Working Paper no.: 2015/08

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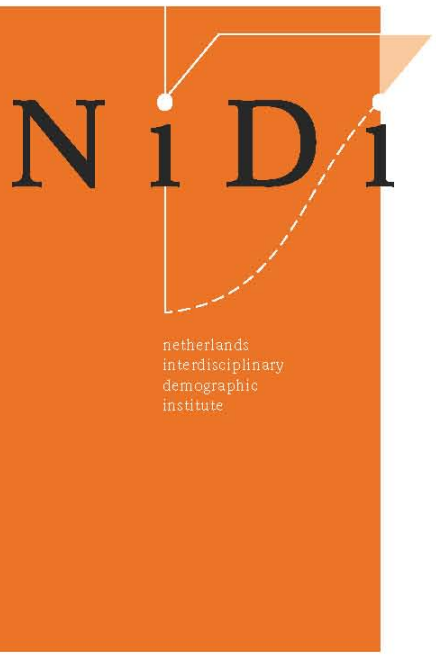

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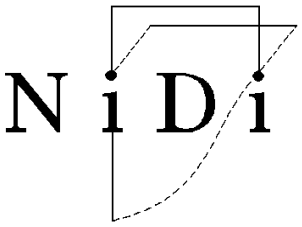

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December 2015

Abstract

While demographic change has been well documented for many Western countries, much less is known about demographic transitions in other countries, including Turkey. Demographic change in European societies can be characterized by, amongst others, increased prevalence of divorce. Although it is often argued that life courses in Turkey follow a more traditional path, little is known on determinants and patterns of divorce, despite the major socioeconomic changes Turkey has undergone over the past decades.

We study the levels of divorce of women in Turkey from 1973-2008 to explain patterns of divorce, looking at the role of individual characteristics and the regional context. We use the Demographic Health Surveys (2003/2008), complemented with regional divorce and GDP data (Turkstat). Applying a multilevel approach, distinguishing 12 regions, we hypothesize that a region in which divorce is already more prevalent will make divorce more acceptable (diffusion hypothesis) and a wealthier region in terms of GDP increases the probability of divorce.

Our analyses show that levels of divorce increased over the past decades but huge regional variation remains. Sociocultural rather than socioeconomic factors explain this trend, and both regional diffusion of divorce and GDP are key determinants for divorce.

Divorce has been the topic of extensive research during the past decades (for overview articles, see e.g. Amato, 2010; Amato & James, 2010; Härkönen, 2013; Lyngstad & Jalovaara, 2010; Wagner & Weiβ, 2006). Increasing levels of divorce and other demographic changes have been linked to a shift in ideas toward family life where individualistic attitudes and higher acceptance of divergent family behaviours prevail (e.g. Härkönen, 2013, Lesthaeghe, 1995; Thornton & Young-De Marco, 2001). This has been referred to as the Second Demographic Transition. While these processes have been well documented in Western countries, and in particular the US and Europe, much less is known about demographic transitions in other regions of the world, including Turkey (Adams, 2004; Rashad, 2000; Tabutin & Schoumaker, 2005).

The largest immigrant community across Europe also originates from this country. While immigration scholars have compared the behaviours of migrants to that of the majority group, and attribute similarity of behaviours to integration of migrants (Anderson & Scott, 2010; Bean et al., 1996; Glick, 2010; Phillips & Sweeney, 2006), less attention has been paid to changes in levels of divorce that occur within the origin context of migrants, or in non-Western countries in general (Tabutin & Schoumaker, 2004, 2005). Migrants' countries of origin are not static entities, and a striking example for the European context is Turkey. It is often argued that life courses in Turkey still follow a more traditional path, yet we know surprisingly little about the patterns and determinants of divorce in Turkey over time.

While higher divorce rates in Europe reflect, amongst others, the changed demographic behaviour (e.g. Härkönen, 2013; Kalmijn, 2007; Lesthaeghe, 1983, 2010), it is often argued that the demographic transition in Turkey is not as advanced (Rashad, 2000), which is illustrated by still more traditional family patterns including a lower prevalence of divorce. However, Turkey has undergone major socio-economic changes over the past decades and this may have had its impact on family life transitions. In addition, Turkey has witnessed a notable increase in divorce rates during the past decades (e.g. Demir, 2013; Härkönen, 2013; Kavas & Gündüz-Hoşgör, 2010; Turkish Statistical Institute (TurkStat), 2011). This growth in levels of divorce is in line with notable changes Turkish family life has undergone during the last century on many domains. In addition to a rising prevalence of divorce, people marry later, have fewer children, and gender roles are said to be more egalitarian (Kavas & Thornton, 2013). These changes have been attributed to modernization processes and exposure to Western values.

Most studies on divorce concentrate on individual socioeconomic and demographic factors that predict whether a couple divorces or not (e.g. Heaton, 2002; Wagner & Weiβ,

2006). Yet macro-level factors shape the context in which a couple's marriage takes place. Particularly, the role of regional variation within one country has remained relatively understudied (but see e.g. Kalmijn & Uunk, 2007; Lester, 1999; and e.g. Glass & Levchak, 2014; Lesthaeghe & Neidert, 2006; Glenn & Shelton, 1985 for regional variation in the U.S.). Regional variation in Turkey is substantial: there are huge differences between regions both in terms of economic development as well as in the spread of more modern values towards family life. Considering total fertility rates (TFR), for example, in some regions, these rates proximity those of European countries while in other regions the TFR is extremely high. Similarly, there is great variation in the prevalence of divorce between the different regions, making it essential to also consider the regional level when studying the prevalence and determinants of divorce in Turkey.

The aim of our paper is twofold. First, we examine the levels of divorce in Turkey over time, between 1967 and 2008, among women aged 15 to 49 years. Second, we study the probability of divorce in Turkey, investigating the importance of both micro- and macro-level predictors simultaneously. At the macro level both economic factors as well as the spread of modern values may influence the probability of divorce. More specifically, we investigate the role of regional variation on the probability of divorce by considering Gross Domestic Product (GDP) and crude divorce rates for each of Turkey's 12 regions. Data come from the Demographic Health Survey (DHS) (2003 and 2008 waves, http://www.dhsprogram.com) enriched with regional data from the TurkStat. Multilevel discrete-time event history models are used to examine to what degree individual characteristics and the regional context influence divorce behaviour. This study improves upon the existing literature by a) examining the prevalence of divorce in Turkey, an understudied subject, b) studying the degree of change that is occurring within a migrant origin country, and c) examining the effects of regional contexts within Turkish society by applying a multilevel framework.

BACKGROUND

Divorce in Turkey

In Western countries, divorce levels began rising sharply from the 1950s onward (Lesthaeghe, 2010). In Turkey, an increase in divorce rates occurred later (Härkönen, 2013). Yet once divorce rates were rising, changes were substantial: while crude divorce rates were only 0.27 in 1970, they increased to 1.40 in 2008 (TurkStat, 2011). This growth in levels of divorce is in line with notable changes that Turkish family life has undergone during the last century in many domains. In addition to a rising prevalence of divorce, people marry later, have fewer

children, and gender roles are said to be more egalitarian. In the same vein, attitudes toward divorce are becoming more tolerant (e.g. Kavas & Thornton, 2013). Although these changes have been connected to modernization processes and exposure to Western values, local values are not necessarily abandoned and Western and non-Western values are simultaneously present in Turkish society (Kavas & Gündüz-Hoşgör, 2010; Kavas & Thornton, 2013).

In general, Turkish society can be characterized as patriarchal with low levels of gender equality (Göksel, 2013; United Nations Development Programme (UNDP), 1995, 2005; World Economic Forum, 2008). Nonetheless, it has been documented how women in Turkey increasingly challenge existing gender norms. For example, while financial decision-making was traditionally an exclusively male-affair and joint bank accounts were basically non-existent, Turkish women today are managing their own bank accounts to a greater extent (Kavas & Gündüz-Hoşgör, 2010). Despite the changes in Turkish family life, divorced women are still stigmatized and held accountable for their broken marriage (Kavas & Gündüz-Hoşgör, 2011; Özar & Yakut-Cakar, 2013).

There have been two major changes in Turkish law that affect divorce. First, in 1988, a Divorce Law (No. 3444) was implemented, referred to as the "no fault divorce", which made attaining a divorce much easier (e.g. Kavas & Gündüz-Hoşgör, 2010). Second, in October 2001, the Civil Code Amendment was passed in Turkey, which significantly expanded women's rights, in particular with respect to women's position in the marriage: articles that declared the husband to be the head of the household and his wife as his helper were deleted, the minimum age of marriage was raised to 18 for both men and women (it used to be 17 and 15, respectively), there were changes in the property regime, from one based on separate ownership to one based on the sharing of property, implying that in the event of divorce, women could now claim a share of the property registered in their husbands name if the property was acquired during the marriage (see Arat, 2010; Kavas & Gündüz-Hoşgör, 2010).

As previous studies on Western contexts have demonstrated, changes in divorce law (e.g. such as an implementation of 'no-fault' divorce legislation) have resulted in increasing divorce rates (González & Viitanen, 2009; Rodgers et al., 1999). Additionally, these new laws reflected changing gender norms in Turkey, and macro-sociological studies have shown how these changing norms are related to a trend of increasing divorce rates (e.g: Cherlin, 1992; Härkönen, 2013; Kalmijn, 2007; Ruggles, 1997).

Regional variation of divorce in Turkey

Several studies examined macro-trends only, indicating various contextual factors that explain cross-national variation in divorce rates. These macro studies point to the role of the normative context (Amato & Keith, 1991; Lesthaeghe, 1995; Wagner & Weiβ, 2006; Wolfinger, 1999), legislative changes toward more liberal divorce legislation (González & Viitanen, 2009; Stevenson & Wolfers, 2007; Wolfinger, 1999), family policies (Engelhardt et al. 2002), and female labour market participation (Diekmann & Schmidheiny, 2004; Kalmijn, 2007). While these macro studies typically study between-country variation, we are interested in variation between regions. Regions can be considered a relevant context as it provides local opportunity structures (e.g. degree of urbanisation, socioeconomic situation) and cultural milieus (e.g. acceptance or prevalence of divorce) that can affect individual behaviour (Hank, 2002).

In 2002, Turkey has been divided in 12 distinct regions, so-called NUTS I regions, which have been defined within the framework of the EU harmonization process. To a large extent, the sociocultural, sociodemographic and socioeconomic differences within Turkey are mirrored in these 12 regions (DHS, 2009). The regions in the Western part of Turkey, encompassing Istanbul and İzmir, are the most urbanised and industrialized. The regions in the South have several growing industrial centres, such as Adana, Mersin and Antalya. The capital city, Ankara, lies in Central Turkey. Besides this metropolis, the regions in Central Turkey are moderately industrial. The Northern region has a fertile coastal line and a mountainous interior, mainly occupied by small-scale farmers. The Eastern regions are economically the least developed and can be characterised by a rugged landscape and difficult climatological circumstances.

The regional levels of divorce reflect these major differences between the 12 regions. While Turkey's crude divorce rates are on average relatively low, the prevalence of divorce differs greatly between the different regions. In some regions, crude divorce rates are very low, in others, crude divorce rates proximate those of West-European countries: whereas the overall divorce rate in 2008 was 1.40, it ranged from 0.48 in Southeast Anatolia to 1.88 in the Aegean region (TurkStat, 2011), which for example equals the divorce rates of the Netherlands (1.9 in 2009 (Eurostat, 2015)). Additionally, it is interesting to see similar regional differences concerning attitudes toward divorce. Figure 1 illustrates this variation by showing how acceptance toward divorce ranges from very high in some regions (e.g. 80.5% in the Aegean region) to very low in other regions (e.g. 76.8% in Central Anatolia).

<< FIGURE 1 ABOUT HERE >>

The question is how we can explain the variation between these 12 regions considering the prevalence of divorce. We expect that, in addition to individual socioeconomic and sociodemographic characteristics, different sociocultural and socioeconomic features of these regions play a major role in the level of diffusion of divorce. As a higher prevalence of divorce reflects a higher cultural acceptance of divorce (Härkönen, 2013), it can be expected that higher acceptance will decrease the stigmatization of divorce, making divorce more accessible for women. A previous study on fertility in Turkey demonstrated that the fertility behaviour of women could be explained by, amongst others, diffusion processes (Yavuz, 2008).

These findings are in line with theories on the diffusion of innovations, where new behaviours typically start in metropolitan areas and where the upper and middle classes constitute the leaders or innovators (Liefbroer & Doureleijn, 2006; Nazio & Blossfeld, 2002; Reed et al., 1999; Rogers, 1983; Strang & Meyer, 1993; Strang & Tuma, 1993; Yavuz, 2008). We consider diffusion as an individual-level process whereby individuals within a society adopt or reject the practice of divorce over time (Nazio & Blossfeld, 2002). Given this theory of diffusion, we expect that in regions where divorce is more prevalent, women's probability of divorce will be higher compared to regions with lower levels of divorce (*Hypothesis 1*).

There is also huge regional variation in terms of socioeconomic development. Regions in the Western part have a much larger share of the national Gross Domestic Product (GDP) than the Northern or Eastern regions (DHS, 2009). We expect that the probability of divorce for women in wealthier and more developed regions in terms of GDP is higher (*Hypothesis 2*).

Additionally, we expect that the effect of women's education on divorce will be shaped by the regional context and change over time. According to the so-called Goode hypothesis, the society present a normative context that shapes individual divorce behaviour; when, in a given context, divorce is a relatively rare and often stigmatized event, it takes more resources to dissolve a marriage (Goode, 1962). In addition, women with higher socioeconomic status will be most likely to be the early adapters or innovators with respect to divorce. A higher socioeconomic status also makes women less sensitive to social conformities, in spite of the sociocultural context that typically represents patriarchal norms and values (Kavas & Gündüz-Hoşgör, 2011). Considering the Turkish fertility transition, higher educated women speaking Turkish were identified as the pioneers (Yavuz, 2008). We

therefore anticipate that women with a higher education will have a higher risk of divorce in earlier years, when divorce is relatively uncommon (*Hypothesis 3)*. Similarly, we expect that in regions where divorce is a rare phenomenon, the probability of divorce is higher for women with higher education, relative to women with less education (*Hypothesis 4*).

With respect to wealthier regions, we can hypothesize two opposing effects: 1) due to decreased costs of divorce, the divorce risk of women with less education will increase compared to women with higher educated (*Hypothesis 5A*), or 2) better socioeconomic circumstances stabilize marriages among those with less education and the divorce risk of higher educated women will increase relative to those of lower educated women (Härkönen & Dronkers, 2006; Jalovaara, 2003) (*Hypothesis 5B*).

Micro-level indicators of divorce

Previous studies have demonstrated the strong predictive quality of various individual level characteristics (for review articles, see Amato, 2000, 2010; Amato & James, 2010; Lyngstad & Jalovaara, 2010; Härkönen, 2013). In line with these previous works, we consider the duration of marriage, which is consistently shown to have a reversed U-shape, with an initial increase in the risk of divorce followed by a gradual decline of divorce risk (Lyngstad & Jalovaara, 2010; Umberson et al., 2005). We also explored the effect year of marriage to examine the changing social context (Härkönen, 2013).

When women marry younger, the risk of divorce is usually greater (Boyle et al., 2008; Heaton, 2002; White, 1990). Additionally, large difference in age between partners is associated with more unstable marriages, and this particularly holds for when women are older than men (Gentleman & Park, 1994; Janssen et al., 1999; Kalmijn & Poortman, 2006). Children that are born out-of-wedlock increase the risk of divorce (Härkönen & Dronkers, 2006). Typically, research shows that while men's resources decrease divorce risks, women's resources increase the risk of divorce (Lyngstad & Jalovaara, 2010). Considering household finances, previous evidence points to a negative relation: when the financial resources of the household are limited, divorce becomes more likely (Kalmijn & Poortman, 2006; Ono, 1998; White, 1990).

Findings with regards to the effect of educational attainment on the risk of divorce have remained inconclusive (Amato, 2010; Takyi and Gyimah, 2007). Quite some scholars have found that higher levels of education decrease the risk of divorce (Berrington & Diamond, 1999; Boyle et al., 2008; Bumpass & Sweet, 1972; Hoem, 1997; Jalovaara, 2003; Lyngstad, 2004; Teachman, 2002), while others found no effect (Bracher et al. 1993; Lillard

et al., 1995), or even a reversed effect for women's educational attainment (Blossfeld et al., 1995; Frank and Wildsmith, 2005; Hall and Zhao, 1995; Kalmijn et al., 2004). We also considered whether having ever lived abroad affects the probability of divorce, as this might indicate exposure to Western values (Hill, 2004; Hirsch, 2003; Zontini, 2010.).

We also controlled for various features typical for the context of Turkey. Arranged marriages are a common phenomenon, as over half of the couples are married though their parent's involvement in the decision-making (Kavas, 2010). Findings concerning the relationship between arranged marriages and divorce are relative scarce and the results are mixed, with some scholars claiming that arranged marriages are less stable marriages (Heaton et al., 2001) others argue the opposite (Jones, 2007). Consanguineous marriages are also prevalent and argued to be more stable (Saadat, 2015). We also identify women whose mother tongue is Kurdish, as Kurdish speaking groups have distinctly different demographic behaviours (Yavuz, 2008). Overall, we expect that more traditionalistic marriages that are characterized by having been an arranged marriage, consanguinity with the husband, and marriage of Kurdish speaking women, have lower risks of divorce.

METHOD

The data used in our analyses is the Turkish Demographic and Health Survey (DHS), waves 2003 and 2008. In these surveys, households were randomly sampled within 12 regions of Turkey. The classification of these 12 regions has been made in late 2002, following EU requirements for the Turkish entry into the European Union (Hacettepe University Institute of Population Studies, 2009). In each of these households, all women that were present have been interviewed if they were between the ages of 15 and 49 and had been ever married.

The women in these two waves have been pooled together, providing us with a robust number of divorced and married Turkish women (726 and 14,692, respectively) and a great variety of marriage cohorts, covering marriages that took place between 1967 and 2008. The survey contains a wide range of demographic and health-based questions, and it includes a history of their marriages. As the number of recorded marriages varies per wave, and the number of women with more than one marriage is limited, we will focus on the first marriages of these women. We consider whether these first marriages ended in divorce not, comparing these women to those whose first marriage is still on-going at the time of survey.

Using the retrospective information, we constructed a person-period-file. We followed respondents from the year of their first marriage until divorce or in case of censoring by the time of the survey (2003/2004 or 2008) or by the death of the spouse. Additionally, we

excluded respondents from whom we did not have complete information concerning the start and end years of their marriage (n=15 and n=23, respectively). This resulted in a dataset consisting of 15,418 respondents; 726 respondents experienced divorce or separation. The first divorce occurred in 1973 and the last occurred in 2008. While data was originally captured on a monthly basis, we reconstructed the dataset considering the information on a yearly basis.

Since we want to explore the effects of individual and context-level factors on women's probability of divorce, we use multilevel discrete-time logistic regression models that enable us to simultaneously use explanatory variables at these two levels (i.e. individual and regional) (Snijders & Bosker, 1999). The person-period-file consisted of 222,616 person-years, and we differentiated between 12 regions. We assessed the duration dependency by using the number of years of marriage. We tested for non-linear effects, and the inclusion of a linear and a squared term fitted the data best. The time-varying variables were lagged with one year, which is in line with standard event-history procedures (Singer & Willett, 2003).

We first modelled a null model (*not shown, available upon request*), which includes the random intercept and the two variables for duration of marriage (cf. Hox, 2002: 81). To account for the hierarchical structure of the data, all subsequent models include the random intercept. Model 1 shows the estimates of all individual variables, Model 2 and 3 show the models with the two regional variables (due to our limited sample size at level 2 and to avoid multicollinearity, we decided to estimate our two regional variables separately), and Models 4 to 9 include various interaction terms to examine whether the effect of education has changed over time and whether the regional characteristics shape the effect of education.

Measures of contextual variables

We distinguished 12 geographical regions (i.e. NUTS-1) as the region in which respondents are currently living. Two variables were constructed on the regional level. First, we were interested in regional crude divorce rates. Unfortunately, these were not available for the entire time period we were interested in. We were, however, able to obtain information about divorces per province. Today, Turkey is divided in 81 provinces (before 1989, there were 67 provinces, but several changes between 1989-1999 resulted in 81 provinces since then (for detailed information about Turkey's administrative divisions, see statoids.com/utr.html)). Provincial crude divorce rates were available through reports from the Turkish Statistical Institute (formally State Institute for Statistics) for the period 2001-2008 (TurkStat, 2006, 2011). For the period 1970-2000, only information about the total number of divorces per

province was available (State Institute for Statistics, 1977, 1983, 1986a, 1994, 2004). Using the 6 censuses that were carried out by the State Institute for Statistics from 1970-2000 (State Institute for Statistics, 1972, 1975, 1981, 1986b, 1990, 2001a), we imputed the missing years to arrive at population estimates for each year, for each province. Crude divorce rates were then computed using the number of divorces and population estimates by province. Using these provincial crude divorce rates, we calculated the crude divorce rate for each of the 12 regions by taking the average divorce rate of the provinces in each region for each year.

The second contextual variable is regional GDP. Information concerning Turkish GDP on regional or provincial level was only available for the period 1987-2001 (State Institute for Statistics, 1997a, 1997b, 1999a, 1999b, 2000, 2001b, 2001c, 2002). We calculated the share of the total country-level GDP per region for this time period. Initial analyses have demonstrated little variation over time (see Figure 2, discussed below), which led us to include regional GDP as a time-constant variable, assuming that these shares remain relatively constant over time.

Measures of individual variables

The Turkish DHS survey does not distinguish between women who are living together and married women. Even though this might slightly overestimate the number of married women, we expect the extent of this bias to be minimal, as non-marital cohabitation hardly occurs in Turkey (Yavuz, 2008). Our dependent variable is dichotomous: 0 = *married* and 1 = *divorced*. We controlled for a number of demographic characteristics of the interviewed women. Women's age at marriage was treated as a continuous variable, and a squared term was added to account for non-linear effects. The educational level at time of survey was included, referring to the highest education level attained, distinguishing between those who have had 0 = *no or primary education,* 1 = *secondary education* and 3 = *tertiary education*. Although ideally we would have included a time varying measure of educational attainment, unfortunately there was no information about the educational histories of the women available. The same holds for respondent's socioeconomic status. We included a measure of their socioeconomic status at the time of survey using the DHS surveys' standardized scale of wealth. This scale uses information about the household in which the interviewed women live, and focuses on ownership of certain assets (e.g. a television or bicycle), the building material of the house, and access to water and sanitary facilities (DHS, 2014). These variables were used to create a 5-point scale by way of principal component analysis, ranging from

poorest to richest. We recoded this variable from 5 to 3 categories: 0 = *poor*, 1 = *middle*, and 2 = *rich.*

We use the mother tongue of the wife as a proxy of their ethnicity. Earlier research using the same survey has shown large differences in Kurdish and Turkish-speaking individuals in their demographic behaviours (Yavuz, 2008). We distinguish between those with Kurdish and those with Turkish, Arabic or a different language as their native tongue, with 1 = *Kurdish*, and 0 = *Turkish or other language*. We included information about how the couples' marriage was arranged: 0 = *by the couple themselves,* 1 = *by family*, and 2 = *other*. Additionally, we considered the age difference between partners: 0 = *wife older than husband*, 1 = *same age*, and 2 = *husband older than wife*. Finally, we controlled for consanguineous marriages by considering: 0 = *no family,* 1 = *first degree,* and 2 = *second degree.* Furthermore, we took respondents' migration history into account by including a question about where they had ever lived abroad. We distinguished between respondents who 0 = *have always lived in Turkey*, or 1 = *have ever lived abroad*. Finally, we took into account

The DHS surveys feature a fertility module, allowing us find to find out exactly at what date women have had children. As the data also gives us exact information on the start and end of the marriage, we were able to consider children that were born out-of-wedlock

Because the DHS surveys focus lies with women, the information about respondents' partner is much less detailed. We did have information about the husband's age at the time the union started, from which we constructed a categorical variable capturing the age difference between the spouses, with 1 = *the wife was older than her husband,* 2 = *the spouses were of the same age*, and 3 = *the husband was older than his wife*. [1] Consanguineous marriages are relatively common in Turkey (Koç, 2008), and we controlled for by including a variable with the following categories: 0 = *no consanguineous marriage,* 1 = *first degree consanguineous marriage*, and 2 = *second degree consanguineous marriage.* Table 1 presents all of the variables used in the models (in person-years).

<< INSERT TABLE 1 ABOUT HERE >>

[1] The average age at first marriage is 22.9 for women and 26.2 for men (Turkstat, 2008)

Findings

Regional variation in crude divorce rates and GDP

Our analyses show the regional variation in crude divorce rates over time (Figure 2). For the whole of Turkey, crude divorce rate rose markedly from 0.27 in 1970 to 1.40 in 2008. Although this upward trend is more or less visible for all regions, we can see large regional differences. Figures in Southeast Anatolia range from 0.06 in 1970 to 0.48 in 2008, reflecting the lowest crude divorce rates. Today, the highest crude divorce rates can be found in the Aegean region, where crude divorce rates ranged from 0.39 in 1970 to 1.88 in 2008. We also show how the difference in crude divorce rates between the 12 regions increases over time. While the variation in 1970 was 0.38, this increased to 1.40 in 2008.

<< INSERT FIGURE 2 ABOUT HERE >>

While the variation between regions changed considerably over time with respect to crude divorce rates, Figure 3 shows a stable situation considering the regional share of Turkey's national GDP for the time period 1987-2001. The Istanbul region represents the wealthiest region in terms of GDP, on average 22% of the total GDP. Next, the Aegean region, East Marmara and the Mediterranean region are the wealthiest, with 16% and 12% of Turkey's GDP, respectively. Northeast Anatolia, East Black Sea and Central East Anatolia represent the poorest regions, with 1% and 3% of the national GDP, respectively.

<< INSERT FIGURE 3 ABOUT HERE >>

Micro-level and macro-level determinants of divorce in Turkey

We first fitted a null model (*not shown, available upon request*), which includes the random intercept and the two variables for duration of marriage (cf. Hox, 2002: 81). The random intercept exhibits significant variation, demonstrated by a likelihood-ratio test comparing a multilevel model to an ordinary logistic regression (p = .000), and by the standard deviation of random intercepts (.305) being more than twice its standard error (.078). Although the intraclass correlation is not straightforwardly obtained in binomial models, we calculate the intraclass correlation in line with Snijders and Bosker (1999: 224). The intraclass correlation is 0.03, which indicates a small but significant degree of dependence between the two levels. The results of Models 1 to 3 are shown in Table 2.

<< INSERT TABLE 2 ABOUT HERE >>

Individual-level effects

We find evidence of non-linear effect of duration: while the risk of divorce decreases initially, it increases when the couple is married longer. This is contrary to previous studies on Western context, which typically find an inverted U-shape pattern of the relationship between divorce and the duration of marriage (Lyngstad & Jalovaara, 2010). Additionally, the non-linear effect of the age at marriage shows that marrying either too young or too old increases the risk of divorce (see Lehrer (2008) for a similar finding in the United States). The individual-level variables together explain about 13 per cent of the total variation (see Snijders & Bosker, 1999: 225 on how to calculate the explained variance in binomial multilevel models).

The effect of education on divorce is positive and significant in all models, in conformity with several previous studies (e.g. Blossfeld et al., 1995; Frank & Wildsmith, 2005; Hall & Zhao, 1995; Kalmijn et al., 2004). This means that higher educated Turkish women, both with secondary and tertiary education, are more likely to divorce than their lower educated counterparts, net of the individual and regional characteristics we controlled for.

The other variables we controlled for are all significantly influencing the probability of divorce in line with previous studies on the determinants of divorce. As expected, the year of marriage reveals that more the recent marriage is, the more likely a divorce. Women with children that are born out-of-wedlock have higher risks of divorce (Härkönen & Dronkers, 2006). Marriages where the husband is older are the most stable compared to marriages where the partners have the same age or when the wife is older than her husband (Gentleman & Park, 1994; Janssen et al., 1999 Kalmijn & Poortman, 2006). In line with previous results, women in households with a lot of financial resources are less likely to divorce compared to women in the poorest households (Kalmijn & Poortman, 2006; Ono, 1998; White, 1990). There are no statistical differences with respect to the risk of divorce between women in the poorest households and women in the middle wealth category. Marriages that are reflective of more traditional Turkish customs are less likely to dissolve, such as arranged (Jones, 2007), consanguineous (Saadat, 2015), and Kurdish marriages (Yavuz, 2008). Finally, women that have experienced living abroad are more likely to divorce than those who never left Turkey.

Regional-level effects

In Model 2 and 3, we include two regional-level explanatory variables, the time-varying indicator capturing the regional divorce rate and the time-constant variable indicating the regional share of GDP. These two variables explain, together with the individual-level variables, 14.0 and 14.4 per cent of the total variation, respectively. As expected, women's probability of divorce is higher in regions where divorce has been more prevalent (*Hypothesis 1*), and likewise, in regions that are wealthier and more developed in terms of GDP (*Hypothesis 2*). This is in line with theories on the diffusion of innovations. Considering divorce as a 'new behaviour', we expected to find a higher risk of divorce in metropolitan areas (Nazio & Blossfeld, 2002; Liefbroer & Doureleijn, 2006; Reed et al., 1999; Rogers, 1983;l Strang & Meyer, 1993; Strang & Tuma, 1993; Yavuz, 2008).

Individual- and cross-level interactions

Table 3 shows the models with individual-level interactions to investigate whether the effect of education has changed over time (Models 1 and 2), and cross-level interactions to see if the macro-variables (divorce rate and percentage GDP) have a significant effect on the effect of education on divorce (Models 3 and 4). These four models including the various interaction terms explain 13.7 to 14.5 per cent of the total variation.

In Model 1 and 2 we examined whether the effect of education has changed over time for Turkish women. In line with the Goode hypothesis (Goode, 1962), these models show that the effect of education decreases over time for women with tertiary education, relative to women with no or primary education (*Hypothesis 3*). This means that the positive effect of education on the risk of divorce decreases over time, but these models show that the divorce risks of higher educated women remain higher than for lower educated women.

Model 3 reveals the cross-level interaction between women's education and the regional divorce rate. Here we see that women that the positive effect of education actually increases for women with secondary education in regions where divorce is more prevalent. This finding contradicts our expectation (*Hypothesis* 4) that the effect of education would decrease in regions where divorce is already more prevalent. Similarly, Model 4 shows that the risk of divorce for women with tertiary education is much higher in regions with higher shares of GDP. This is in line with our alternative hypothesis (*Hypothesis 5B*), that better socioeconomic circumstances have a stabilizing effect on the marriages of women with less education. As such, the divorce risk of women with higher education increases relative to that of women with less education (Härkönen & Dronkers, 2006).

<< INSERT TABLE 3 ABOUT HERE >>

DISCUSSION

This article examined the factors contributing to women's probability of divorce in Turkey. Both the relationships between individual-level and regional-level characteristics were scrutinized, which adds to the existing literature on the risk of divorce in two important ways. First, the majority of studies that explain divorce risks focus on divorce within Western countries (mainly Europe and North America). Non-Western countries have received little attention thus far, even though interesting divorce trends can be observed in these countries. Turkey is a particularly relevant case to study as it has witnessed major changes in family life events in recent years. Second, most studies have focused on individual characteristics in the study of divorce patterns. We add the societal context to our study for the case of Turkey where there is great regional variation in divorce risks. Our analyses point to three important findings.

First, since the rise of divorce in Turkey is relatively recent, divorce can be considered a 'new family demographic behaviour' in the Turkish context. Theories on the diffusion of innovations postulate that new behaviours first emerge in large towns and cities among those with a higher socioeconomic status (Liefbroer & Doureleijn, 2006; Nazio & Blossfeld, 2002). Moreover, the diffusion of divorce is considered as an individual-level process whereby individuals within a society adopt or reject the practice of divorce over time (Nazio & Blossfeld, 2002). Since we were interested in how the wider societal context of these women affected their probability of divorce, we considered characteristics of the region they lived in. This regional context is particularly relevant to study in Turkey, given the huge variation in demographic behaviours between the 12 different regions as well as in terms of economic development. In line with our expectations, living in regions where the crude divorce rate is higher (*Hypothesis 1*) and living in regions where the regional share of GDP is higher (*Hypothesis 2*), increases the divorce risks of women. The fact that our study clearly shows the expected patterns for the influence of the context points to the relevance of including measure of societal context in the study of demographic behaviour. In addition, given the fact that already these rather broad measures provide such a clear patterns indicates that social networks need to be studied in more detail to pinpoint the underlying mechanisms that lead to specific choices in the family life.

Our control variables revealed additional evidence of this process of diffusion: women that were married more recently, are more likely to divorce. Additionally, we also found that

higher educated women have higher probabilities to divorce, as well as women that have ever lived abroad. While the information on the exact whereabouts of these women is limited, we could speculate that they are exposed to Western contexts where divorce was already more prevalent. This in turn increases their individual risk of divorce. Our data did not allow a more fine-grained analyses but future research should link exposure to different norms and value systems in order to better determine the effect of these experiences on individual choices.

Second, we tested the so-called Goode hypothesis (Goode, 1962), which states that the relationship between women's education and her probability to divorce will become more negative over time as divorce becomes more accepted (*Hypothesis 3*). Our findings are to some extent supportive of this hypothesis, since women the effect of education decreases over time. Nonetheless, women with a higher education remain more likely to divorce than their lesser-educated counterparts. This could be the result of the fact that the prevalence of divorce in Turkey is still relatively low, so that the costs of divorce remain relatively high, and those with a higher education remain the pioneers. We could speculate that when this trend of increasing divorce rates in Turkey would continue, the effect of education will decrease or even become negative.

Third, we expected that the effect of women's education on divorce would also be shaped by the regional context. Contrary to what we expected, the effect of women's education becomes more positive in regions where divorce is more prevalent (*Hypothesis 4)*. Similarly, the effect of women's education becomes more positive in regions that are wealthier in terms of GDP (confirming *Hypothesis 5B*). These findings could be explained by the fact that better socioeconomic circumstances can strengthen the marriage of lesser-educated women, resulting in a relative increase of divorce risks among higher educated women (Härkönen & Dronkers, 2006; Jalovaara, 2003).

This study has shown that for Turkey, modernization and the diffusion of new family norms has resulted in an increase of divorce. However, the cross-sectional nature of the DHS data limit the possibilities of studying in detail the time-varying effects of several relevant characteristics, such as education and employment. Future studies could carry this study further by studying sociodemographic processes in Turkey from a more pronounced life course perspective. Additionally, information about characteristics of the husband is limited in our data, and we were not able to distinguish between divorce and separation, whereby people live separated but have not officially divorced. This potentially underestimates our estimates of the probability of divorce in Turkey. Finally, collecting context variables over

time for the 12 regions proved to be challenging. Future research could carry analyses on the role of divorce further by enriching the data with more detailed time-varying regional characteristics (for example the labour market participation of women).

Notwithstanding these limitations, this study is among the few to consider the role of the regional context in shaping women's divorce risk. Specifically, using multilevel models, we were able to simultaneously estimate the effects of women's individual characteristics as well as the regional characteristics on the probability of divorce. This revealed the importance of taking both individual *and* regional levels into account when studying individual-level processes of divorce.

Acknowledgements

We thank Jelle Kooistra for his help in preparing preliminary drafts of this paper during his internship at the Netherlands Interdisciplinary Demographic Institute.

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Table 1.
Descriptive Statistics of Turkish Women aged 15-49 at the time of survey (N = 15,418)

Variables	*M*	*SD*	Range
Individual-level variables			
Duration	14.44	8.91	1-38
Age at marriage	19.58	4.06	7-48
Education[a]			
No/Primary	0.78	0.41	
Secondary	0.10	0.29	
Tertiary	0.12	0.33	
Year of marriage	1991.33	9.27	1967-2008
Child(ren) out-of-wedlock[b]	0.05	0.21	
Age difference[c]			
Wife older	0.08	0.27	
Same age	0.08	0.27	
Husband older	0.84	0.36	
Mothertongue Kurdish[d]	0.19	0.39	
Consanguinity[e]			
Not related	0.75	0.43	
First degree	0.16	0.37	
Second degree	0.09	0.28	
Household wealth index[f]			
Poorest	0.38	0.49	
Middle	0.21	0.41	
Richest	0.41	0.49	
Arranged marriage[g]			
Not arranged	0.55	0.50	
Family	0.39	0.49	
Other	0.05	0.23	
Ever lived abroad[h]	0.02	0.14	
Regional-level variables			
Crude divorce rate	1.15	0.48	0.07-1.89
GDP (regional %)	0.09	0.06	0.01-0.22

[a]Education: 0 = *no or primary education,* 1 = *secondary education,* 3 = *tertiary education*. [b]Child(ren) out-of-wedlock: 0 = *no*, 1 = *yes*. [c]Age difference: 0 = *wife older*, 2 = *same age*, 3 = *husband older.* [d]Mothertongue Kurdish: 0 = *no*, 1 = *yes*. [e]Consanguinity: 0 = *not related*, 1 = *first degree related*, 2 = *second degree related*. [f]Household wealth index: 0 = *poorest*, 1 = *middle*, 2 = *richest*. [g]Arranged marriage: 0 = *not arranged,* 1 = *arranged by family*, 2 = *arranged by other.* [h]Abroad: 0 = *no*, 1 = *yes*.

Table 2. ***Multilevel Model Results Predicting Women's Divorce From Regional and Individual Level Variables (N = 15,418 women from 12 regions)***

Predictors	Divorce					
	Model 1		Model 2		Model 3	
	Coeff.	(SE)	Coeff.	(SE)	Coeff.	(SE)
Individual-level						
Duration	-0.051***	(0.018)	-0.062***	(0.018)	-0.051***	(0.018)
Duration squared	0.001*	(0.001)	0.001*	(0.001)	0.001*	(0.001)
Age at marriage	-0.157***	(0.037)	-0.154***	(0.037)	-0.160***	(0.037)
Age at marriage squared	0.004***	(0.001)	0.004***	(0.001)	0.004***	(0.001)
Education (no/primary=ref.)						
Secondary	0.650***	(0.125)	0.646***	(0.125)	0.649***	(0.125)
Tertiary	0.678***	(0.124)	0.669***	(0.124)	0.683***	(0.124)
Year of marriage (centered)	0.030***	(0.006)	0.017**	(0.007)	0.031***	(0.006)
Child(ren) out-of-wedlock	1.174***	(0.111)	1.174***	(0.111)	1.167***	(0.111)
Age difference (wife older=ref.)						
Same age	-0.512***	(0.165)	-0.514***	(0.165)	-0.515***	(0.165)
Husband older	-0.687***	(0.119)	-0.689***	(0.119)	-0.692***	(0.119)
Mother tongue Kurdish	-0.744***	(0.151)	-0.707***	(0.148)	-0.716***	(0.147)
Consanguinity (not related=ref.)						
First degree	-0.377***	(0.128)	-0.374***	(0.128)	-0.380***	(0.128)
Second degree	-0.382*	(0.157)	-0.382*	(0.157)	-0.384*	(0.157)
Wealth index (poorest=ref.)						
Middle	0.003	(0.101)	-0.001	(0.101)	-0.006	(0.101)
Richest	-0.478***	(0.103)	-0.478***	(0.102)	-0.495***	(0.103)
Arranged marriage (no=ref.)						
Family	-0.176*	(0.090)	-0.178*	(0.090)	-0.181*	(0.090)
Other	0.546***	(0.131)	0.540***	(0.131)	0.542***	(0.131)
Ever lived abroad	0.566***	(0.189)	0.575***	(0.189)	0.567***	(0.189)
Regional-level						
Divorce rate			0.319***	(0.119)		

GDP (regional %)					2.756***	(0.915)
Constant	-3.429***	(0.510)	-3.544***	(0.509)	-3.614***	(0.511)
Random parameters						
Constant	0.216***	(0.068)	0.140***	(0.066)	0.132***	(0.059)
Observations	222,278		222,194		222,278	
Total explained variance (%)[a]	13.3		14.0		14.4	
BIC	9420.8		9426.1		9425.7	
Degrees of freedom	18		19		19	
Likelihood Ratio test	11.37***		2.66**		3.19**	

[a]For details on the calculation of the total explained variance, see Snijders & Bosker, 1999: 225).
*$p < .05$. **$p < .01$. ***$p < .001$.

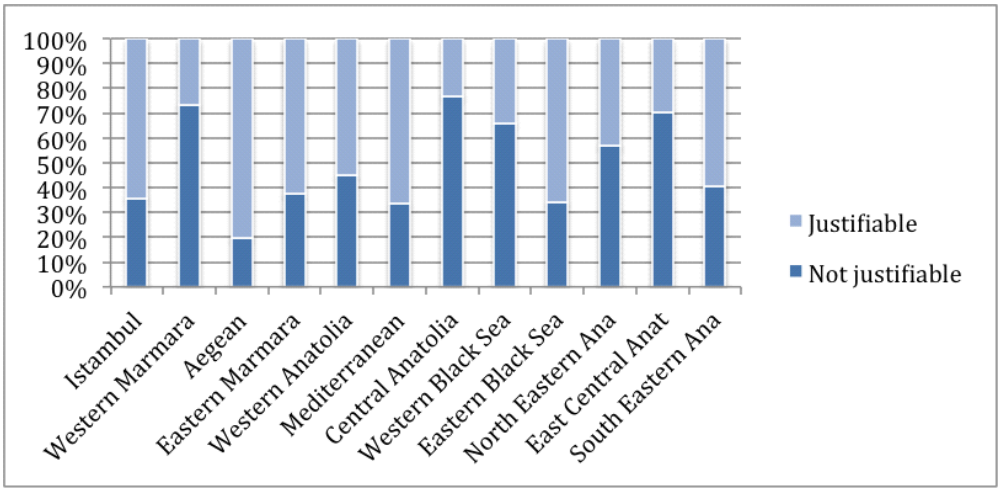
Table 3. ***Multilevel Model Results Predicting Women's Divorce From Regional and Individual Level Variables & Interactions (N = 15,418 women from 12 regions)***

Predictors	Divorce							
	Model 1		Model 2		Model 3		Model 4	
	Coeff.	(SE)	Coeff.	(SE)	Coeff.	(SE)	Coeff.	(SE)
Individual-level								
Duration	-0.064***	(0.018)	-0.051***	(0.018)	-0.0612***	(0.018)	-0.051***	(0.018)
Duration squared	0.001*	(0.001)	0.001**	(0.001)	0.001*	(0.001)	0.001**	(0.001)
Age at marriage	-0.157***	(0.037)	-0.163***	(0.037)	-0.148***	(0.037)	-0.163***	(0.037)
Age at marriage squared	0.004***	(0.001)	0.004***	(0.001)	0.004***	(0.001)	0.004***	(0.001)
Education (no/primary=ref.)								
Secondary	0.556***	(0.154)	0.548***	(0.154)	0.151	(0.238)	0.602***	(0.230)
Tertiary	0.837***	(0.144)	0.832***	(0.144)	0.413*	(0.224)	0.257	(0.228)
Year of marriage (centered)	0.019**	(0.008)	0.033***	(0.006)	0.018**	(0.007)	0.031***	(0.006)
Child(ren) out-of-wedlock	1.157***	(0.111)	1.151***	(0.111)	1.184***	(0.111)	1.162***	(0.111)
Age difference (wife older=ref.)								
Same age	-0.508***	(0.165)	-0.510***	(0.165)	-0.515***	(0.165)	-0.512***	(0.165)
Husband older	-0.685***	(0.120)	-0.688***	(0.120)	-0.687***	(0.119)	-0.692***	(0.119)
Mother tongue Kurdish	-0.707***	(0.148)	-0.718***	(0.147)	-0.740***	(0.149)	-0.736***	(0.148)
Consanguinity (not related=ref.)								
First degree	-0.372***	(0.128)	-0.379***	(0.128)	-0.377***	(0.128)	-0.380***	(0.128)
Second degree	-0.390**	(0.157)	-0.391**	(0.157)	-0.384**	(0.157)	-0.384**	(0.157)
Wealth index (poorest=ref.)								
Middle	0.007	(0.101)	0.002	(0.101)	0.002	(0.101)	0.009	(0.101)
Richest	-0.473***	(0.103)	-0.489***	(0.103)	-0.470***	(0.102)	-0.489***	(0.103)
Arranged marriage (no=ref.)								
Family	-0.175*	(0.090)	-0.179**	(0.090)	-0.180**	(0.090)	-0.188**	(0.090)
Other	0.527***	(0.131)	0.529***	(0.131)	0.544***	(0.131)	0.545***	(0.131)
Ever lived abroad	0.584***	(0.190)	0.577***	(0.189)	0.569***	(0.190)	0.559***	(0.190)

Individual-level interactions								
Secondary education * year of marriage	0.012	(0.014)	0.014	(0.014)				
Tertiary education * year of marriage	-0.026**	(0.013)	-0.023*	(0.013)				
Regional-level								
Divorce rate	0.330***	(0.118)			0.167	(0.136)		
GDP (regional %)			2.720***	(0.910)			2.030**	(1.002)
Cross-level interactions								
Secondary education * divorce rate					0.569***	(0.219)		
Tertiary education * divorce rate					0.286	(0.197)		
Secondary education * % GDP							0.480	(1.855)
Tertiary education * %GDP							3.776**	(1.629)
Constant	-3.506***	(0.512)	-3.585***	(0.514)	-3.535***	(0.509)	-3.514***	(0.513)
Random parameters								
Constant	0.134***	(0.066)	0.131***	(0.059)	0.137***	(0.068)	0.131***	(0.059)
Observations	222194		222278		222194		222278	
Total explained variance (%)[a]	14.2		14.5		13.7		14.2	
BIC	9445.1		9445.2		9443.2		9444.9	
Degrees of freedom	21		21		21		21	
Likelihood Ratio test	2.36*		3.05**		2.38*		3.08**	

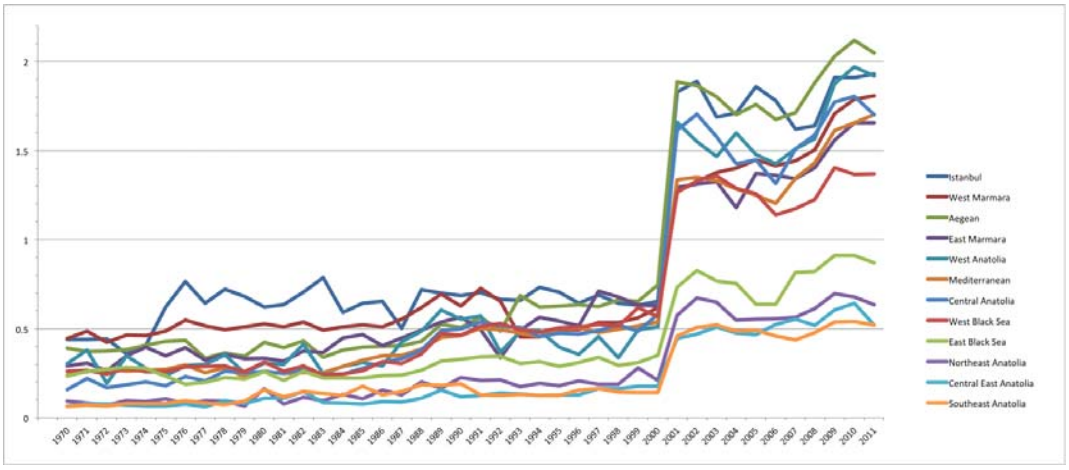
[a]For details on the calculation of the total explained variance, see Snijders & Bosker, 1999: 225).
*$p < .05$. **$p < .01$. ***$p < .001$.

Figure 1. Regional variation in attitudes toward divorce (2007)



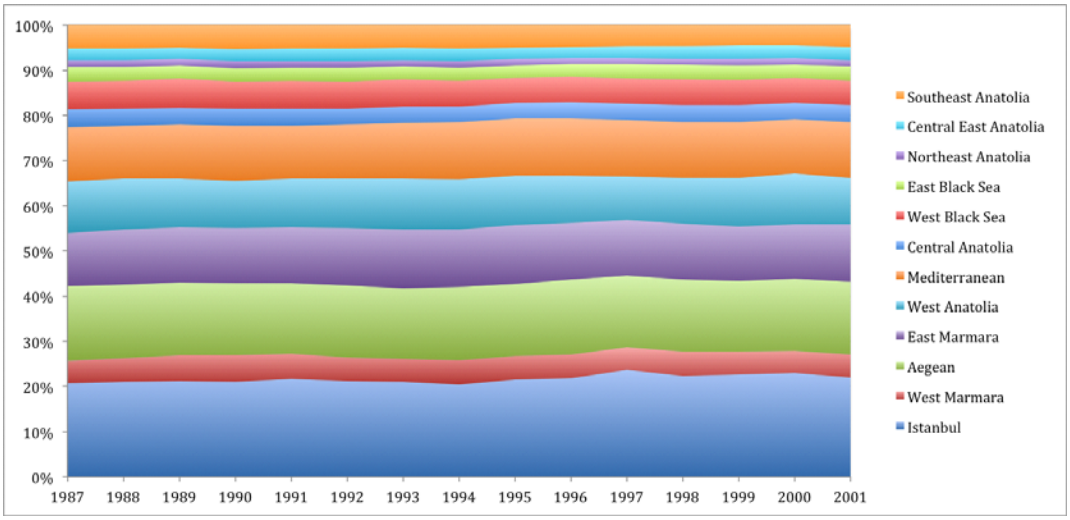
Source: WVS, 2007, authors' calculations; Note: Original variable WVS 2007: V205 0 = never justifiable to 10 = always justifiable; Recoded to a dichotomous variable with 0 = never justifiable and 1 = justifiable.

Figure 2. Crude divorce rates by province, 1970-2011



Source: Author's calculations (based on Turkstat 2006, 2011; State Institute for Statistics, 1972, 1975, 1977, 1981, 1983, 1986a, 1986b, 1990, 1994, 2001a, 2004).

Figure 3. Regional share of Turkey's national GDP, 1987-2001



Source: Author's calculations (based on State Institute for Statistics, 1997a, 1997b, 1999a, 1999b, 2000, 2001b, 2001c, 2002).

While demographic change has been well documented for many Western countries, much less is known about demographic transitions in other countries, including Turkey. Demographic change in European societies can be characterized by, amongst others, increased prevalence of divorce. Although it is often argued that life courses in Turkey follow a more traditional path, little is known on determinants and patterns of divorce, despite the major socioeconomic changes Turkey has undergone over the past decades.

We study the levels of divorce of women in Turkey from 1973-2008 to explain patterns of divorce, looking at the role of individual characteristics and the regional context. We use the Demographic Health Surveys (2003/2008), complemented with regional divorce and GDP data (Turkstat). Applying a multilevel approach, distinguishing 12 regions, we hypothesize that a region in which divorce is already more prevalent will make divorce more acceptable (diffusion hypothesis) and a wealthier region in terms of GDP increases the probability of divorce.

Our analyses show that levels of divorce increased over the past decades but huge regional variation remains. Sociocultural rather than socioeconomic factors explain this trend, and both regional diffusion of divorce and GDP are key determinants for divorce.

The Netherlands Interdisciplinary Demographic Institute (NIDI) is an institute for the scientific study of population. NIDI research aims to contribute to the description, analysis and explanation of demographic trends in the past, present and future, both on a national and an international scale. The determants and social consequences of these trends are also studied.

NIDI is a research institute of the Royal Academy of Arts and Sciences (KNAW).