

# ECONOMIC RECESSION AND FERTILITY AMONG EDUCATIONAL GROUPS IN TURKEY

**Haşim Akça\*, Mehmet Ela\*\***

\* Assoc. Prof., Çukurova University, Faculty of Economics and Administrative Sciences, Department of Public Finance

\*\* Assist. Prof., Osmaniye Korkut Ata University, Faculty of Economics and Administrative Sciences, Department of Public Finance

E-mail: [hakca@yahoo.com](mailto:hakca@yahoo.com), [mehmetela@osmaniye.edu.tr](mailto:mehmetela@osmaniye.edu.tr)

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## ABSTRACT

This study aimed to determine Economic recessions affect economic and social indicators considerably. In this regard, fertility rates are affected by economic recessions and their implications. Generally, fertility rate is affected negatively by the economic recessions. Although crises decrease fertility rates, for crisis and fertility relationship there is variation by region, areas (urban-rural), age, educational level and parity. From this point of view, in this paper we looked at fertility rates among educational levels in crisis years for Turkey. Importing data from Turkey Demographic and Health Surveys (TNSA), we found that women with higher educational level were less affected than women with lower educational levels by the economic recession in Turkey. Women with higher education increased total desired fertility rate (TDFR) and total fertility rate (TFR) while women with lower educational level decreased their TDFR and TFR.

**Keywords:** Economic Recession, Fertility, Education, Women

## 1. INTRODUCTION

By financialization and wrong economic policies aiming just GDP growth and wrong debt management strategies, there has been many crises over the past decades. Crises affect a lot of economic and social indicators just as unemployment, future expectations and income level. One of the indicators which crisis affected is the fertility in crisis countries. Economic and financial crises have affected fertility rates during the recent decades. A good deal of researches find that fertility rates decline in response to economic and financial crises (Eloundou-Enyegue et. al., 2000; Goldstein et. al., 2013; Eun, 2000). As economic and financial crises affect income level, employment status and future expectations adversely (Sobotka et. al., 2011:269; Eun, 2000), relative cost of having a child can be increase (Billingsley, 2009), childbearing can be postponed (tempo effect) (Kotzamanis and Kostaki, 2015:154; Kotzamanis and Kostaki, 2017:32), marriage age can be increase (Eun, 2000), and marriage rates can be decrease (Ariizumi et. al., 2005; Schaller, 2013; Payne, 2014; Kondo, 2016; González-Val and Marcén, 2015). On the other hand, economic and financial crises affect fertility rates negatively among unmarried women, too (Schneider, 2017; Percheski and Kimbro, 2014).

Although crises decrease fertility rates, for crisis and fertility relationship there is variation by region, areas (urban-rural), age, educational level and parity (Goldstein et. al., 2013; Davalos and Morales, 2017, Kim et. al., 2015). In this regard, childbearing decisions varies substantially



between high and low educational level in different countries (Kim et. al., 2015; Kim, 2009; Comolli, 2017; Kreyenfeld, 2009; Caltabiano et. al., 2017).

As an economically vulnerably country, in Turkey, in 2007-2008 period there has been recession by the reason of global financial crisis. And to our knowing, the effect of the economic and financial crises on fertility has never been appropriately dealt with in a research on fertility. Hence, our paper is the first one which research-economic recession-fertility relationship in terms of educational level.

By adopting explanatory and descriptive method and using econometric data from TSI (Turkish Statistical Institute), we aim to address the extent of the effect of economic recession on fertility among the educational levels. We used fertility data supplied by Turkey Demographic and Health Survey and find that women with higher education increased total desired fertility rate (TDFR) and total fertility rate (TFR) while women with lower educational level decreased their TDFR and TFR.

The paper consists of four sections. In Section 1, we dwell on economic recession in Turkey. Then in Section 2, we include literature review about educational level and fertility relationship in crisis or recession years. In section 3, we discussed educational level and fertility relationship in recession years in Turkey. Finally, in Section 4, we present some reasons for this relationship.

## 2. ECONOMIC RECESSION IN TURKEY

There is no commonly accepted definition of economic recession in the literature. Although many researches tries to explain as to what explains the economic recession, there is not a satisfactory definition. In practice, there is a definition of economic recession which we can show content of definition by available economic indicators. According to this definition, "A recession is a period of time when a nation's GDP declines for at least two consecutive quarters in a quarter-to-quarter comparison" (Mazurek, 2013:281).

**Table 1: Quarterly GDP Growth (%) in Turkey (2007Q1-2009Q2)**

| Years          | 2007Q2 | 2007Q3 | 2007Q4 | 2008Q1 | 2008Q2 | 2008Q3 | 2008Q4 | 2009Q1 |
|----------------|--------|--------|--------|--------|--------|--------|--------|--------|
| GDP Growth (%) | -1.50  | -1.42  | 5.08   | 4.03   | -5.06  | -3.09  | -0.92  | -4.05  |

**Source:** OECD Database, <https://data.oecd.org/gdp/quarterly-gdp.htm>

According to Table 1, we can see GDP declines for two consecutive quarters in 2007 and for four consecutive quarters in 2008 and 2009Q1 for Turkey. As it is seen in the Table 1, there is GDP declines in 2007Q2 and 2007Q3. On the other hand, we can see GDP decline between 2008Q2 and 2009Q1. This GDP data indicates that although it is effectual in a short term, there is economic stagnation in 2008 in Turkey.

## 3. LITERATURE REVIEW

There is a growing body of literature about effects of crises on educational level and fertility behavior relationship. Although, there is not a common result about the effects of crises on educational level and fertility relationships, a large part of studies found negative relationship



between educational level and fertility behavior in lower educational groups and positive relationship between educational level and fertility behavior in higher educational groups. Billingsley (2009) researched Russia fertility behavior in crisis year and found that women with low educational level has more disadvantage in crisis year. In crisis, because of low wages, high unemployment and inflation, women with low educational level have high relative cost of childbearing. According to Billingsley (2009), this finding can be interpreted as low income decreases fertility. Dommermuth and Lappegard (2016) researched Norway fertility trends between 1990 and 2015 and found that in crisis year, fall in the fertility rate is especially visible among women with secondary and short tertiary education. Total fertility rate only increases among women with a higher tertiary education. Lee (2013) researched Korea fertility behavior for 1995, 2000, 2005 and 2010 and found that women with lower education take the strategy of postponing childbirths due to economic hardships where they are more affected by the economic crisis (1995-2000) than the groups with higher education level. Kim (2009), researched fertility behavior for Korea and found that in crisis years and afterwards, couples are more likely to have a greater number of children as level of education rises. Kim et. al. (2015) researched children ever born (CEB) and crisis relationship for Italy and Korea and found that as wife's education rises, the amount of CEB after the crisis increases.

But some studies found no or negative relationship between crises and fertility. Hilamo (2017) researched two recession periods between 1991-2005 for Finland and found no strong relationship between educational level and fertility in recession years. Neels et. al. (2013) researched 14 European countries between 1975-2000 and found that recession-induced postponement is significantly more articulated among the higher educated.

Studies emphasize that educational groups who were most affected in a recession period have less fertility. In this regard, Kreyenfeld (2009) researched fertility and economic uncertainties relationship for Germany and found that relatively low first-birth rates for unemployed women in the group of women with a university degree. Caltabiano et al. (2017) researched the effects of Great Recession on fertility behavior for Italia and found that that women with either very low (primary) or very high (university degree) education tend to accelerate their entrance into motherhood, notwithstanding the crisis. The uncertainty generated by the Great Recession in Italy increased childlessness rates only among older women with average education (upper secondary and university diploma). According to Caltabiano et al. (2017), women with average education are the ones who, in the middle of the education and income distribution, are more likely to be influenced in their family-formation and childbearing decisions by the financial constraints generated by the crisis, such as an unemployed partner, an underqualified employment, or an involuntary part-time job. Comolli (2017) researched fertility behavior for European countries and USA and found strong negative association between rising unemployment rates and fertility rates among middle-educated women, the socioeconomic group that is most affected by business cycle fluctuations in their childbearing choices. Low-educated women are the least likely to respond to growing rates of unemployment: despite their larger probability of being affected by unemployment, their fertility rates do not seem to be affected.

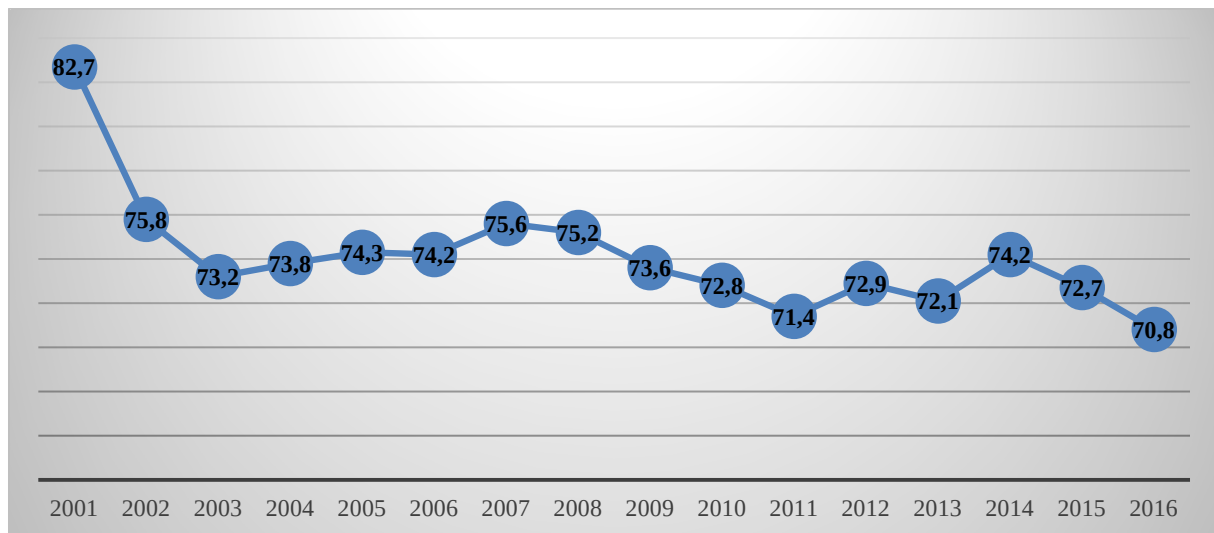
#### **4. ECONOMIC RECESSION AND FERTILITY AMONG EDUCATIONAL GROUPS**

Global financial and economic crisis in 2008/2009 period affected many countries by its spillover effects. As one of the countries which was affected from the global crisis, in Turkey, GDP was decreased in some quarters in 2007 and 2008. As other countries such as European



ones (Dommermutch ve Lappegard, 2016:3; Carella et. al., 2017) in Turkey total fertility rate decreased in 2008/2009 period and started to increase after 2013. According to Figure 1, total fertility rate declined from 75,6 in 2007 to 71,4 in 2011. After increasing between 2003 and 2007, total fertility rate seems to decrease in recession years (2007-2008).

**Figure 1: Total Fertility Rate in Turkey (2001-2016)**



**Source:** TSI (Turkish Statistical Institute), 2017a.

According to Figure 2, total desired fertility rate (TDFR) decreased in uneducated, primary education first and second stage group. In high school and upper degrees, TDFR increased slightly. This finding indicates that in higher educational level, relative cost of childbearing is low in recession years. On the other hand, after recession years namely in 2013, TDFR increased across all educational groups. Interestingly, educational groups which decreased TDFR in 2008 more increased TDFR more in 2013.

**Figure 2: Total Desired Fertility Rate by Educational Level in Turkey (2003, 2008, 2013)**

| Years                                            | 2003 | 2008<br>(Recession) | 2013 |
|--------------------------------------------------|------|---------------------|------|
| Uneducated/ Not Graduated from Primary Education | 2.1  | 1.5                 | 2.8  |
| Primary Education First Stage                    | 1.9  | 1.7                 | 2.3  |
| Primary Education Second Stage                   | 1.2  | 1.0                 | 2.1  |
| High School and Upper Degrees                    | 1.0  | 1.4                 | 1.5  |

**Source:** Turkey Demographic and Health Surveys (TNSA) 2013 (2014:128); TNSA 2008 (2009:130); TNSA 2003 (2004:108).



According to Figure 3, total fertility rate (TFR) decreased across all groups by educational level in 2008 except women with high school and upper degree. For uneducated/not graduated from primary school level women TFR decreased from 3.65 in 2003 to 2.65 in 2008. For women graduated from primary education first stage, TFR decreased from 2.39 in 2003 to 2.25 in 2008. In comparison with other educational groups TFR decrease is very mild in primary education first stage level. In primary education second stage level, decrease from 2003 to 2008 is mild too. Interestingly, for high school and upper degrees level, TFR increased from 1.39 in 2003 to 1.53 in 2008. This implies that women with high school and upper degrees were affected from recession very slightly. And according to Figure 3, crisis affected lower educational levels more severely.

**Figure 3: Total Fertility Rate by Educational Level in Turkey (2003, 2008, 2013)**

| Years                                            | 2003 | 2008<br>(Recession) | 2013 |
|--------------------------------------------------|------|---------------------|------|
| Uneducated/ Not Graduated from Primary Education | 3.65 | 2.65                | 3.76 |
| Primary Education First Stage                    | 2.39 | 2.25                | 2.75 |
| Primary Education Second Stage                   | 1.77 | 1.30                | 2.45 |
| High School and Upper Degrees                    | 1.39 | 1.53                | 1.66 |

**Source:** Turkey Demographic and Health Surveys (TNSA) 2013 (2014:62); (2014:(2009:62); TNSA 2003 (2004:48).

## 5. THE MAIN REASONS OF DIFFERENT FERTILITY BEHAVIOR IN RECESSION YEARS

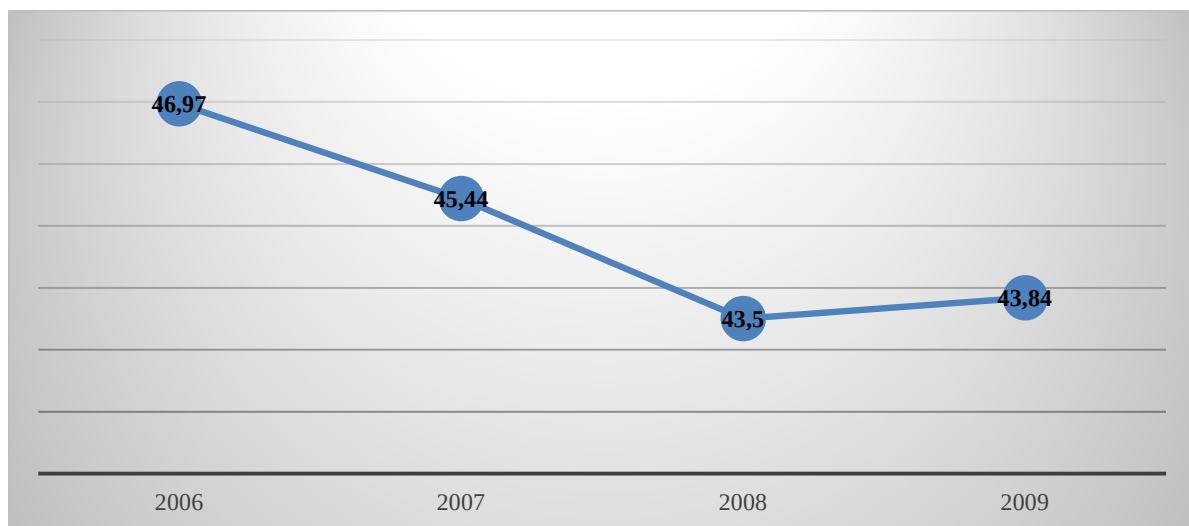
In Turkey, fertility behavior reacted differently to economic recession among women with different education level. One of the explanation about this discrepancy is that women with low education level is more disadvantaged in terms of economic condition in recession years. According to Figure 4, in 2008 for illiterate level and primary education first and second stage level women unemployment level increased from 1.7 to 2.5 and 7.8 to 8.9 respectively. On the contrary, for women with high school and upper degrees, unemployment level decreased from 19 to 18,5. We think that the reason of mild fertility decrease in primary education group is the decrease in unemployment rate in 2007 and mild increase in 2008. This data shows that while women with no education and with primary education were affected by economic recession in 2008 adversely, women with high school and upper degrees were immune from the effects of economic recession in Turkey.

**Figure 4: Unemployment Rate by Educational Level of Women (% , 2006-2008)**

| Education Level | Illiterate (No Education) | Primary Education First and Second Stage | High School and Upper Degrees |
|-----------------|---------------------------|------------------------------------------|-------------------------------|
| 2006            | 1.6                       | 8.6                                      | 19                            |
| 2007            | 1.7                       | 7.8                                      | 19                            |
| 2008            | 2.5                       | 8.9                                      | 18,5                          |

**Source:** Calculated from data based on TSI, 2017b.

Informal employment functions as an opportunity to have children as women in informal economy has low fertility (33) and they can increase their income by attending informal work (34) and may have a flexible working period which is suitable having children (35). In Turkey, informal work opportunities have been decreasing in recent years. In economic recession period, informal employment rates show a decreasing pattern according to Figure 5. In 2007, informal employment decreased from % 46.97 to % 45.44. And in 2008, informal employment rate decreased to % 43,5. Thereafter, informal employment rate increased slightly. From the Figure 5, we can expect that women with low level education has less chance to work in the informal sector. So, they could not find more income to afford the costs of additional children.

**Figure 5: Unemployment Rate in Turkey (%)**

Source: Republic of Turkey Social Security Institution (SSI), 2017.



## 5. CONCLUSION

Fertility is affected by several factors such as social and economic ones. Economic factors such as unemployment and GDP affect fertility behavior among different socioeconomic groups. In this regard educational level of women affect fertility behavior differently in crisis and non-crisis years. In crisis years, educational level affect fertility in a positive way.

In Turkey, there was been an economic recession in 2007/2008 period. In 2008, fertility decreased among women with low education. On the other hand, desired and total fertility rate increased among women with higher educational level.

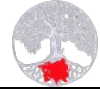
If we look fertility behavior in crisis year for Turkey elaborately, it is seen that fertility rate increased just among women with high school and upper degrees, because women with high school and upper degrees were the less affected educational group among educational groups in Turkey. On the contrary, women with lower educational level were affected severely by the recession. On the other hand, they could not find more employment opportunity in informal economy. And consequently, women with low educational level decreased their desired and total fertility rate in economic recession years in Turkey. This indicates that women with low level education do not view recession years as an opportunity to have child. For women with higher educational level, economic recession years were not destructive considerably and so women with educational level could increase their desired and total fertility rates.

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