

# Visible minorities` educational choices in Canada

By

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## **Abstract**

Paper investigates educational choices of visible minorities in Canada, specifically educational attainment and choices over fields of study. Using 2001 Canada Census data and multinomial logistic regression, research finds that choices over level of education and field of study significantly differ among visible minorities. The choices of visible minorities' males and females differentiate substantially; insights into visible minorities' culture and role of education might explain those differences. Mathematics, computer and physical sciences, engineering, medicine and business are among the most likely choices of Chinese, and South Asians men. Compared to Chinese and South Asian visible minority, Black visible minority does not display the same propensity to achieve superior educational outcomes. Paper argues that research on visible minorities' culture and values could illuminate choices over education.

**Keywords:** visible minorities, educational choices, field of study.

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## Introduction

Immigration policy is one of the main tools to facilitate conditions for development of knowledge-based economy in Canada as outlined in Knowledge matters: Skills and Learning for Canadians (2002). Immigration has an important impact on socio-economic development of Canada due to its increasing magnitude and particularly economic significance. According Denton (1997), immigrants who arrived during the 1990s accounted for 70% of net labor force growth between 1991 and 2001 – a proportion set to double over the next decade. This suggests that from an economic and public policy perspective the research on visible minorities could help to predict structural characteristics of Canadian labor force.

Immigration is the main source of visible minorities` growth in Canada. While visible minorities are welcomed on Canadian soil primarily due to skills and education much higher on average compared to Canadian-born population, it is important to identify whether or not visible minorities continue to display the same propensity to achieve superior educational outcomes. It is helpful to analyze this issue in a broader context linking educational choices with the general educational patterns visible minorities display comparing to non-visible minority population.

Paper`s main objective is to identify and explain educational choices among visible minorities. In particular my primary aim is to answer the following question – do educational choices differ among visible minorities? If so, what are the factors which explain observed differences? Another major objective is to identify the relation between parents immigration status and children`s educational choices over fields of studies. Are children of immigrants inclined to choose fields of studies which offer more financially rewarding career paths? I establish visible minority indicator`s marginal effect on particular fields of studies minority indicator, marginal effects of immigration status of parents and university admission indicator.

It is widely recognized that immigrants and visible minorities have stronger preferences toward education compared with Canadian-born population. Based on data from the first three waves of National Longitudinal Survey of Children and Youth, Christopher Worswick (2001) concluded that the children of immigrants generally do at least as well as the children of the Canadian born along each dimension of school performance, and that with more years in the Canadian education system, the performance of these children in reading, writing and mathematics improves and is equal to or greater than the performance of the children of Canadian born parents by age thirteen in virtually all areas of performance. At the same time Krahn and Taylor (2005) find that while visible minority and immigrant students are disadvantaged within the school system, nonetheless this group of youth has higher educational aspirations than Canadian-born nonvisible minority students, while Abada, Hou and Ram (2008) argues that particularly children of Chinese and Indian immigrants have higher university completion rates than children of Canadian-born parents, even when demographic and human capital factors are controlled for.

These references suggest that visible minorities display strong inclination toward human capital acquisition despite challenges visible minorities' youth and immigrant children face as described by Dei, Mazucca, McIsaacs and Zine (1997).

The achievement of more education by the visible minority and immigrant youth compared to Canadian-born population is primarily explained via economic arguments. Poverty rates within the immigrant community had been on the rise for the last twenty years. At the same time newcomers face a growing depreciation of their education and skills acquired within home countries. Finnie and Meng (2002) suggests that the economic return to a year of foreign experience is about one-third the value of a year of domestic experience, and the return to foreign education, while positive, is worth about twenty-five percent less than a year of education for a native-born Canadian. While immigrant parents could view the investment into human capital, especially those who faced a declining status within the new country, as a shield against potential misfortune or discrimination within the labor force market, however Pendakur and Pendakur

(1998) show that even visible minority persons born and educated in Canada face large earnings gaps compared with Canadian-born white workers.

The choice of field of study becomes of critical importance to assess the validity of the argument that visible minorities accumulate more human capital compared to Canadian-born population in order to smooth challenges immigrants and children of immigrants might have experience. The overrepresentation of visible minorities within fields such as engineering or medicine for example (which require more human capital investment and open horizons to more economically rewarding career paths) would strengthen the hypothesis that parents may influence their children to pursue specific career paths.

Field of study is a relatively new topic of research. In one of the few papers on the study of labor market outcomes of immigrant and racial minority university graduates in Canada, Anisef, Sweet and Frempong (2003) concluded that immigrant racial minorities were well represented in the fields of study which offer higher earnings such as science, commerce and engineering. However the analysis did not identify factors that would influence visible minorities' choices over fields of study.

The importance of exploring field of study choices and factors which influences those choices among visible minorities might help to understand why some visible minorities succeed while others fall behind. At the same time it could help to gain insight into the structural perspectives of the labor force given the fact that the proportion of visible minorities is on the rise within Canadian population.

## **Data and methodology**

The data come from a public-use micro-data file drawn from the 2001 Census of Canada. This file contains information from all the long form records collected and for about 3% of households in general. The main group of interest consists of the visible minority adult population of age 20-60.

I have chosen Canadian Census because this dataset contains detailed information on fields of study, and immigration status. The biggest drawback of Canadian Census is the lack of information regarding parental education. Below I discuss the ways to alleviate the problem of unobserved variables.

The main sample of interest consists of both Canadian-born and non-Canadian born (only those who immigrated until 19 years old) visible minorities of age 20-60 years old with at least some postsecondary education.

The inclusion of visible minorities who immigrated until the age of 19 satisfied research's purpose since the interests lies in the identification of visible minorities choices over fields of study disregarding the place of birth. However this does not imply that immigrants who came to Canada after 19 years old should be included, since the majority of these people had been granted the right for permanent residency primarily because of their skills and thus in part due to field of study choice. This implies that including this group would induce an overrepresentation of individuals with particularly technical or medical fields of studies.

Moreover the inclusion of non-Canadian born visible minority group has the role of illuminating and comparing the level of mathematics and sciences within primary education system of origin (such as China or India) countries and Canada. Students with a good understanding in mathematics and sciences constitute the pool of future engineers, scientists and doctors. According to International Mathematics Report (1999), while Canada scored above the international average, it was well below Taiwan, Hong Kong, Japan, Republic of Correa, i.e. countries of origin of visible minorities. This would imply that individuals born outside Canada but immigrated until the age of 19 on average would display better mathematics and science skills and would be more likely to choose technical fields of studies compared to visible minority children education within Canadian primary school system.

## **Empirical results – educational attainment and choices over fields of study**

The first exercise is to present cross tabulations of educational attainment as well as major field of study by visible minority indicators in order to identify any major differences regarding choices over education and areas among visible minorities. For this exercise all visible minorities aged 20 to 60 years had been used, irrespective of place of birth or immigration status. There are four categories of visible minorities and thus four indicators had been constructed: Chinese, South Asian, Black and Other visible minority category (which includes Japanese, Korean, Filipino, Southeast Asian, Arab, West Asian, Latin American, multiple visible minority).

Table 1 displays the distribution of highest degree or certificate obtained by visible minority indicator. In order to facilitate the comparison I constructed a relative indicator which is the ratio between the proportion of a particular visible minority within a category divided by its proportion within the sample. Thus a number greater than 1 within the relative column would suggest that a particular visible minority is overrepresented, while a number less than 1 would show that it is underrepresented within a category.

Table 1 shows that all visible minorities except black are overrepresented within the following categories: completed bachelor degree or university certificate above BA, medical degree, master degree and earned Ph.D. At the same time Chinese and South Asians are particularly overrepresented within medical degree and master degree. Blacks are significantly underrepresented within BA category.

Chinese minority is significantly underrepresented within categories which require less years of schooling, and overrepresented in categories which require more years of schooling, while the same applies to South Asians however for this visible minority, categories with less schooling are closer to its proportion within general population. Blacks tend to be underrepresented within categories

which requires more years of schooling, while other visible minority category tends to be overrepresented in categories with more schooling.

Table 2 presents the tabulation of fields of study by the visible minority indicator. Census 2001 contains information on major field of study defined as the predominant discipline or area of learning or training of a person. Chinese minority is overrepresented within the following fields of study: mathematics, computer and physical sciences (relative indicator 4.20), engineering and applied sciences (3.49), financial management (2.32) and business and commerce (2.03). This visible minority is underrepresented within the following majors of study: building technologies (0.17), educational, recreational and counseling (0.38) and clerical (0.43).

South Asians` choices for fields of study do not significantly differ from Chinese minority however the proportion of those studying mathematics, computer and physical sciences and engineering or applied sciences is smaller compared to Chinese. Building technologies and fine arts are the least preferred major fields of study among South Asians.

Blacks are represented within all categories more or less uniformly, having a slight overrepresentation within data processing field, while other minorities category is overrepresented in engineering and applied sciences mathematics, computer and physical sciences and nursing. However other visible minorities are overrepresented within engineering and applied sciences (2.10), mathematics and computer and physical sciences (1.82), nursing (1.73) and financial managements (1.26).

All of this suggests that visible minorities, not black though, are attracted to several focal major fields of study: mathematics, computer and physical sciences; engineering and applied sciences, business and commerce, and financial management as well as nursing. While this is just a snapshot of 2001 data which does not take into account important factors such as immigrant status, and parental education of individuals, it clearly displays that there are striking differences across visible minorities` educational choices. It can be inferred that

visible minority indicator plays an important role indeed in explaining educational attainment as well as choices over fields of study.

Why some visible minorities are more likely than the others to choose higher investment in human capital. In particular why black minority does not display the same inclination toward education compared to Chinese or South Asians? Could this be explained by the fact that some visible minorities on average value more education compared to others? This argument would imply that visible minorities' educational choices would mirror educational choices of the home countries. Another explanation resides in the so called adaptation argument. This would imply that visible minorities' higher investments in education would reflect minorities' adaptation to the specifics of Canadian socio-economic environment. To better understand factors that influence educational choices I run multinomial logistic regression.

## **Empirical results – multinomial logistic regression**

Multinomial logistic regression is a natural choice due to the categorical nature of the dependent variable which is field of study. I run multinomial logistic regression in order to identify the magnitude and the sign of factors relating to the choice of field of study.

Major field of study is defined as the predominant discipline or area of learning or training of a person's highest postsecondary degree, certificate or diploma. The major field of study variable consists of the 20 categories: educational, recreational and counseling services; fine and applied arts; humanities and related fields; social sciences and related fields; commerce, management and business administration; agricultural, biological, nutritional, and food sciences; engineering and applied sciences; building technologies; data processing and computer technologies, electronic and electrical technologies; other related technologies; nursing; alternative medicine and other health sciences; mathematics, computer and physical sciences; all other major fields of study; no postsecondary qualifications. No postsecondary qualifications and all

other fields of study categories had been removed because of lack of sufficient observations to obtain estimates.

Eighteen remaining categories of major fields of study had been grouped into eleven in the following way:

- Fields business and commerce, financial management, industrial and institutional management and administration, marketing, merchandising, retailing and sales had been combined into category business
- Engineering and applied sciences, building technologies, electronic and electrical technologies, and data processing and computer technologies, and other engineering technologies had been combined into a single category engineering
- Nursing and alternative medicine and other medical sciences are combined into category medicine.

Educational, recreational and counseling services field of study was chosen as a reference category. Visible minority independent variables are constructed using visible minority indicator variable. Immigration status of parents is another important independent variable of interests. Two variables were created to illuminate how parents' immigration status related to children's educational choices. The dependent variables are indicators which take value of 1 if mother or father is born outside Canada, and zero otherwise.

I controlled for education outcomes using university admission indicator and highest degree, certificate or diploma achieved. University admission indicator variable takes value of 1 if the individual completed at least one year (or less than a year of completed course) of education at educational institution which confer a degree, certificate or diploma upon successful completion of program of studies, and 0 otherwise. From highest degree certificate of diploma achieved three indicators had been created such as: below bachelor degree, bachelor degree and below graduate degree, and graduate degree.

Place of birth of the respondent is another independent variable of interest which takes 1 if the individual was born in Canada and 0 otherwise. Both the sign and the size of place of birth marginal effect are of interest.

Abada, Hou and Ram (2008) argue that children of immigrant parents in most source region groups achieve higher university completion rates than children of Canadian born parents, partly due to higher education levels of their parents. Thus, we could also expect that parents might influence children's educational choices particularly for children of immigrants. Given the fact that immigrants are twice as likely as the Canadian-born population to have a university education, this implies that not controlling for parental education and comparing educational outcomes and choices of visible minorities with non-visible minority would most likely overestimate visible minorities' choices over some major fields of studies. One way to deal with the issue of non-observable parental education is to restrict the analysis to visible minorities only since visible minorities are more homogenous compared to non-visible minorities due to the fact that immigrants face the same selection criteria set up by the Ministry of Citizenship and Immigration.

#### *Omitted variables in the model*

Since parental education is an essential predictor regarding children's educational outcomes, it would probably be an important factor to analyze the choice over the field of study. However the 2001 Census does not track parental education information and a proxy can not be created from the existing variables. This issue could be alleviated or even neutralized by taking into account that the majority of visible minorities are children of immigrants, and that immigrants have a high homogeneity degree particularly from educational point of view due to the standardized immigration selection criteria. Thus, running a multinomial logistic regression and not including parental educational information, given the fact that there is a substantial degree of similarity among children's parents, constitutes rather a minor problem and should not affect the results significantly.

Ethnic capital is seen as a significant factor regarding educational and labor force outcomes for visible minorities and immigrant children. Borjas (1992)

argues that ethnicity acts as an externality and shows that the quality of ethnic environment in which a person is raised influences the skills and labor market outcomes of the children. Ethnic capital could have an impact on the dependent variable only if the child was raised in a location with a significant visible minority community, however this information can not be obtained from Census data.

#### *Multinomial logistic results*

Results are presented separately for males and females (Table 3 and 4, Table 5 presents marginal effects only). The multinomial logistic model confirms the assumption that there are significant differences among choices over fields of study between visible minorities. However the magnitude of the differences is a function of a particular field of study. Moreover results show that choices over fields of study significantly differentiate among males and females within the same visible minority, suggesting that there are probably traditional educational and career paths males and females pursue among visible minorities.

The striking differences in choices over educational fields of study are observed particularly within the male sample. Chinese, South Asians and Other visible minorities compared to base category are more likely to choose the following fields of study: mathematics, computer science and physical sciences and engineering, medicine, and business. Chinese followed by South Asians, and other visible minorities are consistently galvanized towards fields of study which offer more rewarding financial career paths such as business, medicine, computer sciences and engineering. However this tendency is more proliferated within the male sample. This result is consistent with previous findings regarding the general educational patterns presented in Tables 2 and 3. At the same it implies that compared to the rest of visible minorities, black visible minority is less likely to choose educational fields which offer financially prospective careers.

While there is less contrast between the base visible minority and other minorities within the female sample compared to male sample regarding choices over education, both samples generally display the same tendencies. Among both Chinese males and females visible minority, business is the most preferred field

of study, followed by mathematics, computer and physical sciences. Business is also South Asian visible minorities' preferred field of study followed by mathematics and computer science and medicine. At the same time other visible minorities, while less likely compared to Chinese and South Asians, however are twice more likely than the base category to choose business field of study given other variables in the model are held constant.

For a Chinese man relative to a Black man, the relative risk ratio for choosing mathematics, computer and physical sciences field relative to choosing educational field would be expected to increase by a factor of 4.4 given the other variables in the model are held constant, this is followed by medicine (4.00), engineering (3.03), fine and applied arts (3.00), and business (2.80). Relative risk ratios (RRR) are not statistically significant for fields where there are insufficient observations such as social sciences, humanities and related fields.

For a Chinese female relative to a Black female the relative risk ratio for choosing mathematics, computer and physical sciences would be expected to increase by a factor of 3.21 given the other variables in the model are held constant, followed by business (3.23), and biological, nutritional and food sciences (2.23).

For a South Asian man relative to Black man, the relative risk ratio for choosing medical field relative to choosing educational field would be expected to increase by a factor of 3.06 given the other variables in the model are held constant. This is followed by office administration, secretariat and clerical (2.95), mathematics, computer and physical sciences (2.61) business, as well as engineering (2.13).

For a South Asian female relative to a Black female, the relative risk ratio for choosing biological, nutritional and food sciences field relative to choosing educational field would be expected to increase by a factor of 1.8, given the other variables are held constant.

Place of birth decreases the odds of pursuing a particular field of study comparing with educational field within the male sample. The highest drop in likelihood occurs for mathematics computer and physical sciences, and

engineering. For a man who had been born in Canada the RRR for mathematics, computer and physical sciences relative to educational field would be expected to decrease by a factor of 0.39 given the other variables in the model are held constant. So, given a visible minority male, born in Canada, the RRR of pursuing a degree in mathematics, computer and physical sciences would be 0.40 more likely relative to educational field when the other variables in the model are held constant. The second largest decrease in probability is for engineering 0.415 fine and applied arts (0.45), agricultural, biological and food sciences (0.54). Within the females sample while the place of birth decreases the odds choosing particular field of study (except humanities) the drop is much smaller compared to male sample, mathematics, computer and physical sciences (0.58), engineering (0.59).

These results are consistent with the assumption that individuals born outside Canada but immigrated until the age of 19 on average would display better mathematics and science skills and would be more likely to choose technical fields of studies. Superior mathematical and science skills propel and give a long lasting advantage to non-Canadian born visible minorities over visible minorities individuals who received Canadian primary education.

While immigrant parents' status is a substantial dimension in predicting choices of field of study, however for males and females sample only mother's place of birth is consistently statistically significant. The main result is that having an immigrant mother increases RRR in all fields of studies relative to base category, the highest impact within males sample is on business field of study (almost 6) mathematics, computer and physical sciences (5.4), humanities (5.7) and medicine (3.2). Thus, for a visible minority persons who have a mother born outside Canada RRR for mathematics, computer and physical sciences relative to educational field would be expected to increase by a factor of 5.4 given the other variables are held constant. Unlike trends observed within male sample, within female sample having an immigrant mother actually decrease or has little impact on the likelihood of choosing a particular field of study.

Having both parents born outside Canada generally reduces the likelihood to choose a particular field of study relative to base category within male sample,

and has a less negative impact within the female sample. This finding is consistent with the fact that poverty rates had been on the rise for the last twenty years among immigrants, and at the same time there is a significant literature which suggests that boys more than girls are affected to poverty and income loss (Bolger 1995), and Patterson (1990) because of the constitutional differences and due to differential expose of stressful environment.

## Conclusions

1. There are significant differences over educational choices among visible minorities. Chinese, South Asian and Other minorities' category display a strong propensity to acquire human capital, however Black visible minority have a weaker inclination toward human capital accumulation.
2. Chinese followed by South Asians, and other visible minorities are consistently galvanized towards fields of study which offer more rewarding financial career paths such as mathematics, computer and physical sciences, engineering, medicine, and business. This finding strengthens the strategic adaptation argument.
3. A visible minority individual born in Canada is less likely to pursue a particular field of study compared to the base category. This is true particularly for male sample and for fields of study which requires significant intellectual ability such as mathematics, or engineering. This result is consistent with the fact that according to International Mathematics Report (1999), Canada was ranked below Taiwan, Hong Kong, Japan, Republic of Korea, i.e. countries of origin of visible minorities.
4. Having an immigrant mother increases the likelihood of pursuing a particular field of study relative to the base category, the highest impact within males sample is on business field of study, mathematics computer and physical sciences, humanities and medicine. Maternal effect within the females sample has opposite effect in the sense that having an immigrant mother almost does not change the odds or even reduce the likelihood of pursuing a particular field of study. This suggests that culture and traditions might have an important insight into the educational decisions among visible minorities. However having both parents born outside Canada generally reduces the likelihood to choose a particular field of study within male sample, and has smaller negative impact within the female. This finding is consistent with the fact that poverty rates had been on the rise for the last twenty years among immigrants, and boys more than girls are affected to poverty and income loss.

## Appendix

**Table 1 Distribution of highest degree or certificate obtained by visible minority indicator.**

|   | <b>Relative Chinese</b> | <b>Relative SouthA</b> | <b>Relative Black</b> | <b>Relative Other</b> |
|---|-------------------------|------------------------|-----------------------|-----------------------|
| <b>No degree</b>                        | 0.75                    | 1.14                   | 0.98                  | 0.91                  |
| <b>High school</b>                      | 0.61                    | 1.02                   | 1.16                  | 0.98                  |
| <b>Trade dip</b>                        | 0.36                    | 0.48                   | 0.87                  | 0.64                  |
| <b>College dip</b>                      | 0.63                    | 0.57                   | 1.15                  | 0.80                  |
| <b>Univ cert or dipl below bachelor</b> | 2.24                    | 1.23                   | 1.55                  | 2.08                  |
| <b>BA degree</b>                        | 1.98                    | 1.29                   | 0.77                  | 1.3                   |
| <b>Univ. cert above BA</b>              | 1.12                    | 1.33                   | 0.60                  | 1.26                  |
| <b>MD</b>                               | 2.07                    | 2.53                   | 0.62                  | 1.89                  |
| <b>Master</b>                           | 2.64                    | 2.28                   | 0.76                  | 1.26                  |
| <b>Earned Ph.D.</b>                     | 3.08                    | 1.66                   | 1.01                  | 1.79                  |

**Table 2 Distribution of field of study by visible minority indicator**

|   | <b>Relative Chinese</b> | <b>RelativeSA</b> | <b>RelativeBlack</b> | <b>RelativeO</b> |
|---|-------------------------|-------------------|----------------------|------------------|
| <b>Educational, recreational, and counseling</b>                  | 0.38                    | 0.57              | 0.65                 | 0.73             |
| <b>Fine and applied arts</b>                                      | 0.95                    | 0.39              | 0.90                 | 0.87             |
| <b>Humanities</b>   | 0.94                    | 1.15              | 0.85                 | 1.09             |
| <b>Social sciences</b>  | 1                       | 0.83              | 1.10                 | 0.76             |
| <b>Business and commerce</b>                                      | 2.03                    | 1.36              | 1.16                 | 1.19             |
| <b>Financial management</b>                                       | 2.32                    | 0.58              | 1.13                 | 1.26             |
| <b>Industrial and institutional management and administration</b> | 0.88                    | 0.56              | 1.19                 | 0.99             |
| <b>Marketing, merchandising</b>                                   | 1.07                    | 0.58              | 0.83                 | 0.72             |
| <b>Clerical</b>   | 0.43                    | 0.46              | 1.04                 | 0.68             |
| <b>Agricultural, biological</b>                                   | 1                       | 1.04              | 0.89                 | 1                |
| <b>Engineering and applied sciences</b>                           | 3.49                    | 2.07              | 0.63                 | 2.10             |
| <b>Building technologies</b>                                      | 0.17                    | 0.20              | 0.44                 | 0.38             |
| <b>Data processing</b>  | 1                       | 1.02              | 1.59                 | 1.42             |
| <b>electrical technologies</b>                                    | 0.68                    | 0.64              | 1.38                 | 1.02             |
| <b>Other engineering technologies</b>                             | 0.45                    | 0.45              | 0.65                 | 0.62             |
| <b>Nursing</b>  | 0.55                    | 0.64              | 1.27                 | 1.73             |
| <b>Alternative medicine</b>                                       | 1.03                    | 1.05              | 0.93                 | 1.15             |
| <b>Mathematics, computer and physical sciences</b>                | 4.20                    | 2.33              | 1.07                 | 1.82             |
| <b>All other</b>  | 0.97                    | 4.40              | 0.80                 | 1.10             |
| <b>No postsecondary qualifications</b>                            | 0.67                    | 1.07              | 1.08                 | 0.95             |

**Table 3 Multinomial logistic regression results (males)**

Number of obs = 5690, LR chi<sup>2</sup>(90) = 1627.66, Prob > chi2 = 0.0000,  
 Log likelihood = -9895.3922, Pseudo R2 = 0.0760

| Major                                     | Covariates | RRR      | Std. Dev | Z     | Pr> Z | 95% C I  | Major    |
|---|------------|----------|----------|-------|-------|----------|----------|
| <b>Fine and applied arts</b>              | Chinese    | 3.007393 | .8743813 | 3.79  | 0.000 | 1.701016 | 5.317064 |
|   | SouthA     | .7857483 | .2873373 | -0.66 | 0.510 | .3837168 | 1.609    |
|   | Other      | 1.442561 | .3740332 | 1.41  | 0.158 | .8678226 | 2.397934 |
|   | Placec     | .4499576 | .1055602 | -3.40 | 0.001 | .2841054 | .7126294 |
|   | Momimig    | 3.250738 | 2.899082 | 1.32  | 0.186 | .5660581 | 18.66822 |
|   | Faimig     | .6515175 | .3691284 | -0.76 | 0.450 | .2146166 | 1.97783  |
|   | momfaimig  | .460505  | .4741659 | -0.75 | 0.451 | .0612043 | 3.464869 |
|   | Univ       | .4038013 | .1307581 | -2.80 | 0.005 | .2140589 | .7617318 |
|   | Certdeg    | 3.99228  | 1.299051 | 4.25  | 0.000 | 2.109832 | 7.554299 |
|   | AGEP       | .9741937 | .0113814 | -2.24 | 0.025 | .9521402 | .9967581 |
| <b>Humanities and related fields</b>      | Chinese    | 1.208986 | .3517556 | 0.65  | 0.514 | .6835391 | 2.138352 |
|   | SouthA     | 1.141064 | .356352  | 0.42  | 0.673 | .6187021 | 2.10445  |
|   | Other      | .9531711 | .2411005 | -0.19 | 0.850 | .5805813 | 1.564871 |
|   | Placec     | .6384825 | .1411721 | -2.03 | 0.042 | .4139459 | .9848144 |
|   | Momimig    | 5.712504 | 4.755818 | 2.09  | 0.036 | 1.11732  | 29.20622 |
|   | Faimig     | 1.437111 | .6607948 | 0.79  | 0.430 | .5835808 | 3.53899  |
|   | momfaimig  | .128983  | .1186283 | -2.23 | 0.026 | .021265  | .7823485 |
|   | Univ       | 1.393648 | .4580163 | 1.01  | 0.313 | .7318288 | 2.653975 |
|   | Certdeg    | 1.550796 | .4513034 | 1.51  | 0.132 | .8766837 | 2.743255 |
|   | AGEP       | .9605592 | .0111689 | -3.46 | 0.001 | .9389161 | .9827012 |
| <b>Social sciences and related fields</b> | Chinese    | 1.430073 | .3528803 | 1.45  | 0.147 | .8816948 | 2.319519 |
|   | SouthA     | 1.256857 | .3375139 | 0.85  | 0.395 | .7425165 | 2.127482 |
|   | Other      | .7215866 | .1591742 | -1.48 | 0.139 | .4682983 | 1.111871 |
|   | Placec     | .7296207 | .1380523 | -1.67 | 0.096 | .5035475 | 1.057192 |
|   | Momimig    | 4.49446  | 3.603409 | 1.87  | 0.061 | .9337512 | 21.63335 |
|   | Faimig     | 1.374076 | .5487192 | 0.80  | 0.426 | .628195  | 3.00557  |
|   | momfaimig  | .2535257 | .2211806 | -1.57 | 0.116 | .0458583 | 1.401606 |
|   | Univ       | 1.876008 | .5627123 | 2.10  | 0.036 | 1.042114 | 3.377181 |
|   | Certdeg    | 1.175601 | .3058602 | 0.62  | 0.534 | .7059923 | 1.957582 |
|   | AGEP       | .9756221 | .0094145 | -2.56 | 0.011 | .9573433 | .9942498 |
| <b>Business</b>                           | Chinese    | 2.802704 | .6591923 | 4.38  | 0.000 | 1.767567 | 4.444048 |
|   | SouthA     | 2.346306 | .5978493 | 3.35  | 0.001 | 1.42395  | 3.866113 |
|   | Other      | 1.282006 | .2649981 | 1.20  | 0.229 | .8549519 | 1.922376 |
|   | Placec     | .5371926 | .0957366 | -3.49 | 0.000 | .3788191 | .7617775 |
|   | Momimig    | 5.965448 | 4.603781 | 2.31  | 0.021 | 1.314426 | 27.07386 |
|   | Faimig     | .9414282 | .3734393 | -0.15 | 0.879 | .4326517 | 2.0485   |
|   | momfaimig  | .3314597 | .2807748 | -1.30 | 0.192 | .0630072 | 1.743699 |
|   | Univ       | 1.099773 | .2973554 | 0.35  | 0.725 | .6473754 | 1.868314 |
|   | Certdeg    | 2.371116 | .5769108 | 3.55  | 0.000 | 1.4718   | 3.819941 |
|   | AGEP       | .9779833 | .0087544 | -2.49 | 0.013 | .9609745 | .9952931 |

| Major   | Covariates | RRR      | Std. Dev | Z     | Pr> Z | 95% C I  | Major    |
|---|------------|----------|----------|-------|-------|----------|----------|
| <b>Office adm,<br/>secretarial and<br/>clerical</b>                             | Chinese    | 2.550167 | 1.353477 | 1.76  | 0.078 | .9011592 | 7.216651 |
|   | SouthA     | 2.953685 | 1.538915 | 2.08  | 0.038 | 1.063837 | 8.200743 |
|   | Other      | .5221838 | .3047407 | -1.11 | 0.266 | .1663687 | 1.638986 |
|   | Placec     | .668346  | .3021219 | -0.89 | 0.373 | .2755629 | 1.620996 |
|   | Momimig    | 2.322855 | 3.053801 | 0.64  | 0.521 | .1765907 | 30.55458 |
|   | Faimig     | 7.25e-09 | .        | .     | .     | .        | .        |
|   | momfaimig  | 3.25e+07 | 4.19e+07 | 13.41 | 0.000 | 2593679  | 4.07e+08 |
|   | Univ       | .6410039 | .3095779 | -0.92 | 0.357 | .2487517 | 1.651792 |
|   | Certdeg    | 3.93e+09 | 4.63e+09 | 18.75 | 0.000 | 3.91e+08 | 3.96e+10 |
|   | AGEP       | .9884883 | .0222528 | -0.51 | 0.607 | .9458218 | 1.03308  |
| <b>Agricultural,<br/>biological,<br/>nutritional, and<br/>food<br/>sciences</b> | Chinese    | 2.403189 | .6964922 | 3.03  | 0.002 | 1.361736 | 4.241146 |
|   | SouthA     | 1.549919 | .4959142 | 1.37  | 0.171 | .8278608 | 2.901754 |
|   | Other      | 1.24404  | .326473  | 0.83  | 0.405 | .7437963 | 2.080726 |
|   | Placec     | .5419191 | .1190678 | -2.79 | 0.005 | .3523    | .8335973 |
|   | Momimig    | 5.383699 | 4.482921 | 2.02  | 0.043 | 1.052686 | 27.53359 |
|   | Faimig     | .7747464 | .4027792 | -0.49 | 0.623 | .2796613 | 2.146281 |
|   | momfaimig  | .2366579 | .2251947 | -1.51 | 0.130 | .0366564 | 1.52789  |
|   | Univ       | .4302934 | .1552591 | -2.34 | 0.019 | .212145  | .8727632 |
|   | Certdeg    | .7702683 | .2579803 | -0.78 | 0.436 | .3995355 | 1.485008 |
|   | AGEP       | .9641067 | .0110602 | -3.19 | 0.001 | .942671  | .9860299 |
| <b>Engineering</b>  | Chinese    | 3.029761 | .6913387 | 4.86  | 0.000 | 1.93722  | 4.738466 |
|   | SouthA     | 2.133846 | .530491  | 3.05  | 0.002 | 1.310834 | 3.47359  |
|   | Other      | 1.599184 | .3148424 | 2.38  | 0.017 | 1.087218 | 2.352233 |
|   | Placec     | .4152804 | .0727845 | -5.01 | 0.000 | .2945471 | .5855016 |
|   | Momimig    | 2.536947 | 1.938297 | 1.22  | 0.223 | .5675055 | 11.34104 |
|   | Faimig     | .7075388 | .2547321 | -0.96 | 0.337 | .3493783 | 1.432863 |
|   | momfaimig  | .6238659 | .5177545 | -0.57 | 0.570 | .1226501 | 3.173325 |
|   | Univ       | .6228739 | .1634514 | -1.80 | 0.071 | .3724193 | 1.041761 |
|   | Certdeg    | 4.599166 | 1.097865 | 6.39  | 0.000 | 2.88064  | 7.342925 |
|   | AGEP       | .9927561 | .0085445 | -0.84 | 0.398 | .9761496 | 1.009645 |
| <b>Medicine</b>   | Chinese    | 3.985647 | 1.16471  | 4.73  | 0.000 | 2.247789 | 7.067114 |
|   | SouthA     | 3.066082 | .9680369 | 3.55  | 0.000 | 1.651349 | 5.692839 |
|   | Other      | 2.392504 | .6416573 | 3.25  | 0.001 | 1.414376 | 4.047069 |
|   | Placec     | .6941338 | .1397231 | -1.81 | 0.070 | .4678468 | 1.029871 |
|   | Momimig    | 3.203069 | 2.829162 | 1.32  | 0.188 | .5671905 | 18.08855 |
|   | Faimig     | .9684926 | .4782792 | -0.06 | 0.948 | .3679086 | 2.549486 |
|   | momfaimig  | .6504732 | .6392623 | -0.44 | 0.662 | .094776  | 4.464373 |
|   | Univ       | 1.169526 | .3894293 | 0.47  | 0.638 | .6089422 | 2.246174 |
|   | Certdeg    | .8644384 | .250737  | -0.50 | 0.616 | .4895944 | 1.526271 |
|   | AGEP       | .9993412 | .0101809 | -0.06 | 0.948 | .9795848 | 1.019496 |

| Major  | Covariates | RRR      | Std. Dev | Z     | Pr> Z | 95% C I  | Major    |
|--|------------|----------|----------|-------|-------|----------|----------|
| <b>Mathematics,<br/>computer and<br/>physical<br/>sciences</b> | Chinese    | 4.386709 | 1.173391 | 5.53  | 0.000 | 2.596885 | 7.410114 |
|  | SouthA     | 2.614695 | .7608958 | 3.30  | 0.001 | 1.478138 | 4.625163 |
|  | Other      | 1.559176 | .3853084 | 1.80  | 0.072 | .9606018 | 2.530735 |
|  | Placec     | .3969958 | .0760267 | -4.82 | 0.000 | .2727573 | .5778237 |
|  | Momimig    | 5.372195 | 4.410282 | 2.05  | 0.041 | 1.074883 | 26.84987 |
|  | Faimig     | .5370592 | .2885261 | -1.16 | 0.247 | .1873823 | 1.539274 |
|  | momfaimig  | .5192363 | .4930018 | -0.69 | 0.490 | .0807552 | 3.338562 |
|  | Univ       | 5.478825 | 1.819029 | 5.12  | 0.000 | 2.858113 | 10.50257 |
|  | Certdeg    | 1.279189 | .3291554 | 0.96  | 0.339 | .7725155 | 2.118177 |
|  | AGEP       | .9689801 | .0094962 | -3.22 | 0.001 | .9505455 | .9877722 |
|  |            |          |          |       |       |          |          |

*Note on variables:*

Chinese – indicator which takes value of 1 if the individual belongs to Chinese visible minority.

SouthA – indicator which takes value of 1 if the individual belongs to South Asian visible minority.

Other - indicator which takes value of 1 if the individual belongs to Other visible minority category (Filipino; Latin American; Southeast Asian; Arab; West Asian; Japanese; Korean; Visible Minority, n.i.e.; Multiple Visible Minority).

Placec – indicator which takes value of 1 if the individual had been born in Canada, and 0 otherwise.

Momimig - indicator which takes value of 1 respondent`s mother had been born outside Canada and 0 otherwise.

Faimig - indicator which takes value of 1 respondent`s father had been born outside Canada and 0 otherwise.

Univ - indicator which takes value of 1 if respondent had been admitted to an educational institutions which confer a degree, certificate or diploma upon successful completion of a program of studies.

Certdeg – indicator which takes value of 1 if the individual has a degree below bachelor degree.

AGEP – age of the respondent.

**Table 4 Multinomial logistic regression results (females)**

Number of obs = 6203, LR chi2(90) = 1969.31, Prob > chi2 = 0.0000,  
 Log likelihood = -12519.9, Pseudo R2 = 0.0729

| Major                              | Covariates | RRR      | Std. Dev | Z     | Pr> Z | 95% C I  | Major    |
|------------------------------------|------------|----------|----------|-------|-------|----------|----------|
| Fine and applied arts              | Chinese    | 2.749273 | .5467265 | 5.09  | 0.000 | 1.861856 | 4.05966  |
|                                    | SouthA     | .7079418 | .1687327 | -1.45 | 0.147 | .4437312 | 1.129471 |
|                                    | Other      | 1.765798 | .3150705 | 3.19  | 0.001 | 1.244691 | 2.505073 |
|                                    | Placec     | .7424656 | .1198747 | -1.84 | 0.065 | .5410603 | 1.018842 |
|                                    | Momimig    | .8134364 | .3956502 | -0.42 | 0.671 | .3135485 | 2.110292 |
|                                    | Faimig     | .854045  | .3248441 | -0.41 | 0.678 | .4052455 | 1.799879 |
|                                    | momfaimig  | 1.12343  | .6574791 | 0.20  | 0.842 | .3567684 | 3.537573 |
|                                    | Univ       | .5516873 | .1055841 | -3.11 | 0.002 | .3791287 | .8027851 |
|                                    | Certdeg    | 3.264551 | .6754236 | 5.72  | 0.000 | 2.176271 | 4.897043 |
|                                    | AGEP       | .9740886 | .008144  | -3.14 | 0.002 | .9582568 | .990182  |
|                                    |            |          |          |       |       |          |          |
| Humanities and related fields      | Chinese    | .9355336 | .1937422 | -0.32 | 0.748 | .6234215 | 1.403903 |
|                                    | SouthA     | .7377828 | .1606416 | -1.40 | 0.163 | .4814949 | 1.130487 |
|                                    | Other      | 1.178304 | .214795  | 0.90  | 0.368 | .82431   | 1.684319 |
|                                    | Placec     | 1.011217 | .1566726 | 0.07  | 0.943 | .746386  | 1.370014 |
|                                    | Momimig    | 3.230283 | 1.446886 | 2.62  | 0.009 | 1.342692 | 7.7715   |
|                                    | Faimig     | 1.505631 | .5851974 | 1.05  | 0.292 | .7028779 | 3.225204 |
|                                    | momfaimig  | .3104915 | .1697195 | -2.14 | 0.032 | .1063579 | .9064205 |
|                                    | Univ       | 2.181466 | .482401  | 3.53  | 0.000 | 1.41422  | 3.364959 |
|                                    | Certdeg    | .9303829 | .1765823 | -0.38 | 0.704 | .6413686 | 1.349633 |
|                                    | AGEP       | .985268  | .0085283 | -1.71 | 0.086 | .9686939 | 1.002126 |
|                                    |            |          |          |       |       |          |          |
| Social sciences and related fields | Chinese    | .777674  | .1276968 | -1.53 | 0.126 | .5636731 | 1.072921 |
|                                    | SouthA     | .77071   | .1282112 | -1.57 | 0.117 | .5562752 | 1.067806 |
|                                    | Other      | .5806681 | .0880679 | -     | 0.000 | .4313494 | .781676  |

| Major                                       | Covariates | RRR      | Std. Dev | Z     | Pr> Z | 95% C I  | Major    |
|---|------------|----------|----------|-------|-------|----------|----------|
|   |            |          |          | 3.58  |       |          |          |
|   | Placec     | .8427455 | .1069067 | -1.35 | 0.177 | .6572295 | 1.080627 |
|   | Momimig    | 2.089333 | .835038  | 1.84  | 0.065 | .9545752 | 4.573041 |
|   | Faimig     | .9435331 | .3060163 | -0.18 | 0.858 | .4996741 | 1.781671 |
|   | momfaimig  | .6547093 | .3160452 | -0.88 | 0.380 | .2541858 | 1.686342 |
|   | Univ       | 1.938968 | .3615617 | 3.55  | 0.000 | 1.345384 | 2.794443 |
|   | Certdeg    | .584104  | .0956478 | -3.28 | 0.001 | .4237453 | .8051476 |
|   | AGEP       | .975638  | .0069182 | -3.48 | 0.001 | .9621723 | .9892921 |
|   |            |          |          |       |       |          |          |
| <b>Business</b>                             |            |          |          |       |       |          |          |
|   | Chinese    | 3.230637 | .5039677 | 7.52  | 0.000 | 2.379599 | 4.386039 |
|   | SouthA     | 1.757152 | .2808154 | 3.53  | 0.000 | 1.284625 | 2.403489 |
|   | Other      | 1.281355 | .1849298 | 1.72  | 0.086 | .965653  | 1.70027  |
|   | Placec     | .714813  | .0861213 | -2.79 | 0.005 | .5644674 | .905203  |
|   | Momimig    | 1.255963 | .4979654 | 0.57  | 0.565 | .5774201 | 2.731883 |
|   | Faimig     | 1.002862 | .308339  | 0.01  | 0.993 | .5489485 | 1.832107 |
|   | momfaimig  | 1.060522 | .5012415 | 0.12  | 0.901 | .4199625 | 2.678111 |
|   | Univ       | .9484874 | .1465869 | -0.34 | 0.732 | .7006159 | 1.284054 |
|   | Certdeg    | 2.150615 | .3206614 | 5.14  | 0.000 | 1.605634 | 2.880572 |
|   | AGEP       | .9870297 | .006295  | -2.05 | 0.041 | .9747685 | .999445  |
|   |            |          |          |       |       |          |          |
|   |            |          |          |       |       |          |          |
| <b>Office adm, secretarial and clerical</b> |            |          |          |       |       |          |          |
|   | Chinese    | 1.357951 | .2803878 | 1.48  | 0.138 | .9060021 | 2.03535  |
|   | SouthA     | 1.158535 | .2325674 | 0.73  | 0.464 | .7816938 | 1.717045 |
|   | Other      | 1.175713 | .2015705 | 0.94  | 0.345 | .8401691 | 1.645265 |
|   | Placec     | .7214956 | .1231435 | -1.91 | 0.056 | .5163595 | 1.008127 |
|   | Momimig    | .7139872 | .3664287 | -0.66 | 0.512 | .2611207 | 1.952269 |
|   | Faimig     | .5486443 | .2256468 | -1.46 | 0.144 | .2450237 | 1.228496 |
|   | momfaimig  | 2.382266 | 1.504866 | 1.37  | 0.169 | .6907012 | 8.216566 |
|   | Univ       | .4370348 | .0819431 | -4.41 | 0.000 | .3026338 | .6311238 |
|   | Certdeg    | 32.85476 | 12.97459 | 8.84  | 0.000 | 15.15139 | 71.24332 |
|   | AGEP       | 1.021081 | .0079912 | 2.67  | 0.008 | 1.005538 | 1.036865 |

| Major   | Covariates | RRR      | Std. Dev | Z     | Pr> Z | 95% C I  | Major    |
|---|------------|----------|----------|-------|-------|----------|----------|
| <b>Agricultural, biological, nutritional, and food sciences</b> | Chinese    | 2.23479  | .5079052 | 3.54  | 0.000 | 1.431471 | 3.48892  |
|   | SouthA     | 1.824196 | .4262019 | 2.57  | 0.010 | 1.15398  | 2.883664 |
|   | Other      | 1.449189 | .3152997 | 1.71  | 0.088 | .9460828 | 2.219835 |
|   | Placec     | .7254187 | .1205765 | -1.93 | 0.053 | .5237271 | 1.004783 |
|   | Momimig    | .9695419 | .5448713 | -0.06 | 0.956 | .3222562 | 2.91697  |
|   | Faimig     | 1.018401 | .428157  | 0.04  | 0.965 | .4467409 | 2.321569 |
|   | momfaimig  | .9156353 | .6047628 | -0.13 | 0.894 | .2509095 | 3.341395 |
|   | Univ       | .7489338 | .1998754 | -1.08 | 0.279 | .4438894 | 1.263607 |
|   | Certdeg    | .4561426 | .1117855 | -3.20 | 0.001 | .2821625 | .7373981 |
|   | AGEP       | .9841754 | .0089958 | -1.75 | 0.081 | .9667009 | 1.001966 |
|   |            |          |          |       |       |          |          |
| <b>Engineering</b>  | Chinese    | 1.823742 | .3477084 | 3.15  | 0.002 | 1.255094 | 2.650029 |
|   | SouthA     | 1.072562 | .2117581 | 0.35  | 0.723 | .7283971 | 1.579345 |
|   | Other      | 1.34337  | .2261117 | 1.75  | 0.079 | .9658821 | 1.868388 |
|   | Placec     | .5881098 | .0899005 | -3.47 | 0.001 | .4358538 | .7935533 |
|   | Momimig    | 1.274686 | .6042505 | 0.51  | 0.609 | .5033852 | 3.227793 |
|   | Faimig     | .980656  | .3844208 | -0.05 | 0.960 | .4548231 | 2.114418 |
|   | momfaimig  | .8734408 | .5033838 | -0.23 | 0.814 | .2822713 | 2.702715 |
|   | Univ       | .7361531 | .1306745 | -1.73 | 0.084 | .5198421 | 1.042473 |
|   | Certdeg    | 3.377993 | .6327061 | 6.50  | 0.000 | 2.340058 | 4.876304 |
|   | AGEP       | .9715642 | .0077583 | -3.61 | 0.000 | .9564765 | .9868899 |
|   |            |          |          |       |       |          |          |
| <b>Medicine</b>   | Chinese    | 1.181975 | .1990067 | 0.99  | 0.321 | .8497542 | 1.644082 |
|   | SouthA     | 1.238208 | .2070963 | 1.28  | 0.201 | .8921259 | 1.718546 |
|   | Other      | 1.077523 | .1606035 | 0.50  | 0.616 | .8045553 | 1.443102 |
|   | Placec     | .8451378 | .1103278 | -1.29 | 0.197 | .6543471 | 1.091558 |
|   | Momimig    | 1.028363 | .4420181 | 0.07  | 0.948 | .4428705 | 2.387898 |
|   | Faimig     | .631243  | .2180766 | -     | 0.183 | .3207233 | 1.242403 |

| Major  | Covariates | RRR      | Std. Dev | Z         | Pr> Z | 95% C I  | Major    |  |
|--|------------|----------|----------|-----------|-------|----------|----------|--|
|  |            |          |          | 1.33      |       |          |          |  |
|  | momfaimig  | 2.111071 | 1.108445 | 1.42      | 0.155 | .7543427 | 5.907952 |  |
|  | Univ       | .8406448 | .1408921 | -<br>1.04 | 0.300 | .6052727 | 1.167546 |  |
|  | Certdeg    | 1.430265 | .232351  | 2.20      | 0.028 | 1.040246 | 1.966513 |  |
|  | AGEP       | 1.013715 | .0068102 | 2.03      | 0.043 | 1.000455 | 1.027151 |  |
|  |            |          |          |           |       |          |          |  |
|  |            |          |          |           |       |          |          |  |
| <b>Mathematics,<br/>computer<br/>and physical<br/>sciences</b> | Chinese    | 3.210012 | .7696887 | 4.86      | 0.000 | 2.006355 | 5.135771 |  |
|  | SouthA     | 2.200554 | .5501392 | 3.15      | 0.002 | 1.348129 | 3.59197  |  |
|  | Other      | 2.033914 | .4755552 | 3.04      | 0.002 | 1.286207 | 3.216285 |  |
|  | Placec     | .5781195 | .0928829 | -<br>3.41 | 0.001 | .4219493 | .7920908 |  |
|  | Momimig    | .7411646 | .5302711 | -<br>0.42 | 0.675 | .1823547 | 3.012399 |  |
|  | Faimig     | .620803  | .3553853 | -<br>0.83 | 0.405 | .2021503 | 1.906484 |  |
|  | momfaimig  | 3.12494  | 2.71786  | 1.31      | 0.190 | .5682307 | 17.18536 |  |
|  | Univ       | 5.402112 | 1.513679 | 6.02      | 0.000 | 3.11929  | 9.355596 |  |
|  | Certdeg    | .8873728 | .170638  | -<br>0.62 | 0.534 | .6087286 | 1.293566 |  |
|  | AGEP       | .9856112 | .0088206 | -<br>1.62 | 0.105 | .9684739 | 1.003052 |  |
|  |            |          |          |           |       |          |          |  |

**Table 5 Estimated marginal effects for multinomial logistic model regression**

| <i>Males</i>           |                 |                     |              |               |                 |            |                |              |              |             |
|------------------------|-----------------|---------------------|--------------|---------------|-----------------|------------|----------------|--------------|--------------|-------------|
|                        | <b>Avr. Chg</b> | <b>Applied arts</b> | <b>Human</b> | <b>Social</b> | <b>Business</b> | <b>Adm</b> | <b>Biology</b> | <b>Engin</b> | <b>Medic</b> | <b>Math</b> |
| <b>Chinese</b>         | .02375          | .00379              | -.0308       | -.0532        | .007747         | -1.35e-08  | -.0056         | .04283       | .0258        | .0385       |
| <b>SouthA</b>          | .02314          | -.0259              | -.0209       | -.0378        | .03843          | 1.02e-07   | -.0113         | .02547       | .03053       | .02129      |
| <b>Other</b>           | .02070          | .00147              | -.0154       | -.0552        | -.01718         | -1.96e-07  | -.0050         | .05552       | .03772       | .00878      |
| <b>PLacec</b>          | .02025          | .00461              | -.0097       | -.0343        | -.0099          | -6.24e-08  | -.0025         | .07836       | -.0194       | .01824      |
| <b>Momimig</b>         | .03896          | -.0012              | .01897       | .02409        | .10436          | -9.90e-08  | .01902         | -.1191       | -.0031       | .02835      |
| <b>Faimig</b>          | .164728         | .02737              | .041777      | .088167       | .195153         | -.82364    | .03945         | .296635      | .053851      | .0512       |
| <b>Momfam</b>          | .041971         | .00462              | -.08036      | -.05132       | -.04658         | 2.01e-06   | -.031          | .1405        | .0250        | .01687      |
| <b>Certificat Univ</b> | .054211         | .01827              | -.0174       | -.0634        | .003079         | .0057      | -.05539        | .2440        | -.06268      | -.0429      |
|                        | .04656          | -.0335              | .01599       | .05793        | .03424          | 0.001      | -.04157        | -.1576       | .01287       | .1096       |
| <i>Females</i>         |                 |                     |              |               |                 |            |                |              |              |             |
| <b>Chinese</b>         | .04932          | .029048             | -.03389      | -.09506       | .17595          | -.00637    | .012196        | .001412      | -.06089      | .028261     |
| <b>SouthA</b>          | .030314         | -.03018             | -.02757      | -.05766       | .099691         | -.00181    | .022883        | -.01227      | -.00132      | .029014     |
| <b>Other</b>           | .021979         | .028745             | .001057      | -.08409       | .027045         | .000378    | .012568        | .012941      | -.01157      | .027160     |
| <b>PLacec</b>          | .013367         | .003014             | -.01652      | -.01090       | .022524         | .001912    | .003824        | .023192      | -.01345      | .012369     |
| <b>Momimig</b>         | .024947         | -.02787             | .04280       | .062730       | .013606         | -.01581    | -.01202        | .005593      | -.02551      | -.02469     |
| <b>Faimig</b>          | .019342         | -.00196             | .02672       | .009215       | .03250          | -.01450    | .007384        | .008762      | -.06285      | -.01738     |
| <b>Momfam</b>          | .036673         | .008826             | -.11003      | -.06158       | .023409         | .016532    | -.00292        | -.00882      | .09717       | .03406      |
| <b>Certificat Univ</b> | .057858         | .04521              | -.02759      | -.12956       | .088697         | .091214    | -.06612        | .06416       | -.00640      | -.02139     |
|                        | .0362           | -.0428              | .04087       | .07801        | -.02522         | -.0244     | -.01829        | -.03043      | -.0357       | .0625652    |

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