

# Factors explaining the low income return for education among Asian New Zealanders

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# Outline

1. Introduction
2. Exploratory Analysis
3. Results
4. Conclusion

**Disclaimer:** Access to the data used in this study was provided by Statistics New Zealand under conditions designed to give effect to the security and confidentiality provisions of the Statistics Act 1975. The results presented in this study are the work of the author, not Statistics New Zealand.

# Project Origins

While creating the New Zealand Socio-Economic Index (NZSEI), it was noticed that at the 2006 Census, Asian New Zealanders had more than double the prevalence of university degrees compared to any other large ethnic group, yet tended to be in poorly paid jobs.

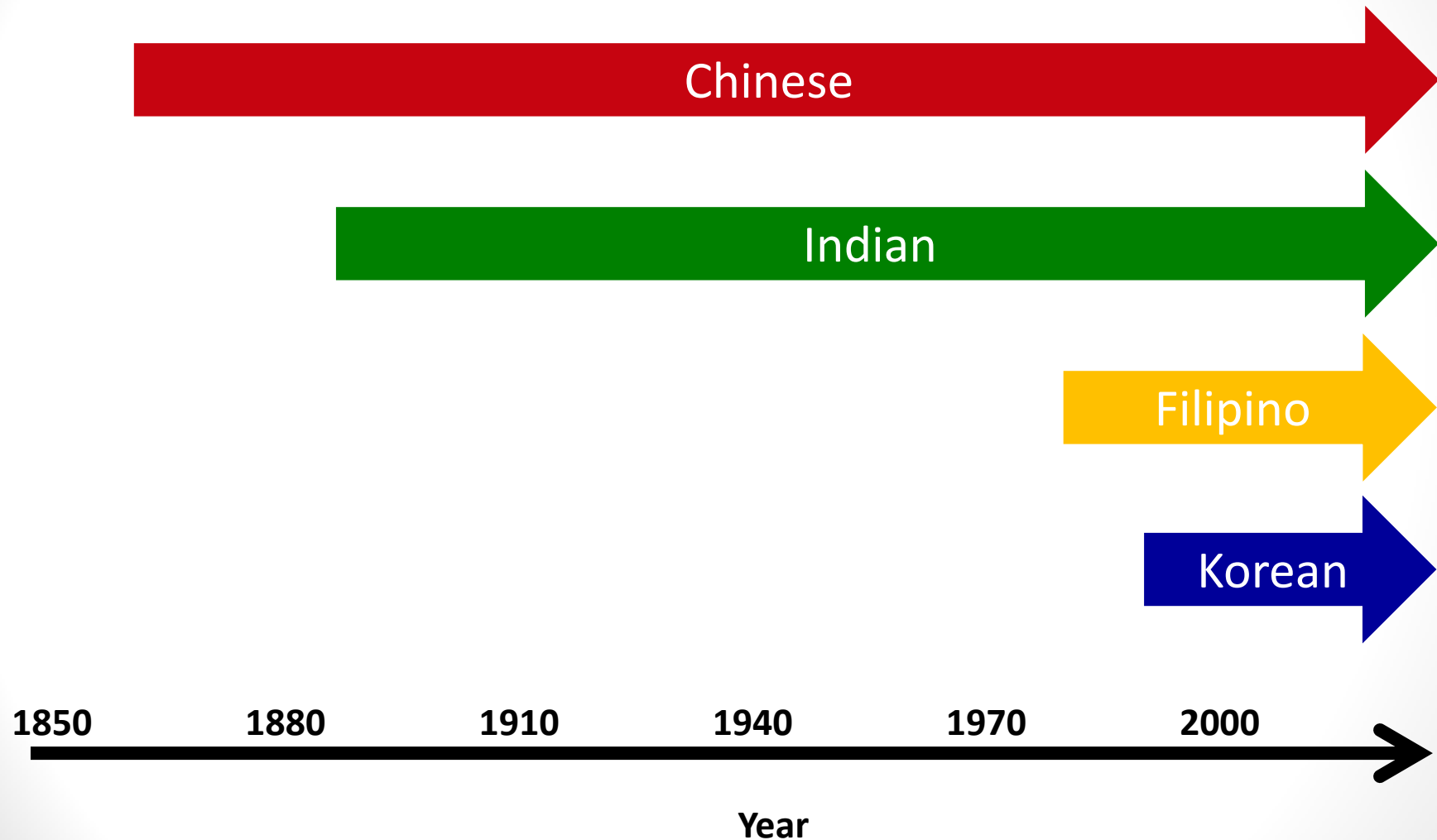
# Common Features in Literature

Australia, Canada, USA and NZ

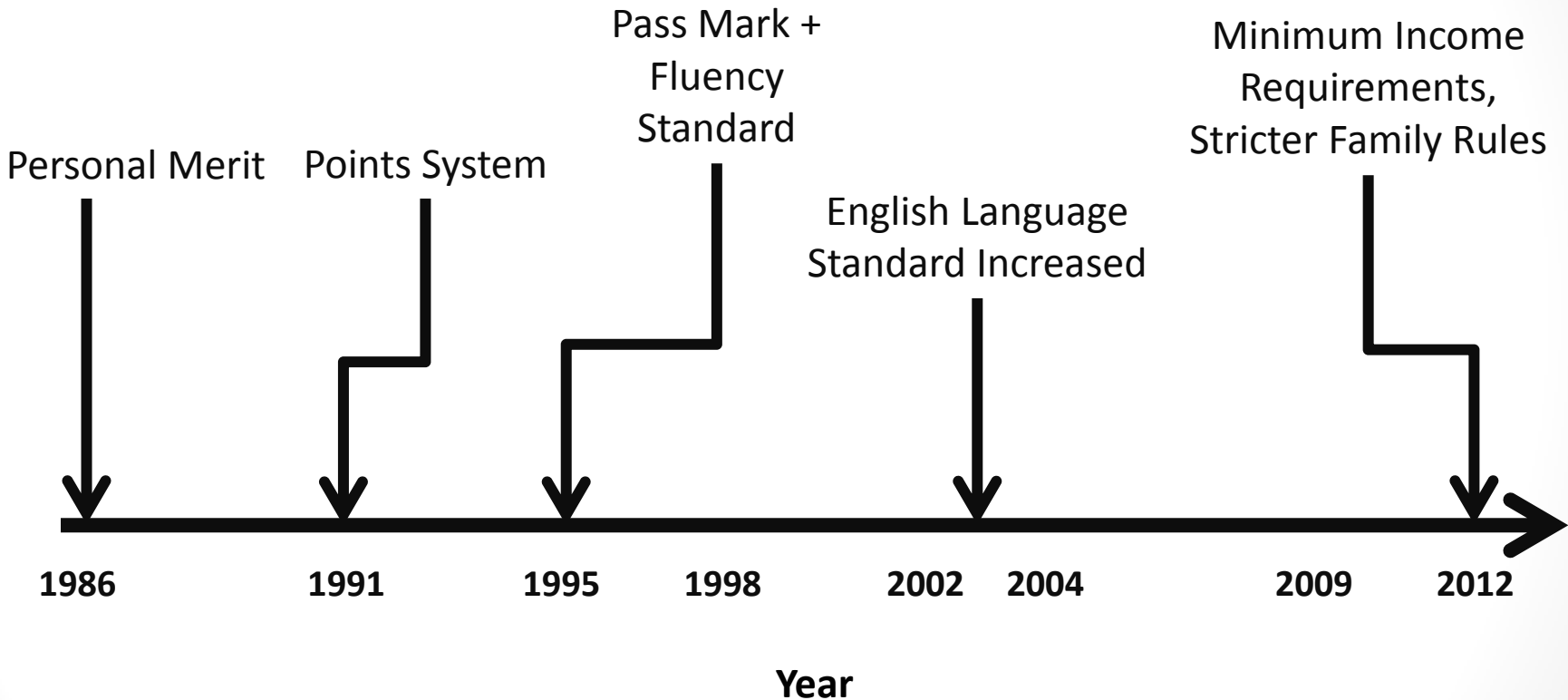
## Observations

- Asians had **double** the prevalence of **Bachelor's degrees** compared to the European population
- Migrants **earn less**
- The children of Asian migrants earn comparable incomes to the general population (2<sup>nd</sup> generation)

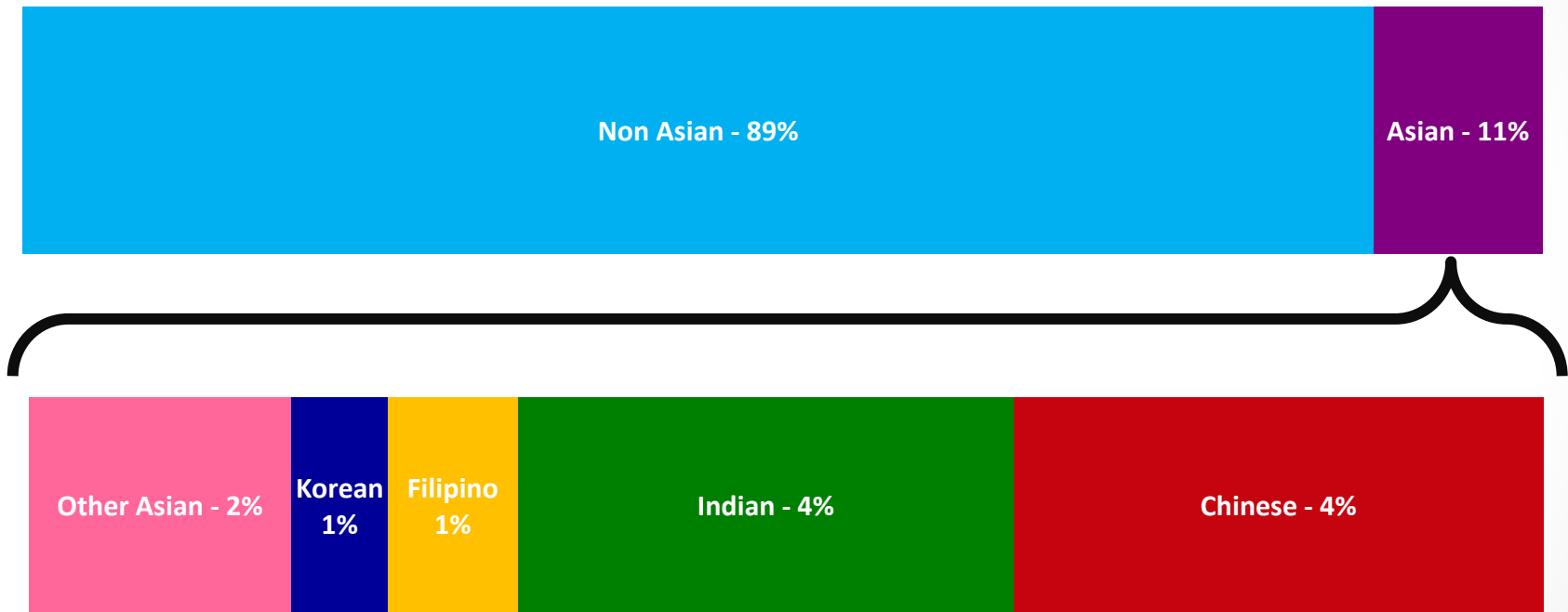
# Migration Histories



# NZ Immigration Law



# Population Breakdown - 2013



# Context

- New Zealand is similar to Australia, Canada and the US in its at times tense relationship with migration from Asia



THE YELLOW PERIL.

Source: Hocken Library, University of Otago

NEW ZEALAND

## Labour's claim Chinese are buying up Auckland housing backed by readers

Sun, Jul 12 Share

Labour's claims that Chinese are buying up Auckland housing in large quantities is being backed by ONE News readers



Source: ONE News

Source: One News



# Importance

- Skill shortages
- Asia is an important source of skills
- Our economy is at risk

# Exploratory Analysis

# The Big Picture

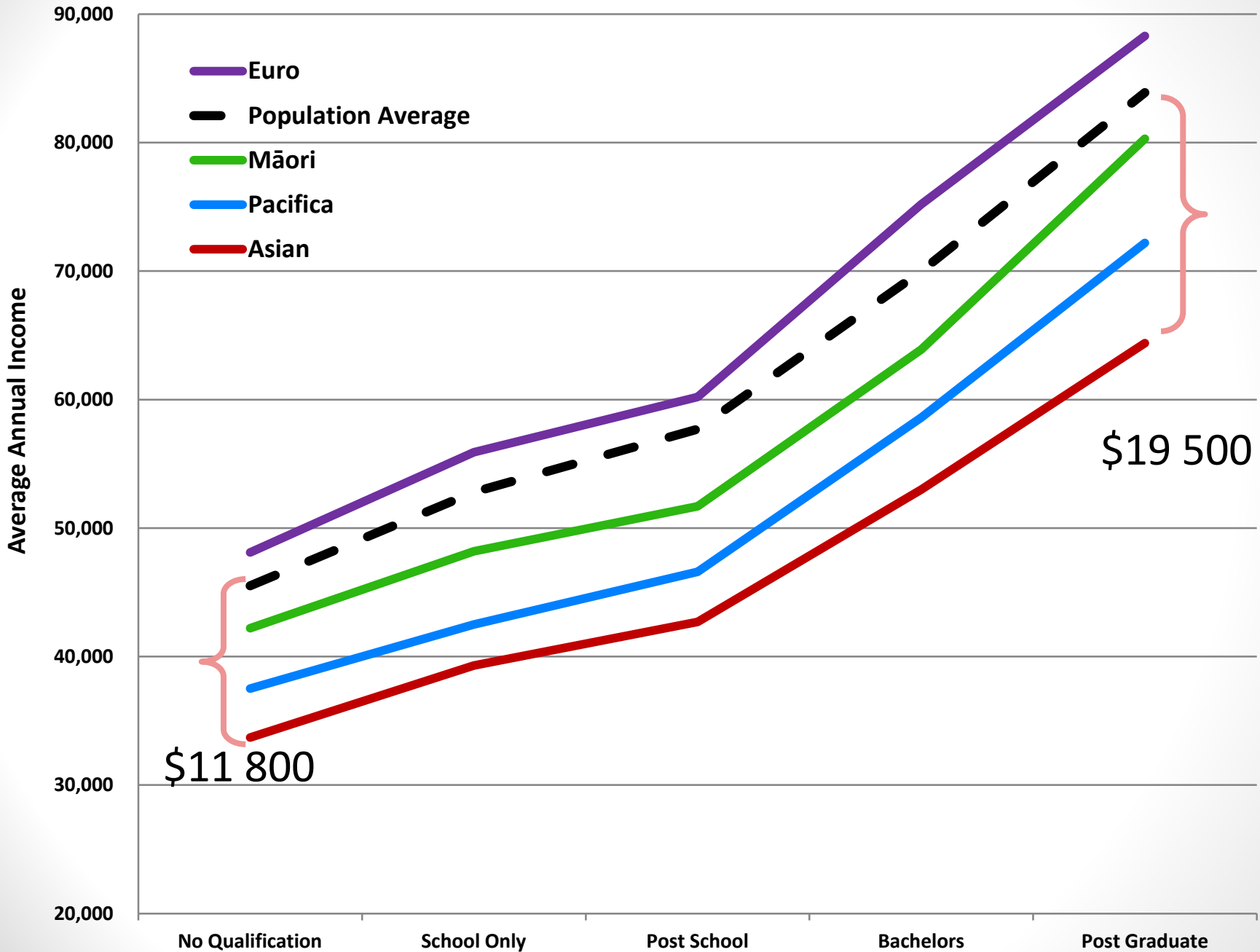
Our analysis focuses on New Zealanders:

- 21 - 69 years of age,
- with an ANZSCO rating,
  - i.e. in the workforce
- who responded to all relevant 2013 census questions.

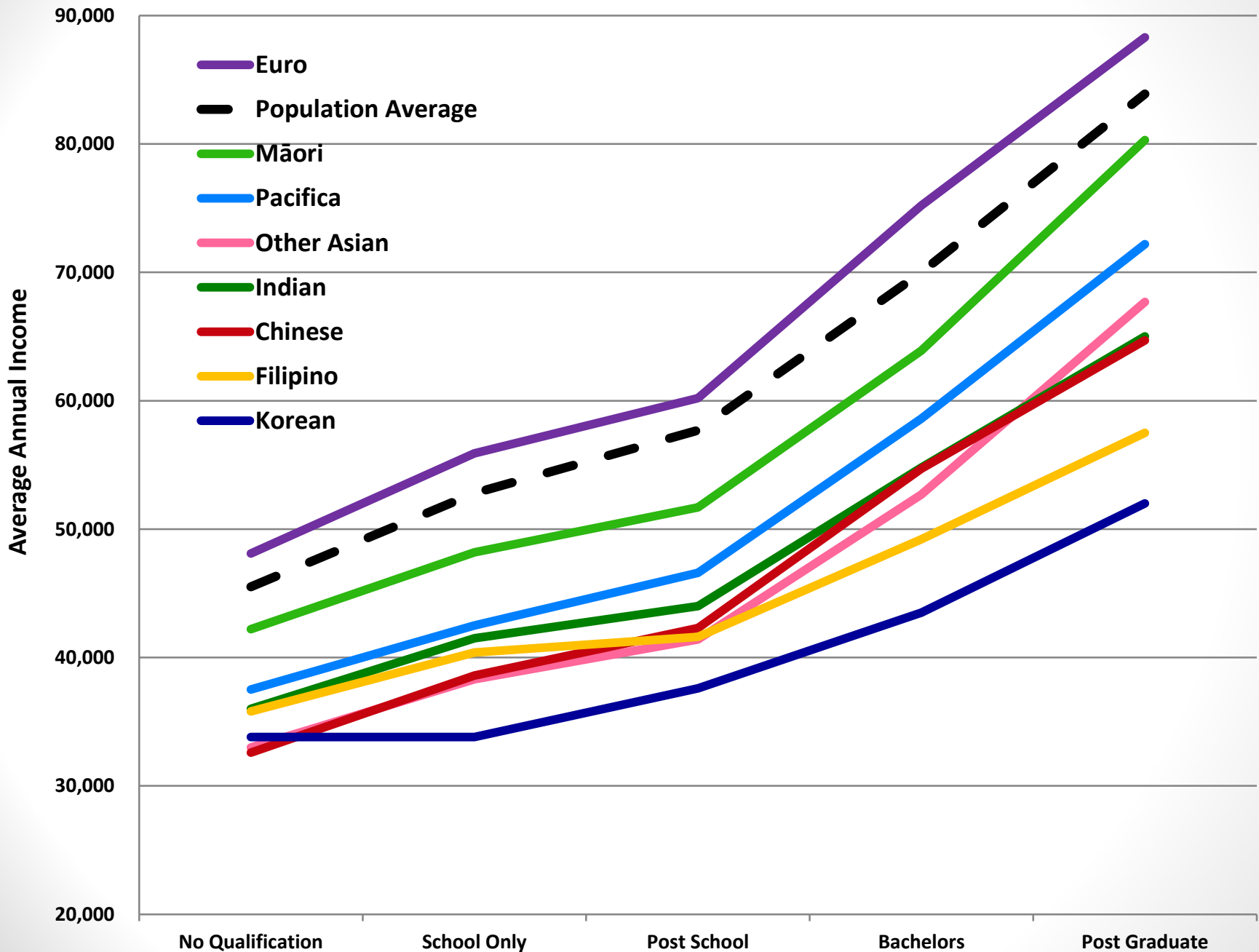
A group of just under **1.7 million** people were used in this analysis.

Of these, about **190,000** identify as Asian with **2/3 living in Auckland** and **90% born overseas**.

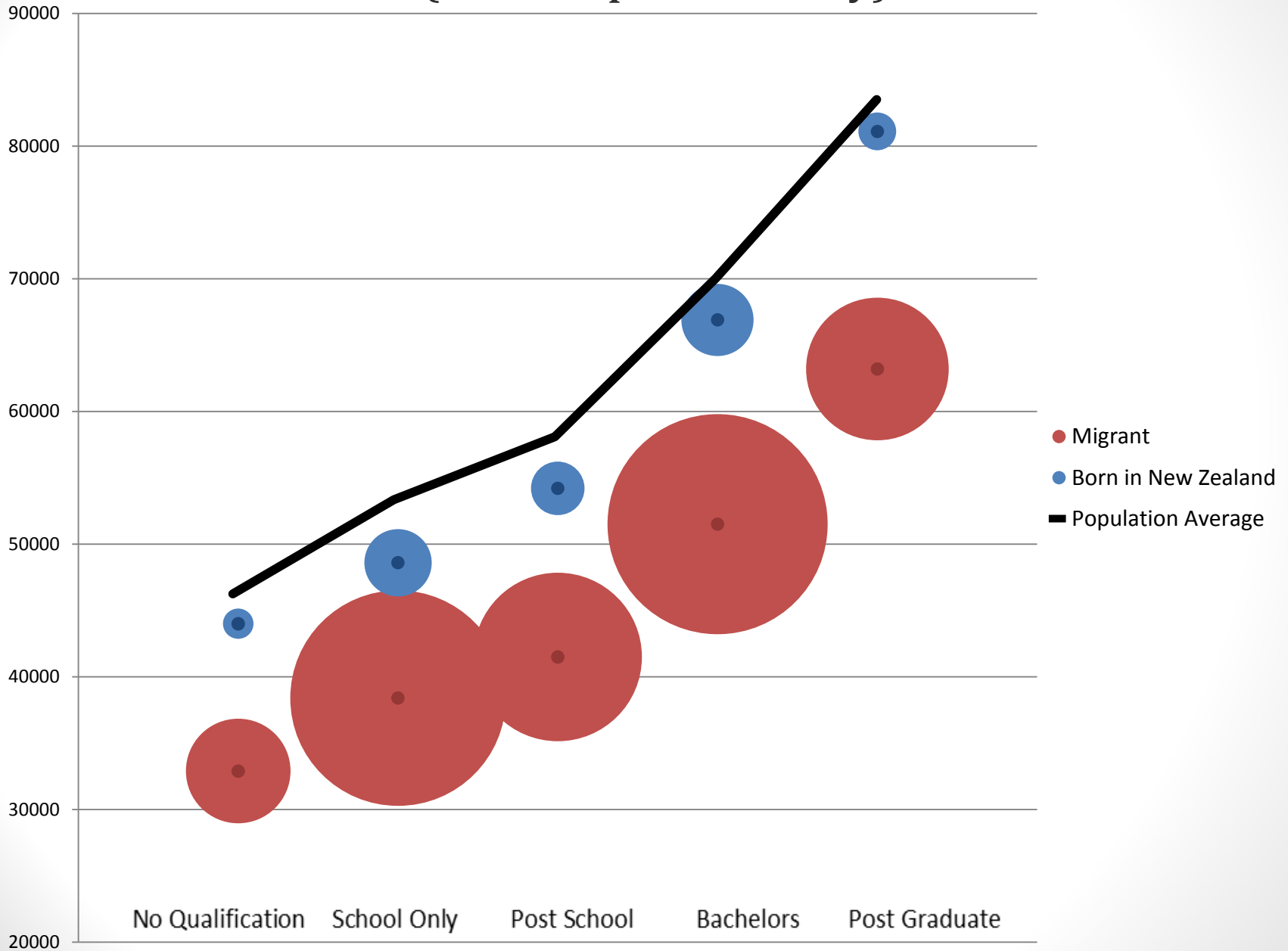
# Income by Education (2013 Census)



# Income by Education with Asian Subgroups



# Born in NZ (Asian Population Only)

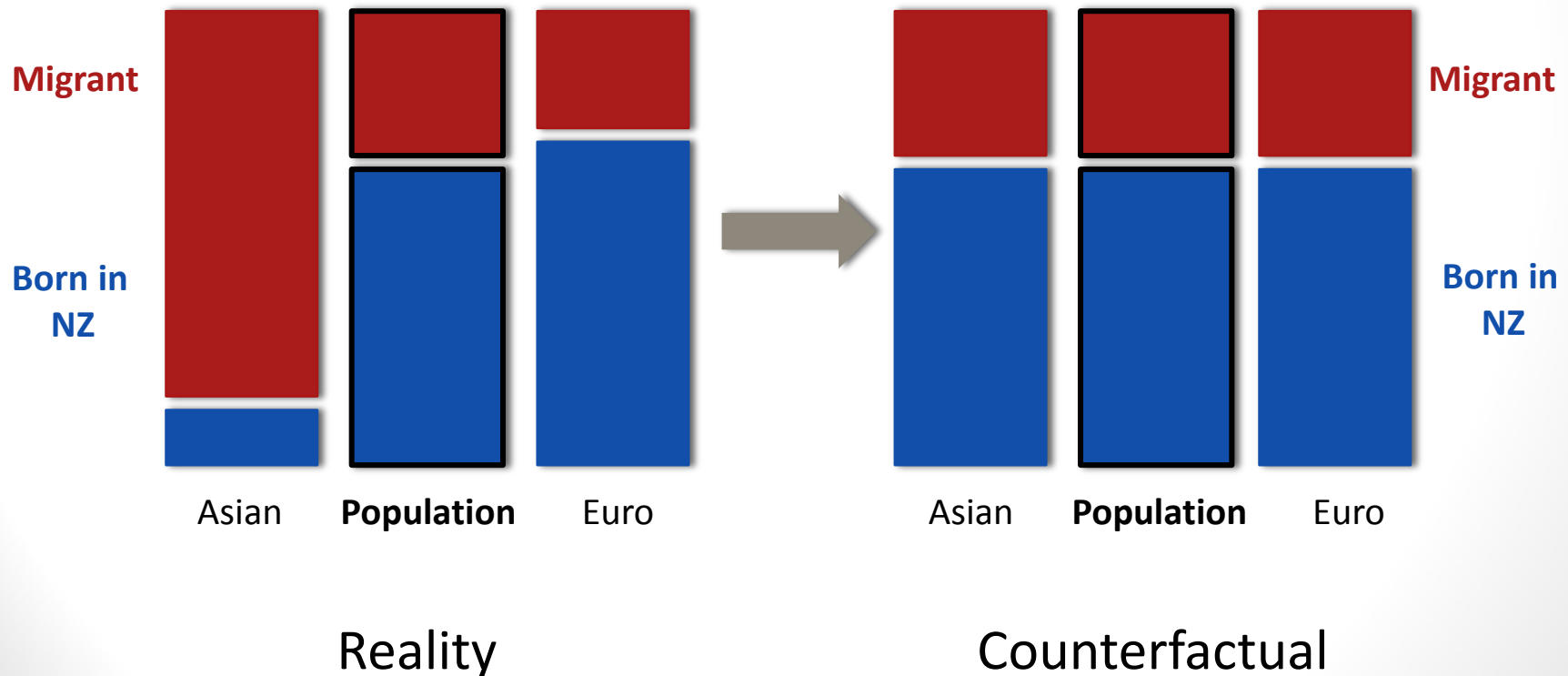


# Counterfactual Models

# Means Adjustment - Example

*What if...*

*Each ethnicity had the same proportion of migrants as the overall population?*

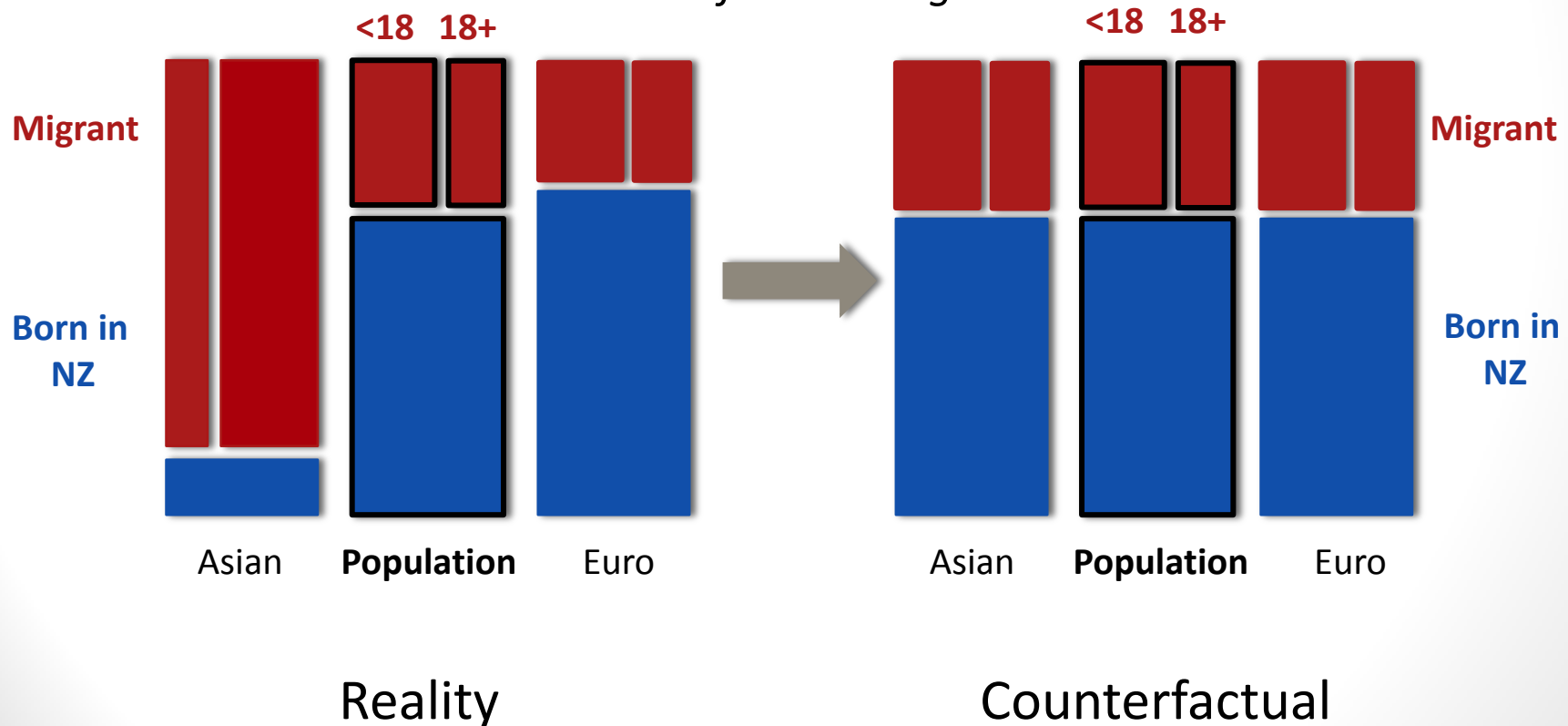




# Means Adjustment - Example

*What if...*

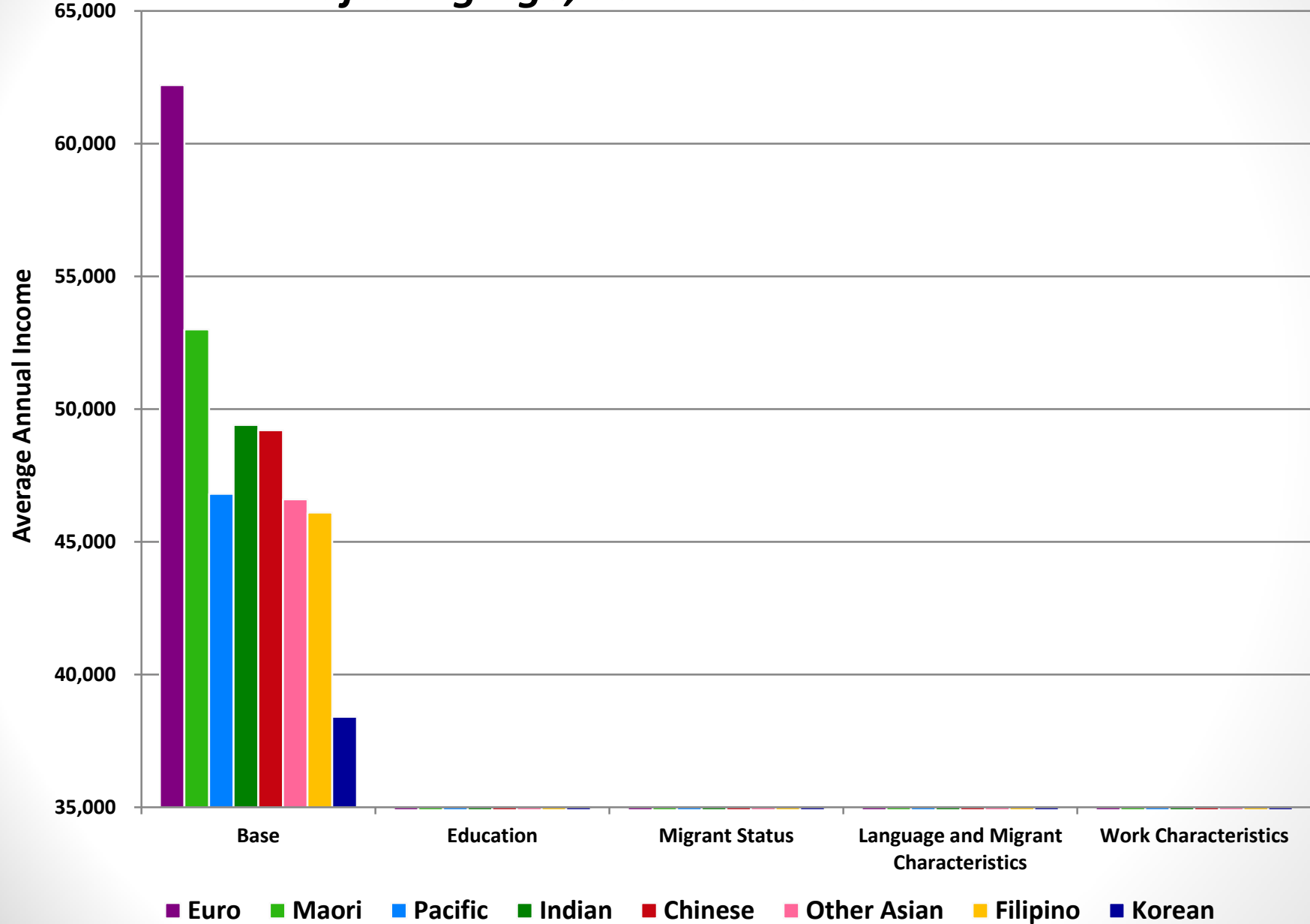
*Each ethnicity had the same proportion of migrants as the overall population, and each population had the same proportion of migrants who arrived before turning 18?*



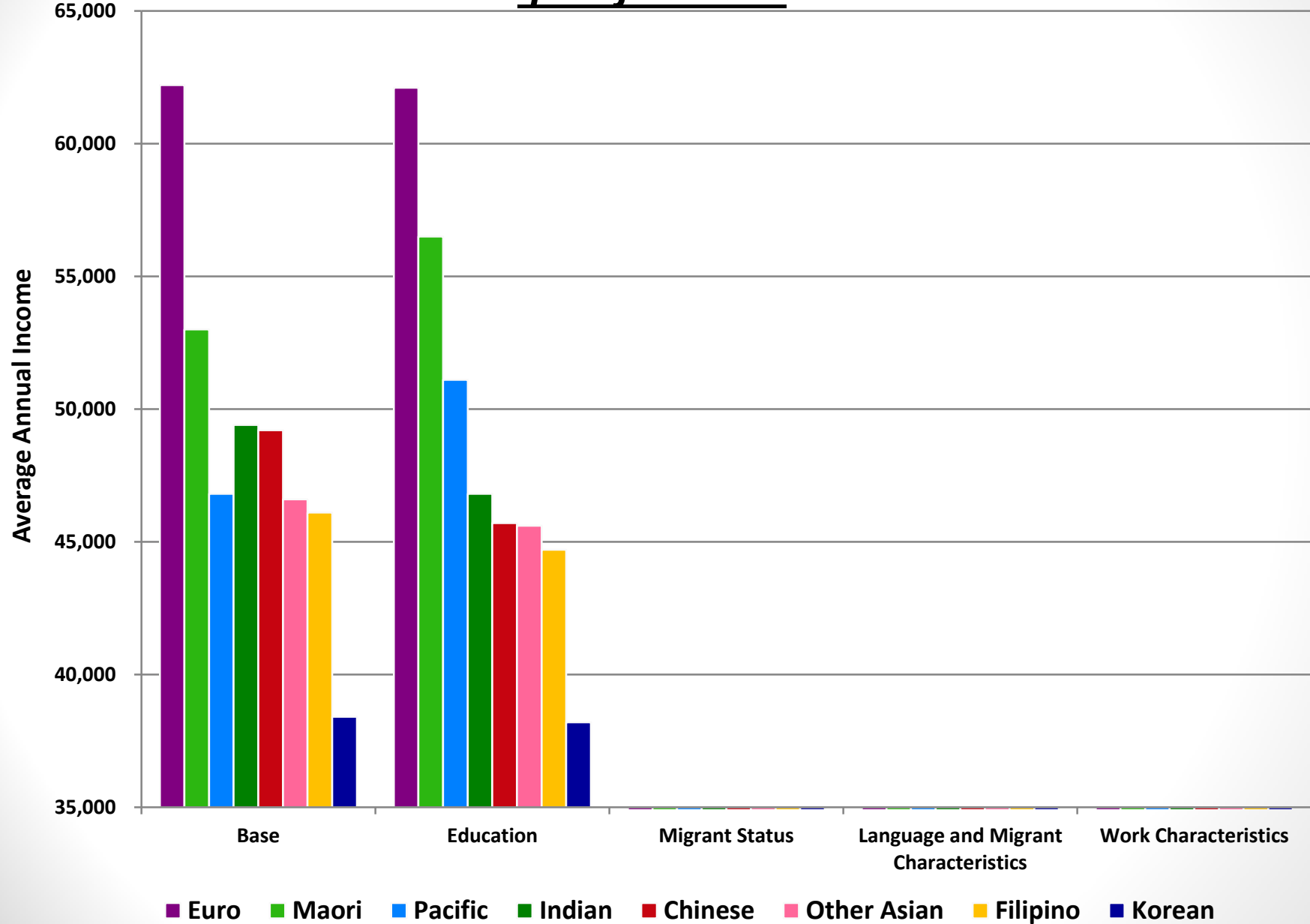
# What if...?

- **Base:**
  - What if all ethnicities had the same age, sex and marital status distributions?
- **Education:**
  - What if all ethnicities had the same distribution of educational qualifications?
- **Migrant Status:**
  - What if all ethnicities had the same distribution of migrant status?
- **Language and Migrant Characteristics (3 variables):**
  - What if all ethnicities had the same distribution of language, age of arrival and length of residence?
- **Work Characteristics (2 variables):**
  - What if all ethnicities had the same distribution of occupation and workplace ethnic profile?

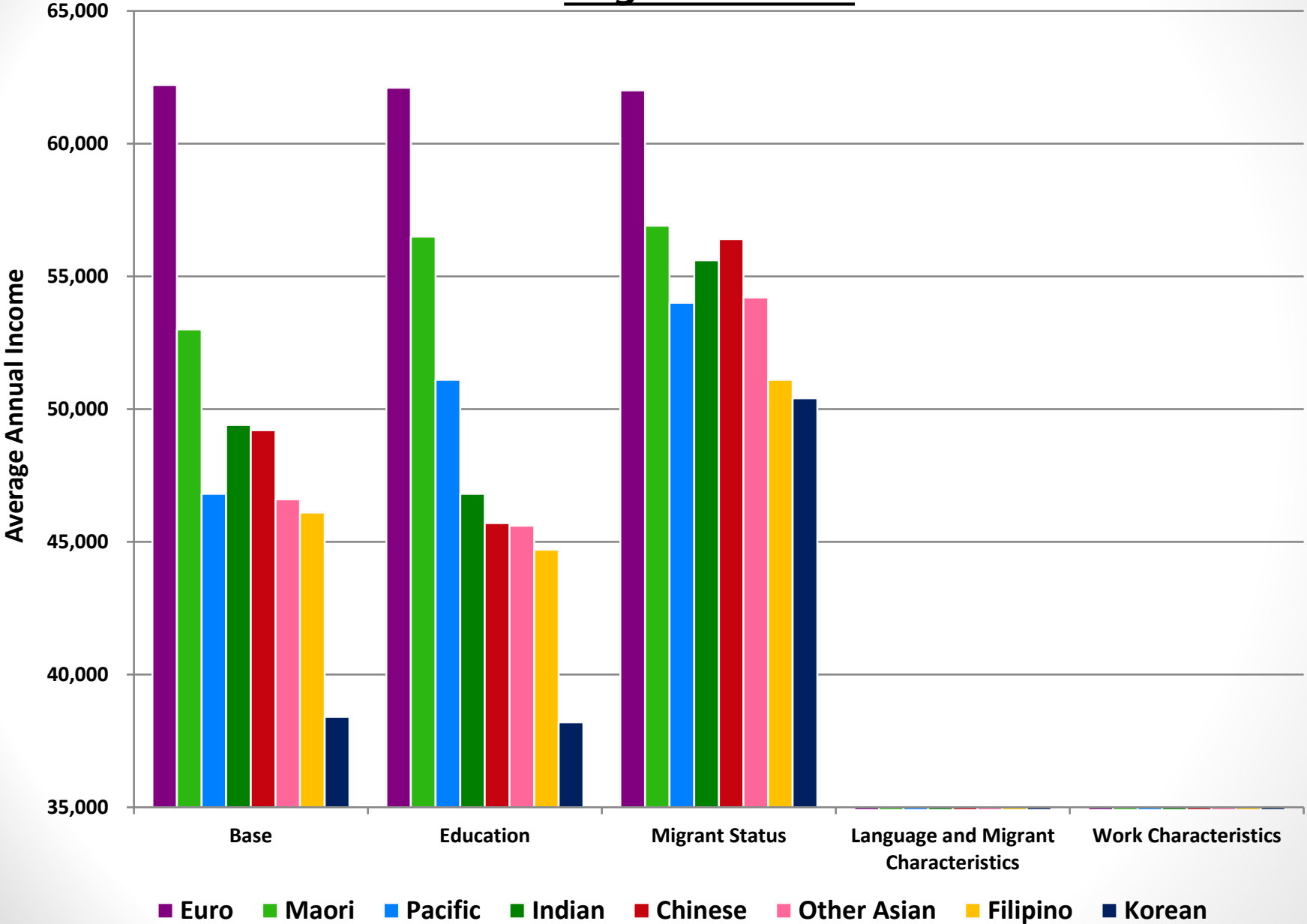
# Base Model – Average Annual Income Adjusting Age, Sex and Marital Status



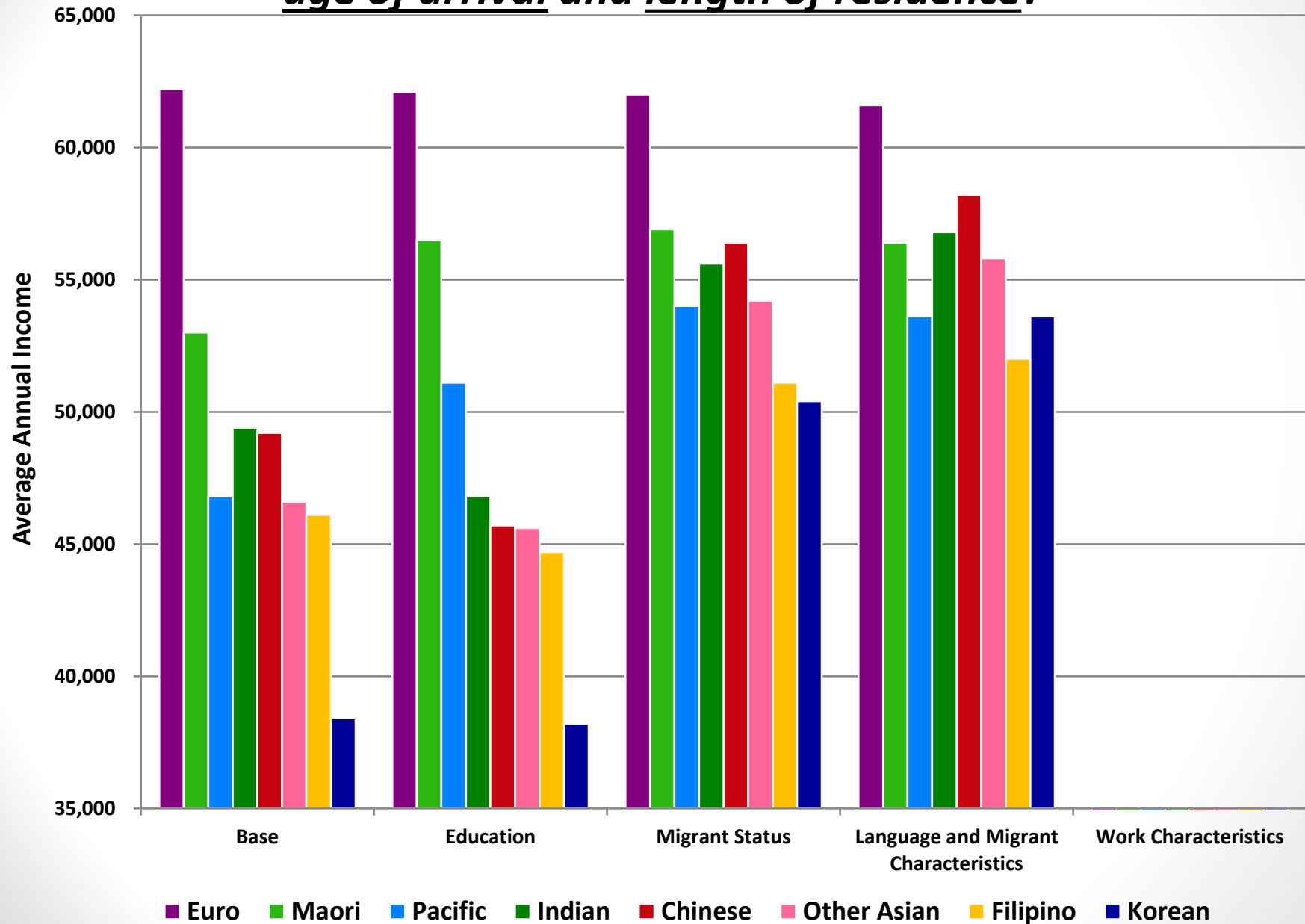
# What if all ethnicities had the same distribution of educational qualifications?



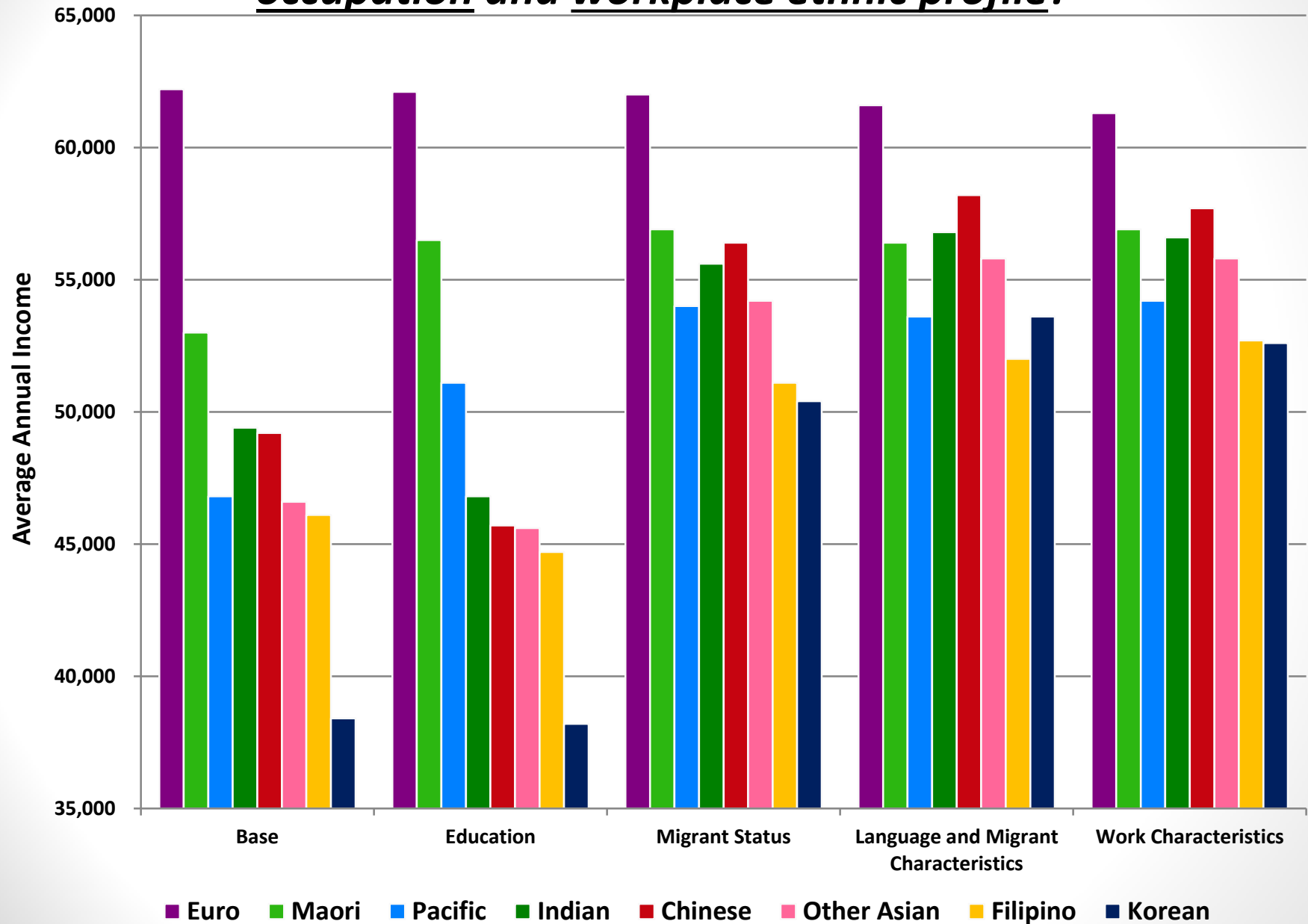
# What if all ethnicities had the same distribution of migrant status?



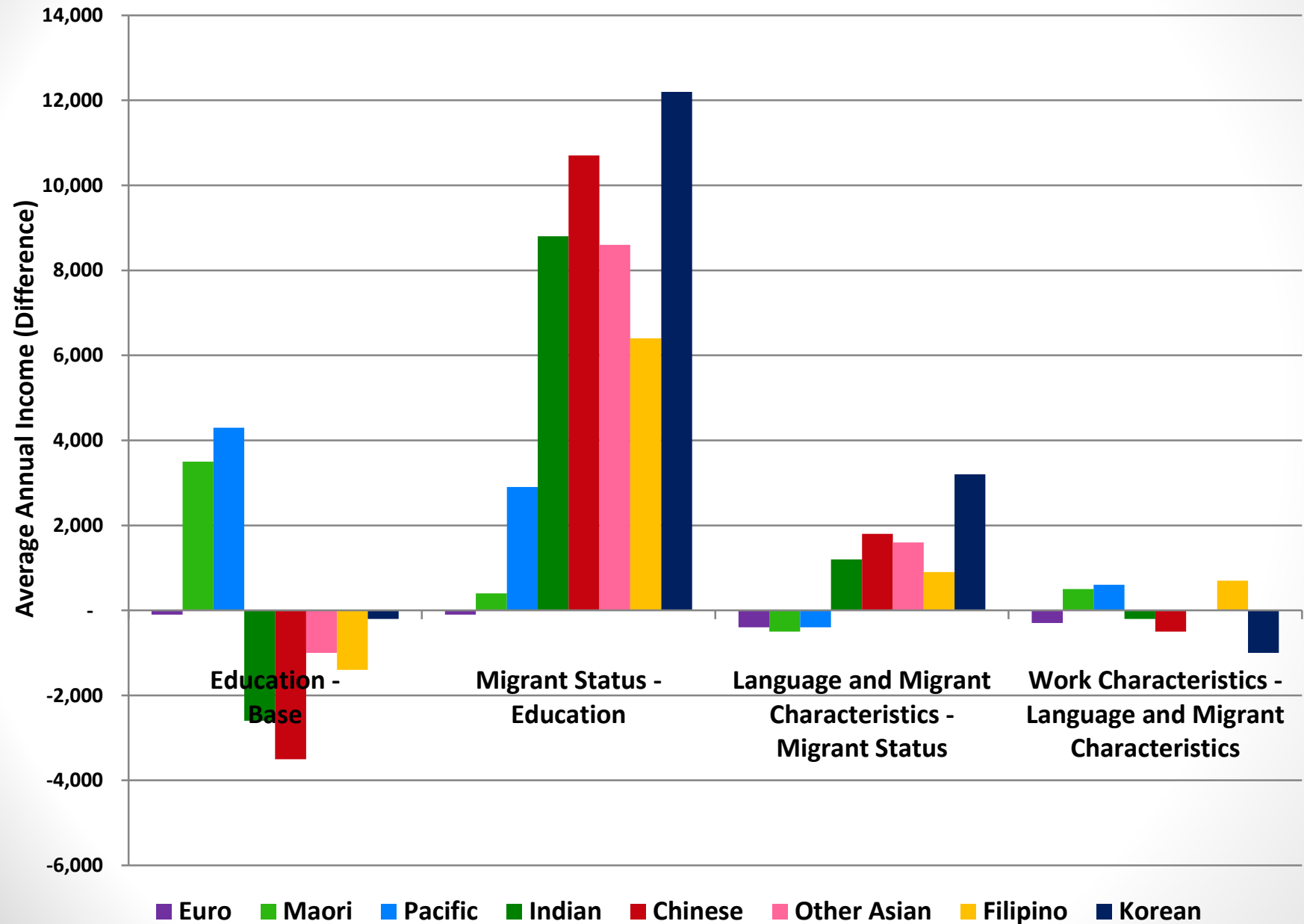
# ***What if all ethnicities had the same distribution of language, age of arrival and length of residence?***



# What if all ethnicities had the same distribution of occupation and workplace ethnic profile?



# Effect of each model compared to the previous model





# Conclusions

- Migrant status
  - The biggest factor in the conversion of education into income for Asian New Zealanders
- Age at arrival, years of residence and language also important
- Occupation and workplace ethnic density were not as influential as expected
- Other factors of culture and background
  - Despite having access to some factors that once controlled for explain more of the ethnicity effects, we are still left with differences between our ethnicities.

# Limitations

## Of this data set

- Missing data
  - Where education or income data was missing, this may not be at random.
    - This was not found to be overly different between migrants and the overall population
- Accuracy of self-report
  - Especially for variables like language

## Of the scope of this analysis

- Missing factors
  - What would we have liked to have but didn't?
    - Sensitivity of measures, like language fluency
    - Where educational qualifications are from
  - **Non census style data about cultural differences or racism might hold the key**

# Where this research has been...

- Department of Statistics Honours and Masters talks day
- Population Association of New Zealand Conference
- Meeting at Ministry of Business, Innovation and Employment
- COMPASS Colloquium at Statistics New Zealand
- Meeting with economist from Treasury
- Inclusion in Superdiversity Stocktake (Superdiversity Centre for Law, Politics and Business)

# Where it is going...

- Write a paper
- Keep talking to interested and affected people

# Questions and Comments?

[liza.bolton@auckland.ac.nz](mailto:liza.bolton@auckland.ac.nz)

- Milne, B., Byun, U., & Lee, A. (2013). New Zealand socio-economic index [NZSEI]. 2006. Wellington: Statistics New Zealand.
- Reitz, J., Zhang, H., & Hawkins, N. (2011). Comparisons of the success of racial minority immigrant offspring in the United States, Canada and Australia. *Social Science Research*, Volume 40(4), 1051-1066. <http://dx.doi.org/10.1016/j.ssresearch.2011.03.009>.
- Simon-Kumar, R. (2014). Neoliberalism and the New Race Politics of Migration Policy: Changing Profiles of the Desirable Migrant in New Zealand. *Journal of Ethnic and Migration Studies*, (June), 1–20. doi:10.1080/1369183X.2014.936838.

# Appendix

These additional slides briefly consider a few other topics of interest:

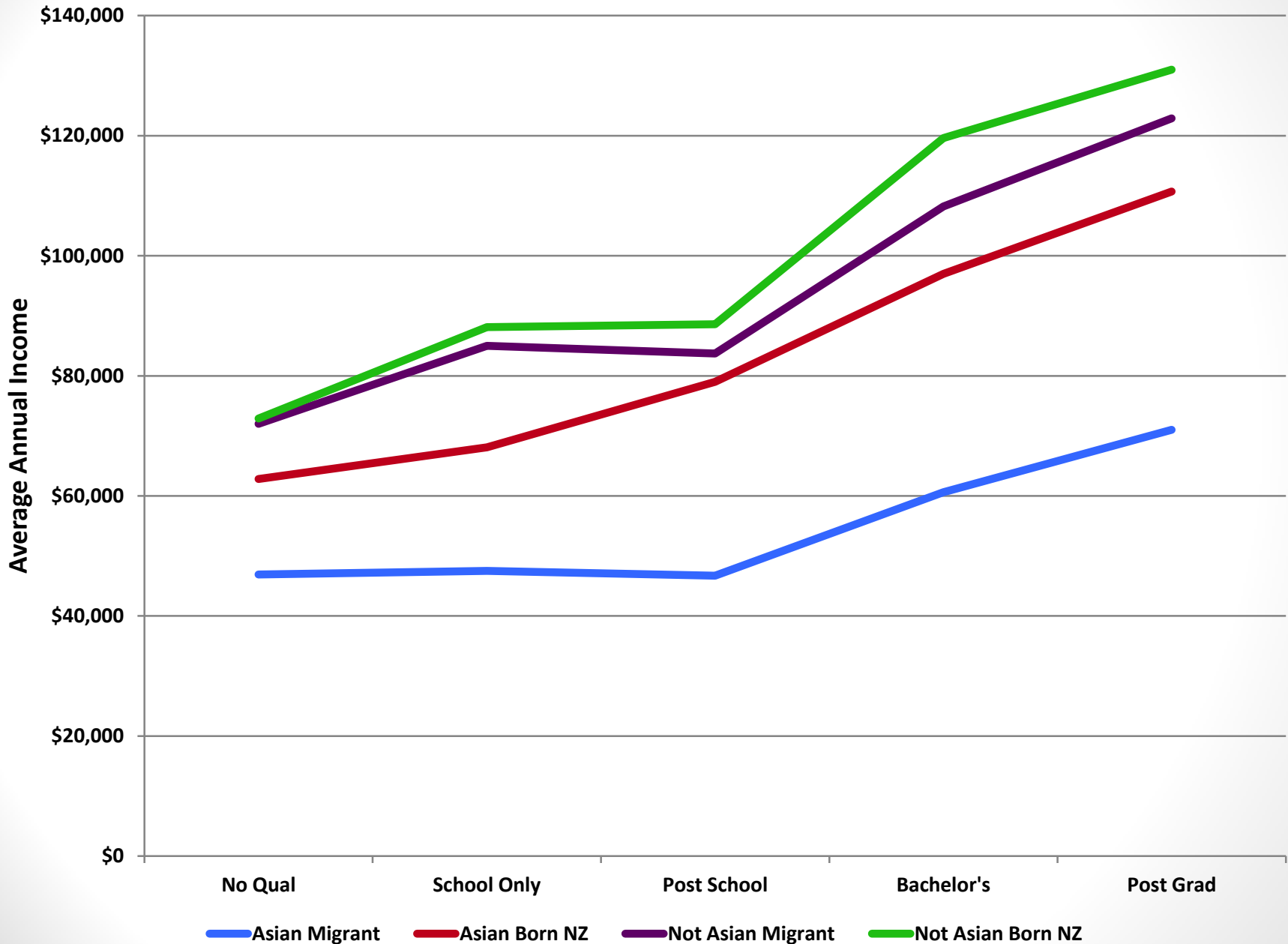
- Income case study for Chief Executives, General Managers and Legislators
  - For all
  - For those aged 35 – 56
  - For those who arrived between the ages of 30 and 40
- Income case study for Specialist Managers
- Age at arrival and gender averages for Asian groups

Anything of particular interest missing? Email me at [liza.bolton@auckland.ac.nz](mailto:liza.bolton@auckland.ac.nz).

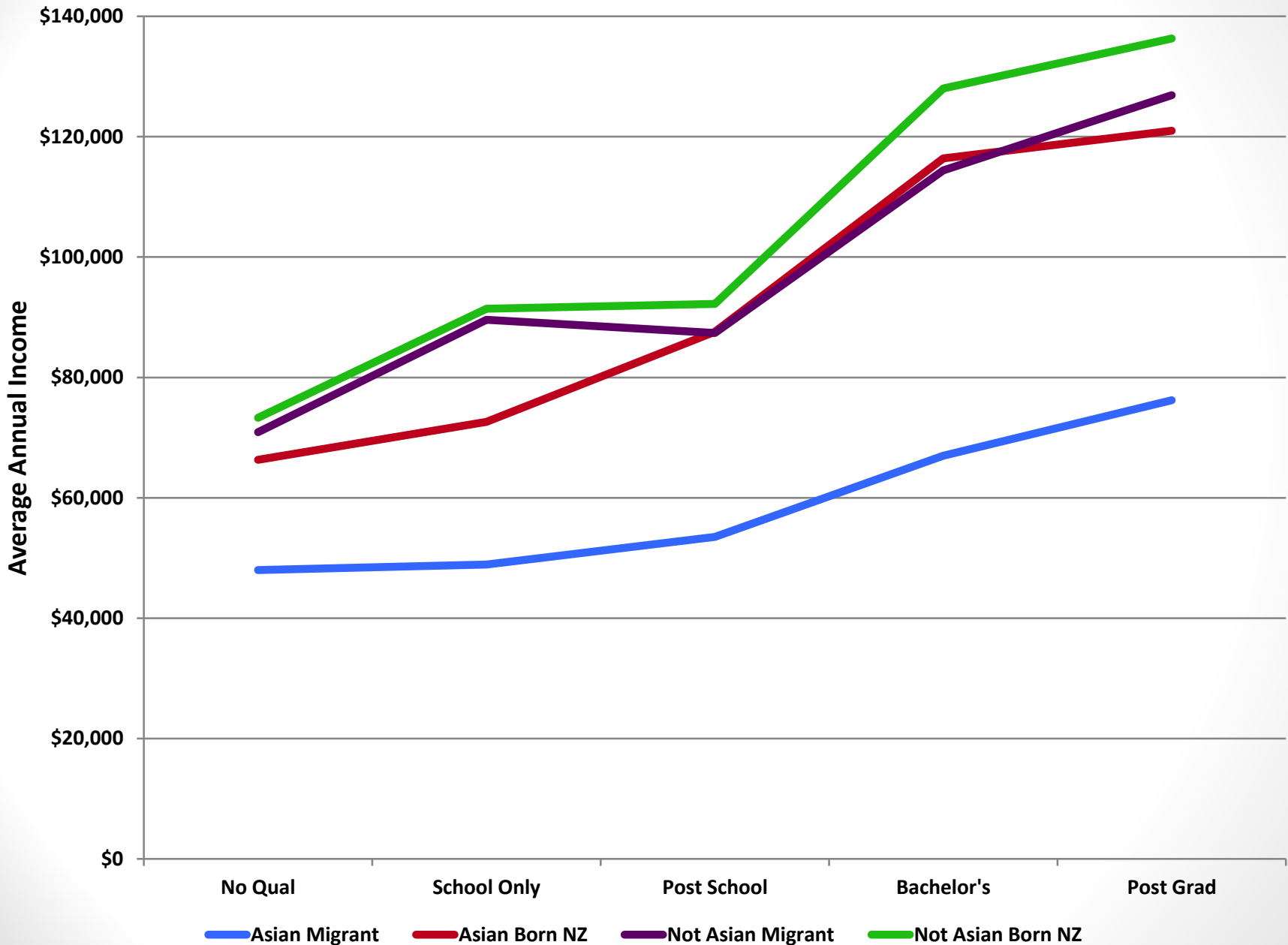


# Occupation Case Studies

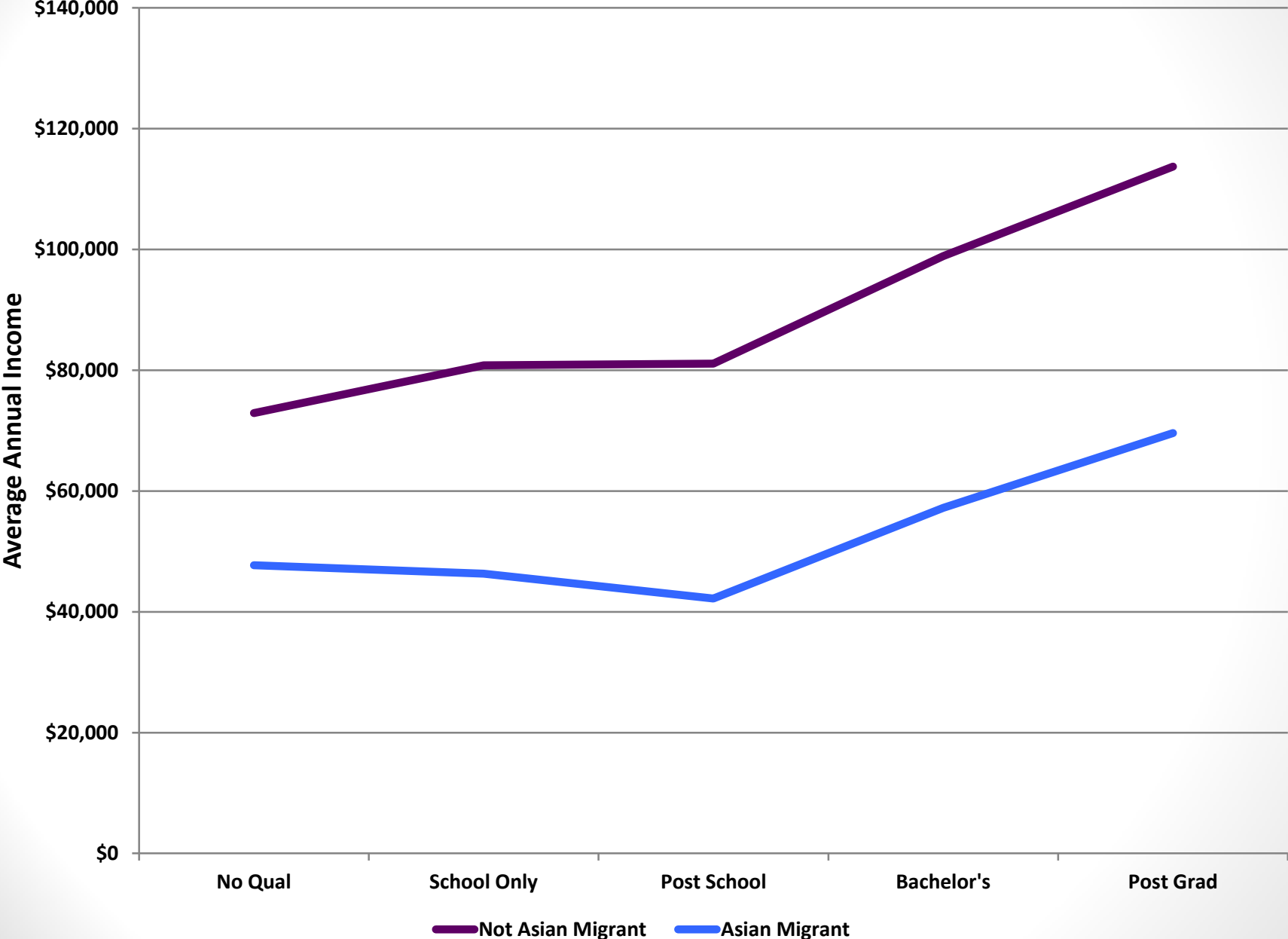
# Average Income by Education for Chief Executives, General Managers and Legislators - Considered by Ethnicity and Migrant Status



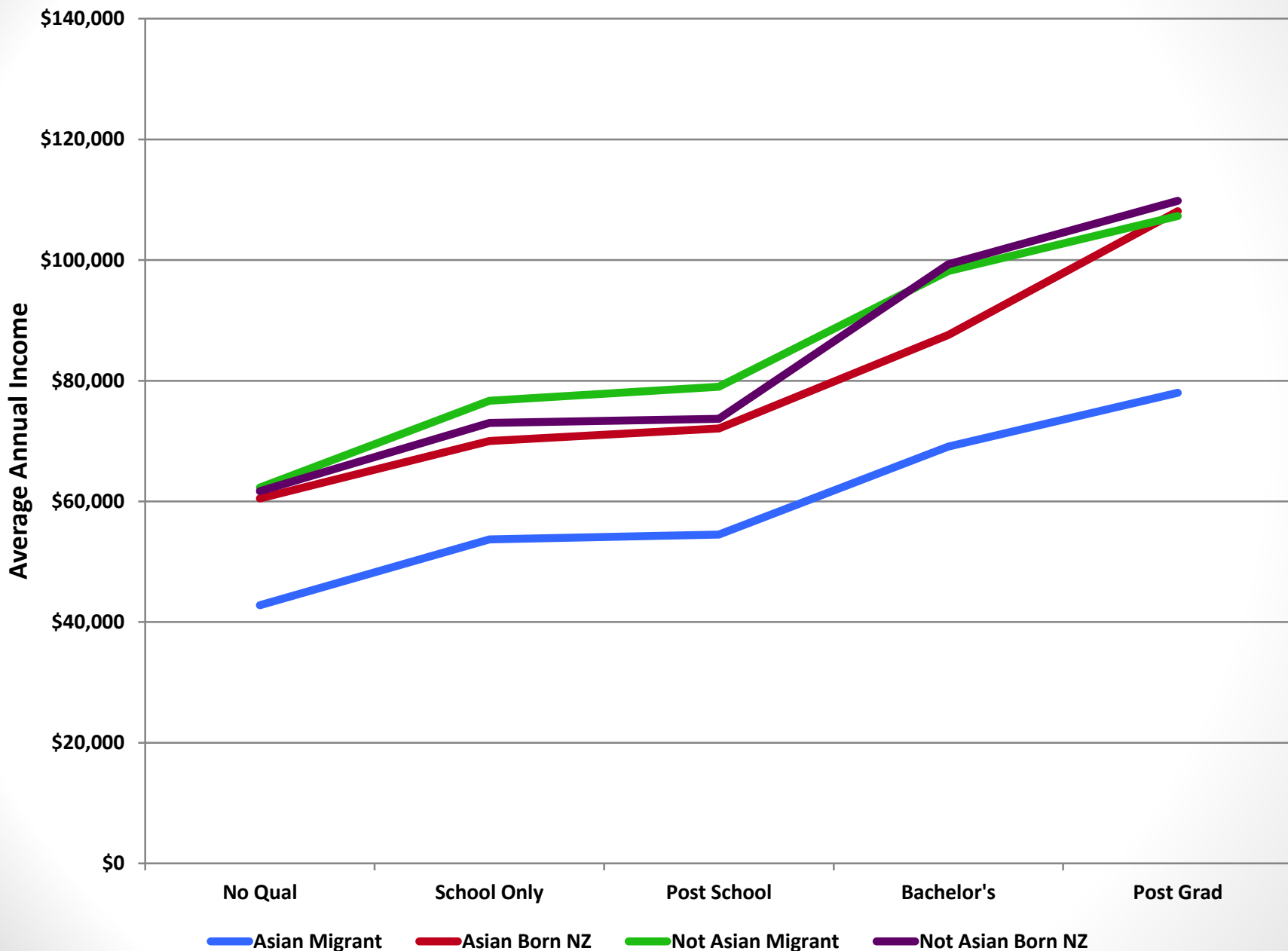
# Average Income by Education for Chief Executives, General Managers and Legislators (Aged 35 -56)



# Average Income by Education for Chief Executives, General Managers and Legislators (Arrived in NZ between the ages of 30 and 40)



# Average Income by Education for Specialist Managers – Considered by Ethnicity and Migrant Status



# Comments and Notes 1

- These are just two occupation groups, and I chose the Chief Executive group because there were some of the largest gaps between the Asian and non-Asian groups in this category. There are some occupations where Asian people receive a higher average income than others, but overall non-Asian groups are earning more for the same jobs and education.
- **Note:** The Australia New Zealand Standard Classification of Occupations (ANZSCO) suggests that Level 1 occupations, like the Chief Executives, General Managers and Legislators group and Specialist Manager group, usually have at least a Bachelor's degree, or many years of experience, so the most important comparisons are probably at the Bachelor's and Post Grad level.

# Comments and Notes 2

- When we limit the ages over which we're examining income to 35-56 we see the born in NZ Asian group aligning much more closely to the non-Asian migrant group at higher levels of education.
  - It is important to consider age profiles when comparing groups.
- There is still an almost \$12,000 difference at the Bachelor's level between Asians born in NZ and non-Asians born in NZ.
- The disparities in the Specialist Manager group are much smaller than for the Chief Executive group.

# Comments and Notes 3

- There are two levels of selection in standard migration: firstly, people self-selecting to apply to migrate, and secondly the destination country selecting whom to approve from these.
- If the processes that cause people to choose to migrate differ by groups this may relate to income differences.
- **Hypothesis:** Non-Asian migrants may have entered the country with job offers more often than Asian migrants, or with different types of job offers, explaining some of the income differences.
  - Anecdotally, Asian migrants may be more likely to be coming to be with family, or seeking a better environment/education for their children.
  - This would need to be explored further with Immigration data, but understanding the extent to which this explains differences between migrant groups is important.



# Asian Groups

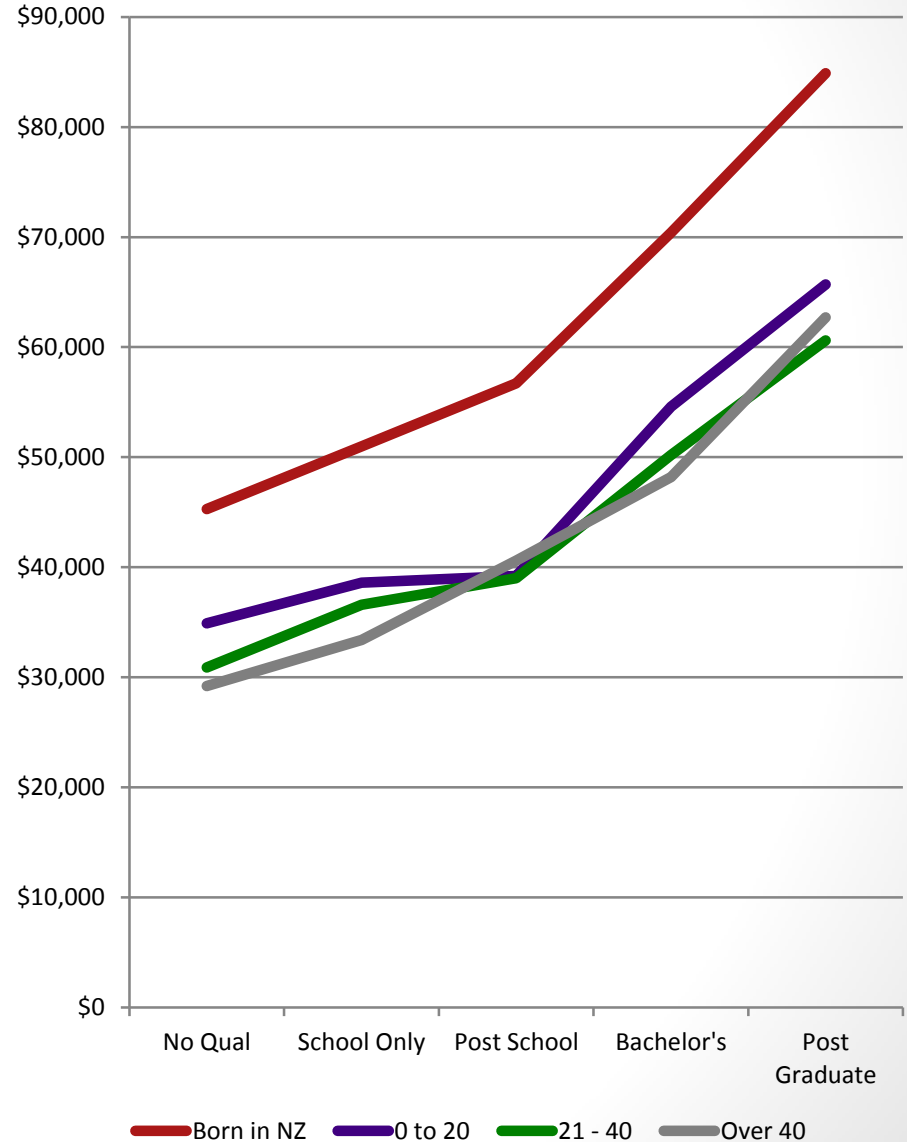
## Age at Arrival and Gender

# Chinese

## Gender



## Age at Arrival



# Chinese Summary

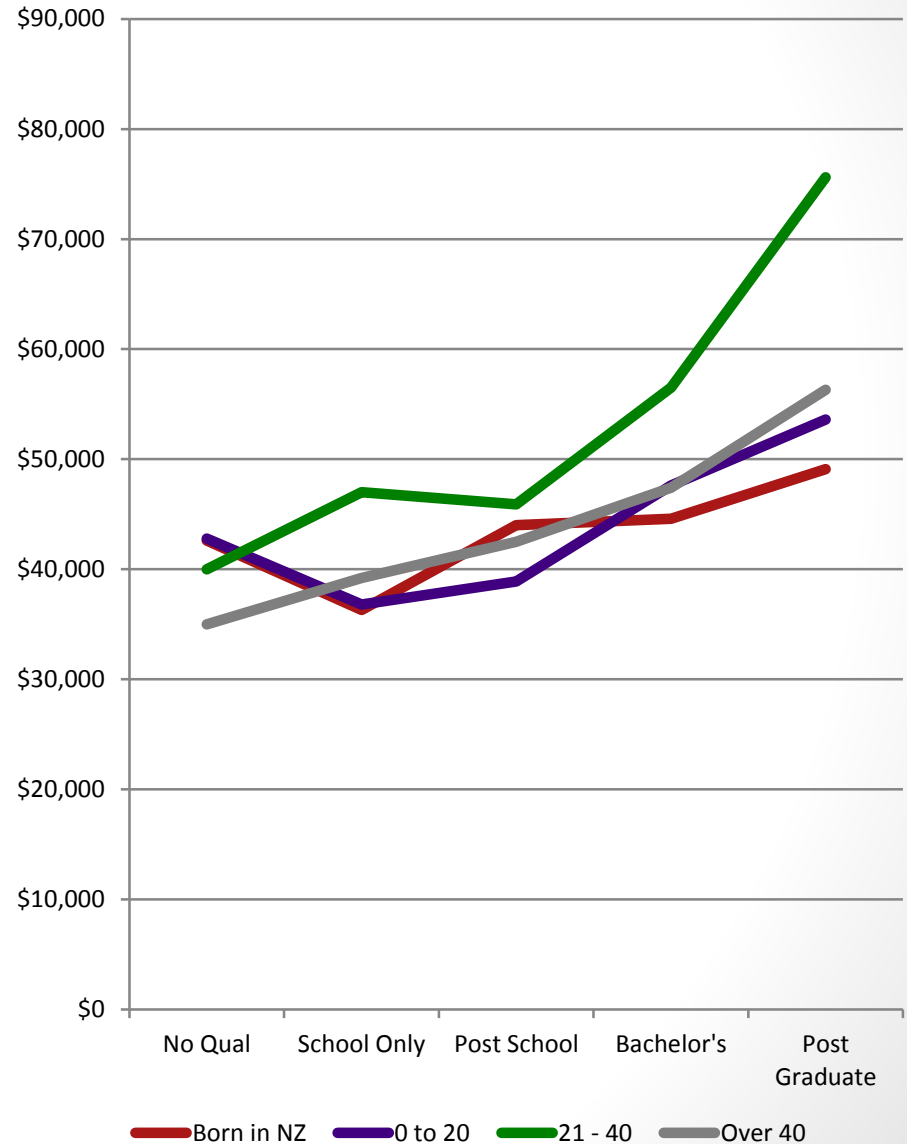
- Slightly more women than men
- Largest arrival group is those who arrived between 21 and 40
- Best paid: Someone who was born here and has a Post Graduate degree
- Male and Female income parity reasonably similar to overall trends
- Largest education group is Bachelor's, followed by School Only
- This group has the smallest difference between the number of people of each gender

# Filipino

## Gender



## Age at Arrival



# Filipino Summary

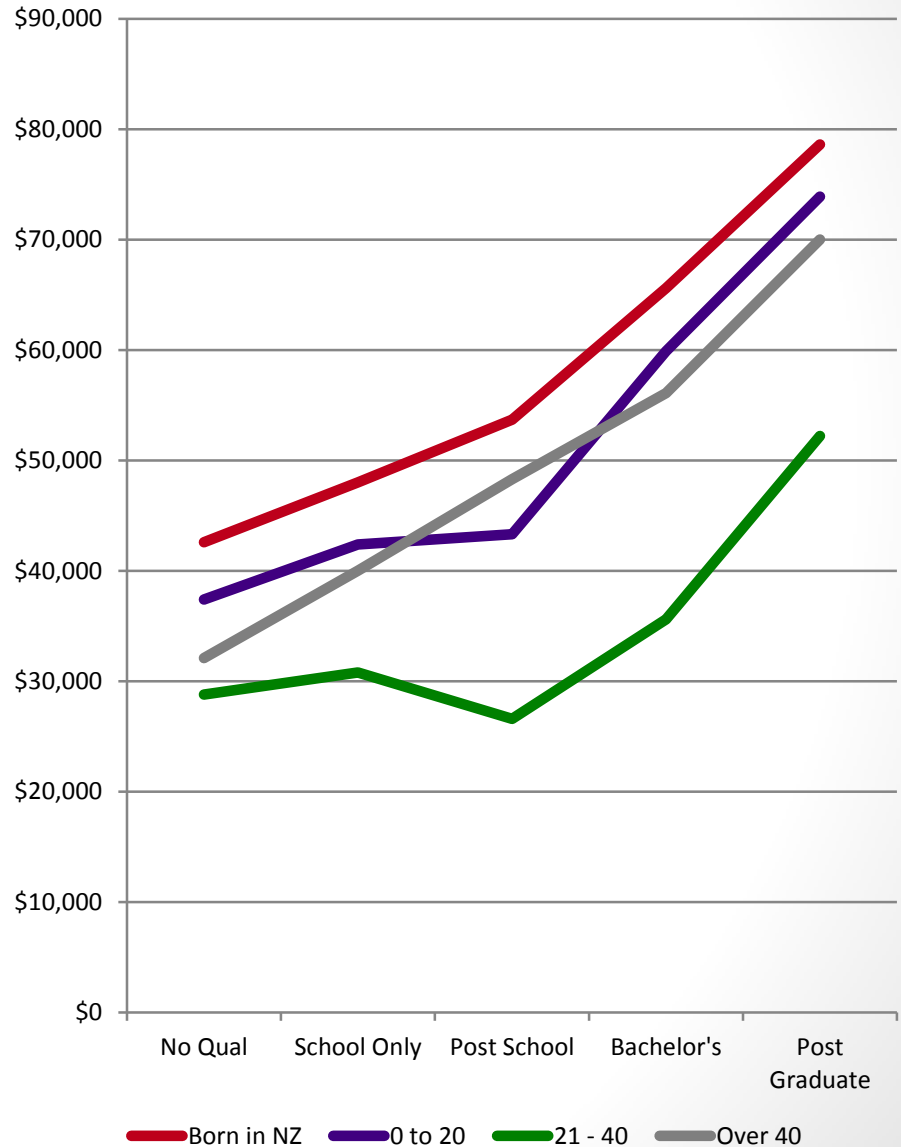
- More women than men
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- Male and Female income parity reasonably similar to overall trends
- Largest education group is Bachelor's, followed by School Only

# Indian

## Gender



## Age at Arrival



# Indian Summary

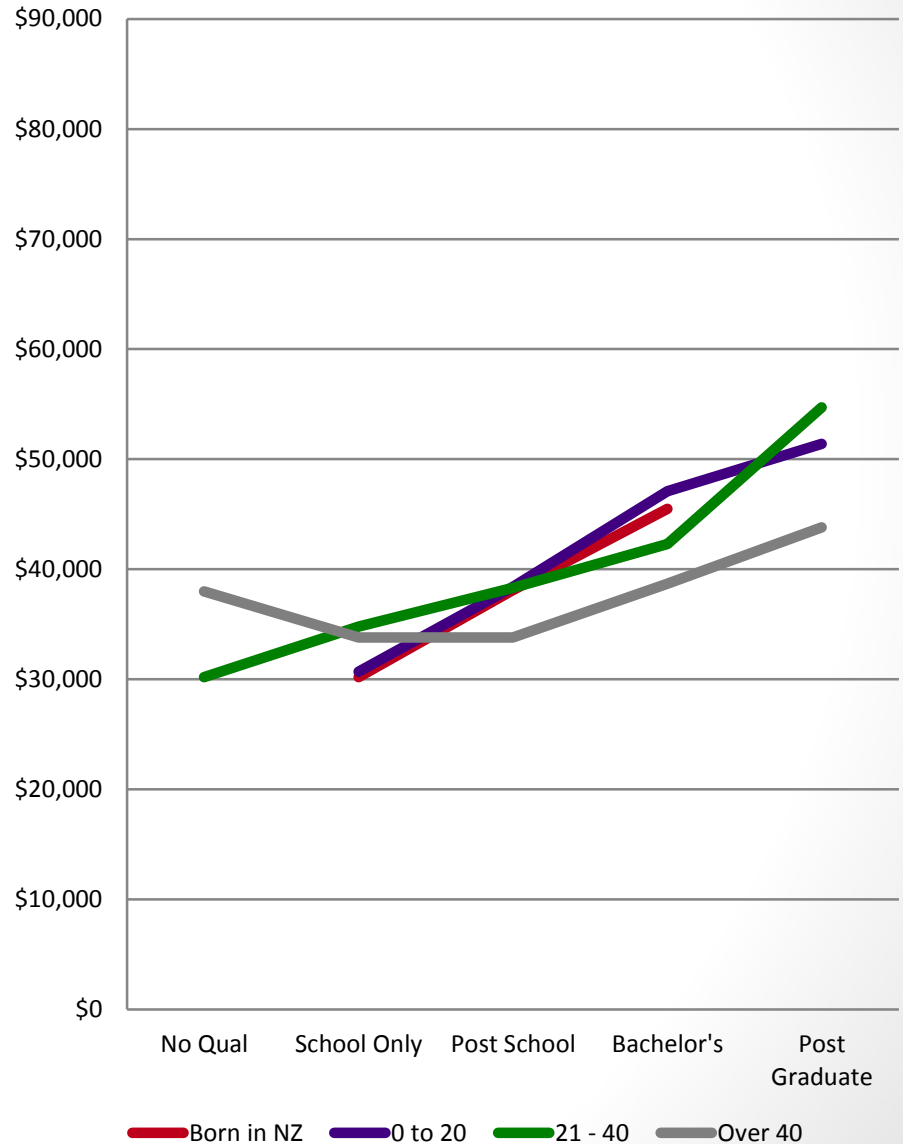
- More men than women
- Largest arrival group is those who arrived between 21 and 40
- Best paid: Someone who was born here and has a Post Graduate degree
- Male and Female income parity is reasonably similar to overall trends, but the difference is a bit larger at Bachelor's (women only earning 80% of what men do)
- Largest education group is Bachelor's, followed by School Only.
- Unusually high level of people with Post School qualifications compared to other groups

# Korean

## Gender



## Age at Arrival





# Korean Summary

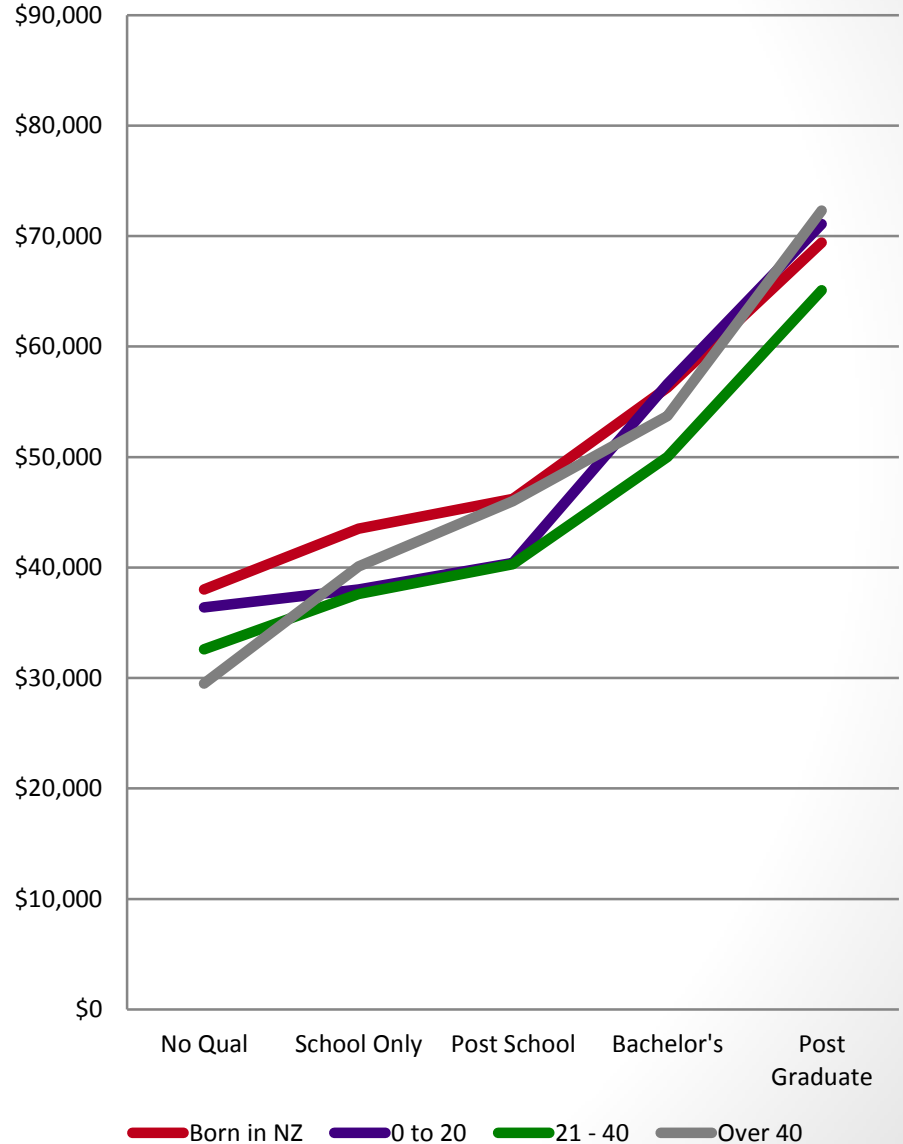
- More men than women
- Largest arrival group is those who arrived between 21 and 40
- Best paid: Someone who arrived between 21 and 40 and has a Post Graduate degree
- Male and Female income the closest for this group out of all Asian subgroups
- Largest education group is School Only, followed by Bachelor's
- Very few Koreans in the workforce in 2013 were born in New Zealand

# Other Asian

## Gender



## Age at Arrival



# Other Asian Summary

- More women than men
- Largest arrival group is those who arrived between 21 and 40
- Best paid: Someone who arrived before age 21 and has a Post Graduate degree
- Women are not as close to pay parity here as in other groups
- Largest education group is Bachelor's, followed by School Only

# 2006 Census Results

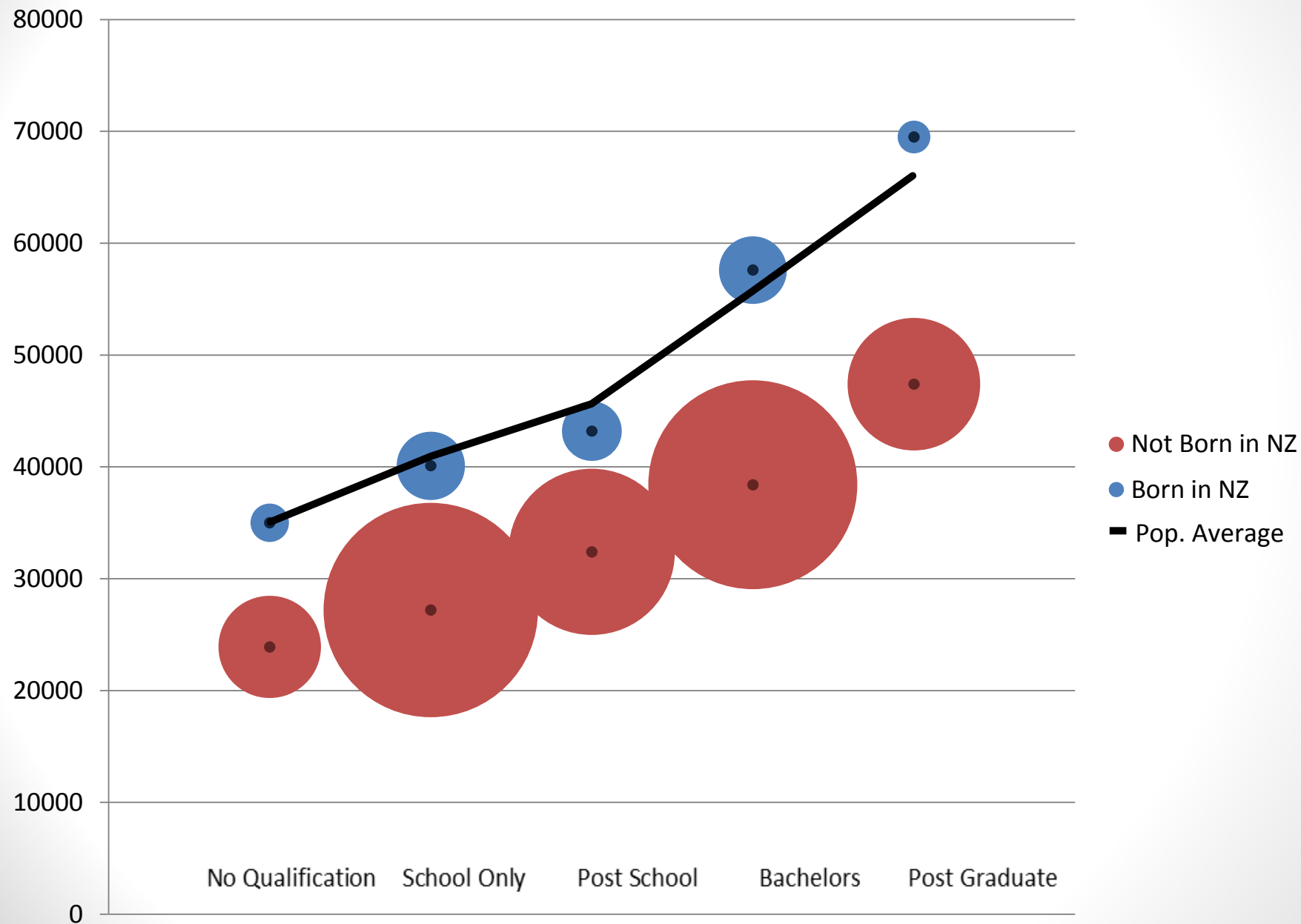
# Steps

1. Perform multiple linear regression and extract estimates of effects.

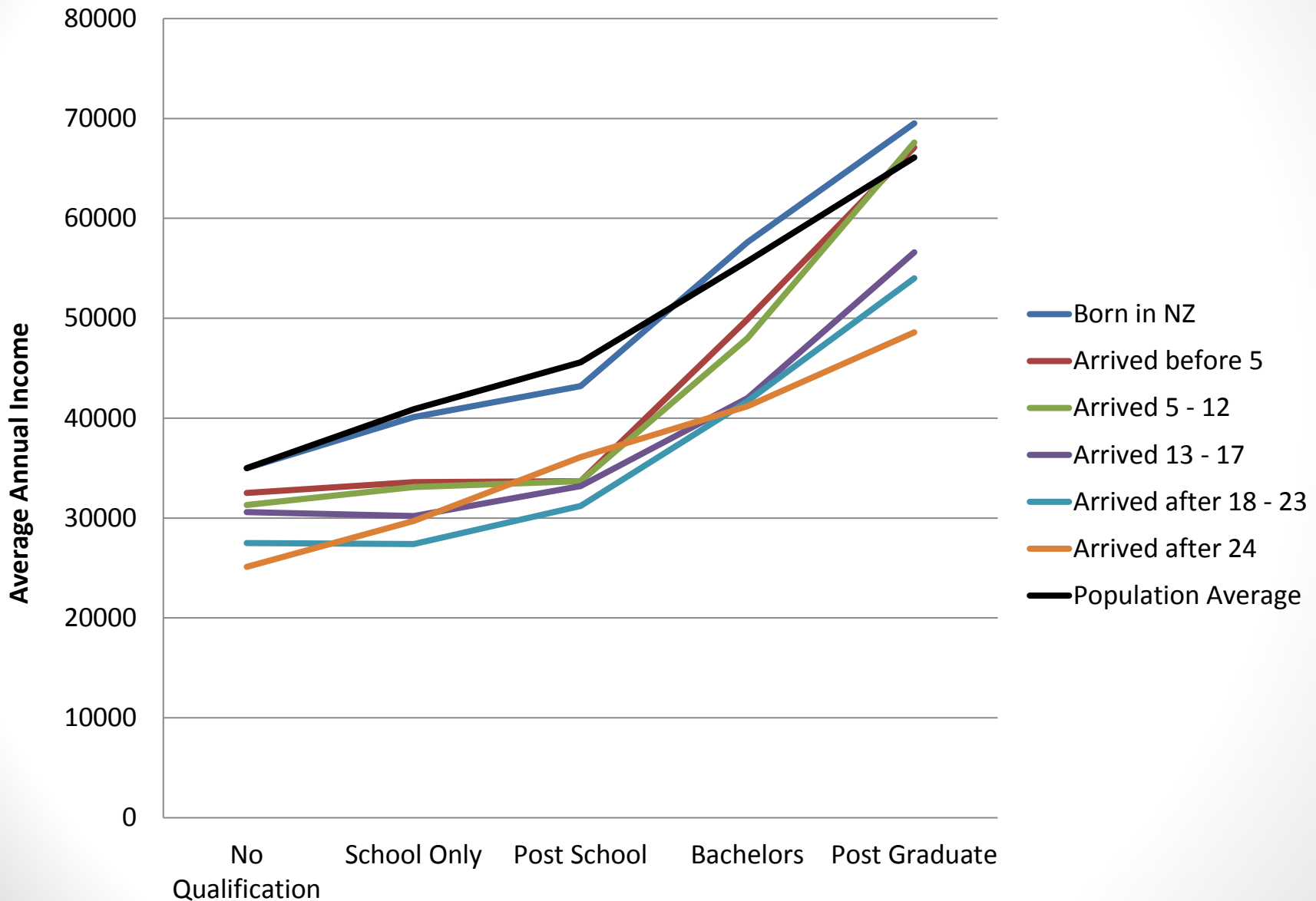
```
income_adj = asian euro age sex married bornNZ bornNZ*asian bornNZ*euro
```

2. Identify proportions for counterfactual population
3. Reweight using theoretical probabilities to get the ethnicity average incomes associated with the counterfactual.

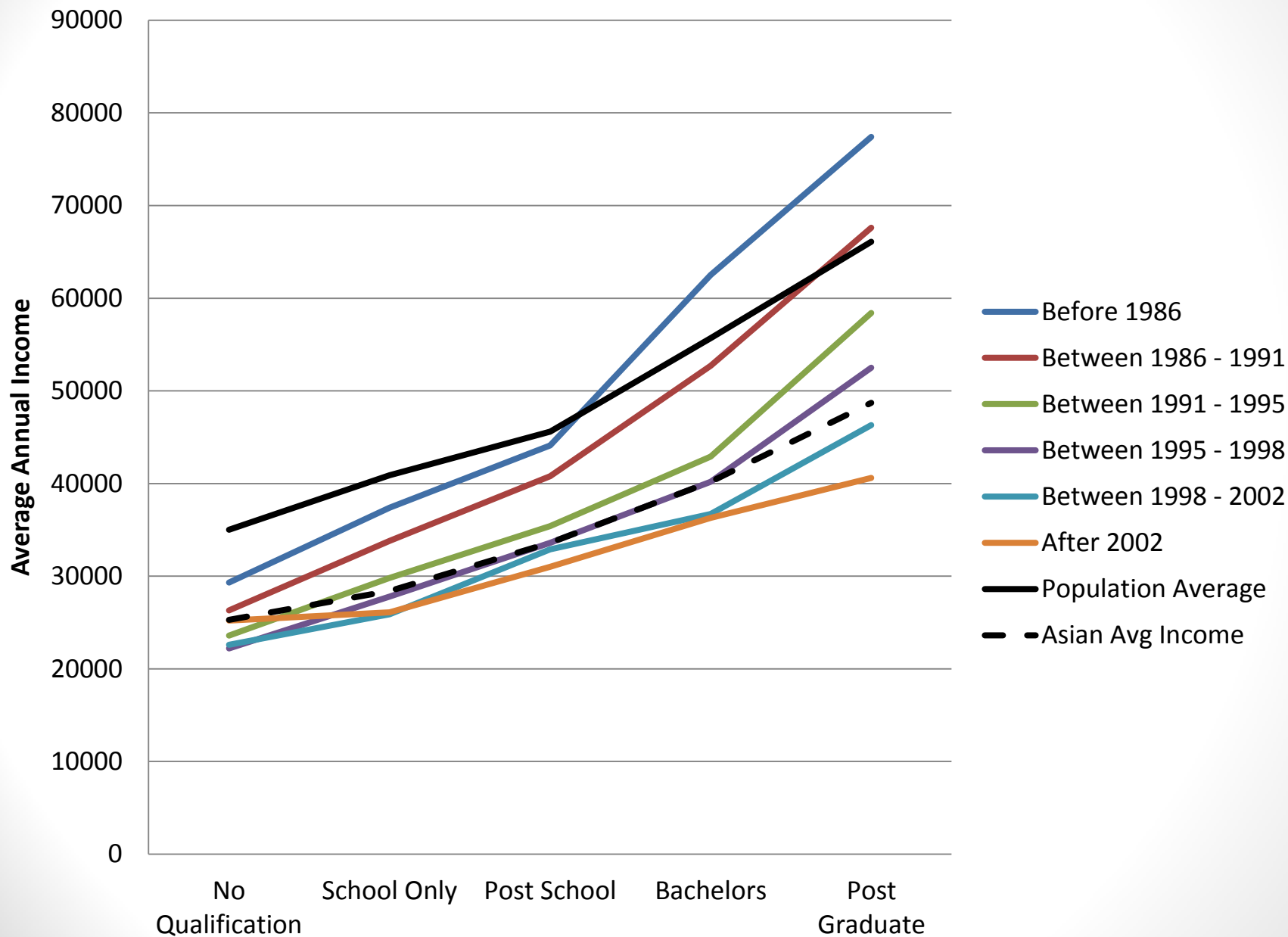
# Born in NZ (Asian Population Only) 2006 Census



# Age at Immigration (Asian Population Only)

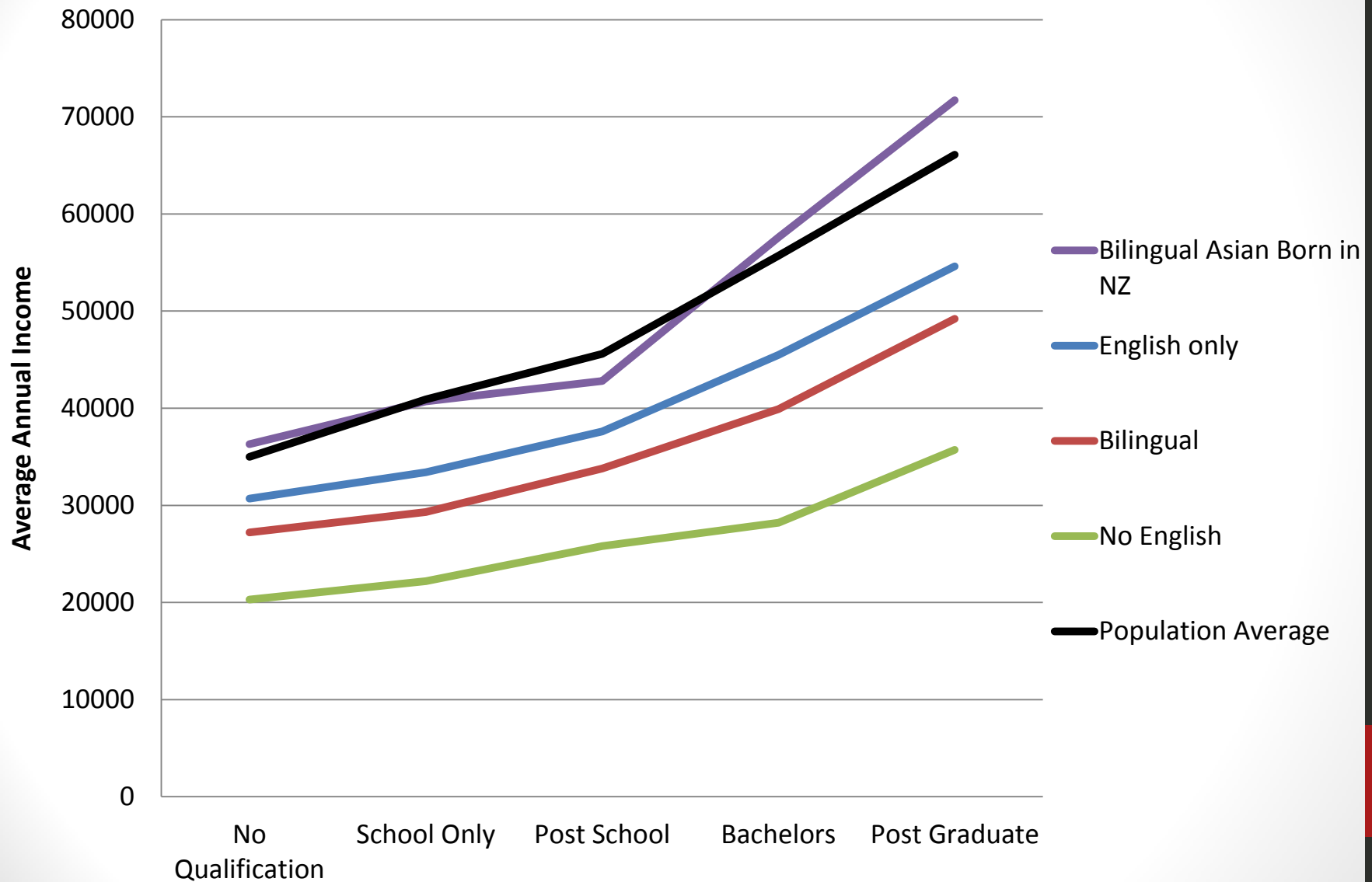


# Years in NZ (Asian Population Only)

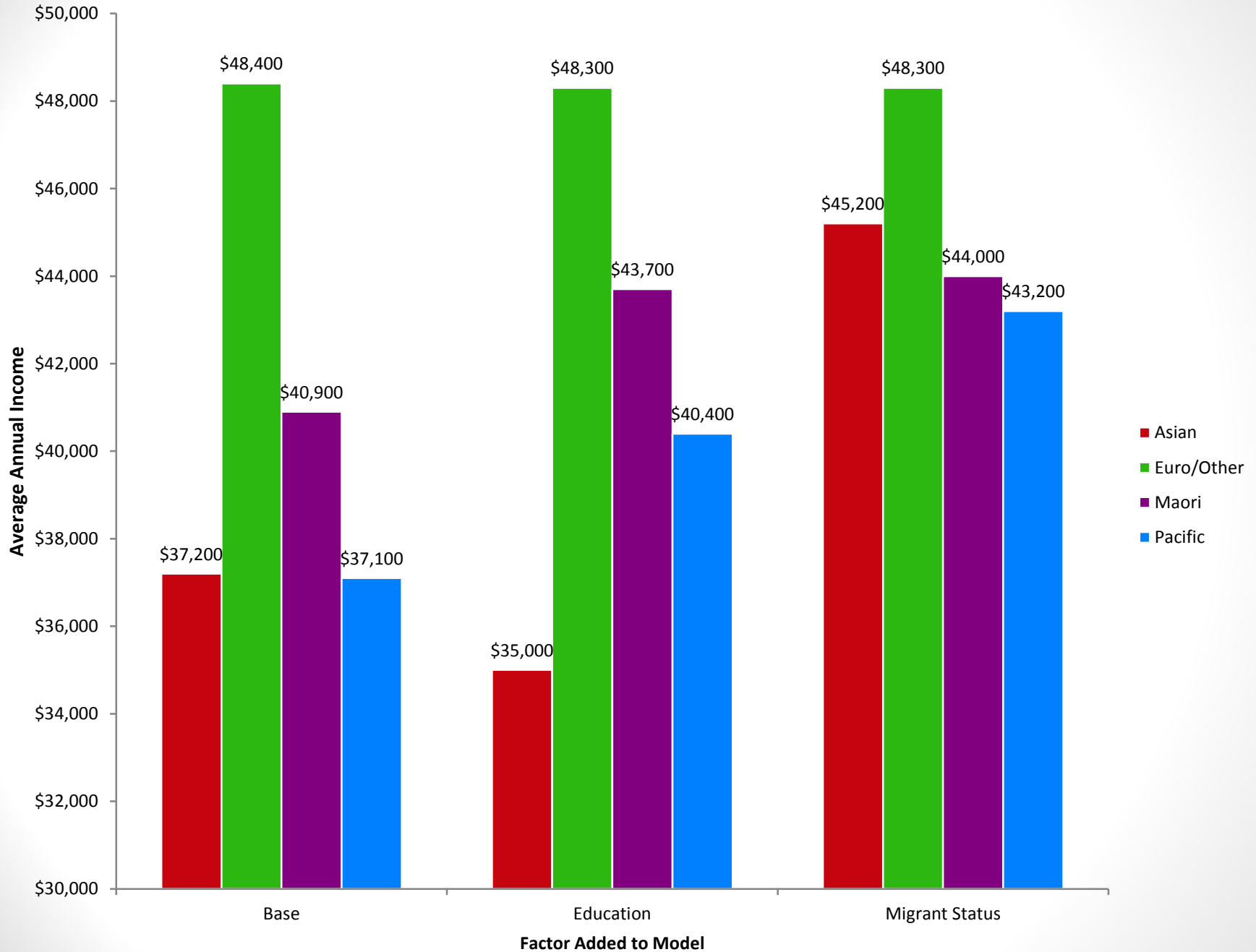




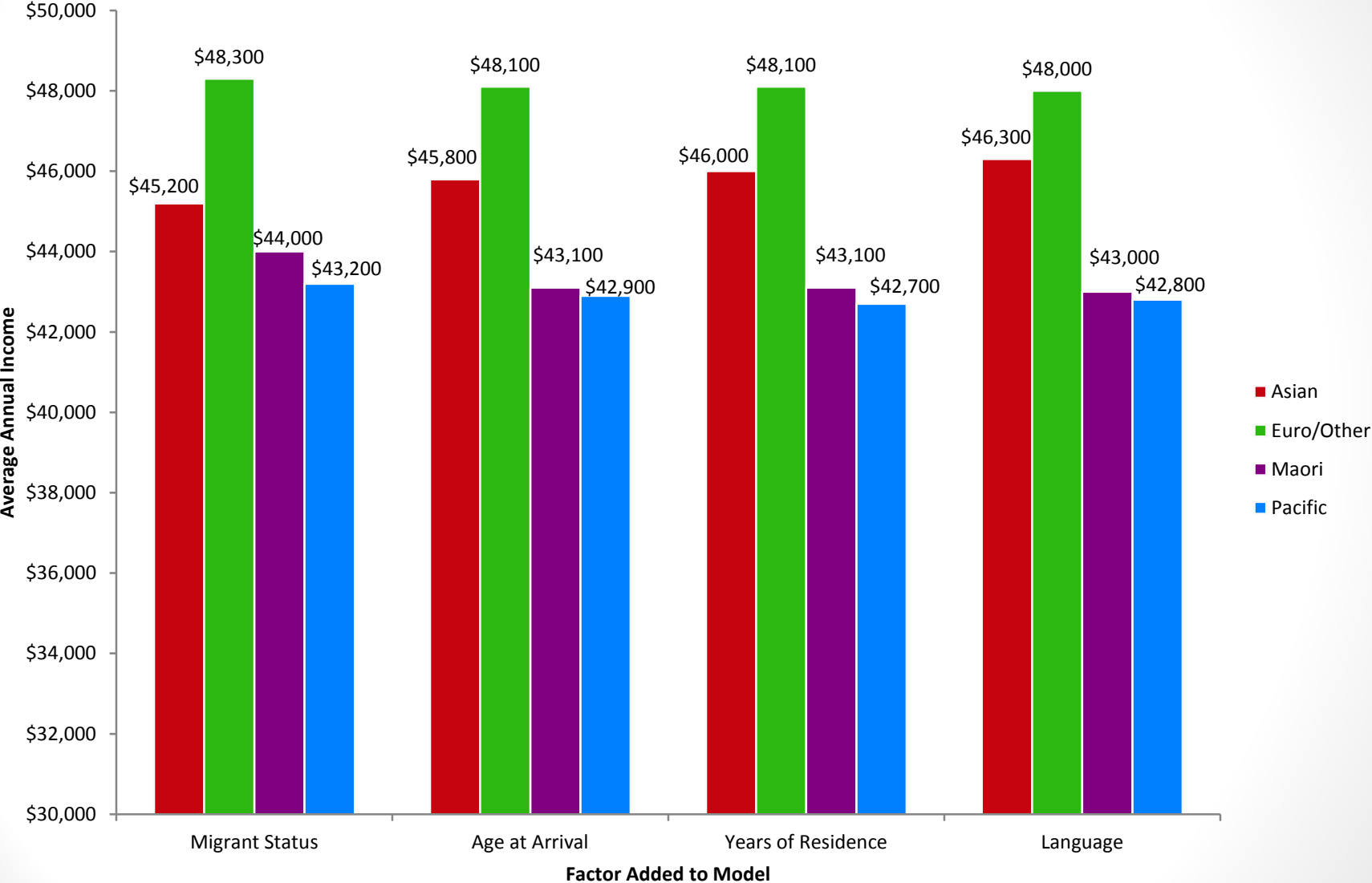
# Languages Spoken (Asian Population Only)



# Cumulative Model Ethnicity Stable Composition Adjusted Means



### Cumulative Model Ethnicity Stable Composition Adjusted Means



# Validity of Models

- Dealing with a whole population, not a sample
- All categorical explanatory variables
- Normal distribution of errors
  - Structure in the right tail – married, European, male, CEOs

