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Does the Indian Act Influence the Income and Education Outcomes of Manitoban Urban Indian People?

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Abstract: *This article answers the question, ‘is the influence of the Indian Act associated with worse economic income and education outcomes in Manitoba? This investigation focuses on the category of Aboriginal persons who self-reported as First Nations and compared the economic outcome of Status Indians (those affected by the Indian Act) with those of non-Status Indians. This paper’s principal contribution to the field is that it assesses empirically the effect of the Indian Act on the economic outcomes of the Indian population in Manitoba using the 2011 NHS individual data. The results indicate that being a Status Indian is associated with a lower probability of higher economic outcomes in terms of income and education.*

Introduction

There is a growing body of empirical literature studying the relationship between historical colonial institutions and economic development. Some studies have found quantitative evidence that supports the hypothesis that historical institutions shape the current economic outcomes in regions such as Africa (Michalopoulos and Papaioannou 2013; Englebert 2000), India (Lankina and Getachew 2013; Banerjee and Lakshmi 2005), South America, North America (Engerman and Sokoloff 1997); Peru (Dell 2010) and Brazil and Portugal (Costa et al. 2011). Among all these studies only Dell (2010) examined the role of historical colonial institutions in the particular case of Aboriginal economic development. Dell found that the legacy of the mita (a colonial labour institution) continues to impact land tenure and public goods provisions in Peru. Currently the territories where the mita was implemented have fewer large landowners, lower education, and less integration of road networks. Among the related literature, Dell’s work is the closest to this paper. This paper seeks to assess the impact of the Indian Act (a political colonial institution) on the income and education outcomes of Manitoba’s Aboriginal peoples. To this end this paper uses 2011 National Household Survey (NHS) microdata. The sample comprises multiple and single identity Aboriginal people who are registered and non-registered Indian persons (Status and non-Status Indian people respectively) and excludes Aboriginal people living on reserves and in Aboriginal districts. Also, the sample does not include those Aboriginal persons identified as Inuit and Metis (single or multiple identities).

It is important to emphasize that the economic outcomes assessed in this investigation may not necessarily fulfill the economic aspirations of the Manitoban Aboriginal people or their definition of success. However, having higher income and increasing levels of education do not contradict Aboriginal life aspirations. Environics Institute (2011) reports that in Winnipeg the most commonly mentioned life aspiration among Aboriginal peoples

“is to have a good job or career (32%), and this is more widespread among urban Aboriginal peoples in general. Other important goals include completing their education (25%), raising or providing for a family (22%), and home ownership (22%)” (57).

Manitoba’s Aboriginal people were selected for this research because the literature review indicates a lack of scholarly empirical works that investigate the impact of the Indian Act on the economic outcomes of Manitoban Aboriginal people. This literature gap happens even though in 2016 Manitoba ranked as the second province of Canada where Aboriginal people accounted for the largest percentage of the total population (10.5%). In 2011, Manitoba was the Canadian province with the largest percent of Aboriginal people among its total population (16.7%) (Statistics Canada 2017)

The main research findings of this paper are that among Aboriginal people being a Status Indian (registered under the Indian Act¹) reduces the odds of having higher economic outcomes with respect to income and education. Although the specific attribute of being a female Status Indian does not influence income outcomes relative to other Aboriginal females (Table 4), being a female Status Indian person does positively influence the Aboriginal female’s university education outcomes. Status Indian persons who complete education, particularly complete university education, achieve higher returns in income outcomes when compared to non-Status Indian people. Being a single parent and a non-Status Indian reduces the likelihood of complete university education while being a single parent and a Status Indian improves the likelihood of complete university education. Likewise, speaking an Aboriginal language at home increases the relative odds of university education for non-Status Indian people, while speaking an Aboriginal language at home decreases the relative odds of university education for Status Indian people (Table 7).

Literature review

Education and income disparities

Although there are several empirical papers that have researched the different dimensions of the economic outcomes of Canadian Aboriginal people, these studies do not evaluate the impact of the Indian Act on these outcomes. The general conclusion of the existing literature on the topic of Aboriginal people’s economic outcomes is that they are the most socioeconomically disadvantaged ethnic group in Canada (Pampalon, Hamel, and Gamache 2010; Adelson 2005; Walters et al. 2004; De Silva 1999).

Regarding education disparity, Walters et al. (2004), using 1995 National Graduates Survey data, compared Aboriginal economic outcomes with the outcomes of visible

¹ In compliance with the literature (Statistics Canada 2013, 2014; Congress of Aboriginal people, 2013; Aboriginal Affairs and Northern Development of Canada -ANDC 2012; Indian Act, R.S.C, 1985; Daniel v. Canada 2014; Galloway 2014) in this paper the terms Registered Indian and Status Indian will be used interchangeably. Likewise, the term non-Registered Indian and non-Status Indian will be referring the same group of people. In addition, the expression Indians or First nation people will be used interchangeably to refer to both Status and non-Status Aboriginal people who constitute the sample of this research.

minorities and non-minorities. They found that Aboriginal people's access to post-secondary education is lower than that of the rest of the Canadian population. Even though Canadian Aboriginal people with higher levels of education in some fields earn more than visible minorities and non-minorities, their postgraduate employment prospects are weaker.

Friesen and Krauth (2010) found substantial segregation and test score gaps between Aboriginal and non-Aboriginal students. Lower Aboriginal student test scores compared to that of non-Aboriginal students was attributed to between-school factors and within-school factors while segregation was associated with peer effects. De Silva (1999) used 1991 Census data to assess wage differences between white and Aboriginal Canadians. He found that the differential in wages between Aboriginal people and white Canadians is mainly due to differences in the endowment. One of the most relevant endowments is education.

Pendakur and Pendakur (2011) use microdata from 1996, 2001, and 2006 Censuses of Canada to research earning and income disparity between Aboriginal people and the rest of the population in Canada. They established that even though the income gap between Aboriginal people and the rest of the Canadian population was falling between 1995 and 2005, a substantial income gap still existed in 2005. Among Aboriginal people, the Status Indians fared the worst.

Except for Pendakur and Pendakur (2011), the literature that used Canadian Census data analyzed the economic outcomes of Aboriginal people by treating them as a group, which does not allow for identifying economic outcomes specific to each Aboriginal subgroup (De Silva 1999; Pendakur and Pendakur 1998; Friesen and Krauth 2010). Aboriginal peoples in Canada include several categories such as Metis, Inuit, and Indian persons. They can all have single or multiple Aboriginal identities². In addition, non-Inuit and non-Metis single and multiple identity Aboriginal people include registered and non-registered Indian persons (Status and non-Status Indian people) living on reserve or off-reserve (Statistics Canada 2013a 2014). The current paper adds to the knowledge on the specific economic outcomes of multiple identities and single identity Aboriginal people that are Status Indians living off-reserve and off-Indian districts relative to non-Status Indians.

The Indian Act was first promulgated in 1876 by the Canadian government as an attempt to consolidate the existing legislation regarding First Nations and their relationship with Canada. Although the principal (stated) objective of the Act was to protect the Indians³ and the land reserved for Indians (Indian Act, R.S.C, 1985), notably, several literature sources argue that the Indian Act is one of the principal causes of the disadvantaged situation of Aboriginal communities (Noel and Larocque 2009; McMillan 1999; Fiske and George 2006). The Act imposes economic, cultural, and political constraints on Aboriginal people. These constraints arise from the limited autonomy that the Indian

2 "Multiple Aboriginal identities" include persons who reported being any two or all three of the following: First Nations (North American Indian), Métis or Inuk (Inuit)" (National Household Survey 2011, Appendix A, Aboriginal Identity).

3 The Indian Act defines *Indian* "as a person who pursuant to this Act is registered as an Indian or is entitled to be registered as an Indian" (Indian Act, R.S.C, 1985, interpretation section)

Act confers to Indians as it rules that the Federal Government holds Indian Band funds. Also, the Indian Act defines how the reserve land can be administrated and determines the political institutions and the cultural practices that Indians are allowed to exercise on the reserves (Cunningham 1995). Moreover, under the 1876 Indian Act terms, the Canadian government denied citizenship for Aboriginal peoples and instead considered them “wards or children of the state” (Noel and Larocque 2009, 13) which explains, to some degree, their reliance on government transfers.

However, in 1951, the restrictions on cultural practices were eliminated from the Indian Act (Coates 2008). Also, through the second half of the twentieth century, the Indian Act was amended several times to eliminate the discriminatory provisions that prevented Aboriginal people from enjoying the rights granted to Canadian citizens. These amendments to the Indian Act, together with the incorporation of the Canadian Charter of Rights and Freedoms to the Canadian Constitution in 1982, granted all Aboriginal Canadians the civil rights enjoyed by non-Aboriginal Canadian citizens and recognized and affirmed Aboriginal and treaty rights (Kane 2000; Tobias 1991).

In 1996, a report of the Royal Commission proposed a greater recognition of First Nation citizenship status. It made recommendations on how to institutionally accommodate Aboriginal peoples by respecting their ‘special status’ rights and responsibilities without increasing the fragmentation of the federation and without hurting the capacity of Canadians to think and act collectively. Currently, there is still a debate between those Canadian politicians and Aboriginal people who would like to be emancipated from the Indian Act and acquire undifferentiated Canadian Citizenship and those who would like to keep their Aboriginal ‘special status’ (Kane 2000; Nepinak 2013).

There is additional literature that recognizes that the economic inequality of Aboriginal people relative to other Canadian ethnic groups is an outcome of historical colonial institutions such as the Indian Act (e.g., Flanagan et al. 2010; Adelson 2005; Carr-Stewart, 2006; Dahiwale 2007). However, none of these studies quantitatively assess the extent to which this colonial institution affects Aboriginal people’s economic outcomes relative to those Aboriginal people not directly affected by the Act. This paper attempts to fill this research gap by using quantitative (regression) analysis to assess the effect of the Indian Act on the economic outcomes of those affected by the act.

Data

This investigation used the 2011 NHS individual data on Manitoba’s Aboriginal population between the ages of 15 and 65 years to assess the impact of the Indian Act on the economic outcomes of Aboriginal peoples in Manitoba. The study focuses on one category of Aboriginal people, that is, those who self-reported (single or multiple identities) as First Nations (North American Indian). The economic outcomes of Aboriginal people within this identity dimension are the dependent variables of the regressions presented in this paper.

Within the identity dimension of Indian persons are two groups distinguished along the legal dimension conferred by the Indian Act:

- Status Indians: those First Nations or Indian registered under the Indian Act. They represent about 57 percent of the total sample;
- Non-Status Indian: those First Nations or Indians not registered under the Indian Act. They constitute about 43 percent of the total sample.

As stated by the Federal Court of Appeal (FCA), “Non-Status Indians are Indians without status under the Indian Act” (Daniels vs. Canada 2014, p.29). Hence, Status Indians and non-Status Indian people can be similar in terms of their ethnic and cultural background, but non-Status Indians are not subject to the Indian Act. In this paper, the sample includes only Status and non-Status Indian people because their similarities make them comparable. However, non-Status Indians are principally distinguished from Status Indians because they are not subject to the obligations and benefits of the Indian Act, and they do not receive targeted governmental financial support. In contrast, Status Indians are subjects of considerable governmental policy and financial support (Pendakur and Pendakur 2011).

In general, a person may be eligible for Indian status if at least one of the parents (or both parents) are or were registered or entitled to be registered under subsection 6(1) of the Indian Act. The subsection distinguishes persons who were born before and after to April 17, 1985. On this date, the Bill C-31⁴ was passed into law to amend the Indian Act. A person born before April 17, 1985, is registered according to the pertinent section of the Indian Act before its amendment. A person born after April 17, 1985, can apply on an application registration under the Indian Act which is sent to Ottawa for processing (Government of Canada 2015).

The sample excluded those respondents who self-reported as Metis, Inuit, or Metis-Inuit because these Aboriginal groups have particular ethnic histories and political rights that make them fundamentally different from those identified as Indians. In addition, unlike other non-Status Indian people, Metis and Inuit are not eligible to be Status Indian people. Although section 35(2) of *The Constitution Act* recognizes Metis and Inuit people as Aboriginals, it does not recognize them as entitled to being Status Indians (*The Constitution Act 1867 to 1982, Part II*). Metis people are those Aboriginal people of mixed European and Indigenous ancestry who cannot hold a Status Indian card as an additional requirement to qualify as Metis (Metis National Council 2011). Very recently, however, on November 20, 2014, the Federal Court recognized the fiduciary obligation of the federal government concerning the Metis people (*APTN National News 2014*).

Inuit are Aboriginal people of the Canadian Arctic whose ways of life are shaped by the geographical challenges imposed by the Arctic. In 1939, the Supreme Court of Canada ruled that Inuit should be considered as Indians for constitutional administrative purposes. Since then, the Federal government has provided some services to Inuit people that are

⁴ The purpose of the Bill C-31 is “to bring the Indian Act into line with gender equality under the Canadian Charter of Rights and Freedoms” (First Nation and Indigenous Studies, The University of British Columbia, para. 1)

provided to Status Indians as well (Aboriginal Affairs and Northern Development Canada 2010, 2011; Bonesteel 2006). However, the Inuit are not to be considered as Status-Indians as the Indian Act does not govern them as the Act's section 4(1) states "A reference in this Act to an Indian does not include any person of the race of aborigines commonly referred to as Inuit" (Indian Act, R.S.C, 1985). Hence, the conditions influencing the economic outcomes of Inuit and Metis people are different from those determining the economic outcomes of those Aboriginal persons commonly referred to as Indians.

Methodology

This paper explores two aspects of the economic circumstances of Indian people: income and education. As these dependent variables have more than two outcomes, multinomial logit models were used. For each economic outcome, four regressions were run: (1) a regression that controls for being a Status Indian; (2) a regression that controls for being a Status Indian and a female along with other explanatory variables that, according to the theory and previous literature, should be included in the model; (3) a version of regression two with an additional variable that controls for the interaction of Status Indian and female; (4) a version of regression three with additional variables that control for the effect on the outcome variable of the interaction between Status Indian and the explanatory variables.

Logit regressions⁵ were selected over OLS regression because income and education are categorical variables (not continuous), and those are the dependent variables (DVs) of the regression models analyzed in this paper. There are two relevant technical factors to know: "(a) OLS regression is not appropriate under most circumstances when DVs are not continuous (technically, ordinal, or interval), and (b) even when these assumptions of OLS regression are met, OLS regression and logistic regression using maximum likelihood estimation will produce identical coefficients (e.g., Menard 2002). Thus, there seems to be no significant drawback to using logistic regression where appropriate" (Osborne 2015, 5).

To test multicollinearity in the Variance Inflation Factor (VIF) matrix was estimated. When VIF indicated multicollinearity, the reference variable was changed to address the problem as advised by the scholarly literature (Wissmann, Toutenburg, and Shalabh 2007).

⁵ The odds ratio calculated through the logistic regression is the odds that an outcome (e.g., being in the middle-income bracket) happens given a particular value of another variable (e.g., being a Status Indian person).

An odds ratio of exactly 1 means that exposure to the property indicated by the independent variable (e.g., being a Status Indian person) does not affect the odds of the property indicated by the dependent variable (e.g., being in the middle-income bracket).

An odds ratio of more than 1 means that there are higher odds of the property indicated by the dependent variable (e.g., being in the middle-income bracket) happening with exposure to the property indicated by the independent variable (e.g., being a Status Indian person).

An odds ratio less than 1 is associated with lower odds, which means that there are lower odds of the property indicated by the dependent variable (e.g., being in the middle-income bracket) happening with exposure to the property indicated by the independent variable (e.g., being a Status Indian person) (Author note, 2019).

Income

Instead of using income as a continuous variable to investigate the effect of being a Status Indian person on the income outcomes, this research uses income as a categorical variable defined by the LICO. The advantage of categorizing the income variable is that it allows for identifying what the odds are of a Status Indian person being in the income threshold at which “families are expected to spend 20 percentage points more than the average family on food, shelter and clothing” (Statistics Canada 2015a, para. 2). The categorized income variable is a more precise measurement of living standards and risk of exclusion than a measurement obtained through using income as a continuous variable, which would only indicate a general association of income outcomes and being a Status Indian person.

The 2010 low-income measure cut off (LICO at 1992 base year) was used to derive the dependent variable for the income multinomial regressions. To make non-Status and Status Indian people more comparable, the Lico before tax was selected because Status Indians face different income tax treatment. For example, income originating on-reserve does not necessarily require that an entrepreneur or employee resides on-reserve and is thus tax-exempt although tax exemption under section 87 of the *Indian Act eliminates Aboriginal people’s obligation to pay personal property tax including income tax while situated on-reserve* (Government of Canada 2017). The 2011 NHS provides seven LICO categories based on family size (Statistics Canada 2013c). The income variable used in this paper has three outcomes:

- Below the low income cut off or low-income bracket which ranks from single person in the rural area (\$15,583) to a family of seven or more persons residing in the urban area (\$59,907)
- Above the low-income cut off up to twice the low-income cutoff or middle-income bracket
- Above twice the low income cut off or high-income bracket.

This income variable is interesting and useful because it allows for identifying possible income inequality between Status Indians and non-Status Indians. It also helps to determine the effect of registration under the Indian Act on each one of the income outcomes.

Table 1 shows the control variables used in the income regressions which have been utilized in previous literature to investigate income levels. Aboriginal Status Indian, age, education level, sex, family structure, language, migration, and geography (area of residence) have been used to investigate the earnings and income disparity faced by Aboriginal people in Canada from 1995 to 2005 (Pendakur and Pendakur 2011). Sex and levels of education have been utilized to investigate the earning outcomes of Aboriginal males and females with various postsecondary credentials such as trades, college, and university (Walters et al. 2004).

Table 1 *Income Regression Independent Variables*

Variable	Variable Label /categories	Variable type	Reference Variable
Indian Act	Status Indian	Binary	
Sex	Female	Binary	
Age: people 15 years and older	Age 25–36years old	Binary	
^a Education	1. No certificate diploma or degree (below secondary educational levels 2. High school diploma or certificate or equivalency 3. Above high school and below bachelor degree 4. University certificate, diploma or degree at bachelor level or above (highest education level)	Categorical	Below secondary educational levels
Family structure	Single parent	Binary	
	Married with children	Binary	
Geography ⁶	1. Winnipeg 2. Brandon 3. Portage la Prairie, Steinbach, and Thompson 4. Strong metropolitan influenced area 5. Moderate metropolitan influenced area 6. Weak metropolitan influenced area 7. No metropolitan influenced area	Categorical	Winnipeg
Aboriginal language at work	Aboriginal language at work	Binary	
Migration during the last five years ^b	Migration during the last 5 years	Binary	

a The categories of education were redefined as 1. Below secondary education; 2. High school diploma or certificate or equivalent (secondary education), and 3. Postsecondary education (including education above high school and below university and university education). It was necessary to avoid multicollinearity problems.

b Migration during the last five years includes Aboriginal people migrating to the county, regional county municipality, regional district, census subdivision, census metropolitan area, etc., where the enumerated person lived on May 10, 2006, five years before the reference day, May 10, 2011. (Statistics Canada 2011b).

6 Categories 1,2, and 3 were defined based on the 2011 population size of Winnipeg, the most populated metropolitan area, while the summation of the populations of Portage la Prairie, Steinbach, and Thompson is just below that of Brandon. Besides, categories 5,6, and 7 follow the Statistics Canada (2017) census metropolitan influenced zone (MIZ) defined as “the census metropolitan influenced zone (MIZ) is a concept that geographically differentiates the area of Canada outside census metropolitan areas (CMAs) and census agglomerations (CAs). Census subdivisions (CSDs) within provinces that are outside CMAs and CAs are assigned to one of four categories according to the degree of influence (strong, moderate, weak, or no influence) that the CMAs or CAs have on them. CSDs within the territories that are outside CAs are assigned to a separate category” (para.1).

Also, Aboriginal migration from reserves and Aboriginal territories, as well as the use of their mother language, has been identified as factors that influence the earnings and wages success of Aboriginal people (Kuhn and Sweetman 2002). Besides, it has been found that family structure affects income (Thomas and Sawhill 2005). Single parenthood is recognized as a factor that increases income poverty because of the time required for child-rearing and the limitations that this imposes on single parents with respect to joining the job market. Single-parent families are more likely to face income deprivation (Russell et al. 2008).

Education

The outcomes of the dependent variable for the education regression were defined based on the highest level of education that individuals self-reported, namely: No certificate, diploma or degree (below secondary education); high school diploma or equivalent; post-secondary certificate, diploma or degree; apprenticeship or trades certificate or diploma (above high school and below university degree); and university certificate, diploma or degree at bachelor level or above (Statistics Canada 2013b). Below secondary education was treated as the reference category. Education can be ordered according to its outcomes. However, the Brant test indicated that there was a violation of the parallel regression assumption required for ordered models. The solution, in this case, is to use alternative models that do not impose the parallel regression assumption, such as the multinomial model (Long and Freese 2006; Borooah 2001). Thus, in this paper, a multinomial regression was selected for the educational outcomes.

Table 2 shows the control variables used in the education regressions. Except for Aboriginal Status, these are variables that have been utilized in previous literature to investigate education outcomes. They are sex, age, marital status, family structure, geographic location, migration during the last 5 years, and language.

Table 2 *Education Regression Independent Variables*

Variable	Variable Label /Categories	Variable type	Reference Variable
Indian Act	Status Indian	Binary	
Sex	Female	Binary	
Age	Age 15–25 years old	Binary	
Marital status	Single	Binary	
	Married or in common law	Binary	
Family structure	Single parent	Binary	
Geography	1. Winnipeg	Categorical	Not metropolitan inf. Area for the model in Table 8 and Winnipeg for models in Table 7 ^a
	2. Brandon		
	3. Portage la Prairie, Steinbach and Thompson		
	4. Strong metropolitan influenced area		
	5. Moderate metropolitan influenced area		
	6. Weak metropolitan influenced area		
	7. No metropolitan influenced area		
Migration: resided 5 years ago elsewhere including reserves and Indian districts	Migration during the last 5 years	Binary	
Aboriginal language spoken at home	Aboriginal language at home	Binary	

^a The geographic reference variable changed in these models to avoid multicollinearity problems

Female sex and age have been used to control for the level of the individual student's test score (Friesen and Krauth 2010). Language and cognitive development, communication skills, and general knowledge have been utilized for examining the equivalence of the early development instrument, a teacher rating measure of school readiness, for Aboriginal and non-Aboriginal children (Muhajarine et al. 2010). Marital status has been used to control for the postsecondary achievement of Australian women (Mugford and Darroch 1980). Family structure was used to investigate its effects on educational attainment after controlling for common family influences (Sandefur and Well 1999). One dimension of family structure selected as an explanatory variable for the education regression is single parenthood which has been identified as a factor in explaining the increases in economic inequality between Aboriginal females and males and between Aboriginal people and the rest of the Canadian population (National Council of Welfare 2007). Geography, in terms of the area of residency (on-reserve, rural, town, city), has been used in explaining the educational attainment of the Aboriginal identity population (Mendelson 2006). Since,

in this investigation, on-reserve populations are not included, the 7 categories of the geography regressor were determined according to the Census 2011 metropolitan category (Statistics Canada 2015b).

The migration of Canadian Aboriginal people has been identified as one obstacle to the delivery of proper services such as education to Aboriginal communities (Carter and Polevychok 2004). To control for the influences of Aboriginal migration in their education outcomes, the explanatory variables include migration during the last five years which controls for the migration of those Indian persons who resided 5 years ago in a Census subdivision that covers Indian reserves and Aboriginal districts and moved to a different Census subdivision. The relevant role of the Aboriginal people's languages in their educational attainments has also been extensively studied (Roberts 1998; Osborne et al. 2011; Corson 1996). To control for the influences of the Aboriginal language in the dependent variables of the education regression, a variable, Aboriginal language spoken at home, was included. This variable refers to those peoples who use the Aboriginal language on a regular basis to communicate at home.

Results

The subsections in this section initially present a descriptive statistical summary of each outcome variable (given that the descriptive statistics are weighted, they represent population-level estimations). Then, the regression results are shown in two separate tables; the first table includes regressions 1, 2, and 3 described in the methodology section above. The second table presents a version of regression 3 with additional variables that control for the interactions between Status Indian and the explanatory variables.

Income

Table 3 shows the distribution of income across the population sample. The percent of Status Indian persons below the low income cut off is about 25.5 percentage points higher than the percent of non-Status Indian persons in the same income bracket. In contrast, the percent of Status Indians with income above twice the low income cut off is 13.6 percentage points lower than the percent of non-Status Indians in the same income cut off. Besides, while the majority of non-Status Indian persons are in the middle-income bracket, the majority of Status Indian persons are in the lowest income group (below the low-income cut off). Also, non-Status females are strongly disadvantaged relative to males and are mostly in the low-income bracket.

Table 3 *Income Outcome Distribution among Manitoba's Indian Population*

Population	Category	1. below low income cut off (%)	2. Above low income cut off and up twice low income cut off (%)	3. Above twice the low income cut off (%)	Total (%)
Indian Population	Non-Status Indian	36.5	38.7	24.9	100
	Status Indian	67.5	21.2	11.3	100
	All Indians	54.0	29.0	17.0	100
Non-Status Indian population	Female	39.2	36.6	24.5	100
	Male	33.7	41.3	25.2	100
Status Indian Population	Female	69.5	18.6	12.0	100
	Male	64.7	25	10.3	100

Source: Statistics Canada, 2011a confidential National Household Survey (individual) files

The results reported in Table 4 show the effect of being Status Indian and the interaction effect of sex and Status Indian on the three income outcomes. The first income outcome is below the low income cut off (low-income bracket) which is the reference group; the second income outcome is above the low income cut off and up to twice the low income cut off (middle-income bracket); and the third income outcome is above twice the low income cut off (high-income bracket).

Data in Table 4 indicate that being a Status Indian person is significant for income outcomes. Being a Status Indian reduces the odds of being in the middle-income bracket relative to the low-income bracket by a factor of roughly 2.5 (0.4 odds ratio) and by a factor of roughly 4 (0.25 odds ratio) for the highest income cut off. Besides, the regression in column 3 shows that being female and a female Status Indian have no statistical impact on income.

The education variable is significant for income outcomes. Relative to Indian persons with education below high school (category 1), higher levels of education increase the odds of being in a middle-income bracket relative to being in the lowest income bracket. The positive effect of higher education is also more significant for those in the high-income bracket relative to the lowest income bracket. University levels of education (category 4) increase the odds of being in the high-income bracket by 3 times the odds of being in the low-income bracket.

Table 4 *Results of Income Regressions Controlling for Status Indian and for the Interaction between Status Indian and Female Sex*

Dependent variable: Income			
Explanatory Variables	Model 1	Model 2	Model 3
<i>1. Low-income bracket (Base outcome)</i>			
<i>2. Middle-income bracket (above low-income cut off up to twice low-income cut off)</i>			
Status Indian	0.296*** (-16.28)	0.368*** (-12.11)	0.372*** (-8.16)
Female		0.818** (-2.48)	0.819 (-1.67)
Female Status			0.976 (-0.15)
Age 36–65 years old		1.367*** (3.91)	1.368*** (3.92)
Education			
2. High school		1.403*** (3.40)	1.404*** (3.41)
3. Above high school below university		1.564*** (4.33)	1.566 (4.34)
4. University/highest educational level		2.198*** (4.86)	2.197*** (4.86)
Geography			
2. Brandon		1.175 (0.98)	1.175 (0.98)
3. Portage la Prairie, Steinbach and Thompson		2.397*** (5.64)	2.398*** (5.64)
4 Strong metropolitan influenced area		2.698*** (4.17)	2.698*** (4.17)
5. Moderate metropolitan influenced area		1.184 (0.96)	1.184 (0.96)
6. Weak metropolitan influenced area		1.499*** (3.02)	1.499*** (3.01)
7. Not metropolitan influenced area		1.609 (1.85)	1.612 (1.85)
Married with Children		0.916 (-0.97)	0.916 (-0.97)
Single parent		0.469*** (-6.91)	0.470*** (-6.89)
Aboriginal language at work		0.267*** (-13.72)	0.267*** (-13.73)
Migration during the last 5 years		0.512*** (-3.62)	0.511*** (-3.62)

(continued)

Table 4 *Results of Income Regressions Controlling for Status Indian and for the Interaction between Status Indian and Female Sex*

<i>1. Low-income bracket (Base outcome)</i>			
<i>3. High-income bracket (Above twice low income cut off)</i>			
Status Indian	0.245*** (-15.88)	0.277*** (-12.29)	0.239*** (-9.40)
Female		0.965 (-0.35)	0.863 (-1.01)
Female Status			1.308 (1.33)
Age 36 –65 years old		2.000*** (6.86)	1.987*** (6.81)
Education			
2. High school		1.364** (2.22)	1.360** (2.20)
3. Above high school below university		2.139*** (5.60)	2.130*** (5.56)
4. University/highest educational level		6.814*** (10.32)	6.735*** (10.32)
Geography			
2. Brandon		1.299 (1.11)	1.291 (1.08)
3. Portage la Prairie, Steinbach and Thompson		4.849*** (8.83)	4.818*** (8.76)
4 Strong metropolitan influenced area		5.910*** (7.240)	5.880*** (7.21)
5. Moderate metropolitan influenced area		2.684*** (4.71)	2.679*** (4.70)
6. Weak metropolitan influenced area		2.437*** (5.44)	2.432*** (5.43)
7. Not metropolitan influenced area		2.657*** (3.24)	2.629*** (3.21)
Married with Children		0.315*** (-10.72)	0.315*** (-10.72)
Single parent		0.132*** (-11.91)	0.130*** (-11.95)
Aboriginal language at work		0.194*** (-11.00)	0.193*** (-11.00)
Migration during the last 5 years		0.583 (-1.51)	0.588 (-1.48)

Note. Exponentiated coefficients; t statistics in parentheses; ** p < .05. *** p < .01

Being between 36 and 65 years old also increases the odds of being in both the middle and in the high-income brackets. For geography, residing in Portage la Prairie, Steinbach, and Thompson, and in strong and weak metropolitan influenced areas (categories 3 and 4 respectively) presents the largest increases in the odds of being in the middle and high-income bracket relative to those Indian people residing in Winnipeg. Another interesting result is that couples with children are less likely to be in the middle and high-income brackets relative to the low-income bracket. The same is true for single parenthood, but the reduction in the odds of higher income is larger for single parents. Likewise, speaking an Aboriginal language at work is associated with reduced odds of being in the middle and high-income brackets relative to the low-income bracket.

Table 5 shows the effects of the interaction between the explanatory variables and the Status Indian dummy variable on the income outcomes. The variables with significant interaction effects are the location (geography), migration, age, education, and married with children. Concerning the interaction effects that increase the relative odds of higher income for a Status Indian person, education (relative to below high school education) increases the odds of being in the high-income bracket more than it does for a non-Status Indian person with the same level of education. In addition, for the middle-income bracket relative to the low-income bracket, a Status Indian person residing in Portage la Prairie, Steinbach, or Thompson relative to Winnipeg has higher odds of being in the middle-income bracket relative to a non-Status Indian. Likewise, when comparing Status and Non-Status Indian persons, a Status Indian person residing in a moderate metropolitan influenced area has higher odds of being in the high-income bracket as opposed to the low-income bracket.

In terms of the significant interaction effects that decrease the relative odds of higher income, the results indicate that migration during the last 5 years between census subdivisions leads to lower odds of being in the middle to high-income brackets relative to the low-income bracket for Status Indian persons compared to non-Status persons.

Table 5 *Income regression controlling for interaction with Status Indian across the independent variables*

Dependent variable: Income			
Explanatory Variables	Model 4	Explanatory Variables	Model 4
Main Effects		Interaction Effects (with Status)	
<i>1. Low-income bracket (Base outcome)</i>		<i>1. Low-income bracket (Base outcome)</i>	
<i>2. Middle-income bracket (above low-income cut off up to twice low income cut off)</i>		<i>2. Middle-income bracket (above low-income cut up to twice low income cut off)</i>	
Status Indian	1.033 (0.08)		
Female	0.810 (-1.78)	Female	1.004 (0.02)
Age 36–65 years old	1.215 (1.65)	Age 36–65 years old	1.221 (1.24)
Education		Education	
2. Secondary education	1.296*** (3.44)	2. Secondary education	0.837 (-1.74)
3. Postsecondary education	1.217*** (3.91)	3. Postsecondary education	0.961 (-0.60)
Geography		Geography	
2. Brandon	1.413 (1.32)	2. Brandon	0.66 (-1.17)
3. Portage la Prairie, Steinbach and Thompson	1.235 (0.66)	3. Portage la Prairie, Steinbach and Thompson	2.428** (2.44)
4 Strong metropolitan influenced area	2.530*** (3.29)	4 Strong metropolitan influenced area	0.776 (-0.48)
5. Moderate metropolitan influenced area	1.037 (0.14)	5. Moderate metropolitan influenced area	1.052 (0.15)
6. Weak metropolitan influenced area	1.21 (0.80)	6. Weak metropolitan influenced area	1.163 (0.51)
7. Non-metropolitan influenced area	1.266 (0.45)	7. Not metropolitan influenced area	1.153 (0.24)
Married with Children	0.986 (-0.11)	Married with children	0.917 (-0.48)
Single parent	0.536*** (-3.60)	Single parent	0.816 (-0.91)
Aboriginal language at work	0.309*** (-7.95)	Migration during the last 5 years	0.982*** (-2.74)
Migration during the last 5 years	0.685 (-1.66)	Speak Aboriginal language at work	0.792 (-1.19)

(continued)

Table 5 *Income Regression Controlling for Interaction with Status Indian across the Independent Variables*

Main Effects		Interaction Effects (with status)	
<i>1. Low-income bracket (Base outcome)</i>		<i>1. Low-income bracket (Base outcome)</i>	
<i>3. High-income bracket (Above twice low income cut off)</i>		<i>3. High-income bracket (Above twice low income cut off)</i>	
Status Indian	0.536 (-1.26)		
Female	0.928 (-0.54)	Female	1.229 (1.01)
Age 36–65 years old	1.644*** (3.54)	Age 36–65 years old	1.504** (2.00)
Education		Education	
2. Secondary education	1.043 (0.45)	2. Secondary education	1.316 (1.92)
3. Postsecondary education	1.313*** (4.52)	3. Postsecondary education	1.219** (2.28)
Geography		Geography	
2. Brandon	1.269 (0.75)	2. Brandon	1.010 (0.02)
3. Portage la Prairie, Steinbach, and Thompson	3.650*** (3.94)	3. Portage la Prairie, Steinbach, and Thompson	1.525 (1.06)
4 Strong metropolitan influenced area	4.853*** (5.69)	4. Strong metropolitan influenced area	0.848 (-0.28)
5. Moderate metropolitan influenced area	1.480 (1.37)	5. Moderate metropolitan influenced area	2.659** (2.42)
6. Weak metropolitan influenced area	1.565 (1.73)	6. Weak metropolitan influenced area	1.666 (1.49)
7. Non-influenced metropolitan area	1.593 (0.74)	7. Non-influenced metropolitan area	1.735 (0.77)
Married with Children	0.46*** (-5.99)	Married with children	0.498*** (-3.23)
Single parent	0.103*** (-9.85)	Single parent	1.384 (0.96)
Aboriginal language at work	0.204*** (-7.66)	Aboriginal language at work	1.953 (0.16)
Migration during the last 5 years	0.923 (-0.20)	Migration during the last 5 years	0.971*** (-3.58)

Note. Exponentiated coefficients; t statistics in parentheses; ** p < .05. *** p < .01

Being a Status Indian person married with children relative to a non-Status Indian person with the same marital status reduces the odds of being in the high-income bracket relative to the low-income bracket.

In general, from the income research results, it is possible to conclude that being a Status Indian person reduces the odds of being in the higher income brackets. However, among Status and non-Status Indians, Status Indian females fare the worst as they present the largest concentration in the low-income bracket. Likewise, education is important for increasing the odds of higher income for Status and non-Status Indian persons.

Education

Table 6 shows the educational attainment of the sample population. The percent of Status Indian persons with education below a secondary school level is 17.5 percentage points higher than that of non-Status Indians with the same educational attainment. That gap is higher for males (20 percentage points) than for females (17 percentage points). In contrast, the percent of Status males and females with a university education is 5 percentage points lower than it is for non-Status males and females. Also, the percent of Status and non-Status females with education below postsecondary level is 9 and 6 percentage points smaller than the percent of Status and non-Status males, respectively. Thus, in general, non-Status Indian persons are better-educated formally than Status Indian persons. Additionally, Indian females have higher educational attainments than Indian males.

Table 6 *Education Outcome Distribution among Manitoba's Indian Population*

Education outcome	Total Indian population (%)			Non-Status Indian population (%)		Status Indian population (%)	
	non-Status	Status	All Indians	Females	Males	Females	Males
1. Below secondary education	28	46	29	26	32	43	52
2. High school certificate, diploma or equivalency	30	23	30	30	30	23	23
3. Above high school and below university bachelor degree	30	23	29	30	29	24	21
4. Bachelor university degree and above	12	8	12	15	9	10	4
Total	100	100	100	100	100	100	100

Source: Statistics Canada, 2011 confidential National Household Survey (individual data) files

Regression results reported in Table 7 show the effect of being a Status Indian and the interaction effect of Status Indian and sex on educational outcomes. The educational outcome categories are no certificate, diploma, or degree or below secondary educational levels (outcome 1); high school certificate, diploma, or equivalency (outcome 2); certificate, diploma, or degree above high school and below a university's bachelor degree (outcome 3); and bachelor university degree and above (outcome 4). Table 7 indicates that being a Status Indian significantly decreases the likelihood of having a high school education diploma and university education. The variables female and the interaction effect between female and Status Indian are significant for education outcomes at the university education level, indicating that, relative to non-Status females, Status females have higher odds of possessing a university degree. The effect of Status Indian on education when the reference outcome is education at the university bachelor degree and above (outcome 4) is also interesting: being a Status Indian person increases the odds of having an educational level below secondary education relative to university education.

Table 7 *Results of Education Regressions Controlling for Status Indian and for Interacting Effect of Female Sex and Status Indian*

Dependent variable: Education			
Explanatory Variable	Model 1	Model 2	Model 3
<i>1. Below high school (Base outcome)</i>			
<i>2. High School</i>			
Status Indian	0.469*** (-9.18)	0.504*** (-7.88)	0.497*** (-5.84)
Female		1.217** (2.41)	1.184 (1.32)
Female Status Indian			1.034 (0.20)
Age 15–25 years old		1.000 (-0.03)	1.000 (-0.03)
Marital status single		0.695** (-2.10)	0.696** (-2.10)
Marital status married		1.047 (0.27)	1.048 (0.27)
Geography			
2. Brandon		1.055 (0.28)	1.054 (0.28)
3. Portage la Prairie, Steinbach and Thompson		0.804 (-1.46)	0.804 (-1.46)
4 Strong metropolitan influenced area		0.977 (-0.10)	0.976 (-0.10)
5. Moderate metropolitan influenced area		0.691** (-2.19)	0.691** (-2.19)
6. Weak metropolitan influenced area		0.803 (-1.68)	0.803 (-1.68)
7. Non-metropolitan influenced area		0.344*** (-3.82)	0.344*** (-3.82)
Aboriginal language at home		0.657** (-2.21)	0.658** (-2.20)
Single parent		0.951 (-0.46)	0.950 (0.47)
Migration during the last 5 years		0.921 (-0.44)	0.920 (-0.44)
<i>3. Above high school and below university bachelor degree</i>			
Status Indian	0.483*** (-8.84)	0.555*** (-6.38)	0.544*** (-4.62)
Female		1.241** (2.51)	1.200 (1.31)
Female Status Indian			1.045 (0.25)
Age 15–25 years old		0.937*** (-10.07)	0.937*** (-10.04)

(continued)

Table 7 *Results of Education Regressions Controlling for Status Indian and for Interacting Effect of Female Sex and Status Indian*

<i>1. Below high school (Base outcome)</i>			
<i>3. Above high school and below university bachelor degree</i>			
Marital status single		0.512*** (-4.29)	0.512*** (-4.29)
Marital status married		1.130 (0.79)	1.131 (0.80)
Geography			
2. Brandon		1.104 (0.54)	1.104 (0.53)
3. Portage la Prairie, Steinbach, and Thompson		0.730** (-2.08)	0.730** (-2.09)
4 Strong metropolitan influenced area		1.119 (0.47)	1.118 (0.46)
5. Moderate metropolitan influenced area		0.840** (-2.19)	0.840** (-2.19)
6. Weak metropolitan influenced area		0.972 (-1.81)	0.972 (-1.81)
7. Non-metropolitan influenced area		0.360*** (-3.66)	0.360*** (-3.67)
Aboriginal language at home		0.671** (2.31)	0.671** (2.31)
Single parent		0.974 (-0.22)	0.972 (-0.23)
Migration during the last 5 years		0.744 (-1.43)	0.744 (-1.43)
<i>4. University</i>			
Status Indian	0.390*** (-8.83)	0.472*** (-6.31)	0.331*** (-5.40)
Female		2.330*** (6.80)	1.850*** (3.53)
Female Status Indian			1.691** (2.06)
Age 15–h25 years old		0.912*** (-8.62)	0.912*** (-8.58)
Marital status single		0.444*** (-3.46)	0.450*** (-3.42)
Marital status married		1.090 (0.38)	1.101 (0.43)
Geography			
2. Brandon		0.786 (-0.88)	0.781 (-0.91)
3. Portage la Prairie, Steinbach, and Thompson		0.588** (-2.50)	0.588** (-2.49)

(continued)

4 Strong metropolitan influenced area	0.918 (-0.31)	0.917 (-0.31)
5. Moderate metropolitan influenced area	0.369*** (-2.94)	0.369*** (-2.92)
6. Weak metropolitan influenced area	0.426*** (-4.41)	0.425*** (-4.42)
7. Non-metropolitan influenced area	0.130*** (-2.79)	0.130*** (-2.82)

(Continued)

Table 7 *Results of Education Regressions Controlling for Status Indian and for Interacting Effect of Female Sex and Status Indian*

1. Below high school (Base outcome)		
3. University		
Aboriginal language at home	0.988 (-0.05)	0.998 (-0.01)
Single parent	0.631** (-2.41)	0.600** (-2.53)
Migration during the last 5 years	0.548 (-1.46)	0.551 (-1.44)

Note. Exponentiated coefficients; t statistics in parentheses; ** p < .05. *** p < .01

The variable single marital status is significant for explaining educational outcomes. This indicates that this condition decreases the relative probability of being in higher levels of education compared to levels below secondary education. Geography is also another variable which is significant in explaining educational outcomes. In general, residing in moderate, weak or non-influenced metropolitan areas compared to Winnipeg decreases the odds of being in higher educational levels relative to below secondary educational levels. Speaking mainly an Aboriginal language at home appears significant for educational levels below university and reduces the odds of higher levels of education relative to below secondary educational levels. Single parenthood is significant for university educational level, indicating that being a single parent decreases the odds of being in the highest level of education relative to below secondary educational levels.

Table 8 shows the interaction effects of the independent variables with the variable Status Indian on the education outcomes. The significant interaction effects for higher levels of education relative to education below high school are age, location, speaking an Aboriginal language at home, and single parenthood. With respect to the significant interaction effects for the education outcome above high school and below university, being a Status Indian person between 15 and 25 years old slightly decreases the odds of education above high school and below university relative to a non-Status Indian person.

Likewise, Table 8 indicates that residence in Winnipeg or in a weak metropolitan influenced area relative to a not metropolitan influenced area decreases the odds of having an education above high school and below university for a Status Indian person relative to a non-Status Indian person. Speaking an Aboriginal language at home also decreases the odds of education above high school and below university for a Status Indian relative to a non-Status Indian person.

Being between 15 and 25 years old also slightly decreases the odds of having an education above high school and below university relative to below high school education for a Status Indian person relative to a non-Status Indian person. For a Status Indian person, speaking an Aboriginal language at home decreases the odds of holding a university degree relative to a non-Status Indian person. In contrast, for a non-Status person speaking an Aboriginal language at home increases the odds of holding a university degree relative to education below high school. Besides, relative to residing in a not influenced metropolitan area, residing in Winnipeg decreases the odds of holding university education for a Status Indian person relative to a non-Status Indian person. The only positive interaction effect that increases the odds of university education relative to education below high school for a Status Indian person is single parenthood.

Being a single parent Status Indian increases the odds of university education relative to a single parent non-Status Indian while the same situation decreases the odds of holding a university degree for non-Status Indian persons.

Table 8 *Education Regression Controlling for Interaction with Status Indian across the Independent Variables*

Dependent variable: Education			
Explanatory Variables	Model 4	Explanatory Variables	Model 4
Main effects		Interaction effects (with status)	
<i>1. Below high school (Base outcome)</i>		<i>1. Below high school (Base outcome)</i>	
<i>2. High school education</i>		<i>2. High school education</i>	
Status Indian	0.774 (-0.53)		
Female	1.180 (1.28)	Female Status	1.025 (0.15)
Age 15–25 years old	1.010 (1.22)	Age 15–25 years old status	0.989 (-1.11)
Marital status single	0.478*** (-2.61)	Marital status single	1.749 (1.56)
Marital status married	1.072 (0.25)	Marital status married	0.926 (-0.22)
Geography		Geography	
1. Winnipeg	3.467*** (4.26)	1. Winnipeg	0.846 (-1.19)
2. Brandon	3.486*** (3.02)	2. Brandon	0.911 (-0.24)
3. Portage la Prairie, Steinbach, and Thompson	2.166 (1.91)	3. Portage la Prairie, Steinbach and, Thompson	1.273 (0.71)
4 Strong metropolitan influenced area	3.288*** (2.92)	4 Strong metropolitan influenced area	0.727 (-0.63)
5. Moderate metropolitan influenced area	2.358** (2.14)	5. Moderate metropolitan influenced area	0.861 (-0.41)
6. Weak metropolitan influenced area	3.639*** (3.44)	6. Weak metropolitan influenced area	0.593 (-1.75)
Aboriginal language at home	1.085 (0.17)	Aboriginal language at home	0.601 (-0.98)
Single parent	0.751 (-1.53)	Single parent	1.339 (1.29)
Mobility during the last 5 years	1.152 (0.65)	Mobility during the last 5 years	0.989 (-1.72)

(Continued)

<i>3. Above high school and below university</i>		<i>3. Above high school and below university</i>	
Status Indian	1.020 (0.04)		
Female	1.205 (1.35)	Female	1.017 (0,10)
Age 15–25 years old	0.962*** (-3.81)	Age 15–25 years old status	0.956*** (-3.34)
Marital status single	0.344*** (-4.01)	Marital status single	1.730 (1.66)
Marital status married	1.034 (0.13)	Marital status married	1.190 (0.54)

Table 8 *Education regression controlling for interaction with Status Indian across the independent variable*

<i>1. Below high school (Base outcome)</i>		<i>1. Below high school (Base outcome)</i>	
<i>3. Above high school and below university</i>		<i>3. Above high school and below university</i>	
<i>Geography</i>		<i>Geography</i>	
1. Winnipeg	4.101*** (5.00)	1. Winnipeg	0.488*** (-4.78)
2. Brandon	4.407*** (3.67)	2. Brandon	0.621 (-1.22)
3. Portage la Prairie, Steinbach and Thompson	2.485** (2.27)	3. Portage la Prairie, Steinbach and Thompson	0.836 (-0.52)
4 Strong metropolitan influenced area	3.992*** (3.39)	4 Strong metropolitan influenced area	0.857 (-0.32)
5. Moderate metropolitan influenced area	3.627*** (3.10)	5. Moderate metropolitan influenced area	0.524 (-1.67)
6. Weak metropolitan influenced area	3.997*** (3.77)	6. Weak metropolitan influenced area	0.482** (-2.39)
Aboriginal language at home	1.407 (0.87)	Aboriginal language at home	0.397** (-2.08)
Single parent	0.715 (-1.64)	Single parent	1.590 (1.82)
Mobility during the last 5 years	0.899 (-0.44)	Mobility during the last 5 years	0.992 (-1.12)
<i>1. Below high school (Base outcome)</i>		<i>1. Below high school (Base outcome)</i>	
<i>4. University</i>		<i>4. University</i>	
Status Indian	2.803 (1.35)		
Female	1.891*** (3.64)	Female Status	1.526 (1.62)

(Continued)

Age 15–25 years old	0.956*** (-3.60)	Age 15–25 years old status	0.896*** (-4.28)
Marital status single	0.350** (-2.53)	Marital status single	1.265 (0.47)
Marital status married	1.484 (0.95)	Marital status married	0.511 (-1.35)
Geography		Geography	
1. Winnipeg	14.01*** (3.78)	Winnipeg	0.343*** (-5.09)
2. Brandon	7.209** (2.51)	2. Brandon	1.007 (0.01)
3. Portage la Prairie, Steinbach, and Thompson	6.749** (2.41)	3. Portage la Prairie, Steinbach and Thompson	0.783 (-0.51)
4 Strong metropolitan influenced area	10.54*** (3.05)	4 Strong metropolitan influenced area	0.687 (-0.62)
5. Moderate metropolitan influenced area	4.472 (1.71)	5. Moderate metropolitan influenced area	0.612 (-0.70)
6. Weak metropolitan influenced area	7.009** (2.54)	6. Weak metropolitan influenced area	0.429 (-1.92)

(Continued)

Table 8 *Education regression controlling for interaction with Status Indian across the independent variable*

1. Below high school (Base outcome)		1. Below high school (Base outcome)	
4. University		4. University	
Aboriginal language at home	2.760** (2.33)	Aboriginal language at home	0.229*** (-2.72)
Single parent	0.239*** (-4.24)	Single parent	3.232*** (2.76)
Mobility during the last 5 years	0.899 (-0.23)	Mobility during the last 5 years	0.989 (-1.82)

Note. Exponentiated coefficients; t statistics in parentheses; ** p < .05. *** p < .01

In conclusion, the above education research results confirm that being Status Indian reduces the odds of higher educational attainment. For non-Status Indian persons, being female has a positive effect on educational outcomes. Single parenthood appears significant just in explaining university educational outcomes relative to below secondary educational levels. Being a single parent non-Status Indian reduces the likelihood of university education while being a single parent Status Indian improves the likelihood of university education. Likewise, speaking an Aboriginal language at home increases the relative odds of university education for non-Status Indian people while speaking an Aboriginal language at home decreases the relative odds of university education for Status Indian people.

Summary and discussion of findings

The results of this research are coherent with those of previous empirical work. Education has been identified as a fundamental variable for Aboriginal income outcomes (Pendakur and Pendakur 2011; Walters et al. 2004). This paper adds to the literature as it identifies that although education is important to increase the odds of higher income for Status and non-Status people, the income returns of holding university education are higher for Status Indian people. It is demonstrated by the fact that the odds of the highest-income levels for Status people holding a university degree are 1.219 times those of non-Status people with the same level of education.

The income gap between Status and Non-Status females relative to males has been explained by variations in labour market determined by the place of residence. e.g., in labour markets dominated by public sector occupations such as clerical, administrative, and health-related jobs performed by females. These job remunerations are lower than those of jobs usually done by males such as trades and skilled crafts. In 2006 from the total income of Status Indian women, 15 percent originated from government transfer payments, compared to seven percent of the total income of Status Indian males (Aboriginal Affairs and Northern Development Canada 2006). Table 3 shows that this gender income polarization was still reflected in 2011. The higher rates of Aboriginal women's lone parenthood also exacerbate the income gaps against them compared to Aboriginal males (Wilson and Macdonald 2010).

The income disparity between Status Indian people and non-Status Indian people is associated with the lower educational attainments of Status Indian people (Table 6). The results confirm the relevance of education for higher income outcomes showed on regression models in Tables 4 and 5. Education is a fundamental factor in decreasing Aboriginal income inequality in Canada. The persistent income gap between Aboriginal people and the rest of the Canadian population has been significantly overcome by those Aboriginal persons with university degrees (Wilson and Macdonald 2010).

The variable of speaking an Aboriginal language at work is associated with reduced odds of being in the middle and high-income brackets relative to the low-income bracket. This situation could be explained by the fact that job places in which Aboriginal languages are spoken might be organizations whose employees are majority Aboriginal people. Usually, in these organizations, job continuity depends on public funding availability. This is the case of jobs in the public administration and health and social assistance industries, which have been the largest employers of Aboriginal labour during the last years (OECD 2018; Statistics Canada 2011c). As mentioned above, jobs in health and social assistance are also paid relatively lower than jobs in other industries. More research is needed to investigate the association of Aboriginal language at work and income.

As mentioned in the previous section, being female increases the odds of having a university level education for both Status and non-Status females. Being a single parent, non-Status Indian reduces the likelihood of university education while being a single parent Status Indian improves the likelihood of university education. It may be related to the fact

that non-Status Indian single parents have no access to educational funding available for registered Indian people, and so they are more likely to join the labour market instead of taking university programs. Besides, single motherhood among First Nations has been identified as a condition that benefits from a social network of care and extended family help, which provides an opportunity for Aboriginal single mothers to be able to study or to work. This social network of care and extended family support is not generally available for non-First nation females facing the responsibilities of single parenthood (Quinless 2013).

Speaking mainly an Aboriginal language at home reduces the odds of higher levels of education. This result confirms the findings of previous work on assimilation (Kuhn and Sweetman 2002). Poor labour and income outcomes of Aboriginal people in Canada have been directly related to the fact that Aboriginal peoples who migrate from isolated communities to urban areas come with a set of skills and cultural values (including language) that are considered not suitable for the mainstream economy. It is intriguing that, contrary to Status Indian persons, speaking mainly an Aboriginal language at home appears to be significant and increases the odds of acquiring university education relative to below secondary educational levels only for non-Status Indian persons. This result could be explained by the fact that non-Status Indian persons have more contact with the dominant society (as they are not isolated in the reserves), which makes non-Status Indian persons with higher levels of education aware of the value of speaking an Aboriginal language to keep the Aboriginal culture alive.

The results above indicate that being a Status Indian person increases the odds of having an education level below secondary education relative to university education. This finding is in line with scholar literature that describes the broader challenges that Aboriginal people face accessing post-secondary education. Among these challenges are complex admission processes, lack of self-confidence and motivation, absence of role models who have post-secondary education, difficult adaptation to the urban environment, lack of understanding Aboriginal culture on campus, and academic preparedness (Ottmann 2017). Given the reserve locations and life conditions, several of these challenges could reasonably affect more Status Indian persons compared to other Aboriginal groups.

The findings of this paper confirm the principal hypothesis of the research that the Indian Act is an institution that negatively affects the economic outcomes of Status Indian people. Status Indian people face negative gaps when compared to non-Status Indian people persons in Manitoba who in 2011 resided off- reserves and out of Aboriginal districts. These gaps imply that Indian people registered under the Indian act tend to fare particularly poorly when compared to non-Status Indian people.

Research limitations

Some variables are relevant to define education and income outcomes but were omitted in the regression models. Among these variables are family origin characteristics (census family composition, census family economic status, etc.).

Conclusions and Policy Implications

The regression analysis of this paper confirms the hypotheses that being Status Indian increases the odds of poor income and education outcomes. However, other variables appear significant and increases the odds of successful economic outcomes for Status Indians persons compared to non-Status Indian persons:

- Higher levels of education relative to education below high school increase the odds of higher income relative to below the low income cut off. Also, higher levels of education relative to education below high school increase the odds of working full time relative to working part-time.
- Residing in Portage la Prairie, Steinbach, and Thompson relative to Winnipeg increases the odds of higher-income outcomes relative to below the low income cut off.
- Lone parenthood increases the odds of university education relative to below high school education.

An interesting finding is that speaking an Aboriginal language at home increases the relative odds of university education for non-Status Indian persons while the same variable decreases the relative odds of university education for Status Indian persons.

Among all Indian persons, Status Indian females appear with the poorest income outcomes. However, the percent of both Status Indian females and non-Status Indian females who have achieved a university education is higher than the percent of Status and non-Status Indian males. Also, being female increases the odds of university education relative to education below high school.

The above conclusions indicate that to reduce the socioeconomic disadvantages of Status Indian persons, Canadian policymakers should:

- Design gendered policies that consider the different challenges that Status Indian females face to improve their income outcomes relative to the rest of the Indian population.
- Concentrate on policies to increase access to education for Status Indian persons.

Under the Indian Act, the government of Canada is responsible for providing elementary and secondary education for First Nations students ordinarily resident on-reserve. Also, the government of Canada provides support for post-secondary institutions to design and deliver courses that supply the education needs of Status Indian Students (Government of Canada 2019). As per the results of this paper, appropriate postsecondary education for Status Indian people should include funding to supply facilities such as child daycare, transportation, and relocation and living expenditures when the postsecondary institution is in remote cities from Status Indian students' residences. This service specific to post-secondary Status Indian Students should not disqualify them from accessing the on-reserve income assistance and the urban programing for Indigenous people which are also provided by the Government of Canada (Government of Canada 2019).

References

- Aboriginal Affairs and Northern Development Canada. 2006. "Aboriginal Women in Canada: A Statistical Profile from the 2006 Census." Accessed June 3, 2015. https://www.aadnc-aandc.gc.ca/DAM/DAM-INTER-HQ/STAGING/texte-text/ai_rs_pubs_ex_abwch_pdf_1333374752380_eng.pdf.
- Aboriginal Affairs and Northern Development of Canada. 2010. "Inuit." Accessed April 4, 2016. <https://www.rcaanc-cirnac.gc.ca/eng/1100100014187/1534785248701>.
- Aboriginal Affairs and Northern Development of Canada. 2011. "A History of Indian and Northern Affairs Canada." Accessed April 4, 2016. https://www.aadnc-aandc.gc.ca/DAM/DAM-INTER-HQ/STAGING/texte-text/ap_htmc_inaclivr_1314920729809_eng.pdf.
- Adelson, N. 2005. "The Embodiment of Inequity: Health Disparities in Aboriginal Canada." *Canadian Journal of Public Health / Revue Canadienne de Sante Publique* 96, SUPPLEMENT 2: Reducing Health Disparities in Canada, S45-S61.
- APTN National News. 2014. Non-Status Severed from Metis Ruling. *National News*, April 17, 2014. Accessed April 4, 2016. <http://aptn.ca/news/2014/04/17/non-status-severed-ruling-metis-rights/>.
- Banerjee, A., and L. Iyer. 2005. "History, Institutions, and Economic Performance: The Legacy of Colonial Land Tenure Systems in India." *The American Economic Review* 95, no. 4: 1190–1213.
- Bonesteel, S. 2006. "Canada's Relationship with Inuit: A History of Policy and Program Development." Prepared for Indian and Northern Affairs Canada. Accessed April 4, 2016. http://www.aadnc-aandc.gc.ca/DAM/DAM-INTER-HQ/STAGING/texte-text/inuit-book_1100100016901_eng.pdf.
- Borooah, V.K. 2001. *Logit and Probit: Ordered and Multinomial Models*. Sage University Paper Series in Quantitative Application in Social Sciences, Series No 07-138. Thousand Oaks: SAGE Publishing.
- Carter, T., and Polevychok, C. 2004. "Literature Review on Issues and Needs of Aboriginal People." Accessed January 13, 2015. http://www.urbancentre.utoronto.ca/pdfs/elibrary/Carter_Aboriginal-Issues-Li.pdf.
- Carr-Stewart, S. 2006. "First Nations Education: Financial Accountability and Educational Attainment." *Canadian Journal of Education* 29, no 4: 998–1018.
- Coates, K. 2008. "The Indian Act and the Future of Aboriginal Governance in Canada. National Centre for First Nations Governance." Accessed January 13, 2015. http://fngovernance.org/ncfng_research/coates.pdf

- Congress of Aboriginal People. 2013. The Daniels Case: Recognition of Métis and Non-Status Aboriginal Peoples. Speaking Notes for Betty Ann Lavallée, CD (Ret'd) National Chief Congress of Aboriginal Peoples and Fairmont, Château Laurier, Ottawa, Ontario.
- Corson, D. 1996. "Official-Language Minority and Aboriginal First-Language Education: Implications of Norway's Sámi Language Act for Canada." *Canadian Journal of Education* 21, no. 1: 84–104.
- Costa, L. F., M.M. Rocha, and T. Araujo. 2011. "Social Capital and Economic Performance: Trust and Distrust in Eighteenth-Century Gold Shipments from Brazil." *European Review of Economic History* 15, no.1: 1–27.
- Cunningham, A. 1995. *Canadian Indian Policy and Development Planning Theory*. Ph.D. dissertation, University of British Columbia.
- Dahiwalé, S.M. 2007. "Aboriginal Businesses and Entrepreneurship in Canada: Towards Economic Self-Sufficiency." *Sociological Bulletin* 56, no. 2, 263–287.
- Daniels vs. Canada (Minister of Indian Affairs and Northern Development) 2014 FCA 101 [Daniels 2014]. Accessed January 13, 2014. <http://decisions.fca-caf.gc.ca/fca-caf/decisions/en/71052/1/document.do>.
- De Silva, A. 1999. "Wage Discrimination Against Natives." *Canadian Public Policy / Analyse de Politiques* 25, no 1: 65–85.
- Dell, M. 2010. The Persistent Effect of Peru's Mining MITA. *Econometrica* 78, no. 6: 1863–1903.
- Engerman, S., and K. Sokoloff. 1994. "Factor Endowments: Institutions, and Differential Paths of Growth among New World Economies: A View from Economic Historians of the United States." *NBER Historical Working Paper* 66.
- Englebert, P. 2000. "Pre-Colonial Institutions, Post-Colonial States, and Economic Development in Tropical Africa." *Political Research Quarterly* 53, no. 1: 7–36.
- EnviroNics Institute. 2011. Urban Aboriginal Peoples Study.
- Fiske, J., E. George. 2006. "Seeking Alternatives to Bill C-31: From Cultural Trauma to Cultural Revitalization through Customary Law." Accessed January 13, 2014 http://www.lynngehl.com/uploads/5/0/0/4/5004954/fiske_and_george.pdf.
- First Nation and Indigenous Studies, the University of British Columbia. (2009). Bill C-31. Accessed January 13, 2014. https://indigenousfoundations.arts.ubc.ca/bill_c-31/.

- Flanagan, T., Alcantara, C., and Le Dressay, A. 2010. *Beyond the Indian Act: Restoring Aboriginal Property Rights*. Montreal: McGill-Queen's University Press.
- Friesen, J., and B. Krauth. 2010. "Sorting, Peers, and Achievement of Aboriginal Students in British Columbia." *The Canadian Journal of Economics / Revue canadienne d'Economique* 43, no. 4: 1273–1301.
- Sandefur, G., and T. Wells. 1999. "Does Family Structure really Influence Educational Attainment?" *Social Science Research* 28, no. 4: 331–357.
- Galloway, N. 2014. "Landmark Ruling on Rights of Métis Upheld." *The Globe and Mail*, April 17, 2014.
- Government of Canada. 2015. "Are you Applying for Indian Status?" Accessed May 3, 2017. <https://www.sac-isc.gc.ca/eng/1462808207464/1572460627149#chp1>.
- Government of Canada. 2017. "Information on the Tax Exemption Under Section 87 of the Indian Act." Accessed November 1st, 2019. <https://www.canada.ca/en/revenue-agency/services/aboriginal-peoples/information-indians.html>.
- Government of Canada. 2019. "Indigenous Services." Accessed November 1st, 2019. <https://www.canada.ca/en/indigenous-services-canada.html>.
- Indian Act. (1985, current to 2014-05-27 and last amended on 2013-04-01). Accessed January 13, 2014. <http://laws-lois.justice.gc.ca/eng/acts/i-5/>.
- Kane, D. 2000. *Aboriginal Citizenship in Transition*. Accessed January 13, 2014. <https://www.neweconomygroup.ca/pdf/AboriginalCitizenshipInTransition-DK-2000-05.pdf>.
- Kuhn, P., and A. Sweetman. 2002. "Aboriginals as Unwilling Immigrants: Contact, Assimilation and Labour Market Outcomes." *Journal of Population Economics* 15, no. 2: 331–355.
- Lankina, T., and L. Getachew, 2013. "Competitive Religious Entrepreneurs: Christian Missionaries and Female Education in Colonial and Post-Colonial India." *British Journal of Political Science* 43, no. 1: 103–131.
- Long J., and J. Freese. 2006. *Regression Models for Categorical Dependent Variables Using Stata*. Texas: Stata Press.
- McMillan, A. 1999. *Native Peoples and Cultures of Canada, An Anthropological Overview*. Second Edition. Vancouver: Douglas and McIntyre.
- Metis National Council. 2011. "Metis Registration Guide 2011." Accessed January 13, 2014. <http://www.metisnation.ca/wp-content/uploads/2011/04/M%C3%A9tis-Registration-Guide.pdf>.

- Michalopoulos, S., and E. Papaioannou. 2013. "Pre-Colonial Ethnic Institutions and Contemporary African Development." *Econometrica* 81, no. 1: 113–152.
- Mendelson, M. 2006. "Aboriginal Peoples and Postsecondary Education in Canada." Caledon Institute of Social policy. Accessed January 13, 2014. <http://www.caledoninst.org/Publications/PDF/595ENG.pdf>.
- Mugford, S., D.B. and Darroch. 1980. "Marital Status and Female Achievement in Australia: A Research Note." *Journal of Marriage and Family* 42, no. 3: 653–656.
- Muhajarine, N., C. Puchala, and M. Janus. 2011. "Does the EDI Equivalently Measure Facets of School Readiness for Aboriginal and Non-Aboriginal Children?" *Springer Science+Business Media* 103, no. 2: 299–314.
- National Council of Welfare. 2007. *First Nations, Métis, and Inuit Children and Youth: Time to Act*. Ottawa: Government of Canada.
- Nepinak, D. 2013. "Discarding Indian Act Card was Act of 'Emancipation,'" Manitoba Chief Tells Treaty Gathering. *The Globe and Mail*, July 17, 2013. <http://www.theglobeandmail.com/news/politics/discarding-indian-act-card-was-act-of-emancipation-manitoba-chief-tells-treaty-gathering/article13291043/>.
- Noel, A., and Larocque, F. 2009. Aboriginal Peoples and Poverty in Canada: Can Provincial Governments Make a Difference. Annual meeting of the International Sociological Association's Research Committee.
- OECD. 2018. "Indigenous Employment and Skills Strategies in Canada." <https://www.oecd-ilibrary.org/docserver/9789264300477-6-en.f?expires=1573876273&id=id&andacname=guestandchecksum=6C05FD2436A165DE3D88A973B4641EF0>.
- Osborne, J. 2015. *Best Practices in Logistic Regression*. Thousand Oaks: SAGE Publishing.
- Ottmann, J. 2017. "Canada's Indigenous Peoples' Access to Post-Secondary Education: The Spirit of the 'New Buffalo.'" In *Indigenous Pathways, Transitions and Participation in Higher Education*, edited by Frawley J., Larkin S., Smith J., 95-117. Singapore: Springer.
- Pampalon, R., D. Hamel, and P. Gamache. 2010. "Health Inequalities, Deprivation, Immigration and Aboriginality in Canada: A Geographic Perspective." *Canadian Journal of Public Health / Revue Canadienne de Santé Publique* 101, no. 6: 470–474.
- Pendakur, K., and Pendakur, R. 2011. "Aboriginal Income Disparity in Canada." *Canadian Public Policy / Analyse de Politiques* 37, no. 1: 61–83.

- Quinless, J. M. 2013. "First Nations Teenaged Female Lone Parent Families in Canada: Recognizing Family Diversity and the Importance of Networks of Care." *The International Indigenous Policy Journal* 4, no. 1. Accessed January 13, 2014. <https://ir.lib.uwo.ca/iipj/vol4/iss1/12/?referer=https%253A%252F%252Fwww.google.com%252F>
- Roberts, T. 1998. Mathematical Registers in Aboriginal Languages. *For the Learning of Mathematics* 18, no 1: 10–16.
- Russell, M., B. Harris, A., Gockel. 2008. "Canadian Lone Mothers Describe Parenting Needs: European Solutions Explored." *Canadian Social Work Review / Revue canadienne de service social* 25, no. 2: 169–185.
- Statistics Canada. 2011a. "National Household Survey (microdata)." Statistics Canada (producer). Using University of Manitoba Research Data Centre (distributor).
- Statistics Canada. 2011b. "National Household Survey Dictionary, 2011." Catalogue no. 99-000-X2011001 ISBN: 978-1-100-22228-8. Accessed November 1, 2019. <https://www12.statcan.gc.ca/nhs-enm/2011/ref/dict/99-000-x2011001-eng.pdf>
- Statistics Canada. 2011c. Canada Year Book, Catalogue no 11-402-X. Accessed November 1, 2019. <https://www150.statcan.gc.ca/n1/en/pub/11-402-x/2011000/pdf/aboriginal-autochtones-eng.pdf?st=Q4zRW8zG>.
- Statistics Canada. 2013a. "Aboriginal People Reference Guide. 2011 National Household Survey." Statistics Canada Catalogue no. 99-011-X2011006.
- Statistics Canada. 2013b. "Education Reference Guide. 2011 National Household Survey." Statistics Canada Catalogue no. 99-012-X2011006
- Statistics Canada. 2013c. "Income Research Paper Series, Low Income Lines 2010-2011." Statistics Canada Catalogue no. 75F0002MIE, 2012 no. 002.
- Statistics Canada. 2014. "Aboriginal Peoples Reference Guide, National Household Survey, 2011."
- Statistics Canada. 2015a. Low Income Definitions. Accessed November 1, 2019. <https://www150.statcan.gc.ca/n1/pub/75f0011x/2012001/notes/low-faible-eng.htm>
- Statistics Canada. 2015b. "Statistical Area Classification - Variant of SGC 2011." Accessed November 1, 2019. <http://www23.statcan.gc.ca/imdb/p3VD.pl?Function=getVDPPage1anddb=imdbanddis=2andadm=8andTVD=117159>
- Statistics Canada. 2017. "Aboriginal Peoples in Canada: Key Results from the 2016 Census." Accessed November 1, 2019. <https://www150.statcan.gc.ca/n1/en/daily-quotidien/171025/dq171025a-eng.pdf?st=DWG5LU0V>.

- The Constitution Act (1867 to 1982). Part II, section 35(2). Accessed April 4, 2014. <http://laws-lois.justice.gc.ca/eng/const/page-16.html>.
- Thomas, A., and I. Sawhill. 2005. For Love and Money? The Impact of Family Structure on Family Income. *The Future of Children* 15, no. 2: 57–74.
- Tobias, J. 1991. *Protection, Civilization, Assimilation: An Outline History of Canada's Indian Policy*. Toronto: University of Toronto Press.
- Usborne, E., J. Peck, D. Smith, and D. Taylor. 2011. "Learning through an Aboriginal Language: The Impact on Students' English and Aboriginal Language Skills." *Canadian Journal of Education / Revue canadienne de l'éducation* 34, no. 4: 200–215.
- Walters, D., J. White, and P. Maxim. 2004. "Does Postsecondary Education Benefit Aboriginal Canadians? An Examination of Earnings and Employment Outcomes for Recent Aboriginal Graduates." *Canadian Public Policy* 30, no. 3: 283–301.
- Wilson D., and D. Macdonald. 2010. "The Income Gap Between Aboriginal People and the Rest of Canada." Accessed November 1, 2019. <https://www.policyalternatives.ca/sites/default/files/uploads/publications/reports/docs/Aboriginal%20Income%20Gap.pdf>.
- Wissmann, M., H. Toutenburg, and Shalabh. 2007. "Role of Categorical Variables in Multicollinearity in Linear Regression Model." Technical Report 008. Department of Statistics University of Munich. Accessed November 1, 2019 https://epub.uni-muenchen.de/2081/1/report008_statistics.pdf.