Other # Childcare Division Index		0.102		-0.201
Constant	3.606***	3.633***	3.174***	3.158***
N	375	375	1,362	1,362
Adj. R-squared	0.10	0.09	0.09	0.09
aic	1141.27	1146.85	4550.76	4554.91
bic	1204.10	1225.38	4634.23	4659.25

* p<0.05, ** p<0.01, *** p<0.001 Models adjusted for age at last birth, age of the youngest child, affordability index, and respondent’s education.

Table 6 presents linear regression results of intending to have another child for men at different parities from models where the focus is on childcare division, measured with a childcare division index. Net of control variables, having more equal division of childcare was negatively related to childbearing intentions for men with one child as well as for fathers with two or more children. There is no statistical difference between men whose partners are homemakers vs. men whose partners are in paid employment. Including an interaction of the childcare division index and partner’s labour force status did not conclusively improve the model fit for any parities, although there is some indication of a moderating effect on the relationship for parity 1. The slope for partners of homemakers is -.646, whereas it is only -0.032 for partners of employed women (although the interaction is not statistically significant). It seems that more traditional division of

childcare is positively associated with men’s intentions to have another child when their partners are not in paid employment, but the opposite again is not true.

Table 6. Regression Results from Adjusted Ordinary Least Squares Models of Men’s Intention to Have a Child in the Next 3 Years, by women’s labour force participation, childcare division, and parity, men

	Parity 1		Parity 2+	
	Model without interaction	Model with interaction	Model without interaction	Model with interaction
Childcare Division Index	-0.331***	-0.646*	-0.166**	-0.041
Labour force status (ref. Homemaker)				
Employed	0.123	0.086	-0.009	-0.025
Unemployed	-0.145	-0.116	0.114	0.089
Parental leave	-0.263	-0.252	-0.303*	-0.331*
Other	-0.757*	-1.427***	0.259	0.363
Interaction (ref. Homemaker#Index)				
Employed # Childcare Division Index		0.528		-0.122
Unemployed # Childcare Division Index		0.428		-0.176
Parental leave # Childcare Division Index		0.187		-0.299
Other # Childcare Division Index		-0.872		0.265
Constant	3.621***	3.572***	3.807***	3.794***
N	330	330	893	893
Adj. R-squared	0.12	0.14	0.12	0.12
aic	972.87	969.49	2923.74	2928.03
bic	1026.06	1037.87	3024.42	3047.90

* p<0.05, ** p<0.01, *** p<0.001

Models adjusted for age at last birth, age of the youngest child, affordability index (parity 1 model), respondent’s education (parity 2+ model), partner’s education (parity 2+ model), and respondent’s employment (parity 2+ model).

The next measure is a match between gender ideology and housework and childcare, respectively. For the purposes of accessing whether *consistency between gender egalitarian attitudes and gender egalitarian division of labour in the household (either housework and childcare) is associated with positive fertility intentions among both women and men* a matching variable between categorical variables of the indices was used (described in data and methods section). It is worth to note that one mismatch category, where more egalitarian gender values are linked with more traditional behaviour, is the biggest category in the sample, while the egalitarian match between values and behaviour is the smallest category at all parities. Thus, the mismatch category with a less equal behaviour is used as a reference category for the matching variable. Table 7 presents linear regression results of intending to have a/nother child for both

women and men at different parities from models where the focus is on a match between gender attitudes and household division, measured with a combined variable. Net of control variables, having an egalitarian match between gender values and housework division was negatively associated with childbearing intentions for both women and men at all parities, but a statistically significant coefficient (with a strong effect size) is found only for childless women. For both women and men with two and more children, having a traditional match between gender values and housework division was positively associated with intentions to have another child in the next three years. Having a mismatch with more egalitarian gender values and less equal division of housework was negatively associated with fertility intentions of childless women and men with two and more children.

Table 7. Regression Results from Adjusted Ordinary Least Squares Models of Women’s and Men’s Intention to Have a Child in the Next 3 Years, a match between gender ideology and household division, by parity

	Women			Men		
	Parity 0	Parity 1	Parity 2+	Parity 0	Parity 1	Parity 2+
Traditional match	-0.356	-0.165	0.194*	0.337	0.126	0.176*
Intermediate match	-0.236	0.022	-0.310*	0.514	-0.078	-0.360
Egalitarian match	-0.874*	-0.399	-0.268	-0.457	-0.505	-0.232
Mismatch less equal behaviour	(ref.)	(ref.)	(ref.)	(ref.)	(ref.)	(ref.)
Mismatch more equal behaviour	-0.758*	-0.357	-0.132	-0.514	-0.109	-0.319*
Constant	4.384***	3.162***	2.971***	1.951**	3.289***	3.433***
N	162	511	1,639	160	406	1,042
Adj. R-squared	0.17	0.22	0.15	0.19	0.19	0.14

* p<0.05, ** p<0.01, *** p<0.001

Models adjusted for age (in parity 0 models) or age at last birth (in parity 1 and 2+ models), age of the youngest child (in parity 1 and 2+ models), affordability index (in parity 0,1,2+ models for men, in parity 1 and 2+ models for women), respondent’s education (in models for women), respondent’s employment (in parity 0,1,2+ models for men, in parity 1 and 2+ models for women), partner’s education (in parity 1 and 2+models for women) and partner’s employment (in parity 2+ model for men).

Table 8 presents linear regression results of intending to have another child for both women and men at different parities from models where the focus is on a match between gender egalitarian attitudes and childcare division index, measured with a matching variable. Net of control variables, having an egalitarian match was not statistically related to childbearing intentions for both women and men at any parity. For women with two and more children and men with one child, a traditional match between gender values and childcare division was positively associated with intentions to have a child in the next three years. A mismatch between less egalitarian

gender values and more equal division of childcare was positively associated with women's fertility intentions for a third or higher order child.

Table 8. Regression Results from Adjusted Ordinary Least Squares Models of Women's and Men's Intention to Have a Child in the Next 3 Years, a match between gender ideology and childcare division, by parity

	Women		Men	
	Parity 1	Parity 2+	Parity 1	Parity 2+
Traditional match	-0.123	0.294**	0.428**	0.090
Intermediate match	0.100	0.075	0.230	-0.115
Egalitarian match	0.369	0.204	0.621	0.202
Mismatch less equal behaviour	(ref.)	(ref.)	(ref.)	(ref.)
Mismatch more equal behaviour	-0.021	0.198*	0.013	-0.079
Constant	3.406***	2.833***	3.001***	3.861***
N	514	1,632	406	1,039
Adj. R-squared	0.21	0.15	0.20	0.14

* p<0.05, ** p<0.01, *** p<0.001

Models age at last birth, age of the youngest child, affordability index (in parity 1,2+ models for women, in parity 1 model for men), respondent's education (in parity 1, 2+ models for women, in parity 2+ model for men), respondent's employment (in parity 1,2+ models for men, in parity 1 model for women), partner's education (in parity 2+model for men) and partner's employment (in parity 1,2+ models for men and 2+ model for women).

Discussion

The study aimed to examine the current stage of the gender revolution framework in Kazakhstan by accessing whether fertility intentions are associated with gender attitudes or domestic work division (both housework and childcare) depending on women's labour force participation. The assessment was carried out for fertility intentions of first, second, third or higher-order children for women and men in Kazakhstan. The question is important because we do not know enough about these associations in a context that is not a developed country. Kazakhstan has experienced relatively good development in terms of conventional gender equality in the public sphere (education and employment), but gender equality in family settings in relation to labour force participation or the match between gender attitudes and actual behaviour have not been studied previously.

It appears that the gender revolution framework may be less applicable to the context of Kazakhstan because the main mechanisms underlying the theoretical framework were not revealed working in the same directions as in the previously studied European and East-Asian

contexts. This could mean that the framework is more applicable to contexts that have already experienced low fertility (as have both European and East-Asian countries), but also to contexts that have a higher proportion of the population supporting gender egalitarian values, which enables any differentiation in the associations between gender equality and fertility. Kazakhstan does not have low fertility, but it also appears that in contrast to the development idealism that sometimes prevail in contexts of Central and Eastern Europe after the collapse of the Communist regimes (Thorton and Philipov ,2009), Kazakhstan is not following the same route or embracing the values and familial systems of the West. In contrast to Eastern Europe that according to the development idealism has followed Western European patterns of behaviour on a way to a more modern development, Kazakhstan went through the process of self-identification and nation-building that was associated with restoration of cultural norms. This could have reinforced patriarchal norms and meanings of what “proper” Kazakh gender roles are.

In contrast to the expectation within the second half of the gender revolution framework, I do not find, more gender egalitarian attitudes or a more equal division of housework or childcare are positively associated with fertility intentions when women are working. Thus, it appears that the main feature of the second half of the gender revolution (positive effect of higher contribution to household chores or childcare by men) is not working in Kazakhstan. Also, in contrast to earlier studies on a match between gender attitudes and housework division (Goldscheider, Bernhardt, and Brandén, 2013; Aassve et al., 2015; though on different fertility measures), having a gender egalitarian match in Kazakhstan was not statistically related to childbearing intentions for women at any parity. It was rather the match between traditional gender values and division of housework and childcare that was positively associated with fertility intentions for both women and men.

In summary, it seems that gender ideology and sharing of domestic work have less effect on fertility intentions in Kazakhstan than in previously studied developed contexts. It is likely that the Kazakh context is related to a higher cultural taken-for-grantedness of unequal household division, similar to what Brinton and colleagues (2018) found for Japan where references to any work-family conflict was also little pronounced. It could also be argued that many women in Kazakhstan belong to the category of “traditional providers” as described in a qualitative study on Turkey (Kavas, 2019), who do not express strong ideological commitment to private gender

equality and, in the case of Turkey, were more adherent to traditional Turkish norms and gender-appropriate behaviour. Thus, in line with the restoration of cultural traditions within nation-building processes after the collapse of the Soviet Union, adherence to traditional Kazakh norms and gender-appropriate behaviour could help us understand why the relationships we studied were not in line with the gender revolution framework.

However, contrary to the public gender equality settings of many gender unequal societies (including previously mentioned Turkey and Japan), women in Kazakhstan experience higher involvement in labour market. So, they are not at a pre-gender revolution stage. But it appears that they do not experience gender equality at home to the same extent as in other developed countries, and have thus not achieved the second stage of the gender revolution. Nevertheless, this does not seem to conflict with their fertility intentions. Similar to the Turkish context, it can be assumed that “the notion of husband’s help does not entail women’s commitment to egalitarian gender ideology” (Kavas 2019, p.22). Thus, a quantitative categorization using survey data may not reveal the underlying mechanisms behind forming intentions. Further qualitative research is needed to study the context and the mechanisms that form fertility behaviour in the country.

Nevertheless, the current study contributes to the literature on gender equality in post-Soviet Central Asia, and to fertility research by adding a new dimension to previously studied parity progressions (Kan, 2012), and completed fertility and fertility preferences (Agadjanian and Qian, 1997; Agadjanian, 1999; Agadjanian et al., 2008; Spoorenberg 2013, 2015, 2018). Further quantitative research on gender equality in Kazakhstan and Central Asia is needed preferably with longitudinal data and more detailed measures of income, ethnicity, rural-urban residence and gender dimensions.

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A1. Regression Results from Adjusted Ordinary Least Squares Models of Women's Intention to Have a Child in the Next 3 Years, women's labour force participation, gender ideology, by parity, women

	Parity 0		Parity 1		Parity 2+	
	Model without interaction	Model with interaction	Model without interaction	Model with interaction	Model with interaction	Model with interaction
Gender Ideology Index	0.094	0.635	0.084	-0.268	-0.179***	-0.507***
Labour force status (ref. Homemaker)						
Employed	-0.211	-0.183	-0.363	-0.335	-0.126	-0.094
Unemployed	-0.209	-0.228	-0.025	0.018	0.019	0.068
Parental leave			-0.576**	-0.562*	-0.232*	-0.191
Other	-0.703	-0.715	-1.025**	-0.985*	0.018	0.038
Age (ref. 19-24)						
25-29	-0.558*	-0.539*				
30-34	-0.271	-0.232				
35-39	-0.936**	-0.885**				
40+	-1.322***	-1.358***				
Age at first birth (ref. 24 years and younger)						
25-29 years			0.092	0.081	0.034	0.026
30-34 years			-0.452*	-0.460*	-0.298**	-0.303**
35-39 years			-0.397	-0.408	-0.752***	-0.749***
40 years and older			-1.126	-1.021	-0.830***	-0.856***
Age of the youngest child (ref. 0-2 years)						
3-5 years			-0.264	-0.268	-0.234**	-0.243**
6-8 years			-0.543**	-0.564**	-0.504***	-0.504***
9 years and older			-1.448***	-1.449***	-1.228***	-1.229***
Education (ref. upper and post-secondary, not tertiary)						
lower secondary and less	0.008	0.027	0.447**	0.455**	-0.014	-0.022
tertiary	0.435*	0.424	0.509***	0.520***	0.226**	0.225**
Affordability Index			0.095**	0.102**	0.056**	0.056**

Partner's Education (ref. upper and post-secondary, not tertiary)						
lower secondary and less				-0.194	-0.202	
tertiary				-0.185	-0.195	
Partner's Labour force status (ref. Employed)						
Unemployed					0.471***	0.477***
Homemaker					0.008	-0.016
Other					0.062	0.041
Interaction (ref. Homemaker#Index)						
Employed#Gender Ideology Index				-0.641	0.340	0.427**
Unemployed#Gender Ideology Index				-0.549	0.636*	0.358*
Parent. leave#Gender Ideology Index					0.393	0.326
Other#Gender Ideology Index				-0.651	0.233	0.166
Constant	4.447***	4.439***	3.391***	3.316***	2.997***	2.932***
N	161	161	511	511	1,623	1,623
Adj. R-squared	0.13	0.12	0.21	0.21	0.15	0.15
aic	470.47	473.60	1651.00	1654.82	5396.23	5394.83
bic	504.37	516.74	1727.25	1748.02	5498.68	5518.84

* p<0.05, ** p<0.01, *** p<0.001

Note: In this and all other tables, control variables are different by gender and by parity basing on goodness-of-fit tests.

A2. Regression Results from Adjusted Ordinary Least Squares Models of Men's Intention to Have a Child in the Next 3 Years, women's labour force participation, gender ideology, by parity, men

	Parity 0		Parity 1		Parity 2+	
	Model without interaction	Model with interaction	Model without interaction	Model with interaction	Model with interaction	Model with interaction
Gender Ideology Index	-0.217	0.105	-0.112	-0.597*	-0.034	-0.286*
Partner's labour force status (ref. Homemaker)						
Employed	-0.302	-0.341	0.147	0.250	0.035	0.082
Unemployed	-0.208	-0.305	-0.194	-0.066	0.204	0.324*
Parental leave			-0.179	-0.064	-0.293*	-0.289
Other	-0.274	-0.325	-0.693*	-0.440	0.110	0.050
Partner's age (ref. 19-24)	(ref.)	(ref.)				
25-29	0.192	0.258				
30-34	-0.145	-0.128				
35-39	-0.829*	-0.758				
40+	-0.584	-0.561				
Partner's age at first birth (ref. 24 years and younger)						
25-29 years			-0.150	-0.125	-0.270*	-0.262*
30-34 years			-0.565**	-0.550**	-0.477***	-0.480***
35-39 years			-0.885**	-0.881*	-1.027***	-1.009***
Age of the youngest child (ref. 0-2 years)						
3-5 years			-0.215	-0.227	-0.705*	-0.678*
6-8 years			-0.392*	-0.350*	-0.068	-0.072
9 years and older			-0.414	-0.376	-0.701***	-0.707***
			-1.428***	-1.404***	-1.075***	-1.076***
Affordability Index	0.081	0.089	0.099**	0.107***		
Partner's Education (ref. upper and post-secondary, not tertiary)						
lower secondary and less	0.019	-0.040			-0.147	-0.152
tertiary	0.175	0.214			0.093	0.116

Education (ref. upper and post-secondary, not tertiary)						
lower secondary and less					0.082	0.090
tertiary					0.190	0.190
Respondent's labour force status (ref. Labour force status (ref. Employed))						
Unemployed	-0.222	-0.199				
Other	-1.436**	-1.437**				
Interaction (ref. Homemaker#Index)						
Employed#Gender Ideology Index		-0.459		0.647*		0.287
Unemployed#Gender Ideology Index		0.143		0.574		0.589**
Parent. leave#Gender Ideology Index				0.370		0.074
Other#Gender Ideology Index		-0.652		0.717		-0.029
Constant	2.289**	2.210**	3.475***	3.272***	3.767***	3.704***
N	159	159	403	403	1,037	1,037
Adj. R-squared	0.11	0.11	0.19	0.19	0.13	0.14
aic	518.30	520.82	1256.34	1257.82	3417.40	3414.44
bic	561.27	572.99	1312.32	1329.81	3501.44	3518.27

* p<0.05, ** p<0.01, *** p<0.001

A3. Regression Results from Adjusted Ordinary Least Squares Models of Women's Intention to Have a Child in the Next 3 Years, women's labour force participation, household division, by parity

	Parity 0		Parity 1		Parity 2+	
	Model without interaction	Model with interaction	Model without interaction	Model with interaction	Model with interaction	Model with interaction
Household Division Index	-0.130	-0.162	-0.263**	-0.235	-0.122*	-0.115
Labour force status (ref. Homemaker)						
Employed	-0.152	-0.140	-0.261	-0.270	-0.140	-0.142
Unemployed	-0.192	-0.185	0.018	0.027	0.036	0.026
Parental leave			-0.507*	-0.517*	-0.216	-0.208
Other	-0.655	-0.729	-0.927*	-0.913*	0.103	0.103
Age (ref. 19-24)						
25-29	-0.579*	-0.568*				
30-34	-0.239	-0.244				
35-39	-0.902**	-0.901**				
40+	-1.332***	-1.330***				
Age at first birth (ref. 24 years and younger)						
25-29 years			0.089	0.084	0.027	0.029
30-34 years			-0.437*	-0.436*	-0.306**	-0.304**
35-39 years			-0.441	-0.472	-0.749***	-0.750***
40 years and older			-1.312	-1.265	-0.838***	-0.830***
Age of the youngest child (ref. 0-2 years)						
3-5 years			-0.260	-0.253	-0.214*	-0.212*
6-8 years			-0.527**	-0.532**	-0.494***	-0.493***
9 years and older			-1.429***	-1.424***	-1.189***	-1.186***
Education (ref. upper and post-secondary, not tertiary)						
lower secondary and less	0.010	-0.028	0.425**	0.424*	-0.056	-0.053
tertiary	0.466*	0.453*	0.513***	0.524***	0.198*	0.199*

Partner's Education (ref. upper and post-secondary, not tertiary)							
lower secondary and less				-0.191	-0.183	0.144	0.144
tertiary				-0.178	-0.194	0.105	0.106
Affordability Index				0.088**	0.088**	0.053**	0.053**
Partner's Labour force status (ref. Employed)							
Unemployed						0.418**	0.417**
Homemaker						0.039	0.035
Other						0.119	0.125
Interaction (ref. Homemaker#Index)							
Employed # Household Division Index			-0.026		0.003		-0.010
Unemployed # Household Division Index			0.111		0.158		-0.070
Parental leave # Household Division Index					-0.148		0.064
Other # Household Division Index			0.387		-0.458		-0.049
Constant	4.417***	4.427***	3.371***	3.380***	2.967***	2.960***	
N	161	161	511	511	1,632	1,632	
Adj. R-squared	0.13	0.12	0.23	0.23	0.15	0.15	
aic	469.40	473.98	1641.41	1647.33	5433.89	5441.30	
bic	503.30	517.12	1717.67	1740.53	5547.24	5576.24	

* p<0.05, ** p<0.01, *** p<0.001

A4. Regression Results from Adjusted Ordinary Least Squares Models of Men's Intention to Have a Child in the Next 3 Years, women's labour force participation, household division, by parity

	Parity 0		Parity 1		Parity 2+	
	Model without interaction	Model with interaction	Model without interaction	Model with interaction	Model with interaction	Model with interaction
Household Division Index	-0.240*	0.937	-0.144*	-0.024	-0.163**	0.007
Partner's Labour force status (ref. Homemaker)						
Employed	-0.176	-0.481	0.161	0.137	0.066	0.052
Unemployed	-0.222	-0.543	-0.185	-0.170	0.234	0.204
Parental leave			-0.187	-0.169	-0.279	-0.307*
Other	-0.253	-0.540	-0.628	-0.631	0.131	0.131
Partner's age (ref. 19-24)						
25-29	0.043	0.077				
30-34	-0.161	-0.156				
35-39	-0.933*	-0.932*				
40+	-0.757*	-0.718				
Partner's age at first birth (ref. 24 years and younger)						
25-29 years			-0.145	-0.160	-0.275*	-0.276*
30-34 years			-0.549**	-0.552**	-0.489***	-0.486***
35-39 years			-0.881**	-0.871*	-1.034***	-1.034***
40 years and older			-0.135	-0.033	-0.704*	-0.754**
Partner's age of the youngest child (ref. 0-2 years)						
3-5 years			-0.357*	-0.369*	-0.079	-0.082
6-8 years			-0.405	-0.416	-0.726***	-0.733***
9 years and older			-1.435***	-1.426***	-1.089***	-1.098***
Partner's Education (ref. upper and post-secondary, not tertiary)						
lower secondary and less	-0.090	-0.058			-0.151	-0.145
tertiary	0.179	0.141			0.154	0.153

Labour force status (ref. Employed)						
Unemployed	-0.283	-0.237				
Other	-1.429**	-1.365**				
Affordability Index			0.100**	0.094**		
Interaction (ref. Homemaker#Index)						
Employed # Household Division Index		-1.122		0.002		-0.267
Unemployed # Household Division Index		-1.428		-0.275		-0.021
Parental leave # Household Division Index				-0.419		-0.206
Other # Household Division Index		-2.283*		-0.041		0.053
Constant	3.041***	3.378***	3.475***	3.523***	3.832***	3.861***
N	159	159	406	406	1,039	1,039
Adj. R-squared	0.12	0.14	0.19	0.20	0.14	0.14
aic	515.73	514.33	1261.68	1263.52	3413.45	3415.49
bic	555.63	563.43	1317.77	1335.63	3487.64	3509.47

* p<0.05, ** p<0.01, *** p<0.001

A5. Regression Results from Adjusted Ordinary Least Squares Models of Women's Intention to Have a Child in the Next 3 Years, women's labour force participation, childcare division, by parity, women

	Parity 1		Parity 2+	
	Model without interaction	Model with interaction	Model with interaction	Model with interaction
Childcare Division Index	0.116	0.291	-0.064	-0.177
Labour force status (ref. Homemaker)				
Employed	-0.486*	-0.540**	-0.168	-0.148
Unemployed	-0.142	-0.218	0.034	0.072
Parental leave	-0.636**	-0.675**	-0.276*	-0.259*
Other	-1.088**	-1.189**	-0.173	-0.223
Age at first birth (ref. 24 years and younger)				
25-29 years	-0.042	-0.046	-0.023	-0.026
30-34 years	-0.617**	-0.619**	-0.378**	-0.384**
35-39 years	-0.517*	-0.515*	-0.837***	-0.840***
40 years and older	-1.094	-1.223	-0.897***	-0.903***
Age of the youngest child (ref. 0-2 years)				
3-5 years	-0.292	-0.271	-0.212*	-0.216*
6-8 years	-0.558**	-0.513**	-0.494***	-0.496***
9 years and older	-0.721**	-0.705**	-0.685***	-0.705***
Education (ref. upper and post-secondary, not tertiary)				
lower secondary and less	0.328	0.337	0.050	0.060
tertiary	0.409**	0.419**	0.256**	0.255**
Affordability Index	0.083*	0.084*	0.042*	0.042*
Interaction (ref. Homemaker#Index)				
Employed # Childcare Division Index		-0.219		0.133
Unemployed # Childcare Division Index		-0.427		0.288
Parental leave # Childcare Division Index		-0.119		0.091
Other # Childcare Division Index		0.102		-0.201
Constant	3.606***	3.633***	3.174***	3.158***

N	375	375	1,362	1,362
Adj. R-squared	0.10	0.09	0.09	0.09
aic	1141.27	1146.85	4550.76	4554.91
bic	1204.10	1225.38	4634.23	4659.25

* p<0.05, ** p<0.01, *** p<0.001

A6. Regression Results from Adjusted Ordinary Least Squares Models of Men's Intention to Have a Child in the Next 3 Years, women's labour force participation, childcare division, by parity, men

	Parity 1		Parity 2+	
	Model without interaction	Model with interaction	Model with interaction	Model with interaction
Childcare Division Index	-0.331***	-0.646*	-0.166**	-0.041
Partner's Labour force status (ref. Homemaker)				
Employed	0.123	0.086	-0.009	-0.025
Unemployed	-0.145	-0.116	0.114	0.089
Parental leave	-0.263	-0.252	-0.303*	-0.331*
Other	-0.757*	-1.427***	0.259	0.363
Partner's age at first birth (ref. 24 years and younger)				
25-29 years	-0.144	-0.144	-0.215	-0.220
30-34 years	-0.553**	-0.523**	-0.499***	-0.499***
35-39 years	-0.785*	-0.802*	-0.985***	-0.989***
40 years and older	-0.074	-0.052	-0.720*	-0.702*
Partner's age of the youngest child (ref. 0-2 years)				
3-5 years	-0.322*	-0.348*	-0.041	-0.038
6-8 years	-0.420*	-0.380	-0.675***	-0.671***
9 years and older	-0.930***	-0.903***	-0.795***	-0.821***
Affordability Index	0.083**	0.087**		

Education (ref. upper and post-secondary, not tertiary)				
lower secondary and less			0.172	0.178
tertiary			0.233*	0.239*
Partner's Education (ref. upper and post-secondary, not tertiary)				
lower secondary and less			-0.138	-0.135
tertiary			0.030	0.031
Labour force status (ref. Employed)				
Unemployed			0.395*	0.392*
Homemaker			0.081	0.056
Parental leave			-0.613	-0.683
Other			-0.276	-0.231
Interaction (ref. Homemaker#Index)				
Employed # Childcare Division Index			0.528	-0.122
Unemployed # Childcare Division Index			0.428	-0.176
Parental leave # Childcare Division Index			0.187	-0.299
Other # Childcare Division Index			-0.872	0.265
Constant	3.621***	3.572***	3.726***	3.738***
N	330	330	893	893
Adj. R-squared	0.12	0.14	0.12	0.12
aic	972.87	969.49	2923.74	2928.03
bic	1026.06	1037.87	3024.42	3047.90

* p<0.05, ** p<0.01, *** p<0.001

A7. Regression Results from Adjusted Ordinary Least Squares Models of Women's and Men's Intention to Have a Child in the Next 3 Years, a match between gender ideology and household division, by parity

	Women			Men		
	Parity 0	Parity 1	Parity 2+	Parity 0	Parity 1	Parity 2+
Match between gender values and household division						
Traditional match	-0.356	-0.165	0.194*	0.337	0.126	0.176*
Intermediate match	-0.236	0.022	-0.310*	0.514	-0.078	-0.360
Egalitarian match	-0.874*	-0.399	-0.268	-0.457	-0.505	-0.232
Mismatch less equal behaviour	(ref.)	(ref.)	(ref.)	(ref.)	(ref.)	(ref.)
Mismatch more equal behaviour	-0.758*	-0.357	-0.132	-0.514	-0.109	-0.319*
Age (ref. 19-24)						
25-29	-0.593**			0.225		
30-34	-0.211			-0.105		
35-39	-0.887**			-0.801*		
40+	-1.185***			-0.659		
Age at first birth (ref. 24 years and younger)						
25-29 years		0.105	0.025		-0.116	-0.251*
30-34 years		-0.432*	-0.311**		-0.493**	-0.509***
35-39 years		-0.403	-0.758***		-0.846*	-1.060***
40 years and older		-1.144	-0.837***		-0.259	-0.862**
Age of the youngest child (ref. 0-2 years)						
3-5 years		-0.306	-0.224*		-0.257	-0.071
6-8 years		-0.547**	-0.511***		-0.276	-0.742***
9 years and older		-1.461***	-1.210***		-1.267***	-1.129***
Education (ref. upper and post-secondary, not tertiary)						
lower secondary and less	-0.003	0.439**	-0.072			
tertiary	0.426*	0.513***	0.197*			
Labour force status						
Employed		-0.330	-0.097	(ref.)	(ref.)	(ref.)
Unemployed		-0.006	0.092	-0.215	0.481*	0.316*

Homemaker		(ref.)	(ref.)		-0.136	0.052
Parental leave		-0.589**	-0.196		0.050	-0.405
Other		-0.963*	0.108	-1.429**	-0.625*	-0.143
Affordability Index		0.091**	0.048**	0.095	0.108***	0.040
Partner's Education (ref. upper and post-secondary, not tertiary)						
lower secondary and less tertiary		-0.198	0.170*			
		-0.186	0.092			
Partner's Labour force status (ref. Homemaker)						
Employed						0.191
Unemployed						0.233
Parental leave						-0.165
Other						0.314
Constant	4.384***	3.492***	2.971***	3.380***	3.289***	3.433***
N	162	511	1,639	160	406	1,042
Adj. R-squared	0.17	0.22	0.15	0.19	0.19	0.14

* p<0.05, ** p<0.01, *** p<0.001

A8. Regression Results from Adjusted Ordinary Least Squares Models of Women’s and Men’s Intention to Have a Child in the Next 3 Years, a match between gender ideology and childcare division, by parity

	Women		Men	
	Parity 1	Parity 2+	Parity 1	Parity 2+
Match between gender values and household division				
Traditional match	-0.123	0.294**	0.428**	0.090
Intermediate match	0.100	0.075	0.230	-0.115
Egalitarian match	0.369	0.204	0.621	0.202
Mismatch less equal behaviour	(ref.)	(ref.)	(ref.)	(ref.)
Mismatch more equal behaviour	-0.021	0.198*	0.013	-0.079
Age at first birth (ref. 24 years and younger)				
25-29 years	0.074	0.021	-0.143	-0.248*
30-34 years	-0.469*	-0.321**	-0.477**	-0.466***
35-39 years	-0.429	-0.754***	-0.882**	-1.023***
40 years and older	-1.154	-0.866***	-0.035	-0.720*
Age of the youngest child (ref. 0-2 years)				
3-5 years	-0.263	-0.196*	-0.409*	-0.058
6-8 years	-0.583**	-0.487***	-0.454*	-0.693***
9 years and older	-1.448***	-1.182***	-1.430***	-1.091***
Education (ref. upper and post-secondary, not tertiary)				
lower secondary and less	0.380*	0.026		0.048
tertiary	0.449***	0.202**		0.174
Labour force status				
Employed	-0.355		(ref.)	(ref.)
Unemployed	-0.025		0.512*	0.322*
Homemaker	(ref.)		-0.118	0.095
Parental leave	-0.551**		-0.367	-0.629
Other	-1.028**		-0.417	-0.124
Affordability Index				
	0.084**	0.052**	0.116***	

Partner's Labour force status				
Employed		(ref.)	0.218	0.034
Unemployed		0.436***	-0.166	0.178
Homemaker		0.039	(ref.)	(ref.)
Parental leave			-0.131	-0.290
Other		0.147	-0.546	0.141
Partner's Education (ref. upper and post-secondary, not tertiary)				
lower secondary and less				-0.132
tertiary				0.107
Constant	3.406***	2.794***	3.119***	3.766***
N	514	1,632	406	1,039
Adj. R-squared	0.21	0.15	0.20	0.14

* p<0.05, ** p<0.01, *** p<0.001

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