

Residential concentration and marital behaviors of Muslim Chinese

Chinese Journal of Sociology
2015, Vol. 1(2) 177–200
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DOI: 10.1177/2057150X15579141
chs.sagepub.com



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Abstract

This article examines how the marital behaviors of Hui Muslims respond to varying residential concentrations of Hui. Specifically, the marriage patterns indicating responses to local demographic availability of marriageable Hui and adherence to two Islamic norms – universal marriage and endogamy – were explored. Marriage market conditions were measured by local concentrations of Hui and we estimate discrete-time hazard models of marital outcomes using the China 2005 1% inter-census survey. The results show that in places with higher Hui concentrations, Hui tend to have higher marriage rates, to marry earlier, and to marry more endogamously. Conditional on being married, the logged odds of exogamy over endogamy are significantly lower in places with higher Hui concentrations; nevertheless, if exogamy is treated as an alternative to being single, the coefficient of the logged odds of exogamy over being single is significantly negative only for women. This suggests coexistence and competition between the two Islamic norms. Moreover, women have consistently higher marriage rates than men, regardless of Hui concentration. This suggests that women are universally more strictly constrained by the norm of universal marriage than men are. However, men show more variation in marriage rates, suggesting that they are more responsive to changes in Hui concentrations. Men and women are equally restricted by the norm of endogamy.

Keywords

Contextual effect, gender, local Hui concentration, Muslim Chinese, norm of endogamy, norm of universal marriage

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Introduction

Social context plays an important role in forming and framing individuals' marital behaviors (Blau, 1977; Blau and Schwartz, 1997). In sociological studies on marriage and the family, the relationship between the composition of the local population and an individuals' marital choices has long been a focus of research (e.g., Blau et al., 1982; Harris and Ono, 2005; Kennedy, 1943; Lewis and Oppenheimer, 2000; Lichter et al., 1995; Raley, 1996; Schoen and Kluegel, 1988). Numerous studies have interpreted these contextual effects as structural constraints that influence one's chances of meeting a potential spouse with particular traits (e.g., Blau et al., 1982; Lewis and Oppenheimer, 2000; Lichter et al., 1995; Raley, 1996; Schoen, 1983, 1988; Zeng and Xie, 2008). Aside from the structural constraints, other studies have also shown that social context may influence individuals' marital behaviors through 'cultural pathways'. These pathways create preferences for, or impose group-level pressures against, specific marital outcomes (Barber, 2004; Cheng and Xie, 2013; Jennings and Barber, 2013).

As the only Chinese-speaking Muslim group in China, the Hui people are unique in their ethno-religious characteristics. Hui are different from other Muslim Chinese ethnic groups, especially those of Turkic ancestries.¹ Hui are nearly indistinguishable from China's ethnic majority, the Han, in physical appearance and language, and they are well assimilated into Han culture. Their Islamic religion is almost the only characteristic that separates them into a distinct group (Lipman, 1997). Hence, marrying within the Hui group, that is, choosing ethnic endogamy, has long been strictly practiced by Hui people in order to secure ethnic identity and maintain religious purity (Zhou, 2001).² This practice of endogamy is enforced by the Islamic religion, which also promotes universal marriage and men's dominance over women (Abbasi-Shavazi and McDonald, 2008; Khairabadi, 1982; Mernissi, 1996). Hui marital behavior is therefore constrained by both the norm of endogamy and the norm of universal marriage. In the meantime, because Muslim women assume more inferior positions than do their male counterparts they are expected to obey the authoritative figures and to adhere to Islamic rules to a greater extent (Khairabadi, 1982). Thus, we expect Muslim women to experience stronger normative pressures than do Muslim men.

The unique pattern of Hui's residential distribution makes the local concentration of Hui a good measure of the contextual factors that influence individual marital behaviors. First, Hui, as the most residentially dispersed minority group in China (Han, 2010; Hu, 2012; Ma, 2000), are most likely to be exposed to varying contextual influences. In addition, their residential concentration shows a pattern of 'national dispersion, local concentration' ('da fen san, xiao ji zhong') (Hai, 2010; Ma, 2000). In most cases, Hui people self-select themselves to live in places with a higher Hui concentration for more convenient living and religious activities (Hai, 2010; Ma, 2000). In these places, the Islamic religion has usually been practiced more thoroughly and devoutly (Mamet et al., 2005). Thus, the residential concentration of Hui not only measures the structural constraints on

Hui meeting potential spouses within the Hui population, but also captures the normative pressures against exogamy or remaining single.

Specifically, using data from the China 2000 census and the 2005 1% intercensus survey (2005 mini-census), this article examines how the prefecture-level Hui concentration influences Hui Muslims' choices between endogamy, exogamy and being single, for both men and women. By conducting this empirical investigation, the article contributes to the field of marriage and the family in two ways. First, it tests the contextual influence of the local ethnic marriage markets on individual marital choices in a unique Chinese Muslim group, whose residential patterns reflect both the structural constraints and the cultural pressures involved in making marital choices.³ Second, and more importantly, by comparing the contextual effects across different marital outcomes and by gender, it sheds light on the relative strengths of the two cultural norms of marriage for Hui Muslims, as well as the gender differences in the strictness of those norms.

Theoretical issues and research setting

Marriage market conditions and marital choices

A body of literature has focused on the relationship between 'field of eligibles' within the local marriage markets and the resulting marital choices (Blau and Schwartz, 1997; Blau et al., 1982; Lewis and Oppenheimer, 2000; Lichter, 1990; Lichter et al., 1991; Lichter et al., 1992; Lichter et al., 1995). Those studies often measure conditions of the local marriage markets by gender ratios (Lichter et al., 1992; Lichter et al., 1995), the local concentrations of specific groups, or the overall local heterogeneities in terms of age, race/ethnicity, education or economic potentials (Blau and Schwartz, 1997; Blau et al., 1982; Lewis and Oppenheimer, 2000; Schoen and Kluegel, 1988). For interpretation, most of those studies consider conditions of the local marriage markets as structural constraints; that is, the extent to which unmarried individuals are sufficiently exposed to the opportunities to meet potential mates (Blau and Schwartz, 1997; Blau et al., 1982).

However, aside from the structural constraints, local contextual conditions can also form and frame cultural factors, such as norms and preferences (Cheng and Xie, 2013; Lichter, 1990; Zeng and Xie, 2008), which influence the marital behaviors of individuals through distinctive mechanisms (Fu, 2001; Jayakody et al., 2008; Kalmijn and Van Tubergen, 2010; Thornton, 2001, 2005). Specifically, social context can operate either through local socialization or through local social pressure (Jennings and Barber, 2013). First, through close and constant interactions among individuals within the local area, the prevailing beliefs and attitudes may be dispersed. This process can lead local individuals to internalize the locally dominant preference and fortify or change their own preferences to fit with those of the mainstream (Barber, 2004; Dharmalingam, 1996; Katz et al., 2002). In addition, a local community can also exert social pressures on individuals by enforcing social norms. In order to blend in with the community,

individuals may conform to the norms even when their own desires run counter to those that are dominant (Coleman, 1990; Fishbein and Ajzen, 2010; Troyer and Younts, 1997). That is, social contexts may play a unique cultural role in forming and changing individuals' marital behaviors, aside from the structural constraints.

For example, in places where a higher percentage of the population has received post-secondary education, structurally speaking there is a larger supply of socio-economically attractive 'candidates' for marriage, and this larger supply should lead to higher rates of marriage as well as earlier ages at marriage. However, in contrast, in those places with more highly educated individuals, people's attitudes toward marriage also tend to be more liberal and more individualistic, and they may experience less pressure to behave according to the opinions of others, which could result in fewer and later marriages. It is therefore crucial to understand the contextual effects through both pathways. In this sense, our measure of the contextual condition – local concentration of Hui – captures both the structural constraints and the cultural influences of the local social context.

Chinese Hui Muslim

Hui Muslim is one of the ten Muslim ethnic groups and one of the 55 minority ethnic groups in China. While the ethnic majority Han dominates 90.95% of the national population, Hui only constitute 0.77% (China Data Center, 2005). Hui are very similar to Han in physical appearance, they speak Chinese and have adopted most of the cultural practices of Han. Except for their Islamic religion, Hui have been well acculturated by the majority Han (Zang, 2005, 2006, 2012). In addition, Hui, as the most widely dispersed minority group, are subject to varying levels of local residential concentration and thus experience differential tensions between the desire to retain their own ethnic identity and the necessity to assimilate into the Han culture. Past research has used intermarriage as a major indicator of ethnic assimilation (Qian, 1997; Qian and Lichter, 2007; Schoen et al., 1989). We therefore studied the marital behaviors of Hui in various social contexts in order to understand the ethnic assimilation of Hui.

It has been widely established that the Islamic religion is patriarchal and endogamous in family practices (Abbasi-Shavazi and McDonald, 2008; Khairabadi, 1982; Mernissi, 1996; Morgan et al., 2002; Zang, 2005, 2006). Islam strongly emphasizes the family and considers it the foundation of a society (Abbasi-Shavazi and McDonald, 2008). Correspondingly, as believers in Islam, Hui tend to establish their families at early ages, to value universal marriage, and to marry within their group in order to secure ethnic identity and preserve religious purity. Thus, we expect Hui's marriages to be earlier, more prevalent, and more endogamous when they are exposed to stronger Islamic norms. However, given Hui's dual strong norms of universal marriage and endogamy, it is of interest to know, when social context imposes constraints on the realization of the two norms, how Hui individuals respond – by delaying marriage, staying single or marrying outside

of the group?⁴ The answer to this question sheds light on the relative strengths of the two norms. In addition, Islam prescribes that women should be subordinate to men (Abbasi-Shavazi and McDonald, 2008; Khairabadi, 1982). Specifically, according to Muslim family law, it is highly important for women to preserve their chastity and be young at the time when they enter into marriage and give birth to children, in order to guarantee the religious purity and physical vitality of their offspring (Esposito, 2001). Moreover, while Muslim men are permitted to contract marriages based on their own judgments, the decisions of Muslim women about marriage typically have to be made by one of their male guardians (Esposito, 2001). These gendered dynamics based on Islam may have rendered salient gender differences in the normative constraints they may experience (Esposito, 2001). Would women thus be subject to stronger religious norms in marital behaviors? The answer to this question contributes to an understanding of the gendered restrictiveness of the two norms.

As mentioned earlier, Hui's residential concentration is a proper candidate for measuring the local contextual conditions which influence Hui's marital decisions. Specifically, the most salient feature of Hui's residential concentration is 'national dispersion, local concentration' ('da fen san, xiao ji zhong') (Hai, 2010; Ma, 2000). Hui Muslims tend to self-select into areas with higher Hui concentrations so that they can build their own living facilities – such as mosques, schools and restaurants – and perform religious practices more rigorously. That is, residential concentration both facilitates religious practices and secures religious beliefs better (Kalmijn, 1998). Correspondingly, in places with higher Hui concentrations, Islamic beliefs are usually more powerful, and Hui Muslims are often more devout and follow religious practices more strictly (Hai, 2010; Ma, 2000). Thus, in terms of its impact on marital choices, local concentration of Hui indicates not only Hui Muslims' potential opportunities to meet other eligible Hui peers as possible spouses, but also the religious norms imposed on Hui Muslims or internalized by them for making marital choices.

To recapitulate, Hui Muslims hold norms of universal marriage and endogamy. In places with higher concentrations of Hui, therefore, we expect higher marriage rates, younger ages at marriage and a larger prevalence of endogamy. This could be due to both increased opportunities to meet other Hui as eligible marriage candidates and stronger norms regarding marriage, imposed or internalized. However, what happens to Hui who are faced with a choice between exogamy and delay of marriage or even single status? Do they choose exogamy to fulfill the norm of universal marriage or delay or even retreat from marriage in order to maintain the norm of endogamy? Do men and women behave differently in this respect?

More explicitly, this article aims to answer the following three research questions:

1. How do marriage timing and the marriage rate of Hui vary across levels of Hui concentration?

2. How does Hui's likelihood to choose exogamy vary across levels of Hui concentration? Moreover, will the concentration–exogamy link differ when compared to different reference groups, namely, endogamy and singleness?
3. Do Hui men and women respond to Hui concentration differently?

By answering these three questions, we apply the framework of the contextual effects on marital choices in a unique ethnic group by operationalizing both the structural and the cultural conditions of the social context. More importantly, by comparing the contextual effects on various marital choices, this study sheds light on the relative strengths of the two norms regarding marriage and also on Islamic gender ideology among Hui people.

Data and methods

This study is based mainly on a random sample of the China 2005 1% inter-census survey (2005 mini-census). We used both discrete-time hazard models and binary logit models to estimate the contextual effects on marital choices. All models are estimated separately for men and women regarding their potentially differential mechanisms in marital choices (Xie et al., 2003). However, to test the gender difference formally we also estimated nested models excluding and including interactions between gender and all the other variables.

Analytical samples

We constructed two separate samples for different analyses. The first sample was larger and was restricted to Hui Muslims aged 15–50 in 2005, the age range that is most likely for marriage.⁵ We used this sample to compute descriptive results in order to obtain a more general profile of the relationship between local Hui concentration and Hui's marital behaviors, considering the limited sample size after further data restrictions. The results in Tables 1 and 2 are based on this sample.

The second sample involved more restrictions, in order to guarantee to maximum extent the statistical rigor of the main analysis.⁶ The results in Tables 3 and 4 are based on this sample. First, the China 2005 mini-census does not include information on the place of marriage, so the resulting measures of the local marriage market conditions based on respondents' current place of residence may not reflect the contextual characteristics to which they were actually exposed when they married. Hence, we restricted the dataset to those who did not leave their place of residential registration and those who lived within the province of residence both one year before the 2005 mini-census (Year 2004) and five years before it (Year 2000). Second, we restricted the sample further to those who were still single in 2000 (they may have remained single in 2005 or married between 2000 and 2005) in order to include those who were under the contextual influence of 2000 in their places of residential registration as shown in the 2005 mini-census. This restriction is based on the assumption that the local

Table 1. Distribution of Hui's marital outcomes by quartiles of Hui concentration level.

Hui concentration	Male (N = 5,799)					Female (N = 5,601)				
	% Hui among local population	% Never married by age 25	% Never married by age 30	Age at 1st marriage	% Exogamy among married	% Hui among local population	% Never married by age 25	% Never married by age 30	Age at 1st marriage	% Exogamy among married
Low – Q1	0.05	34.15	28.57	24.93	74.07	0.04	14.29	3.70	22.97	73.33
Medium low – Q2	0.10	28.21	13.79	24.81	61.02	0.09	11.94	3.45	23.49	59.02
Medium high – Q3	0.48	16.54	9.94	24.39	32.62	0.46	7.04	1.95	22.88	31.09
High – Q4	3.88	9.06	3.68	22.69	8.34	4.00	4.34	1.82	20.76	7.85
All	1.13	10.56	4.86	22.92	12.18	1.14	5.75	1.88	21.03	11.51

Source: China 2005 Inter-Census Survey.

Note: All statistics are calculated based on a larger sample with the restriction to the Hui population aged 15–50. Percentage of Hui among the local population is calculated by dividing the local population of Hui by the total local population. For this statistic, prefecture-level total population aged 15–50 is used as the denominator. Nationally, the total male population is 514,474, and the total female population is 490,684. Percent never married by age 25, and percent never married by age 30 are calculated among population of Hui. Age at first marriage, and percentage of exogamy among those married are computed among all married Hui, which includes 359 Hui men and 367 Hui women.

Table 2. Correlations between concentration of Hui and Hui's marital outcomes.

	% Never married by age 30	Age at 1st marriage	% Exogamy among married
Hui concentration	–0.0423	–0.3188	–0.1460
Prefecture-level	–0.2318	–0.5922	–0.3838
Province-level			

Source: China 2005 Inter-Census Survey.

Note: All statistics are calculated based on a larger sample with restriction to the Hui population aged 15–50. N = 11,400. Hui concentration is calculated as percent Hui among the local population. Percent never married by age 30 is calculated among the Hui population aged 15–50. Age at first marriage and percent exogamy among those married are computed among all married Hui. For these two statistics, N = 726.

Table 3. Local Hui concentrations and marital choices of Hui: Total marriage rate and choice of exogamy over endogamy conditional on being married.

	Male		Female		Gender difference (ref. = male)	
	Model 1-M	Model 2-M	Model 1-F	Model 2-F	Model 1	Model 2
	Married/ single	Exogamy/ endogamy	Married/ single	Exogamy/ endogamy	Married/ single	Exogamy/ endogamy
Local concentration	2.782*** (0.379)	-7.696** (1.695)	1.158** (0.386)	-10.733*** (2.209)	-1.624** (0.542)	-3.037 (2.784)
Age	1.812*** (0.134)	0.823*** (0.554)	1.741*** (0.135)	-0.076 (0.439)	-0.071 (0.190)	-0.899 (0.707)
Age squared	-0.032*** (0.003)	-0.013*** (0.010)	-0.033*** (0.003)	0.004 (0.009)	-0.001 (0.004)	0.017 (0.013)
Years of schooling	0.013 (0.017)	0.139** (0.053)	-0.089*** (0.017)	0.176** (0.059)	-0.103*** (0.024)	0.037 (0.080)
Rural residence (ref. = urban)	0.153 (0.136)	-0.459 (0.443)	-0.011 (0.147)	0.001 (0.474)	-0.164 (0.200)	0.460 (0.649)
Urbanization level	0.093 (0.258)	0.110 (0.648)	-0.147 (0.259)	0.964 (0.652)	-0.241 (0.366)	0.854 (0.919)
Constant	-28.346*** (1.687)	-14.227 [†] (7.390)	-24.261*** (1.560)	-3.019 (5.366)	-28.346*** (1.687)	-14.227 [†] (7.390)
Observations	2,804	359	2,399	367	5,203	726
Person-years	19,005	NA	13,322	NA	32,327	NA
Chi-square	624.62	94.37	526.97	118.06	1177.91	212.43
DF		6				13

Source: China 2005 Inter-Census Survey.

Note: The top entries are logit coefficients. Standard errors are in parentheses. Models 1-M and 1-F show results from the discrete-time hazard models; Models 2-M and 2-F show results from the binary logit models.

[†] $p < 0.10$; * $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed tests).

DF = Degrees of Freedom.

concentrations of Hui were relatively stable across a five-year time span which, we argue, seems reasonable (Hai, 2010; Ma, 2000). By making this restriction, we also accounted for the fact that an individual's marital choices should be attributable to contextual conditions before the time of marriage. Accordingly, we calculated the local concentration of Hui based on the 2000 census data. Third, because the dataset only includes information on age at first marriage, we can only model the transition from singleness to first marriages through event history analysis. Accordingly, for individuals already married in 2005, we included only those in their first marriages. These restrictions left us with 2804 observations for men and 2399 observations for women. In order to capture the proper pool of eligible marriage candidates and to estimate accurately the

Table 4. Local Hui concentrations and marital choices of Hui: endogamy and exogamy as independent alternatives to being single.

	Male		Female		Gender difference (ref. = male)	
	Model 3-M	Model 4-M	Model 3-F	Model 4-F	Model 3	Model 4
	Endogamy/ single	Exogamy/ single	Endogamy/ single	Exogamy/ single	Endogamy/ single	Exogamy/ single
Local concentration	3.249*** (0.416)	-1.362 (1.348)	1.406** (0.417)	-3.443* (1.632)	-1.843** (0.589)	-2.082 (2.117)
Age	1.929*** (0.157)	2.355*** (0.383)	2.010*** (0.177)	1.973*** (0.307)	0.080 (0.237)	-0.382 (0.491)
Age squared	-0.035*** (0.003)	-0.040*** (0.007)	-0.040*** (0.004)	-0.035*** (0.006)	-0.004 (0.005)	0.005 (0.009)
Years of schooling	-0.012 (0.019)	0.143*** (0.037)	-0.117*** (0.019)	0.019 (0.039)	-0.105*** (0.027)	-0.124* (0.054)
Rural residence (ref. = urban)	0.210 (0.148)	-0.535 (0.394)	-0.040 (0.158)	-0.236 (0.429)	-0.249 (0.217)	0.299 (0.582)
Urbanization level	0.214*** (0.299)	-0.691 (0.497)	-0.112 (0.302)	-0.295 (0.489)	-0.325 (0.425)	0.396 (0.697)
Constant	-29.413*** (1.942)	-39.375*** (5.210)	-26.733*** (1.969)	-30.851*** (3.909)	-29.413*** (1.942)	-39.375*** (5.210)
Observations	2,734	2,515	2,328	2,103	5,062	4,618
Person-years	18,089	16,086	12,532	11,018	30,621	27,104
Chi-square	512.43	219.15	447.27	186.20	982.38	410.78
DF			6			13

Source: China 2005 Inter-Census Survey.

Note: The top entries are logit coefficients. Standard errors are in parentheses. Models 3-M, 3-F, 4-M and 4-F show results from the discrete-time hazard models.

† $p < 0.10$; * $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed tests).

DF = Degrees of Freedom.

likelihood of marital choices, for analysis of marital transitions from singleness, we transformed the dataset into a pseudo-longitudinal format with person-years being the unit of analysis (Hannum et al., 2008). The total amount of exposure is 19,005 person-years for men and 13,322 person-years for women.

Conceptualizing marital choices

As mentioned earlier, Hui Muslims are constrained by two norms of marriage: universal marriage and endogamy. In practice, these norms involve decisions about whether to get married and whether to marry only within the Hui population. To examine the contextual influences on the first decision, we can simply treat endogamy and exogamy as equivalent destinations from singleness, and compute the total

marriage rate based on the outcome of married versus single (Thornton et al., 2010). For the second decision, however, we need to consider the heterogeneities among individuals in order to gain a fuller understanding of the mechanisms underlying their marital choices. If we assume that the prevailing marital outcomes are an accurate reflection of a person's actual marital preference, then whether we include single persons in the analysis may influence the theoretical interpretations that follow.

Specifically, if we focus exclusively on those already married we can conceptualize them as individuals who are fortunate enough to be able to enter into marriage with partners of their preferred type and assume that their existing marital choices reveal fully their marital preferences between endogamy and exogamy. By taking this approach, we examine the relative prevalence of exogamy over endogamy, which only measures the strength of the norm of endogamy.

However, if we introduce those who are still single into the picture, we may assume that we are including those who are still present in the marriage market, debating between the two norms of marriage. They may be waiting for a partner who is also Hui, or they may have already foregone marriage in order to avoid exogamy. Based on this latter approach, which includes everyone, we are conceptualizing the marital decision process as one where people treat endogamy, exogamy and singleness as independent competing options. Using this approach we can evaluate the prevalence of exogamy over singleness, which measures the relative strength of the two norms.

In practice, based on the first approach, we evaluated the contextual effects on the logged odds of exogamy over endogamy among married Hui only. Based on the second approach, we used a pair of outcomes of endogamy versus singleness, and exogamy versus singleness among all Hui (Thornton et al., 2010).

Measures

Dependent variables: marital choices. For the choice of getting married or not, this is a binary variable with 0 = 'stay single' and 1 = 'married', and we used discrete-time hazard models. Conditional on getting married, for the choice between endogamy and exogamy, we used a binary variable with 0 = 'endogamy' and 1 = 'exogamy' and accordingly binary logit models. For the choice between endogamy, exogamy and singleness, we used two binary variables of endogamy or singleness with 0 = 'stay single' and 1 = 'endogamy', and exogamy or singleness with 0 = 'stay single' and 1 = 'exogamy', and a pair of discrete-time hazard models correspondingly.

Key independent variable: Local concentration of Hui. We calculated prefecture-level concentration of Hui as the percentage of Hui population over the total population in a given prefecture. Note that we computed the percentages at the prefecture-level, an administrative unit small enough to ensure sufficient variability across units and large enough to reflect the scale of the marriage market that has actually influenced the individual marital choices. We assumed relative stability in Hui concentration within a time span of five years. We also assumed that marital choice is influenced by the Hui

concentrations prior to the time of marriage, ensuring that the contextual conditions are sufficiently exogenous to the individual marital choices. Correspondingly, we used the 2000 census data to compute the local concentrations of Hui that have influenced the marital choices between 2000 and 2005. In total, we have 344 prefecture-level Hui concentrations.

Other control variables

Age and age squared. We used both the linear function of age and age squared to capture the potential quadratic pattern in the age effect. That is, people may become increasingly responsive to pressures to marry up to a certain age, after which it becomes more difficult to find a suitable partner, or when they decide not to get married at all.

Education. We included education as years of schooling completed. We recoded the years of schooling as: illiterate = 3; primary school = 6; junior high = 9; senior high = 12; associate degree = 15; college and graduate school = 17 (Xie and Hannum, 1996). This serves as an indicator of an individual's socioeconomic status.

Rural/urban status. We included a dummy variable with 0 = urban and 1 = rural to control for the salient rural–urban disparities in China (Wu and Treiman, 2004).

Urbanization level. Aside from individual-level control variables, we also included urbanization level as a prefecture-level control. We calculated prefecture-level urbanization level as the percentage of urban population over the total population in a given prefecture. Note that higher Hui concentration reflects both more affluent supply of Hui as potential marriage candidates, and more stringent religious constraints to marry early and endogamously. The concentration effect is therefore a composite of both structural and religious factors, both of which predict younger, more, and more endogamous marriages. Thus, regarding cultural influences, we included level of urbanization seeking to separate out the cultural factors due to modernization. That is, the ideas of modern lifestyles may promote freedom in marital choices. In the meantime, level of urbanization also relates highly to macro-level economic development, which may facilitate people's freedom in making marital decisions based on their actual preferences (Lichter, 1990; Raley, 1996).

Sample issues

As discussed, in order to specify accurately the population under the influence of local Hui concentrations, we restricted the sample to a relatively immobile, young and single-person-dominant population.⁷ We do not see this as a severe challenge to the validity of the results. China is a country with substantial levels of internal migration, most of which is driven by economic incentives and high economic uncertainty (Wu and Treiman, 2004; Wu and Wan, 2009). Correspondingly, those individuals who choose to remain in their places of origin tend to be more conservative

and consequently are more likely to conform to existing norms (Jokela, 2009).⁸ Their immobility should therefore lead to a higher prevalence of universal marriage and a lower likelihood of exogamy. In contrast, young people are often more open to social changes and are also more likely to challenge existing rules and norms (McCrae et al., 1999). Thus, the disproportionately higher percentage of young adults may predict lower marriage rates and a higher incidence of exogamy.

Appendix Tables 5 and 6 (available online at: <http://chs.sagepub.com/>) show descriptive statistics, based respectively on the analytical (more restricted) sample and the descriptive (less restricted) sample, as mentioned earlier. We compared descriptive statistics in order to provide a rough evaluation of the differences between Hui included in our analytical sample and the general Hui population. As it can be seen from Appendix Table 5, compared to those in Appendix Table 6 (available online at: <http://chs.sagepub.com/>), for both genders, percentages of exogamy are consistently lower, while percentages of singleness are universally higher. This is consistent with our speculations earlier on the sample restrictions. First, the low level of residential mobility in the more restricted sample may indicate a disproportionately higher percentage of Hui who are more conservative than a typical Hui Muslim; hence they tend to remain single in order to avoid exogamy, which leads to the high percentage of singleness and the low percentage of exogamy. In addition, this sample includes a disproportionately higher percentage of younger people. Although ultimately they may not choose singleness, they might delay marriage for a while to avoid exogamy. Therefore, we expect an underestimation of the ratio of exogamy over singleness, with less exogamy and more singleness. Aside from the above differences, Appendix Tables 5 and 6 (available online at: <http://chs.sagepub.com/>) show similar patterns of variation in percentages of exogamy and singleness. The distributions of other variables are comparable.

As already mentioned, our analytical sample includes disproportionately higher percentages of young and non-migrant Hui. To test the robustness of results using the analytical sample, we should draw two more comparisons: that between the analytical sample and the sample with migrant Hui included, and that between the analytical sample and the sample with a larger range of age. We present descriptive statistics based on the two new samples respectively in Appendix Tables 7 and 8 (available online at: <http://chs.sagepub.com/>). As can be seen from both comparisons, the descriptive statistics based on the two samples are very similar to those using the analytical sample. This indicates that although the analytical sample is not representative of the general Hui population, the results based on this sample are highly robust with regard to biases due to sample restrictions on migration and age structure.

Results

Descriptive statistics

Table 1 presents Hui's various marital outcomes by quartiles of the corresponding population distribution of Hui, for men and women separately. Specifically, to

reflect the norm of universal and early marriage, we present percent never married by age 25, percent never married by age 30, and age at first marriage among all Hui; and to echo the norm of endogamy we computed percent exogamy among married Hui. As can be seen, for both genders, all four indicators are lower in places with higher Hui concentrations. This indicates that with Hui concentration increasing, there is also an increase in both the opportunities to meet potential spouses within the Hui population and the cultural pressures to pursue universal marriage and endogamy.

Comparing across genders, at all quartiles of Hui concentration, Hui women are much less likely than Hui men to remain single by both ages 25 and 30 and tend to marry younger than Hui men. Note that the variations in ‘percent never married’ for both ages are much smaller for women than for men across all levels of Hui concentration, especially for age 30. Specifically, while a range of 3.68% to 28.57% of Hui men never marry, only 1.82–3.70% of Hui women remain single. This indicates that all Hui women are more strongly constrained regarding the norm of universal marriage, or by the local supply of marriageable Hui, regardless of the specific Hui concentrations, which provides little room for the variations in Hui concentration to have a sizable effect. Hui men, in contrast, are more responsive to the change in contextual conditions. That is, in places with lower Hui concentrations they are much freer to stay single than their female counterparts and the gender gap shrinks with higher Hui concentrations. For the norm of endogamy, based on percent choosing exogamy among married Hui, women are less likely to choose exogamy than men except in places with low Hui concentrations, though in general both the percentages and the slope of change are very similar for both genders. In sum, the above comparisons indicate that, compared to Hui men, Hui women are more severely constrained by the norm of universal and early marriage regardless of the local Hui concentrations, but may be equally restricted by the norm of endogamy.

In Figure 1 we provide a more systematic presentation of the relationship between various marital outcomes by showing the Kaplan–Meier survival curves of Hui’s marital choices across age and Hui concentrations, respectively, for men and women. The Kaplan–Meier estimate is a nonparametric estimate of the survival function. For example, we let n_t be the number of observations still remaining single at time t , d_t the number of observations getting married at time t . The Kaplan–Meier estimate of the survival function is:

$$S(t) = \prod_{t_i \leq t} (n_i - d_i) / n_i \tag{1}$$

and the area below the curve shows the probability of remaining single. Specifically, in Figure 1, the area under the lower curve shows the probability of remaining single, with d_t being the number of observations getting married at age t , and the area under the upper curve shows the probability of either remaining single or choosing exogamy, with d_t denoting the number of observations choosing

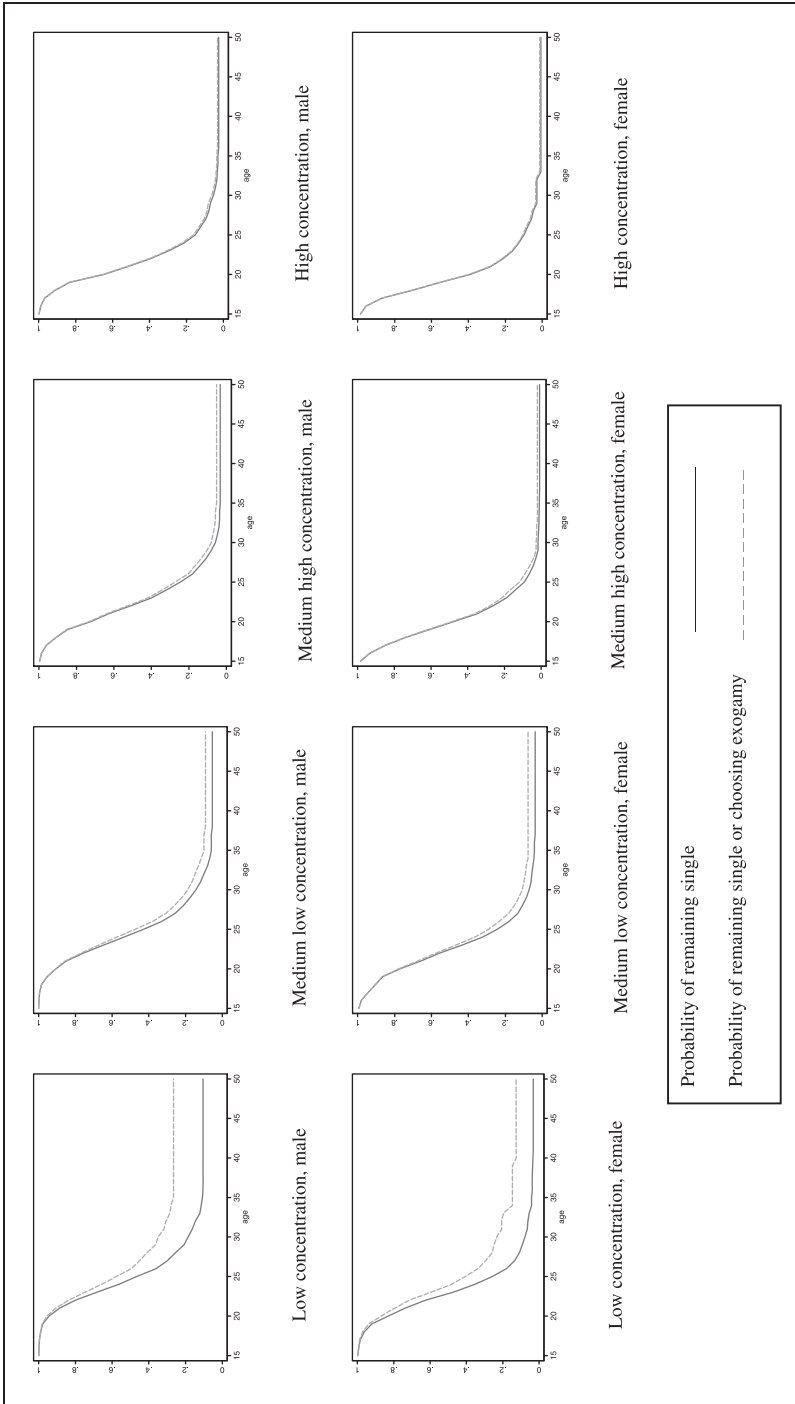


Figure 1. Kaplan-Meier survival curves of marital choices along age, by Hui concentration and gender.

endogamy at age t . Correspondingly, the gap between the two curves presents the probability of choosing exogamy. As can be seen, the patterns shown are consistent with the results in Table 1. With a higher Hui concentration, both percent married and percent endogamy are higher, while percent exogamy is lower. Moreover, single Hui 'drain out' much faster with a shorter 'waiting time' in places with higher Hui concentrations, as demonstrated by the steeper drop of the curves. In addition, women, compared to men, have a consistently higher percent married, higher percent endogamy, lower percent exogamy and shorter 'waiting time'.

To support these patterns at the aggregate level further, Table 2 shows correlations between the aggregate-level Hui concentration and various marital outcomes. As can be seen, the correlations are all negative at both the prefecture level and the province level. That is, results at the aggregate level in Table 2 show similar patterns to those at the individual level, as shown in Table 1 and Figure 1. This indicates the robustness of the results.

Marry or not?

Table 3 shows the results for the marital outcome of married or single – that is, the total marriage rate – for men and women respectively. As can be seen from Models 1-M and 1-F, for both men and women the local concentration of Hui has positive effects on the logged odds of married over single. If we test on the gender difference, while the intercept is significantly larger for women than for men, the coefficient on the Hui concentration is significantly smaller.⁹ This echoes the patterns shown in Table 1. That is, women are more strictly constrained by the norm of universal marriage and by the supply of marriageable Hui partners than men, regardless of the contextual conditions, and this leaves little room for their marriage rates to vary across Hui concentrations. In contrast, with men's larger variation in marriage rates, their decisions on whether to marry are more responsive to the changing marriage market conditions.

The coefficients on age and age squared are similar for men and women. That is, before the late 20s, age promotes marriage with decreasing slopes; after that, however, Hui are less likely to marry as they get older.¹⁰

While the number of years of schooling has no significant influence on the total marriage rate for men, women with higher education are less likely to get married. This may imply that a more liberal attitude toward marriage is associated with higher education and the gender difference may mean that the liberalization effect of education is more pronounced for women than for men. However, it is still surprising that the same pattern is not significant for men. Thus, this pattern for women may also indicate that highly educated women face an even more restricted pool of potential marriage candidates than their less-educated female counterparts.

To understand better the relative magnitude of the concentration effect, we used the education effect as a benchmark for models where both effects are significant. As can be seen, for a Hui woman, with every one percent increase in local Hui concentration, she may need to increase her education by 0.13 years, that is, one

and a half months, in order to offset the marriage-promoting effects of the local Hui concentration.¹¹

Endogamy or exogamy? Endogamy and exogamy as a choice conditional on getting married

Aside from the norm of universal marriage, another norm of marriage based on Islam is that of endogamy. As previously noted, for the choice of exogamy we need to consider the heterogeneities among individuals. While some of them are fortunate enough to realize their marital preferences by finding the partner of their preferred type, and will only be confronted with the choice between endogamy and exogamy conditional on getting married, some others may see endogamy and exogamy as independent alternatives to being single. Accordingly, we applied two different modeling approaches to capture these two types of individuals.

For those who have succeeded in finding the spouse of their preferred type – that is, those who consider endogamy and exogamy as a choice conditional on getting married – we use the outcome variable of exogamy versus endogamy with binary logit models. Models 2-M and 2-F show the results based on this approach. For both men and women, coefficients on Hui concentration are significantly negative. This indicates that for those who are able to fulfill their marital preferences, conditional on getting married, endogamy is clearly the dominant option. In addition, women's coefficient on Hui concentration, though larger, is not significantly different from that of men. This means that men and women are equally constrained by the norm of endogamy.

Moreover, with higher education both men and women are more likely to pursue exogamy over endogamy, and the gender difference is insignificant. This indicates that education can liberate both men and women from the restriction of endogamy, which adds up to evidence that men and women are similarly constrained by the norm of endogamy.

To put things in perspective, we compared the concentration effects to the education effects where both effects are significant. As can be seen, for a Hui man and a Hui woman, respectively, with every one percentage point increase in local Hui concentration, they may need to increase their education by 0.55 years, that is, around six months, and 0.61 years, or, around seven months, in order to offset the exogamy-depressing effects of the local Hui concentration.¹²

Endogamy or exogamy? Endogamy and exogamy as independent alternatives to being single

There do remain people who are unable to find their preferred spouses, however. Due to the potential competition between the norm of universal marriage and the norm of endogamy, they may see exogamy and endogamy as parallel options to being single. How will they respond to varying contextual conditions? Table 4 shows the results from the discrete-time hazard models with the pair of outcome

variables, endogamy or singleness, and exogamy or singleness, separately for men and women. This set of models is based on the assumption that endogamy and exogamy are independent alternatives to being single.

As Models 3-M and 3-F show, for both men and women coefficients on the local concentration of Hui for the logged odds of endogamy over singleness are positive, with men having larger coefficients. Women's larger intercept, though not significant, echoes the patterns shown in Table 1 and by Models 1-M and 1-F in Table 3. That is, because women are more likely than men to get married and to choose endogamy at all concentration levels, and since endogamy comprises the majority of all marriages, men are able to be more responsive to variations in Hui concentration. Note that there is a significant positive urbanization effect on the logged odds of endogamy over singleness. This may reflect that the liberalizing influence brought about by urbanization can hardly override the religious constraints, as shown by the much larger coefficients on Hui concentration. In the meantime, the economic development together with the process of urbanization may help people realize better their preferences for marriage, that is, endogamy, when possible.

However, as we move to Models 4-M and 4-F, the coefficient on Hui concentration for the logged odds of exogamy over singleness, though negative for both genders, is only significant for women. Moreover, the gender difference is not significant, which means that even the significant depressing effect of Hui concentration on choosing exogamy for women may not be very robust, especially considering its low significance level. This implies coexistence of and competition between the two norms, given the same supply of marriageable Hui partners in the local areas: that is, in places with higher Hui concentrations, both the norm of universal marriage and the norm of endogamy get stronger. While some Hui may stay single for possible endogamy in the future, others may sacrifice the religious purity in order to fulfill the expectation of universal marriage. Therefore, especially for those who place endogamy, exogamy and singleness as parallel options, the link between Hui concentration and the choice between exogamy and singleness is uncertain and indefinite.

To put things in perspective, note that in Table 3 the coefficients for Hui concentration in Models 2-M and 2-F are not only both significantly negative, but also have higher significance levels than those in Models 4-M and 4-F. This comparison indicates that the choice between exogamy and delay of marriage or singleness is less evident and definitive than the choice between exogamy and endogamy. To be more specific, in places with higher Hui concentrations, both the opportunities to meet the potential spouses within Hui and the norm of endogamy increase. For those who find the spouse of their preferred type, they are definitely more likely to marry other Hui, rather than non-Hui, in places with higher Hui concentrations. However, those who are still in the process of selecting a marriage partner, being exposed to both the norm of universal marriage and the norm of endogamy, may find it difficult to make a decision.¹³ Should they delay marriage further or even stay single for good, in order to avoid exogamy? Or should they disregard the ethnicity of their spouse and get married anyway, in order to fulfill the norm of

universal and young marriage? The competition between the two norms may lead to both positive and negative links running from Hui concentrations to the logged odds of exogamy over singleness, which may result in the low significance in Models 4-M and 4-F.

In addition, the coefficients for years of schooling show gender differences for both outcomes of endogamy over singleness and exogamy over singleness. As shown, for the logged odds of endogamy over singleness, the coefficients for years of schooling are negative for both men and women, though only significant for women; and the gender difference is significant. Similar to that for the outcome of married versus singleness, this could indicate both stronger liberalization effects for women and a shrunken 'pool of eligibles' for highly educated Muslim women. Nevertheless, for the logged odds of exogamy over singleness, the coefficient for years of schooling is only significant for men, though positive for both genders. Again, the gender difference is significant. This result shows that education plays a lesser role in women's tendency to choose exogamy over singleness than education for men. This may further imply that even for highly educated women, exogamy is still a taboo that can hardly be overridden, much more so than for their male counterparts. This provides some evidences for the speculation that women are more constrained than men by the norm of endogamy. Finally, coefficients for age and age squared show similar patterns for men and women.

In order to understand better the relative magnitudes of the concentration effects, we compare them to the education effects, where both effects are significant. As can be seen, for a Hui women, with every one percent increase in local Hui concentration, she may need to increase her education by 0.12 years – that is, around one and a half months – to offset the endogamy-promoting effects of the local Hui concentration.¹⁴

Conclusions and discussion

This article considers how Hui's marital choices among endogamy, exogamy and singleness vary across local Hui concentrations. By doing so, we examined how the local availability of marriageable Hui influences Hui's marital choices, and explored the relative strengths of the two norms regarding marriage for Hui Muslims – universal marriage, and endogamy. We also examined how the concentration effects differ for men and women. Specifically, we investigated the influence of prefecture-level Hui concentration on various marital choices using both the discrete-time event history model and the binary logit model, based on a random sample of the China 2005 mini-census data. In order to reflect the actual contextual conditions that have influenced the marital outcomes, the China 2000 census was used to measure the Hui concentration.

Both the descriptive and the analytical results show that in places with higher Hui concentrations, Hui tend to have higher marriage rates and to marry earlier and more endogamously, for both men and women. For the choice of exogamy, there are some nuances in the results. Specifically, conditional on being married,

the logged odds of exogamy over endogamy is significantly lower in places with higher Hui concentrations; nevertheless, if we treat exogamy as an alternative to being single, the coefficient on the logged odds of exogamy over singleness is significant only for women, and only slightly. This indicates the coexistence of and the competition between the two norms.

For the comparison across gender, women have consistently higher marriage rates than men, regardless of the level of Hui concentration. This means that women are universally constrained more strictly than men by the norm of universal marriage, although men are more responsive to the change in Hui concentrations with their larger variation in marriage rates. Coefficients on both logged odds of exogamy over endogamy and exogamy over singleness show no significant gender difference, which implies that men and women are equally restricted by the norm of endogamy. However, the coefficients on education lend some insight on the gender differences in the implementation of the norm of endogamy. While higher education can bring women some freedom to stay single, it is not associated with more exogamy for them. Men with higher education, in contrast, are more likely to pursue exogamy. This may be due to the fact that exogamy is a more prohibitive taboo for women than for men (Khairabadi, 1982).

There are some limitations in this study. First, although we attempted to provide some theoretical implications for the relative strengths of the two norms of marriage, which should facilitate a cultural perspective on the contextual effects, we still cannot directly test between the two norms, or between the structural and cultural influences. Existing research strategies to execute the above two tasks can hardly work for Hui considering the limited data availability on them. Second, as discussed earlier, our sample was composed of disproportionately higher percentages of the young, single and immobile population. Although we do not think this is a problem, it is still useful to assess our research questions based on a more representative sample. At this time, simple solutions to this issue are not available, due to the small percentage of Hui in the population and the active internal migration in China. Third, as shown in Appendix Tables 5, 6, 7 and 8 (available online at: <http://chs.sagepub.com/>), exogamy with different ethnic groups may have varying links with contextual conditions. Again, due to data limitations, this more nuanced analysis is not currently possible. All the above limitations can serve as future research agendas when sufficient data become available. Finally, marital choices could be affected by multiple individual characteristics (Kalmijn, 1991, 1998), and people may match on various traits with different priorities (e.g., Davis, 1941; Fishman et al., 2008; Merton, 1941; Qian and Preston, 1993; Rosenfeld, 2005, 2008; Schoen and Cheng, 2006; Schoen and Wooldredge, 1989). In the future we can study how other domains of contextual conditions (e.g., regarding education, occupation and language) influence the patterns of marital choices, aside from ethnicity.

To summarize, this study has examined the contextual influence on individuals' marital choices in a unique Chinese Muslim group. It has also facilitated a cultural perspective by evaluating the relative strengths of the two norms regarding marriage, through the comparison between the relative likelihood of different marital outcomes

across Hui concentrations and gender. The limitations noted here will serve as good starting points for the future development of other studies on this topic.

Funding

This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

Acknowledgments

An early version of this paper was presented at the 2011 International Sociological Association Research Committee 28 on Social Stratification and Mobility spring meeting in Essex, UK. We are grateful to conference participants, members of the Population Workshop at the Population Studies Center of the University of Michigan, as well as Barbara Anderson, Jennifer Barber, Siwei Cheng, Mary Corcoran, Qing Lai, Arland Thornton, Geoff Wodtke, Yu Xie, and two anonymous reviewers for their comments and advice. We also thank Cindy Glovinsky for her editorial help.

Notes

1. Language identifies the various Muslim ethnic groups in China as follows: the Uyghur, Qazak, Tatar, Uzbek, Salar, and Kirgiz speak Turkic; the Dongxiang and Bonan speak Mongolic; the Tajiks speak Persian; and the Hui speak Chinese (Lipman, 1997).
2. Due to the physical distinctions between Hui and other Muslim ethnic groups, intermarriages among the different Muslim groups are extremely rare (China Data Center, 2005). Hui Muslims mainly rely on ethnic endogamy, in other words marriage within the Hui group, to maintain religious endogamy (Mackerras, 1998).
3. In this article, we do not intend to distinguish the structural and cultural influences in explaining individual marital choices. In fact, higher Hui concentration reflects both more affluent supply of Hui as potential marriage candidates, and more stringent normative constraints to marry early and endogamously. Through both pathways, Hui concentration is expected to be positively related to earlier, more, and more endogamous marriages. We aim to present the concentration effects as composites of the structural and cultural influences, and interpret the effect based on both mechanisms.
4. Throughout the article, we use both 'constrain/constrained' and 'respond/responsive' to indicate the influences of Hui concentrations on Hui's marital choices, almost interchangeably. If there are any explicit distinctions, to a larger extent, the former is used as an interpretation of the cultural concentration effects, while the latter aims to indicate the statistic association of the individual behaviors and Hui concentrations.
5. Descriptive statistics of this sample are in Appendix Table 6. Available online at: <http://chs.sagepub.com/>.
6. Descriptive statistics of this sample are in Appendix Table 5. Available online at: <http://chs.sagepub.com/>.
7. The analytical sample is 'young' either/both in terms of their biological age or/and of their marriage cohort.
8. It is also possible that conservative Hui people may migrate to places with higher Hui concentrations (Wu and Wan, 2009). However, if anything, this potential upward bias may alleviate the overestimation of the conservativeness level in our analytical sample. Moreover, since Hui concentration is a composite measure of both demographic availability of marriageable Hui and the religious constraints based on Islamic marriage

- norms, this possible pattern of self-selection may make Hui concentration a more valid indicator of the latter.
9. Note that for models in Tables 3 and 4, all the statistical tests on gender differences are based on a set of nested models excluding and including interactions between gender and all the other variables. We present the coefficients in the form of separate models to facilitate clearer and more straightforward visualization.
 10. To compute the specific age at which the age effects change directions, we take derivatives of the regression equation on age and set it to zero so as to get the peaks. For men, the age is 28.3 and for women, it is 26.4.
 11. $(1.158*0.01)/0.089 = 0.13$.
 12. $(7.696*0.01)/0.139 = 0.55$ for Hui men, and $(10.733*0.01)/0.176 = 0.61$ for Hui women.
 13. The stated mechanism regarding the insignificant coefficient is only an interpretation, not an inference. The insignificance can be driven by the fact that the male sample in Model 4-M and the female sample in Model 4-F are highly heterogeneous in age. Correspondingly, we have conducted auxiliary analyses by including interactions between age and concentration, and the results are presented in Appendix Table 9 (available online at: <http://chs.sagepub.com/>). However, as can be seen, based on our analytical sample, neither the main effects of Hui concentration nor the age interactions are significant. In the future, when more sufficient data sources for Hui become available, this can be an important research direction.
 14. $(1.406*0.01)/0.117 = 0.12$.

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