

# Occupational Niche Preferences of Canada's Refugee and Non Refugee Workers: Explorations Using Census Data

Fernando Mata  
School of Sociology and  
Anthropology  
[fmata@uottawa.ca](mailto:fmata@uottawa.ca)



Paper presented to the conference "Inclusion: Third Annual Forum on Measuring Identities" November 21-22, 2019, Association for Canadian Studies, Gatineau, QC.



# OVERVIEW OF THE STUDY

- ❑ **The purpose of the paper was to examine the occupational niche preferences of refugee and non refugee workers arriving to Canada between 1981 and 2016**
- ❑ **Core working age of immigrants 20-54 who earned some employment incomes in 2015**
- ❑ **Basic aim was to detect preferences across immigrant groups of different genders, admission classes, periods of arrivals and ethnic/racial backgrounds of workers**
- ❑ **A sample of 90 ethnic groups from a special table from the 2016 Census was used as data source for the analysis**
- ❑ **Descriptive and Multivariate statistics (PCA and k-means cluster analysis) were used to explore the data**
- ❑ **Exploratory study as a *precursor* of more in-depth analysis using individual micro-data**



# THEORETICAL CONSIDERATIONS (1)

- ❑ **Research conducted in Canada as well as in other immigrant receiving countries have already provided evidence that refugees underperform in labour markets compared to other admission class categories (Kaida, et. al, 2019)**
- ❑ **Occupational choices often lead to unfavourable outcomes (Colic and Tilbury, 2006; Jayaraman and Bauder, 2013; Alzeer, 2017)**
- ❑ **Due to immigrant selection process and discrimination related processes, refugee workers more likely to choose occupations typical of the “secondary” labour market (Castles and Miller, 2003)**



## **THEORETICAL CONSIDERATIONS (2)**

- Secondary labour market jobs (low status-low paid) as the only occupational alternatives available for refugee and non refugee workers who want to move away from conditions of marginalization and/or welfare dependency (Valtonen, 2004) .**
- Choice of occupational niches influenced by various drivers: past investments in human capital, labour market factors, social and cultural context as well as motivational influence decisions concerning various job alternatives (Alzeer,2017).**
- Administrative and socio-demographic drivers: admission class , gender, period of arrival, ethnic and racial backgrounds.**



# Four Major Research Questions

- ❑ 1) What are the most and least preferred occupational niches of refugees and non refugees?
- ❑ 2) Are there any variations in their occupational preferences by gender, period of arrival, ethnic, racial or other socio-demographic characteristics of workers?
- ❑ 3) What are the economic returns of their occupational choices?
- ❑ 4) Are there any similarities or dissimilarities between groups in terms of their occupational preferences and socio-demographic characteristics?



# Looming question: Can the racial dimension underlying in occupational preferences be captured through ethnic ancestry measures?



# Data Source and Sample

- ❑ The data used for this analysis is an admission sample consisting of 90 ethnic groups drawn from custom table (E03181) of the 2016 Census of Canada.
- ❑ The custom table contained detailed information on workers aged 25-54 receiving employment income in 2015 by admission class, occupational groups, gender, periods of arrivals, education, income levels as well the reported ethnic origin of workers .
- ❑ Economic class ethnic groups represented approximately 1.2 thousand workers while family class ones about 666 thousand. Refugee groups represented approximately 293 thousand (155 thousand male and 138 thousand females
- ❑ Ethnic origins of workers referred to the ethnic or cultural origins of the person's ancestors which is usually more distant than a grandparent (233 origins).



# Selection of Ethnic Groups for the Admission Class Sample

- ❑ The 90 ethnic groups selected which were categorized by gender and visible minority status, representing groups with the largest count size within their respective admission class category.
- ❑ Groups in the Economic Class: Chinese, East Indian, Filipino, French, English, Russian, Iranian, Spanish, Korean, Romanian, German, Ukrainian, Pakistani, Portuguese, Lebanese, Chinese, East Indian, Filipino, French and English.
- ❑ Groups in the Family Class: East Indian, Chinese, Filipino, Jamaican, English, Polish, German, Spanish, Vietnamese, Punjabi, Haitian, Portuguese, Pakistani, French, Sri Lankan
- ❑ Groups in the Refugee Class: Chinese, Vietnamese, Polish, Sri Lankan, Iranian, Afghan, Colombian, Spanish, East Indian, Serbian, Salvadoran, Somali, Ethiopian, Iraqi, Syrian
- ❑ Required minimal number of observations per ethnic classification: 500 +, specific ethnic ancestries





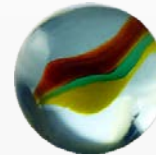
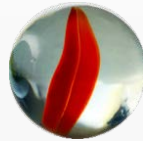
# NOC 2016 Classification of Occupational Niches (1)

- ❑ The 2016 National Occupational Classification (NOC 2016) of Canada was the measurement instrument used to identify the preferences for occupational niches
  
- ❑ The following 10 occupational niches (first two digits) were examined:
  - ❖ Management
  - ❖ Business
  - ❖ Sciences
  - ❖ Health
  - ❖ Education&Related
  - ❖ Arts&Related
  - ❖ Sales&Services
  - ❖ Trades
  - ❖ Resources
  - ❖ Manufacturing
  
- ❑ National picture of occupational preferences



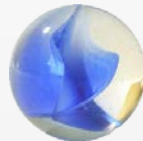
# NOC 2016 Classification of Occupational Niches: Examples (2)

**Management:** legislators, senior management , middle management



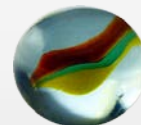
**Health:** health care services

**Business:** financial , business services, administrative , regulatory services, clerical supervision



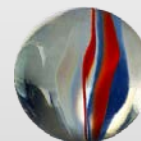
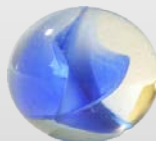
**Education&Related:** law, teaching, counselling, education, government

**Sciences:** professional and technical nature including physical and life sciences



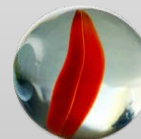
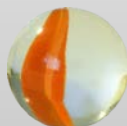
**Arts&Related:**art s,culture, performing arts, film, video, broadcasting

**Sales&Services:** sales, personal and protective services, hospitality, tourism



**Trades:** construction ,mechanics, supervisors , contractors, operators, transportation,, equipment

**Resources:** mining, oil , gas production, forestry, logging, agriculture, horticulture, fishing



**Manufacturing:** manufacturing, processing, utilities





# Descriptive Explorations

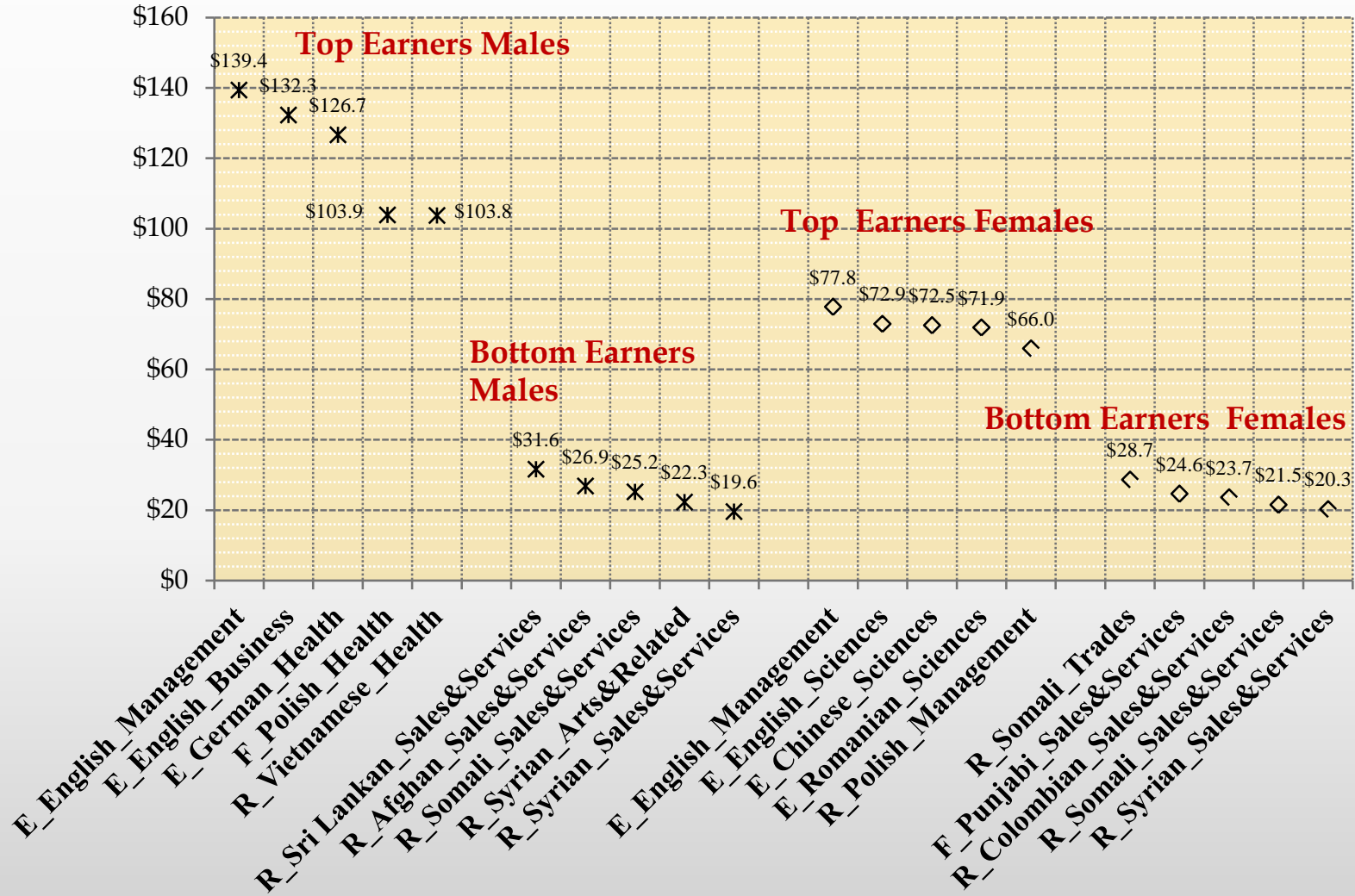
## Findings



# Occupational Preferences' Highlights

- ❑ **Males to the Trades:** At the time of the census, about one in three refugee and family class male individuals were found working in the Trades niches (32% and 31% respectively).
- ❑ **Females to the Sales and Services:** Similar proportions were found for refugee and family class females with regards to the Sales & Services niche (35% and 30% respectively).
- ❑ **Sciences Niche Attraction:** One out of five economic class male workers (22%) chose the Sciences niche
- ❑ **Punjabi Males to the Trades:** About 60% of all family class male workers of Punjabi backgrounds were found working in jobs corresponding to the Trade niche.
- ❑ **Visible Minority Women to the Sales and Services:** Vietnamese family class (51%) and refugee class women: Iraqi (47%), Afghan (45%), Ethiopian (43%) and/or Syrian ethnic backgrounds (41%).

# TOP AND BOTTOM EMPLOYMENT INCOME EARNERS





# Multivariate Explorations

## Findings



## **ANALYTICAL APPROACH : PCA AND K-MEANS CLUSTER ANALYSIS “TANDEM”**

- ❑ The “tandem” analytical approach pioneered by Barker and Everit-Dunn (1976, 2001) was used to undertake the analysis of tabular data**
- ❑ This approach uses a combination of Principal Components Analysis (PCA) and cluster analysis methods (hierarchical and non hierarchical).**
- ❑ Emphasis on visualizations of the relationships *between variables* and between *units of analysis* simultaneously**
- ❑ Computer software used: XLSTAT**



# **OCCUPATIONAL AND SOCIO-DEMOGRAPHIC MEASURES IN THE MULTIVARIATE ANALYSIS**

- ❑ A total of 26 measures comprising binary (0,1) as well as continuous measures were used .**
- ❑ Ten continuous measures tapped the preferences (in %) for occupational choices following the NOC 2016 classification.**
- ❑ Two binary measures separated workers into two groups (males, females), same number of measures for visible and non visible minority ethnic groups (Vismin, Non Vismin)**
- ❑ Three binary measures tapped membership in the three admission class (economic, family and refugee).**
- ❑ Four binary variables tapped membership in the arrival cohorts: 1981-1990, 1991-2000, 2001-2010 and 2011-2016.**
- ❑ Also included were the average employment earnings (\$ in thousands) and the average percentage of workers holding a bachelor university degree or above.**



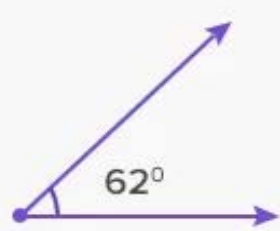


# PCA BI-PLOTS

- PCA bi-plots are graphs where vectors represent indicators and points the position of units in principal component space.
- The bi-plot of the second component on the first component (representing the major sources of variation in the data) displays the correlations of variables in terms of various vectors of different magnitudes, directions and positions.
- In the biplot, the length of indicators reflect the variances of the corresponding measuring variable while the angles between them reflect the size of their correlations, with small angles corresponding to high correlations .

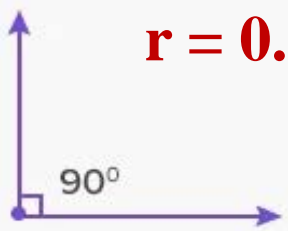


# $\cos(\text{ANGLE } \theta) \approx \text{PEARSON'S } R$



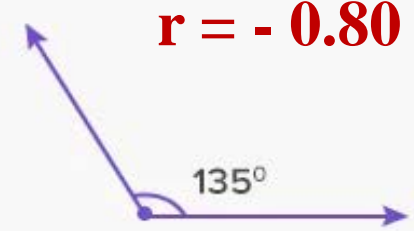
**$r = +0.67$**

Acute angle



**$r = 0.00$**

Right angle



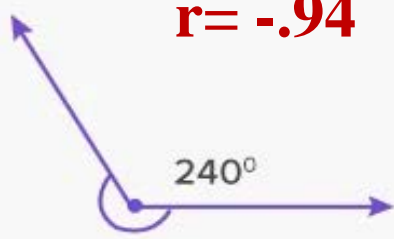
**$r = -0.80$**

Obtuse angle



**$r = -1.00$**

Straight angle



**$r = -.94$**

Reflex angle

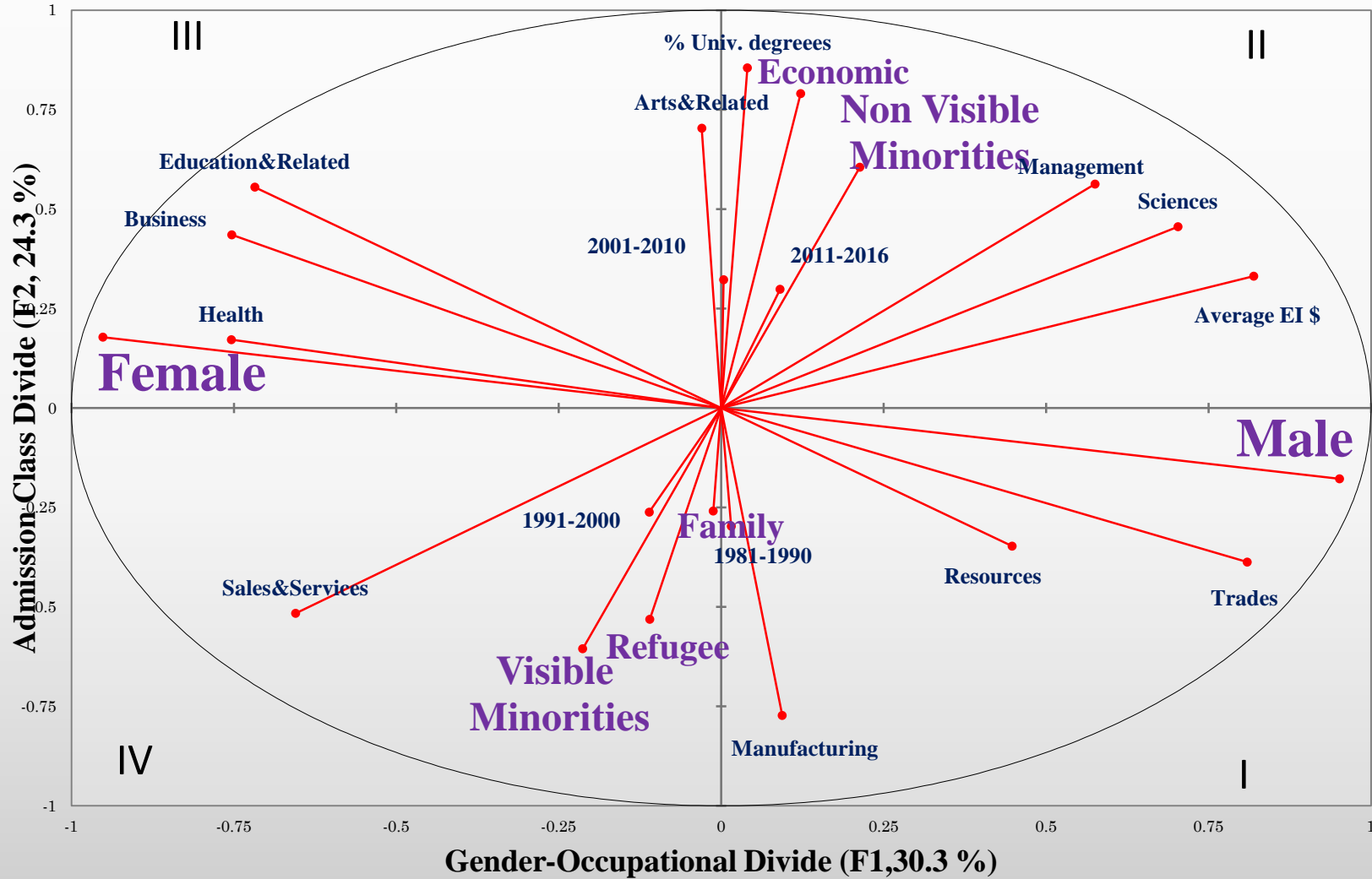


**$r = +1.00$**

Complete angle

# PCA BIPLLOT: GENDER-OCCUPATIONAL AND ADMISSION CLASS DIVIDES

Axes F1 and F2: 54.6 %)



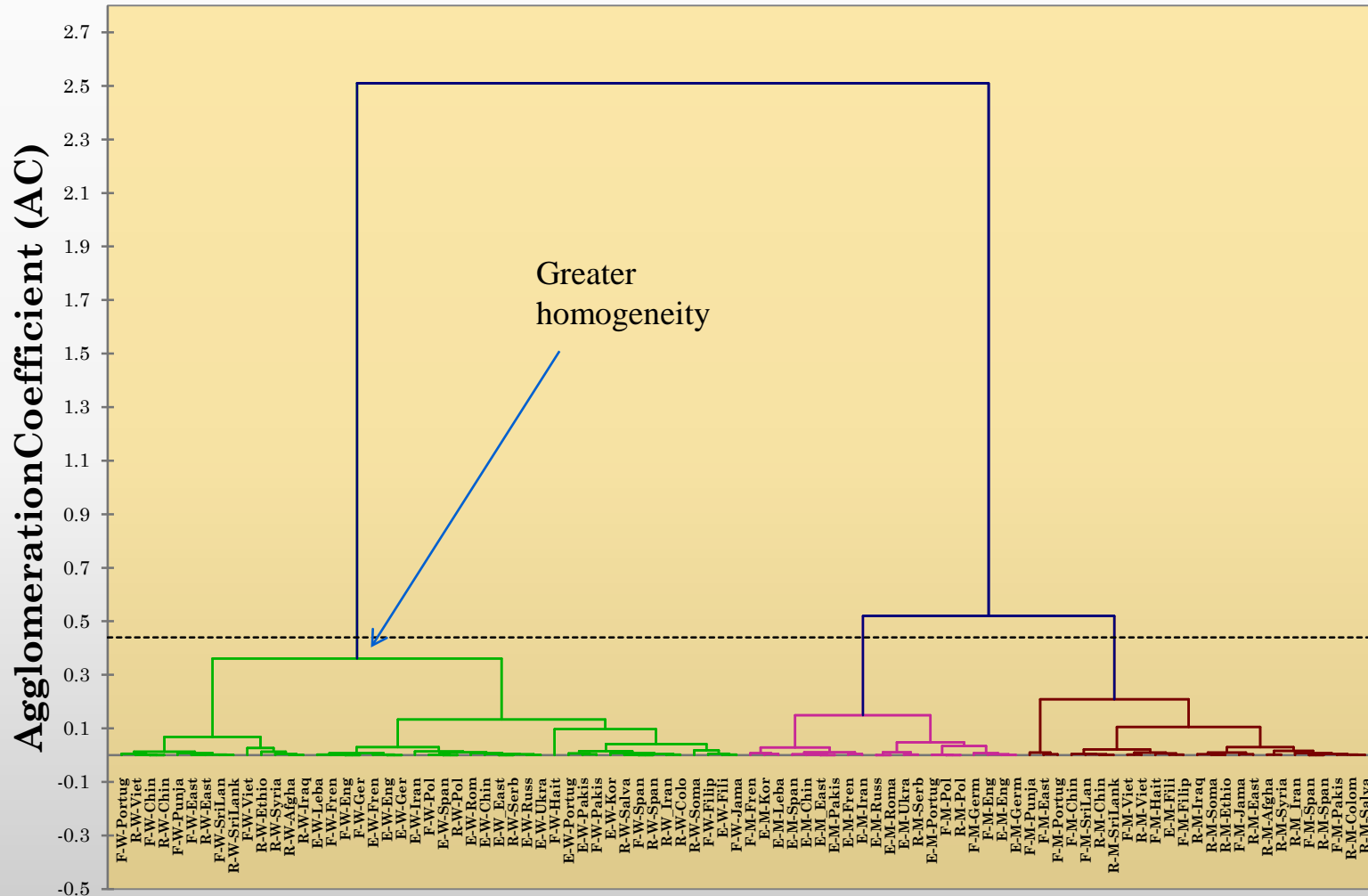
# CLUSTERING STRATEGY : HCA AND K-MEANS

- ❑ Factor Scores F1 and F2 for the 90 ethnic groups were used for the analysis.
- ❑ HCA was used in the preliminary stage to observe basic cluster partitions
- ❑ k-means followed and five solutions were carried out: k=3 to k=7.
- ❑ The "Elbow" method was chosen as criteria to choose the optimal number of clusters.
- ❑ This method looks at the reduction of the Within Sums of Squares (SSW) as new clusters are created searching for the number after which not major improvement is achieved (called "knee" or "elbow").
- ❑ This was achieved after k=5. A plots these WSS reductions is presented in graph 6. A significant Wilk's lambda statistic (proportion of within to between variance) was associated with the partition k=5 ( $\lambda=.04$ , p. <.05).



# HCA EXPLORATION: FEMALE GROUPS MORE HOMOGENEOUS THAN MALE

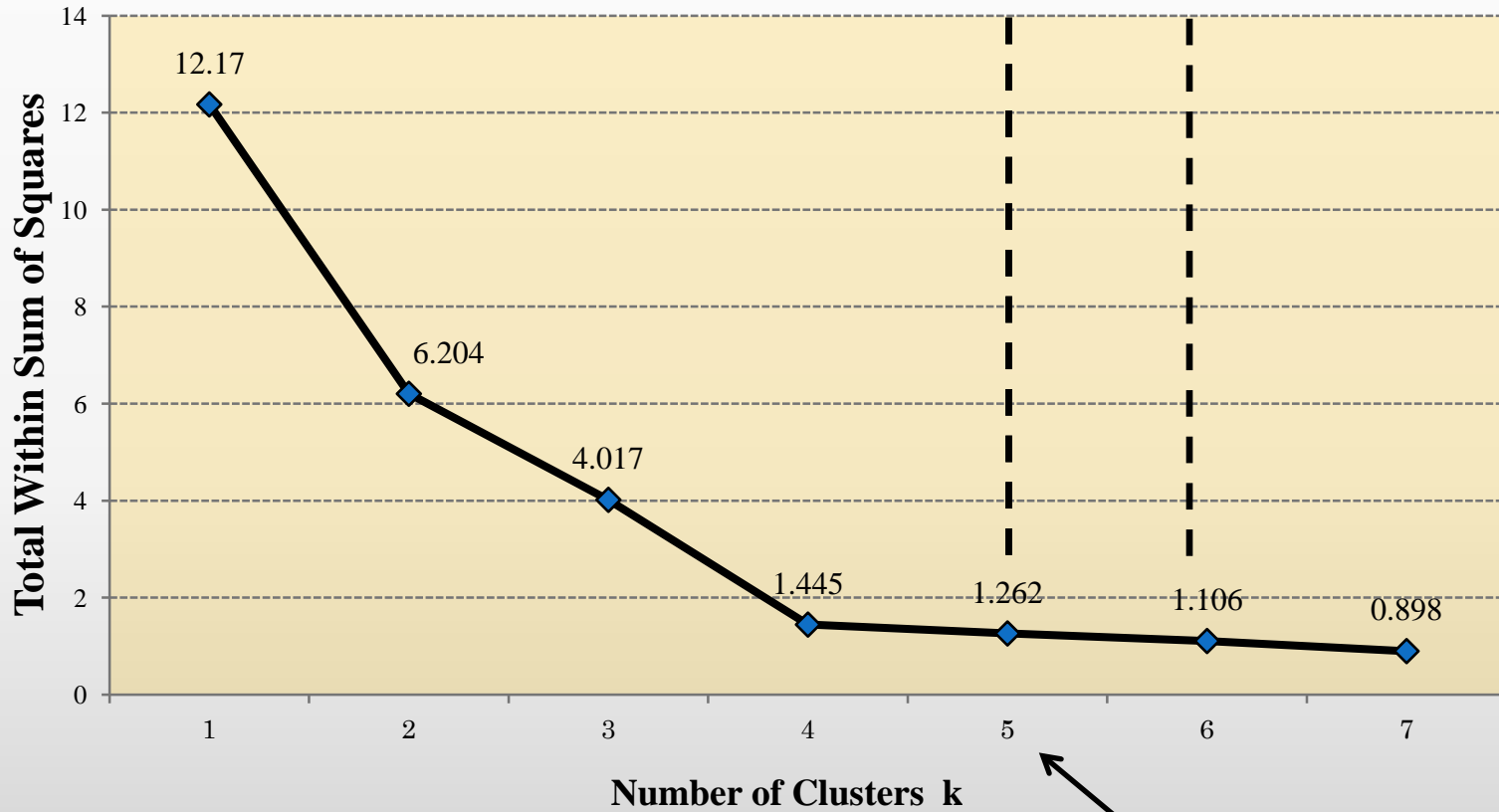
## Dendrogram



# K-MEANS CLUSTERING SOLUTION



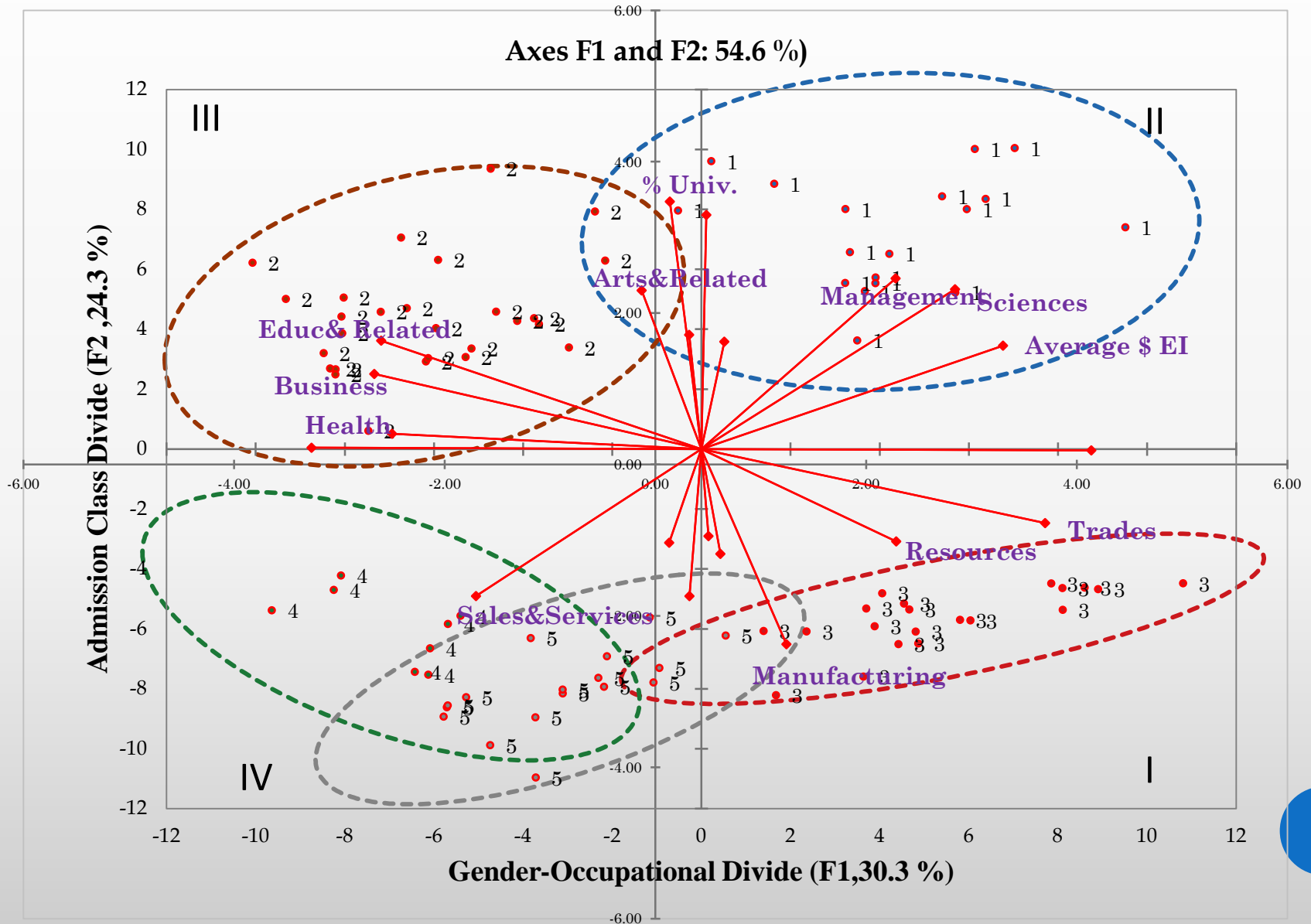
**Optimal Number of Clusters:  
Ward's "Elbow" Method**



Wilk's Lambda=.02,  $p<.01$



# K-MEANS =5 SOLUTION : CONFIDENCE ELLIPSOIDS



# K=5 CLUSTERING: VISIBLE MINORITY WOMEN OF THE FAMILY AND REFUGEE CLASS FOUND IN MOST DISADVANTAGED POSITIONS (CLUSTERS 4)

Class	Male Classes		Female Classes			
	Class 1	Class 2	Class 3	Class 4	Class 5	
Centroid F1	3.08	1.96	-2.04	-2.14	-2.97	
Centroid F2	2.23	-2.19	2.73	-2.51	-0.91	
N	18	27	20	8	17	
Within-class variance	1.587	1.370	1.338	0.635	0.923	
Minimum distance to centroid	0.295	0.191	0.166	0.471	0.027	
Average distance to centroid	1.090	1.030	0.960	0.720	0.824	
Maximum distance to centroid	2.229	2.130	2.331	1.151	1.724	
Members	E-M-Chinese	E-M-Filipino	E-W-Chinese	F-W-East Indian	F-W-Chinese	
	E-M-East Indian	F-M-East Indian	E-W-Filipino	F-W-Vietnamese	F-W-Filipino	
	E-M-French	F-M-Chinese	E-W-East Indian	F-W-Punjabi	F-W-Jamaican	
	E-M-English	F-M-Filipino	E-W-French	F-W-Sri Lankan	F-W-Spanish	
	E-M-Russian	F-M-Jamaican	E-W-English	R-W-Chinese	F-W-Haitian	
	E-M-Iranian	F-M-Spanish	E-W-Russian	R-W-Vietnamese	F-W-Portuguese	
	E-M-Spanish	F-M-Vietnamese	E-W-Iranian	R-W-Sri Lankan	F-W-Pakistani	
	E-M-Korean	F-M-Punjabi	E-W-Spanish	R-W-East Indian	R-W-Afghani	
	E-M-Romanian	F-M-Haitian	E-W-Korean		R-W_Iranian	
	E-M-German	F-M-Sri Lankan	E-W-Romanian		R-W-Iraqi	
	E-M-Ukrainian	F-M-Portuguese	E-W-German		R-W-Colombian	
	E-M-Pakistani	F-M-Pakistani	E-W-Ukrainian		R-W-Spanish	
	E-M-Portuguese	R-M-Chinese	E-W-Pakistani		R-W-Somali	
	E-M-Lebanese	R-M-Vietnamese	E-W-Portuguese		R-W-Salvadoran	
	F-M-English	R-M-Polish	E-W-Lebanese		R-W-Ethiopian	
	F-M-Polish	R-M-Sri Lankan	F-W-English		R-W-Serbian	
	F-M-German	R-M-Afghan	F-W-Polish		R-W-Syrian	
	F-M-French	R-M-Iranian	F-W-German			
		R-M-Iraqi	F-W-French			
		R-M-Colombian	R-W-Polish			
		R-M-East Indian				
		R-M-Spanish				
		R-M-Somali				
		R-M-Salvadoran				
		R-M-Ethiopian				
		R-M-Serbian				
		R-M-Syrian				





## POST EXPLORATIONS REFLECTIONS (1)

- ❑ **Data limitations: aggregations, sample selection, first two digits of the NOC2016, national picture, etc.**
- ❑ **Canadian immigrant workforce : highly stratified arrangement of workers according to various administrative and identity markers such as admission class, gender and ethnic/racial origins.**
- ❑ **Occupational choices as reflections of human capital endowments and the spectrum of job opportunities in the labour market : economic class workers in more advantaged positions.**
- ❑ **Refugee and family class workers face similar types of occupational predicaments.**



## POST EXPLORATIONS REFLECTIONS (2)

- ❑ **Strategic importance of the Sales& Services niche in terms of the economic survival of refugee and family class immigrants in Canada.**
- ❑ **The SS niche, which contains a wide fan of low-paid low status menial jobs (e.g. cashiers, cleaners, caretakers, store clerks, taxi drivers, cooks, etc.) was chosen by about one in three of family and refugee class female entrants**
- ❑ **The positions of visible minority women of East Indian, Punjabi, Somali, Salvadoran, Sri-Lankan, Haitian, Syrian , Vietnamese and/or Filipino ancestries illustrates situation.**
- ❑ **“Vulnerable” or precarious status in the labour market**
- ❑ **Policy interventions: official language training, skill training, recognition of foreign credentials and markets transition programs to match immigrants’ transferable skills and capabilities**





**THANK-YOU!**  
**MERCI!**

