Immigration, Labor Force Integration and the Pursuit of Self-Employment[1]

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Using correspondence analysis, we look at age-education cohorts of male immigrants who arrived in Canada between 1945 and 1961 and compare them to similar age-education groups of Canadian-born males in order to examine shifts in employment patterns across four census periods. We find that immigrants with low levels of schooling consistently had higher rates of self-employment than similar groups of Canadian-born males, and the longer they stayed in Canada, the more likely they were to become self-employed. We posit that the pursuit of self-employment may be tied to the existence of a segmented labor market, particularly for immigrants with low and moderate levels of schooling.

Recently, in Canada, the area of self-employment has received increased attention both politically and in the media. Parliamentarians, for example, speak about unleashing the power of the entrepreneur or the importance of small business to economic prosperity. In the case of immigration, this interest is carried through to a policy level because the Immigration Act places special status on self-employment through the immigrant entrepreneur program which is touted as a means to increase investment in Canada and bolster the number of independent businesses. This link between self-employment and immigration, however, goes far beyond the confines of the immigrant entrepreneurship program. This is because immigrants in general have been both more likely to be active in the labor force and more likely to be self-employed than for Canadian-born workers (Beaujot *et al.*, 1994; Marger and Hoffman, 1992; Maxim, 1992; Pendakur, 1996:3).

Despite the political interest, academic interest in self-employement among immigrants has been minimal as few systematic studies have examined the self-employed population. It is possible that this lack of interest is due in part to the decline in self-employment witnessed between the 1930s and 1970s (*see* Gardner, 1994; *see* also Crompton, 1993). Another possible cause stems from the prevailing view that earnings from self-employment are diffi-

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cult to measure. For these and other reasons, many researchers interested in income issues ignored or omitted the self-employed population from their studies.

However, ignoring the self-employment sector may be a mistake in the case of immigrants because, if as a group they are more likely to be self-employed and if the propensity to enter self-employment increases over time, studies which focus solely on the wage labor market may misrepresent the economic progress immigrants make over time. Further, as Gardner (1994, 56) points out, the last two decades have seen a renaissance in self-employment as the proportion of self-employed workers in non-agricultural industries has increased.

Thus we may not fully comprehend the socioeconomic correlates for entering self-employment and the differentials by immigrant status. We hypothesized that this propensity is related to differences in age, education and industry sector. We expected that different cohorts of immigrants and Canadian-born workers would gravitate toward different self-employment niches across the labor force. Using a cohort analysis approach, we looked at the changing labor force roles of Canadian-born males and male immigrants who arrived in six of Canada's major centers between 1945 and 1961.[2] We looked at these shifts by age and education within the context of the dominant labor force shifts which took place between 1961 and 1991. In doing so, we examined an entire working life cycle. We are therefore able to suggest reasons for shifts in self-employment rates based on criteria which go beyond a single point in time and increase our understanding of why immigrants may make the leap to self-employment.

IMMIGRANTS AND SELF-EMPLOYMENT

The study of self-employment among immigrants in the United States is both reasonably well developed and multidisciplinary, examining issues such as economic benefit, skill transfer, enclave economies, split or segmented labor markets, and situational concerns like historical circumstance (*see* Papademetriou *et al.,* 1989:169–175). Scholars examining economic issues have suggested that differences in expected income between salaried and self-employed sectors play a major role in the decision to move into self-employment. Bearse (1984), for example, found that immigrants can gain higher

[2]We attempted to look at female labor force participation. However, we found that it was far more difficult to draw conclusions about women because labor force participation rates were much lower than is the case today.

incomes through self-employment (*see* also Sullivan, 1981). However, a number of economists who have ventured into the arena have concluded the opposite. Economists such as George Borjas (1990), for example, looking at income returns to self-employment, concluded that entrepreneurship does not offer any significant advantage to wage labor. Rather, he concludes that once demographic characteristics are included in the model, the returns to self-employment are about the same as those in the wage labor sector (*see* also Bates and Dunham, 1991).

Real or expected income differences may not be the sole determining factors in the decision to enter self-employment. Some of the alternative reasons for entering self-employment have been explored by sociologists looking at structural barriers which force immigrants to seek alternatives to wage labor. These barriers include lost human capital as a product of the migration process. Such losses can take a number of forms, such as inability to speak the dominant language, nonrecognition of foreign earned credentials, or the loss of a network to contacts and other business associates. It is possible that some human capital can be regained over time – people can learn the dominant language or get retrained if necessary. However, barriers can also take the form of discrimination by members of the host society, in which case the loss may be permanent. As a result of both types of barriers, immigrants may choose to move into self-employment more readily than Canadian-born workers (*see* Yoon, 1995; Portes, 1987; Portes and Zhou, 1996; Beaujot *et al.,* 1994). In addition, for some workers, low levels of schooling may limit the set of occupational choices available for them. "Bleak" social mobility prospects in combination with feelings of disappointment with a society that does not recognize their abilities may therefore make self-employment a desirable option.

Still others view self-employment as a natural extension of the ethnic enclave which offers both stability and employment to group members. Within this context, owners of small businesses draw on members of the enclave as a source of workers, while group members gravitate toward the enclave as a source of employment and ethnic solidarity (*see* Bonacich: 1973). The enclave thereby allows immigrants to gain human capital within the confines of the ethnic community, which can then be expanded for use in the broader society. Related to the concept of ethnic enclaves is the issue of split or segmented labor markets. Segmentation analysis of the labor market offers an understanding of the labor force as being segmented by different skill requirements and, to a degree, into so-called 'good' jobs and 'bad' jobs (England *et al.*, 1988: 546).

There have been few studies which employ a segmentation approach to look at immigrant participation in the labor force. Those that have, generally conclude that one's initial position in the labor force is critical in determining future opportunities for advancement because the labor market is recognized as being structurally divided with different sectors having different wage, stability and competitive characteristics, as well as differing opportunities for mobility (Porter, 1965; Lautard and Loree, 1984; Darroch, 1979). They also conclude that immigrants are often concentrated in the periphery. Campbell, Fincher and Webber (1991), for example, found that the majority of immigrants in Australia are employed in the competitive sector (jobs in construction tend to be classified as competitive sector jobs). Unfortunately, the interface between segmentation and self-employment is often forgotten.

Past research in Canada, as well as in other countries of the industrialized world, has shown that the pursuit of self-employment is not necessarily uniform across all immigrant segments. It varies according to the age of the immigrants, the specific mix of their education and labor skills, as well as with the types of work being sought. The economic climate in the host country at the time of arrival also plays a major role in determining this outcome. The type of labor demands predominant in each industrial sector, economic cycles and specific characteristics in the industrial makeup are examples of these types of factors. Given that each cohort of immigrants admitted to the host country is likely to be different with respect to both internal and external conditions, it is expected that the observed self-employment propensities will be specific to each cohort.

Recently Beaujotet *et al.* (1994) tested the degree to which immigrants in Canada enter self-employment as a result of barriers to progress in the wage labor force. They conclude that immigrants on both ends of the schooling spectrum are more likely to enter self-employment. However, the sectors to which each group gravitates are different. Exploring the issue of segmentation, Satzewich and Li (1987) looked at impact of first job on a respondent's job three years later in Canada and found that the industrial location of an immigrant's first job did affect subsequent attainment. If immigrants operate or dominate different sectors of the economy, it could be an indication of both segmentation and barriers to entry.

APPROACH

One possible shortcoming of the research cited above is that the researchers have tended to look at the situation for workers in only a single point in time. Their results have thus been somewhat hampered because they have been

unable to explore issues related to change over time. This becomes particularly important in the case of discussions related to self-employment because the move to self-employment is often related to both work experience which is developed over time and the opportunities available at any given moment.

In an attempt to overcome this problem, we have chosen to use a 'quasi-longitudinal' cohort approach to look at the same group of individuals at several points in time. Using information provided by four censuses, the purpose of this article is to describe the patterns of self-employment of male immigrants who arrived in Canada during the decade and a half following World War II (1946–60). This cohort provides an interesting case study for three reasons. First, this was a period when the policy emphasized family reunification. Thus, the majority of immigrants came to Canada because they had family already living here rather than being drawn specifically on the basis of economic need. Second, it was a period of unprecedented economic growth and the beginning of the shift towards a service economy from a manufacturing base. Third, because it is possible to look at this group in four separate decennial census periods (1961, 1971, 1981 and 1991), it is possible to study an entire working life.

IMMIGRATION AND THE LABOR FORCE

The immigrants who arrived in the decade and a half following World War II were in many ways unique, being preceded and followed by very different types of immigrant flows. In the years immediately prior to World War II, in part because of the Depression, immigration to Canada was low, averaging about 65,000 people a year. The immigrants who entered were primarily from either the United States or Great Britain. During the war itself, immigration almost ceased altogether as the country shut its doors to practically everyone. Following the war, however, there was a push to increase immigration levels as people sought to leave Europe while relatives living in Canada demanded the right to bring in their family members.

From a policy perspective, there was a growing understanding that immigration would be increasingly urban and that Canada required workers to build the economy and sustain economic growth. It was also acknowledged that immigration from Northern Europe and Britain did not constitute an endless supply and that there would be competition for immigrants from other settler societies such as Australia, the United States and South America.

Between 1945 to 1961, over 2 million immigrants entered Canada. However, the source changed over the decade and a half. Immediately after World War II, British and American citizens were eligible to enter Canada as

basically independent immigrants. Migrants from European countries other than the United Kingdom could come to Canada if they were sponsored by a relative already living in Canada (Hawkins, 1988: 89–90). During this period, immigration flow was controlled by the regulations defining eligibility and ability of the bureaucracy to administer the paperwork. A series of regulatory changes over the fifteen-year period acted to steadily expand the eligibility criteria for sponsored immigrants. After each liberalization in the immigration regulations there was a concomitant increase in intake. In 1947, for example, when the definition for sponsorable immigrants was broadened, intake almost doubled, rising from 64,000 to 125,000. When the regulations were modified again in 1950, allowing any permanent resident of European origin to sponsor a wider range of relatives, immigration intake rose to almost 200,000.

In general, the immigrants who arrived during this period were almost always sponsored and overwhelmingly from Europe. However, through the 1950s, with changes to the regulations, the flow came increasingly from southern Europe. In 1961, there were 330,619 immigrants living in Montreal, Toronto, Hamilton, Edmonton, Calgary and Vancouver who had arrived in Canada during the post-war period. Twenty percent were from the United Kingdom and an additional 2 percent were from the United States. The remaining 78 percent were largely sponsored immigrants from the rest of Europe, primarily Italy (22% of the total intake).

Immigrants from Italy, Greece and Portugal came with very different qualifications as compared to other immigrant groups. While those from Northern Europe often had credentials similar to the Canadian population, immigrants from Southern Europe generally came with very low levels of schooling. For example, while 10 percent of Canadian-born males had some university education, this was true of less than 1 percent of Italian immigrants. In contrast, immigrants from the United Kingdom and United States were more likely to have university schooling (15% and 55% respectively). The cohort as a whole was thus split both regionally and educationally.

The majority of post-war immigrants settled in Canada's major urban areas, changing the social and economic landscape of the cities. During this time, Canada had started to move towards a more industrialized and modern society. In 1961, Canada's urban industrial profile was centered on manufacturing and consumer services. Over half of all workers were employed in these two industrial sectors, with almost 30 percent in manufacturing alone. Thirty years later, the shape of the labor market had changed radically. The manufacturing sector workforce of six major Census Metropolitan Areas (CMAs) dropped steadily by almost half from 29 percent to 16 percent of all

workers. The service sectors took off as the number of jobs in consumer services increased by three fold to comprise a total of almost one and a half million jobs by 1991. Business services doubled in strength to over 400,000 jobs. The rise of the welfare state, which took place during the 1960s and 70s, meant that the number of jobs in social service-related industries (health, education and welfare) increased by almost five times over the course of the three decades and went from 9 percent to 15 percent of all jobs (*see* Table 1).

TABLE 1
DISTRIBUTION OF JOBS BY INDUSTRY, 6 SELECTED CMAS 1961, 1971, 1981, 1991

	1961 percent	1971 percent	1981 percent	1991 percent	Percent change in number of jobs by sector
TOTAL	2,129,514	3,121,225	4,537,050	5,466,095	257
Primary	1	1	2	2	454
Manufacturing	29	26	21	16	142
Construction	8	7	6	6	211
Distributive Services	17	15	15	14	205
Consumer Services	20	20	24	26	328
Business Services	9	11	13	16	473
Social Services	8	14	13	15	446
Public Administration	6	6	6	6	260

Source: 1961, 1971 census base, 1981, 1991 Public Use Samples, individual files.
Note: Population age 15–64 not in school full time.
Living in CMAs: Montreal, Toronto, Hamilton, Edmonton, Calgary and Vancouver.

The changes in the industrial profile of the country had a tremendous impact on the skills and educational requirements for the labor force. The new labor force appeared very much dichotomous both in terms of the skills required and the remunerations received (Myles and Fawcett, 1990). Emerging occupations in the health, education and welfare sectors, as well as those in business services, tended to require far higher levels of schooling than was the case for other sectors. New jobs in consumer services tended to require relatively low levels of both skill and education. The manufacturing sector, which in the past had offered relatively high wages without necessarily requiring high schooling credentials, was stagnating, while new jobs in the services sectors were at both the high and low ends of the wage-education spectrum (Economic Council of Canada, 1990).

Workers entered and operated within this changing structure, but an individual's role was conditioned by the skills he had and the job openings available at any given time. While low skill-high wage jobs were prevalent at the outset of the period, these jobs were fast disappearing. Thus, both immigrant and Canadian-born workers were increasingly entering a highly differentiated labor force. The question asked here is to what degree did the choices differ

between the two groups, and to what degree was self-employment used as an option by immigrant and Canadian-born males.

THE DATA

The ideal dataset for such an exercise is one that contains labor force data for a representative sample of immigrant and Canadian-born workers at several points in time. Such a longitudinal dataset would provide the individual work histories and could be used to measure both location in the labor force and change over time. The problem is that such a database does not yet exist in Canada. An alternative is to examine like groups or cohorts of individuals which can be tracked from census to census. In this way, it is possible to study the same group of individuals using snapshot data. Although this approach does not tell us precisely how any given individual has fared from one census to another, it is possible to determine the degree to which an entire cohort of individuals has changed over the period and identify relative changes in the size of the cohort itself with respect to particular labor force positions.

The data used for this analysis are tabular in nature and is drawn from the 1961 and 1971 census databases, as well as the 1981 and 1991 public use sample individual files. These tables contain similar data breakdowns on the active immigrant and nonimmigrant labor force whose members lived in six Census Metropolitan Areas: Toronto, Montreal, Vancouver, Hamilton, Edmonton and Calgary. Information on a total of 319,816 immigrant and 989,966 Canadian born workers, who were originally reported in 1961, were identified in 1971, 1981 and 1991.[3] The information of the census tabulations was broken down by the following categories: age (3 categories): 15–24, 25–34, 35–44; employment status (2 categories): self-employed, wage laborer; immigrant status (2 categories): immigrant, Canadian born (nonimmigrant); schooling (3 categories): less than grade 8, 9–13 years, university education; 1971 Standard Industrial Classifications (SIC) (7 categories):[4] manufacturing, construction, distribution services, consumer services, business services, social services and public administration.

These tables were then examined using a combination of log-linear modeling and correspondence analysis in order to identify relationships between variables and data structures.

[3]Tables showing dropout rates for each of the cohorts as well as an indication of the degree to which the cohorts have changed in education attribute from one census period to another are available upon request from the authors.

[4]Primary industries were excluded because of the small number of observations.

DATA ANALYSIS

Looking at Table 2, it can be seen that although the rates of self-employment were somewhat similar to the Canadian born in 1961, as time passed postwar immigrants were more likely to be both active in the labor force and to be self-employed. There were almost 340,000 immigrant males who were active in the

TABLE 2
CLASS OF WORKER FOR CANADIAN-BORN AND POSTWAR IMMIGRANT COHORT LIVING IN THE SIX CMAS, 1961–1991

	1961	1971	1981	1991
Canadian born	percent	percent	percent	percent
Total	1,054,632	1,494,385	1,812,650	2,155,464
Not active	6	6	6	7
Active	94	94	94	93
Active	989,966	1,407,380	1,712,600	2,001,364
Wage labor	90	92	91	89
Self-employed	10	8	9	11
Postwar Immigrants				
Total	330,618	346,820	312,300	196,467
Not active	3	3	3	12
Active	97	97	97	88
Active	319,816	337,130	301,550	173,166
Wage labor	91	88	84	81
Self-employed	9	12	16	19

Sources: 1961 and 1971 Data bases, 1981 and 1991 Public Use Samples Individual Files.
Figures refer to the population aged 15–64 not school full time living in Toronto, Montreal, Hamilton, Edmonton, Calgary and Vancouver.

labor force in 1961. The proportion of self-employed had increased from 9 percent in 1961 to 12 percent in 1971, whereas it had decreased for native-born males from 10 percent to 8 percent. By 1991, the rate of self-employment among immigrants was close to 20 percent while that of natives was only 11 percent.

At least part of the difference in self-employment rates was a product of age. The degree to which people enter self-employment rises with age. However, while the table shows the immigrant cohort aging over time, it shows data for the total Canadian-born population. It is thus necessary to delve deeper into this puzzle.

A first step toward understanding the basic structure of our data was to determine the empirical relationships which existed between the five main variables at each census period. For this purpose, a hierarchical five-way interaction log linear model was fitted to each of the tables. In this way, we were able to detect, in a summary fashion, the strongest associations present in the data. The partial X^2 test of significance of main effects and "interaction" terms (present-

ed in Table 1 of the appendix) suggest that the strongest and most statistically significant associations present in the data were the two-way interactions, which in descending order of importance were the following:

1) Industry and education: Controlling for other characteristics, the industry-education association was the strongest. Workers with higher levels of schooling were more likely to work in business and social services niches (both as self-employed and wage laborers) than other types of workers. Workers of lower education were more likely to find their industrial niches within the manufacturing, construction and consumer services.
2) Industry and self-employment status: Self-employed workers were more typical within consumer and business industries while wage laborers were more typical within manufacturing, construction and distribution service industries.
3) Industry and immigrant status: Overall, immigrants were more likely to work in manufacturing and construction than was the case for Canadian- born workers.
4) Age and self-employment status: The propensity to be self-employed increased with age.

As a consequence of these dominant two-way relationships, three-way associations between the variables were also found. These were the associations between industry and schooling categories in combination with self-employment status, immigrant status and age respectively. Overall, the partial X^2 suggests that self-employment status tends to co-vary closely with the other variables and with industrial sector and age in particular.

Next we used correspondence analysis (CA) to summarize information and relationships between immigrant status-age-education cohorts and industry niches in order to identify concentrations. CA, a multivariate technique based on dual scaling procedures, allows for the examination of the relationships between two nominally scaled variables in a multidimensional space. By determining departures from the independence model through the X^2 statistic, CA expresses relationships between variables and groups as points in a bi-plot (Weller and Romney, 1990). It also partitions the unexplained deviations from independence into orthogonal dimensions (components) of descending order of explanatory power.

One major advantage that correspondence analysis has over other traditional cross-tabular analytical techniques is that it describes associations between variables in a graphical fashion in accordance with a measure of statistical independence such as the X^2 statistic. In doing so it illustrates the under-

lying relationships between variable categories. Distances can be calculated between points from bi-plots produced by correspondence analysis to approximate the X^2 distances present in the data table. Points that are closer together in the plot are more alike than those that are far apart. By calculating row and column profiles of the table and breaking down the X^2 statistic, points corresponding to cohorts and sectors thus may be plotted in a plane spanned by the two major principal components.

To reduce the complexity of the data and increase their interpretability, the original five-way tables were compressed into two-way tables (four in total, one for each census period). The rows of the new tables represent attributes of the age cohorts (age, immigrant status and schooling) while columns represent the type of industrial niche within which cohort members worked (employment status and industry sector).[5] The basic structure of the compressed two-variable tables (where rows represented objects and columns represented its features) allowed for their statistical manipulation as quasi-proximity matrices. Through the "singular value decomposition" of the data matrices, pairs of age cohorts and industrial niches were identified as points in a plane by principal components axes.[6] As part of its statistical output, CA produces plots of row and column profiles in which categories that are similar appear close to each other in the bi-plots. Summary statistics of correspondence analysis's inertia statistics for each of the census tables are presented in Table 3.

The total inertia statistic (which ranges from 0 to 1) is a measure of the magnitude of departure from the independence model which is left unexplained. Overall, total inertia represented about a quarter of the data variation. The first data dimension accounted for the large majority of the deviation from independence. It accounted for 61 percent of the deviation in 1961, 71 percent in 1971, 76 percent in 1981 and 80 percent in 1991. The second dimension, the minor one, ranged from explaining 20 percent of this deviation in 1961 to only 13 percent in 1991). The two major dimensions thus accounted for the bulk of the total deviations from the independence model. The first dimension captures schooling attributes, with low education on the left of the plane and high education on the right. The second dimension is an industry class-related variable, capturing differences in white (top) versus blue collar (bottom) work.

Four bi-plots were generated, one for each of the four census periods (Figures 1 to 4). The axes space has been canonically normalized to represent profiles ranging from -2 to +2 standard deviations. Distances between points

[5]By Statistics Canada definition, there are no self-employed workers in public administration.
[6]These principal components have similar interpretation as those found in the factor analytical literature.

TABLE 3
CORRESPONDENCE ANALYSIS RESULTS

Correspondence Analysis Results	1961 Census		1971 Census		1981 Census		1991 Census	
N of Cases	1,934,035		1,137,095		1,030,169		628,804	
χ^2 Statistics	230,087	*	257,136	*	229,783	*	143,815	*
Total Inertia	0.247	100%	0.226	100%	0.23	100%	0.238	100%
Dimension 1 (education)	0.149	61%	0.16	71%	0.175	76%	0.191	80%
Dimension 2 (industry sector)	0.049	20%	0.037	17%	0.035	16%	0.029	13%

* Indicates significance at the .001 level.
% below * represent total inertia explained by dimension.

reflect propensities of workers to be self-employed or wage laborers in different industry branches. Depending on their row and column profiles, points representing cohorts and industrial niches may be found in quadrants I, II, III or IV of the bi-plots.[7]

Looking first at Figure 1, it is apparent that in 1961, immigrants with low levels of schooling, regardless of age, sought work as wage laborers in the construction sector. This is reflected by the positions of the star points located at the bottom of quadrant III. Immigrants with moderate schooling seemed to find self-employment niches in construction and/or as wage laborers in consumer or manufacturing services. Their corresponding points are clustered near the upper portion of quadrant III and the origin of the bi-plot. Canadians with low schooling had similar propensities as the latter group of immigrants.

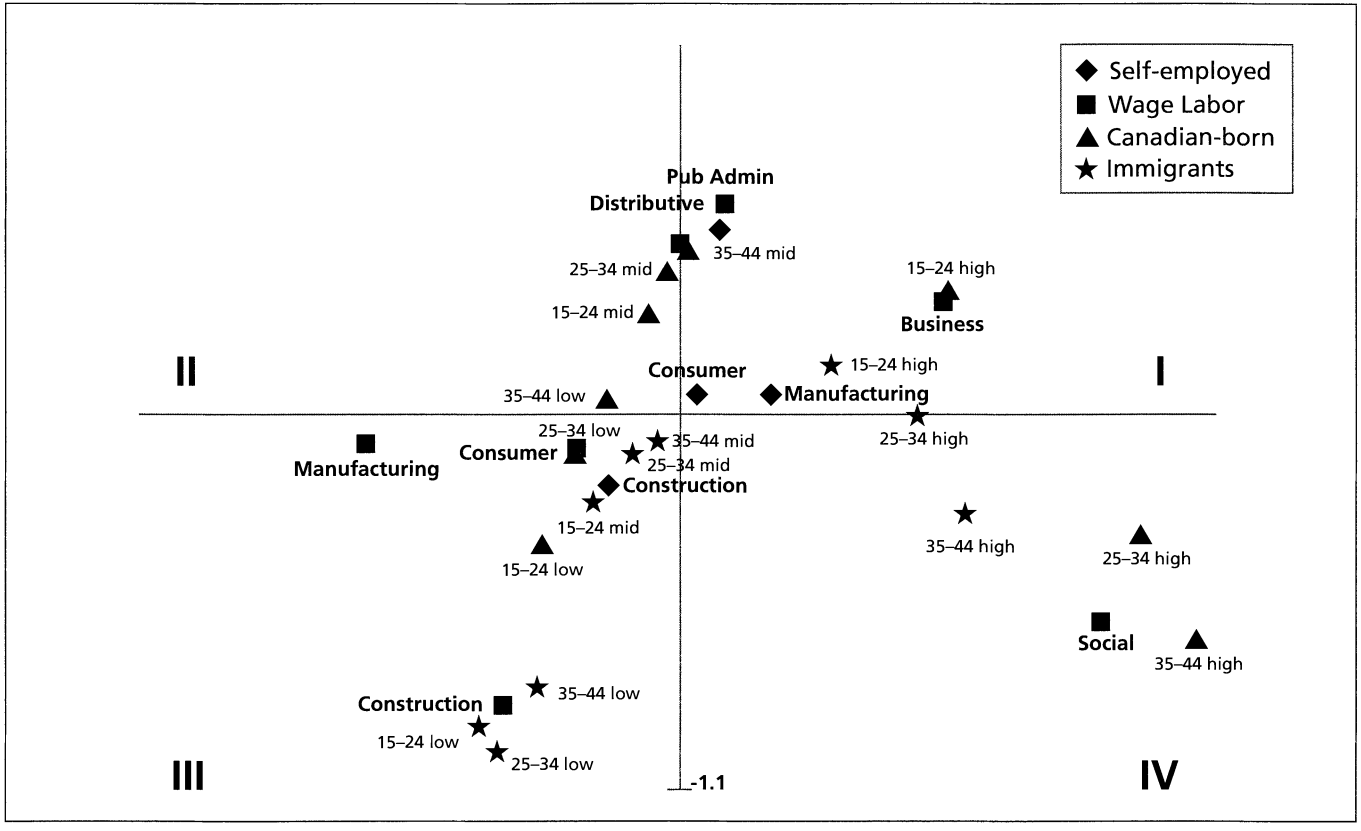
Canadians of moderate schooling were found to be over-represented as wage laborers and self-employed workers in the distributive services and public administration sectors. As reflections of higher levels of schooling, quadrants I and IV contain larger proportions of highly educated immigrant and Canadian-born workers.

University educated immigrants gravitated towards self-employment in the manufacturing sector. Canadian born with university schooling found their typical industrial niches as wage laborers in the business and social services sectors.

In 1971, self-employment in construction and manufacturing industries were the most viable options for immigrants of different levels of schooling

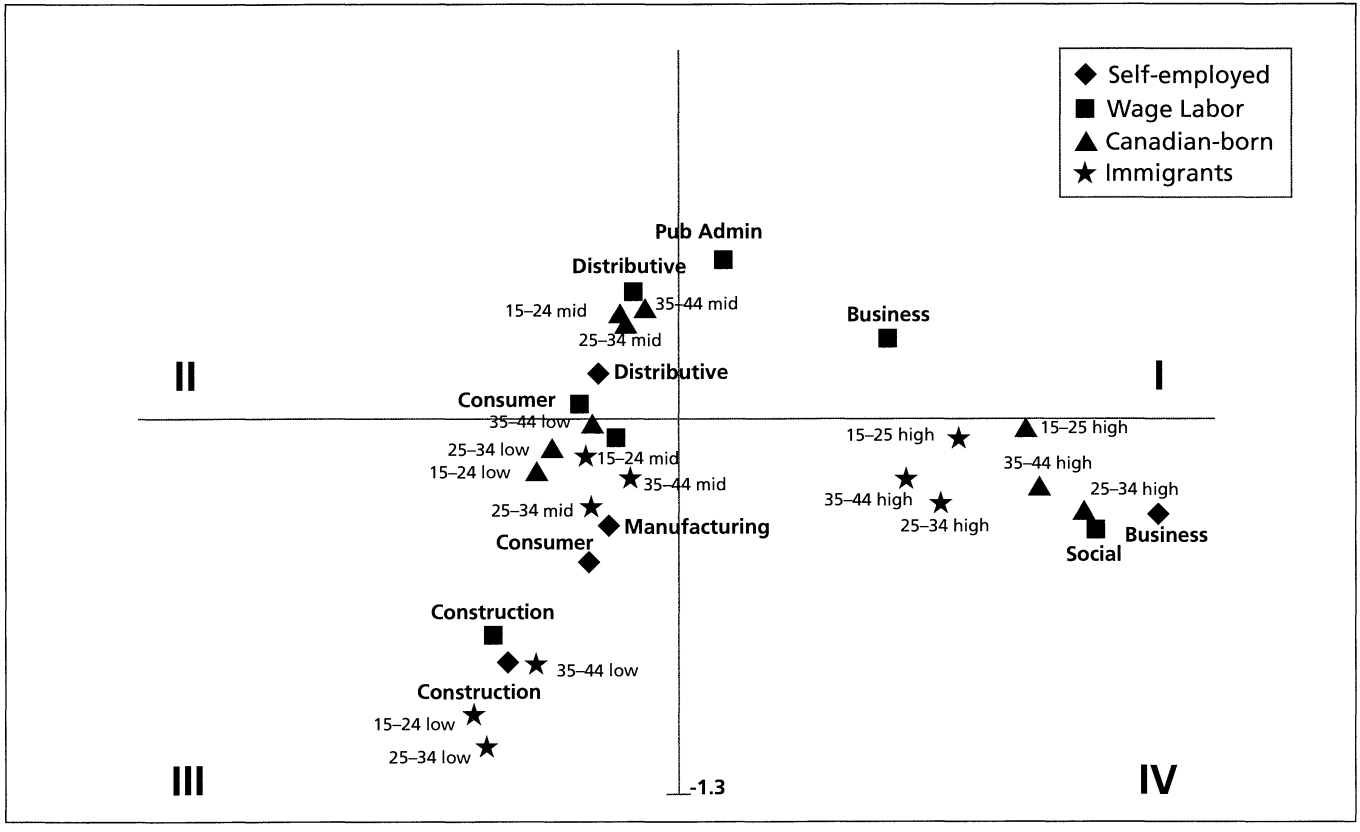
[7]The bi-plots are intended to indicate the proximity of age-education cohorts to industry sectors. Self-employed industry sectors are identified by diamonds and wage labor industry sectors are identified by squares. There are nine age-education cohorts of immigrant distinguished by stars and nine age-education cohorts of Canadian-born workers indicated by triangles.

Figure 1. **Correspondence Analysis Bi-Plot: Age-Immigrant-Schooling Cohorts, Industry and Employement Sector, 1961**



Source: 1961 Census of Canada. Population not in school full time, living in Montreal, Toronto, Hamilton, Edmonton, Calgary, and Vancouver.

Figure 2. **Correspondence Analysis Bi-Plot: Age-Immigrant-Schooling Cohorts, Industry and Employement Sector, 1971**



Source: 1971 Census of Canada. Population not in school full time, living in Montreal, Toronto, Hamilton, Edmonton, Calgary, and Vancouver.

(*see* Figure 2). This is geometrically expressed in the bi-plot by new clustering processes taking place in quadrant III. As immigrants age and gain training experience in the host country, more employment options are opened to them. Immigrants with lower education started to move towards self-employment in the construction sector, leaving behind their overwhelming concentration around wage labor in the same sector.

Self-employment in consumer and manufacturing industries was becoming a viable option for immigrants with moderate schooling, regardless of their age of arrival in the country. These immigrants were now closer to wage labor niches which had traditionally been reserved for the Canadian born, such as distributive and consumer services.

In quadrant IV, university educated immigrants moved towards self-employment in the business sector competing with the Canadian born of comparable schooling.

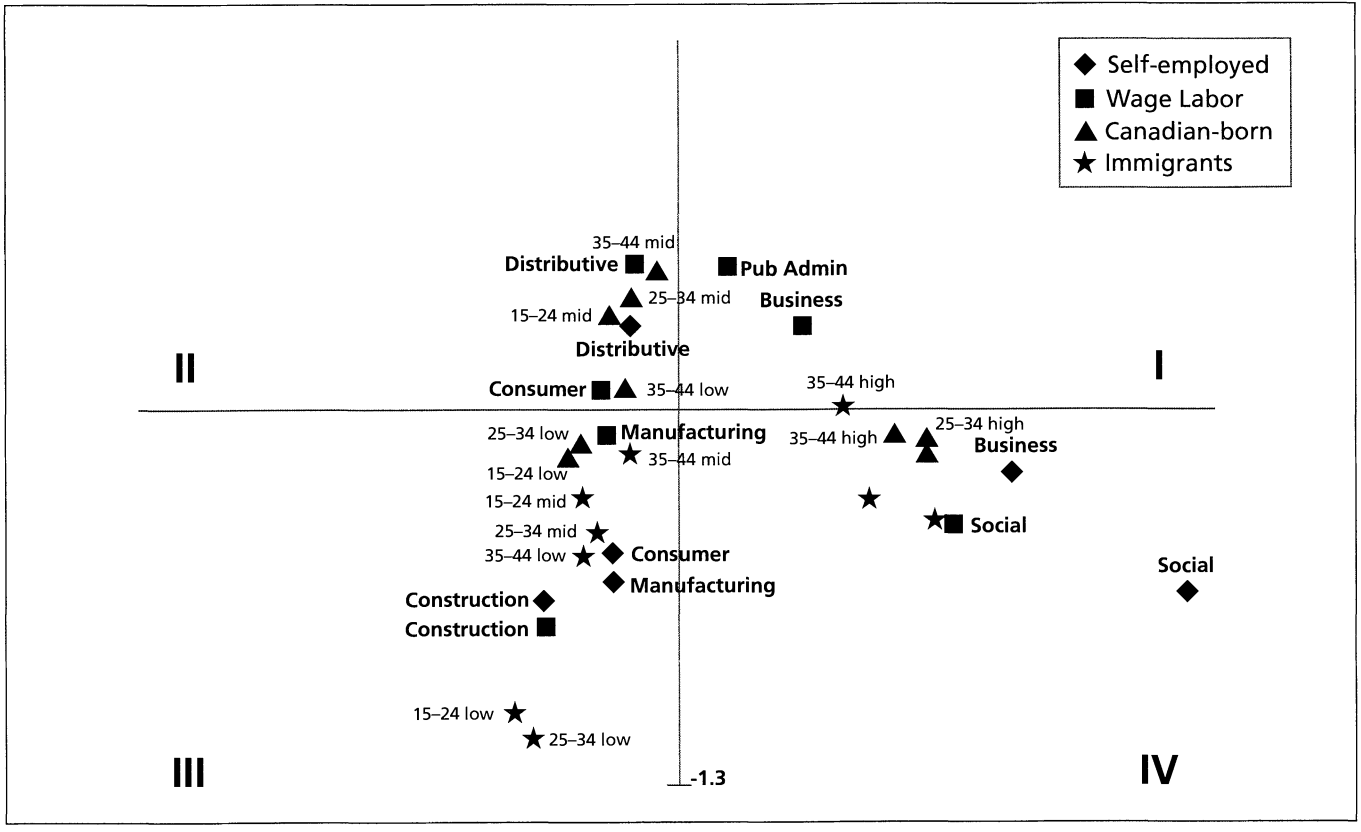
In 1981, points representing age cohorts and niches were closer to the origin, suggesting not only a decrease in the overall deviation from the independence model but also an increase in the separation between Canadian-born and immigrant workers (*see* Figure 3). The configuration of points in the principal axes space is fairly similar to that of 1971. The only change worthwhile noting is that the social service sector becomes increasingly attractive to immigrants with university education, particularly for those who arrived at younger ages (15–24). For some of these immigrants, a "jump" towards self-employment in the social services also becomes a viable option.

Only two age cohorts are left in 1991 (*see* Figure 4). By the end of their working cycle, there is a clear polarization of immigrant cohorts in terms of their positions in the work continuum. In quadrant III, the majority of immigrants with low or moderate levels of schooling end their careers as wage laborers or self-employed workers in construction, manufacturing or consumer services. These workers had few chances to make incursions in the other industrial sectors.

In quadrant IV, most of the university educated immigrants gravitated toward social and business services. Thus, over time self-employment in these sectors becomes a more realistic career move for these immigrants. Canadian-born workers appear to have more occupational choices than is the case for immigrants.

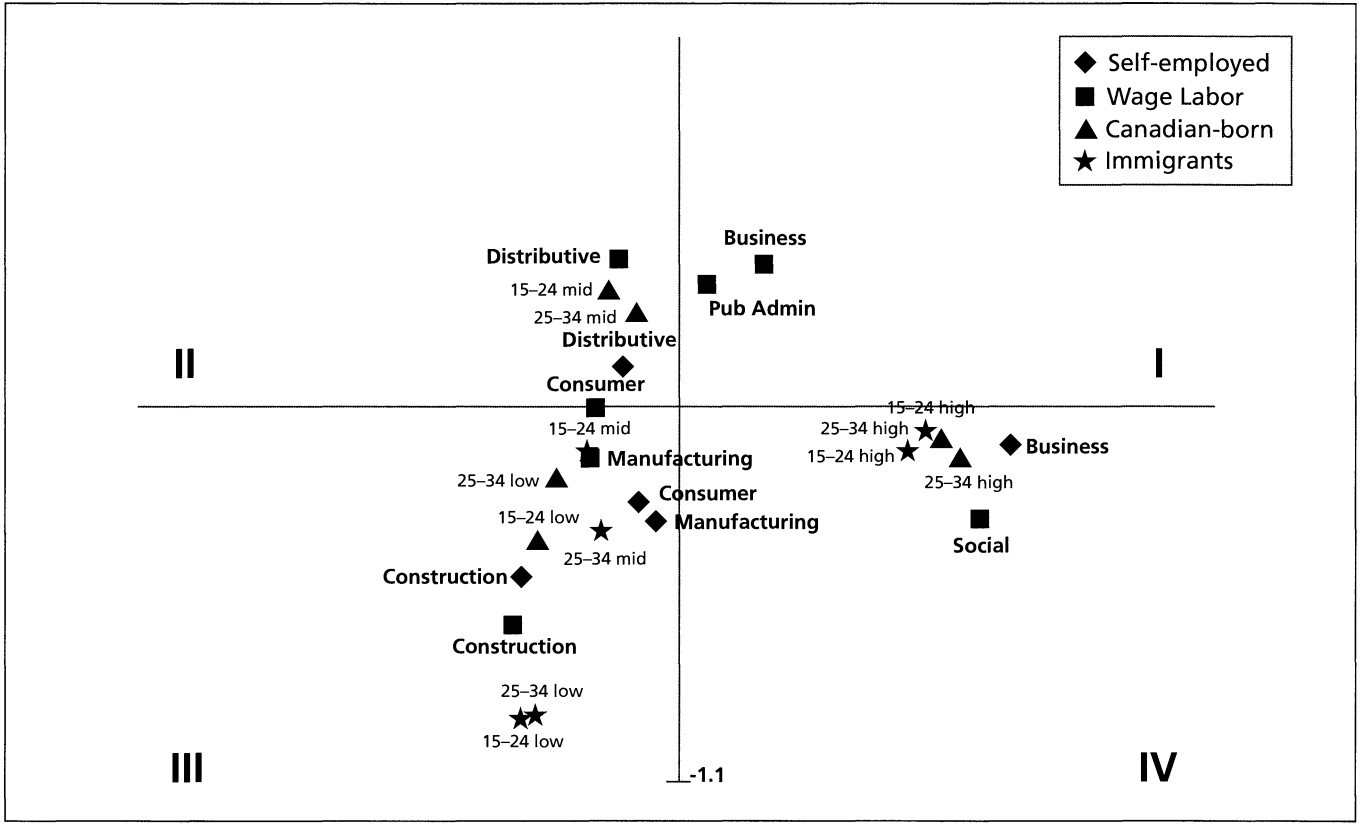
A final step of the analysis was to summarize CA results by calculating euclidean distances between age-education-immigrant cohorts and industry niches in order to estimate change between 1961 and 1991. These distances are presented in Tables 2a and 2b of the appendix. Smaller Euclidean dis-

Figure 3. **Correspondence Analysis Bi-Plot: Age-Immigrant-Schooling Cohorts, Industry and Employement Sector, 1981**



Source: 1981 Census of Canada. Population not in school full time, living in Montreal, Toronto, Hamilton, Edmonton, Calgary, and Vancouver.

Figure 4. **Correspondence Analysis Bi-Plot: Age-Immigrant-Schooling Cohorts, Industry and Employement Sector, 1991**



Source: 1991 Census of Canada. Population not in school full time, living in Montreal, Toronto, Hamilton, Edmonton, Calgary, and Vancouver.

tances are proxies for concentration of age cohorts around a particular industry sector. Of particular interest are shorter distances to self-employment niches because they reveal increased likelihoods for members of these cohorts to make the "jump" from employment to self-employment and vice-versa.[8]

Overall, the configuration of euclidean distances confirmed the patterns observed in the bi-plots. For immigrants with low levels of schooling, self-employment in the construction sector becomes an attractive possibility with the passing of time. Moderately educated immigrants alternated between self-employment opportunities in the manufacturing and consumer services. Highly educated immigrants, who started mostly as social service workers, by 1991 slowly moved towards greater rates of participation as self-employed workers in the business and social services. The latter was reflected in the decreasing distances between their corresponding points and those representing these services.

DISCUSSION

The results of the analysis leads to a series of both theoretical and social policy related conclusions. The findings support the existence of a split labor market based on immigrant status, particularly at the low end of the schooling spectrum. In 1961, immigrants with low levels of schooling were tightly aligned with the wage construction sector, whereas Canadian-born males with less than high school were more likely to gravitate towards consumer services.[9] Immigrants with high school had more choices and were more likely to be in consumer services, or the self-employed construction sector. Canadian-born males with high school were more closely aligned with public administration and distributive services.

The close euclidean distance between immigrant groups and the construction sector suggests that this sector represented a strong ethnic niche, with immigrants with higher levels of schooling hiring those with lower levels of schooling. The advantage provided by the construction sector was that it offered relatively high wages to workers without the requirement of high levels of schooling. Given that this sector was also an ethnic niche, it had the added advantage of possibly allowing immigrants to work in their own language and cultural mileau.

[8]An asterix indicates distances lower than .50.

[9]At least part of this outcome was related to language ability. About one third of immigrants who were unable to speak an official language worked in the construction sector. However, this represented only 12% of immigrant males working in the construction sector.

Immigrants with higher levels of schooling were less likely to work in ethnically dominated niche markets. These immigrants were spread across the growing social services sector as well as self-employed manufacturing. In the same way, Canadian-born males with university schooling were well represented in the social services sector, but also in business services. By 1971, there was a convergence of the construction sector, so that both the self-employed and wage labor sides of the sector were dominated by immigrants with low levels of schooling. Immigrant males with high school and native-born males with low levels of schooling were now more tightly aligned with manufacturing – a dying sector – and consumer services – a growth sector. Canadian-born males with high school were clustered around distributive services and public administration, where there was very little growth. People with university schooling, regardless of immigrant status, gravitated towards the growth sectors of social and business services. The ten-year period between 1961 and 1971 saw a contraction in the distribution of jobs for immigrants with low levels of schooling, but an expansion in the industry distribution for those with higher levels. It also saw immigrants with low levels of schooling starting to move into the self-employed construction sector, after having spent some time in the wage labor construction sector.

The next two decades saw some movement, but overall there was a consolidation of these positions. However, the industrial base of the major cities had now fully shifted towards the service sectors. The problem was that the jobs which could offer relatively good pay to people with lower levels of schooling – those in construction and manufacturing – were stagnating. They were being replaced by jobs with a much tighter education-income relationship. Workers with high school also started clustering in different sectors. As opposed to immigrant males who clustered around manufacturing or self-employed consumer services, Canadian-born workers were clustered around distributive services or the wage labor consumer services sector. Those with university schooling, regardless of immigrant status, concentrated in either social services or the self-employed business services sector, both of which were growth sectors. By 1991, postwar immigrants no longer dominated the construction sector. The youngest cohort of Canadian-born workers with low levels of schooling was actually more closely aligned to construction than the immigrant groups.

Therefore, it appears that among workers with lower levels of schooling there was a split labor market which was maintained over the four census periods. If there was movement, it was often within the same sector, but towards self-employment; for example, a move from wage labor construction to self-

employed construction. It is possible, therefore, that immigrants used these ethnic niches in construction and consumer services as training, so that they could eventually make a move into self-employment.

For those with higher levels of schooling, the situation was somewhat different. Immigrants with university schooling did not show the same propensity to enter self-employment as was seen in those with less education. And, in fact, often university educated Canadian-born workers were at least as likely or more likely to enter self-employment than similarly schooled immigrants. At least part of this is due to the nature of the industry sectors themselves. Some industries within which immigrants were concentrated are simply more conducive to self-employment because the success ladders are short and there is nowhere to go but off on one's own. It is relatively easy, for example, to make the jump from wage labor construction to self-employment within the construction sector. The same is true for small scale consumer services where immigrants were also concentrated. In these instances, the move to self-employment could be a product of constrained choices, but we are unable to determine if the choices were any less constrained for Canadian-born workers in the same sectors, in part because we do not have firm level data. If, for example, Canadian-born workers were more concentrated in large-scale consumer services such as department stores with a succession ladder, whereas immigrants were more likely to be in small retail stores, it could be an indication both groups are simply taking their most natural progression, given the characteristics of the firm. It could also be an indication that immigrants were unable to enter those larger retail stores.

It is also apparent that the move towards self-employment takes time. During the first census period, the self-employment rate for immigrants was about the same as was the case for Canadian-born workers, however, the proportion of self-employed immigrants increased with each census period. It is possible that those who made the jump to self-employment were using their time in the wage labor force as a training period. This whole aspect of the shifts in employment pattern is not well studied in Canada, and we can only hint at it here.

Perhaps the final point of interest is related to labor force entry and movement. Immigrant and Canadian-born workers on entry into the labor force, entered jobs which were open at the time of entry. The vast bulk of these workers entered the labor force during the 1950s and 60s, which were economic growth periods. Regardless of schooling qualifications, it was often possible to find good jobs in such sectors as manufacturing or construction. Four decades later, these jobs are no longer open to labor market entrants.

Both manufacturing and construction are either dying or stagnant industry sectors, replaced by jobs which have far tighter relationships to schooling credentials, such as those in the social or business services. The place of immigrants in Canada's labor force today is thus by necessity very different.

APPENDIX

TABLE 1
PARTIAL χ^2* TESTS OF SIGNIFICANCE OF INDIVIDUAL TERMS OF A LOG LINEAR SATURATED MODEL COMPRISING EDUCATION, AGE, IMMIGRANT STATUS, SELF-EMPLOYMENT, AND INDUSTRIAL BRANCH

TERMS OF SATURATED MODEL	Degrees of freedom	Census 1961	1971	1981	1991
Four Way Interaction Terms					
AGE*SELF*IMSTAT*INDUSTRY	24	0	0	0.6	0.1
AGE*SELF*IMSTAT*EDUC	8	0.1	0	0	0
AGE*SELF*INDUSTRY*EDUC	48	0.2	0.2	0.9	0.4
AGE*IMSTAT*INDUSTRY*EDUC	48	0.4	0.5	1.2	0.4
SELF*IMSTAT*INDUSTRY*EDUC	12	0.3	0.5	0.8	0.8
Three Way Interaction Terms					
AGE*SELF*IMSTAT	4	0.5	0.6	0.6	0
AGE*SELF*INDUSTRY	24	0.5	0.3	0.4	1.1
AGE*IMSTAT*INDUSTRY	24	0.4	0.6	0.9	0.4
SELF*IMSTAT*INDUSTRY	6	0.2	0.5	1.5	0.5
AGE*SELF*EDUC	8	0	0.2	0.1	0
AGE*IMSTAT*EDUC	8	0.7	0.9	0.5	0.3
SELF*IMSTAT*EDUC	2	0.2	0.3	0.2	0.4
AGE*INDUSTRY*EDUC	48	1.6	3.1	4.6	1.3
SELF*INDUSTRY*EDUC	12	3.3	5.5	6.3	4.5
IMSTAT*INDUSTRY*EDUC	12	2.2	2	2.1	1.3
Two Way Interaction Terms					
AGE*SELF	4	22.5	8.5	0.7	0
AGE*IMSTAT	4	5.3	18.1	21.3	16.7
SELF*IMSTAT	1	0.7	1	2	0.5
AGE*INDUSTRY	4	11.6	4.4	5.1	1.3
SELF*INDUSTRY	6	56.3	75.9	84.1	49
IMSTAT*INDUSTRY	6	23.4	19.6	15.6	5.4
AGE*EDUC	8	7.9	26.6	26.4	10.4
SELF*EDUC	2	5.7	4.4	6.7	8.4
IMSTAT*EDUC	2	11.2	4.2	6.9	7.9
INDUSTRY*EDUC	12	107.1	159.6	159.2	102.7
Main Effects					
AGE	4	1066.4	1169.2	1077.5	1168.7
SELF	1	756.1	848.6	628.8	319.3
IMSTAT	1	213.7	365.3	307.9	247.9
INDUSTRY	6	369.6	281.1	179.2	78.5
EDUC	2	275.9	213	208.5	161.2

[a] *χ^2 are expressed in thousands. All effects were significant at the .001 level.

[b] Symbols: AGE-age, SELF-self employment status, IMSTAT-immigrant status, EDUC-educational levels, INDUSTRY-industrial branch. Total categories: AGE (5), SELF (2), IMSTAT (2), INDUSTRY (7), EDUC (3)

TABLE 2A

EUCLIDEAN DISTANCES BETWEEN GROUPS AND EMPLOYMENT/INDUSTRY SECTORS IN CORRESPONDANCE ANALYSIS SPACE

			Self-employed						Wage Labor						
Immigrant status	Age cohort	Schooling	Manu-facturing	Construc-tion	Distrib-utive Services	Consumer Services	Business Services	Social Services	Manu-facturing	Construc-tion	Distrib-utive Services	Consumer Services	Business Services	Social Services	Public Admin-istration
1961															
Immigrants	15–24	<9	1.50	0.89	1.76	1.31	3.28	5.06	0.96	0.12*	1.65	0.92	2.17	2.34	1.84
		9–13	0.73	0.06*	0.93	0.49*	2.87	4.85	0.87	0.72	0.83	0.16*	1.42	1.91	1.01
		University	0.23*	0.90	0.57	0.50	2.16	4.27	1.74	1.60	0.67	0.98	0.47*	1.28	0.62
	25–34	<9	1.49	0.91	1.78	1.32	3.21	4.97	1.06	0.14*	1.69	0.96	2.15	2.27	1.87
		9–13	0.55	0.13*	0.75	0.30*	2.76	4.78	1.00	0.91	0.67	0.21*	1.24	1.81	0.84
		University	0.54	1.16	0.92	0.83	1.80	3.91	2.05	1.77	1.03	1.27	0.36*	0.93	0.96
	35–44	<9	1.25	0.67	1.54	1.07	3.05	4.88	0.98	0.14*	1.45	0.73	1.91	2.10	1.62
		9–13	0.45*	0.23*	0.67	0.20*	2.69	4.72	1.09	1.00	0.60	0.31*	1.14	1.74	0.76
		University	0.81	1.33	1.26	1.07	1.53	3.60	2.24	1.81	1.35	1.46	0.66	0.60	1.30
Canadian born	15–25	<9	0.97	0.30*	1.15	0.73	3.06	5.00	0.72	0.52	1.04	0.30*	1.66	2.09	1.23
		9–13	0.52	0.54	0.36*	0.29*	2.84	4.92	1.12	1.31	0.24*	0.50*	1.09	1.93	0.44*
		University	0.72	1.39	0.86	0.99	1.90	4.05	2.21	2.08	1.01	1.46	0.04*	1.17	0.87
	25–34	<9	0.75	0.15*	0.86	0.48*	2.97	4.98	0.78	0.81	0.75	0.01*	1.44	2.02	0.94
		9–13	0.54	0.69	0.22*	0.38*	2.82	4.93	1.24	1.46	0.09*	0.65	1.02	1.93	0.29*
		University	1.43	1.98	1.81	1.71	0.90	3.02	2.89	2.42	1.93	2.11	1.02	0.31*	1.84
	35–44	<9	0.62	0.26*	0.66	0.33*	2.91	4.94	0.90	1.01	0.54	0.19*	1.29	1.96	0.74
		9–13	0.53	0.77	0.13*	0.43*	2.78	4.89	1.34	1.55	0.05*	0.74	0.96	1.90	0.20*
		University	1.74	2.23	2.16	2.00	0.61	2.67	3.14	2.58	2.27	2.37	1.39	0.35*	2.19
1971															
Immigrants	15–25	<9	0.89	0.24*	1.38	0.72	2.62	3.64	1.17	0.30*	1.71	1.24	2.08	2.37	1.96
		9–13	0.27*	0.82	0.33*	0.39*	2.10	3.35	0.13*	0.76	0.66	0.21*	1.19	1.87	0.91
		University	1.29	1.84	1.31	1.41	0.80	2.12	1.25	1.85	1.31	1.38	0.47*	0.61	1.09
	25–34	<9	0.97	0.34*	1.49	0.81	2.62	3.61	1.27	0.42*	1.82	1.36	2.14	2.37	2.05
		9–13	0.09*	0.67	0.51	0.20*	2.06	3.28	0.27*	0.62	0.84	0.40*	1.24	1.82	1.05
		University	1.19	1.68	1.32	1.29	0.80	2.08	1.21	1.70	1.38	1.36	0.66	0.57	1.22
	35–44	<9	0.60	0.10*	1.14	0.44*	2.34	3.41	0.91	0.19*	1.47	1.01	1.78	2.09	1.69
		9–13	0.19*	0.84	0.41*	0.35*	1.93	3.18	0.16*	0.79	0.71	0.34*	1.07	1.69	0.89
		University	1.08	1.61	1.18	1.19	0.93	2.22	1.07	1.62	1.23	1.22	0.55	0.71	1.07
Canadian born	15–25	<9	0.35*	0.73	0.45*	0.40*	2.28	3.52	0.31*	0.65	0.77	0.30*	1.37	2.04	1.06
		9–13	0.81	1.39	0.24*	0.96	2.12	3.44	0.48*	1.32	0.09*	0.38*	0.97	1.92	0.43*
		University	1.55	2.09	1.56	1.67	0.59	1.92	1.50	2.10	1.53	1.63	0.62	0.46*	1.28
	25–34	<9	0.36*	0.83	0.34*	0.45*	2.22	3.48	0.23*	0.75	0.67	0.20*	1.29	1.99	0.95
		9–13	0.78	1.37	0.22*	0.92	2.08	3.40	0.45*	1.30	0.12*	0.36*	0.95	1.88	0.42*
		University	1.71	2.17	1.82	1.80	0.29*	1.60	1.72	2.20	1.84	1.87	0.97	0.09*	1.62
	35–44	<9	0.39*	0.96	0.19*	0.53	2.10	3.38	0.10*	0.89	0.52	0.09*	1.12	1.87	0.78
		9–13	0.84	1.44	0.30*	0.99	2.04	3.36	0.52	1.38	0.08*	0.44*	0.88	1.84	0.33*
		University	1.55	2.04	1.64	1.65	0.46*	1.78	1.55	2.06	1.65	1.69	0.79	0.27*	1.43

TABLE 2B
EUCLIDEAN DISTANCES BETWEEN GROUPS AND EMPLOYMENT/INDUSTRY SECTORS IN CORRESPONDANCE ANALYSIS SPACE

			Self-employed						Wage Labor						
Immigrant status	Age cohort	Schooling	Manu-facturing	Construc-tion	Distrib-utive Services	Consumer Services	Business Services	Social Services	Manu-facturing	Construc-tion	Distrib-utive Services	Consumer Services	Business Services	Social Services	Public Admin-istration
1981															
Immigrants	15–24	<9	0.71	0.44*	1.57	0.77	2.61	3.32	1.15	0.36*	1.79	1.29	2.05	2.27	2.00
		9–13	0.34*	0.43*	0.70	0.26*	2.09	2.95	0.27*	0.52	0.92	0.41*	1.27	1.81	1.15
		University	1.60	1.95	1.65	1.59	0.41*	1.23	1.62	1.96	1.72	1.68	0.96	0.08*	1.37
	25–34	<9	0.71	0.50	1.62	0.79	2.56	3.25	1.19	0.41*	1.84	1.34	2.05	2.22	2.03
		9–13	0.19*	0.37*	0.81	0.11*	2.04	2.87	0.38*	0.43*	1.03	0.53	1.29	1.74	1.21
		University	1.29	1.64	1.32	1.28	0.70	1.57	1.28	1.66	1.41	1.35	0.72	0.41*	1.09
	35–44	<9	0.16*	0.27*	0.90	0.12*	2.10	2.92	0.47*	0.34*	1.12	0.62	1.38	1.79	1.31
		9–13	0.48*	0.70	0.49*	0.38*	1.85	2.73	0.13*	0.77	0.72	0.27*	0.98	1.58	0.87
		University	1.30	1.64	1.05	1.26	0.87	1.81	1.13	1.68	1.09	1.14	0.33*	0.71	0.73
Canadian born	15–25	<9	0.50	0.56	0.58	0.41*	2.14	3.02	0.21*	0.65	0.80	0.30*	1.25	1.87	1.07
		9–13	1.00	1.14	0.08*	0.90	2.00	2.94	0.45*	1.22	0.22*	0.30*	0.92	1.80	0.60
		University	1.61	1.97	1.52	1.59	0.41*	1.34	1.55	1.99	1.56	1.59	0.76	0.29*	1.18
	25–34	<9	0.52	0.61	0.52	0.43*	2.10	2.98	0.15*	0.70	0.74	0.24*	1.19	1.83	1.01
		9–13	10.7	1.23	0.10*	0.97	1.95	2.89	0.53	1.31	0.12*	0.38*	0.85	1.76	0.50
		University	1.63	1.98	1.51	1.61	0.42*	1.36	1.55	2.01	1.54	1.59	0.73	0.33*	1.15
	35–44	<9	0.72	0.90	0.24*	0.63	1.90	2.82	0.19*	0.98	0.47*	0.10*	0.91	1.66	0.70
		9–13	1.19	1.37	0.25*	1.10	1.86	2.81	0.67	1.46	0.10*	0.53	0.74	1.70	0.36*
		University	1.49	1.84	1.35	1.47	0.58	1.51	1.40	1.87	1.39	1.43	0.59	0.43*	1.01
1991															
Immigrants	15–24	<9	0.94	0.50*	1.32	0.93	2.36	3.11	0.96	0.32*	1.67	1.16	1.93	2.13	1.73
		9–13	0.39*	0.54	0.34*	0.29*	1.84	2.80	0.03*	0.71	0.68	0.17*	1.01	1.72	0.78
		University	1.14	1.78	1.29	1.21	0.42*	1.43	1.41	1.88	1.43	1.39	0.90	0.38*	1.05
	25–34	<9	0.90	0.49*	1.30	0.90	2.31	3.06	0.94	0.32*	1.65	1.14	1.89	2.09	1.70
		9–13	0.26*	0.39*	0.60	0.21*	1.81	2.71	0.26*	0.52	0.96	0.45*	1.19	1.65	0.99
		University	1.21	1.85	1.34	1.27	0.36*	1.39	1.47	1.95	1.46	1.44	0.91	0.38*	1.08
Canadian born	15–25	<9	0.54	0.15*	0.72	0.48*	2.09	2.99	0.37*	0.33*	1.05	0.55	1.39	1.93	1.16
		9–13	0.83	1.08	0.27*	0.75	1.81	2.85	0.60	1.26	0.11*	0.40*	0.68	1.78	0.42*
		University	1.26	1.91	1.41	1.33	0.30*	1.33	1.53	2.00	1.52	1.50	0.97	0.33*	1.14
	25–34	<9	0.48*	0.39*	0.49*	0.38*	1.98	2.93	0.16*	0.57	0.81	0.31*	1.18	1.85	0.94
		9–13	0.73	1.06	0.20*	0.66	1.68	2.72	0.55	1.24	0.19*	0.37*	0.59	1.65	0.32*
		University	1.32	1.97	1.49	1.40	0.23*	1.23	1.61	2.05	1.62	1.58	1.07	0.24*	1.24

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