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# Ethnicity and Income in China: The Case of Ningxia

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## Abstract

Using a 2006 household survey from the Ningxia Hui autonomous region in China, this paper examines two aspects of the correlation between ethnicity and income: namely, differences in the returns to human capital and the effects of ethnicity- and religion-related social capital. The findings indicate ethnic disparity in the returns to human capital across rural and urban areas. In rural areas, the returns to human capital for the Hui workforce differ according to the place of economic activity (i.e. local employment or migration), whereas no ethnic disparity is found for the urban workforce. We also find that ethnicity- and religion-related social capital plays a significant role among the Hui in rural areas where the level of interethnic social interactions is lower. We use this to suggest that Muslim-oriented attitudes toward trust in social networks of rural Hui households positively and interactively affect income through ethnically open trust attitudes.

**Keywords:** ethnic minorities, Hui, household and personal income, China

**JEL classifications:** J15, D31

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## **1. Introduction**

### ***Aim of the paper***

Rising income inequality has become one of the most critical policy issues in China in recent years (Li, Sato, and Sicular forthcoming in 2013). Of the several aspects of income inequality present in China, including differences in income equality across the urban–rural households, region, gender, business ownership, and industry, we know relatively little about income inequalities possibly arising from ethnicity. Against this background, this paper examines the influence of ethnicity-related factors on income in modern China. Using a 2006 household survey of both rural and urban areas in the Ningxia Hui Autonomous Region, one of five provincial-level ethnic minority autonomous regions in China, we examine the case of the Hui and Han ethnic groups.

### ***Why Ningxia and the Hui?***

The reasons we focus on Ningxia Hui autonomous region are as follows. First, Ningxia is one of five provincial-level ethnic minority autonomous regions located in northwestern China. The concentration of two major ethnic groups, the Hui and the Han, in Ningxia assists researchers in conducting ethnic comparisons of socioeconomic conditions (according to the one-percent minicensus conducted in 2005, the Hui and Han ethnic groups respectively accounted for 35 and 64 percent of the Ningxia population of 5.95 million).<sup>1</sup> Second, the Hui share a common language and physical appearance with the Han, with the Hui identifiable solely by religion (Islam) and religious culture alone. This unique feature of Hui ethnicity aids researchers in investigating the role of ethnicity as sociopolitical labels. Third, while many ethnic minorities are concentrated in rural areas, the Hui population resides in both urban and rural areas and it is therefore possible to conduct a multifaceted comparison of majority–minority and urban–rural disparities. Finally, as Islam is the only major religion that overlaps ethnic groups in China, we may be able to draw some implications on the relationship between religion-related factors and individual/household economic well-being in a Chinese context.

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<sup>1</sup> According to the 2010 population census, total population of Ningxia is 6.30 million, out of which Hui population is 2.19 million (34.8 percent ) and Han population is 4.07 million (64.6 percent of total population) and Hui population is 2.19 million (34.8 percent ) (Statistical Bulletin of the Sixth Population Census in 2010, Bureau of Statistics of the Ningxia Hui autonomous region, [http://www.stats.gov.cn/tjgb/rkpcgb/dfrkpcgb/t20120228\\_402804334.htm](http://www.stats.gov.cn/tjgb/rkpcgb/dfrkpcgb/t20120228_402804334.htm), accessed September 20, 2012.

### ***Stylized findings***

We summarize the stylized findings from previous studies on the economic conditions of ethnic minorities and the issues investigated in this paper as follows. First, a large gap in educational attainment exists between ethnic minorities in China and the Han majority (Gustafsson and Ding 2009). We confirm whether this stylized finding is applicable in Ningxia and compare the effects of educational attainment on income.

Second, ethnic minorities in rural areas are less likely to work outside the home village and such difference in the propensity for labor migration can negatively affect the income of minority households (Ding 2006b; Gustafsson and Ding 2009). Concerning this point, we initially examine whether this general finding is applicable to rural Ningxia, and then investigate the determinants of migration earnings and therefore the impact of migration on household income.

Third, social barriers caused by language, culture, religion, and appearance (put differently, ethnicity-based relations) affect the labor market entry and outcomes of ethnic minorities (Zang 2008). The Hui ethnic group may well be unique in this respect in its characterization solely by religion and religion-related customs and being otherwise identical in language and appearance to the Han majority. In addition, the Hui share Muslim beliefs with other ethnic minorities, such as the Uyghur and Dongxiang, and therefore we may need to differentiate carefully between ethnicity-based social relations and religion-based social relations. To investigate the influence of ethnicity- and religion-related factors on income, we employ attitudinal variables on ethnicity- and religion-related social networks in the estimation of an income function.

This remainder of the paper is structured as follows. In the remainder of this section, we provide a brief literature review of research on ethnic minorities in Ningxia and detail the data source used. Section 2 summarizes the basic socioeconomic characteristics of the sample households. In Section 3, we estimate the determinants of household income and individual earnings in rural and urban areas, with a focus on the ethnic and regional differences in the returns to human capital. Section 4 examines the effects of ethnicity- and religion-oriented attitudes of Hui households on income. Section 5 concludes.

### ***Literature review***

As there are many studies on Chinese minorities, especially in terms of sociological and anthropological research in both Chinese and English, we limit our literature review to

economic studies of the ethnic disparities in employment, income, and poverty in China generally and in Ningxia in particular.<sup>2</sup> Regarding the economic status of an ethnic minority as a whole, several studies employ the China Household Income Project (CHIP) surveys, a nationally representative repeated cross-sectional survey of Chinese households.<sup>3</sup> Gustafsson and Li (2003) and Gustafsson and Wei (2000), for instance, analyzed the income gap between the Han majority and ethnic minorities in rural areas. They found that the average income of minorities was lower than that of their Han counterparts in the same location and that this income gap had widened during the period 1988–1995 in most of the counties surveyed. Later, Ding (2006a) and Gustafsson and Ding (2009) used village data from 2002 to examine socioeconomic disparity between ethnic minority villages and Han villages. They found that minority villages in the southwest were in generally worse economic conditions, whereas minority villages in the northeast were in somewhat better condition than comparable Han villages. They also found that location was the single most important factor working against favorable economic conditions for minority villages in the northwest, and particularly, the southwest, although other several economic factors were all found to play a role.

Also using 2002 CHIP village data, Ding (2006b) found that although outmigration had increased in all of the sample villages between 1998 and 2002, the outmigration ratio of ethnic minority villages was lower than that for Han villages. On this basis, Ding (2006b) suggested that the lower education level and relatively closed socioeconomic environment of ethnic minority villages restrained the outmigration of villagers. Most recently, Ding, Li, and Myers (forthcoming) employed the 2007 CHIP survey and described the pattern of first a narrowing and then a widening of minority–Han earnings disparities between 1995 and 2007 among urban workers. They concluded that the patterns of minority–Han earning disparity also differed by gender, with a generally widening disparity found between men but a narrowing disparity between women.

In terms of Ningxia, several studies employ the same data source—an urban/rural household survey of Ningxia conducted in 2006 by the Institute of Ethnology and Anthropology, Chinese Academy of Social Sciences—as the current analysis. For example, Li and Ding (2008) analyzed the earnings gap between employed Hui and Han in urban areas. They found, on the one hand, that Hui status itself has a positive and significant effect on the earnings of the urban workforce and, on the other hand, that there is no substantial gap in average earnings between the Hui and Han workforces. Considering that urban Han typically

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<sup>2</sup> For a more comprehensive review, see Ouyang and Pinstrip-Andersen (2012).

<sup>3</sup> See Li, Sato, and Sicular (forthcoming) for the survey design and the major findings of each of the CHIP survey waves.

have higher educational attainments than the Hui, these findings suggest that the advantage of a higher education level of the Han workforce cancels out the advantage of the Hui as the major ethnic group.

More recently, Gustafsson and Ding (2011) compared various aspects of Hui–Han economic well-being, which serves well as background findings for our analysis. The relevant findings are as follows. First, with the exception of younger urban men, the Hui are less educated than the Han. Second, Hui households are larger and have less family wealth per capita in both urban and rural areas. Third, although there is no large income gap by ethnic status between the Hui and the Han, there are ethnic differences in employment conditions in both urban and rural areas. For example, the Hui are more likely to be involved in outmigration and other off-farm employment in rural areas. In addition, there is segmentation between the Hui and Han in different ownership/industrial sectors of the labor market in urban areas, while female urban Hui are generally less likely to participate in the labor market.

Finally, other recent studies using microdata from Ningxia, for example, Chang and Sun's (2008) analysis of microdata from the city of Guyuan, estimated ethnic disparities in rural wage incomes (including both local wage income and migration earnings) and found that the wage income of the rural Hui workforce is clearly lower than that of the rural Han workforce. Using this, they argued that the stability of migration employment underlies the ethnic earning disparity, with the rural Han workforce more likely to migrate to coastal regions and obtain relatively stable employment.<sup>4</sup>

### ***Data***

This analysis draws on a 2006 household survey of the Ningxia Hui Autonomous Region conducted by the Institute of Ethnology and Anthropology, Chinese Academy of Social Sciences in collaboration with a number of international scholars.<sup>5</sup> As discussed, Li and Ding (2009) and Gustafsson and Ding (2011) utilized the same survey in their respective analyses.

Table 1 details the subprovincial regions (prefecture-level cities) surveyed and the sample distribution. The sampling frame is a subsample of the official annual household survey

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<sup>4</sup> Although we do not systematically review the field research and case studies on Ningxia, Ma (2007) examined socioeconomic changes, including employment, in a Hui community in suburban Wuzhong during the 2000s.

<sup>5</sup> This project funded by the Institute of Ethnology and Anthropology, Chinese Academy of Social Sciences, Hitotsubashi University, the Japan Society for the Promotion of Science Grants-in-Aid for Scientific Research No. 18203018 and No. 21330065, the Japanese Ministry of Education, and the Heiwa Nakajima Foundation.

conducted by the National Bureau of Statistics (NBS) and well represents the situation of Hui and Han households in rural and urban areas of Ningxia. By utilizing the sample households that have maintained detailed household accounts for the NBS survey, we are able to collect high-quality data on income and employment conditions. In addition to information on income and employment, we asked respondents various questions about the socioeconomic characteristics of their families, including attitudinal questions on ethnic identity and religious belief. The total sample comprises 1,190 and 800 rural and urban households, respectively.

<INSERT TABLE 1 HERE>

## 2. Socioeconomic characteristics of the sample households

Here we describe the basic socioeconomic characteristics of the sample households. Table 2 compares the level of income across rural and urban areas by ethnicity. First, we can see that there is a large urban–rural income gap between both the Hui and Han households. In particular, there are extremely low rural incomes and a significant urban–rural income gap in the cities of Guyuan and Zhongwei, both part of a typical less-developed, environmentally vulnerable region in northwestern rural China.<sup>6</sup> Second, in both rural and urban areas, Hui households have relatively lower per capita income than do Han households. Across the whole of Ningxia, the Hui–Han gap in per capita income is generally larger in urban areas (a Hui/Han per capita income ratio of 0.79) than in rural areas (a Hui/Han ratio per capita income ratio of 0.96).

The same generally holds for semiprovincial regions with the exception of Wuzhong. We should of course note that the ethnic income gap on a per capita basis mainly arises through ethnic differences in household structure; that is, Hui households typically have more members and a higher dependency ratio (relatively more dependents). In fact, the average income of rural Hui households (13,245 yuan) is about 6 percent higher than that of Han households (12,457 yuan). Therefore, the higher dependency ratio of Hui households leads to the lower per capita income measure. In addition, as shown at the bottom of Table 2, the Hui–Han gap in annual earnings for the urban workforce is only about 2 percent. Therefore, we should only examine the influence of ethnicity after controlling for household structure and other characteristics.

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<sup>6</sup> Many studies of rural poverty in China refer to these regions. For example, the *Xihaigu Huizu Shequ Xiandaihua Fazhan Jincheng Ketizu* (Research Project on the Development and Modernization of Xihaigu Hui Ethnic Communities) (1998) is a report on the economic conditions of these regions immediately before the launch of the Great Western Region Development.

<INSERT TABLE 2 HERE>

Table 3 details the ethnic disparity in educational attainment. As shown, the average educational attainment of the Hui is lower than that of the Han in both urban and rural areas. However, we should note that the gap in educational attainment narrows for younger cohorts (persons aged 16–30 years) in urban areas. Put differently, there is a form of polarization in educational attainment among the younger Hui population in urban areas in that the proportion of the younger urban cohort that have a college or higher level of educational attainment is slightly higher for the Hui (about 28 percent) than the Han (some 26 percent). At the same time, the proportion of those that have a primary school or lower level of educational attainment among the urban younger cohort is higher for the Hui (some 9 percent) than for Han (less than 2 percent). We should also note that gender gap in education is much higher for the Hui than the Han in both urban and rural areas, even among the youngest cohorts.

<INSERT TABLE 3 HERE>

Table 4 provides information on the employment structure of the rural workforce. “Local nonagricultural income” here is income from employment/self-employment within the home township. Note also that that the concept of “agriculture” used broadly refers to livestock farming, forestry, fishery, and aquaculture. “Outmigration” is the process of working outside the home township, regardless of the duration or occupation. We make the following points using the information in this table. First, the proportion of the rural workforce with local nonagricultural income is higher among the Hui (Table 3.A). Second, similarly, the Hui rural workforce is more likely to work outside the home township, although the average migration duration of the Hui workforce is shorter than that of the Han (Table 3.B). Third, in terms of the migration destination, the Hui rural workforce tends to be employed in the northwestern region of China (Gansu, Xinjiang, and Shaanxi), whereas the Han rural workforce is more likely to migrate to the northern and southern coastal regions (Table 3.C).

<INSERT TABLE 4 HERE>

Table 5 details the employment structure of the urban workforce. For the most part, we can see that the employment of the Han workforce is mostly in the public or manufacturing



sector. The relatively high proportions of manual workers on the one hand, and engineers and professionals on the other, among the Han workforce reflect these sectoral characteristics. In contrast, most of the employment of the Hui workforce tends to be in the nonpublic (private) and general service sectors (commerce, food and accommodation services, and transportation). At the same time, Hui are more likely to find employment in political party, government, educational, and scientific research institutes. This feature reflects Ningxia's status as an ethnic minority autonomous region. In addition, it is notable that ethnic differences in the female labor participation rate are very small, although the proportion of women in the total workforce is slightly lower for the Hui than the Han.

<INSERT TABLE 5 HERE>

Table 6 compares the social networks of Hui and Han households. As shown, interethnic marriage represents a very small proportion of marriages for both Hui and Han households (Table 6.A). Not surprisingly, there is a clear contrast in religious beliefs in that almost all Hui are Muslims, whereas only small proportion of Han responds with any religious affiliation (Table 6.B). However, a small proportion of Hui in urban areas indicate that they do not have religious beliefs.

<INSERT TABLE 6 HERE>

Table 6.C summarizes information on the ethnic status of three good friends for each respondent (aged 16 years or more). This clearly illustrates an urban-rural difference in ethnic density in social networks among Hui people. For example, approximately 72 percent of Hui respondents in rural areas declared that all three good friends had the same ethnicity, compared with only 40 percent of Hui respondents in urban areas. In sharp contrast, Han social networks appear to be constrained within the same ethnicity in both rural and urban areas.

These findings are consistent with previous studies in Ningxia. For example, Zhou and Gao (2011), using a questionnaire survey conducted in Wuzhong (both urban and rural households), found that more than 40 percent of respondents never invited persons of a different ethnic status to their home. They also found that Hui respondents were more likely to have negative attitudes toward interethnic social interactions.

### 3. Ethnic differences in the returns to human capital

Here we examine the determinants of income by estimating household income/individual earnings functions. Our focus is ethnic differences in the role of human capital.

#### *Rural household income*

We estimate the rural household income function as follows. To start with, the dependent variable is the log of per capita annual household net income in 2006, where household net income is the sum of net revenue from agricultural production and nonagricultural self-employment, local wage income, income earned from migration, asset income, public and private transfer incomes, and miscellaneous other incomes. The imputed rent for owner-occupied housing is not included. The explanatory variables are: (a) household ethnic status defined by the household head (dummy variable for Hui households); (b) family structure (age and age squared of the household head, and the proportion of household members in the workforce); (c) the level of education of the household workforce (average years of education); (d) physical capital endowment (value of productive assets, and size of land used for agricultural production), (e) employment structure (number of household members with local wage employment, a dummy for local nonagricultural self-employment, and the sum of migration duration of working household members); and (f) regional dummy variables (at the subprovincial level). In addition, to investigate the interaction effects of ethnicity with other factors, we introduce interaction terms between Hui households and the level of education, physical capital, and employment structure. Table 1 in the Appendix provides summary statistics of the variables used in the estimation. Table 7 details the estimation results obtained using OLS. We make the following points using these results.

<INSERT TABLE 7 HERE>

First, as shown by the results for Equation 1 in Table 7, there is a significant negative correlation between Hui household ethnic status and household income. Controlling for other factors, the per capita income of Hui households is approximately 8 percent lower than that of an equivalent Han household. Second, as expected, the level of human capital in the household measured by the average years of education of the household workforce, positively and significantly correlates with household income. These results indicate that the rate of return for one additional year of education is 3.4 percent, after controlling for ethnic status and other household attributes. As shown by the results for Equation 2 in Table 7, when we

employ the interaction term between Hui ethnicity and average years of workforce education, we find that the interaction term is positive and statistically significant, suggesting higher returns to education for Hui households.<sup>7</sup>

Considering the large ethnic gap in education (a lower level of education associated with Hui ethnicity) and low ethnic barriers in the rural labor market, these findings suggest that the scarcity value of well-educated Hui workforce is rather high. In turn, this indicates a widening inequality of income among Hui households, with Gini coefficients for per capita income for all, Han, and Hui households of 0.397, 0.371, and 0.433, respectively.<sup>8</sup> In addition, unobserved human capital that is complementary to education, such as the family cultural background, also tends to be higher for the generally better-educated Hui workforce.

Third, regarding physical capital, we find that the rate of return to productive assets is also higher for the Hui than the Han. As shown by the results for Equation 2 in Table 7, the interaction term between productive asset holding and the Hui household dummy is positive and significant. We can explain the differing interaction effects found between Hui status and physical capital (land) by the fact that Hui households are more likely to engage in nonagricultural self-employment than Han households. In fact, about 43 percent of Hui households engage in nonagricultural self-employment activity, compared with only about 23 percent for Han households (for details, see Table 1 in the Appendix).

Fourth, our results confirm that nonagricultural employment is important in increasing the level of household income. The effect of migration, measured by total time (months) spent working outside the home township, is positive and significant, indicating that a one-month increase in migration duration raises per capita household income by 0.5 percent. In contrast, increasing the number of family members engaging in local (within the home township) wage

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<sup>7</sup> Estimation by ethnic group shows that the returns to education are 5.72 and 2.10 percent for the Hui and Han, respectively.

<sup>8</sup> The existing literature on the comparison of returns to education by ethnic group draws different findings. For example, Baulch et al. (2010) compared socioeconomic characteristics and differences in returns to the Kin majority and ethnic minorities in Vietnam and found that the returns to education tend to be higher for the Kin than for ethnic minorities. Silva (2009), using data on full-time male workers in Sri Lanka, found that the returns to secondary education were generally higher for Sinhalese (ethnic majority) workers, although the returns to tertiary education were greater for Tamil (ethnic minority) workers in the upper part of the wage distribution. In South Africa, Veitch (2007) found that while the returns to education by race differed by employment status and that the returns for white and black men were very similar at all levels of education, the returns to tertiary education were significantly higher for blacks than whites in the self-employed sector. This literature suggests the need for more detailed interethnicity analysis of the returns to education for urban–rural and sector comparisons. As for the US, Ashraf (1994) calculated education returns for white and black workers from 1967 to 1986 and found that for high school graduates returns were higher for whites, whereas the returns for blacks were higher among college graduates.

employment increases per capita household income by 8.6 percent.

Finally, the interaction effects between Hui ethnic status and employment structure differ across local employment and migration. The interaction term between the Hui and migration duration is negative and statistically significant. In this sense, the negative interaction effect with ethnic status almost cancels out the main positive effect of migration duration on Hui household income. In contrast to migration duration, the interaction terms between Hui households and both local wage employment and local nonagricultural self-employment are not statistically significant. These findings suggest that Hui households have a certain disadvantage when they work outside their home township, whereas no such ethnic disadvantage appears to exist for local nonagricultural activities.

### ***Earnings from migration***

Although most of the extant literature concludes that the ethnic minority workforce is less likely to migrate, our data show that the proportion of the workforce that migrate (to work outside the home township) among the total rural workforce is higher for Hui (33 percent) than Han (26 percent) households. However, the average migration duration (in months) is typically longer for Han (7.1 months) than Hui (6.2 months) households. We also identify ethnic differences in migration destination, with the Han more likely to migrate to coastal regions, whereas the Hui are more likely to migrate to other northwestern provinces. We can likely explain these differences in destination with religious and cultural factors. Unfortunately, because of data limitations, we are unable to observe the ethnic differences in the occupations and industries where these migrants work.

What factors then influence the earnings from migration? Here we estimate the determinants of hourly earnings from migration and consider if there are any ethnic differences. The dependent variable is the log of hourly earnings from working outside the home township in 2006. The explanatory variables are gender, age and age squared, years of education, a dummy variable indicating employment that requires certain skills, the total migration duration in 2006 (in months), the migration destination (northern coastal, northwestern, southern coastal, and other regions), and the place of origin (using subprovincial region dummies). To observe ethnic differences in the returns to human capital, we also specify interaction terms between Hui ethnicity and gender, years of education, and a dummy variable for skilled employment. Because rural migrants engage in various kinds of jobs and it is difficult to define job skills exclusively, we did not specify job skills in our questionnaire. As a second-best strategy, we instead asked respondents whether the

employment of family members required certain skills.

<INSERT TABLE 8 HERE>

Table 8 reports the estimation results for the migration earnings function. The results for Equation 1 in Table 8 (excluding the interaction terms with Hui ethnic status) indicate the following. First, Hui ethnic status negatively and significantly correlates with hourly earnings from migration. This finding is consistent with the earlier outcome of the rural household income function (Table 7), suggesting that when working away from home, the rural Hui workforce faces ethnic segmentation or discrimination in the labor market. Second, both the level of education and the employment skills dummy positively and significantly correlate with hourly earnings. Third, the workforce originating from southern less-developed regions (Wuzhong, Guyuan, and Zhongwei) has a disadvantage in migration earnings. We can explain this finding by relatively poorer access to job information and the low level of human capital found among the workforce in these less-developed regions.

When we specify interaction terms in Equation 2 in Table 8, we find that the interaction effect of Hui ethnicity and the dummy for skilled employment is negative and significant, although there is no significant interaction effect for Hui ethnicity and education and gender. The lower return to skills in migration earnings for the Hui workforce is yet another finding that suggests a disadvantage arising from ethnic minority status when Hui migrants work away from home.

### ***Urban income***

As for urban income, we estimated an individual earnings function because urban household income essentially comprises individual earnings with a relatively small number of households engaging in family business. The dependent variable is the log of annual individual net earnings in 2006. The explanatory variables consist of: (a) ethnic status (Hui dummy); (b) gender (male dummy); (c) years of education; (d) seniority and its square; (e) a dummy for communist party membership; (f) occupational status (self-employed and private business owners, managerial positions, engineers and professionals, office clerks, manual workers/sales clerks, and others); (g) industrial sector (manufacturing, commerce/food and accommodation/transportation, real estate/finance and insurance, education/culture/scientific research/medical care, party and government/social organizations, and others); (h) ownership sector (state-owned, collectively-owned, self-employed/private/other ownership status); and

(i) subprovincial region (prefecture-level city) dummies. In addition, we include interaction terms between Hui status and the education level of the workforce and the employment status of the household head.

Table 9 provides the estimation results for the urban individual earnings function. We make the following points using these results. First, as shown by Equation 1 in Table 9, Hui ethnic status dummy is positive and statistically significant, suggesting about a 6.5 percent premium in annual earnings for the Hui workforce over their Han counterparts with comparable individual attributes and employment status. The positive correlation of Hui status with earnings in urban Ningxia shows that the Hui, the single major ethnic group designated as the principal ethnic group governing regional ethnic autonomy in Ningxia, generally has an advantage in the local labor market. We can perhaps explain this advantage using a combination of thick social networks existing among urban Hui as the major ethnic group and the favorable policy treatment prevailing for Hui as the principal ethnic minority. Of course, this ethnic advantage may not be applicable to the other ethnic autonomous regions in China. For example, Zang (2008), using data from Lanzhou in 2001, argued that the ethnic minority status of the Uyghur has a disadvantage in terms of discrimination in the local urban labor market in both the enterprise and nonbusiness sectors. The effects of ethnic minority status on incomes will also vary according to the local socioeconomic context, including the ethnic distribution of the population, the ethnic structure of employment and production, any interethnic social distance, and ethnicity-related local sociopolitical history, along with policy treatment at the local level.

<INSERT TABLE 9 HERE>

Second, as shown by the results for Equation 2 in Table 9, the results for the effect of education on earnings suggest no substantial difference in the returns to education of the Hui and Han workforces. In evidence, the interaction term between Hui status and years of education is negative, but not statistically significant. Third, as shown by the results for Equation 3 in Table 9, the interaction term between Hui status and the state-owned sector dummy is negative and statistically significant. This implies that although Hui ethnic status generally has a positive effect in the local urban labor market in Ningxia, favorable positions in the state-owned sector (for example, large state-owned enterprises with central/provincial-level administrative status and provincial-level party/governmental apparatuses) are more likely obtained by the Han (national majority) workforce. Finally, as

shown by the results for Equation 2 in Table 9, it is notable that the gap in earnings between men and women, which is quite large compared with the general situation in urban China, does not appear to be associated with ethnicity in that the interaction term between Hui status and the male dummy is not statistically significant.

#### **4. Role of ethnicity- and religion-related social capital**

This section examines the extent to which ethnicity- and religion-related social capital correlates with the income of Hui households. Specifically, we utilize two subjective questions that reflect the attitudes of household heads toward trust in social networks. We asked household heads to respond as to whether they agreed with two statements that it was easier to communicate with those of the same ethnicity and that only if they are Muslim could they easily trust others, regardless of whether they were from other regions in China or outside China. Respondents answered these questions on a five-point scale: “strongly agree”, “agree”, “disagree”, “strongly disagree”, and “do not know/not sure”.<sup>9</sup>

We regard the first question as a measure of “ethnic openness” to trust in social networks. We assume that “ethnically open” attitudes positively correlate with Hui household income because such attitudes toward trust in social networks will help Hui households find more opportunities that are favorable. We regard the second question as a measure of Muslim-oriented trust in social networks. This potentially can represent either an “open” or “closed” attitude toward social networks. On the one hand, it represents a more “open” attitude in that Muslim networks can lie above other ethnic or regional networks. On the other, it may also represent a rather “closed” attitude toward social networks if it implies distrust in non-Muslim ethnicities.

To elaborate further, we create a combined attitudinal measure based on the assumption that Muslim-oriented attitudes can represent “open” beyond-ethnic attitudes toward trust. First, we create measures of “openness” in ethnicity-oriented attitudes toward trust by converting the relevant question into a three-scale categorical variable: “highly open” (“disagree”), “somewhat open” (“somewhat disagree”), “not open” (“strongly agree”, “somewhat agree”, and “do not know/not sure”). Similarly, we create a measure of Muslim-oriented trust by converting the relevant question: strongly Muslim-oriented (“strongly agree”), somewhat

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<sup>9</sup> For rural households, we also attempt to discern the level of general trust using a five-point scale measure by asking whether respondents agreed with the statement that they could only trust relatives and friends and not other people. As this variable is not available for urban households, we did not employ it in specifying the results in Table 10. Nevertheless, the estimation results are generally the same when we employ the level of general trust in the rural household income function as a control variable.

Muslim-oriented (“somewhat agree”), not Muslim-oriented (“disagree”, “somewhat disagree”, and “do not know/not sure”). We then create a combined attitudinal variable using these categorical variables. These are [1] ethnically not open and Muslim-oriented (ethnically not highly open and strongly Muslim-oriented), [2] ethnically not open and not Muslim-oriented (ethnically not highly open and not strongly Muslim-oriented), [3] ethnically highly open and not Muslim-oriented (ethnically highly open and not strongly Muslim-oriented), and [4] ethnically highly open and Muslim-oriented (ethnically highly open and strongly Muslim-oriented).<sup>10</sup>

<INSERT TABLE 10 HERE>

Table 10.A reports the estimation results for rural and urban households. We make the following points using the results in this table (see Table 1 and Table 3 in the Appendix for summary statistics for the ethnicity- and religion-related social capital variables). First, ethnicity-related trust exhibits a significant correlation with income (Equation 1 in Table 10.A), unlike Muslim-oriented attitudes (Equation 2 in Table 10.A). The presence of positive and statistically significant coefficients for ethnically “somewhat open” and “highly open” attitudes toward trust supports our earlier assumption and suggests that ethnically open attitudes help Hui households to access lucrative economic opportunities in rural Ningxia where Hui and Han villages are usually separately located and the level of beyond-ethnicity social interactions is relatively low.

Second, as shown by the results for Equation 3 in Table 10.A, the combined measure of trust in social networks suggests that Muslim-oriented attitudes toward trust in social networks positively and interactively affect rural Hui household incomes. Using the combination of ethnically not open and Muslim-oriented attitudes toward trust as the reference category, we find that that the combination of ethnically open/Muslim-oriented attitudes has the largest positive and statistically significant effect on Hui household income. In contrast, while the combination of ethnically open/non-Muslim-oriented attitudes also has a positive and significant influence, the magnitude of the estimated coefficient is smaller.<sup>11</sup>

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<sup>10</sup> Li and Ding (2008) employed similar variables indicating social networks as reported in Table 6 (dummies for religion and ethnic density in social networks) in their urban individual earning functions and found that neither of these variables exerted a significant influence on earnings. In our analysis, we employ these other variables only for the Hui sample because the combined trust variable is only applicable for the Hui.

<sup>11</sup> It is interesting to note that trust in social networks was not associated with the level of education of respondents and is therefore considered as an independent social factor that may affect income. We conducted a chi-squared test of independence of the ethnicity- and Muslim-oriented attitudes



Third, we are, however, unable to clarify the presence of any reverse causality, that is, whether higher Hui household income brings about more ethnically open attitudes. As good instruments for confirming the presence of any endogeneity are not available, we merely report the positive correlation between ethnicity- and religion-related social capital and current household income in rural areas. Finally, in contrast to rural areas, there appear to be no significant effects arising from ethnicity- and Muslim-oriented attitudes in urban areas. Table 10.B reports the results for the earnings function for Hui respondents (household heads) for the ethnicity- and religion-oriented attitudinal variables.<sup>12</sup> We find neither of the attitudinal variables to be significant. This suggests that ethnicity- and religion-oriented trust toward social networks does not matter as much in urban areas where the density of interethnic social relations is typically much higher than in rural areas.

## 5. Conclusion

In this paper, we focused on two aspects of the correlation between ethnicity and income: the returns to human capital (education and job skills) and the effect of ethnicity-related social capital. Our major findings are as follows. First, we found that the effects of ethnicity on income vary with the rural–urban context and the unit of measurement (household income or individual earnings). When we controlled for household and individual characteristics, Hui ethnic status in rural households generally negatively and significantly correlated with per capita household income. Hui ethnic status of the rural workforce also negatively and significantly affected hourly earnings from migration employment. However, in contrast to the rural context, Hui ethnic status of the urban workforce exerted a positive and statistically significant correlation with individual earnings in the local labor market.

Second, ethnic differences in the returns to human capital also varied within the rural–urban context and by unit of measurement. Regarding rural household income, we found the returns to education to be higher for Hui households than for Han households. As for individual earning from migration employment of rural workforce, the returns to job skills were lower for the Hui workforce than for their Han counterparts, although there was no significant ethnic difference found for the returns to education. In the urban setting, there is no substantial ethnic difference in the returns to education for urban individual earnings.

Third, we found that ethnicity- and religion-related social capital plays a significant role among Hui people in rural areas where the level of interethnic social interactions is relatively

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variables with the education level of respondents and found no statistically significant association.  
<sup>12</sup> The attitudinal questions were delivered only to household heads (or in a small number of cases, another major income earner).

low. In particular, we suggest that Muslim-oriented attitudes toward trust in social networks positively and interactively affect income with ethnically open attitudes toward trust. Similar to the case of the returns to education, we found no significant correlations between ethnicity- and religion-related social capital and income in urban areas where the level of interethnic interactions in the labor market is typically much higher than in rural areas.

Overall, we confirm that a simple majority–minority dichotomy cannot well describe the effects of ethnicity on income. This is because these effects vary according to the local socioeconomic context of the minority and the majority as well as the conduct of local ethnic policy. As a way forward, in future research we need to elaborate on the situation in Ningxia using updated data as well as possibly drawing upon comparable data for other ethnic groups from other regions.

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Table 1 Distribution of samples of Ningxia survey

A. Rural

Region (subprovincial level cities)	Number of samples (households)	Number of samples (individuals)	Number of Hui individual samples	Proportion of Hui individual samples in each region (%)
Yinchuan	200	798	422	52.9
Shizuishan	90	338	103	30.5
Wuzhong	302	1,404	500	35.6
Guyuan	378	1,866	838	44.9
Zhongwei	220	990	393	39.7
Total	1,190	5,396	2,256	41.8

B. Urban

Region (subprovincial level cities)	Number of samples (households)	Number of samples (individuals)	Number of Hui individual samples	Proportion of Hui individuals in each region (%)
Yinchuan	200	534	70	13.1
Shizuishan	150	433	40	9.2
Wuzhong	200	649	344	53.0
Guyuan	150	506	223	44.1
Zhongwei	100	323	83	25.7
Total	800	2,445	760	31.1

*Source:* This table and the following tables are calculated from IEA-CASS Ningxia Survey 2006.

Table 2 Per capita household income by ethnicity and regions, 2006

	(yuan)		
	Han	Hui	Hui/Han ratio
	Mean	Mean	
<b>Rural area</b>			
Number of sample households	711	467	
Household size (number of persons/household)	4.33	4.87	1.12
Per capita annual household income	3,098	2,964	0.96
Per capita annual household income (by regions)			
Yinchuan	4,859	4,192	0.86
Shizuishan	4,420	3,493	0.79
Wuzhong	3,551	4,078	1.15
Guyuan	2,198	2,029	0.92
Zhongwei	2,168	1,716	0.79
<b>Urban area</b>			
Number of sample households	565	235	
Household size (number of persons/household)	2.85	3.63	1.27
Per capita annual household income	9,052	7,117	0.79
Per capita annual household income (by regions)			
Yinchuan	10,975	10,053	0.92
Shizuishan	8,218	7,476	0.91
Wuzhong	8,990	6,569	0.73
Guyuan	7,778	7,552	0.97
Zhongwei	8,296	5,865	0.71
Number of workforce in the sample households	778	289	
Annual earning of work force	15,562	15,230	0.98

Table 3 Educational attainments by ethnicity, gender, and age cohorts

A. Rural							(%)
	Lower than primary	Primary school	Lower secondary school	Upper secondary school	College or above	Total	Number of observations
Han	18.5	22.9	40.7	15.2	2.8	100.0	2447
Male	10.6	22.5	45.6	18.3	2.9	100.0	1282
Female	27.1	23.3	35.2	11.7	2.8	100.0	1165
Age 16-30	2.1	11.9	54.2	24.6	7.2	100.0	858
Age 31-45	9.9	28.9	49.3	11.5	0.5	100.0	811
Age 46-60	34.4	31.8	22.1	11.2	0.6	100.0	526
Above age 60	70.8	22.9	4.58	1.67	0.0	100.0	240
Hui	28.6	30.5	29.6	9.2	2.0	100.0	1,631
Male	17.2	32.2	35.8	12.3	2.5	100.0	843
Female	40.7	28.8	22.8	6.1	1.5	100.0	788
Age 16-30	11.2	30.5	41.0	14.4	3.0	100.0	696
Age 31-45	31.6	31.8	28.7	6.5	1.4	100.0	509
Age 46-60	45.4	32.1	14.9	6.0	1.7	100.0	302
Above age 60	72.6	21.8	4.8	0.81	0.0	100.0	124
B. Urban							(%)
	Lower than primary	Primary school	Lower secondary school	Upper secondary school	College or above	Total	Number of observations
Han	4.4	6.3	27.1	36.0	26.2	100.0	1,360
Male	1.5	4.7	26.3	37.8	29.8	100.0	678
Female	7.3	7.8	28.0	34.3	22.6	100.0	682
Age 16-30	0	1.5	22.2	53.3	23.0	100.0	261
Age 31-45	0.6	2.4	27.2	33.5	36.3	100.0	659
Age 46-60	7.3	13.8	31.6	31.6	15.6	100.0	275
Above age 60	21.8	16.4	27.3	26.1	8.5	100.0	165
Hui	9.1	11.8	26.8	24.5	27.8	100.0	515
Male	0.8	10.0	29.7	27.0	32.4	100.0	259
Female	17.6	13.7	23.8	21.9	23.1	100.0	256
Age 16-30	2.9	6.4	25.4	38.7	26.6	100.0	173
Age 31-45	7.1	9.7	27.9	17.7	37.6	100.0	226
Age 46-60	19.8	22.2	27.2	18.5	12.4	100.0	81
Above age 60	28.6	28.6	25.7	11.4	5.71	100.0	35

Table 4 Employment structure of rural workforce

A: Percentage of workforce having local nonagricultural income, 2006

	Han		Hui	
	%	Total number of workforce	%	Total number of workforce
Total	24.0	2,234	33.6	1,519
Male	37.2	1,178	50.8	784
Female	9.2	1,056	15.2	735
Age 16-30	27.6	843	37.5	672
Age 31-45	26.6	794	36.2	500
Age 46-60	16.0	519	24.9	297
Above age 60	10.3	78	6.0	50

B: Out-migration, 2006

		Han			Hui		
		Total	Male	Female	Total	Male	Female
Percentage of workforce working out of home township (%)		22.2	32.9	10.1	29.2	43.9	13.6
Migration duration (month)		7.1	7.0	7.4	6.2	6.3	5.9
Number of observations		495	388	107	444	344	100

C. Migration destination, 2006

	Han	Hui
Within Ningxia	67.7	53.8
Northern coastal region	2.6	1.8
Northwestern region	22.4	43.2
Southern coastal region	6.7	0.9
Other regions	0.6	0.2
Number of observations	495	444



Table 5 Employment structure of urban workforce

	(%)	
	Han	Hui
<b>Gender</b>		
Male	56.2	59.6
Female	43.8	40.5
<b>Occupational status</b>		
Self-employed, private business owners	9.2	10.7
Managerial classes	7.2	8.8
Engineers and professionals	23.0	17.8
Office clerks	17.0	28.8
Manual workers, sales clerks, and other unskilled workers	43.7	34.0
<b>Industrial sectors</b>		
Manufacturing	19.1	5.5
Commerce, food and accommodation service, transportation	20.8	26.2
Real estate, finance, and insurance	12.5	11.0
Education, medical care, culture, and scientific research	16.2	21.7
Party, government, and social organizations	11.7	21.4
Others	19.8	14.2
	100.0	100.0
<b>Ownership sectors</b>		
State-owned	24.0	13.6
Collectively-owned	16.4	9.4
Others	59.6	77.0
	100.0	100.0
Number of observations	795	309

Table 6 Social networks

## A. Intra- and interethnicity marriage (household head and spouse)

	Rural	Urban
Total: Proportion of intraethnicity marriage (%)	99.0	95.4
Number of observations (households)	1164	755

## B. Percentage of those who have religion (individuals of age 16 and above ) (%)

	Rural	Number of observations	Urban	Number of observations
Han				
Male	23.1	1,455	13.0	654
Female	23.5	1,293	15.6	659
Hui				
Male	100.0	1,060	92.5	256
Female	100.0	992	94.9	253

## C. Ethnic density in social networks (individuals of age 16 and above) (%)

	Rural		Urban	
	All of three good friends belong to same ethnicity with respondent	At least one good friend not belong to same ethnicity with respondent	All of three good friends belong to same ethnicity with respondent	At least one good friend not belong to same ethnicity with respondent
Han	86.8	13.2	78.3	21.7
Male	85.8	14.2	78.2	21.9
Female	90.1	9.9	78.5	21.5
Number of observations	481	73	1,040	288
Hui	72.2	27.8	39.5	60.5
Male	71.1	28.9	35.2	64.8
Female	75.5	24.5	43.8	56.2
Number of observations	380	146	197	302

Table 7 Determinants of rural household income (OLS estimation)

Dependent variable: log of per capita annual household net income in 2006	(1)		(2)	
	Coef.	Standard error	Coef.	Standard error
Hui households	-0.0832**	0.04101	-0.2664***	0.1024
Age of household head	-0.0026	0.0111	-0.0023	0.0111
Age of household head, squared	0.00005	0.0001	0.00005	0.0001
Average years of education of workforce	0.0344***	0.0076	0.01961**	0.0098
Employment ratio (workforce/number of family members)	0.3211***	0.0728	0.3033***	0.0729
Value of productive assets (thousand yuan)	0.0033***	0.0007	0.0025***	0.0008
Size of land used for agricultural production (mu)	0.0017	0.0014	0.0003	0.0018
Number of workforce having local wage employment	0.0860***	0.0325	0.0880**	0.0442
Dummy for having nonagricultural self-employment	0.0495	0.0413	0.0499	0.0570
Sum of migration duration of workforce (months)	0.0056*	0.0029	0.0093**	0.0036
Shizuishan	.05331	0.0815	0.0539	0.0813
Wuzhong	-.1523**	0.0590	-0.1652***	0.0594
Guyuan	-.5047***	0.0619	-0.5217***	0.0622
Zhongwei	-.7087***	0.0638	-0.6973***	0.0643
<i>Interaction terms with Hui</i>				
Hui*Education			0.0316**	0.0145
Hui*Productive assets			0.0044**	0.0020
Hui*Land			0.0037	0.0026
Hui*Local wage employment			-0.0226	0.0646
Hui*Nonagricultural self-employment			-0.0123	0.0823
Hui*Migration duration			-0.0094*	0.0057
Constant	7.5904***	0.2591	7.7044***	0.2617
Adj R-squared	0.2340		0.2394	
Number of observations	1,178		1,178	

Notes: Omitted region dummy is Yinchuan. \*\*\*, \*\*, \* denote statistically significant at the 1% level, 5% level, and 10% level respectively.

Table 8 Determinants of hourly earning from migration (OLS estimation)

Dependent variable: log of hourly earning in 2006	(1)		(2)	
	Coef.	Standard error	Coef.	Standard error
Hui	-0.0723**	0.0320	-0.1395	0.0953
Male	0.1724***	0.0386	0.1495***	0.0528
Age	0.0359***	0.0087	0.0369***	0.0087
Age squared	-0.0005***	0.0001	-0.0005***	0.0001
Years of education	0.01300**	0.0053	0.0031	0.0085
Jobs requiring certain skill	0.0840***	0.0317	0.1447***	0.0444
Migration duration (months)	-0.0598***	0.0049	-0.0591***	0.0049
<i>Interaction terms with Hui</i>				
Hui*Male			0.0370	0.0734
Hui*Education			0.0141	0.0104
Hui*Job with skill			-0.1138*	0.0631
<i>Migration destinations</i>				
North costal region	0.2554**	0.1008	0.2517**	0.1009
Northwest region	0.0753**	0.0347	0.0753**	0.0348
South costal region	0.2968***	0.0787	0.2921***	0.0794
Other regions	0.4146*	0.2277	0.4336*	0.2277
<i>Place of origin</i>				
Shizuishan	0.04109	0.0763	0.0393	0.0762
Wuzhong	-0.1885***	0.0531	-0.1855***	0.0532
Guyuan	-0.1785***	0.0518	-0.1819***	0.0518
Zhongwei	-0.1315**	0.0551	-0.1382**	0.0556
Constant	1.1601***	0.1597	1.1962***	0.1702
Adj R-squared	0.2041		0.2052	
Number of observations	964		964	

Notes: Omitted categories are within Ninxia (migration destination) and Yinchuan (place of origin). \*\*\*, \*\*, \* denote statistically significant at the 1% level, 5% level, and 10% level respectively.

Table 9 Urban earning functions (OLS estimation)

Dependent variable : log of personal earning of the employed	(1) without interaction terms		(2) with interaction terms	
	Coef.	Standard error	Coef.	Standard error
Hui	0.065*	0.0407	0.403*	0.2343
Male	0.303***	0.0354	0.281***	0.0404
Years of education	0.038***	0.0072	0.043	0.0088
Work experience	0.051***	0.0067	0.050***	0.0068
Square of work experience	-0.001***	0.0002	-0.001***	0.0002
Communist party member	-0.001	0.0454	-0.003	0.0455
Owner of private or individual enterprise	0.115	0.0764	0.094	0.0902
Head of division in institution or the institution	0.187***	0.0701	0.227***	0.0851
professional or technical worker	0.108*	0.0569	0.120*	0.0663
Worker, commercial service worker or others	-0.193***	0.0531	-0.164***	0.0635
Manufacturing	0.012	0.0615	0.010	0.0618
Commerce, food and accommodation service, transportation	0.015	0.0541	0.008	0.0541
Real estate, finance and insurance	0.191	0.0619	0.203	0.0624
Education, medical care, culture and scientific research	0.118*	0.0636	0.120*	0.0638
Party, government, social organizations	-0.007	0.0676	-0.007	0.0677
State-owned units	0.131**	0.0581	0.180***	0.0633
Others	0.042	0.0557	0.069	0.0605
Shizuishan	-0.164***	0.0517	-0.171***	0.0520
Wuzhong	-0.234***	0.0507	-0.243***	0.0512

Guyuan	-0.120**	0.0545	-0.111**	0.0549
Zhongwei	-0.140**	0.0584	-0.142**	0.0585
<i>Interaction terms with Hui</i>				
Hui*Male			0.089	0.0770
Hui*Years of education			-0.013	0.0141
Hui*State-owned units			-0.333**	0.1525
Hui*Others			-0.181	0.1278
Hui* Owner of private or individual enterprise			0.061	0.1511
Hui* Head of division in institution or the institution			-0.136	0.1479
Hui* professional or technical worke			-0.078	0.1123
Hui* Worker, commercial service worker or others			-0.086	0.1082
Constant	8.389***	0.0584	8.300***	0.1539
Adj. R <sup>2</sup>	0.313		0.314	
Number of observations	1067		1067	

*Notes:* Omitted categories are office clerks (occupational status), others (industrial sector), collectively-owned (ownership sector), and Yinchuan (region dummy). \*\*\*, \*\*, \*\* denote statistically significant at the 1% level, 5% level, and 10% level respectively.

Table 10 Income function of Hui with ethnicity- and religion-oriented attitudinal variables

A. Rural Hui household income function with ethnicity- and religion-oriented attitudinal variables (OLS estimation)

Dependent variable: log of per capita annual household net income in 2006	(1)		(2)		(3)	
	Coef.	Standard error	Coef.	Standard error	Coef.	Standard error
Age of household head	-0.0152	0.0144	-0.0149	0.0146	-0.0158	0.0144
Age squared	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
Average years of education of workforce	0.0552***	0.0123	0.0567***	0.0123	0.0542***	0.0123
Employment ratio (workforce/number of family members)	0.2883**	0.1161	0.3071***	0.1155	0.2933**	0.1153
Value of productive assets (thousand yuan)	0.0077***	0.0019	0.0076***	0.0019	0.0076***	0.0019
Size of land used for agricultural production (mu)	0.0038	0.0022	0.0035	0.0022	0.0038	0.0022
Number of workforce having local wage employment	0.0773*	0.0495	0.0834*	0.0496	0.0798*	0.0495
Dummy for having nonagricultural self-employment	0.0247	0.0623	0.0321	0.0623	0.0331	0.0622
Sum of migration duration of workforce (months)	-0.0006	0.0048	-0.0014	0.0048	-0.0004	0.0048
<i>Ethnicity- and religion-oriented attitudinal variables</i>						
<i>Combined variable of ethnic and religious trusts:</i>						
Ethnically-not open and Muslim-oriented (reference)						
Ethnically-not open and not Muslim-oriented					0.1149	0.1079
Ethnically-open and not Muslim-oriented					0.1510*	0.0882
Ethnically-open and Muslim-oriented					0.2391**	0.0970
<i>Ethnicity-oriented trust: not open (reference)</i>						
Somewhat open	0.1277*	0.0735				
Highly open	0.1299*	0.0780				
<i>Muslim-oriented trust: Not Muslim-oriented (reference)</i>						
Somewhat Muslim-oriented			-0.0627	0.0773		
Muslim-oriented			-0.0309	0.0734		
<i>Combined variable of ethnic and religious trusts:</i>						
Ethnically-not open and Muslim-oriented (reference)						
Ethnically-not open and not Muslim-oriented					0.1149	0.1079
Ethnically-open and not Muslim-oriented					0.1510*	0.0882
Ethnically-open and Muslim-oriented					0.2391**	0.0970

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Shizuishan	-0.0464	0.1343	-0.0272	0.1348	-0.0333	0.1344
Wuzhong	-0.2341**	0.0935	-0.2166**	0.0939	-0.2353**	0.0933
Guyuan	-0.4934***	0.0951	-0.4633***	0.0952	-0.4890***	0.0949
Zhongwei	-0.5496***	0.1047	-0.5563***	0.1061	-0.5678***	0.1057
Constant	7.7812***	0.3306	7.7360***	0.3296	7.6121***	0.3375
Adj R-squared	0.2368		0.2315		0.2392	
Number of observations	467		467		467	

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*Notes:* Omitted region dummy is Yinchuan. \*\*\*, \*\*, \* denote statistically significant at the 1% level, 5% level, and 10% level respectively.



B. Earning function of urban Hui workforce with ethnicity- and religion-oriented attitudinal variables (OLS estimation)

Dependent variable : log personal earning of the employed	(1)		(2)	
	Coef.	Standard error	Coef.	Standard error
Male	0.259	0.1583	0.260	0.1586
Education year	0.037**	0.0146	0.038**	0.0146
Work experience	0.072***	0.0180	0.073***	0.0180
Square of work experience	-0.001***	0.0005	-0.001***	0.0005
Communist party member	0.074	0.0951	0.083	0.0941
Owner of private or individual enterprise	0.309*	0.1611	0.298*	0.1596
Head of division in institution or the institution	0.041	0.1208	0.036	0.1219
professional or technical worker	0.098	0.1321	0.104	0.1328
Worker, commercial service worker or others	-0.048	0.1196	-0.050	0.1183
Manufacturing	-0.023	0.2242	-0.039	0.2205
Commerce, food and accommodation service, transportation	0.069	0.1238	0.066	0.1242
Real estate, finance and insurance	0.274	0.1702	0.259	0.1723
Education, medical care, culture and scientific research	0.091	0.1463	0.083	0.1459
Party, government, social organizations	0.046	0.1262	0.035	0.1247
State-owned units	-0.166	0.2018	-0.182	0.2001
Others	-0.013	0.1800	-0.027	0.1792
<i>Ethnicity- and religion-oriented attitudinal variables</i>				
<i>Ethnicity-oriented trust: not open (reference)</i>				
Somewhat open	-0.022	0.1062		
Highly open	0.042	0.1081		
<i>Muslim-oriented trust: Not Muslim-oriented (reference)</i>				
Somewhat Muslim-oriented			0.041	0.1097
Muslim-oriented			0.046	0.1072
Yinchuan (reference)				
Shizuishan	-0.272	0.2179	-0.274	0.2188

Wuzhong	-0.195	0.1444	-0.190	0.1428
Guyuan	-0.080	0.1486	-0.062	0.1471
Zhongwei	0.028	0.1842	0.038	0.1808
Constant	8.200***	0.3919	8.174***	0.3729
Adj. R <sup>2</sup>	0.300		0.298	
Number of observations	156		156	

*Notes:* Omitted categories are office clerks (occupational status), others (industrial sector), collectively-owned (ownership sector), and Yinchuan (region dummy). \*\*\*, \*\*, \* denote statistically significant at the 1% level, 5% level, and 10% level respectively.

Appendix Table 1 Summary statistics of rural household function

	Total		Hui		Han	
	Mean	STD	Mean	STD	Mean	STD
Per capita annual net household income (yuan)	3045.4930	3636.0070	2964.1300	4541.4360	3098.9340	2893.5050
Annual net household income (yuan)	12769.39	12524.69	13244.86	20025.30	12457.09	9288.486
Number household members	4.5467	1.4445	4.8737	1.5500	4.3320	1.3288
Dummy for Hui household	0.3964	0.4894	--	--	--	--
Age of household head	44.9338	10.5114	44.1563	11.3891	45.4444	9.8677
Average years of education of workforce	5.7684	2.7147	4.8933	2.7023	6.3432	2.5669
Employment ratio (workforce/number of family members)	0.5876	0.2679	0.5594	0.2757	0.6061	0.2612
Value of productive assets (thousand yuan)	13.6415	25.6085	11.3961	16.6130	15.1164	30.0084
Size of land used for agricultural production (mu)	6.1419	14.4393	5.8917	14.9816	6.3063	14.0800
Number of workforce having local wage employment	0.3795	0.4605	0.4111	0.6268	0.3586	0.5407
Dummy for having nonagricultural self-employment	0.3048	0.4605	0.4261	0.4950	0.2250	0.4179
Sum of migration duration of workforce (months)	5.5631	6.6843	6.2539	6.5706	5.1094	6.7240
Yinchuan	0.1613	0.3680	0.2141	0.4107	0.1266	0.3327
Shizuishan	0.0756	0.2644	0.0642	0.2454	0.0830	0.2760
Wuzhong	0.2555	0.4363	0.2099	0.4076	0.2855	0.4520
Guyuan	0.3209	0.4670	0.3448	0.4758	0.3052	0.4608
Zhongwei	0.1868	0.3899	0.1670	0.3734	0.1997	0.4001
<i>Combined variable of trust: Ethnically not open and Muslim-oriented</i>	--	--	0.1563	0.3635	--	--
Ethnically not open and not Muslim-oriented	--	--	0.1435	0.3509	--	--
Ethnically open and not Muslim-oriented	--	--	0.4690	0.4996	--	--
Ethnically open and Muslim-oriented	--	--	0.2313	0.4221	--	--
<i>Ethnicity-oriented trust: Ethnically not open</i>	--	--	0.2998	0.4587	--	--
Ethnically somewhat open	--	--	0.3919	0.4887	--	--
Ethnically open	--	--	0.3084	0.4624	--	--
<i>Muslim-oriented trust: Not Muslim-oriented</i>	--	--	0.3041	0.4605	--	--
Somewhat Muslim-oriented	--	--	0.3084	0.4623	--	--
Muslim-oriented	--	--	0.3876	0.4877	--	--
Number of observations	1,178		467		711	

Appendix Table 2 Summary statistics of earning function from migration

	Total		Hui		Han	
	Mean	STD	Mean	STD	Mean	STD
Hourly wage (yuan)	4.2312	5.5624	4.0173	5.3638	4.4201	5.7306
Hui	0.4689	0.4993	--	--	--	--
Male	0.7863	0.4101	0.7832	0.4125	0.7891	0.4084
Age	30.5436	10.5675	30.1372	10.6702	30.9023	10.4733
Average years of education	6.7147	3.0795	5.8717	3.3814	7.4590	2.5685
Jobs requiring certain skill	0.5270	0.4995	0.4248	0.4949	0.6172	0.4865
Migration duration (months)	6.6316	3.2055	6.1340	3.1236	7.0708	3.2157
Within Ningxia	0.6210	0.4854	0.5490	0.4981	0.6855	0.4648
North costal region	0.0218	0.1461	0.0177	0.1320	0.0254	0.1575
North west region	0.3154	0.4649	0.4270	0.4952	0.2168	0.4125
South costal region	0.0405	0.1971	0.0111	0.1047	.0664063	0.2492
Other regions	0.0041	0.0643	0.0022	0.0470	0.0059	0.0764
Yinchuan	0.1183	0.3231	0.1593	0.3664	0.0820	0.2747
Shizuishan	0.0539	0.2260	0.0442	0.2059	0.0625	0.2423
Wuzhong	0.2272	0.4192	0.2102	0.4079	0.2422	0.4288
Guyuan	0.3807	0.4858	0.3739	0.4844	0.3867	0.4875
Zhongwei	0.2199	0.4144	0.2124	0.4095	0.2266	0.4190
Number of observations	964		452		512	

Appendix Table 3 Summary statistics of earning function of urban workforce with ethnicity- and religion-oriented attitudinal variables

	Total		Hui		Han	
	Mean	STD	Mean	STD	Mean	STD
Earning of urban workforce (Yuan)	17476.36	10680.06	17554.09	10999.93	17447.98	10573.77
Male	0.8961	0.3054	0.9427	0.2332	0.8791	0.3264
Education year	12.2624	3.0702	12.0382	3.7394	12.3442	2.7865
Work experience	18.0584	8.2218	16.9615	8.0634	18.4601	8.2519
Square of work experience	393.5876	330.2591	352.2949	312.4809	408.7089	335.619
Communist party member	0.3390	0.4738	0.3822	0.4875	0.3233	0.4683
Owner of private or individual enterprise	0.1056	0.3076	0.1401	0.3482	0.0930	0.2908
Head of division in institution or the institution	0.1193	0.3244	0.1529	0.3610	0.1070	0.3094
professional or technical worker	0.1942	0.3959	0.1592	0.3671	0.2070	0.4056
Office worker (reference)	0.1857	0.3892	0.2420	0.4297	0.1651	0.3717
Worker, commercial service worker or others	0.3952	0.4893	0.3057	0.4622	0.4279	0.4954
Industry	0.1652	0.3717	0.0573	0.2332	0.2047	0.4039
Commerce and trade, restaurants & catering, materials supply, marketing,	0.2181	0.4133	0.2675	0.4441	0.2000	0.4005

warehousing and transportation						
Realty business, finance and insurance	0.1141	0.3183	0.0764	0.2665	0.1279	0.3344
Education, health, culture and scientific research	0.1363	0.3434	0.1592	0.3671	0.1276	0.3341
government and Party organs, social organizations	0.1789	0.3836	0.2930	0.4566	0.1372	0.3445
Other	0.1874	0.3906	0.1465	0.3547	0.2023	0.4022
State-owned units	0.2266	0.4190	0.1274	0.3345	0.2628	0.4407
Collective units	0.1397	0.3470	0.0701	0.2561	0.1651	0.3717
Others	0.6337	0.4822	0.8025	0.3994	0.5721	0.4954
<i>Ethnicity-oriented trust</i> : Ethnically not open	--	--	0.1720	0.3786	--	--
Ethnically somewhat open	--	--	0.4076	0.4930	--	--
Ethnically open	--	--	0.4204	0.4952	--	--
<i>Muslim-oriented trust</i> : Not Muslim-oriented	--	--	0.1592	0.3671	--	--
Somewhat Muslim-oriented	--	--	0.3631	0.4824	--	--
Muslim-oriented	--	--	0.4777	0.5011	--	--
Yinchuan	0.2300	0.4212	0.0955	0.2949	0.2791	0.4491
Shizuishan	0.1789	0.3836	0.0382	0.1923	0.2302	0.4215
Wuzhong	0.2487	0.4326	0.4395	0.4979	0.1791	0.3839
Guyuan	0.2078	0.4061	0.3312	0.4722	0.1628	0.3696
Zhongwei	0.1346	0.3416	0.0955	0.2949	0.1488	0.3563
Number of observations	587		157		430	