

## Urban Aboriginal settlement patterns and the distributions of housing characteristics in large prairie cities, 2001

Shauna L. Wouters, University of Saskatchewan  
Evelyn J. Peters, University of Saskatchewan

*Abstract:* This paper explores the relationship between settlement patterns of Aboriginal people in large prairie cities and the distribution of selected housing characteristics. Early models of immigrant settlement patterns assumed that generally immigrants settled in inner city neighbourhoods and dispersed to suburban areas as they adjusted to urban life. More recent work argues that this pattern can not be generalised and that settlement patterns are related to housing characteristics. As a result, there are variations across cities. While urban Aboriginal people are not immigrants, it is useful to explore whether their settlement patterns are also related to the distribution of housing characteristics across urban spaces. Our analysis shows that Aboriginal settlement patterns in large prairie cities are related to particular housing characteristics. However, we also found that housing characteristics, Aboriginal settlement patterns, and the relationships between them vary across cities. This underscores the importance of understanding particular situations in different cities.

Canadian geographers and sociologists have studied the residential patterns of different cultural and ethnic groups in Canadian cities for several decades (Murdie 1969; Walks and Bourne 2005). While some of this work has described cities across Canada, the three largest cities in Canada – Montréal, Toronto and Vancouver – have received the most attention (Bauder and Sharpe 2002). In the prairies, Aboriginal<sup>1</sup> people

---

<sup>1</sup>Within the context of this research, Aboriginal refers to the indigenous population of Canada. Included are First Nations (Indian), Métis and Inuit. It is important to note these are legal definitions that do not reflect the range of diverse nations within the population, and in many cases these are not how Aboriginal people refer to themselves.

represent a growing component of urban populations, and in many urban areas they represent the largest minority population. Although there is some recent academic work that describes their distributions in urban areas, we still do not have a good understanding of the factors affecting these patterns (Maxim et al. 2003; Heisz and McLeod 2004). The possibility that there are different patterns in different cities is also not well recognized. Media treatments, especially, often present urban Aboriginal circumstances as if they were similar in all urban areas. Yet recent analyses show that the situation of the Aboriginal population varies substantially in different cities (Peters 2005; Siggner and Costa 2005).

In Canada, a number of researchers have suggested that the characteristics of the urban housing stock affect the residential patterns of ethnic groups (for example Fong 1996; Bauder and Sharpe 2002;). This paper addresses the residential distribution of Aboriginal people in relation to the housing characteristics of large prairie cities. Clearly Aboriginal people in cities are not immigrants. They represent the indigenous population of Canada. However models of immigrant residential settlement patterns represent a useful point of comparison with Aboriginal residential patterns. The first section below reviews work on immigrant residential patterns and housing with a focus on Canadian cities. Then we summarize existing material on Aboriginal urban residential settlement patterns. A description of our data and methods follows. Results are presented in the fourth section, and we summarize some of the implications of the analysis by way of conclusion.

## **Immigrant Residential Patterns and Housing**

In 1925, Ernest Burgess introduced what was to become a classic model of immigrant settlement patterns in North American cities. Suggesting similar people tended to live near each other, he developed the concept of residential segregation as something inherent to the city, stating:

This differentiation into natural economic and cultural groupings gives form and character to the city. For segregation offers the group, and thereby the individuals who compose the group, a place and a role in the total organization of city life. (1925, 56)

Burgess suggested that immigrants first settled in a “zone of deterioration” near the central business district. As they assimilated, they eventually dispersed into suburban areas. This model of immigrant settlement patterns was seen as a generalisable model to all immigrant

groups and North American cities, and it has had a longstanding influence on urban studies (see for example Lieberman 1963; Clark 1998). However, this model is based on certain assumptions about the nature of the immigrant group and the receiving city (Burnley and Hiebert 2001). It assumes that the group has the social and economic capacity to be economically mobile (Warner and Burke 1969; Ward 1971; Yancey et al. 1976). It also assumes that the relationship between the immigrant group and the host society allows for eventual integration. As Boal (1999) points out, there are a variety of outcomes for immigrant groups associated with attitudes of the host society toward them. Other research has shown that improvements in socio-economic status do not necessarily translate into spatial advantages for all immigrant groups (Fong 1996; Fong and Guila 1996; Fainstein 1998). Finally, the model assumes a particular housing distribution in the receiving city, with low cost housing of sufficient quantity, close to employment, to facilitate the development of immigrant enclaves (Yancy et al. 1976). Burnley and Hiebert (2001, 127) point out that the model assumes “a linear relationship ... between housing cost and distance from the city centre, such that the least expensive housing is in inner-city neighbourhoods”. In other words, there are mediating factors that influence residential settlement patterns of minority groups. These include the nature of urban economies, group capacity, attitudes toward particular minority groups, and the housing structure of the city. This paper focuses on the latter.

In the Canadian literature, a number of researchers have demonstrated that the spatial distribution of housing affects the residential settlement patterns of various ethnic, cultural and immigrant groups. Fong's (1996) comparison of residential segregation in American and Canadian cities found that segregation was related to the age of the city because of the intensifying effect of the concentration of less expensive, older housing stock at the centre of older cities. His 1997 study showed that in cities with a larger proportion of older housing stock, the proximity of racial and immigrant groups to French and British groups decreased. Others have confirmed that immigrant settlement patterns in Canada are closely related to their circumstances in the housing market (Ray and Moore 1991; Ray 1994, 1998, 1999; Ray et al. 1997). Bauder and Sharpe's (2002) exploration of the residential segregation of visible minorities in Vancouver, Toronto and Montréal found that the location quotients of visible minority populations were correlated with the location quotients of various housing variables. They concluded that levels of segregation and integration were related to local housing characteristics. Recently Walks and Bourne (2005) suggested that the concentration of apartment districts affected segregation levels of visible minorities. While some of these researchers

included Aboriginal populations in their analysis, there has been no focus on the relationships between housing characteristics and the residential location of Aboriginal people.

## Aboriginal Settlement Patterns in Cities

In the 1940s, relatively few Aboriginal people lived in cities in Canada (Kalbach 1987). Since then, the urban Aboriginal population has increased steadily. According to the 2001 Census, 49.1 percent of Aboriginal people lived in urban areas, with about one quarter of the Aboriginal population in ten of Canada's census metropolitan areas<sup>2</sup> (Statistics Canada, 2003). Table 1 describes changes in the Aboriginal populations in Canada's CMAs with more than 10,000 Aboriginal people in 2001. While changes in census definitions over the years make it impossible to compare these statistics directly, they nevertheless demonstrate trends with respect to the changing size of the urban Aboriginal population. With the exception of Vancouver, cities on the prairies have experienced the largest increase in Aboriginal populations since the mid-1900s. Aboriginal populations also comprise the largest minority populations in many prairie cities. While Table 1 summarizes dimensions of the changing size of urban Aboriginal populations, it is difficult to obtain a clear sense of Aboriginal settlement patterns within cities from existing research, and what factors are associated with these patterns.

There are conflicting accounts about the extent to which Aboriginal people are segregated in Canadian cities. Early work on Aboriginal urbanisation assumed that Aboriginal migrants would concentrate in inner cities (Melling 1967; Braroe 1975; Decter 1978;).<sup>3</sup> Other research suggested that Aboriginal people were scattered throughout urban areas even in the 1960s and 1970s (Davis 1965; Nagler 1970; Dosman 1972; Krotz 1980;). The lack of Aboriginal concentrations in the city and assumptions about the role of neighbourhoods in facilitating adaptation, generated several projects to encourage urban Aboriginal people to concentrate in

---

<sup>2</sup> A Census Metropolitan Area (CMA) is a very large urban area, together with adjacent urban and rural areas which have a high degree of economic and social integration with that urban area. It is delineated around an urban area that has a population of at least 100,000.

<sup>3</sup> In the 1980s, many urban Aboriginal non-profit housing organizations (supported by a CMHC Native housing program) attempted to disperse Aboriginal households throughout the city (Lipman, 1986). This program was halted in the early 1990s, though, so current settlement patterns cannot be attributed only to this initiative.

**Table 1:** *Aboriginal people in selected<sup>4</sup> Census Metropolitan Areas, 1951-2001<sup>5</sup>*

	1951	1961	1971 <sup>6</sup>	1981	1991 <sup>7</sup>	2001	Percent Change, 1951-2001 <sup>8</sup>	Percent of CMA Aboriginal 2001
Montreal	296	507	3215	14450	6775 <sup>9</sup>	11275	3,709.1	0.3
Ottawa-Hull	--	--	--	4370	6915	13695	n/a	1.3
Toronto	805	1196	2990	13495	14205	20595	2,458.4	0.4
Winnipeg	210	1082	4940	16575	35150	55970	26,552.4	8.2
Regina	160	539	2860	6575	11020	15790	9,768.8	8.0
Saskatoon	48	207	1070	4350	11920	20455	42,514.6	8.8
Calgary	62	335	2265	7310	14075	22110	35,561.3	2.3
Edmonton	616	995	4260	13750	29235	41295	6,603.7	4.3
Vancouver	239	530	3000	16080	25030	37265	15,492.1	1.9

Sources: Department of Indian Affairs and Northern Development 1985.  
 Statistics Canada.1974: 244  
 Statistics Canada 1991  
 Statistics Canada 2003

<sup>4</sup> These were CMAs with Aboriginal populations of more than 10,000 in 2001.

<sup>5</sup> The 2006 Census data are not available yet.

<sup>6</sup> The 1971 data do not include the Inuit.

<sup>7</sup> In 1991 and 2001, these statistics refer to individuals who identified with an Aboriginal group. Counts for previous years refer to individuals with Aboriginal ancestry. Because of changes in the questions on which these counts are based, and changes in definition and collection methods, statistics are not strictly comparable between years before 1991.

<sup>8</sup> The percent of change in the size of urban Aboriginal populations is presented for heuristic purposes only. The definition of Aboriginal was different in 1951 than in 2001.

<sup>9</sup> Montreal, Calgary and Vancouver had, within their boundaries, reserves that were incompletely enumerated in either 1991 or 2001 or both, affecting the counts for those years and cities.

neighbourhoods in ways assumed to be typical of immigrants to urban areas (Dosman 1972; Damas & Smith Ltd. 1975; Svenson 1978). Some contemporary accounts also assume that Aboriginal people are segregated in urban areas (Drost 1995; Kazemipur and Halli 2000; Richards 2001). Media accounts support this impression, using the terminology of the “ghetto” to describe urban Aboriginal peoples (Stackhouse 2001; Polèse 2002; Hayden, 2004). Recent federal government reports also raised concern about the concentration of urban Aboriginal populations (Sgro, 2002).

At the same time, research using indices of dissimilarity to describe urban Aboriginal settlement patterns uniformly concluded that segregation is low to moderate. In general terms the dissimilarity index indicates the proportion of the minority population that would have to move to replicate the distribution of the majority population to which it is being compared. Values up to 0.3 are considered low, 0.4-0.5 are moderate and 0.6 and over is considered high. Researchers using 1981, 1991 and 1996 single origin ethnicity and 1996 identity census data for Census Metropolitan Areas (CMA's) found moderate dissimilarity indices for Aboriginal people, ranging from about .2 to about .4 (Bourne et al. 1986; Clatworthy 1994, 256;

Maxim et al. 2000; Darden and Kamel 2002;). Maxim et al. (2000, 15) argued that Aboriginal groups “are more evenly distributed across CMAs ... than most other ethnic groups.” Studies employing the 2001 Aboriginal identity data have come to similar conclusions (Peters 2005; Walks and Bourne 2005). However, not all cities are the same with regard to the residential settlement pattern of Aboriginal people. Maxim et al. (2000) suggest that some clumping does exist in the residential patterns of Aboriginal people in urban areas, but there is a large variability in patterns between the cities. They found higher levels of residential concentration of Aboriginal residents in prairie cities than in other regions. Peters (2005) showed that there were variations in the distribution of Aboriginal people, even between large prairie cities.

Very few studies have explored what elements are associated with Aboriginal settlement patterns in cities. The Royal Commission on Aboriginal Peoples (1996) indicated that discrimination by private landlords and poverty limited Aboriginal people’s choices concerning housing in urban areas. Carter’s (2004, 7) recent review noted that “Aboriginal people migrate to urban areas in search of jobs and better housing, but they often end up living in poor quality, unaffordable housing in declining inner city neighbourhoods.” This suggests that the location of Aboriginal people in cities may be associated with the location of inexpensive housing. Key informants interviewed in Winnipeg and Edmonton in 2002 suggested that the main factors affecting Aboriginal residential choice were the location of low cost housing and the location of other Aboriginal people (Peters and Starchenko 2006). The distribution of housing, and particularly inexpensive housing, may be linked to Aboriginal residential patterns in cities.

## **Data and Methods**

We focus our analysis on prairie cities because the Aboriginal population represents a relatively large proportion of the population in these cities. Because there are more Aboriginal people in prairie cities, they likely represent a greater range of housing characteristics than in cities where they are smaller in number of proportion. As noted by Maxim et al. (2003), the census tract is the appropriate data level for this type of question because enumeration areas have too many zero observations for the Aboriginal population in CMAs. The entire CMA is not included in this analysis, only the census tracts within defined city boundaries. This is because some of the cities have reserves within CMA boundaries (but

outside of city boundaries). Reserve residents are almost all First Nations people, and many reserves have large amounts of poor quality housing (Indian and Northern Affairs 2005). Including reserves could make the relationship between quality and proportion of the population that is Aboriginal seem more significant than it is in the rest of the city.

Aboriginal identity data will be used for this study. These data refer to individuals' own perceptions of their Aboriginal identity, in contrast to the ethnic origin data which refers to ethnic or cultural origins of individuals' ancestors. Many Canadians have Aboriginal ancestry but do not consider themselves to be Aboriginal. Individuals with Aboriginal ancestry who do not identify as Aboriginal may not have similar experiences in the housing market as individuals who identify. The Aboriginal identity data was therefore considered to be more appropriate than the Aboriginal ancestry data.

We use four measures of housing characteristics in this study. The average value of dwelling units is a measure of the socio-economic status of housing in the neighbourhood. The rate of home ownership differentiates between neighbourhoods with high numbers of rental units and neighbourhoods where most of the housing is owner occupied. We use this measure rather than the proportion of units in a neighbourhood that are apartments because Aboriginal households tend to be larger than non-Aboriginal households and as a result, they may prefer to rent single family dwelling units rather than apartments (Spector 1996). The proportion of dwellings requiring major repairs measures the quality of the housing stock, while the proportion of dwellings constructed before 1946 refers to both quality and size of housing units. Clearly, using averages can conceal diversity within census tracts (Bourne 1981). However, this is a preliminary study, and averages are useful for an initial exploration. Because we are employing averages and proportions, it is important to avoid the ecological fallacy in interpreting the data. These data indicate whether Aboriginal people are located in census tracts with particular housing characteristics. We cannot conclude from the data whether or not Aboriginal people themselves are living in particular types of housing.

Measures of strength and direction of the relationships between the proportion of Aboriginal identity residents and the housing characteristics of census tracts were obtained using Spearman rank order correlation (Ebdon 1985). Results of Kolmogorov-Smirnov tests confirmed that many of the variables did not have the normal distribution required to perform a Pearson product correlation. After an examination of the scatterplots, a two-tailed test was chosen because this paper does not make predictions about the direction of each correlation. A significance level of 0.01 was used to estimate how likely it is that the observed correlation represents a

real correlation in the population. The Spearman rank order correlation is non-parametric and it does not have the statistical strength of a parametric test largely because outliers are repressed. For instance, in Calgary the highest proportion the Aboriginal identity population comprised of any census tract was 14.2 percent, while in Winnipeg it was 52.7 percent. Both of these census tracts rank as number one for this variable in the respective city. Nevertheless the test does help us explore the relationships between housing characteristics and Aboriginal residential patterns in each city.

## Results

Table 2 uses averages and standard deviations to demonstrate the differences in the proportion of census tract populations that are Aboriginal in different cities. The average proportion of census tract populations that is Aboriginal is close to ten percent for Regina, Saskatoon and Winnipeg, with a low of 9.68 percent in Winnipeg and a high of 10.28 percent in Saskatoon. Standard deviations for these cities are also similar to each other, ranging from 8.73 in Regina to 9.6 in Winnipeg. Census tracts with a high proportion of their population that is Aboriginal range from 38.22 percent in Saskatoon to 52.70 percent in Winnipeg. Edmonton and Calgary provide quite a different picture. While Edmonton had the second largest

**Table 2:** *Proportion of population that is Aboriginal by census tract, Prairie CMAs, 2001.*

	Mean	Standard Deviation	Maximum	Minimum
Winnipeg (n=153)	9.68	9.60	52.70	1.14
Regina (n=43)	9.78	8.73	39.47	0.37
Saskatoon (n=42)	10.78	9.52	38.22	1.73
Calgary (n=181)	2.28	1.97	14.17	0.21
Edmonton (n=154)	4.77	3.91	41.56	0.73
Source: Statistics Canada, Census Tract Profiles, 2001				

urban Aboriginal population among CMAs (41,295 people, with Winnipeg having the largest Aboriginal population at 55,970 people), Aboriginal people on average make up a smaller proportion of census tract populations (mean of 4.77 and standard deviation of 3.91). The mean percent that Aboriginal people comprise of Calgary census tracts is even lower, at 2.28 percent, with a standard deviation of 1.97. Edmonton had one census tract where Aboriginal people comprised more than 40 percent of the population, but that tract had only 50 people living there in 2001. The Edmonton census tract with the next highest proportion of its population that was Aboriginal was 21.56 percent Aboriginal. Calgary had even lower values, with the tract with the highest proportion that was Aboriginal at 14.17 percent.

Table 3 provides another perspective on these settlement patterns and confirms the fact that the characteristics of Aboriginal settlement patterns vary considerably between cities. The table describes the number of census tracts that fall into different levels of concentration of Aboriginal populations, for example, how many census tracts in each city have between 0 and 9.9 percent of their populations that are Aboriginal, and at the other end of the scale, how many census tracts have 50 percent or more of their populations that are Aboriginal. Winnipeg is the only city with census tracts where the proportion of the census tract that is Aboriginal is 50 percent or higher. Saskatoon and Regina have four and two census tracts respectively where Aboriginal people make up about one third of the tract. All census tracts in Calgary have less than one fifth of their

**Table 3:** *Percent of total census tracts by percent of census tract population Aboriginal, Prairie Cities, 2001.*

	Percent of Census Tract Population Aboriginal					
	0-9.9	10-19.9	20-29.9	30-39.9	40.49.9	50+
Winnipeg # of tracts	111	24	9	8	1	1
(n=154) % of tracts	72.1	15.6	5.8	5.7	0.6	0.6
Regina # of tracts	32	11	2	2	0	0
(n=43) % of tracts	68.1	23.4	4.3	4.3	0	0
Saskatoon # of tracts	28	8	3	4	0	0
(n=42) % of tracts	65.1	18.6	7.0	9.3	0	0
Calgary # of tracts	179	2	0	0	0	0
(n=181) % of tracts	99.0	1.1	0	0	0	0
Edmonton # of tracts	141	18	1	0	1	0
(n=161) % of tracts	87.6	11.2	0.6	0	0.6	0

Source: Statistics Canada, Census Tract Profiles, 2001

population that is Aboriginal. Apart from the one census tract in Edmonton where Aboriginal people make up more than 40 percent of the population most census tracts have less than one fifth of their population that is Aboriginal.

Table 4 uses averages and standard deviations to demonstrate the dispersion of the values and consequently the variability among the housing characteristics of census tracts within each city. While there are similarities, there are also key differences. Calgary stands out with the highest average dwelling values, the lowest average and standard deviation of dwellings requiring repairs, the lowest average number of units constructed before 1946, and the highest average percentages of dwellings owned per census tract. Winnipeg falls at the opposite end of the scale with lowest average value of dwelling, a high average proportion of dwellings requiring major repairs, the largest average percentage of dwellings constructed before 1946 (over one fifth) and the lowest average percentage of dwelling owned. Regina and Saskatoon are closer to Winnipeg values, but with a lower proportion of units requiring major repairs and quite a bit lower proportion of houses built before 1946. Edmonton values are close to Calgary's in terms of pre-1946 construction, and average housing values are higher than those of the other cities, but they fall close to Regina and Saskatoon on the other variables. Overall, there are considerable variations in housing characteristics by census tract in these cities, with Calgary showing the highest socio-economic status with respect to housing and Winnipeg showing the lowest.

Table 5 summarizes the result of Spearman rank order correlations between the proportion of the census tract population that is Aboriginal population and the proportion of housing units in a census tract with particular housing characteristics. The first column pools the data for all of the cities to provide a reference point. The other columns show results for individual cities. The pooled data shows that settlement patterns of Aboriginal people were significantly related to census tract housing characteristics. The strongest relationship was a negative one between the percent of the neighbourhood or census tract population that was Aboriginal and the average value of housing. In other words, the larger the proportion of the neighbourhood population that was Aboriginal, the lower the average housing values. The next most significant relationship was between proportion Aboriginal and proportion of dwelling units requiring major repairs. These were followed by a significant positive relationship between proportion Aboriginal and proportion older housing, and a negative relationship between proportion Aboriginal and proportion of units that were owned.

**Table 4:** *Housing characteristics by census tract, Prairie CMAs, 2001.*

	Regina (n=43)		Saskatoon (n=42)		Winnipeg (n=153)		Calgary (n=181)		Edmonton (n=154)	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Average value of dwelling (\$)	96414.93	28408.40	123731.95	27722.42	93746.98	33347.73	194222.49	55076.05	135432.11	41990.66
Dwellings requiring major repairs (%)	8.42	5.82	6.16	4.38	9.98	5.91	5.41	3.81	7.63	4.83
Pre-1946 construction (%)	10.90	17.24	11.38	17.87	21.89	24.55	4.08	9.63	4.74	8.44
Dwellings owned (%)	66.78	19.45	62.99	17.79	66.97	24.70	73.22	21.31	62.92	22.76

**Table 5:** Correlations between proportion of census tract that is Aboriginal and selected housing characteristics of census tract.

	Pooled Data (n=573)	Regina (n=43)	Saskatoon (n=42)	Winnipeg (n=153)	Calgary (n=181)	Edmonton (n=154)
Average value of dwelling unit (\$)	-.793*	-.892*	-.816*	-.780*	-.654*	-.660*
Dwellings requiring major repairs (%)	.552*	.684*	.670*	.478*	.532*	.480*
Pre-1946 Construction (%)	.482*	.507*	.620*	.479*	.271*	.404*
Dwellings Owned (%)	-.451*	-.336	-.418*	-.599*	-.541*	-.501*

\* Correlation is significant at the 0.01 level (2-tailed)

Examining cities individually, however, shows that while the direction of most of the relationships is similar to the pooled data, there were also some differences in the significance of these relationships. For each city, the strongest relationship was a negative one between the proportion of the census tract that was Aboriginal and the average dwelling unit value in the census tract. The relationship was strongest in Regina and Saskatoon. Winnipeg's mean average dwelling unit value was the lowest of all the cities, and this may mean that there are other low income people living in areas with inexpensive housing, diluting the association between lower housing costs and Aboriginal concentration. In the case of Calgary, the relatively higher average housing unit value suggests that there are fewer pockets of less expensive housing, with the result that the low income Aboriginal population is relatively dispersed. Other research found that Edmonton has had a longstanding policy of mixing housing types and costs in neighbourhoods, and that may have diluted the relationship for this city (Peters and Starchenko, 2006). These are all patterns that deserve further research.

The factors identified to explain the patterns of relationship for Aboriginal settlement patterns and housing characteristics also seem relevant to other statistics. The association between units needing major repairs and proportion of the census tract that is Aboriginal was strongest in Regina and Saskatoon and weakest in Winnipeg and Edmonton, with Calgary falling in between. The relatively large proportion of units needing repairs in Winnipeg may mean that groups other than Aboriginal people are living in them. The association between older housing and Aboriginal

concentration was again strongest in Regina and Saskatoon. The association was lowest for Calgary which has very little older housing. In Regina, there was no significant relationship between the proportion of dwellings owned and the proportion of the census tract population that was Aboriginal. For the other cities, this relationship was negative, with the lowest value in Saskatoon and the highest value in Winnipeg.

## Conclusion

This study suggests that the housing traits of value, age, tenure and level of repairs are related to the settlement patterns of the Aboriginal population. It builds on the findings of Bauder and Sharpe (2002) that residential patterns are related to local housing characteristics. However, these relationships are complex. Most of the values of the Spearman Rank Order correlations for Winnipeg, for example, are not as strong as those for Regina and Saskatoon, even though Winnipeg has the only census tract where Aboriginal people make up more than half of the population. While it seems logical that this is because the large amount of low cost, low quality housing in that city means that other groups than Aboriginal populations live there, this requires further research. Similarly, it would be interesting to explore whether Edmonton's historic policy of combining different types and values of housing in neighbourhoods helps to explain Edmonton's relatively low correlation values. However, these topics are beyond the scope of this paper, which had as its main focus the question of whether Aboriginal settlement patterns were related to the patterns of housing characteristics.

There are other topics that also need further research to flesh out these patterns. The characteristics of urban Aboriginal populations also vary in different cities, with Aboriginal people in Winnipeg, Regina and Saskatoon characterized by higher levels of poverty than those in Edmonton and Calgary (Peters 2005). It may be that the housing characteristics of a particular city affect whether Aboriginal people can reside there; for example low-income Aboriginal people may not be able to afford to live in Calgary, and therefore their settlement patterns are not associated with the housing characteristics that differentiate between house value, state of repair, year of construction and home ownership. These topics, however, are beyond the scope of this paper.

As the literature review suggested, other researchers have associated Aboriginal settlement patterns in cities with discrimination, low incomes and a desire to be near other Aboriginal people. While this paper does not

discount these factors, it suggests that residential settlement patterns may vary by city, and that the characteristics and distribution of different types of housing may also have an effect of Aboriginal settlement patterns.

## References

- BAUDER, H. and SHARPE, B. 2002 'Residential segregation of visible minorities in Canada's gateway cities' *The Canadian Geographer* 46, 204-222
- BOAL, F.W. 1999 'From undivided cities to undivided cities: Assimilation to ethnic cleansing' *Housing Studies*, 14, 585-600
- BOURNE, L. S. 1981 *The Geography of Housing* (London: Edward Arnold Publishers)
- BOURNE, L. S., BAKER, A. M., KALBACH, W., CRESSMAN, R., GREEN, D. 1986 *Canada's Ethnic Mosaic: Characteristics and Patterns of Ethnic Origin Groups in Urban Areas* (Centre for Urban and Community Studies, University of Toronto)
- BRAROE, N. W. 1975 *Indian and White: Self-Image and Interaction in a Canadian Plains Community* (Stanford: Stanford University Press)
- BURGESS, E. W. 1967 'The growth of the city: An introduction to a research project' in *The City ed R. PARK and E. W. BURGESS* (Chicago: University of Chicago Press) 47-62
- BURNLEY, I. and HIEBERT, D. 2001 'Emerging patterns in immigrant settlement at the metropolitan scale' *Progress in Planning* 55:127-140
- CARTER, T. 2004 *Literature Review on Issues and Needs of Aboriginal People* (Winnipeg: Institute of Urban Studies)
- CLARK, W.A.V. 1998 *The California Cauldron: Immigration and the Fortunes of Local Communities* (New York and London: Guilford Press)
- CLATWORTHY, S. 1994 *The Migration and Mobility Patterns of Canada's Aboriginal Population* prepared for the Royal Commission on Aboriginal Peoples, Four Directions Consulting Group, Winnipeg, Manitoba
- DAMAS & SMITH LTD. 1975 *A Report on the Feasibility Study prepared for Neeginan (Manitoba) Incorporated* (Winnipeg: Damas & Smith Ltd)
- DARDEN, J. T. and KAMEL, S. M. 2002 'The spatial and socioeconomic analysis of First Nation People in Toronto CMA' *The Canadian Journal of Native Studies* 22:239-268
- DAVIS, A. K. 1965 *Edging Into Mainstream: Urban Indians in Saskatchewan* (Bellingham: Western Washington State College)
- DECTER, M. 1978 'Children of the ghetto...Children of despair' *Perception* 2:3-4.
- DOSMAN, E.. J. 1972 *Indians: The Urban Dilemma* (Toronto: McClelland and Stewart)
- DRIEDGER, L. 1999 'Immigrant/ethnic/racial segregation: Canadian big three and prairie metropolitan comparison' *Canadian Journal of Sociology* 4: 485-509

- DROST, H. 1995 'The Aboriginal-White unemployment gap in Canada's urban labor market' in *Market Solutions for Native Poverty: Social Policy for the Third Solitude* eds H. Drost, B. L. Crowley, R. Schwindt (Toronto: C.D. Howe Institute)
- DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT  
1985 *Customized Data, 1981 Census* (Ottawa: Indian Affairs Branch)
- EBDON, D. 1985. *Statistics in Geography* (Oxford: Blackwell)
- FAINTEIN, S. S. 1998 'Assimilation and exclusion in US cities: The treatment of African Americans and immigrants' in *Urban Segregation and the Welfare State: Inequality and Exclusion in Western Cities* eds S. Musterd and W. Ostendorf (London: Routledge) 28-43.
- FONG, E. 1996 'A comparative perspective on racial residential segregation: American and Canadian experiences' *Sociological Quarterly* 37: 199-127
- FONG, E. 1997 'Residential proximity with the charter groups in Canada' *Canadian Studies in Population* 24:103-123
- FONG E. and GUILA, M. 1996 'Differences in neighbourhood qualities among racial and ethnic groups in Canada' *Sociological Inquiry*, 69:575-598
- HAYDEN, T. 2004 'That is not the image we have of Canada' *The Globe and Mail* 6 March, pF6
- HEISZ, A., and MCLEOD, L. 2004 *Low Income in Census Metropolitan Areas, 1980-2000* (Ottawa: Statistics Canada) Catalogue No. 89-613-MIE, No. 001
- INDIAN AND NORTHERN AFFAIRS 2005 *First Nations Housing* <[http://www.ainc-inac.gc.ca/pr/info/info\\_104\\_e.html](http://www.ainc-inac.gc.ca/pr/info/info_104_e.html)> accessed April 21, 2006
- KALBACH, W. E. 1987 'Growth and distribution of Canada's ethnic populations, 1871-1981' in *Ethnic Canada. Identities and Inequalities* ed L. Dreidger (Toronto: Copp Clark Pitman)
- KAZEMIPUR, A. and HALLI, S. 2000 *The New Poverty in Canada: Ethnic Groups and Ghetto Neighbourhoods* (Toronto: Thompson Educational Publishing Inc)
- KROTZ, L. 1980 *Urban Indians: the Strangers in Canada's Cities* (Edmonton: Hurtig Publishers Ltd)
- LEIBERSON, S. 1963 *Ethnic Patterns in American Cities* (New York: The Free Press of Glencoe)
- LIPMAN, M. 1986 'Historical review of CMHC's urban native housing activity.' in *Urban Native Housing in Canada* eds M. Lipman and C. (Winnipeg: Institute of Urban Studies, University of Winnipeg)
- MAXIM, P., WHITE, J.P., WHITEHEAD, P.C., and BEAVON, D. 2000 *Patterns of Urban Residential Settlement among Canada's First Nations* 9London, Canada: University of Western Ontario) <[www.ssc.uwo.ca/sociology/popstudies/dp/dp00-8.pdf](http://www.ssc.uwo.ca/sociology/popstudies/dp/dp00-8.pdf)> accessed June 30, 2005
- MAXIM, P., KEANE, C., and WHITE, J. 2003 'Urban residential patterns of Aboriginal people in Canada' in *Not Strangers in These Parts: Urban Aboriginal People* eds. D. Newhouse and E. Peters (Ottawa, ON: Policy Research Initiative) 79-92
- MELLING, J. 1967 *Right to a Future: the Native Peoples of Canada* (Toronto: T.H. Best Printing Co. Ltd)

- MURDIE, R. A. 1969 *Factorial Ecology of Metropolitan Toronto, 1951-1961* (Chicago: University of Chicago Press)
- NAGLER, M. 1970 *Indians in the City* (Ottawa: Canadian Research Centre for Anthropology, St. Paul University)
- PETERS, E.J. 2005 'Indigeneity and marginalisation: Planning for and with urban Aboriginal communities in Canada' *Progress in Planning* 63:325-404
- PETERS, E.J. and STARCHENKO, O. 2006 'Changes in Aboriginal settlement patterns in two Canadian cities: A comparison to immigrant settlement models' *Canadian Journal of Urban Research* 14:315-337
- POLÉSE, M. 2002 'What ails urban Canada?' *Globe and Mail*, January 7
- Ray, Brian. K. 1994 "Immigrant settlement and housing in metropolitan Toronto" *The Canadian Geographer*. 38(3):262-265.
- RAY, B.K. 1998 *A Comparative Study of Immigrant Housing, Neighbourhoods and Social Networks in Toronto and Montréal* (Ottawa: CMHC)
- RAY, B.K. 1999 'Plural geographies in Canadian cities: Interpreting immigrant residential spaces in Toronto and Montréal' *Canadian Journal of Regional Science* 22:65-86
- RAY, B.K., HALSETH, G. and HANSON, B. 1997 'The changing 'face' of the suburbs: Issues of ethnicity and residential change in suburban Vancouver' *International Journal of Urban and Regional Research* 21:75-99
- RAY, B.K., and MOORE, E. 1991 'Access to homeownership among immigrant groups in Canada' *Canadian Review of Sociology and Anthropology* 18: 1-27
- ROYAL COMMISSION ON ABORIGINAL PEOPLES 1996 *Perspectives and Realities* (Ottawa: Minister of Supply and Services)
- RICHARDS, J. 2001 *Neighbors Matter. Poor Neighborhoods and Urban Aboriginal Policy* (Toronto: C.D. Howe Institute)
- SGRO, J. 2002 *Canada's Urban Strategy: A Vision for the 21<sup>st</sup> Century* (Ottawa, Canada: Prime Minister's Caucus Task Force on Urban Issues)
- SIGGNER, A. J. and COSTA, R. 2005 *Aboriginal Conditions in Census Metropolitan Areas, 1981-2001* (Ottawa: Statistics Canada) Catalogue No. 89-613-MIE, No. 008
- SPECTOR, A. 1996 *The Housing Conditions of Aboriginal People in Canada, 1991* (Ottawa: Canada Mortgage and Housing Corporation)
- STACKHOUSE, J. 2001 'Welcome to Harlem on the Prairies' *Globe and Mail*, November 3, F2-F4
- STATISTICS CANADA 1974 *Perspective Canada* (Ottawa: Information Canada)
- STATISTICS CANADA 1991 *1991 Census and Aboriginal Peoples Survey*, Catalogue #94-327 (Ottawa: Canada, Statistics Canada)
- STATISTICS CANADA 2003 'Aboriginal identity population, percentage distribution, for Canada, provinces and territories - 20% sample data. Aboriginal peoples of Canada: Highlight tables' *2001 Census of the Population* <[www.statcan.ca](http://www.statcan.ca)> accessed October 10, 2003
- SVENSON, K. 1978 *The Explosive Years: Indian and Metis Issues in Saskatchewan to 2001* (Regina: Department of Indian Affairs and Northern Development, Regina)

- WARD, D. 1971 *Cities and Immigrants. A Geography of Change in Nineteenth Century America* (New York: Oxford University Press)
- WARNER, S. B. and BURKE, C. 1969 'Cultural change and the ghetto' *Journal of Contemporary History* 4:173-188
- WALKS, R. A. and BOURNE, L. S. 2005 *Ghettos in Canadian cities? Racial segregation, ethnic enclaves and poverty concentration in Canadian urban areas* paper presented to the Annual Meeting of the Canadian Association of Geographers, June 2, 2005
- YANCEY, W.L., ERICKSEN, E. P. and JULIANI, R. N. 1976 'Emergent ethnicity: A review and reformulation' *American Sociological Review* 41:391-403