



# SUMMARY OF THE EARLY DEVELOPMENT INSTRUMENT FINDINGS

---

Preliminary Findings of the Early Development Instrument for Metis Kindergarten Children



INSTITUTE OF  
URBAN STUDIES



THE UNIVERSITY OF  
WINNIPEG

Institute of  
Urban Studies

PRELIMINARY FINDINGS

MAY—2019

**Institute of Urban Studies**

599 Portage Avenue, Winnipeg

P: 204 982-1140

F: 204 943-4695

E: [ius@uwinnipeg.ca](mailto:ius@uwinnipeg.ca)

Mailing Address:

515 Portage Avenue,

Winnipeg, Manitoba, R3B 2E9

*Author:* Aynslie Hinds & Jino Distasio

*Research / Analysis:* Aynslie Hinds

*GIS / Mapping:* Ryan Shirtliffe

.....

.....

The Institute of Urban Studies is an independent research arm of the University of Winnipeg. Since 1969, the IUS has been both an academic and an applied research centre, committed to examining urban development issues in a broad, non-partisan manner. The Institute examines inner city, environmental, Aboriginal and community development issues. In addition to its ongoing involvement in research, IUS brings in visiting scholars, hosts workshops, seminars and conferences, and acts in partnership with other organizations in the community to effect positive change.

## Summary of the Early Development Instrument Findings

The Early Development Instrument (EDI) is a 103-item checklist that assesses readiness for school (i.e., “age-appropriate developmental expectations”) in kindergarten. In Manitoba, the EDI is completed province-wide (37 school divisions) by kindergarten teachers in the second half of the school year every two years. Some independent and First Nations schools participate voluntarily. Parents may opt their children out of the assessment. The items on the EDI are grouped into five domains: physical health and well-being, social competence, emotional maturity, language and cognitive development, and communication skills and general knowledge. Children are assessed as “ready” or “not ready” for school in each of the five domains based scoring above or below the 10<sup>th</sup> percentile using Canadian norms as a cut-off.

The objective of this study was to determine how Metis children fare on the EDI compared to children who are not Metis. As well, we examined performance by EDI domain, sex, and region.

### Methods

We linked (with permission) several administrative databases in the Population Research Data Repository housed at the Manitoba Centre for Health Policy. The Metis youth cohort was created by using the Manitoba Metis Federation’s membership registry. The non-Metis youth cohort included all other children enrolled in kindergarten in the academic years the EDI was administered, namely, 2005/06, 2006/07, 2008/09, 2010/11, 2012/13, and 2014/15. The databases were linked using a de-identified unique number. The databases do not contain identifying information (e.g., names, addresses).

### Results

#### Description of the Cohort

Figure 1 shows how the cohort was constructed. The final cohort consisted of 59,926 children; 11.6% (n = 6,932) were Metis and 88.4% (n = 52,994) were not Metis. Table 1 shows the characteristics of the cohorts. Half of the children in each cohort were male. The majority of the Metis cohort resided outside of Winnipeg (53.9%), while the majority of the non-Metis cohort resided in Winnipeg (55.9%). Income quintile, an area-level measure of income, is based on self-reported household income collected by the Canadian Census. Twenty percent of the population should fall into each quintile. The Metis cohort was over-represented in the lowest income areas (27.6%) and under-represented in the wealthiest income areas (16.0%). There was a statistically significant difference in the income quintile distribution between the two cohorts.

Figure 1. Construction of the Cohort

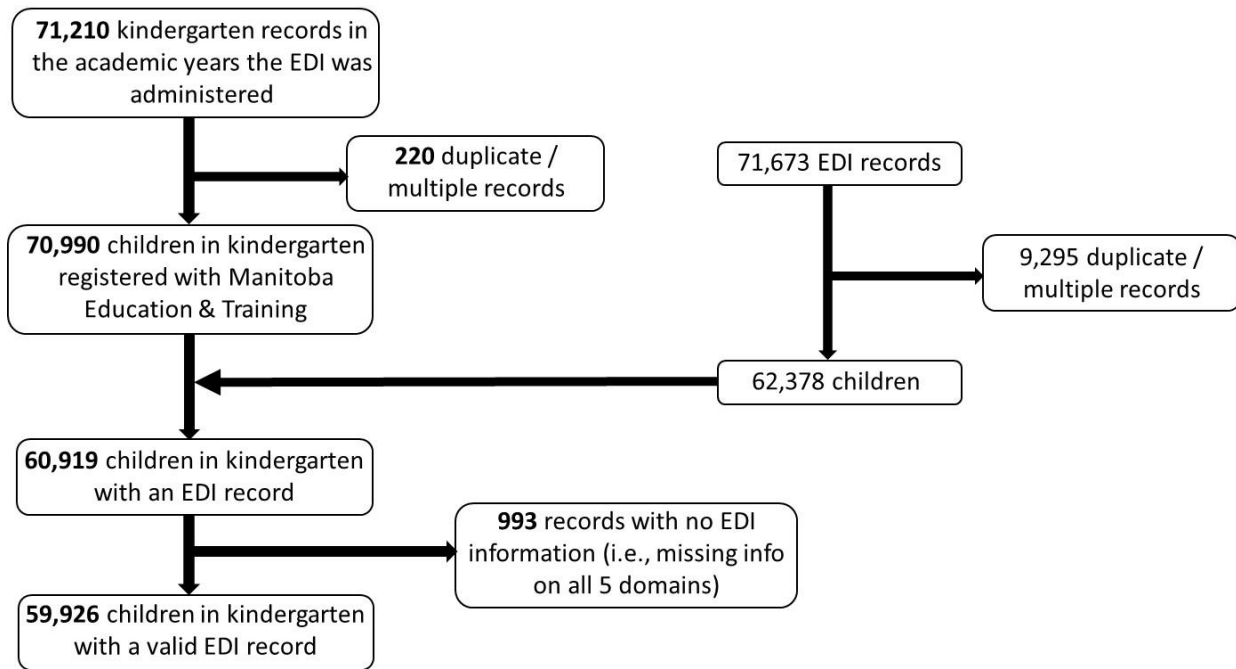


Table 1. Frequency distributions of the cohort characteristics.

Characteristics	Category	Metis Cohort (n = 6,932)	Non-Metis Cohort (n = 52,994)
		%	%
Sex	Male	50.6	50.9
	Female	49.5	49.1
Metis Region <sup>†</sup>	Interlake	9.3	4.9*
	Northwest	5.9	3.0
	South East	13.3	10.2
	South West	12.3	19.9
	Thompson	5.9	4.1
	The Pas	7.2	2.1
	Winnipeg	46.1	55.9
	Q1 (poorest)	27.6	19.8*
Income Quintile <sup>†</sup>	Q2	19.8	19.4
	Q3	18.8	20.7
	Q4	17.2	20.3
	Q5 (wealthiest)	16.0	19.6

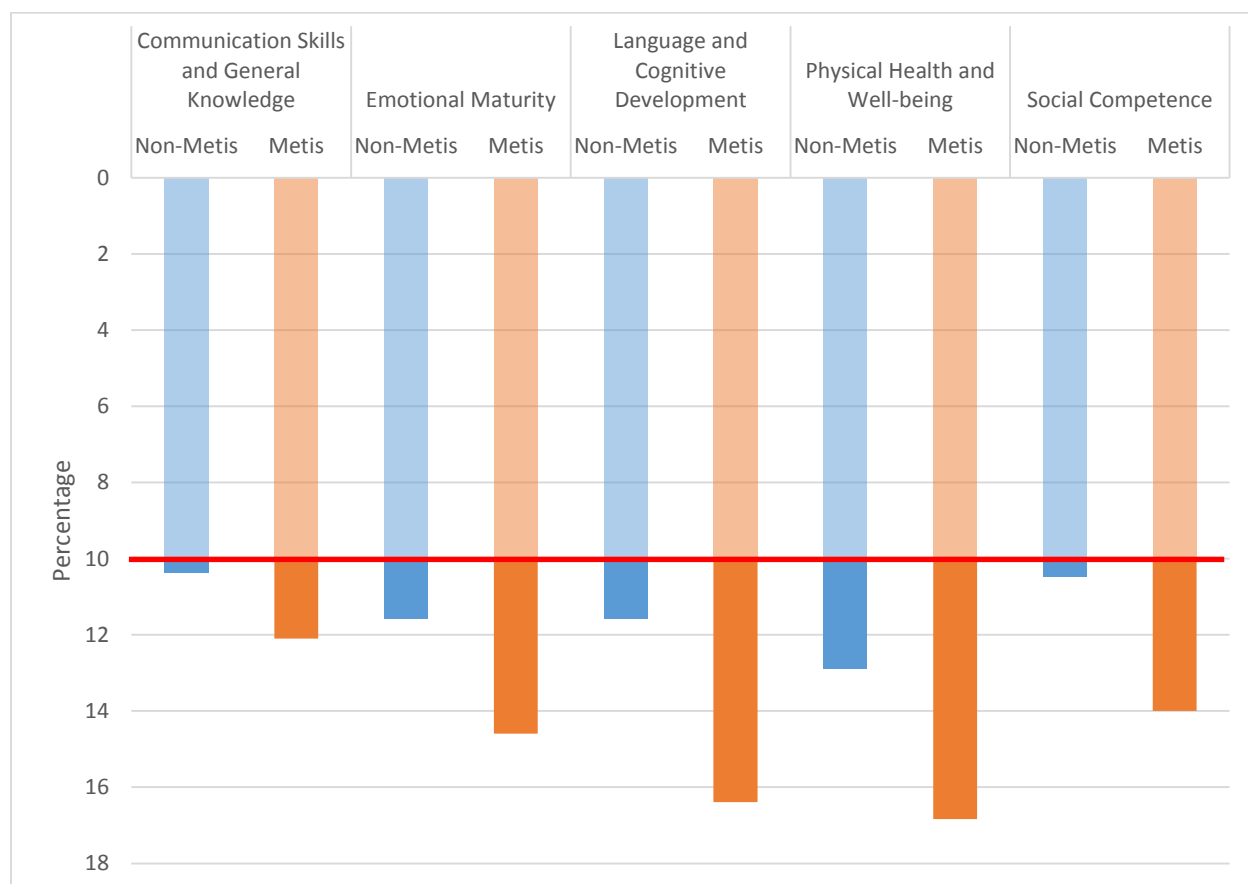
Notes. \* indicates the distributions of the Metis and non-Metis cohorts differ significantly at the 0.0001 level. <sup>†</sup>Values do not total to 100% because some postal codes could not be assigned to a region.

## EDI Results

### Descriptive Analysis

Figure 2 shows the percentage of each cohort not ready (i.e., below the 10<sup>th</sup> percentile) in each of the five domains. If the percentage is above 10%, Manitoba students are doing worse than the Canadian population and if the percentage is below 10%, Manitoba students are doing better. In all five domains, the percentages are higher than 10%; and in all cases, a higher percentage of Metis students (between 12.1% and 16.8%) are below the 10<sup>th</sup> percentile (i.e., not ready for school) than the non-Metis cohort (between 10.5% and 12.9%).

Figure 2. Percentage of the Metis and non-Metis cohorts **not ready** (i.e., below the 10<sup>th</sup> percentile) in each of the five EDI domains.



Figures 3a to 3e are maps of the percentages of the Metis cohort not ready for school (i.e., below the 10<sup>th</sup> percentile) in each of the five domains by Manitoba Metis region. The same cut-offs for the categories were used, so these maps can be compared. Across domains, The Pas region consistently had the highest percentage of children not ready, while the Interlake region consistently had the smallest percentage of children not ready. One noteworthy finding is that the Interlake and South East regions are doing better than the Canadian population on the Social Competence domain (i.e., less than 10% are below the 10<sup>th</sup> percentile).

Figure 3a. Percentage of the Metis cohort 'not ready' on the General Skills and Knowledge domain.

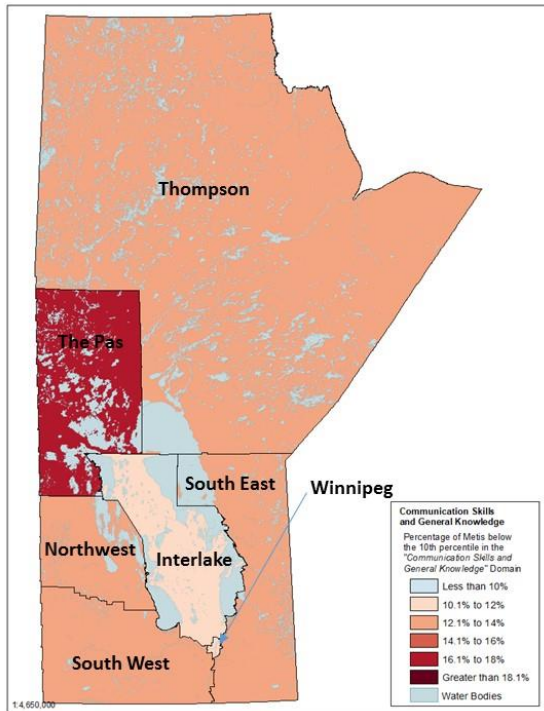


Figure 3b. Percentage of the Metis cohort 'not ready' on the Emotional Maturity domain.

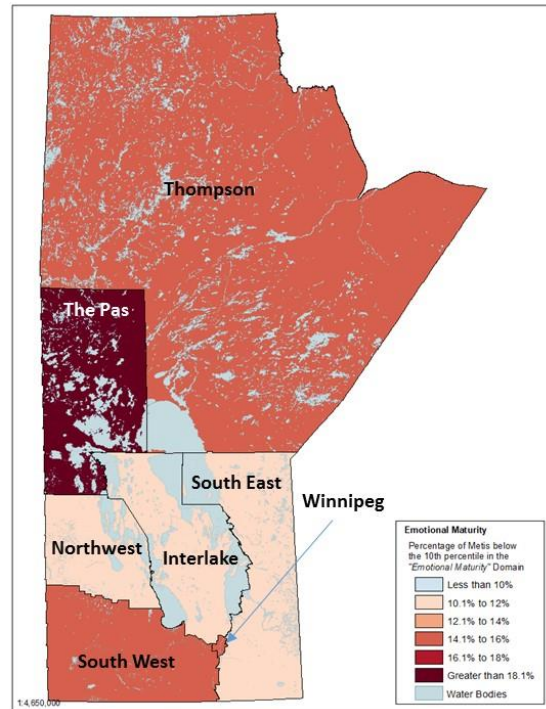


Figure 3c. Percentage of the Metis cohort 'not ready' on the Language and Cognitive Development domain.

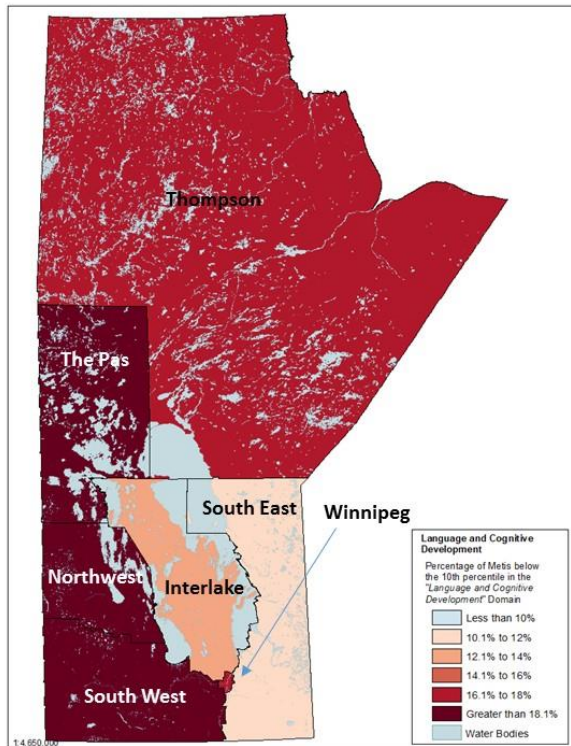


Figure 3d. Percentage of the Metis cohort 'not ready' on the Physical Health and Well-Being domain.

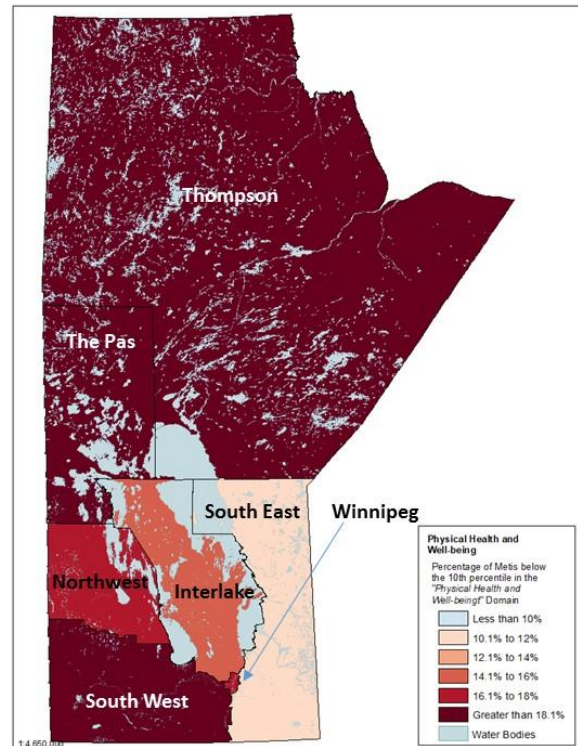
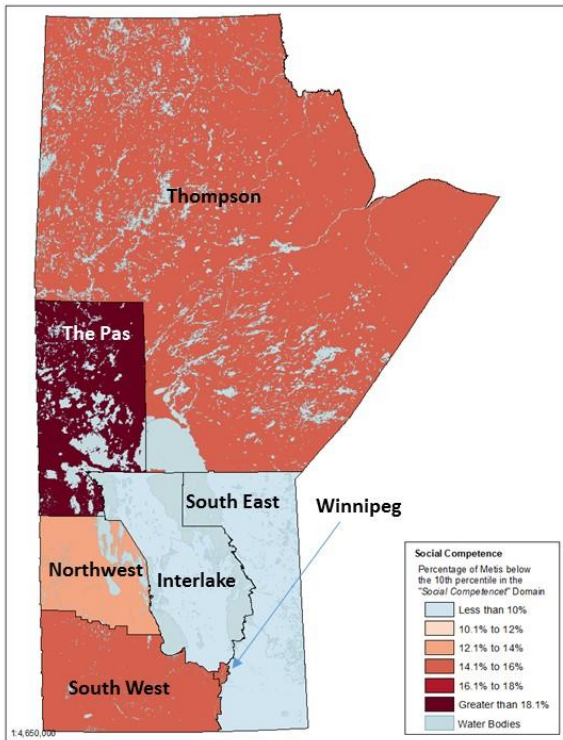


Figure 3e. Percentage of the Metis cohort 'not ready' on the Social Competence domain.



In total, 34.9% of the Metis cohort and 27.7% of the non-Metis cohort are 'not ready' for school in *at least one* of the five domains. This is a consistent finding over the years the EDI was administered, as illustrated in Figure 4. The percentage not ready (i.e., below the 10<sup>th</sup> percentile) in one or more domains has fluctuated slightly over time, ranging between 33.7% and 36.5% for the Metis cohort and between 26.9% and 28.6% for the non-Metis cohort.

Figure 4. Percentage of the Metis and Non-Metis cohorts 'not ready' (i.e., below the 10<sup>th</sup> percentile) in at least one EDI domain by year.

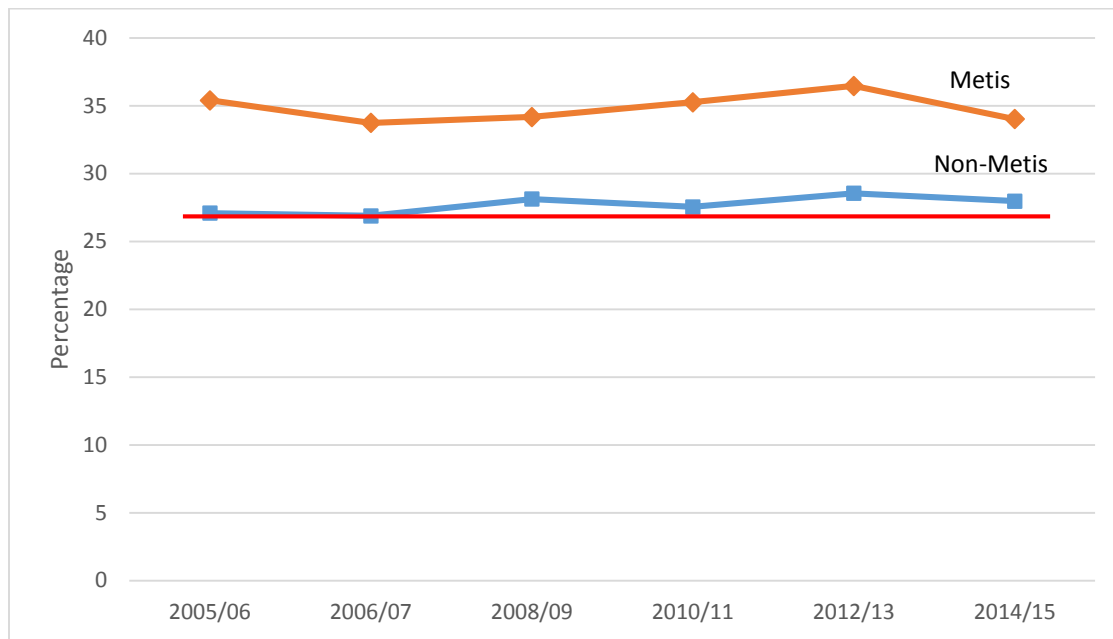
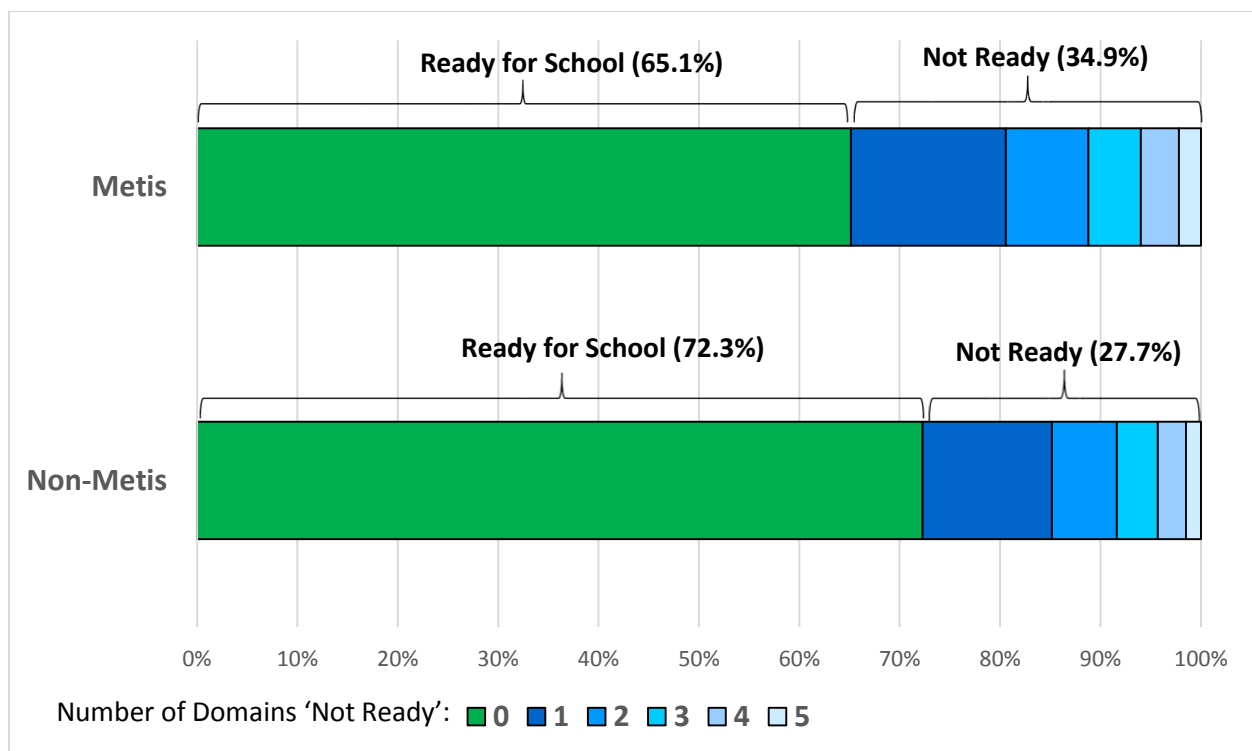


Figure 5 shows, for each cohort, the percentage ready for school (i.e., above the 10<sup>th</sup> percentile in all five domains or below the 10<sup>th</sup> percentile in none of the domains), the percentage below the 10<sup>th</sup> percentile in one domain, two domains, three domains, four domains, and all five domains.

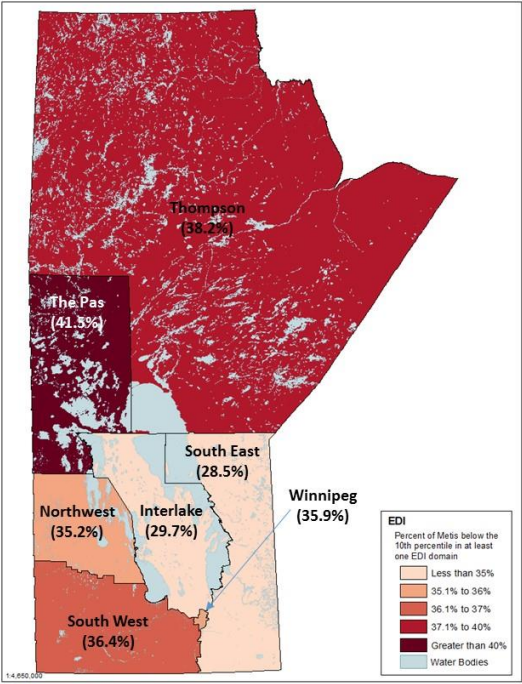
Figure 5. The number of domains ready and not ready for school.





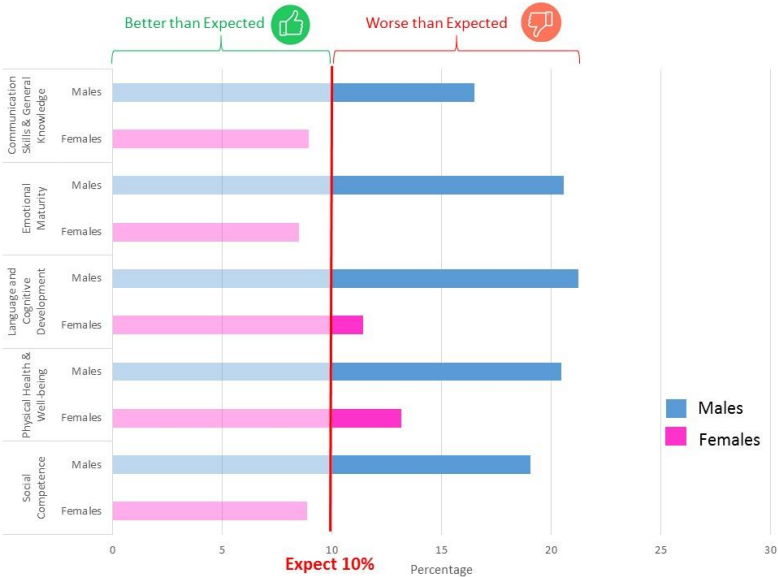
As illustrated in Figure 6, for the Metis cohort, performance on the EDI varied by region. The South East region (28.5%) had the lowest percentage of Metis children ‘not ready’ in at least one of the domains, while The Pas region (41.5%) had the highest percentage of Metis children ‘not ready’ in at least one of the domains.

Figure 6. Percentage of the Metis cohort ‘not ready’ in at least one EDI domain.



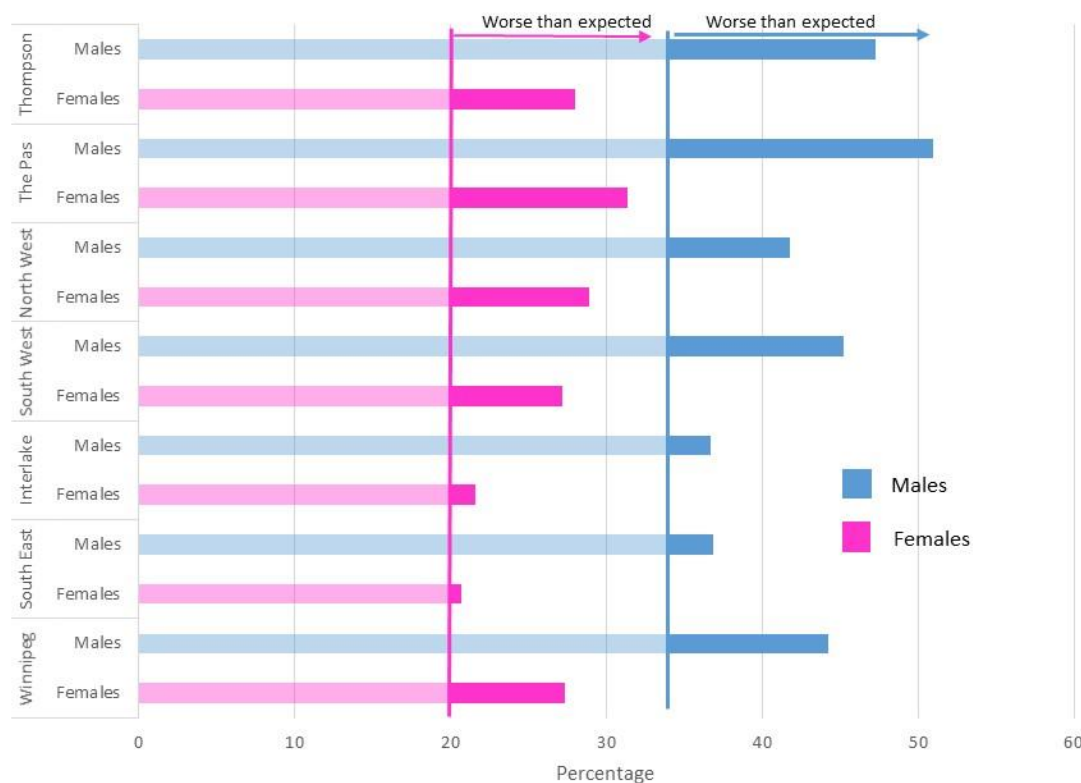
As shown in Figure 7, female students are doing better than male students on all five of the EDI domains. In fact, female students are doing better than expected on three of the five domains; namely Communication Skills and General Knowledge, Emotional Maturity, and Social Competence. Male students, on the other hand, are doing worse than expected on all five domains.

Figure 7. Percentage of the Metis cohort not ready on each of the five EDI domains by sex.



According to the EDI website, nation-wide 20% of females and 34% of males are not ready in at least one domain. Using these benchmarks, females and males in the Metis cohort are faring worse than expected. Overall, 43.2% of males and 26.3% of females in the Metis cohort are not ready in at least one domain, compared to 34.9% of males and 20.3% of females in the non-Metis cohort. As shown in Figure 8 below, the percentages of male and female Metis students are consistently above these benchmarks in all Metis regions.

*Figure 8. Percentage of the Metis cohort not ready in at least one domain by sex and region.*



Figures 9a to 9e show the percentages of male and female Metis students not ready each EDI domain by Metis region. There are regional and sex differences in performance on the EDI. Across all of the domains, in all regions, male children are doing worse than expected (i.e., higher percentage are not ready than expected) and fare worse compared to their female counterparts. Female children in the South East region consistently are doing better than expected, while female children in The Pas are consistently doing worse than expected.

Figure 9a. Percentage of the Metis cohort not ready in Communication Skills and General Knowledge.

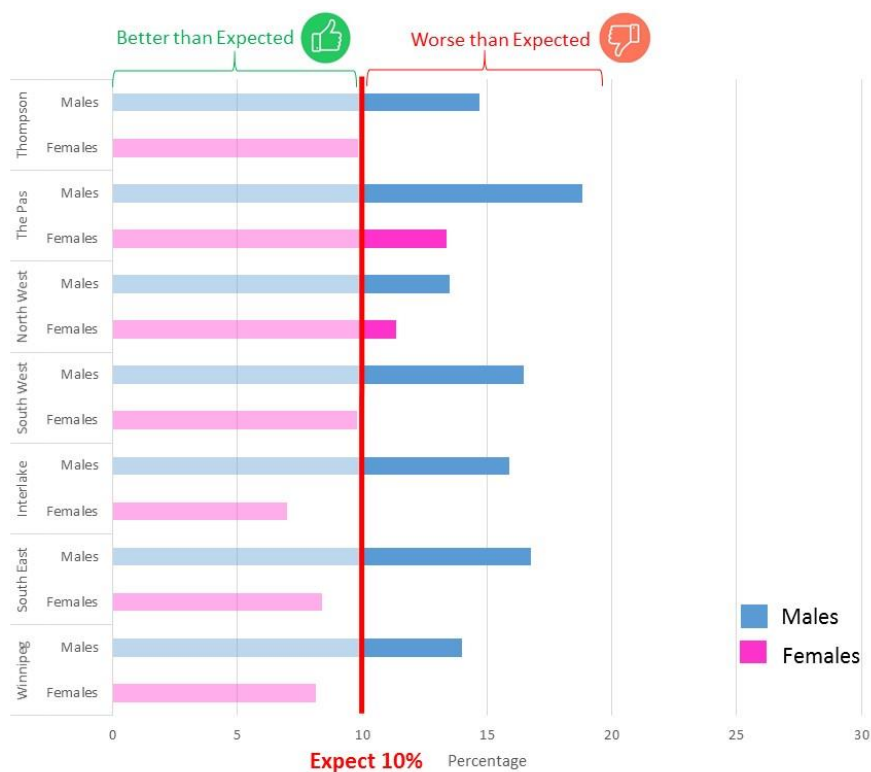


Figure 9b. Percentage of the Metis cohort not ready in Emotional Maturity.

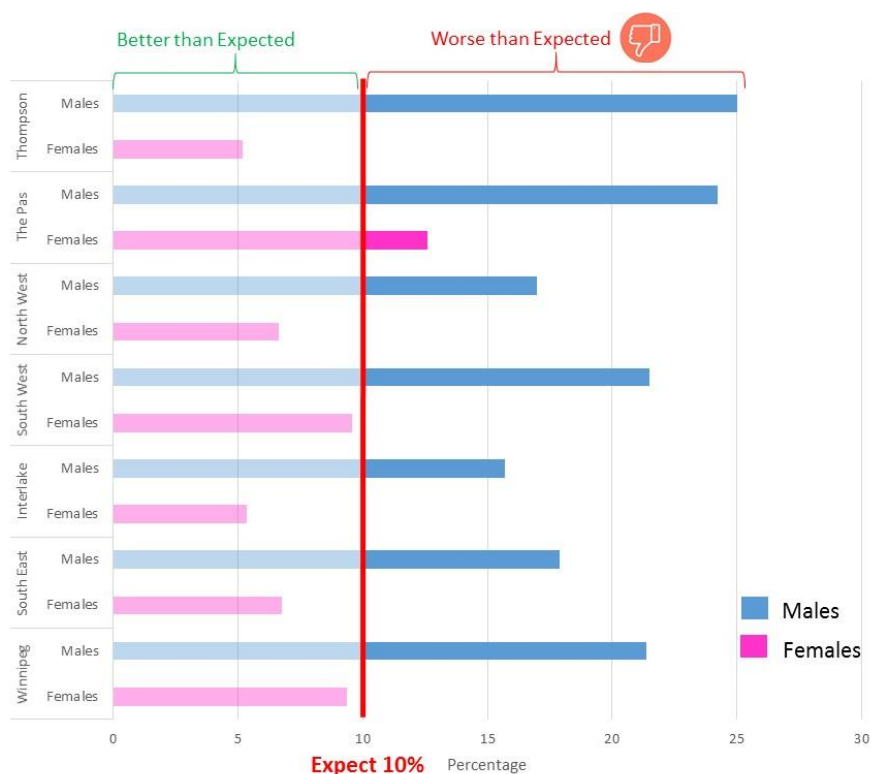


Figure 9c. Percentage of the Metis cohort not ready in **Language and Cognitive Development**.

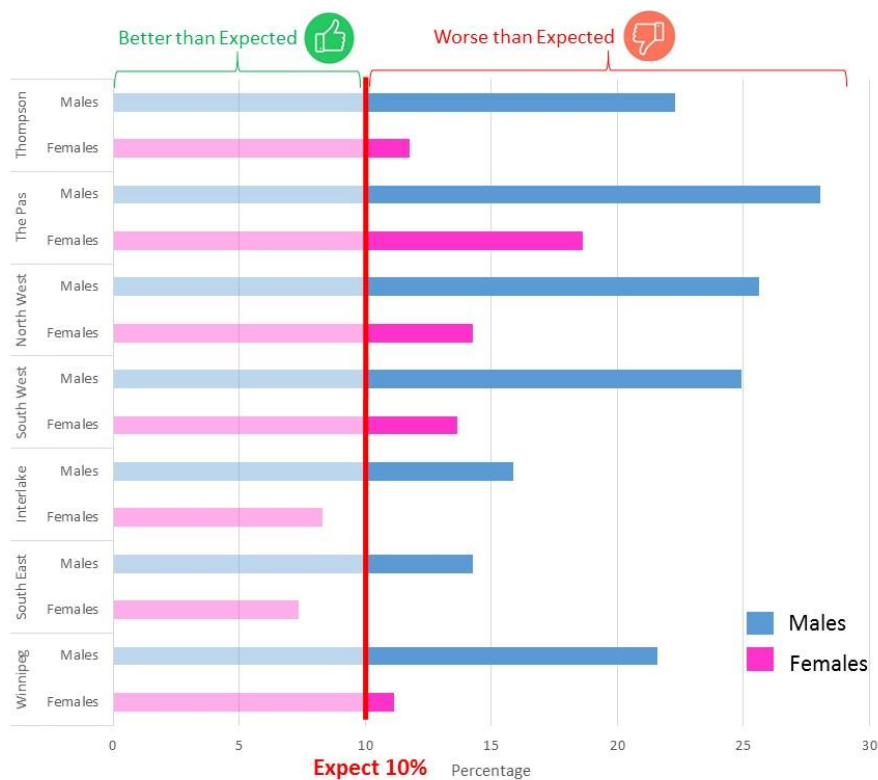


Figure 9d. Percentage of the Metis cohort not ready in **Physical Health and Well-Being**.

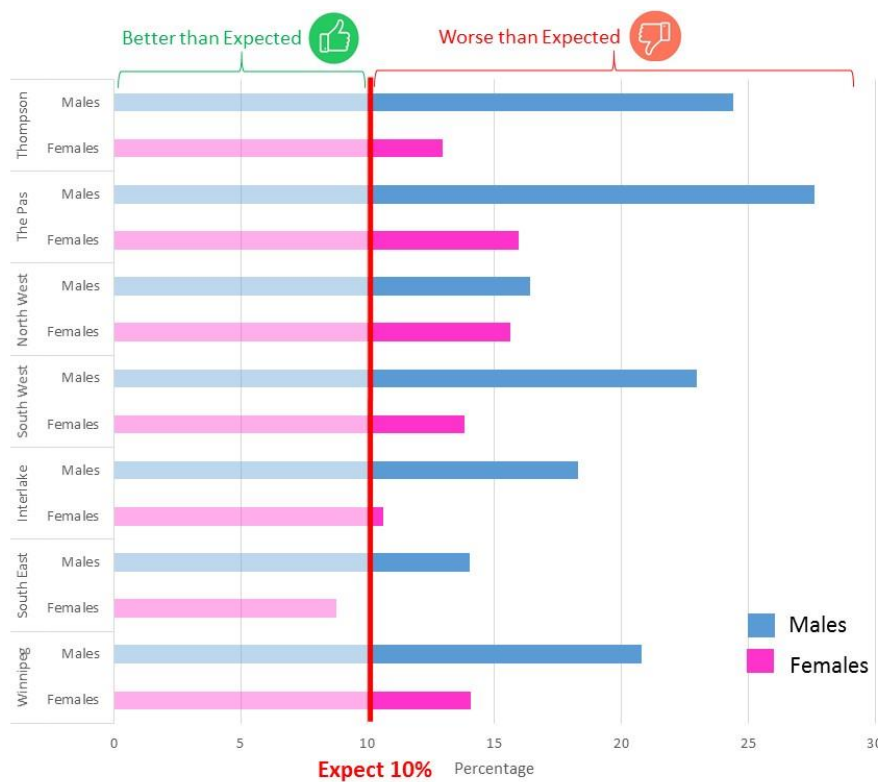
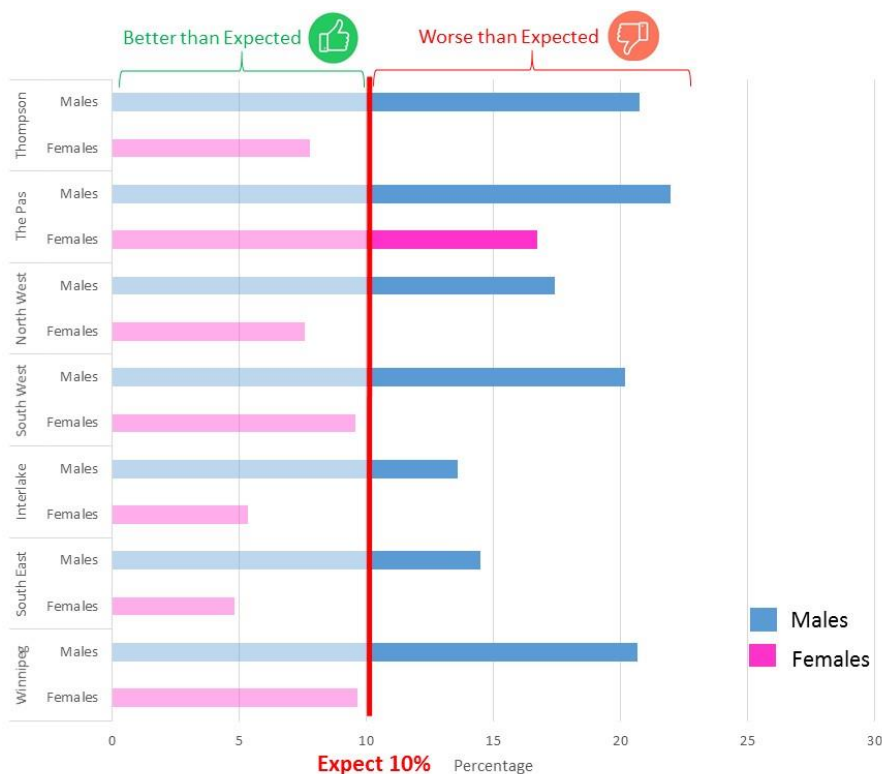


Figure 9e. Percentage of the Metis cohort not ready in **Social Competence**.



### Inferential Analysis

A logistic regression that modeled not being ready for school in at least one domain was performed to determine if there was a difference between the two cohorts on the EDI when differences in sex, region of residence, and income quintile were controlled for. The adjusted odds ratio (OR) and 95% confidence intervals are presented in Table 2. After adjusting for sex, region of residence, and income quintile, for the Metis cohort, the odds of not being ready for school was 1.29 times (95% CI 1.22, 1.36) as large as the odds for the non-Metis cohort. Males had a higher odds of not to be ready for school compared to females. Compared to children residing in Winnipeg, children in the Thompson and The Pas regions had a higher odds of not being ready for school, while children in the Interlake and the Northwest had a lower odds of not being ready for school. Children residing in poorer income areas had a higher odds of not being ready for school.

Table 2. Odds ratios (ORs) at 95% confidence intervals (CIs) for not being ready for school (below the 10<sup>th</sup> percentile on at least one domain) as assessed by the Early Development Instrument.

Variable	Category	Adjusted OR (95% CI)
Cohort	Metis	<b>1.29 (1.22,1.36)</b>
	Non-Metis	Ref
Sex	Male	<b>2.16 (2.08,2.24)</b>
	Female	Ref
Metis Region	Interlake	<b>0.89 (0.82,0.97)</b>
	Northwest	<b>0.69 (0.62,0.77)</b>
	South East	1.05 (0.99,1.12)
	South West	<b>0.89 (0.85,0.93)</b>
	Thompson	<b>2.09 (1.92,2.27)</b>
	The Pas	<b>1.44 (1.29,1.61)</b>
	Winnipeg	Ref
Income Quintile	Q1 (poorest)	<b>2.92 (2.75,3.11)</b>
	Q2	<b>1.86 (1.74,1.98)</b>
	Q3	<b>1.51 (1.42,1.61)</b>
	Q4	<b>1.31 (1.23,1.40)</b>
	NF	<b>4.03 (2.94,5.51)</b>
	Q5	Ref

Note. Bolded values indicate statistical significance at the 0.05 level.

Note that there was a statistically significant cohort by region interaction. In all regions, except Thompson, Metis children have a significantly higher odds of not being ready for school than non-Metis children. In Thompson, Metis children have a significantly lower odds of not being ready for school than non-Metis children.

### Summary

- While Manitoba children generally fare poorer on the EDI compared to the rest of the Canada, Metis children fared worse in not being prepared for school than other children in the province. More than one-third of Metis children are not ready for school.
- This finding was repeated in each of the five EDI domains: Communication Skills and General Knowledge; Emotional Maturity; Language and Cognitive Development; Physical Health and Well-being; and Social Competence.
- Metis children compared to non-Metis children differed in the number of domains they were not prepared for. Specially, a higher percentage of Metis children were not ready in multiple domains.
- Across the five domains, geography, sex, and income play a role
  - Boys and children from lower incomes neighbourhoods were more likely to not be ready
  - The Pas and Thompson regions had higher percentages of children not ready for school, whereas children in southern regions fared better.

### Recommendations

- Further research is needed to assess whether low EDI scores result in lower educational outcomes in grades 3, 7, 8, and 12 (and graduation rates) for Metis and non-Metis children

- Exploring additional programming to support school readiness, particularly in the areas of language and cognitive development and physical health and well-being, for Metis children is recommended. At minimum, Metis students should strive to reach or exceed provincial scores.
- Careful consideration for the role of poverty, sex (boys in particular), and location needs to be carefully understood.

### **Acknowledgements**

Thanks to Natalia Dik and Heather Prior, data analysts from the Manitoba Centre for Health Policy, for extracting the data from the Repository and for answering questions.

### **Disclaimer**

The authors acknowledge the Manitoba Centre for Health Policy for use of data contained in the Population Health Research Data Repository under project HIPC#2018/2019-21. The results and conclusions are those of the authors and no official endorsement by the Manitoba Centre for Health Policy, Manitoba Health, or other data providers is intended or should be inferred. Data used in this study are from the Population Research Data Repository housed at the Manitoba Centre for Health Policy, University of Manitoba and were derived from data provided by the Manitoba Metis Federation, Manitoba Health, the Department of Families, Healthy Child Manitoba, and Manitoba Education and Training.