Intergenerational Education Mobility of Minorities in Turkey

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Abstract

This is a study of intragenerational education mobility of minorities in Turkey, using Barometer surveys of Konda conducted periodically aiming to follow the political and social tendencies of Turkish society. We analyze four components of education mobility: bottom-up mobility, downward mobility, lower-end persistence, and upper-end persistence. Alevi individuals, on the one hand, Kurds and women, on the other one, have opposite dynamics. Women and Kurds are less likely to have bottom-up mobility and upper-end persistence but more likely to have downward mobility and lower-end persistence. For Alevi individuals, this is just the opposite. We find that both gender and being Alevi interact with ethnicity. While, in general, Kurdish-female interaction is positively associated with offspring's education attainment for Alevi-female interaction this association is negative.

J.E.L. Codes: E20, E62, H21, H20
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1 Introduction

While one may think of various explanations of existing differences in individual outcomes, persistence in socioeconomic status across generations is usually seen as a reliable indicator of lack of equality of opportunity. In an ideal world of equal opportunities, individuals would have the same chance to develop their talents and capacities. Unfortunately, this ideal is hardly attained in reality because circumstances that are beyond individual's control are likely to hinder or foster the process of achieving one's potential. Lately, there is an increasing concern in lack of opportunities and social inclusion among policy makers (e.g., OECD, 2018b) and among people at large (Alesina et al., 2018). Hence, there is a growing literature on intergenerational mobility, particularly in more advanced economies using data on incomes or earnings (e.g., Checchi et al., 1999, Kerm, 2004, Corak et al., 2014, among others), and to a lesser extent in less developed countries based on educational attainment of parents and children as data on incomes are generally not available (e.g., Azam and Bhatt, 2015, Neidhöfer et al., 2018, Alesina et al., 2021).

A large body of research investigates intergenerational mobility and change in intergenerational persistence for the entire population in a single country (e.g., Hertz et al., 2007). Yet, societies are not homogeneous; there are well-known differences in cultural, social and economic environment in which people live based on their race, ethnicity, class or region into which they are born. These circumstances that are beyond individual's control are known to lead inequalities, and recently there is an increasing number of studies testing differences in intergenerational mobility within a nation and they also provide evidence that they also contribute to diminishing mobility over generations (e.g., Chetty et al., 2014a, 2020).

In this paper, using a unique data set (Barometer surveys of Konda) we contribute to this literature by considering intergenerational education mobility of minorities, which we define as belonging to an ethnic or a religious group, in Turkey. We also consider women as a 'minority' group despite they constitute half of the population as they are traditionally left behind in many social and economic aspects, and that there could be a significant gender

gap in equality of opportunity. While there are some studies discussing gender differences in Turkey, to the best of our knowledge, there are no studies discussing inequality or mobility between and within minorities in Turkey.

There are various measures of intergenerational mobility that are used in the literature. Each measure has its own advantage and weakness. As Chetty et al. (2014b) state, the appropriate definition of intergenerational mobility depends upon one's normative objective. Given the complex and multidimensional nature of the problem no single measure can summarize all important aspects. This is why we prefer to focus on bottom-up mobility, downward mobility, upper-end persistence and lower-end persistence.

We find that bottom-up mobility increases over generations, as an expansion of education and an increase of the importance of (formal) education over time. However, we also provide evidence that gender, ethnicity and religion matters significantly. Even if women and Kurds are less likely to have bottom-up mobility we observe that Alevi individuals are better off. Further, Alevi-female and Alevi-Kurdish interactions are positive and significant implying that Alevi women and Alevi Kurds have a higher probability of bottom-up mobility compared to Sunni women and Sunni Kurds.

Our results show that downward mobility probability is lower for younger generations and Alevi population but it is higher for Kurds and women. Compared Kurdish males, Kurdish females have a higher probability of downward mobility. But, Alevi Kurds have a lower probability of downward mobility when compared to Sunni Kurds.

When we look at the persistence at the ends of the distribution we see that women and Kurds are less likely to have upper-end persistence but more likely to have lower-end persistence. But for Alevi individuals this is just the opposite. The likelihood of upper-end persistence is even lower for Kurdish females indicating that ethnicity and gender interact and create multiplicative negative effects which makes it difficult for Kurdish women to stay at the highest level of education. Also the probability of lower-end persistence is lower for Alevi females and Alevi Kurds. This shows that being Alevi is creating a difference for

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females and Kurds when it comes to the risk of staying at the bottom of the education distribution.

We document here existing differences in education and intergenerational mobility between different segments of the Turkish society as an introduction to a more detailed and policy oriented causal analysis. Our findings are purely descriptive and should not be interpreted in a causal way. Yet, we believe that our findings are valuable in that this is the first paper providing quantitative measures comparing minorities with majority in Turkey in terms of intergenerational education mobility.

The paper is organized as follows. Section 2 briefly reviews the existing literature. In section 3 we provide the context in Turkey. After discussing our methodology in Section 4, we provide our findings in Section 5. Finally, Section 6 concludes.

2   Related literature

From a macroeconomic theoretical perspective, intergenerational mobility is closely related to economic growth, inequality and well-being through a mechanism of human capital accumulation. For example, the model by Owen and Weil (1998) shows that increased mobility enables resources to be allocated efficiently and thus leads to higher growth and per capita income. However, their model also predicts multiple equilibria because of credit constraints and imperfect public provision of education, even though ability is assumed to be random and independent of parents' ability and wealth.

The structure and transmission of opportunities are first discussed by Becker and Tomes (1979) in their seminal paper. The outcomes of children and parents are related to the inheritability of ability, social capital, goals set by family environment and altruistic parental investment in children's human capital. Solon (2004) modifies the original model and adds to the list the efficacy of human capital investment, return to human capital, and public investment in human capital. In a recent paper, Alesina et al. (2021) also discuss the role

of history and institutions in the form of colonial past in Africa. Thus any differences in intergenerational mobility could be a consequence of differences in any of these factors.

Defined as the lack of persistence between parents and children's outcome, there is an intensive empirical literature on intergenerational mobility (Solon, 1999). Black and Devereaux (2011) provide a detailed survey of existing research discussing causes of observed correlation between outcomes of parents and children, and difficulties in estimating precise correlation due to measurement, particularly in incomes/earnings. Many studies on intergenerational mobility show a significant variation across countries. Hertz et al. (2007), for example, provide a cross-country analysis of trends in intergenerational mobility for 42 countries using comparable sample and variable definition. Their global estimate of correlation between child's and parent's education is around 0.40 in the last fifty years, yet it ranges form 0.28 to 0.66 across countries. Further studies show that intergenerational mobility also varies across time. Mayer and Lopoo (2005) find that intergenerational income elasticity decreases for men but increases for women in the US. Blanden and Machin (2004) show increasing immobility in the UK, whereas Neidhöfer et al. (2018) find that although intergenerational mobility varies between Latin American countries, it is increasing over time, arguing the earlier findings of high degree of immobility in this region is valid only for older cohorts.

A relatively small number of studies that look into racial/ethnic/class/regional differences within a country report strong evidence that such a gap between groups exists. For example, studies by Mazumder (2014) and Chetty et al. (2020)) show that intergenerational mobility is lower for blacks than whites in the US. Similar differences between races is also reported for South Africa (Nimubona and Vencatachellum, 2007), while Azam and Bhatt (2015) find that sons of fathers that belong higher casts in India are more likely to obtain higher levels of education. Chetty et al. (2014a) show significant differences in mobility across areas in the United States[1]. An extensive study by Alesina et al. (2021) finds significant heterogeneity

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[1]When minorities are recent immigrants, the conclusion differs. For example, Aydemir et al. (2013) find that immigrants in Canada exhibit higher intergenerational educational mobility than native born Canadians.

between and within African countries, arguing that geographic and historical factors are prominent causes of such variation.

As pointed out before, the differences could be due to a wide range of factors. For example, Mayer and Lopoo (2005) relate the change in intergenerational mobility in the US to decisions of children about marriage, whereas Blanden and Machin (2004) argue that the fall in mobility in the UK can be explained by differential expansion of education between poor and rich families. In a similar vein, Neidhöfer et al. (2018) find that differences in mobility between Latin American countries are strongly correlated with progressive public provision of education.

Interest in intergenerational education mobility in Turkey is very recent. Tansel (2015) finds that there is lower mobility for women in general and for children with less educated parents using 2007 Adult Literacy Survey conducted by Turkish Statistic Institute. Akarçay-Gürbüz and Polat (2017) use 1990 and 2000 Censuses and reach similar conclusion. Both papers also report an increasing mobility over time. In a recent paper, Aydemir and Yazici (2019) confirm the intergenerational persistence in educational attainment for women. Their analysis moves beyond and show a positive relationship between mobility and development level of place of residence when the child is young, though their findings is mostly valid for women. Oztunali and Torul (2022), similarly concludes a significant heterogeneity in Turkey, in that descendants' gender, degree of urbanization of the place of (current) residence, educational attainment of the less-educated parent, and financial conditions during the adolescence of the descendant play important roles.

All these studies cited above are at national level, comparing intergenerational mobility across countries or over time, with a few exceptions that look into gender differences. There are a few studies that considers mobility between social groups, racial, ethnic, religious minorities or 'vulnerable' groups, within a country. The first study that examines differences

An OECD report (OECD, 2018a) concludes that immigrants' children's educational outcomes depends less on their parents than children of native-born parents in several European countries, albeit migrants to Europe have lower socio-economic characteristics than natives, unlike immigrants in Canada.

in mobility between the blacks and whites in the US is by Hertz, 2005. He found that blacks are less upwardly and more downwardly mobile than whites, a result later confirmed by Mazumder, 2014 and Chetty et al., 2020. Similarly, Nimubona and Vencatachellum, 2007 report higher intergenerational education mobility for whites than that of blacks in South Africa. Azam and Bhatt, 2015, on the other hand, investigate intergenerational mobility of different castes in India and find that children of higher castes have higher probability to obtain more education.

3   Data and context

Turkish constitution prohibits any kind of discrimination based on gender, ethnicity or religious affiliation. While it is debatable whether the Turkish state is nationalistic or it is attempting to ensure its neutrality with respect to ethnicity, no official statistics are published about the distribution of population based on ethnicity since 1965. At the same time, the Turkish state to support its claims to be secular, does not provide any information for religious affiliation of its citizens[2]. These restrictions on data prevented researchers to examine economic and social well-being of heterogeneous groups in Turkey for a long time. Our unique data set allows us to test presence or lack of intergenerational mobility of minorities for the first time. Regardless all provisions in the constitution, we suspects and test the lack of mobility across different segments of the Turkish society. As suggested in the literature the lack of mobility could be either due to preferences and/or ambitions of these groups or through '(in)visible' glass ceilings. At this stage we are not able to identify cause(s).

Data used in this paper come from Barometer surveys of Konda, a polling company. Barometer surveys are conducted periodically on the first week of each month regularly covering on average 2,750 individuals and aims to gauge the political and social tendencies and preferences of the Turkish society. While surveys cover a long period of time (from March

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[2]There were a significant non-Muslim minority living in the Ottoman Empire. After the World War I, population deportations and exchanges reduced Christian minorities to a negligible size. The share of non-Muslims were already below three percent in 1927.

2010 to present), question about father's education, a primary variable for our research, was not asked in each survey. Earliest survey we use conducted in March 2010 and the latest in January 2020.

The Barometer surveys provide unique information on the ethnicity and religious affiliation of respondents by asking two specific questions to the respondents:

> *"We are all citizens of Turkish Republic, yet may come from different ethnic roots. What is your ethnic identity or how do you perceive your ethnic identity?"*

and

> *"Which religious affiliation, do you consider, that you do belong?"*

The answers to these question enable us to establish minorities (as perceived by respondents) in Turkish society. Our ethnicity and religious affiliation variables are each grouped into two categories: 'Turkish' and 'Kurdish' (including Zazas, a section of Kurdish ethnicity); and 'Sunni' (including both Hanafites and Shafi'ites) and 'Alevi'. The surveys also allow other ethnicity and other religious affiliations, yet each segment has too few observations and when grouped together they exhibit significant variation within groups, rendering our findings on these sub-groups to unreliable. For example, ethnicity includes Arabs, Jews, Armenians and so on; religious affiliation contains other Islamic sects, Orthodox and Catholic Christians and more. We exclude them from our analysis.

Table 1 provides sample size and shares of different ethnic and religious groups in the sample. We have 30,878 usable observations. Males and females are almost have equal shares. Over 80 percent of people living in Turkey consider themselves as 'Turkish'. People that perceive themselves as Kurdish are 13.7%, which constitutes a sizable minority. Other ethnic groups make up the remaining 4.7%. An overwhelming majority of people in Turkey claim to be 'Sunni Muslims', 92.7%. Those who respond to religious affiliation question as Alevi are making up 5.4% of the population. People with other religious affiliations form a rather small group. They are included in the sample, but we do not provide any results pertaining those groups separately.

While not a minority in numbers, women have traditionally been left behind in Turkey. In the year of 2020, 6.4% of women of 25 years age and above are illiterate and 13.5% does not have any degree, despite the mandatory education (of (at least five years), as opposed to a mere 1.0% illiterate and 3.2% without-a-degree men. There are an abundance of studies that show repeatedly the disadvantages of women in economic and social spheres in Turkey. Therefore, in our analysis we consider women as a vulnerable group and emphasize differences between men and women between and within each ethnic and religious group.

Table 1: Sample Size

		Total	Males	Females
Full Sample	Nobs	30,878	15,480	15,398
	Share (%)	100.0	50.1	49.9
Turkish	Nobs	25,198	12,580	12,618
	Share (%)	81.6	40.7	40.9
Kurdish	Nobs	4,221	2,144	2,077
	Share (%)	13.7	6.9	6.7
Sunni	Nobs	28,632	14,303	14,329
	Share (%)	92.7	46.3	46.4
Alevi	Nobs	1,679	865	814
	Share (%)	5.4	2.8	2.6

To eliminate possible biases that may result from pooling data we report mobility measures over four cohorts, defined by their birth year, 1950-1959, 1960-1969, 1970-1979 and 1980-1985, as well. NeidhÃ¶fer et al. (2018), for example, report changing immobility in Latin America over time. As education expands and returns to education changes over time, it is likely that younger cohorts obtain more education independent of their fathers' education level. Moreover, changing demographics may also bias mobility estimates. While there is a more than ten percent difference between males and females of the older cohort, share of Kurds in the sample increases over cohorts (Table 2). Shorter life span of women, particularly less educated women, in Turkey reduces number of observations for older cohorts, and/or high fertility among Kurdish population are suspected to create an upward bias in mobility when data is pooled. In table 2 we report shares of each group within the cohort.

Table 2: Distribution Across Cohorts

	Cohort 1	Cohort 2	Cohort 3	Cohort 4
Share in Sample	17.2	27.3	33.9	21.6
		Share in Cohort		
Males	57.0	48.8	49.0	48.1
Females	43.0	51.2	51.0	51.9
Turkish	84.7	82.7	81.3	78.1
Males	47.8	40.1	39.6	37.8
Females	36.9	42.6	41.8	40.4
Kurdish	11.0	12.7	13.8	16.8
Males	6.8	6.4	6.9	7.7
Females	4.2	6.3	6.9	9.1
Sunni	93.2	93.2	92.5	92.1
Males	52.9	45.5	45.2	43.9
Females	40.3	47.7	47.3	48.2
Alevi	4.9	5.0	5.8	5.9
Males	3.1	2.4	2.9	3.0
Females	1.8	2.6	2.9	2.9

Finally, Chetty et al. (2014) find significant differences in mobility across areas in the US, and report that individuals who live in regions with better social and economic conditions are intergenerationally more mobile. It is a well-known fact that there is a persistent wide economic and social development gap between Western and Eastern part of Turkey. Aydemir and Yazici (2017) also find that social and economic conditions in city that the child grows up is important in Turkey. If there is a spatial sorting based on ethnic and/or religious identity, then estimates of intergenerational mobility could be biased. Unfortunately, our data does not have information on the region in which the individual spend his childhood, but region in which he or she is born. We assume that the individual's childhood region is where he/she grew up. We split our sample into West, East and Central regions to ensure that we have sufficient sample size and control for regional differences, as well [3]. As shown in Table 3 majority of the population born in the East belongs to Kurdish minority (51%), and Kurds also constitute current majority in the East (not reported, 54%). In contrast,

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[3]West covers all western coastal regions and Ankara, the capital, and East includes NUTS1 regions of TRA-TRC.

West is overwhelmingly Turkish and Sunni considering the birth place. Due to migration to relatively developed West, the shares of minorities are higher in terms of current residence: The share of Kurds is 7.6% and the share of Alevis 5.9% is in the West. While we can guess migrants from these numbers, it is hard to know when did the migration occur.

Table 3: Distribution Across Region of Birth

	West	East	Central
Share in Sample	50.6	23.5	25.9
	Share in Region of Birth		
Males	50.5	50.2	49.5
Females	49.5	49.8	50.5
Turkish	93.1	42.6	95.5
Males	46.9	21.0	47.2
Females	46.3	21.7	48.3
Kurdish	2.8	51.0	1.3
Males	1.4	26.0	0.8
Females	1.4	24.9	0.6
Sunni	93.4	92.0	92.1
Males	47.0	46.0	45.4
Females	46.4	46.0	46.8
Alevi	4.3	6.8	6.6
Males	2.2	3.4	3.6
Females	2.2	3.4	3.0

Our outcome measure is educational attainment, as data for incomes or earnings are not available. However, Black and Devereaux (2011) argue that educational attainment provides significant information about the lives of individuals and that measurement problems are less severe as education is completed early in life and thus not prone to life cycle effects and people can provide more reliable information on their educational attainment. Blanden (2013), in an extensive survey, considers different outcomes, earnings, education and social class, using data from 46 countries and concludes that the results for earnings and education are fairly well correlated, making analysis on educational mobility a reliable proxy for earnings mobility in countries such as Turkey where earnings information is not readily available.

Educational attainment is measured as the latest degree completed. We have grouped

them into five: 'No Degree', 'Lower Primary' , 'Upper Primary', 'Highschool' and 'University' degrees. We separate primary school into two, as all individuals in our sample were subject to a mandatory education of five-years (Lower Primary). Mandatory education increased to eight years (Upper Primary) in 1997 affecting those who are born after 1985. To avoid possible bias of such a change in our analysis, we restrict our sample to those who are born between years 1950 and 1985, corresponding people of ages 28 to 69 in our sample.

Table 4: Descriptive Statistics on Educational Attainment

	Share in each segment (%)				
	No Degree	Lower Prim.	Upper Prim.	High School	Univ. Grads.
All	8.6	41.6	14.5	22.3	13.0
Males	3.4	36.4	16.6	27.1	16.5
Females	13.9	46.9	12.4	17.4	9.4
Turkish	5.0	42.0	15.1	23.9	14.0
Males	1.9	34.7	17.1	28.7	17.6
Females	8.2	49.3	13.2	19.1	10.4
Kurdish	28.6	39.2	11.9	13.5	6.7
Males	11.9	44.5	15.1	19.1	9.5
Females	45.8	33.8	8.7	7.8	3.9
Sunni	8.8	42.0	14.6	22.1	12.5
Males	3.5	36.6	16.8	27.2	16.0
Females	14.1	47.4	12.4	17.1	8.9
Alevi	7.3	41.8	15.1	23.1	12.7
Males	3.0	40.1	16.2	26.4	14.3
Females	11.8	43.6	13.9	19.7	11.1

In Table 4 we report educational attainment by each segment. A number of important differences are apparent. Women, regardless of their ethnic origin or religious affiliation have lower educational attainment. Second, Kurds have significantly lower attainment, particularly Kurdish women: More than 45% of Kurdish women have not completed any school. Data show that there was a significant noncompliance with mandatory years of education requirement within the Kurdish community. It should be noted that they face a linguistic disadvantage from the start, as the medium of learning is in Turkish at all levels. On the other hand, Alevis have slightly, but not significantly, higher education level. However, Alevi

women are better off in terms of education compared to their Sunni counterparts.

4   Conceptual framework

Interest in intergenerational mobility (IM), defined as transmission of opportunities across generations, is increasing, however, it has many facets and consequently different measures are used in the literature yielding different pictures of mobility. Fields (2019) defines six 'concepts' that have various interpretations. Our main goal in this paper is to compare IM across different segments of Turkish society and we would like to emphasize 'directional mobility'.

Earlier research on intergenerational mobility is based on a single parameter that describes parent-child outcome distributions. There are two such measures that are frequently used (See among others Fields and Ok, 1999; Jantti and Jenkins, 2015; Fields, 2022; Formby et al. 2004)). The first one is intergenerational elasticity (IGE) of offspring's income or education with respect to parental income or education. However, there are various shortcomings of IGE. First, it does not differentiate between upward and downward mobility. Second, it is not informative about non-linearities in mobility due to the differences in mobility across different parts of the distribution. Third, it is not suitable for between group comparison as it measures children's outcomes against better-offs in their own group. And finally, it requires cardinal values, assigning numbers to education may not be meaningful when studying education mobility as it is our case.

The second popular measure of intergenerational mobility is transition matrices (TM). Not only TM approach has the benefit of allowing nonlinearities across the distribution, but also it allows us to make comparisons between population subgroups and entire population. In IGE, when the sample is split by groups the estimate shows the degree of regression to the subgroup mean not the mean of the whole population (see also Black and Devereux, 2011 for a similar discussion). There are at least three major shortcoming of TM approach. The first

one is that it is not easy to estimate a TM conditional on some important covariate such as regions. For IGE, this is as simple as adding a new covariate to the regression. The second one is that the TM approach does not allow to measure the degree of origin independence. Imagine that each offspring attains an education level that is only one level higher than their parents. According to TM approach that would imply that we have a relatively higher mobility while in reality we have a very strong origin dependence which, by the way, would be captured by IGE for instance.[4] And third, as IGE, TM does not differentiate between upward and downward mobility.

Given the above discussion, we think that it is more informative to focus on directional education mobility. This is why, we are considering four different measures based on discrete transition matrices and takes into account directional mobility in this paper. Our first measure is bottom-up-mobility and defined as:

$$BUM_k = Pr(y_{k,t} \geq s_1 \,|\, y_{k,t-1} < s_0) \tag{1}$$

where s_0 and s_1 are degrees of father's and child's, respectively, and k denotes k^{th} segment of the society. Our choice for s_0 and s_1 is primary and high school degrees. While these choices are somewhat arbitrary, we picked primary education as it was required for all cohorts in our data, and chose high school as around 38% of our sample has a degree above middle school[5].

One can also measure downward-mobility in a symmetrical way:

$$DWM_k = Pr(y_{k,t} < s_1 \,|\, y_{k,t-1} \geq s_0) \tag{2}$$

in this case we have chosen a more lenient upper primary for both s_0 and s_1.

We are also interested in persistence at the ends of the distribution. We report two sets of transition probabilities, lower-end-persistence, LEP, and upper-end-persistence, UEP,

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[4]To have origin independence we need that final education levels are independent of initial (parents') education levels. Obviously, this is not the case here.

[5]We have used different levels for robustness and our main findings are not altered in any significant way.

measures:

$$LEP_k = Pr(y_{k,t} \leq s_1 \mid y_{k,t-1} < s_1) \tag{3}$$

$$UEP_k = Pr(y_{k,t} \geq s_2 \mid y_{k,t-1} \geq s_2) \tag{4}$$

that is the probability that children of fathers with low (high) education also have low (high) education. We choose s_1 as lower primary degree (more than 50% of children has primary or less education in our sample), and s_2 as highschool degree (around 10% of fathers have highschool or above degree) in our analysis.

An important problem of descriptive measures of mobility measures is that one cannot distinguish between various demographic and regional factors we consider in this paper: ethnicity, religion, gender, birth date and region. This is especially problematic in Turkey because these factors are intersecting. For instance, while Kurds are overwhelmingly concentrated in less-developed Eastern regions Turks are mostly in developed Western regions (see Table 3). Thus, ethnicity and regional effects are correlated in the data. When discussing mobility measures it is desirable to distinguish between "being Kurdish" and "living in less developed regions". Unfortunately, cross-tabulation analyses (unconditional descriptive measures calculated for each group separately) do not allow for this. Multiple regression approach will not only allow us to separate ethnic effects from regional ones, but also to make statistical inference. By using region dummy variables we are able to partial out regional effects so that ethnicity variable reflects all other effects independent of regional ones. Another benefit of multiple regression is that we can carry out an intersectional analysis and determine whether some of these demographic and regional factors interact and create multiplicative positive or negative effects on education mobility.

For each mobility measure we run three nested models. The first model ($m1$) is the basic

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regression without any interactions

$$y = \beta_0 + R_r + \beta_1 F + \beta_2 K + \beta_3 A + \beta_4 M + C_c + u \tag{5}$$

where y is one of our mobility concepts; F, K, A and M are, respectively, dummy variables for female, Kurdish, Alevi and being in a migrant family; C_c are 10-year birth cohort (1950-1959, 1960-1969, 1970-1979, 1980-1985) and R_r are NUTS 1 level region dummy variables.

The second model $(m2)$ adds all two-way interactions between F, K, A, M and C_c to $m1$

$$
\begin{aligned}
y =& \beta_0 + R_r + \beta_1 F + \beta_2 K + \beta_3 A + \beta_4 M + C_c + \beta_5 F \times K + \beta_6 F \times A + \beta_7 F \times M \\
&+ F \times C_c + \beta_8 K \times A + \beta_9 K \times M + K \times C_c + \beta_{10} A \times M + A \times C_c + M \times C_c + u \tag{6}
\end{aligned}
$$

And finally the third model $(m3)$ adds the following three-way interactions $F \times K \times A$, $F \times K \times M$, $F \times K \times C_c$ and $F \times A \times C_c$ to $m2$

$$
\begin{aligned}
y =& \beta_0 + R_r + \beta_1 F + \beta_2 K + \beta_3 A + \beta_4 M + C_c + \beta_5 F \times K + \beta_6 F \times A + \beta_7 F \times M \\
&+ F \times C_c + \beta_8 K \times A + \beta_9 K \times M + K \times C_c + \beta_{10} A \times M + A \times C_c + M \times C_c \\
&+ \beta_{11} F \times K \times A + \beta_{12} F \times K \times M + F \times K \times C_c + F \times A \times C_c + u \tag{7}
\end{aligned}
$$

5 Intergenerational mobility

5.1 Absolute and relative mobility

Before getting into discussion of intergenerational mobility of ethnic and religious minorities, we provide mobility patterns at national level. Figure 1 shows absolute mobility by gender over cohorts. The figures reveal that as education expands, children attain higher education levels than their fathers. Once again, it is clear that women are disadvantages. In older cohorts, mobility for women was significantly different than men, but the gap has closed

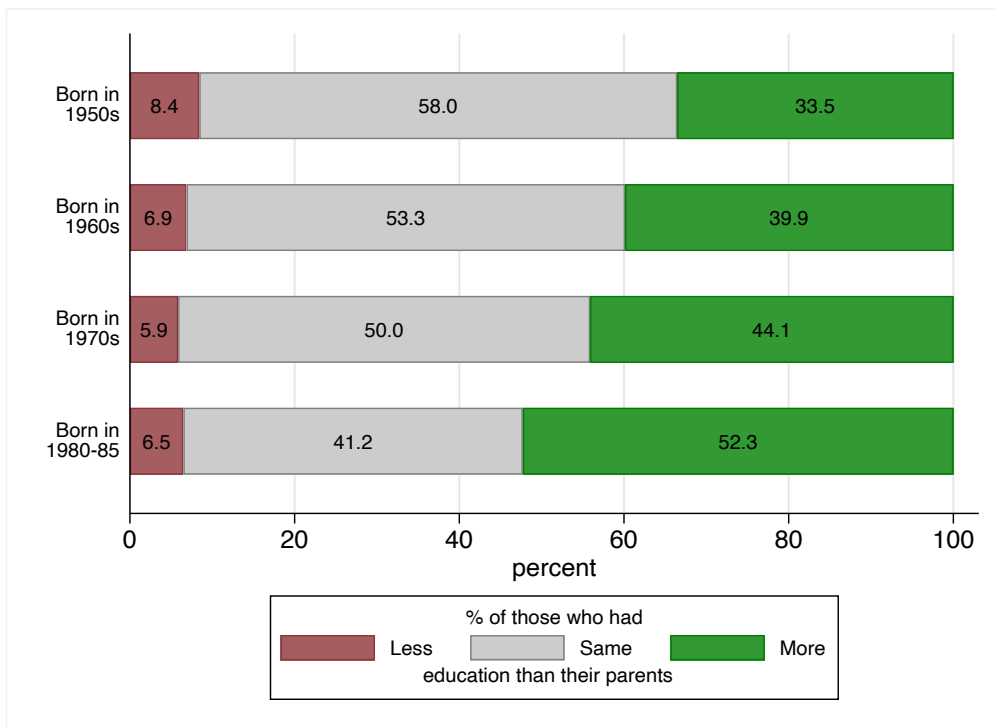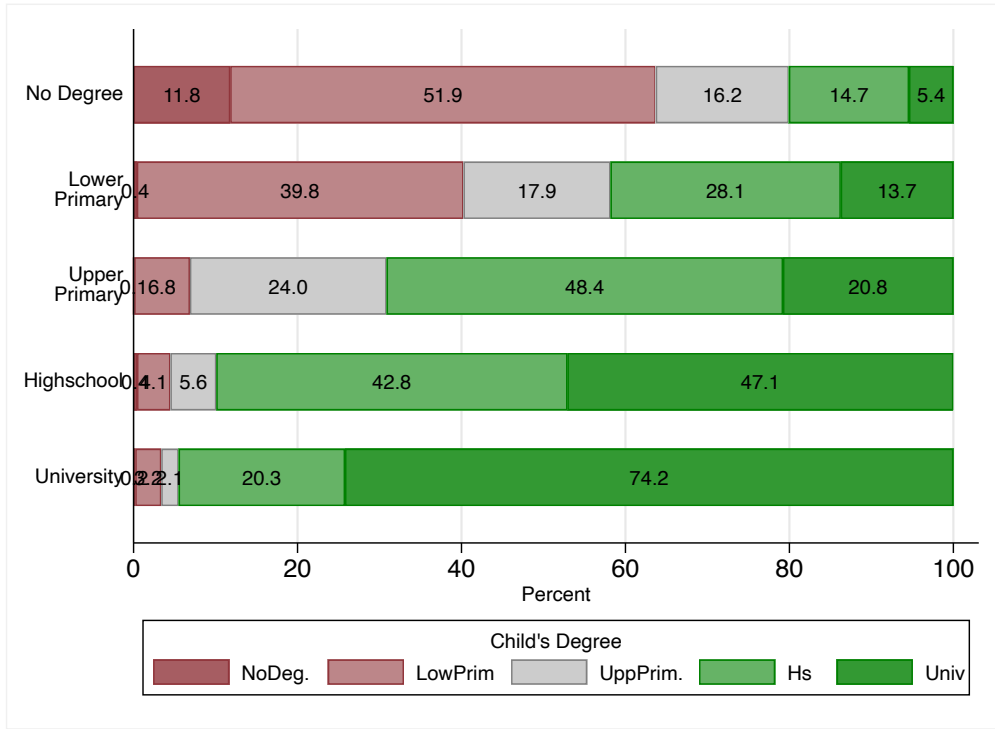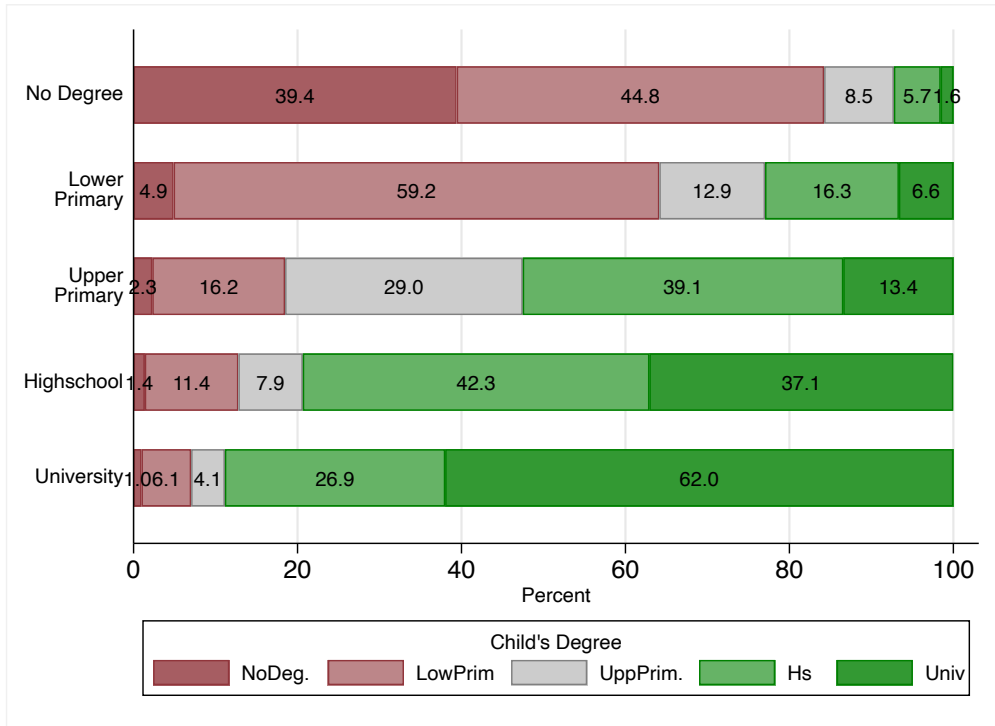# Figure 1: Absolute Mobility by Cohorts

(a) Males

(b) Females

Figure 2: Relative Mobility by Gender

(a) Males

(b) Females

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over time.

In Figure 2 we show relative mobility by gender. Beyond the obvious differences between males and females, the figures indicate upper- and lower-end persistence. More than 70% (60%) of men (women) born to a father with a university degree are university graduates, whereas the share decreases to 5.4% (1.6%) if the father has no degree. On the other end, almost two-thirds of women and three quarters of women born to a no-degree father can not achieve a level above mandatory lower primary level.

5.2   Regression analysis

Table 5, Table 6, Table 7 and Table 8 show, respectively, multiple regression results for bottom-up mobility, downward mobility, upper-end persistence and lower-end persistence. In each table, the first column contains covariates used in each regression. The other columns (m1,m2 and m3) present results of different regressions.

Table 5: Bottom-up mobility

	m1	m2	m3
F	−0.18*** (0.01)	−0.16*** (0.01)	−0.15*** (0.01)
Kurdish	−0.10*** (0.01)	−0.06*** (0.02)	−0.09*** (0.02)
Alevi	0.04*** (0.01)	0.02 (0.03)	0.08** (0.04)
60-69	0.05*** (0.01)	0.05*** (0.01)	0.05*** (0.01)
70-79	0.14*** (0.01)	0.18*** (0.01)	0.18*** (0.01)
80-85	0.26*** (0.01)	0.30*** (0.01)	0.30*** (0.01)
migfam	0.06*** (0.01)	0.02 (0.03)	0.02 (0.03)
F:60-69		0.004 (0.01)	−0.001 (0.02)
F:70-79		−0.06*** (0.01)	−0.06*** (0.02)
F:80-85		−0.07*** (0.02)	−0.07*** (0.02)
F:Alevi		0.05** (0.02)	−0.09 (0.06)
F:Kurdish		−0.001 (0.01)	0.06* (0.04)
F:migfam		0.07*** (0.02)	0.06*** (0.02)
60-69:Alevi		−0.06* (0.03)	−0.13*** (0.05)
70-79:Alevi		−0.02 (0.03)	−0.09** (0.05)
80-85:Alevi		0.004 (0.04)	−0.10** (0.05)
60-69:Kurdish		−0.03 (0.02)	−0.01 (0.03)
70-79:Kurdish		−0.03 (0.02)	−0.004 (0.03)
80-85:Kurdish		−0.08*** (0.02)	−0.02 (0.03)
60-69:migfam		0.03 (0.04)	0.03 (0.04)
70-79:migfam		0.03 (0.03)	0.03 (0.03)
80-85:migfam		0.04 (0.04)	0.04 (0.04)
Alevi:Kurdish		0.11*** (0.03)	0.16*** (0.04)
Alevi:migfam		−0.06 (0.04)	−0.06 (0.04)
Kurdish:migfam		−0.09** (0.04)	−0.10** (0.05)
F:Alevi:Kurdish			−0.11* (0.06)
F:60-69:Kurdish			−0.04 (0.04)
F:70-79:Kurdish			−0.06 (0.04)
F:80-85:Kurdish			−0.11** (0.05)
F:60-69:Alevi			0.19*** (0.07)
F:70-79:Alevi			0.18*** (0.07)
F:80-85:Alevi			0.25*** (0.07)
F:Kurdish:migfam			0.02 (0.07)
Observations	27,106	27,106	27,106
Adjusted R^2	0.10	0.11	0.11

Note: *p<0.1; **p<0.05; ***p<0.01. Coefficients of intercept and dummy variables for Nuts 1 region of birth are not reported to save space.

Bottom-up mobility results are presented in Table 5. The basic model (m1) shows that bottom-up mobility is positively associated with being Alevi and having a migrant family. Also, bottom-up mobility has an increasing trend in the sense that younger generations have higher mobility rates. However, the probability of bottom-up mobility is lower for females

and Kurds.

m2 presents regression results for the larger model with all two-way interactions. There are several important findings. First, females and Kurds benefit less from the increasing trend in bottom-up mobility. The coefficients on 1970-1979 and 1980-1985 cohorts are negative for females, while for Kurds only the the coefficient on 1980-1985 cohort is negative. Second, being in a migrant family increases the likelihood of bottom-up mobility for females while for Kurds this effect is negative. Third, Alevi-female and Alevi-Kurdish interactions are positive and significant implying that Alevi women and Alevi Kurds have a higher probability of bottom-up mobility compared to Sunni women and Sunni Kurds.

m3 augments m2 with three-way interactions. There are three important findings. First, the negative cohort effects for females are mainly coming from Sunni females, because we see that Alevi females have a strong increasing trend over time. Second, the higher probability of bottom-up mobility for Alevi Kurds is not homogenous across gender. Compared to males, the probability of bottom-up mobility is smaller for females among Alevi Kurds. Third, the negative effect of being in a migrant family for Kurdish people is statistically the same for males and females.

It is difficult to calculate probability of bottom-up mobility for any given category (such as males, females, Sunnis etc.) because of two-way and three-way interactions. In such complex models, it is easier to compare predicted models. There are usually three way to compute predictions. Let us say we want to compare the probability o bottom-up mobility for males and females in m3. One way is to calculate predicted value for males and females at "representative values" of other covariates. For instance we can compute the predicted probability for males and females who are Sunni, Turkish, born in Istanbul, member of a migrant family, born in 1960s. This is one possible way for "adjustment". A second way is to calculate the predicted probability at the mean value of other covariates. We will compare males and females who are 14 percent Kurdish, 5 percent Alevi etc. A third way, which is our preferred approach, is to calculate these predictions using observed values of

other covariates two times: first, assuming this person is female and second assuming this person is male regardless of this person's gender. This way it is as if we have two identical samples except gender. Taking the average of predicted values gives us "Average Adjusted Predictions" (AAP). When we have several categories, say gender and ethnicity, we compute predictions for all combinations of these two covariates. In this example, we have four combinations: "female and Turkish", "female and Kurdish", "male and Turkish" and "male and Kurdish"

Figure 3 shows the AAP of bottom-up mobility by gender and ethnicity. Males have a higher probability of bottom-up mobility compared to females for both ethnicities while Turks have a higher probability compared to Kurds for both genders.

Figure 4 shows the AAP of bottom-up mobility by gender and religion. There is no statistically significant difference between Alevi males and and Sunni males. However Alevi females have a higher probability of bottom-up mobility compared to Sunni females.

Figure 5 and Figure 6 compare Alevi and Sunni individuals at each gender-by-ethnicity combination. While Figure 5 consider all birth cohorts together, Figure 6 compares the evolution of bottom-up mobility over cohorts to see whether there are any signifcant changes over time. From Figure 5 we see that the lack of difference between Alevi males and and Sunni males is only true for Turks. In all other cells being Alevi is associated with a higher probability of bottom-up mobility. Figure 6 reveal several important facts. First, despite differences in levels between Alevi and Sunni individuals the trends are very similar for both ethicities in the case of males. However, the trend for Alevi females is steeper compared Sunni females for both Kurds and Turks. Second, although younger generations have higher probabilities of upward mobility in all gender-by-ethnicity-by-religion combinations, the difference between young and old generations is very small in the case of Kurdish females.

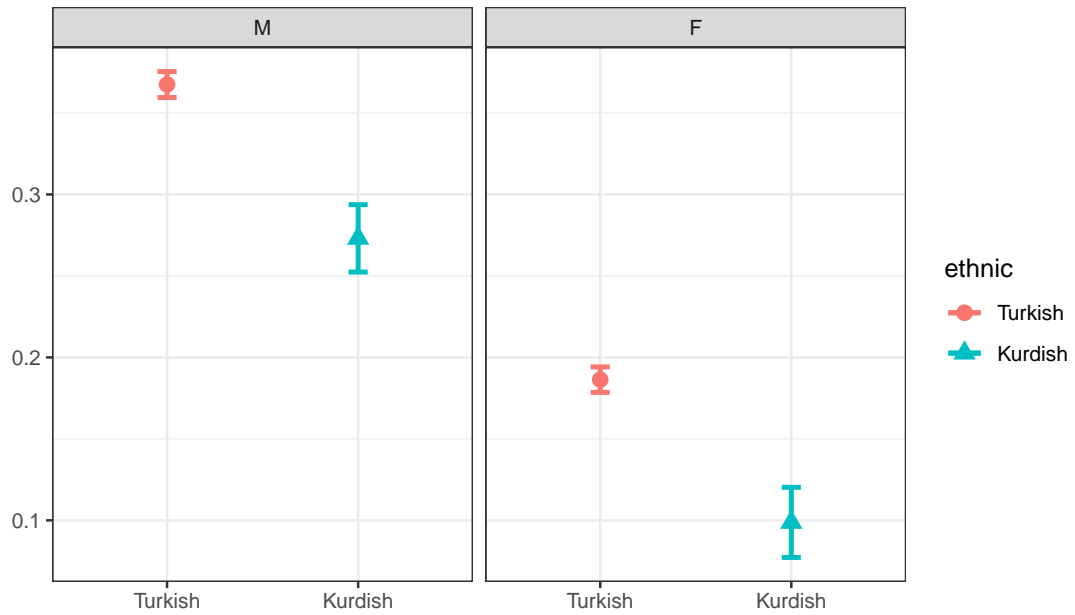Figure 3: Bottom-up mobility by gender and ethnicity

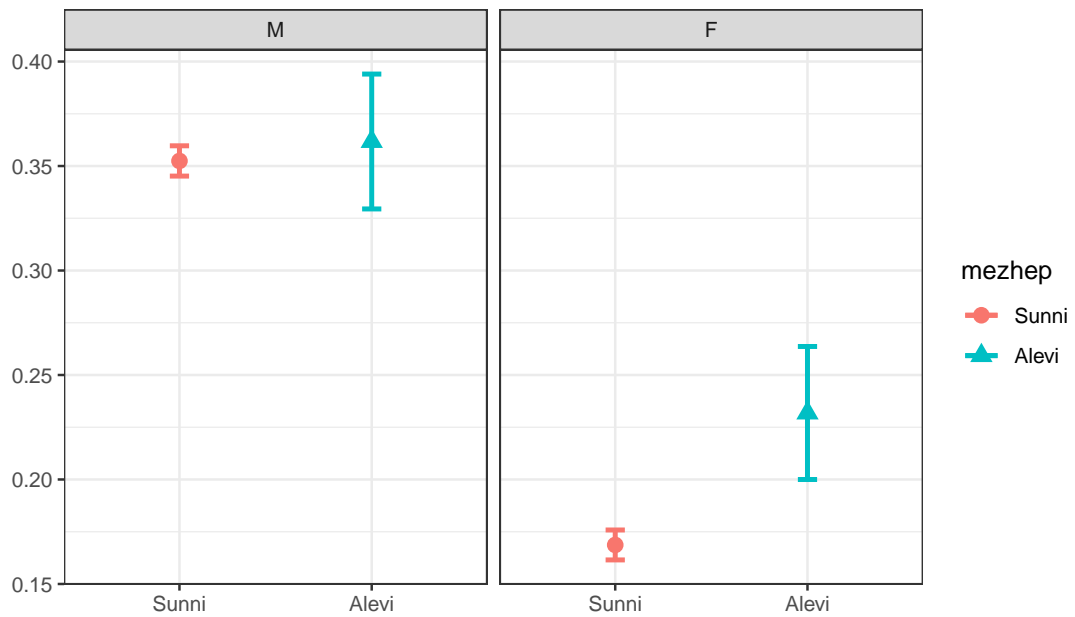Figure 4: Bottom-up mobility by religion and ethnicity

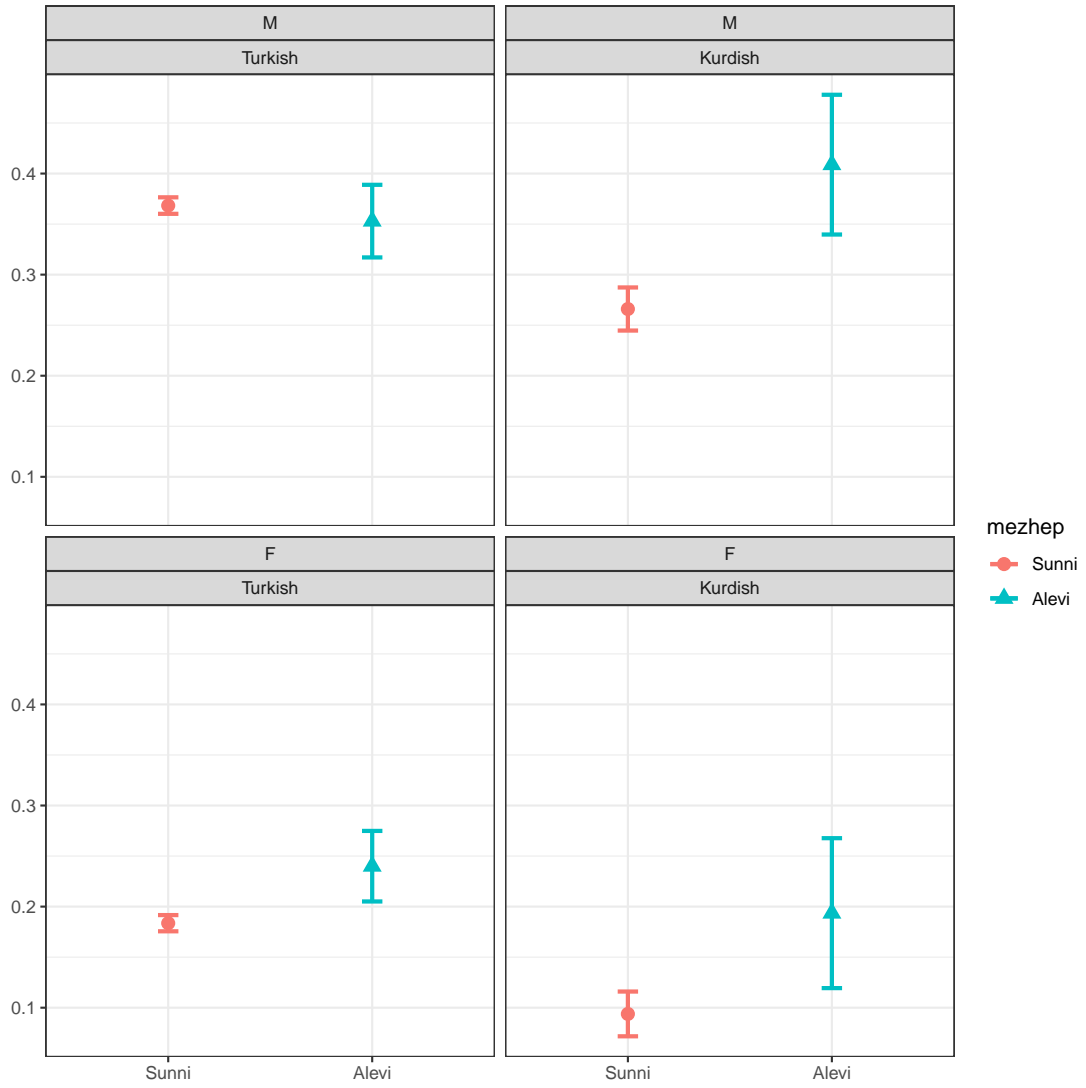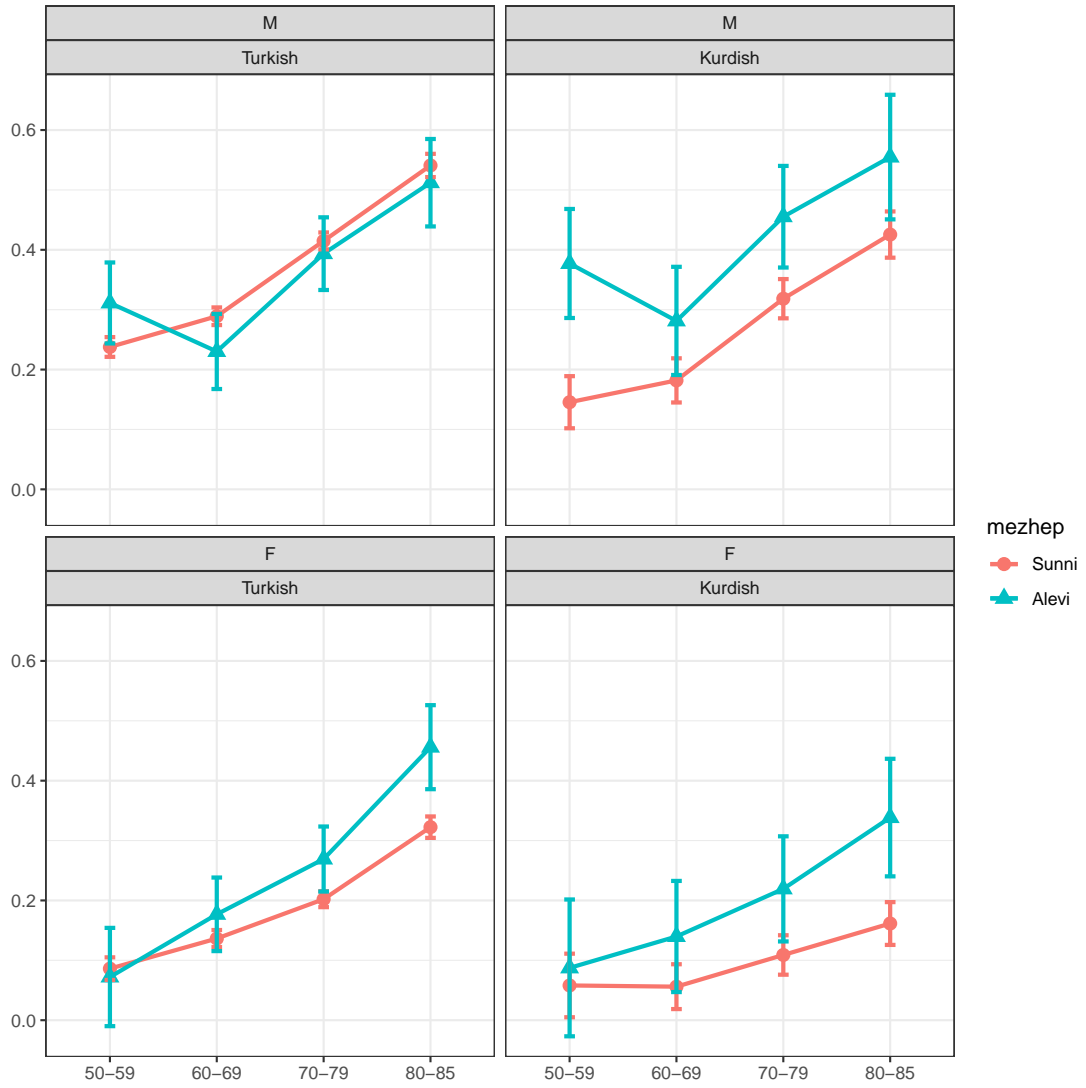**Figure 5: Bottom-up mobility by gender, religious and ethnicity**

Figure 6: Bottom-up mobility by gender, religious and ethnicity

Downward mobility results are presented in Table 6. The simple model, m1, shows that downward mobility probability is higher for Kurds and females while it is lower for Alevi individuals. As expected, the probaility of downward mobility is lower for younger generations. The effect of being in a migrant family is found to be statistically insignificant.

Again, m2 includes all two-way interactions in addition to m1. Most of these two-way interactions are not statistically significant at the 5 percent significance level. Only, female-Kurdish and Alevi-Kurdish interactions are significant. Compared Kurdish males, Kurdish females have a higher probability of downward mobility. And compared Sunni Kurds, Alevi Kurds have a lower probability of downward mobility. Also, females are likely to have a lower probability of downward mobility in a migrant family but this effect is only significant at the 10 percent level. Given that all interaction terms including cohorts it is safe to say that there are no differential trends across various demographic groups considered in this study.

As before, m3 adds three-way interactions to m2. None of these interactions are significant at the 5 persent significance level. This implies three things. First, cohort effects do not differentiate across gender for Kurds and Alevi individuals. Second, there is no difference across gender regarding the effect of being in a migrant family for Kurds. Third, the lower probability of downward mobility for Alevi Kurds is likely to be driven by females but please note that this effect is only significant at the 10 percent level.

Table 6: Downward mobility

	m1	m2	m3
F	0.09*** (0.01)	0.06** (0.03)	0.06** (0.03)
Kurdish	0.03* (0.02)	−0.03 (0.07)	−0.03 (0.08)
Alevi	−0.04** (0.02)	−0.06 (0.08)	−0.12 (0.10)
60-69	−0.004 (0.02)	−0.04 (0.02)	−0.04* (0.02)
70-79	−0.05*** (0.01)	−0.07*** (0.02)	−0.07*** (0.02)
80-85	−0.08*** (0.01)	−0.09*** (0.02)	−0.10*** (0.02)
migfam	−0.003 (0.01)	0.002 (0.04)	0.005 (0.04)
F:60-69		0.06* (0.03)	0.06* (0.03)
F:70-79		0.03 (0.03)	0.03 (0.03)
F:80-85		0.01 (0.03)	0.01 (0.03)
F:Alevi		−0.03 (0.04)	0.08 (0.15)
F:Kurdish		0.14*** (0.03)	0.13 (0.16)
F:migfam		−0.05* (0.03)	−0.05* (0.03)
60-69:Alevi		0.09 (0.09)	0.11 (0.13)
70-79:Alevi		0.08 (0.08)	0.10 (0.11)
80-85:Alevi		0.03 (0.08)	0.10 (0.11)
60-69:Kurdish		0.01 (0.08)	0.04 (0.10)
70-79:Kurdish		−0.01 (0.07)	−0.04 (0.08)
80-85:Kurdish		0.005 (0.07)	0.01 (0.08)
60-69:migfam		−0.04 (0.05)	−0.04 (0.05)
70-79:migfam		0.04 (0.05)	0.04 (0.05)
80-85:migfam		0.02 (0.05)	0.01 (0.05)
Alevi:Kurdish		−0.11** (0.05)	0.001 (0.08)
Alevi:migfam		−0.01 (0.06)	0.002 (0.06)
Kurdish:migfam		0.09 (0.06)	0.07 (0.08)
F:Alevi:Kurdish			−0.19* (0.10)
F:60-69:Kurdish			−0.03 (0.18)
F:70-79:Kurdish			0.09 (0.17)
F:80-85:Kurdish			0.01 (0.17)
F:60-69:Alevi			−0.05 (0.18)
F:70-79:Alevi			−0.06 (0.16)
F:80-85:Alevi			−0.15 (0.16)
F:Kurdish:migfam			0.07 (0.13)
Observations	5,806	5,806	5,806
Adjusted R^2	0.05	0.05	0.05

Note: *p<0.1; **p<0.05; ***p<0.01. Coefficients of intercept and dummy variables for Nuts 1 region of birth are not reported to save space.

Figure 7 shows the AAP of downward mobility by gender and ethnicity. Males have a lower probability of downward mobility compared to females for both ethnicities. While the difference between Turks and Kurds is not significant for males, Kurdish females have a significantly higher probability of downward mobility.

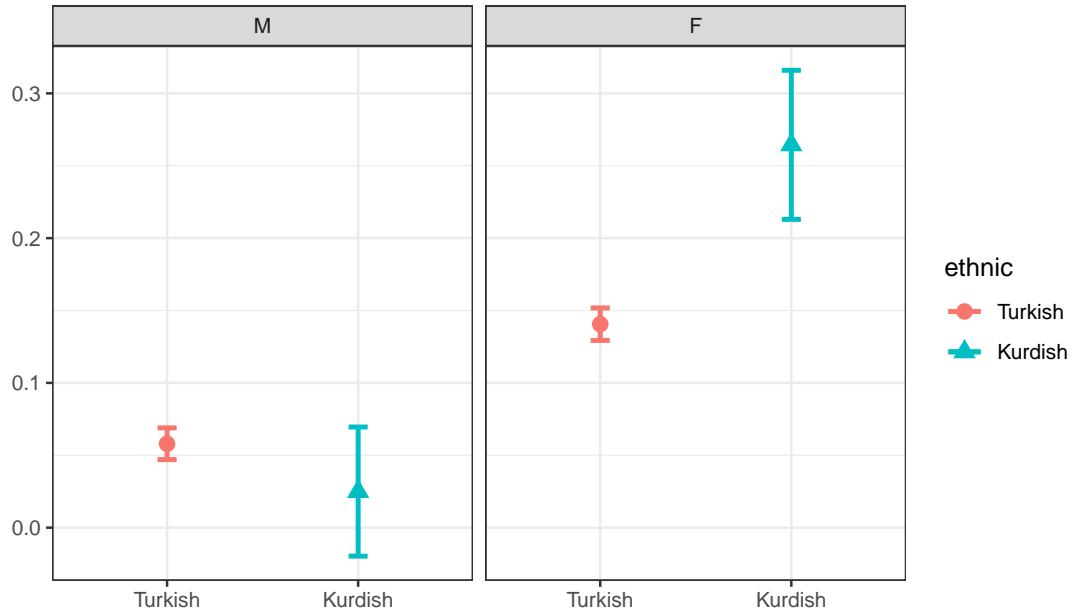**Figure 7: Downward mobility by gender and ethnicity**

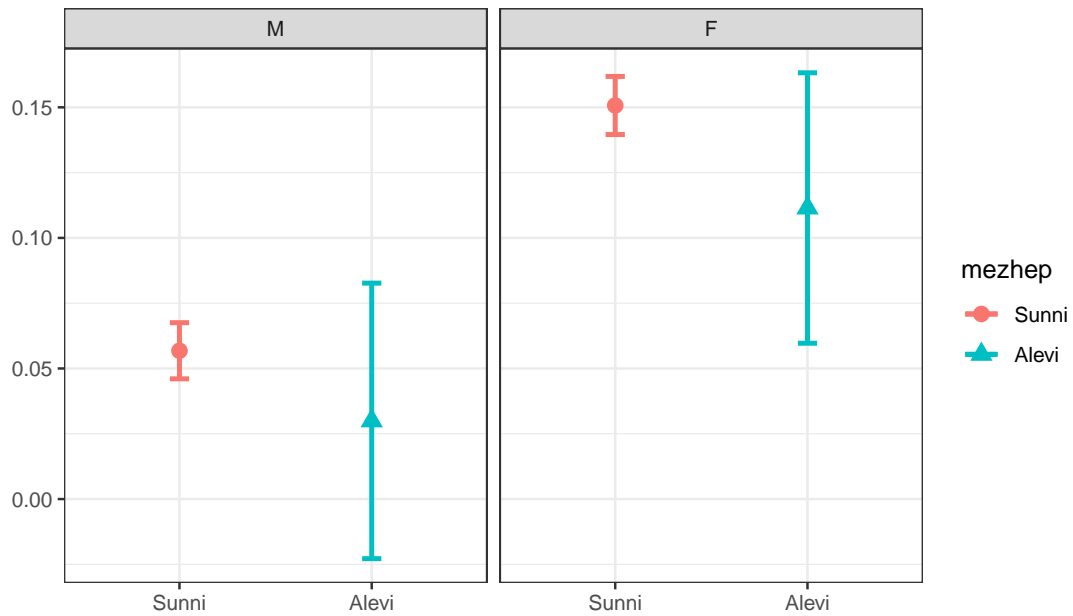**Figure 8: Downward mobility by religion and ethnicity**

Figure 8 shows the AAP of downward mobility by gender and religion. Even if the point estimates imply that downward mobility probability is lower for Alevi individuals for both genders the differences are not statistically significant.

While Figure 9 compares Alevi and Sunni individuals at each gender-by-ethnicity combination without any special attention to cohort differences, Figure 10 repeats the same analysis by taking into account cohort dynamics. This finer presentation in both figures reveals that for Turkish males, Kurdish males and Turkish females there is no statistically significant difference between Alevi and Sunni individuals. The only exception is Kurdish females where Sunni females have a clearly higher probability of downward mobility. Further, there seems to be no any significant change over time when we consider different birth cohorts.

Figure 9: Downward mobility by gender, religious and ethnicity

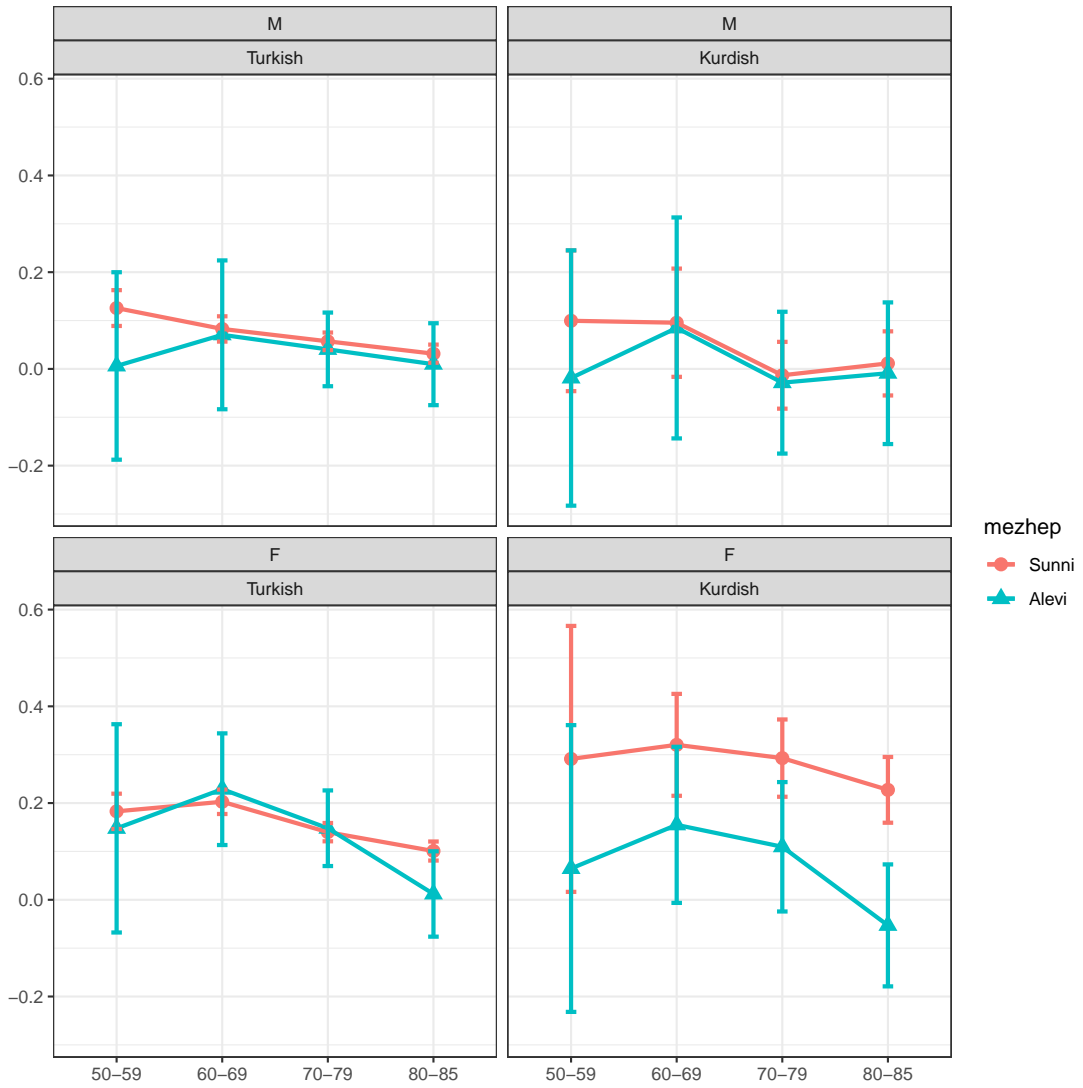Figure 10: Downward mobility by gender, religious and ethnicity

Table 7 presents regression output for upper-end persistence. According to m1, upper-end persistence probability is lower for females and Kurds, while it is higher for Alevi individuals. Also, the probability of upper-end persistence is higher for younger generations. There is no effect of being in a migrant family on upper-end persistence probability.

The larger model m2 discloses three important findings. The first one is that the likelihood of upper-end persistence is far lower for Kurdish females compared to Kurdish males. The second one is that younger generations of Kurds born in 1960s, 1970s and 1980s have a similar and higher probability of upper-end persistence compared to Turks with similar birth dates. The main reason for this difference is the very low probability of upper-end persistence for older Kurdish cohort. And the third one is that none of interaction terms involving cohort effects are significant for females, Alevi individuals and members of migrant families implying lack of any differential trend for these groups.

The largest model m3 shows, somehow surprisingly, that none of three-way interactions are significant at the 5 percent significance level. This means that regarding upper-end persistence cohort effects do not differentiate across gender for Kurds and Alevi individuals. Also, this indicates that there are no differences across gender for both Alevi Kurds and Kurds that come from a migrant family. Since the interaction between birth cohort and Kurdish dummy is significant and positive for males while female-cohort-Kurdish interaction is insignificant, this suggests cohort effects vary by ethnicity but Kurdish males and and Kurdish females have similar trends across cohorts.

Table 7: Upper-end persistence

	m1	m2	m3
F	−0.09*** (0.01)	−0.10** (0.04)	−0.10** (0.04)
Kurdish	−0.08*** (0.03)	−0.41*** (0.16)	−0.49** (0.20)
Alevi	0.06** (0.03)	0.01 (0.13)	0.09 (0.16)
60-69	0.01 (0.02)	0.01 (0.04)	0.01 (0.04)
70-79	0.09*** (0.02)	0.08** (0.03)	0.08** (0.04)
80-85	0.11*** (0.02)	0.09*** (0.03)	0.09*** (0.04)
migfam	−0.001 (0.02)	0.003 (0.06)	−0.002 (0.06)
F:60-69		−0.05 (0.05)	−0.04 (0.05)
F:70-79		0.02 (0.05)	0.03 (0.05)
F:80-85		0.03 (0.05)	0.03 (0.05)
F:Alevi		0.07 (0.06)	−0.14 (0.26)
F:Kurdish		−0.22*** (0.05)	0.06 (0.32)
F:migfam		0.02 (0.04)	0.03 (0.04)
60-69:Alevi		0.06 (0.15)	0.05 (0.21)
70-79:Alevi		−0.01 (0.13)	−0.07 (0.17)
80-85:Alevi		0.02 (0.13)	−0.07 (0.17)
60-69:Kurdish		0.46*** (0.17)	0.52** (0.23)
70-79:Kurdish		0.45*** (0.16)	0.56*** (0.21)
80-85:Kurdish		0.43*** (0.16)	0.51** (0.21)
60-69:migfam		0.11 (0.07)	0.11 (0.07)
70-79:migfam		−0.04 (0.07)	−0.04 (0.07)
80-85:migfam		−0.05 (0.06)	−0.04 (0.06)
Alevi:Kurdish		0.10 (0.08)	−0.01 (0.12)
Alevi:migfam		0.02 (0.10)	0.01 (0.10)
Kurdish:migfam		−0.06 (0.10)	0.04 (0.14)
F:Alevi:Kurdish			0.19 (0.16)
F:60-69:Kurdish			−0.24 (0.35)
F:70-79:Kurdish			−0.33 (0.33)
F:80-85:Kurdish			−0.28 (0.33)
F:60-69:Alevi			0.08 (0.31)
F:70-79:Alevi			0.18 (0.27)
F:80-85:Alevi			0.23 (0.28)
F:Kurdish:migfam			−0.26 (0.21)
Observations	3,182	3,182	3,182
Adjusted R^2	0.06	0.06	0.06

Note: *p<0.1; **p<0.05; ***p<0.01. Coefficients of intercept and dummy variables for Nuts 1 region of birth are not reported to save space.

Figure 11 shows the AAP of upper-end persistence by gender and ethnicity. Males have a higher probability of upper-end persistence compared to females for both ethnicities. However the difference between males and females is larger for Kurds. While the difference between Turks and Kurds is not significant for males, Kurdish females have a significantly

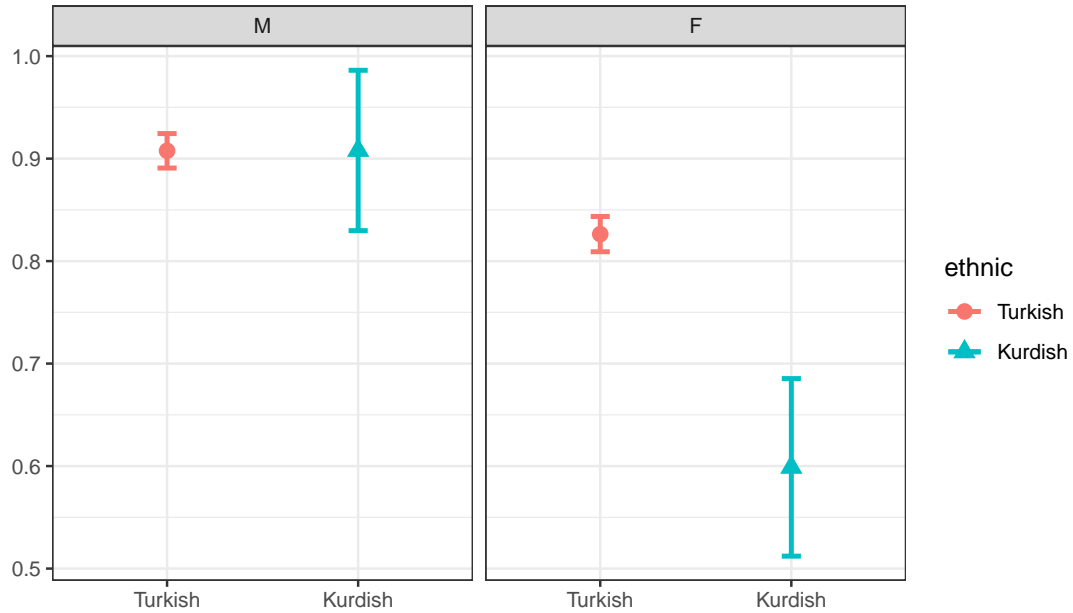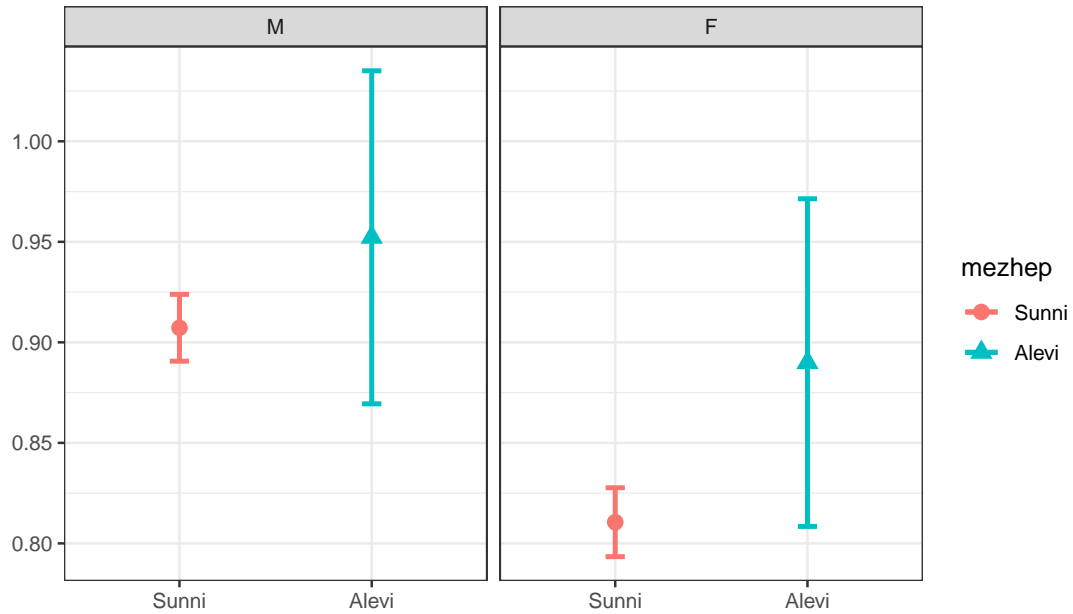Figure 11: Upper-end persistence by gender and ethnicity

Figure 12: Upper-end persistence by religion and ethnicity

lower probability of upper-end persistence.

Figure 12 shows the AAP of upper-end persistence by gender and religion. Again, similar to the case of downward mobility the point estimates imply that upper-end persistence prob-

ability is higher for Alevi individuals for both genders, but the differences are not statistically significant because of very large standard errors.

Both Figure 13 and Figure 14 compares Alevi and Sunni individuals at each gender-by-ethnicity combination. The former does not pay attention attention to cohort differences, while the latter takes them into account. Both figures exposes that for Turkish males, Kurdish males and Turkish females there is no statistically significant difference between Alevi and Sunni individuals. The only exception is Kurdish females where Alevi females have a slightly higher probability of upper-end persistence that is marginally significant. Younger generations seem to have slightly higher probability of upper-end persistence but the trend is very weak.

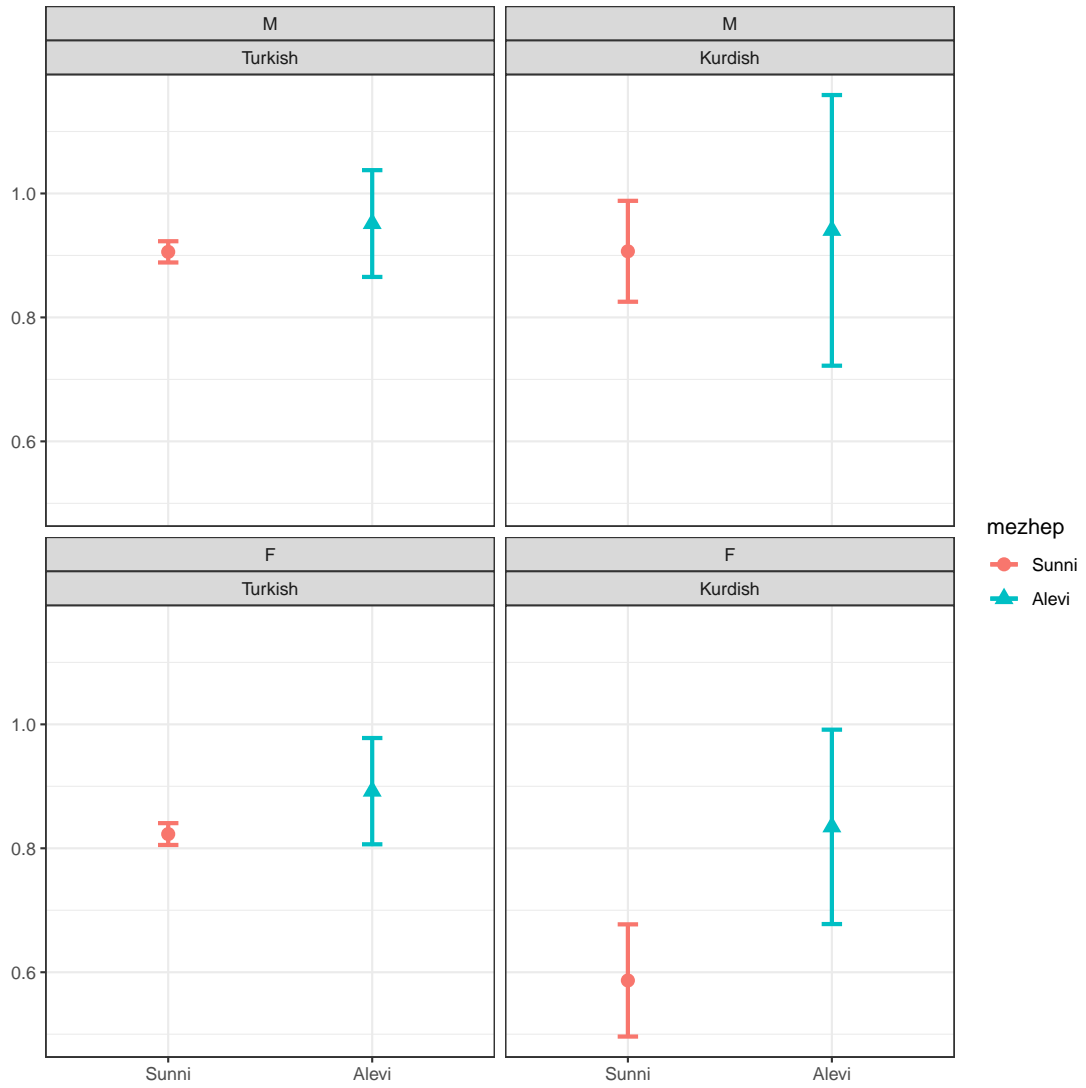**Figure 13: Upper-end persistence by gender, religious and ethnicity**

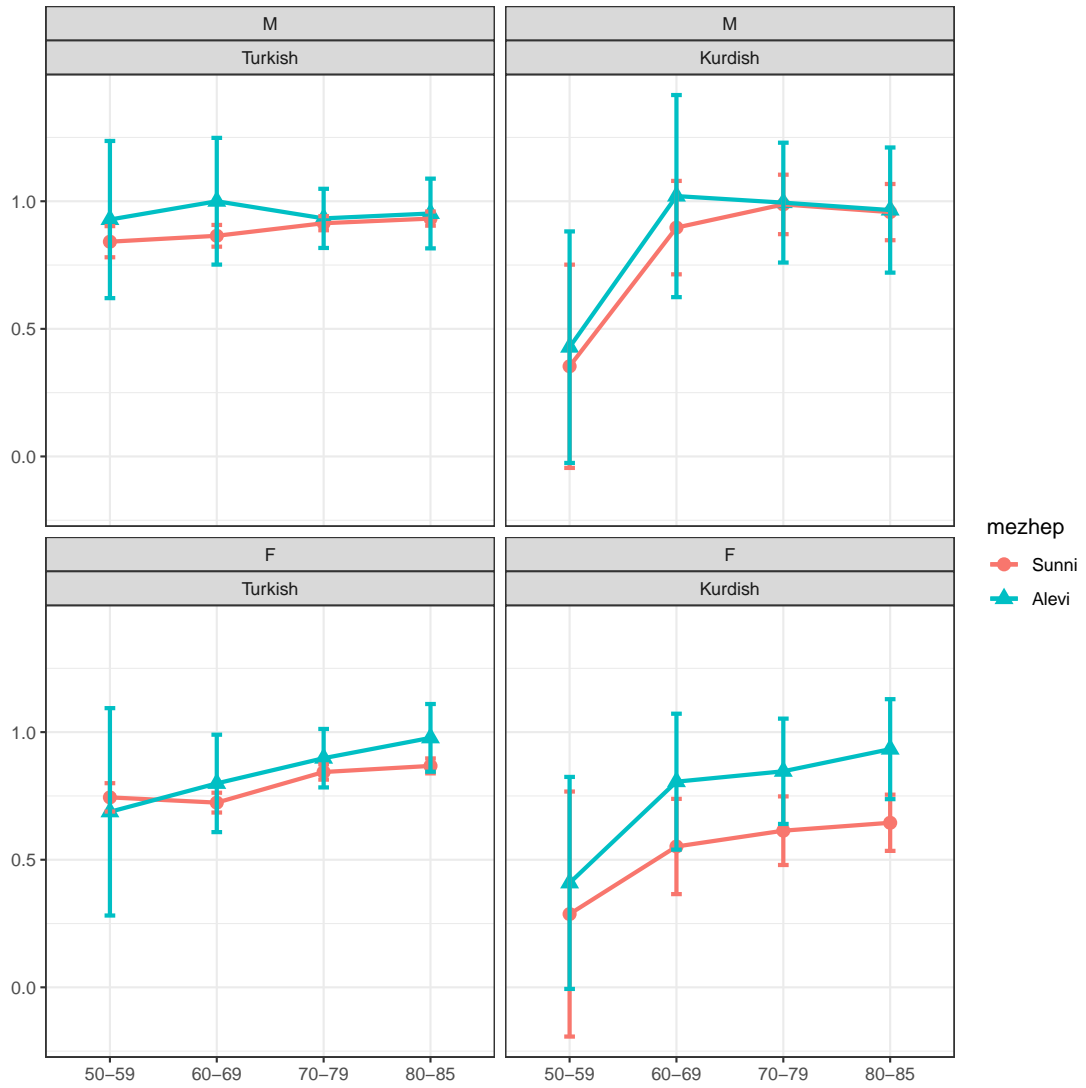Figure 14: Upper-end persistence by gender, religious and ethnicity

Table 8 presents regression output for lower-end persistence. According to m1, lower-end persistence probability is higher for females and Kurds, while it is lower for Alevi individuals. The younger a generation the lower its probability of lower-end persistence. Individuals coming from migrant families have also a lower probability of lower-end persistence.

Many of two-way interactions are significant according to the larger model, m2. First, compared to Alevi males the probability of lower-end persistence is lower for Alevi females. Second, for members of migrant families females have a lower probability of lower-end persistence compared to males while Alevi individuals and Kurds have a higher probability compared to, respectively, Sunni individuals and Turks. Third, compared to Sunni Kurds, Alevi Kurds are less likely to have lower-end persistence. Fourth, all but one cohort interactions are not statistically significant which means that for females, Kurds, Alevi individuals or members of migrant families there is no statistically significant difference across cohorts.

The largest model m3 reveal several interesting findings. First, younger generations of Kurdish females have higher probability of lower-end persistence compared to younger Kurdish males. This probability is inversely related to birth date which means that a Kurdish girl born in 1980s to a father with primary school diploma is more likely to be primary school graduate compared to her mother born in 1960s who was also born to a similar father. Second, younger Alevi females are in the opposite case of younger Kurdish females: not only compared to younger Alevi males they have a lower probability of lower-end persistence but also the younger the individual, the less likely they will have lower-end persistence. But given that the interaction between birth cohort and Alevi dummy is significant and positive (albeit smaller in magnitude) for males this comes down to younger generations of Alevi males being more likely to have lower-end persistence compared to their Sunni peers.

Table 8: Lower-end persistence

	m1	m2	m3
F	0.25*** (0.01)	0.24*** (0.01)	0.24*** (0.01)
Kurdish	0.12*** (0.01)	0.10*** (0.02)	0.13*** (0.03)
Alevi	−0.05*** (0.01)	−0.04 (0.03)	−0.10*** (0.04)
60-69	−0.09*** (0.01)	−0.09*** (0.01)	−0.10*** (0.01)
70-79	−0.19*** (0.01)	−0.22*** (0.01)	−0.21*** (0.01)
80-85	−0.31*** (0.01)	−0.33*** (0.01)	−0.33*** (0.01)
migfam	−0.06*** (0.01)	−0.01 (0.03)	−0.01 (0.03)
F:60-69		0.01 (0.02)	0.01 (0.02)
F:70-79		0.04** (0.02)	0.03* (0.02)
F:80-85		0.02 (0.02)	0.01 (0.02)
F:Alevi		−0.06** (0.03)	0.11* (0.06)
F:Kurdish		0.02 (0.02)	−0.06 (0.04)
F:migfam		−0.12*** (0.03)	−0.11*** (0.03)
60-69:Alevi		0.03 (0.04)	0.10** (0.05)
70-79:Alevi		0.05 (0.04)	0.14*** (0.05)
80-85:Alevi		0.04 (0.04)	0.17*** (0.06)
60-69:Kurdish		0.01 (0.02)	0.004 (0.03)
70-79:Kurdish		0.01 (0.02)	−0.03 (0.03)
80-85:Kurdish		0.03 (0.03)	−0.04 (0.03)
60-69:migfam		−0.04 (0.04)	−0.04 (0.04)
70-79:migfam		−0.01 (0.04)	−0.01 (0.04)
80-85:migfam		0.01 (0.04)	0.01 (0.04)
Alevi:Kurdish		−0.17*** (0.03)	−0.19*** (0.04)
Alevi:migfam		0.10** (0.04)	0.10** (0.05)
Kurdish:migfam		0.09** (0.04)	0.12** (0.06)
F:Alevi:Kurdish			0.05 (0.06)
F:60-69:Kurdish			0.03 (0.05)
F:70-79:Kurdish			0.10** (0.05)
F:80-85:Kurdish			0.15*** (0.05)
F:60-69:Alevi			−0.17** (0.08)
F:70-79:Alevi			−0.22*** (0.07)
F:80-85:Alevi			−0.29*** (0.08)
F:Kurdish:migfam			−0.05 (0.08)
Observations	27,106	27,106	27,106
Adjusted R^2	0.13	0.13	0.13

Note: *p<0.1; **p<0.05; ***p<0.01. Coefficients of intercept and dummy variables for Nuts 1 region of birth are not reported to save space.

Figure 15 shows the AAP of lower-end persistence by gender and ethnicity. Females have a higher probability of lower-end persistence compared to males for both ethnicities. Kurds are more likely to have lower-end persistence compared to Turks.

Figure 16 shows the AAP of lower-end persistence by gender and religion. While the

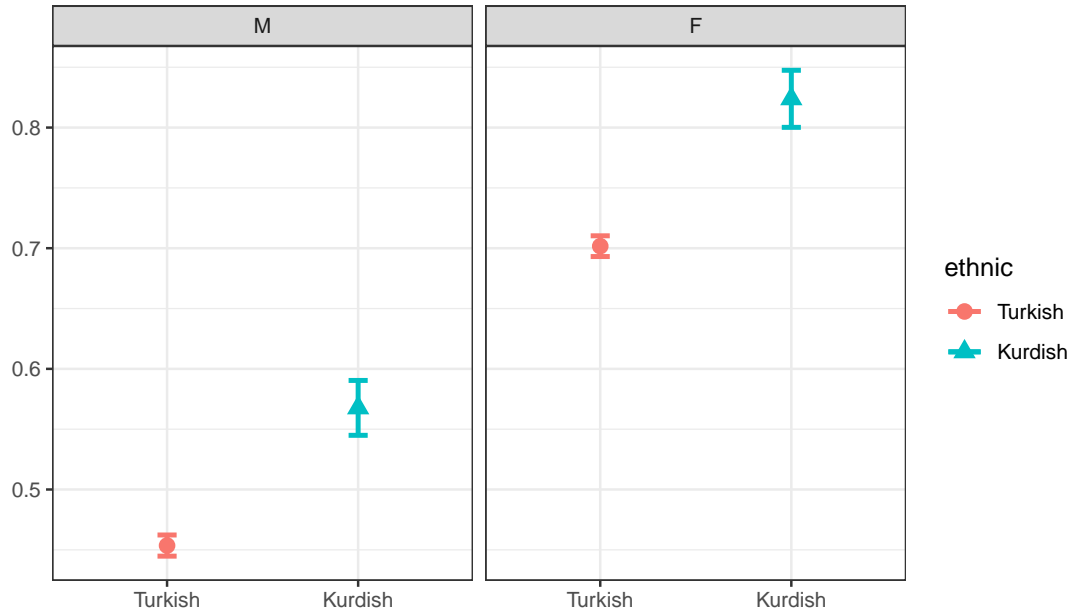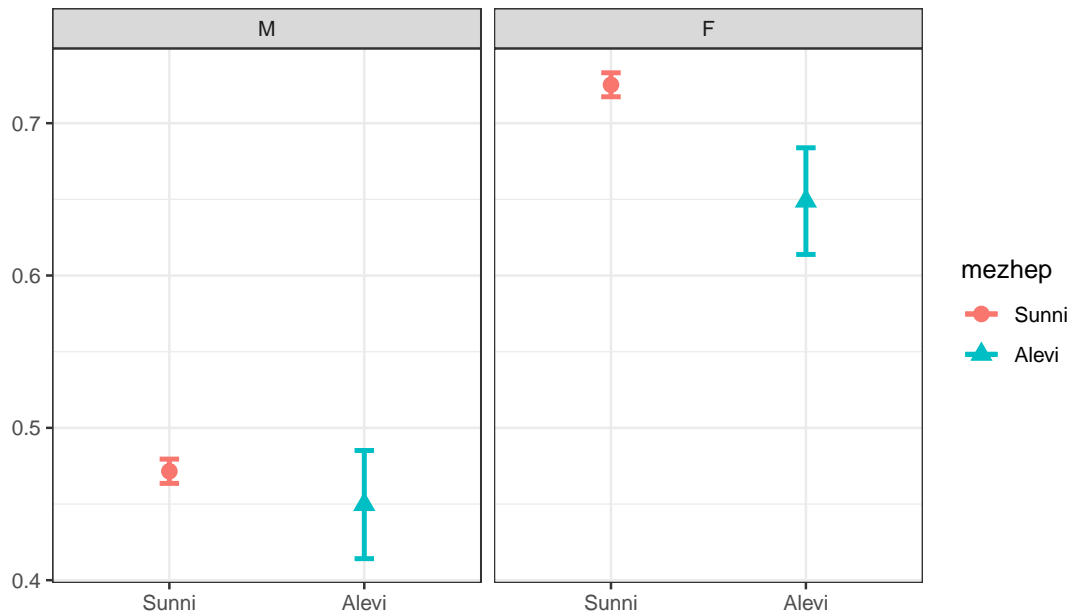**Figure 15: Lower-end persistence by gender and ethnicity**

Figure 16: Lower-end persistence by religion and ethnicity

difference between Alevi males and Sunni males is not statistically significant, Sunni females have a significantly higher probability of lower-end persistence compared to Alevi females.

Both Figure 17 and Figure 18 compares Alevi and Sunni individuals at each gender-

by-ethnicity combination. The first one presents findings for all cohorts together while the second one focuses on cohort differences. Both figures show that for Kurdish males, Kurdish males and Turkish females Sunni individuals have a higher probability of lower-end persistence. Only among Turkish males there is no such difference. When we focus on cohorts, similarly we find that Alevi and Sunni individuals share not only the same trend but also the same levels in the case of Turkish males. But for other three groups even if the trends are almost parallel their level is not the same.

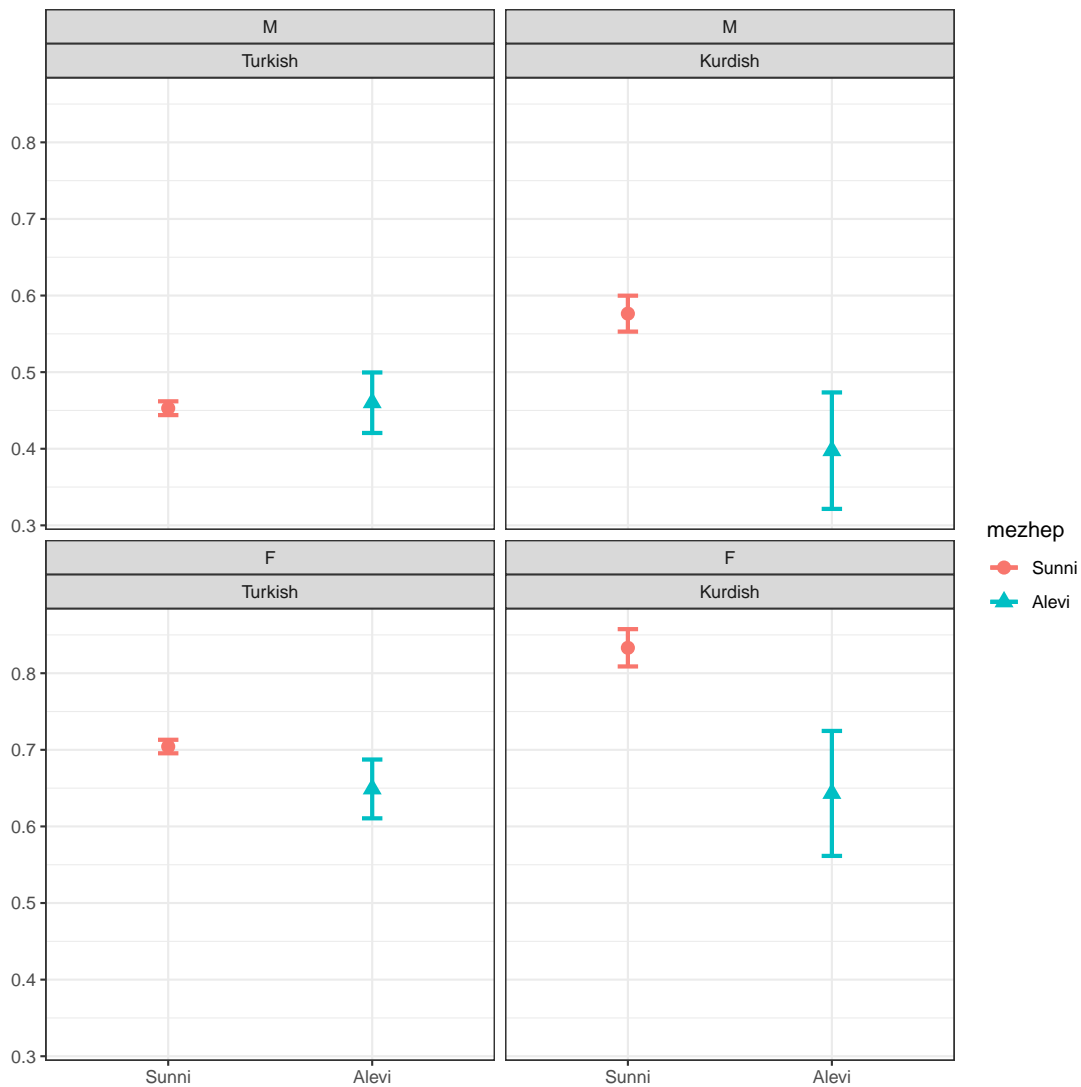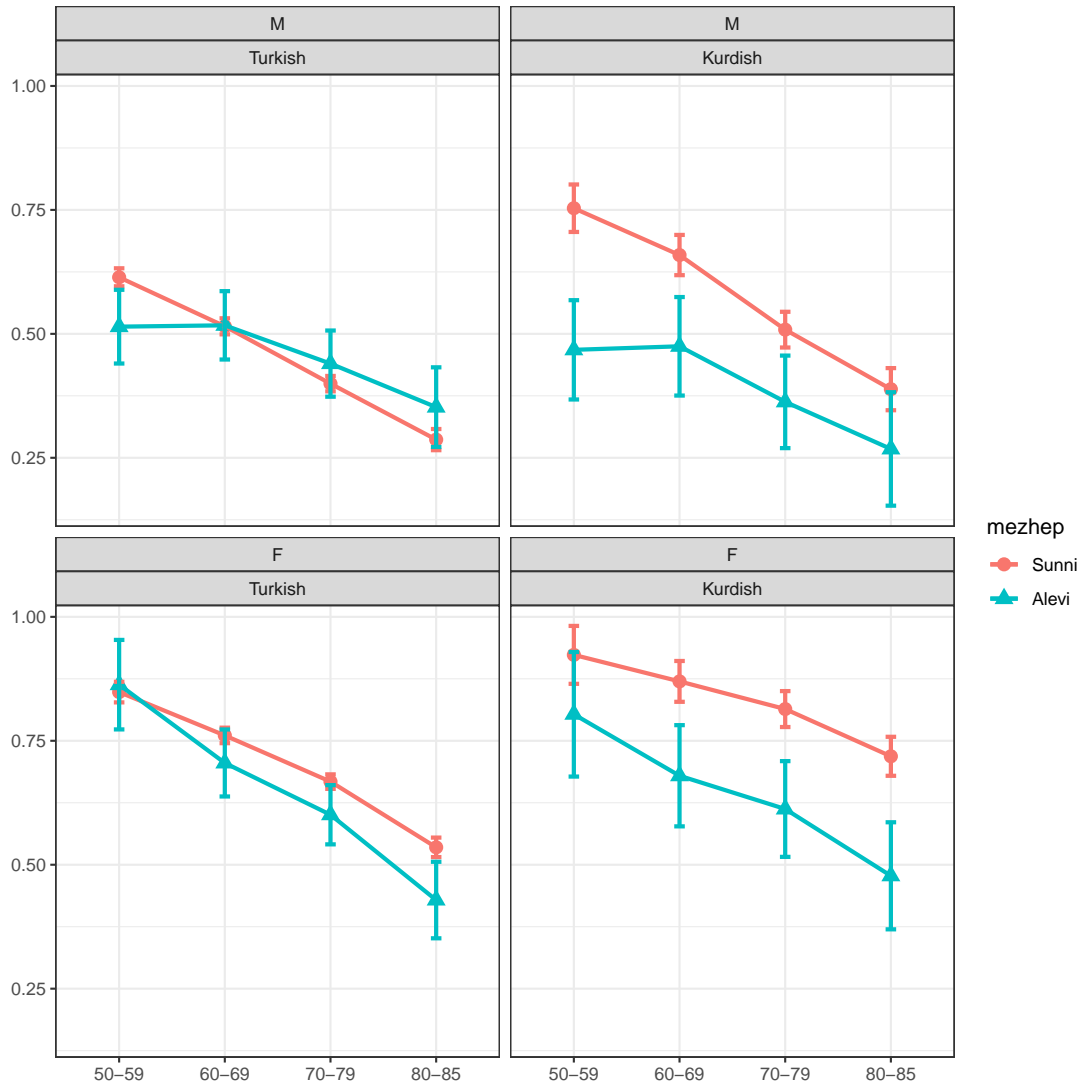**Figure 17: Lower-end persistence by gender, religious and ethnicity**

Figure 18: Lower-end persistence by gender, religious and ethnicity

6 Conclusion

Using Barometer surveys of Konda conducted periodically aiming to follow the political and social tendencies of the Turkish society, we analyze intergenerational education mobility of minorities in Turkey, which we define as women or members of an ethnic or religious groups.

We find that bottom-up mobility increases over generations, as an expansion of education and an increase of the importance of (formal) education over time. However, we also provide evidence that gender, ethnicity and religion matters significantly. Even if women and Kurds are less likely to have bottom-up mobility we observe that Alevi women and Alevi Kurds are better off.

While younger generations and Alevi population has a lower probability of downward mobility, Kurds and women has a higher one. Also we observe a significant and positive interaction between gender and Kurdish ethnicity which shows that women are more likely to have downward mobility compared to men among Kurdish population. Interestingly, the Alevi-Kurdish interaction term is significant and negative implying that Alevi Kurds have a lower probability of downward mobility when compared to Sunni Kurds.

Kurds and women are more likely to have lower-end persistence but less likely to have upper-end persistence. Again, for Alevi individuals this is just the opposite. The likelihood of upper-end persistence is even lower for Kurdish females indicating that ethnicity and gender interact and create multiplicative negative effects. Being Alevi is associated with a lower probability of lower-end persistence: Alevi females and Alevi Kurds are less likely to stay at the bottom of the education distribution compared to Sunni females and Sunni Kurds.

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