The Effects of Length of Urban Residency on Native Labour Market Behaviour

by Stewart J. Clatworthy
1982

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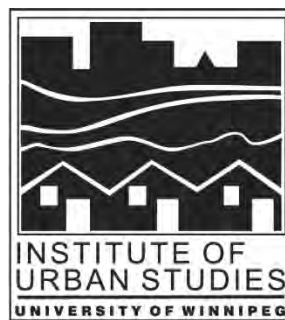**The Institute of Urban Studies**

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THE EFFECTS OF LENGTH OF URBAN RESIDENCY ON NATIVE LABOUR MARKET BEHAVIOUR
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THE EFFECTS OF LENGTH OF URBAN RESIDENCY

ON NATIVE LABOUR MARKET BEHAVIOUR

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by

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Stewart Clatworthy has been actively involved in socio-economic research and program evaluation for the past eight years. He was educated at the University of Western Ontario and Queen's University (Kingston) receiving bachelor and masters degrees in urban economic geography. Mr. Clatworthy joined the Institute of Urban Studies as senior research officer in 1978 and served as the Institute's assistant director during the 1980-82 period. While at the Institute he taught courses in urban studies and urban economics.

Mr. Clatworthy has extensive experience in the design of survey based research and statisticsl analysis projects. Of special note is his work related to labour market and employment issues involving native populations. He has also conducted several studies of urban housing markets and designed evaluations of Canada Mortgage and Housing Corporation programs.

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1.0 INTRODUCTION

Prior research by the author served to document several key
dimensions of the relationship between Winnipeg's native population
and the city's labour market (see Clatworthy 1980, 1981 a, b, c).
In general, the results of this research support the conclusion
that only a small segment of the city's native population is
participating in and receiving benefits from the Winnipeg labour
market. Moreover, a recently completed comparative study by
Clatworthy and Gunn (1982) strongly suggests that the employment
and labour market experiences of Winnipeg's native peoples are not
unique; rather they are quite similar to the experiences of natives
in other western Canadian metropolitan areas.

Although native leaders and government officials recognize
the severity of urban native employment problems very little by
way of special programming has been forthcoming. To this point in
time most employment related programming developed for urban natives
has been limited to life skills and job readiness courses and the
provision of short-term employment/training experiences. On the
surface these programs appear to be based in part on the assumptions
that urban native people, because of their recent migration to the
city, are unfamiliar with the demands of urban life, possess
personal or cultural traits which conflict with mainstream value
systems and lack sufficient knowledge of the expectations of
employers and the requirements of the labour market. From this

perspective the difficulties native people experience in the labour market become one dimension of the more general problem of "adjusting" to an urban setting.

Nearly all of the available literature on the subject of native adjustment to city life draws heavily on the anthropological theory of acculturation. With reference to native employment experiences this theory of cultural and economic change postulates that through continued exposure to urban life (i.e. as length of time in the city increases) the minority cultural group will adopt the attributes and gain the skills necessary to succeed in the urban labour market. Thus, over time, native employment experiences and socio-economic conditions will improve and approach those experienced by general urban society. Temporary support services such as life skills and job readiness programs are believed to assist and hasten the process of native integration in urban society.

In spite of the centrality of the acculturation thesis to current explanations of native employment problems, the theory has not been subjected to thorough empirical examination in a Canadian context. This study attempts to provide a partial test of the theory by examining the effects of length of time in the city on native behavior in the urban labour market.

The remainder of the study is organized into four sections. Section 2, which follows, provides a brief review of existing

research concerning native adjustment to the city and urban native employment and labour market experiences. Section 3 describes the data employed in the study and provides a description of the length of residence characteristics of Winnipeg's native population. Section 4 presents the results of formal statistical analyses of the effects of length of residence on native behaviour in the urban labour market. The concluding section provides a summary of the study's findings and discusses some of the study's implications for employment policy and program development.

2.0 PREVIOUS RESEARCH

Little systematic analysis of native urbanization and urban life conditions has been undertaken in Canada. Moreover, most of the existing work in this general subject area has ignored the length of residence theme and, in fact, several studies have muddied the issue by lumping all urban natives under the label "migrant" regardless of the length of time the individual or population has resided in the city. Our discussion of the literature embraces those few studies which consider directly the effects of length of time in the city, as well as a much larger body of research (most of which derives from U.S. experiences) which considers the cultural and socio-economic factors affecting native adjustment to urban life.

2.1 Urban Native Employment Conditions

Although few systematic analyses of urban native employment experiences have been conducted in Canada previous research has produced quite consistent results. For example, Clatworthy (1981a), Stanbury (1975) and Nagler (1973) indicated that a disproportionate number of urban natives worked in 'low-skill', 'low-wage' jobs and experienced frequent, periodic unemployment. Mooney (1976) discovered that Victoria natives experience longer and more frequent periods of unemployment than non-natives in similar occupations. The F.S.I. survey (1978) of urban and rural status Indians in Saskatchewan indicated the urban group had a higher employment rate than the rural group but that, compared to other city workers, Regina Indians were the lowest paid and the most likely to be unemployed. DIAND's Indian Conditions report (1980) indicated national off-reserve status Indian unemployment to be in the 25-30 percent range. On the basis of non-survey research in Saskatoon, Dosman (1972) concluded that there is little occupational mobility within the urban native group. Finally, Clatworthy and Gunn's (1982) recently completed, largely non-quantitative overview of native economic circumstances in all the major urban centres of western Canada indicated that for the West in general, urban natives experience excessively high rates of unemployment; have labour force participation rates significantly lower than those of general urban populations; are disproportionately employed in low skill/low entry level occupations; and experience a pattern of

employment which is very unstable.

Although not stated explicitly, the findings from the studies discussed above appear to imply the existence of a dual labour market in which the great majority of urban natives can be found in the secondary level--i.e. low-wage, low-skill jobs which provide minimal opportunity for advancement. Moreover, existing research provides an indication that movement by urban natives into the primary labour market of higher skill, higher pay occupations with potential for mobility occurs very seldom (see Clatworthy 1981c).

In spite of the labour market difficulties experienced by the vast majority of urban natives, it deserves mention that most earlier studies have obscured the fact that a few natives have been 'successful urbanites' in terms of employment, as well as income. For example, Dosman (1972) referred to a group of 'native aristocracy', while Nagler (1973) also described a white collar group which exhibited occupational and income stability. It is also worthy of note that both Stanbury (1975) and Clatworthy (1981a) cited greater labour market success for urban natives who had completed high school than for less educated members of this group.

Looking to possible future developments in this area, Clatworthy and Gunn (1982) in their examination of economic conditions in the western cities, implied (on the basis of some rough projections) that growth among the labour force age group (15+ years) of urban natives will be especially pronounced in the 1980's. Clatworthy's

(1981a) earlier more systematic work in Winnipeg noted that during
the 1981-86 period, natives are expected to account for one-quarter
of the projected growth in that city's total labour force age group.
This anticipated development in the West, particularly given the
existing employment problems facing natives, would appear to be of
great significance for labour market planners.

2.2 Native Adjustment To The City

Existing research concerning native adjustment to the city can
be grouped into three broad categories including:

a) studies which assume adjustment, adaptation or acculturation
to prevailing norms of urban living to be necessary for native
success in the city and urban labour market;

b) studies which further assume that acculturation is inevitable
(i.e. the notion of an acculturation continuum); and

c) studies which refute the concept of inevitable acculturation
and which focus instead on the peripheral position of native peoples
in the economic structure of western society.

Price's (1972) analysis of Indians in Los Angeles is typical of
the first group of studies mentioned above. Price argued that one
tribal group, the "Five Civilized Tribes", which had resided in
Los Angeles longer than most of the city's Indian population, had
adapted relatively successfully to urban life. On this basis Price
concluded that as length of residence in the city increases, native
behaviour patterns and economic conditions become increasingly
similar to those exhibited by the general urban population.

Studies by Snyder (1971, 1973) and Weppner (1971) on Denver's

Navajo population emphasize the importance of premigration circum-
stances and early urban life experiences to the successful adaptation
of natives to the city. Weppner (1971) for example, argued that
successful adjustment depended on the individual's early economic
experiences (i.e. employment, starting wages, etc.) in the city not
being so disappointing as to destroy the desire to adjust. In a
subsequent study Weppner (1972) concluded that it appeared that
labour market discrimination and low starting wages severely retarded
the process of native adjustment. Sorkin (1978) also noting the
importance of initial urban experiences argued that the successful
integration of natives to urban life may depend on the establishment
of Indian centres which provide assistance in finding housing, jobs
and social services.

Several American studies have focused on the importance of
differing value systems in explaining urban native problems. Tax
(1978), for example, argues that natives are among the few peoples
who maintain kinship and sharing cultures which differ greatly from
North America's individualized, economically oriented, urban society.
Krutz (1974) has extended this line of argument to suggest that
differing values between natives and white society adversely affect
native employment opportunities in the city. Ablon (1972) based on
a small sample of Indians in San Francisco contended that the Indians'
lack of motivation for social mobility was related to culturally
based inhibitions against future planning, wealth accumulation, and
materialism. Work by Graves (1974), however, contradicts the

findings of Ablon's study. Graves measured the economic performance
of Indian migrants to Denver with respect to three features of Navajo
personality (i.e. time perspective, loss of control, and achievement
motivation) believed to contrast with white middle class attributes.
None of the personality measures tested by Graves were associated
with economic performance in the city.

Canadian research on the theme of native adjustment to the city
remains poorly developed. However, like the U.S. research reviewed
above, most Canadian studies draw conceptual support from the theory
of acculturation. Ryan's (1978) work on Calgary for example, suggests
that native adjustment problems relate largely to initial contact with
the city and that time and the provision of proper support services
will allow adjustment to take place. Gurstein (1977) describes the
native urbanization process as a series of temporal stages in which
the native migrant increasingly transfers social and economic
relationships from a reserve (or rural) setting to the city. In a
similar vein, Nagler (1973) based on a small sample of Indians in
Toronto concluded that after about two years in an urban setting
natives who had a genuine commitment to live in the city had overcome
their adjustment problems.

In contrast with the various studies mentioned above, which
rely on the acculturation thesis, a few researchers have attempted
to interpret the difficulties experienced by urban native peoples
from a political economy perspective. This approach or style of

investigation has taken many forms, although it is distinguished
by an explicit concern for the role of societal structures and
institutions in shaping urban native economic conditions.

Perhaps the best example of work in this regard is Jorgenson's
(1967) adaptation of Andre Günder Frank's thesis on underdevelopment
to the situation of native peoples in the northern U.S. Within a
Canadian context, Mooney (1976) has attempted empirical examination
of both the Frank model and the acculturation thesis using data on
Victoria's Coastal Salish population, however, the results of the
exercise are inconclusive.[1] Other investigators including Kerri
(1976), Dosman (1972) and Brody (1971) have employed elements of a
political economy approach in their analyses.

The preceding literature review, although brief, demonstrates
the fundamental weakness of our knowledge of native adjustment to
urban life. Adaptation oriented research from a variety of sources,
on a diverse range of native groups, variously indicates that
economic, social, cultural or institutional factors are most important
in determining native life conditions in the city. Most of the
researchers however, seem to argue that conditions are improving over
time and will further improve should proper support services be
implemented. Studies from a political economy perspective, although

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1. Mooney's data and methodology appear to be inappropriate for
examining directly the length of residence effect. In addition the
findings of her study could be interpreted as support for either of
the competing theoretical positions.

scarce, generally argue that urban native problems are the outcome of the prevailing economic system and that significant improvements to urban native life conditions are unlikely to occur under present institutional frameworks.

3.0   DATA AND LENGTH OF RESIDENCE CHARACTERISTICS OF THE SAMPLE

Data contained in the Institute of Urban Studies Native Data Base present the opportunity to formally estimate relationships between length of residence in the city and native labour market behaviour. Since the acculturation thesis posits a direct relationship between length of residence in the city and performance in the labour market the analysis provides a test of the explanatory power of the thesis as it relates to native employment experiences in an urban setting.

The data base contains a broad range of demographic, socio-economic and labour market activity information for a sample of 2453 native individuals living in 651 households. These data were obtained through a survey of approximately 20,000 households residing in the Winnipeg census metropolitan area during the June 1979 - September 1980 period. Approximately 10 percent of the city's household population were contacted during the course of the survey. Appendix A describes the range and nature of information contained in the data base. Variables used in this study include age, sex, household type, length of time since last move to the city, native sub-group, education level, employment status, present

and previous occupation, origin area of migrant, and number of
weeks worked during the previous 12 month period.

3.1 Length of Residence Characteristics

Our survey of previous research noted that few existing studies
of urban native peoples have analyzed directly length of residence
patterns. Moreover, much of the literature reveals a tendency to
consider all urban natives as recent migrants. Data available for
Winnipeg indicate that although native migration to the city is a
relatively recent phenomenon most native peoples have resided in
the city for considerable periods of time and regard themselves not
as migrants but rather permanent urban residents.

Table 1, which documents length of residence patterns for select
ethno-demographic subgroups of Winnipeg's native population, reveals
that approximately 56 percent of the native labour force age group
has lived in the city for more than 10 years.[2] Among the population,
average length of residency in the city approaches 15 years. Although
length of residence patterns do not vary significantly among sex
groups, quite marked differences exist between native groups. Average
length of residency among the MNSI working age population is more than
twice that of similarly aged status Indians. Recent migrants (i.e.
individuals who moved to the city during the three years prior to
the survey) only represent a significant component of the city's

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2. The figures appearing in Tables 1 and 2 are population
estimates generated from the sample data.

Table 1

Length of Residence in the City by Sex and Native Sub-Group
Natives Aged 15+ Years, Winnipeg, 1980

| | Length of Residence (months) | | | | | Average Length of Residence | |
Sub-Group	<36	36-59	60-119	≥120	Total	Months	Years
Status Indians							
Males	452 (36.1)	201 (16.0)	128 (10.2)	472 (37.7)	1253	107.0	8.9
Females	793 (40.8)	224 (11.5)	363 (18.7)	565 (29.0)	1945	86.4	7.2
Total	1245 (38.9)	425 (13.3)	491 (11.4)	1037 (32.4)	3198	94.5	7.9
Métis/Non Status Indians							
Males	366 (10.6)	320 (9.3)	578 (16.8)	2179 (63.3)	3443	228.0	19.0
Females	440 (10.2)	277 (6.4)	727 (16.8)	2884 (66.6)	4328	203.0	16.9
Total	806 (10.4)	597 (7.7)	1305 (16.8)	5063 (65.2)	7771	214.1	17.8
Total Native							
Males	818 (17.4)	521 (11.1)	706 (15.0)	2651 (56.5)	4696	195.7	16.3
Females	1233 (19.6)	501 (8.0)	1090 (17.4)	3449 (55.0)	6273	166.8	13.9
Total	2051 (18.7)	1022 (9.3)	1796 (16.4)	6100 (56.1)	10969	179.2	14.9

status Indian population. These results confirm the findings of earlier research which indicate that migration to the city has occurred more recently among status, as opposed to métis/non-status Indians (see for example Clatworthy 1981 a, b, c).

Although most of Winnipeg's adult native population are longer term urban residents relatively few native adults resided in the city during their childhood years. Table 2 indicates that roughly 62 percent of the working age population moved to the city after reaching 15 years of age. Only about one-quarter of the population (comprised largely of MNSI) has lived in Winnipeg since early child-hood. Clearly, for most of the city's native labour force, early childhood and educational experiences occurred outside of Winnipeg, probably in a non-urban setting. Similarly, for many urban natives initial employment experiences are likely to have occurred outside of an urban labour market.

The population under investigation in this report is thus comprised largely of individuals who moved to the city as adults. For the vast majority of the population, however, considerable periods of time have passed since moving to the city. Approximately 72 percent of the adult native population has experienced at least 5 years of life in the city and more than 55 percent have lived in the city for at least 10 years.

Table 2

Length of Time in City Prior to Reaching Labour Force Age
By Sex and Native Sub-Group, Winnipeg, 1980

Sub-Group	Length of Residence Prior to Age 15 (months)				
	0	1-35	36-119	>120	Total
Status Indian					
Males	861 (68.7)	80 (6.4)	108 (8.6)	204 (16.3)	1253
Females	1674 (86.1)	45 (2.3)	137 (7.0)	89 (4.6)	1945
Total	2535 (79.3)	125 (3.9)	245 (7.7)	293 (9.2)	3198
Métis/Non Status Indian					
Males	1955 (56.8)	101 (2.9)	397 (11.5)	990 (28.8)	3443
Females	2339 (54.0)	175 (4.0)	428 (9.9)	1386 (32.0)	4328
Total	4294 (55.3)	276 (3.6)	825 (10.6)	2376 (30.6)	7771
Total Native					
Males	2816 (60.0)	181 (3.9)	505 (10.8)	1194 (25.4)	4696
Females	4013 (64.0)	220 (3.5)	565 (9.0)	1475 (23.5)	6273
Total	6829 (62.3)	401 (3.7)	1070 (9.8)	2669 (24.3)	10969

4.0 THE EFFECTS OF LENGTH OF RESIDENCY ON NATIVE EMPLOYMENT

Previous attempts to measure the effects of length of residency on urban native employment patterns have been plagued by methodological problems. Mooney (1976) and Chadwick and White (1973) for example, failed to employ adequate analytical controls relating to several characteristics of the individual, including age and education level, which affect labour market performance. As such, the results of earlier studies as they pertain to length of residence effects may be spurious. In addition, prior studies have not explicitly recognized that the effects of length of residence on labour market behaviour could vary among sub-groups of the native population. Given the segmented character of the labour market and strong relationships between occupation, education and demographic characteristics, there is good reason to believe that labour market performance over time will differ among population sub-groups.

The statistical methods used in this study, logistic regression analysis and regression employing dummy variables, overcome some of the difficulties noted above. These procedures allow for the construction of models which include not only the main effects of independent variables but also interaction effects associated with specific combinations of independent variables. The analyses consider five dimensions of labour market behaviour including labour force participation and unemployment rates, employment stability, occupational levels and occupational mobility rates. Logistic regression analyses are used to estimate the models of labour force participation and unemployment rates. Models of employment

stability, occupation level and occupational mobility rates are estimated using dummy variable regression techniques. The numbers of observations available for the analyses are summarized in Table 3.

Table 3

Sample Sizes Available For Analyses

Model	Number of Observations
Labour Force Participation Rates	1324
Unemployment Rates	634
Employment Stability Levels	612
Occupational Levels	612
Occupational Mobility Rates	206

4.1 Labour Force Participation Rates[3]

Efforts to isolate length of residence effects on labour force participation involved the estimation of three separate models. These models, which are identical except for the specification of the length of residence variable, are outlined below.

Consider a 5-way $(I \times J \times K \times L \times M)$ contingency table in which the five dimensions pertain to current labour force status, sex, native group (i.e. status Indian vs. MNSI), education level, and length of residency in the city, respectively. Let f_{ijklm} and F_{ijklm} represent respectively,

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3. The concepts of labour force participation and unemployment used in this study are those of the Labour Force Survey.

the observed and expected number of individuals in all (i, j, k, l, m) cells of the table, with the subscripts referring to the following categories:

Current Labour Force Status $(I = 2)$	$i = 1$ in labour force
	$i = 2$ not in labour force
Sex $(J = 2)$	$j = 1$ male
	$j = 2$ female
Native Group $(K = 2)$	$k = 1$ status Indian
	$k = 2$ Métis/Non-Status Indian
Education $(L = 3)$	$l = 1$ less than 7 grades completed
	$l = 2$ 7-11 grades completed
	$l = 3$ 12 or more grades completed
in *Model (1)* Length of Residence in City $(M = 2)$	$m = 1$ <3 years since last move to city
	$m = 2$ ⩾3 years since last move to city
in *Model (2)* Length of Residence in City $(M = 2)$	$m = 1$ <5 years since last move to city
	$m = 2$ ⩾5 years since last move to city
in *Model (3)* Length of Residence in City $(M = 2)$	$m = 1$ <10 years since last move to city
	$m = 2$ ⩾10 years since last move to city

Let N represent the total number of observations in the table, such that:

$$\Sigma f_{ijklm} = \Sigma F_{ijklm} = N \qquad\qquad (1)$$

We define the logit, ψ, as the natural logarithim of the ratio of labour force participants to non-participants in every 4-way combination of the levels of the other four variables. Thus:

$$\psi_{jklm} = \log \left(F_{1jklm} / F_{2jklm} \right) \qquad (2)$$

Procedures developed by Goodman (1971) and others permit decomposition of the logit into independent and additive components of the main effects and interactions related to the four explanatory (independent) variables. In this case the model of interest to us can be written as:

$$\psi_{jklm} = \mu + B_j^J + B_k^K + B_l^L + B_m^M$$

$$+ B_{jk}^{JK} + \text{(other two variable combinations)}$$

$$+ B_{jkl}^{JKL} + \text{(other three variable combinations)}$$

$$+ B_{jklm}^{JKLM} \qquad (3)$$

Where μ is a constant representing the grand mean of the logits, B_j^J is the jth parameter pertaining in our model to the sex factor. (B_1^J and B_2^J denote the difference from the grand mean associated with being male and female respectively. B_{jk}^{JK} is the jkth parameter representing the sex * native group interaction; for example B_{11}^{JK} denotes the deviation from the sum of the grand mean (μ) and the main effects (B_1^J and B_1^K) attributable to being male and being a status Indian (similarly for other parameters and for the other five two variable interactions).

B_{jkl}^{JKL} refers to the jklth parameter of the sex * native group *

education interaction (and similarly for the other three variable inter-
actions).

B_{jklm}^{JKLM} in the $jklm$th parameter associated with the one four variable
interaction.

The effects must satisfy the following conditions:

$$\Sigma_j B_j^J = 0 \qquad\qquad (4)$$

$$\Sigma_j B_{jk}^{JK} = \Sigma_k B_{jk}^{JK} = 0 \qquad\qquad (5)$$

$$\Sigma_j B_{jkl}^{JKL} = \Sigma_k B_{jkl}^{JKL} = \Sigma_l B_{jkl}^{JKL} = 0 \qquad\qquad (6)$$

$$\Sigma_j B_{jklm}^{JKLM} = \Sigma_k B_{jklm}^{JKLM} = \Sigma_l B_{jklm}^{JKLM} = \Sigma_m B_{jklm}^{JKLM} = 0 \qquad (7)$$

Each model consists, therefore, of four main effects and eleven
interactions each associated with a set of parameters pertaining to the
respective variables. In a fashion similar to the B's the degrees of
freedom associated with the parameters are independent and additive
(see Goodman 1970).

4.2 Unemployment Rates

Investigation of the effects of length of urban residency on unemploy-
ment rates involved the estimation of three 6-way (i.e. $I \times J \times K \times L \times M \times N$)
contingency table models. These models, like those estimated for labour
force participation rates, differ only with respect to specification of
the length of residency variable. Subscripts of the variables included
in the models refer to the following categories:

Employment Status *(I = 2)* $i = 1$ unemployed

                                              $i = 2$ employed

Age *(J = 2)* $j = 1$ <25 years of age

                                             $j = 2$ ≥25 years of age

Sex *(K = 2)* $k = 1$ male

                                             $k = 2$ female

Native Group *(L = 2)* $l = 1$ Status Indian

                                             $l = 2$ Métis/non-status Indian

Education *(M = 3)* $m = 1$ less than 7 grades completed

                                             $m = 2$ 7-11 grades completed

                                             $m = 3$ 12 or more grades completed

in *Model (4)* Length of Residence in City *(N = 2)* $n = 1$ <3 years since last move to city

                                             $n = 2$ ≥3 years since last move to city

in *Model (5)* Length of Residence in City *(N = 2)* $n = 1$ <5 years since last move to city

                                             $n = 2$ ≥5 years since last move to city

in *Model (6)* Length of Residence in City *(N = 2)* $n = 1$ <10 years since last move to city

                                             $n = 2$ ≥10 years since last move to city

4.3 Estimating the Models

Some of the main effects and interactions may not be statistically significant in the sense that they do not affect the logit values. As such, our concern is to isolate a model containing only those effects

which are especially important in explaining the variations in the logit values. We employ a procedure commonly referred to as stepwise logit analysis to identify the best fit models (Goodman 1971). One effect at a time is chosen for inclusion in the model starting with the lowest order (main) effects and proceeding to higher order interactions. At each step in the process a significance test determines whether to retain or delete the added effect. The process of adding effects to the model continues until no further effect satisfies the significance criterion (in our models, $\alpha = .05$).

4.4 Analysis Results: Labour Force Participation Rates

Table 4 summarizes the results of efforts to estimate the three labour force participation rate models. Significant effects included in the models are listed in column 2 of the table. Listed in column 3 is a ratio R, which measures the amount of total x^2 variation accounted for by the set of effects included in the model. This ratio, which can be used as an index to determine the merit of the model, is calculated as follows:

$$R = \frac{x^2 \text{ (total variation)} - x^2 \text{ (model at a given step)}}{x^2 \text{ (total variation)}} \qquad (8)$$

The table reveals that the models are identical with respect to the effects or parameters included. Each of the models contains significant effects for sex, native group, and education level. Of particular interest with respect to the focus of this study is the absence of significant

Table 4

Estimation of Labour Force Participation Rate Models

Model	Significant Effects	R
(1)	J, K, L	.913
(2)	same as Model (1)	.901
(3)	same as Model (1)	.915

where J = sex, K = native group, L = education, and M = length of residence in the city.

length of residence effects in each of the models. Very simply, the models imply that native labour force participation rates are not patterned over (or affected by) length of urban residency.

Table 5 provides a more detailed summary of the sequence of steps leading to specification of Model (3)[4]. The effects or parameters added at each step are identified in column 2. Columns 3 and 4 present values of the maximum likelihood (MLR) x^2 ratio and the degrees of freedom associated with each step. Columns 5 and 6 present changes in the MLR x^2 and degrees of freedom resulting from the addition of each effect into the model. The ratio, R, identified earlier, is listed in column 7 of the table and column 8 presents the proportion of total x^2 variation accounted for by each of the effects.

The table reveals, as expected, that sex (variable J) is the most powerful factor in differentiating rates of native labour force partici-pation. Participation rates, however, are also strongly patterned over education level (variable L). Native group (variable K) although highly significant accounts for a comparatively small amount of variation in participation rates and is substantially less important than either sex or education in accounting for participation rate differentials.

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4. We elect to present more detailed information on this model because it provides the best fit to the data and contains the fewest number of significant parameters. It should be noted that parameter estimates for this model vary only slightly from those of *Models (1) and (2).*

Table 5

Summary of Stepwise Logit Analysis of Labour Force Participation Rates (Model (3))

Step	β added	χ^2	d.f.	change in χ^2	change in d.f.	R	% of total χ^2
(1)	-	287.019	24	-	-	-	-
(2)	J	89.695	23	197.325*	1	.687	68.7
(3)	L	35.483	21	54.211*	2	.876	18.9
(4)	K	24.258	20	11.226*	1	.915	3.9

* effect significant at α = .01

Table 6, which presents the parameter estimates of Model (3), reveals the magnitudes and directions of the effects on participation rates. Given these parameters, estimates of the probability of participating in the labour force (i.e. labour force participation rates) can be obtained from equation (9) below:

$$LFPR_{jklm} = 1 \div (1 + e^{-\psi_{jklm}}) \qquad (9)$$

These estimates are illustrated graphically in Figure 1. The figure reveals that labour force participation among the urban native population is:

    i)   substantially lower among females than males,

    ii)   substantially higher among better educated individuals,

    iii)   moderately higher among métis/non-status, as opposed to, status Indians,

and iv)   not affected by length of residency in the city.

4.5 Analysis Results: Unemployment Rates

Results of the estimation of the three unemployment rate models (i.e. Models (4), (5) and (6)) are summarized in Table 7. The table indicates that although there exists some variability in goodness of fit (i.e. the ratio R), all models are identical with respect to the effects included. Significant effects on unemployment rates were identified for age, sex, native group and education level. In addition each of the models contain significant interaction effects associated with age * education and sex * native group. As in the case of labour

Table 6

Parameter Estimates of Labour Force Participation Rate Model (3)

Grand Mean: $\mu = 0.500$

J	$j = 1$	0.818	$j = 2$	-0.818
K	$k = 1$	-0.211	$k = 2$	0.211
L	$l = 1$	-0.763	$l = 2$	0.062	$l = 3$	0.701

Figure 1

ESTIMATED LABOUR FORCE PARTICIPATION RATES BY SEX, NATIVE GROUP
AND EDUCATION LEVEL, WINNIPEG, 1980

- 28 -
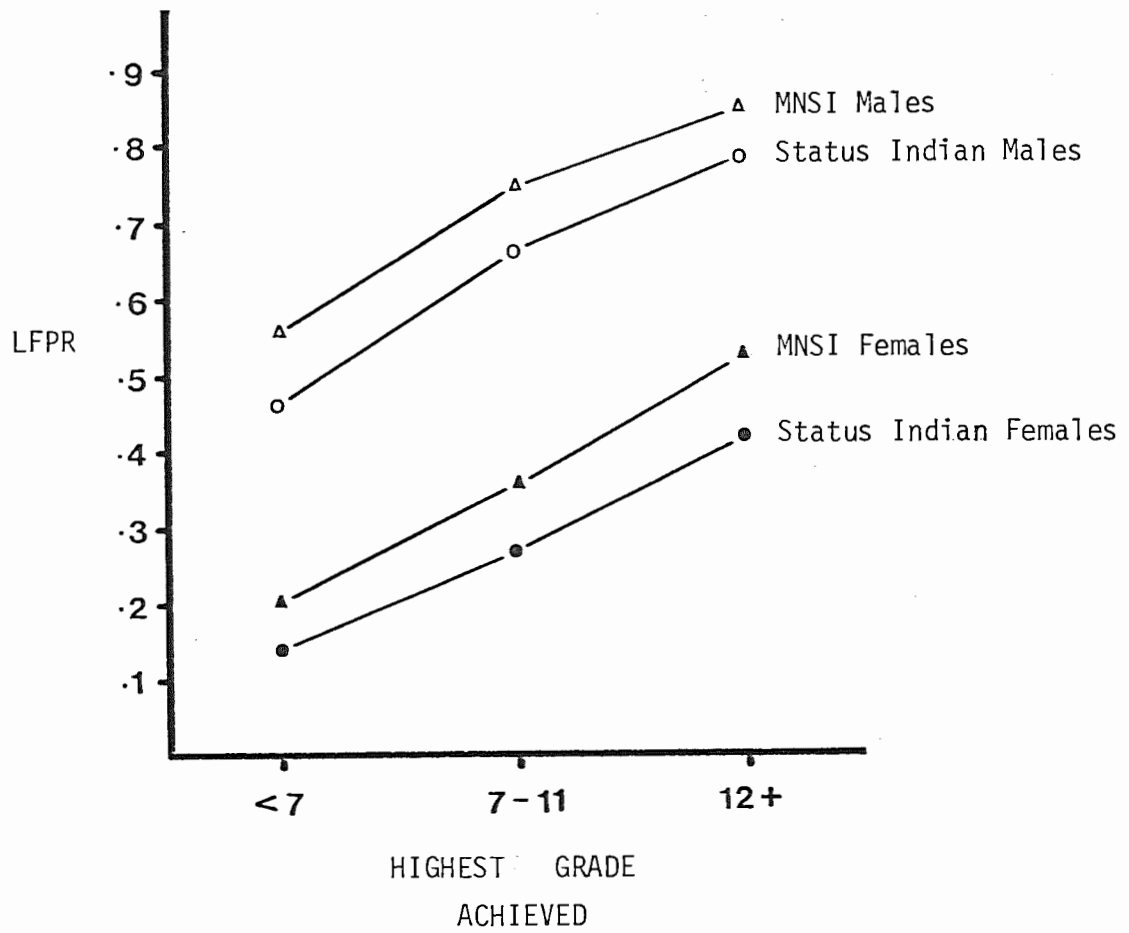
Table 7

Estimation of Unemployment Rate Models

Model	Significant Effects	R
(4)	μ, J, K, L, M, $J \ X \ M$, $K \ X \ L$	.790
(5)	same as Model (4)	.794
(6)	same as Model (4)	.819

where J = age, K = sex, L = native group, M = education and N = length
   of residence in the city.

force participation rates none of the unemployment rate models include effects pertaining to length of urban residency.

A detailed summary of the sequence of steps involved in estimating Model (6) is provided in Table 8. The table indicates that differentials in unemployment rates are most pronounced over age and education groups, however, significant differences occur between sex and native groups. The contribution of the two interaction terms, although significant, tends to be small in comparison with the main effects.

Using the parameter estimates of Model (6) (see Table 9) estimates of the probability of incurring unemployment have been calculated. These estimates which are illustrated in Figure 2 indicate that rates of unemployment among the city's native population are:

    i)   lower among MNSI than status Indians;

    ii)   substantially lower for males than females among the MNSI population;

    iii)   roughly equivalent for males and females among the status Indian population;

    iv)   markedly higher among younger natives, especially those with lower levels of education;

    v)   substantially lower among better educated natives, particularly those with 12 or more grades completed and those aged <25 years;

and vi)   not affected by length of residency in the city.

Table 8

Summary of Stepwise Logit Analysis of Unemployment Rates (Model (6))

Step	β added	χ^2	$d.f.$	change in χ^2	change in $d.f.$	R	% of total χ^2
(1)	-	83.275	23	-	-	-	-
(2)	J	60.780	22	22.494*	1	.270	27.0
(3)	M	44.012	20	16.769*	2	.471	20.1
(4)	L	33.458	19	10.554*	1	.598	12.7
(5)	K	26.482	18	6.976*	1	.682	8.4
(6)	$K \times L$	21.764	17	4.718*	1	.739	5.7
(7)	$J \times M$	15.096	15	6.667**	2	.819	8.0

*   effect significant at α = .01

** effect significant at α = .05

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Table 9

Parameter Estimates of Unemployment Rate Model (6)

Grand Mean: $\mu = -0.557$

J	$j = 1$	0.527	$j = 2$		-0.527
K	$k = 1$	-0.179	$k = 2$		0.179
L	$l = 1$	0.275	$l = 2$		-0.275
M	$m = 1$	0.768	$m = 2$	0.148 $m = 3$	-0.916

		$m = 1$	$m = 2$	$m = 3$
$J * M$	$j = 1$	0.637	-0.40	-0.597
	$j = 2$	-0.637	0.040	0.597

		$l = 1$	$l = 2$
$K * L$	$h = 1$	0.208	-0.208
	$h = 2$	-0.208	0.208

Figure 2

ESTIMATED RATES OF UNEMPLOYMENT BY AGE, SEX,
NATIVE GROUP AND EDUCATION LEVEL, WINNIPEG, 1980

<25 years of age

≥25 years of age

o Status Indian Males
• Status Indian Females
△ MNSI Males
▲ MNSI Females

UR

Highest Grade
Achieved

Highest Grade
Achieved
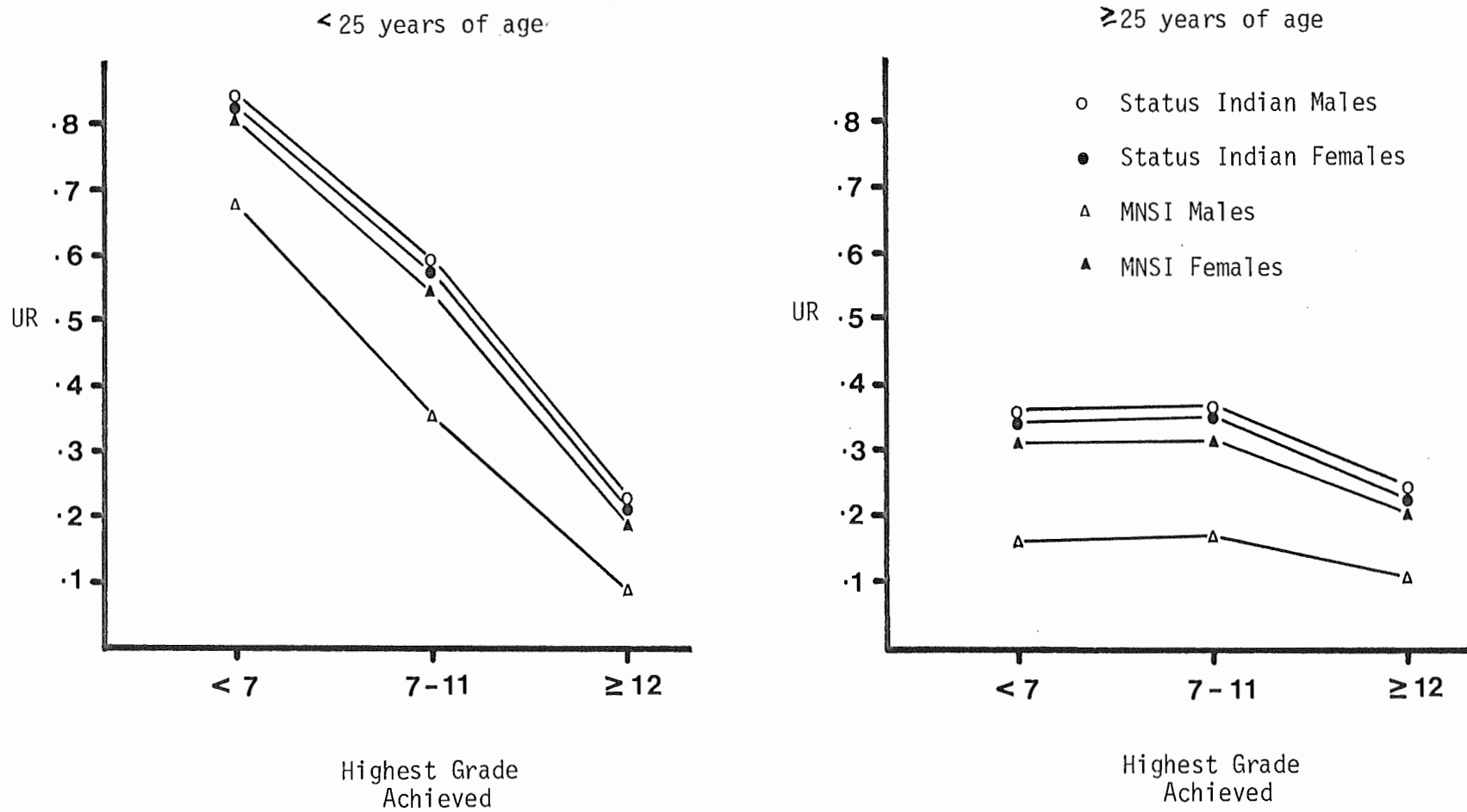
4.6 Analysis of Employment Stability, Occupational Levels and Occupational
      Mobility

The preceding analyses have attempted to identify the effects of
several socio-demographic variables including length of urban residency
on native labour force participation and employment patterns. The
analyses have found that participation and unemployment rates are not
patterned over length of residency in the city. These results, which
are in conflict with those postulated by the acculturation thesis,
raise doubts about the applicability of the theory in terms of explaining
urban native labour market behaviour. The possibility remains, however,
that length of urban residency affects other facets of native employment
behaviour. This section of the study extends the scope of our investi-
gation of length of residence effects to include employment stability,
occupation levels, and occupational mobility rates.

Employment stability is measured as the ratio of length of time
employed to length of time in the labour force during the previous 12
month period. In the case of individuals who moved to the city (or
reached labour force age) during the previous 12 months the denominator
used in the construction of the ratio measures the length of time during
which the individual could have participated in the urban labour market.
The analysis includes only those individuals who held a job during some
portion of the 12 month period prior to the survey.

Occupation levels are measured according to the Blishen/McRoberts
index of occupations (see Appendix B). For individuals employed at the

time of the survey the index refers to present occupation. For individuals not working at the time of the survey the index refers to the individual's most recent prior employment experience. As in the case of the employment stability analysis, only those individuals who worked some portion of the 12 month period prior to the survey are included in the study.

Occupational mobility rates were constructed by dividing the difference of the Blishen/McRoberts index for present and previous occupations by the length of time (in years) since starting the previous occupation. In the case of individuals for whom full employment histories were available the variable measures change between the present occupation level and the level associated with their first job in the city. For all other individuals the variable measures change between present occupation and the least recent previous occupation in the city for which information was provided.

The analyses employ a form of multiple regression in which the individual's socio-demographic and length of residency characteristics (i.e. the independent variables) are specified as dummy variables. The models to be estimated have the form:

$$Y = B_0 + B_1 X_1 + B_2 X_2 + B_3 X_3 + B_4 X_4 + B_5 X_5 + B_6 X_6 + B_7 X_7 + \xi \qquad (10)$$

where Y = employment stability index (Model (7))

= occupation level (Model (8))

= annual rate of occupational mobility (Model (9))

$X_1 = 1$ if $\geq$25 years of age

$X_1 = 0$ if <25 years of age

$X_2 = 1$ if female

$X_2 = 0$ if male

$X_3 = 1$ if MNSI

$X_3 = 0$ if status Indian

$X_4 = 1$ if education level is 7-11 years of schooling

$X_4 = 0$ if otherwise

$X_5 = 1$ if education level is 12 or more years of schooling

$X_5 = 0$ if otherwise

$X_6 = 1$ if length of urban residency 3-10 years

$X_6 = 0$ if otherwise

$X_7 = 1$ if length of urban residency >10 years

$X_7 = 0$ if otherwise

The B's refer (as in our earlier analyses) to the parameters of the model and are interpreted as the effects of the independent variables on employment stability, occupation level and occupational mobility rates. ξ is the normal (random) error term. The dummy variables are specified such that the B_0 (the constant) reflects the score on the dependent variable (e.g. employment stability) of a baseline or reference group (i.e. where $X_1 = X_2 = X_3 = X_4 = X_5 = X_6 = X_7 = 0$). $B_1 \ldots B_7$ measure the effect on the dependent variable attributable to a change in the

level of the associated independent variable. B_1, for example, measures
the effect of being 25 or more years of age as opposed to being less than
25 years of age. Similarly B_2-B_7 measure respectively, the effects of
being female, a metis/non-status Indian, of having 7-11 years of schooling,
of having 12 or more years of schooling, of residing in the city for 3-10
years, and of residing in the city for more than 10 years.

4.7 Results: Employment Stability

Table 10 provides a summary of the results of the employment stability
regression analysis. The table reveals that although several of the
independent variables are statistically significant, the model fails to
account for a substantial portion of the total variance (R^2 = .159). The
parameters (B's) suggest that employment stability is higher among older
natives, MNSI, and individuals possessing 12 or more grades of schooling.
Employment stability tends to be lower among native females. Of special
interest are the results concerning length of urban residency. Although
statistically significant only for individuals with 3-10 years of resi-
dency in the city, both parameters (B_6 and B_7) associated with length of
residency are negative. These results imply that employment stability
does not improve with longer residency in the city; on the contrary,
natives who lived in the city for more than three years tended to be
employed for a fewer number of weeks (during the previous 12 month period)
than those who recently moved to the city.

4.8 Results: Occupation Levels

The regression analysis of occupation levels (see Table 11) also

Table 10

Results of Employment Stability Regression Analysis

Variable	B	Standard Error of B	Significance
Constant (B_0)	0.579	-	-
Age = $\geqslant$25 years (B_1)	0.148	0.039	α = .001
Sex = Female (B_2)	-0.205	0.036	α = .001
Native Group = MNSI (B_3)	0.091	0.040	α = .023
Education 7-11 years (B_4)	0.033	0.058	NS
Education $\geqslant$12 years (B_5)	0.129	0.063	α = .042
Length of Residence 3-10 years (B_6)	-0.115	0.051	α = .025
Length of Residence $\geqslant$10 years (B_7)	-0.020	0.047	NS

$$R^2 = .159 \qquad N = 612$$

Table 11

Results of Occupation Level Regression Analysis

Variable	B	Standard Error of B	Significance
Constant (B_0)	29.460	-	-
Age = $\geqslant$25 years (B_1)	1.209	0.897	NS
Sex = Female (B_2)	-1.964	0.761	$\alpha = .01$
Native Group = MNSI (B_3)	0.158	0.844	NS
Education 7-11 years (B_4)	2.142	1.041	$\alpha = .04$
Education 12+ years (B_5)	10.519	1.219	$\alpha = .001$
Length of Residence 3-10 years (B_6)	-1.370	1.093	NS
Length of Residence 10+ years (B_7)	0.148	0.992	NS

$$R^2 = .159 \qquad N = 612$$

failed to account for a large portion of the total variance (R^2 = .159).

Moreover, only three of the seven independent variables included in the

model proved significant at the α = .05 confidence level. Occupation

levels are higher among native individuals with higher levels of education,

especially those who have completed 12 or more years schooling. The co-

efficient for sex (X_2) was also significant implying that native females

exhibit marginally lower scores on the occupation level index. The co-

efficients for both length of urban residency variables (X_6 and X_7) were

not statistically different from zero, implying that length of residency

has little or no effect on native occupation levels.

4.9   Results: Occupational   Mobility Rates

Table 12 provides a summary of the results of our analyses of rates

of occupational mobility. Although only three of the coefficients are

statistically significant the model fits the data reasonably well

(R^2 = .482). Occupational mobility rates are unaffected by sex, native

group and level of education. The effect of age (X_1) is negative although

quite small implying that rates of mobility are marginally lower among

older native individuals. The coefficients associated with the two

length of urban residency variables (X_6 and X_7) are highly significant

and negative. These coefficients imply that occupational mobility among

the population is substantially lower among longer term urban residents.

Moreover, among those individuals who have resided in the city for more

than 10 years, mobility is generally downward.

Table 12

Results of Occupational Mobility Rate Regression Analysis

Variable	B	Standard Error of B	Significance
Constant (B_0)	1.198	-	-
Age = $\geqslant$25 years (B_1)	-0.130	.060	α = .026
Sex = Female (B_2)	-0.059	.048	NS
Native Group = MNSI (B_3)	-0.077	.060	NS
Education 7-11 years (B_4)	0.117	.084	NS
Education 12+ years (B_5)	0.078	.096	NS
Length of Residence 3-10 years (B_6)	-0.842	.084	α = .001
Length of Residence $\geqslant$10 years (B_7)	-0.907	.072	α = .001

$$R^2 = .482 \qquad N = 206$$

5.0 SUMMARY AND CONCLUSIONS

The study has attempted to identify and measure the effects of
length of urban residency on several dimensions of native labour
market behaviour in Winnipeg. In comparison with previous research,
the methodologies employed in this study control more fully for
variations in the individual's ethno-demographic characteristics and
thus allow more accurate estimation of length of residence differentials.
The major findings of the study are summarized below:

i) The majority of the city's native population of labour force
age (i.e. 15 or more years) migrated to the city as adults. As such
it seems highly likely that the educational and early employment
experiences of most Winnipeg natives occurred outside of an urban
context.

ii) For most native people however, considerable periods of time
have passed since moving to the city. More than three quarters of the
population have lived continuously in the city for five or more years
and approximately 55 percent have been residents of the city for more
than 10 years.

iii) Differentials in rates of labour force participation among
Winnipeg's native population are largely attributable to sex and
education differences. Participation rates are unaffected by length
of residency in the city.

iv) Native unemployment rates are strongly patterned over (or
affected by) education level, native group, sex, and age. Unemployment
rates do not vary over length of residence in the city.

v) Longer residence in the city does not lead to higher levels
of employment stability among Winnipeg's natives. Employment stability
is, however, greater among better educated members of the labour force.

vi) Present occupation levels appear to be unaffected by length of
residency and occupational mobility rates are sharply lower among
longer term residents.

In general the study has found that no substantial differences exist
between longer term native residents and recent native migrants with

respect to several dimensions of labour market behaviour. The severe
employment difficulties experienced by native newcomers to the city
have been found to occur to the same degree amongst native individuals
who have resided continuously in the city for more than ten years.
The absence of length of residence effects on native employment patterns
clearly raises questions about the utility of the acculturation thesis
in terms of explaining native adaptation to urban life and the urban
labour market.

In light of the study's findings concerning the pervasiveness and
temporal stability of native employment difficulties, the present role
of native peoples in the urban labour market appears to be firmly
established. This condition is consistent with the postulates of the
political economy theories of Mooney (1976) and Jorgenson (1967) and
suggests the need to examine more fully native employment and labour
market issues from this theoretical and analytical perspective.

The study's results are also consistent with the arguments of
the dual or segmented labour market theory. Within the context of
this theory the lack of improvement in native employment conditions
over time results from the inability of the population to gain access
to primary market occupations through direct entry. Earlier research
by the author strongly suggests that the native labour force is
employed for the most part in very low level "secondary" market occu-
pations [see Clatworthy 1981a]. The present study reveals that the
movement of natives out of these occupations into higher level

occupations which characterize the primary labour market is not occurring.

With respect to policy and program development our results suggest that rudimentary job and life skills development and short term work experience programs which attempt simply to "familiarize and acclimatize" native people to urban life and the urban labour market are unlikely to have much effect in terms of improving the employability or employment opportunities of urban native peoples. When delivered in isolation, such programs appear for the most part capable only of preparing native workers for 'low level' employment in the secondary labour market, thus perpetuating the patterns of employment and labour market behaviour identified in this study.

The study's results pertaining to the effects of education on native employment patterns strongly suggest the need to redirect and strengthen education and occupational training programs. Substantial improvements in employment patterns have been clearly identified among high school and technical vocation school graduates, especially among young native adults. Based on earlier research (e.g. Deprez (1973)) skill development and education programs are likely to be most successful if tied closely to affirmative action and job creation programs which create primary labour market job opportunities for native peoples.

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APPENDIX A

Data Bases Employed
in the Study

I.U.S. Native Housing Data Base

1.1 Individual Sub-File

INFORMATION BIT	DESCRIPTION	FORMAT
1	census tract I.D.	I3
2	age	I2
3	sex	I1
4	education level	I2
5	current employment status	I1
6	indian group	I1
7	weeks worked last year	I2
8	length of time in city	I3
9	present job S.E.S.	I4
10	present job rank of S.E.S.	I3
11	present job occupation I.D. #	I4
12	present job length of employment	I3
13	present job hours per week	I2
14	time unemployed between current and previous job	I3
15	previous job S.E.S.	I4
16	previous job rank of S.E.S.	I3
17	previous job occupation I.D. #	I4
18	previous job length of employment	I3
19	previous job hours per week	I2
20	time unemployed between previous and 2nd previous job	I3
21	2nd previous job S.E.S.	I4
22	2nd previous job rank of S.E.S.	I3
23	2nd previous job occupation I.D. #	I4
24	2nd previous job length of employment	I3
25	2nd previous job hours per week	I2
26	time unemployed between 2nd and 3rd previous jobs	I3
27	3rd previous job S.E.S.	I4
28	3rd previous job rank of S.E.S.	I3
29	3rd previous job occupation I.D. #	I4
30	3rd previous job length of employment	I3
31	3rd previous job hours per week	I2
32	1st job in city S.E.S.	I4
33	1st job in city rank of S.E.S.	I3
34	1st job in city occupation I.D. #	I4
35	1st job in city length of employment	I3
36	1st job in city hours per week	I2
37	buffer	I10
	TOTAL length	I114

I.U.S. Native Housing Data Base

1.2 Household Sub-File

VARIABLE	DESCRIPTION	DATA FORMAT
1	Sampling Area	I2
2	Sex of Household Head (H.H.)	I1
3	Age of Household Head (H.H.)	I2
4	Education Level of H.H.	I2
5	Employment Status of H.H.	I1
6	Native Group of H.H.	I1
7	Household Type	I2
8	Household Size	I2
9	# of Children aged < 5 years	I1
10	# of Children aged 5-16 years	I1
11	# of Children aged ≥ 17 years	I1
12	# of Household members employed	I1
13	Total Household Income	I5
14	Transfer Income	I5
15	Recipient of Social Assistance	I1
16	U.I. recipient	I1
17	Pension recipient	I1
18	Ed/Training Allowance recipient	I1
19	Other transfer recipient	I1
20	Months since moving to city	I3
21	# of times a resident of Winnipeg	I1
	Reasons for Moving to Winnipeg:	
22	Employment	I1
23	Education	I1
24	Medical	I1
25	Housing	I1
26	Family in city	I1
27	Problems on reserve	I1
28	Other	I1
29	Community of Origin (or reserve)	I1
30	Migration Intentions	I1
31	# of Household members in labour force	I1
32	# of Major housing unit defects	I1
33	C.M.H.C. housing condition code	I1
34	Structure type	I1
35	# of rooms	I2
36	# of rooms used as bedrooms	I2
37	Tenure	I1
38	Value of owner occupied units	I6
39	Annual shelter cost	I4
40	Buffer	I11
	TOTAL Length	I75

APPENDIX B

The Blishen/McRobert
Occupation Index

Construction of the Blishen/McRoberts Scale

The Blishen/McRoberts (B/M) socio-economic index of occupations is based upon the results of a regression analysis employing occupational prestige as the dependent variable and education level and income as independent variables.

The relationship may be expressed as follows:

Status $(Y) = B_1$ Income $(X_1) + B_2$ Education $(X_2) + C$

The scaled occupations are taken from those listed in the 1971 Canadian occupational manual (Department of Manpower and Immigration, 1974). The scale is a revision of the same type of analysis employed by Blishen's (1967) original index.

The data for the scale are taken from the 1971 Canadian census and "are based on those persons in the male labour force who worked in 1970 and for whom occupation refers to the job held in the week preceding the 1971 census enumeration or the job of longest duration since 1 January, 1970 if they were not employed that week" (Blishen and McRoberts, 1976: 71).

The income variable was defined as follows: "the income level ... is expressed as the percentage of males who worked in an occupation in 1970 and whose 1970 employment income was $6500 or over" (p. 71). Income data were obtained from a total enumeration of the labour force collected through the 1971 census.

The education variable "is expressed as the percentage of males who worked in an occupation in 1970 and who had attended at least grade 12 if the province of schooling was Prince Edward Island, New Bruswick, Ontario, British Columbia, Yukon, or outside Canada, or who had attended at least Grade 11 if their

schooling had been undertaken in Newfoundland, Nova Scotia,
Quebec, Manitoba, Saskatchewan, or Alberta" (p. 72). Again,
data were obtained from a total enumeration of the labour
force collected through the 1971 census.

The dependent variable, occupational prestige, was defined
as the Pineo-Porter (1966) prestige score for occupations.
Prestige scores for 102 occupations which corresponded to the
1971 census occupational classification were utilized. "The
unstandardized regression weights resulting from the regression
analysis were .2640 for income and .3619 for education. The
intercept was 13.985" (p. 72). Occupations were ranked
according to a 10-digit socio-economic index score produced in
the regression analysis.

Table B-1 provides an alphabetical listing of CCDO
occupations by socio-economic index and the rank of the index.

Table B-1

ALPHABETICAL LISTING OF OCCUPATIONS BY SOCIOECONOMIC INDEX AND RANK ORDER,
CANADA, 1971

Occupational classification number	Occupational classification	Socio-economic index	Rank
8373	abrading & polishing occs: clay, glass & stone, n.e.c.	30.3649	388
1171	accountants, auditors & financial officers	67.4100	37
3335	actors	49.4299	176
3314	ad. & illustrating artists	48.6593	185
4192	adjusters, claim	53.1130	140
1134	administrators, medicine & health	70.4313	20
1133	administrators, teaching & rel. fields	75.2846	1
5174	advertising salesmen	57.2838	105
2155	aeronautical engineers	66.9202	42
2131	agriculturists & rel. scientists	61.1907	78
9119	air transport operating occs. n.e.c.	41.2020	260
9113	air transport operating support occs.	59.1959	91
8515	aircraft fabricat. & assembl. occs. n.e.c.	41.7126	253
8582	aircraft mechanics & repairmen	51.5605	153
6169	apparel & furnishings, service occs. n.e.c.	26.7076	443
2165	architec. & engineering technologists & technicians	62.5002	66
2141	architects	71.9520	13
2159	architects & engineers n.e.c.	68.9527	26
3373	athletes	49.2975	177
3375	attendants, sport & recreation	29.9834	394
6147	babysitters	24.5828	466
8213	baking, confectionery making & rel. occs.	28.4424	420
6143	barbers, hairdressers & rel. occs.	25.0670	460
6123	bartenders	26.4920	449
8227	beverage process. occs.	40.7490	268
2133	biologists & rel. scientists	65.7778	50
7715	blasting occs.	33.3923	349
8337	boilermakers, platers & structural metal workers	41.0745	264
8571	bonding & cementing occs: rubb. plast. & rel. prod.	33.7494	347
9517	bookbinders & rel. occs.	38.8055	291
4131	bookkeepers & acc'ting clerks	50.7098	160
4139	bookkeeping, account-recording & rel. occs. n.e.c.	50.9450	159
8782	brick & stone masons & tile setters	29.4705	405
9171	bus drivers	32.2318	368
8585	bus. & commerc. machine mechanics & repairmen	50.1433	166
8525	bus. & commerc. machines fabricat. & assembl. occs. n.e.c.	50.2132	165
5177	business services salesmen	60.8690	81
5191	buyers, wholesale & retail trade	55.4303	124
8541	cabinet & wood furniture makers	27.0457	436
7311	captains & oth. officers, fishing vessels	29.7920	398
8781	carpenters & rel. occs.	28.0382	422
8251	cellulose pulp preparing occs.	44.2194	233
6133	chambermaids & housemen	27.1178	435
6121	chefs & cooks	26.8068	441
8179	chem. petrol. rubb. plast. & rel. mater. process. occs. n.e.c.	45.6396	214
2142	chemical engineers	70.8910	18
2111	chemists	66.4193	45
2143	civil engineers	69.2593	23
8379	clay, glass & stone & rel. mat. machin. occs. n.e.c.	32.1559	370
8159	clay, glass & stone process. forming & rel. occs. n.e.c.	32.1517	371
3370	coaches, trainers, instructors & mgrs: sport & rec.	46.8675	203
8173	coating & calendering occs: chem. & rel. mat.	33.0795	353
4191	collectors	49.7978	171
5133	commercial travellers	57.4109	104
6116	commissioned officers, armed forces	68.1072	34
2791	commun. college & vocational school teachers	66.1264	48
8783	concrete finishing & rel. occs.	29.0537	408
9133	conductors & brakemen, railway	47.8677	194
8733	construction electric. & repairmen	46.8823	202
8171	crushing & grinding occs: chem. & rel. materials	31.4274	378
8111	crushing & grinding occs: mineral ores	37.9576	305
8575	cutting & finishing occs: rubb. plast. & rel. prod.	31.8769	374
8371	cutting & shaping occs: clay, glass & stone	28.6463	418
3333	dancers & choreographers	38.2202	302
9155	deck crew, ship	28.9568	411
9151	deck officers	44.8931	222
3157	dental hygienists, assist. & technic.	48.2832	189
3113	dentists	74.6984	3
3152	dieticians & nutritionists	64.4183	59
3154	dispensing opticians	49.7960	172
8165	distil., sublim. & carboniz. occs. chemicals & rel. materials	57.4990	103
2163	draughtsmen	62.0921	69
5193	driver-salesmen	32.8339	357
4143	e.d.p. equip. operators	55.8252	119
2311	economists	69.6355	22
2391	educational & vocational counsellors	71.9267	14
8739	el. pow. light. & wire commun. equip erec. i. & r. occs. n.e.c.	48.2167	190
8533	elec. & rel. equip.-i. & r. occs. n.e.c.	43.7960	238
2144	electrical engineers	70.7401	19
8531	electrical equip. fabricat. & assemb. occs.	35.4749	326
8731	electrical power lineman & rel. occs.	48.5124	186
9559	electron. & rel. commun. equip. operating occs. n.e.c.	54.0143	135
8535	electronic & rel. equip. install. & repair. occs. n.e.c.	59.7432	87
8534	electronic equip. fabricat. & assemb. occs.	38.5749	294
2731	elem. & kindergarten teachers	65.8531	49
2739	element. & sec. school teaching & rel. occs. n.e.c.	55.5801	120

Occupational classification number	Occupational classification	Socio-economic index	Rank
6193	elevator operating occs.	23.0774	479
9157	engine & boiler room crew, ship	29.8589	396
8511	engine & rel. equip. fabricat. & assemb. occs. n.e.c.	34.5173	339
9153	engineering officers, ship	41.8162	251
8391	engravers, etchers & rel. occs.	38.7543	292
8711	excavating, grading & rel. occs.	29.8278	397
8719	excavating, grading, paving & rel. occs. n.e.c.	32.7188	359
8579	fabricat. assemb. & repair. occs: rubb. plast. & rel. prod. n.e.c.	31.3242	380
8549	fabricat. assemb. & repair. occs: wood products. n.e.c.	24.8377	463
8539	fabricat. assemb. i. & r. occs: electric. electron. & rel. equip.	34.8363	334
8569	fabricat. assemb repair. occs: text fur & leath. prod. n.e.c.	23.2252	477
7197	farm machinery operators & custom operators	26.2011	451
7131	farm management occs.	27.9879	425
7182	farm workers	24.2541	472
7112	farmers	23.0227	480
8393	filing, grinding, buffing, clean. & polish. occs. n.e.c.	32.9927	355
8163	filtering, straining & separating occs: chem. & rel. mater.	42.3316	248
1135	financial management occs.	68.2250	33
2792	fine arts school teachers	55.4545	123
6111	fire fighting occs.	50.9583	157
8217	fish canning, curing & packing occs.	18.2394	499
7313	fishermen: net, trap & line	18.6296	498
7319	fishing, hunting, trapping & rel. occs. n.e.c.	22.7447	482
8211	flour & grain milling occs.	28.9914	410
6129	food & bev. prep. & rel. service occs. n.e.c.	27.5225	428
8229	food, bev. & rel. process. occs. n.e.c.	32.2390	367
9110	foremen: air transport op. occs.	61.7911	72
8160	foremen: chems. petrol. rubber. plast. & rel. mater. proc. occs.	57.0673	108
8370	foremen: clay glass & stone & rel. mater. machining occs.	44.4470	228
8150	foremen: clay glass & stone process. forming & rel. occs.	47.0419	200
8730	foremen: el. pow. light. & wire commun. equip. erec. i. & r. occs.	56.0063	117
9550	foremen: electr. & rel. commun. equip. op. occs., n.e.c.	65.5887	52
8710	foremen: excavating, grading, paving & rel. occs.	38.9193	290
8510	foremen: fabricat & assemb. occs. metal products. n.e.c.	54.2590	132
8550	foremen: fabricat. assem. & repair. occs: text. fur & leath. prod.	42.7460	245
8530	foremen: fabricat. assemb. i. & r. occs. el. electron. rel. equip.	55.8867	118
8540	foremen: fabricat. assembl. & repair. occs: wood products	41.6081	254
8210	foremen: food, bev. & rel. process. occs.	45.9770	211
7510	foremen: forestry & logging occs.	38.0623	304
9310	foremen: materials handling & rel. occs. n.e.c.	43.8969	236
8580	foremen: mechanics & repairmen exc. electrical	45.0002	221
8310	foremen: metal machining occs.	52.1729	151
8130	foremen: metal process. & rel. occs.	51.4055	154
8330	foremen: metal shaping & forming occs. exc. machining	47.4094	197
8110	foremen: mineral ore treating occs.	53.8963	136
7710	foremen: mining & quarrying incl. oil & gasfield occs.	49.9946	168
9170	foremen: motor transp. operating occs.	40.9698	267
8780	foremen: oth. construction trades occs.	42.4216	247
9590	foremen: oth. crafts & equip. operating occs. n.e.c.	59.1308	92
8390	foremen: oth. machining & rel. occs. n.e.c.	46.6586	204
8290	foremen: oth. process. occs.	46.5696	206
9190	foremen: oth. transp. & rel. equip. operating occs.	54.5601	130
7180	foremen: other farming, horticult. & animal husbandry occs.	35.8990	321
9510	foremen: printing & rel. occs.	52.9503	142
8590	foremen: product fabric. assem. & repair. occs. n.e.c.	47.9736	192
8250	foremen: pulp & papermaking & rel. occs.	52.4163	145
9130	foremen: railway transport operating occs.	50.4002	163
9530	foremen: stationary engine & util. equip. operat. & rel. occs.	53.4982	138
8260	foremen: textile process. occs.	44.7037	226
8350	foremen: wood machining occs.	40.2551	276
8230	foremen: wood process. occs. exc. pulp & papermaking	40.2219	277
8570	foremen: fabric. assem. repair. occs. rubb. plas. & oth. rel. prod.	49.0253	182
7519	forestry & logging occs. n.e.c.	19.3280	496
7511	forestry conserv. occs.	31.8739	375
8331	forging occs.	33.8487	346
8155	forming occs: clay, glass & stone	31.2890	381
8221	fruit & veget. canning, preserv. & packag. occs.	26.4676	450
6141	funeral directors embalmers, & rel. occs.	51.3475	155
8151	furnacemen & kilnmen: clay, glass & stone	32.9690	356
8555	furriers	24.9863	461
1130	gen. mgrs. & oth. senior officials	66.6958	44
4197	gen. office clerks	46.4416	208
2112	geologists	69.2159	25
8795	glaziers	31.5716	377
1113	government administrators	68.6724	31
6115	guards & watchmen	28.7070	417
6144	guides	28.2021	421
3119	health diagnosing & treating occs. n.e.c.	57.1236	107
8295	hide & pelt proc. occs.	25.6631	457
9311	hoisting occs. n.e.c.	37.8511	306
6145	hostesses & stewards. exc. food & bev.	41.1612	261
4194	hotel clerks	30.0380	393
7315	hunting, trapping & rel. occs.	14.3963	500
8796	i.t.g. & s. occs., construc., exc. electrical	49.1070	179
8256	i.t.g. & s. occs., pulp & paper-making	55.5257	121
9916	i.t.g. & s. occs. n.e.c.	47.0743	199
8236	i.t.g. & s. occs. wood process. exc. pulp & papermaking	32.5377	362
8376	i.t.g. & s. occs: clay, glass & stone machining	29.2692	407
8156	i.t.g. & s. occs: clay, glass & stone process. & forming	39.9696	279
8586	i.t.g. & s. occs: equip. repair exc. electrical	44.5760	227
8526	i.t.g. & s. occs: fabric. assem. metal prod. n.e.c.	45.5382	216
8546	i.t.g. & s. occs: fabricat. assemb. & repair: wood prod.	19.7729	494

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8226	i.t.g. & s. occs: food, bev. & rel. process.	39.0159	288
8396	i.t.g. & s. occs: machining n.e.c.	39.8583	280
8316	i.t.g. & s. occs: metal machining	45.1924	219
8146	i.t.g. & s. occs: metal processing	48.3808	188
8336	i.t.g. & s. occs: metal shaping & forming, exc. machining	46.4617	207
8116	i.t.g. & s. occs. mineral ore treating	47.8694	193
8296	i.t.g. & s.occs: processing, n.e.c.	36.9336	315
8596	i.t.g. & s. occs: product fabricat. assemb. & repair. n.e.c.	38.6001	293
8276	i.t.g. & s. occs: textile processing	27.4283	429
8356	i.t.g. & s. occs: wood machining	24.6923	465
8176	i.t.g. & s. occs: chem. petrol. rubber, plast. & rel. mater. proc.	52.4039	146
8536	i.t.g. & s. occs: fabric. assem. i. & r. el. electron. & rel. equip.	48.8063	183
8736	i.t.g. & s. occs: el. pow. light. & wire commun. equip. erec. i. & r.	59.5654	89
8566	i.t.g. & s. occs: fabr. assem. & rep. textile, fur & leath. prod.	27.6826	426
8576	i.t.g. & s. occs: fabric. assem. & repair. rubb. plast. & rel. prod.	40.9796	266
8523	ind. farm const. & oth. mech. equi. & mach. fabr. & assem. occs. nec	33.2208	352
8584	indus. farm & construc. machinery mechanics & repairmen	41.4781	256
2145	industrial engineers	67.1195	39
1116	inspectors & regulatory officers govt.	59.7212	88
1176	inspectors & regulatory officers non-govt.	54.2791	131
2797	instructors & training officers n.e.c.	56.3952	116
8786	insulating occs. construction	34.7941	335
5171	insurance salesmen & agents	57.7196	102
4135	insurance, bank & oth. finance clerks	49.6863	173
6191	janitors, charworkers & cleaners	24.9784	462
8591	jewellery & silverware fab. assem. & repair. occs.	32.5292	363
2341	judges & magistrates	72.0631	12
8271	knitting occs.	22.0573	486
9918	labourers, n.e.c.	27.6005	427
9921	labourers, manufacturing	29.0274	409
9926	labourers, other industries	26.8178	440
9925	labourers, public administration & defence	25.6058	459
9924	labourers, service	26.5015	448
9923	labourers, trade	26.7645	442
9922	labourers, transportation & communication	28.6236	419
6162	laundering & dry cleaning occs.	24.2647	471
2343	lawyers & notaries	72.7302	9
2351	librarians & archivists	61.8705	70
4161	library & file clerks	45.5775	215
4169	library, file & corr. clerks & rel. occs. n.e.c.	54.6357	129
2135	life sciences technologists & technic.	55.3551	126
9131	locomotive engineers & firemen	46.3239	209
7517	log hoisting, sorting, moving & rel. occs.	30.3240	390
7516	log inspect. grad. scaling & rel. occs.	39.2284	284
9313	longshoremen, stevedores & freight handlers	32.4366	365
8315	machine tool operating occs.	37.6640	310
8313	machinist & machine tool setting-up occs.	41.9239	250
4173	mail & postal clerks	48.0802	191
4172	mail carriers	41.7737	252
1132	management occs., soc. sciences & rel. fields	66.8855	43
1145	management occs. construc. operations	55.4962	122
1147	management occs. transport & communications operations	60.9983	79
1131	managers, sci. & engineering	74.4373	4
6131	managers: hotel, motel & oth. accom.	39.0288	287
8592	marine craft fabricat. assemb. & repair. occs.	33.3758	350
4159	material recording, scheduling & distrib. occs. n.e.c.	39.8265	282
9319	materials handling & rel. occs. n.e.c.	32.5434	361
9315	materials handling equip. operators n.e.c.	31.9098	373
2181	mathematicians, statisticians & actuaries	66.9806	41
2147	mechanical engineers	67.5427	36
8589	mechanics & repairmen exc. electrical, n.e.c.	37.6721	309
3156	medical lab. technologists & technic.	56.8694	111
8115	melting & roasting occs: mineral ores	42.0305	249
1111	members of legis. bodies	56.8551	112
4177	messengers	30.1310	391
8141	metal extruding & drawing occs.	38.1482	303
8133	metal heat treating occs.	38.9896	289
8319	metal machining occs. n.e.c.	29.3887	406
8149	metal process. & rel. occs. n.e.c.	35.0812	332
8135	metal rolling occs.	41.0819	262
8339	metal shaping & forming occs. exc. machining, n.e.c.	36.2515	320
8399	metal shaping & other machining & rel. occ. n.e.c.	40.5645	271
8131	metal smelt. converting & refining furnacemen	39.4135	283
2151	metallurgical engineers	71.6364	16
8334	metalworking-machine operators, n.e.c.	31.6284	376
2114	meteorologists	72.8036	8
8223	milk process. occs.	30.9860	385
8557	milliners, hat & cap makers	20.6313	490
8119	mineral ore treating occs. n.e.c.	42.5039	246
7719	mining & quarrying incl. oil & gas field occs. n.e.c.	40.6229	270
7717	mining & quarrying cutting, handling & loading occs.	34.3501	341
2153	mining engineers	68.7107	29
2511	ministers of religion	50.4228	162
8161	mixing & blending occs. chemicals & rel. materials	36.6975	317
8113	mixing, separating, filtering & rel. occs. mineral ores	43.8922	237
9557	motion pictures projectionists	43.2204	241
9179	motor transport operating occs. n.e.c.	39.8416	281
8513	motor vehicle fabricat. & assemb. occs. n.e.c.	34.7114	336
8581	motor vehicle mechanics & repairmen	32.8137	358
9193	motormen & dinkeymen, exc. rail transp.	37.8323	307
8573	moulding occs. rubb. plast. & rel. prod.	31.0887	384
8137	moulding, coremaking & metal casting occs.	32.6249	360
3332	musicians	43.3157	240

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5143	newsboys	19.2430	497
2157	nuclear engineers	74.7182	2
2513	nuns & brothers (w) n.o.r.	46.6069	205
7195	nursery & rel. workers	28.0194	423
3133	nurses-in-training	49.8921	170
3131	nurses, grad. exc. supervisors	51.3173	156
3135	nursing aides & orderlies	32.2890	366
3134	nursing assistants	36.5502	318
3139	nursing, therapy & rel. assist. occs. n.e.c.	38.2307	301
3319	occs in fine & commerc. art, photog. & rel. fields n.e.c.	45.9477	212
8298	occs. in lab. & oth. elem. work. oth. process.	25.6716	455
7518	occs. in lab. & oth. elem. work: forestry & logging	24.8347	464
8278	occs. in lab. & oth. elem. work: text. process.	20.7319	489
6198	occs. in lab. & oth. elemen. work: services	26.5539	446
8718	occs. in lab. & oth. elemen. work. excavat. grading & paving	23.9854	474
9318	occs. in labour. & oth. elemental work. mater. handling	29.9291	395
8258	occs. in labour. & oth. elemental work, pulp & papermaking	36.7853	316
8118	occs. in labouring & oth. element. work. mineral ore treat.	37.7532	308
8148	occs. in labouring & oth. elemental work, metal process.	34.8435	333
9518	occs. in labouring & oth. elemental work, print. & rel. n.e.c.	34.6923	337
2349	occs. in law & jurispru. n.e.c.	52.6475	143
2359	occs. in library, museum & archival sics. n.e.c.	44.7284	225
6139	occs. in logging & oth. accomm. n.e.c.	26.5112	447
2189	occs. in math. stats., systems anal. & rel. fields n.e.c.	57.2225	106
3339	occs. in performing & audio-visual arts, n.e.c.	40.5122	272
2119	occs. in physical sics. n.e.c.	49.0506	181
2519	occs. in religion, n.e.c.	35.7054	323
2339	occs. in soc. work & rel. fields n.e.c.	54.0327	134
2319	occs. in social sciences n.e.c.	60.9556	80
3379	occs. in sport & recreation, n.e.c.	22.2337	484
2333	occs. in welfare & commun. services	49.2108	178
1179	occs. rel. to management & administration n.e.c.	64.7042	56
8798	occs. lab. & oth. elem. work. oth. constr. trades	27.0100	437
8158	occs. lab. & oth. elem. work: clay, glass, stone proc. & forming	25.8264	454
8528	occs. lab. & oth. elem. work: fabric. & assem. metal prod. nec.	27.2044	433
8548	occs. lab. & oth. elem. work: fabric. assem. & repair. wood prod	22.1647	485
7718	occs. lab. & oth. elem. work. mining & quarry. inc. oil & gas fields	33.2949	351
8178	occs. lab. & oth. elem. work: chem. petr. rub. plas. & rel. mat. proc	34.0719	345
8578	occs. lab. & oth. elem. work: fab. assem. rep. rub. plas. & rel. prod	29.7354	400
8228	occs. lab. & oth. elem. work: food. bev. & rel. proc.	25.9034	453
8598	occs. lab. & oth. elem. work: prod. fab. assem. & repar. n.e.c.	28.2094	416
8738	occs: lab. & oth. elem. wrk: el. pow: light, & wir. comm. equ. er.i & r	33.0574	354
8538	occs: lab. & oth. elem. wrk: fab ass. i & r el. electron. & rel. equi	28.7140	415
8238	occs: lab. & oth. elem. wrk: wood proc. exc. pulp & papermaking	26.0082	452
8568	occs: lab. oth. elem. wrk: fab. ass. & rep. text., fur & leath. prod.	21.8708	487
3359	occupations in writing n.e.c.	66.2099	47
4141	office machine operators	44.3225	231
1119	officials & adminstrators unique to govt., n.e.c.	58.8662	94
3153	optometrists	74.2831	5
3117	osteopaths & chiropractors	71.2672	17
4199	oth. clerical & rel. occs. n.e.c.	48.7367	184
8799	oth. construc. trades occs. n.e.c.	31.3978	379
9599	oth. crafts & equip. operating occs. n.e.c.	44.1848	234
8529	oth. fabricat. & assemb. occs. metal products. n.e.c.	34.1891	343
7199	oth. farming. horticult. & animal husbandry occs. n.e.c.	29.6735	401
2169	oth. occs. in architec. & engineering. n.e.c.	40.4515	273
3159	oth. occs. in medicine & health n.e.c.	44.7832	224
2399	oth. occs. in soc. scis. & rel. fields n.e.c.	57.9668	100
9919	oth. occs. n.e.c.	34.1703	344
8299	oth. process. occs. n.e.c.	27.4241	430
8599	oth. prod. fabricat. assemb. & repair. occs. n.e.c.	32.1822	369
6117	oth. ranks, armed forces	43.1314	242
7713	oth. rock & soil-drilling occs.	35.5183	325
6199	oth. service occs. n.e.c.	29.6090	403
2799	oth. teaching & rel. occs. n.e.c.	55.4041	125
9199	oth. transp. & rel. equip. operating occs. n.e.c.	26.6524	445
1149	other managers & administrators, n.e.c.	63.9995	62
1154	other managers, construction	58.4063	98
1152	other managers, durable good manufacture	66.3979	46
1151	other managers, mines & oil wells	68.6711	32
1153	other managers, non-durable goods manufacture	64.6404	57
1158	other managers, other industries	65.2116	53
1157	other managers, service	64.8013	55
1156	other managers, trade	58.8655	95
1155	other managers, transportation & communication	64.3958	60
5199	other sales occs. n.e.c.	44.1485	235
9317	packaging occs. n.e.c.	31.1612	382
8785	painters, paperhangers & rel. occs.	28.8448	412
3311	painters, sculptors & rel. artists	39.0343	286
8595	painting & decorating occs. exc. construc.	30.3390	389
8593	paper product fabricat. & assemb. occs.	35.2914	329
8253	papermaking & finishing occs.	46.9033	201
8551	patternmak., marking & cutting occs: text., fur & leath. prod.	27.3972	431
8395	patternmakers & mouldmakers n.e.c.	47.2699	198
8713	paving, surfacing & rel. occs.	25.6197	458
6149	personal service occs. n.e.c.	30.1133	392
1136	personnel & indus. relations mgmnt. occs.	63.1203	63
1174	personnel & rel. officers	65.7001	51
4195	personnel clerks	56.9941	110
2154	petroleum engineers	69.7069	21
3151	pharmacists	72.1743	11
9515	photoengravers & rel. occs.	49.8940	169
3315	photographers & cameramen	49.5214	175

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9591	photographic process. occs.	44.8545	223
2117	physical scis. technologists & technicians	60.4386	84
3111	physicians & surgeons	74.2246	6
2113	physicists	68.7922	27
3137	physiotherapists. occup. & oth. therapists	53.5215	137
9111	pilots. navigators. & flight engineers	67.8389	35
8791	pipefitting. plumbing & rel. occs.	37.6162	312
8355	planing. turning. shaping & rel wood machin. occs.	25.6634	456
8784	plasterers & rel. occs.	30.4749	387
8143	plating. metal spraying. & rel. occs.	33.6194	348
8233	plywood making & rel. occs.	32.4753	364
6112	policemen & detectives. govt.	60.1046	85
6113	policemen & investigator. priv.	45.6711	213
2793	post-secondary school teachers, n.e.c.	69.2577	24
1115	postmasters	49.1020	180
9531	power station operators	54.8191	128
8527	precis. instrum. & rel. equip. fabricat. & assem. occs. n.e.c.	38.2462	300
8588	precis. instrument mechanics & repairmen	57.8979	101
6165	pressing occs.	20.5893	491
9514	printers, engravers exc. photoengravers	50.3028	164
9519	printing & rel. occs. n.e.c.	37.0982	314
9512	printing press occs.	41.5833	255
3330	producers & directors, performing & audio-visual arts	67.0394	40
3313	product & interior designers	53.0155	141
4151	production clerks	50.4406	161
1143	production management occs.	62.7272	65
6119	protec. service occs. n.e.c.	41.0713	265
2315	psychologists	62.2645	67
8259	pulp & papermaking & rel. occs. n.e.c.	41.4186	257
1175	purch. officers & buyers. exc. wholesale & retail trade	60.7041	82
1141	purchasing management occs.	61.8599	71
9551	radio & t.v. broadcasting equip. operators	56.5194	115
8537	radio & t.v. service repairmen	43.0365	243
3337	radio & television announcers	58.5342	97
3155	radiological technologists & technicians	58.7227	96
8583	rail transp. equip. mechanics & repairmen	39.0343	285
8715	railway sectionmen & trackmen	24.0700	473
9139	railway transp. operating occs. n.e.c.	30.6828	386
9135	railway transport operating support occs.	44.4045	229
5172	real estate salesmen	50.0692	167
4179	recep., info., mail & message distrib. occs. n.e.c.	42.7816	244
4171	receptionists & info. clerks	40.6897	269
3371	referees & rel. officials	38.5612	295
8167	roasting, cooking & drying occs. chemicals & rel. materials	36.3204	319
8787	roofing, waterproofing & rel. occs.	26.9817	438
7711	rotary welldrilling & rel. occs.	41.0808	263
1137	sales & ad. management occs.	65.1050	54
5137	sales clerks, commodities	38.3541	297
5149	sales occs: commodities, n.e.c.	41.4111	258
5179	sales occs: services, n.e.c.	52.4014	148
5135	salesmen & salespersons commodities, n.e.c.	43.7909	239
5173	salesmen & traders, securities	59.7802	86
8231	sawmill sawyers & rel. occs.	26.9558	439
2733	secondary school teachers	71.7725	15
4111	secretaries & stenos.	52.4455	144
8153	separat.. grind.. crush. & mixing occs: clay, glass & stone	27.3214	432
5145	service station attendants	29.6593	402
1142	services management occs.	57.9985	99
8563	sewing machine operators. text. & similar mat.	23.2175	478
8333	sheet metal workers	37.6528	311
4153	shipping & receiving clerks	34.4410	340
8561	shoemaking & repair. occs.	19.9182	493
8215	slaughtering & meat cutting. canning. curing & pack. occs.	31.1280	383
6135	sleeping-car & baggage porters, & bellmen	28.8280	413
2331	social workers	61.6410	74
2313	sociologists. anthropologists & rel. soc. scientists	60.5728	83
9555	sound recording & reproduction equip. operators	58.8836	93
9539	stationary engine & util. equip. operating & rel. occs. n.e.c.	41.3749	259
4137	stats. clerks	51.5852	152
9513	stereotypers & electrotypers	45.3223	218
4155	stock clerks & rel. occs.	38.5252	296
5141	street vendors & door-to-door salesmen	32.0964	372
8793	structural metal erectors	35.8482	322
9191	subway & streetrailway operating occs.	44.3000	232
8225	sugar process. & rel. occs.	35.3198	328
9910	supervisors & foremen, n.e.c.	46.2227	210
4140	supervisors office machine & e.d.p. equipment operators	68.6739	30
2160	supervisors, oth. occs. in architecture & engineering	67.1897	38
6160	supervisors: apparel & furnishing service occs.	40.3394	275
4130	supervisors: bookkeeping, acct.-recording & rel. occs.	61.4871	76
6120	supervisors: food & bev. prep. & rel. service occs.	37.2441	313
4160	supervisors: libr.. file & corr. clerks & rel. occs.	64.1414	61
4150	supervisors:material recording. scheduling & distrib. occs.	49.6442	174
3130	supervisors: nursing occs.	57.0085	109
2350	supervisors: occs. in libr. museum & archiv. scis.	62.1512	68
6130	supervisors: occs. in lodging & other accom.	35.6811	324
4190	supervisors: oth. clerical & rel. occs. n.e.c.	61.3559	77
5190	supervisors: oth. sales occs.	47.4196	196
6190	supervisors: oth. service occs.	38.2848	298
4170	supervisors: recep. info. mail & message distrib. occs.	56.6130	114
5130	supervisors: sales occs.. commodities	47.6628	195
5170	supervisors: sales occs.. services	61.5618	75
4110	supervisors: steno. & typing occs.	56.8004	113

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2161	surveyors	54.1410	133
2183	systems analysts & comput. programmers & rel. occs.	68.7215	28
8553	tailors & dressmakers	24.2752	470
9173	taxi drivers & chauffeurs	26.6796	444
2795	teachers of excep. students n.e.c.	53.2098	139
2353	technic. in library, museum & archival scis.	44.4040	230
5131	technical salesmen & rel. advisers	64.4944	58
9553	telegraph operators	50.9492	158
4175	telephone operators	38.2805	299
4133	tellers & cashiers	40.4164	274
8273	textile bleaching & dyeing occs.	24.4136	468
8261	textile fibre prepar. occs.	19.6522	495
8275	textile finishing & calendering occs.	23.4167	476
8279	textile process. occs.	24.3613	469
8263	textile spinning & twisting occs.	22.5059	483
8267	textile weaving occs.	21.7177	488
8265	textile winding & reeling occs.	24.4378	467
7513	timber cutting & rel. occs.	22.8047	481
8293	tobacco process. occs.	34.2377	342
8311	tool & die making operations	52.4026	147
3355	translators & interpreters	61.6940	73
4193	travel clerks, ticket, station. & freight agents	55.0394	127
9175	truck drivers	29.7365	399
9511	typesetters & compositors	45.0035	220
4113	typists & clerk typists	45.4604	217
2711	univ. teachers	72.2955	10
2719	univ. teaching & rel. occs. n.e.c.	52.2331	150
8562	upholsterers	27.1699	434
3115	veterinarians	73.4877	7
6125	waiters, hostesses & stewards, food & bev.	28.0074	424
8587	watch & clock repairmen	40.0036	278
9159	water transp. operating occs. n.e.c.	35.3916	327
4157	weighers	35.2532	330
8335	welding & flame cutting occs.	35.1540	331
8735	wire commun. & rel. equip. i. & r. occs.	59.3464	90
8359	wood machining occs. n.e.c.	28.8047	414
8351	wood patternmaking occs.	48.4971	187
8239	wood process. occs. exc. pulp & papermaking. n.e.c.	29.5722	404
8357	wood sanding occs.	20.3135	492
8353	wood sawing & rel. occs: exc. sawmill	23.6649	475
8235	wood treating occs.	34.6748	338
3352	writers & editors	62.8184	64
2139	occs. in life sciences. n.e.c.	52.3517	149