

Programme for the International Assessment of Adult Competencies (PIAAC)

Nova Scotian Findings

OUTLINE

- The Survey
- Definitions
- Some Findings
 - Specific Findings and Data.

The Survey

- “The Organisation for Economic Co-operation and Development (OECD) PIAAC assessed the proficiency of adults [aged 16-65] in three information-processing skills essential for full participation in the knowledge-based economies and societies of the 21st century: literacy, numeracy and problem solving in technology-rich environments.”
- There is also a host of background information on respondents such as gender and level of education.

The Survey

Table 1.1 Geographical distribution of PIAAC respondents, Canada, provinces and territories, 16-65 years, 2012

Province or Territory	Number of respondents	Representative population (16-65)
Newfoundland and Labrador	1,609	349,233
Prince Edward Island	929	97,542
Nova Scotia	1,441	627,538
New Brunswick	1,686	500,997
Quebec	5,911	5,404,254
Ontario	5,313	9,148,632
Manitoba	2,312	785,291
Saskatchewan	1,601	657,025
Alberta	1,224	2,622,199
British Columbia	2,733	3,111,300
Yukon Territory	830	25,564
Northwest Territory	917	30,506
Nunavut	779	20,987
Canada (Total)	27,285	23,381,067

“The Programme for the International Assessment of Adult Competencies, 2012” User Guide, Tourism and the Centre for Education Statistics Division, Statistics Canada p. 7

The Survey – Literacy Example

Look at the list of preschool rules.
Highlight information in the list to
answer the question below.

What is the latest time that children
should arrive at preschool?



Preschool Rules

Welcome to our Preschool! We are looking forward to a great year of fun, learning and getting to know each other. Please take a moment to review our preschool rules.

- Please have your child here by 9:00 am.
- Bring a small blanket or pillow and/or a small soft toy for naptime.
- Dress your child comfortably and bring a change of clothing.
- Please no jewelry or candy. If your child has a birthday please talk to your child's teacher about a special snack for the children.
- Please bring your child fully dressed, no pajamas.
- Please sign in with your full signature. This is a licensing regulation. Thank you.
- Breakfast will be served until 7:30 am.
- Medications have to be in original, labeled containers and must be signed into the medication sheet located in each classroom.
- If you have any questions, please talk to your classroom teacher or to Ms. Marlene or Ms. Tree.

The Survey – Numeracy Example



Look at the graph about the number of births. Click to answer the question below.

During which period(s) was there a decline in the number of births? Click all that Apply

- 1957 – 1967
- 1967 – 1977
- 1977 – 1987
- 1987 – 1997
- 1997 – 2007



The following graph shows the number of births in the United States from 1957 to 2007. Data are presented every 10 Years.



Definitions of Competencies

- Literacy:
 - Literacy is defined as the ability to understand, evaluate, use and engage with written texts to participate in society, to achieve one's goals, and to develop one's knowledge and potential. (writing not included in definition, very difficult to test)
- Numeracy:
 - Numeracy is defined as the ability to access, use, interpret and communicate mathematical information and ideas in order to engage in and manage the mathematical demands of a range of situations in adult life.

Definitions of Competencies

- Problem Solving in a Technology Rich Environment
 - “Problem solving in technology-rich environments is defined as the ability to use digital technology, communication tools and networks to acquire and evaluate information, communicate with others and perform practical tasks. “

Definitions of Competencies

Proficiency as a Continuum

“The competencies assessed in the Survey of Adult Skills are understood as involving a **continuum of proficiency.**”

“In other words, there is **no threshold** that separates those who have the competency in question from those who do not.”

Definitions

- Skills reported on a scale, from 0 – 500.
- If a person scores 250 out of 500, then they can correctly answer about $\frac{2}{3}$ of questions with a difficulty rating of 250. (It does not mean they got 50% of the answers correct)

Definitions

- Literacy and Numeracy scores are grouped together into levels, each with a specific definition:

Score Range	Level
0-175	0
176-225	1
226-275	2
276-325	3
326-375	4
376-500	5

“The Programme for the International Assessment of Adult Competencies, 2012” User Guide, Tourism and the Centre for Education Statistics Division, Statistics Canada p. 14-15

Definitions

Throughout Presentation, bar charts will be coloured based on a test of statistical significance.



Benchmark Colour in Charts against which other data is tested.



Statistically Different from Blue based on two tailed T-Test



NOT Statistically Different from Blue based on two Tailed T-Test

- Green means that we are 95% confident that population mean is different from the Blue Population mean.
- Orange means that we can not infer that the population mean is different from the Blue mean.

Findings

- Nova Scotia did not do much better nor worse than most other provinces.
- Difference between younger age groups (20-24 vs 25-29) in Nova Scotia is noticeably large (all education levels).
- Gender Difference in Numeracy but not in Literacy in Nova Scotia.
- Immigrants in Nova Scotia score better than Canadian Born Nova Scotians.

Findings

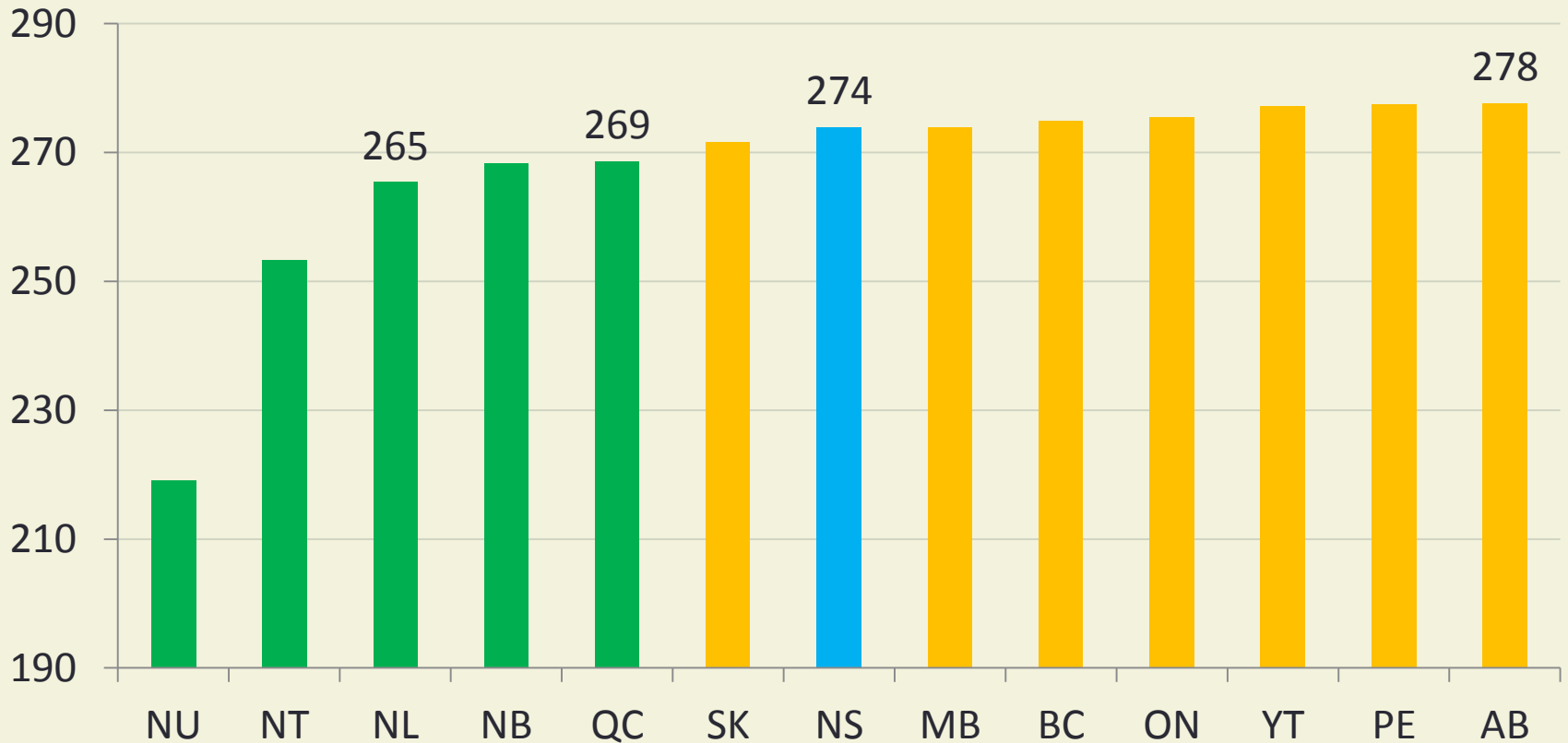
- In which province you finish high school matters.
- When Children have a higher education, the education of their parents does not contribute to their literacy score.
- At the highest levels of literacy, Nova Scotians and Canadians earn similar levels of income.

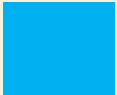
Findings

- Nova Scotia did not do much better nor worse than most other provinces.


Literacy Results

(Mean Literacy Results Age 16-65)



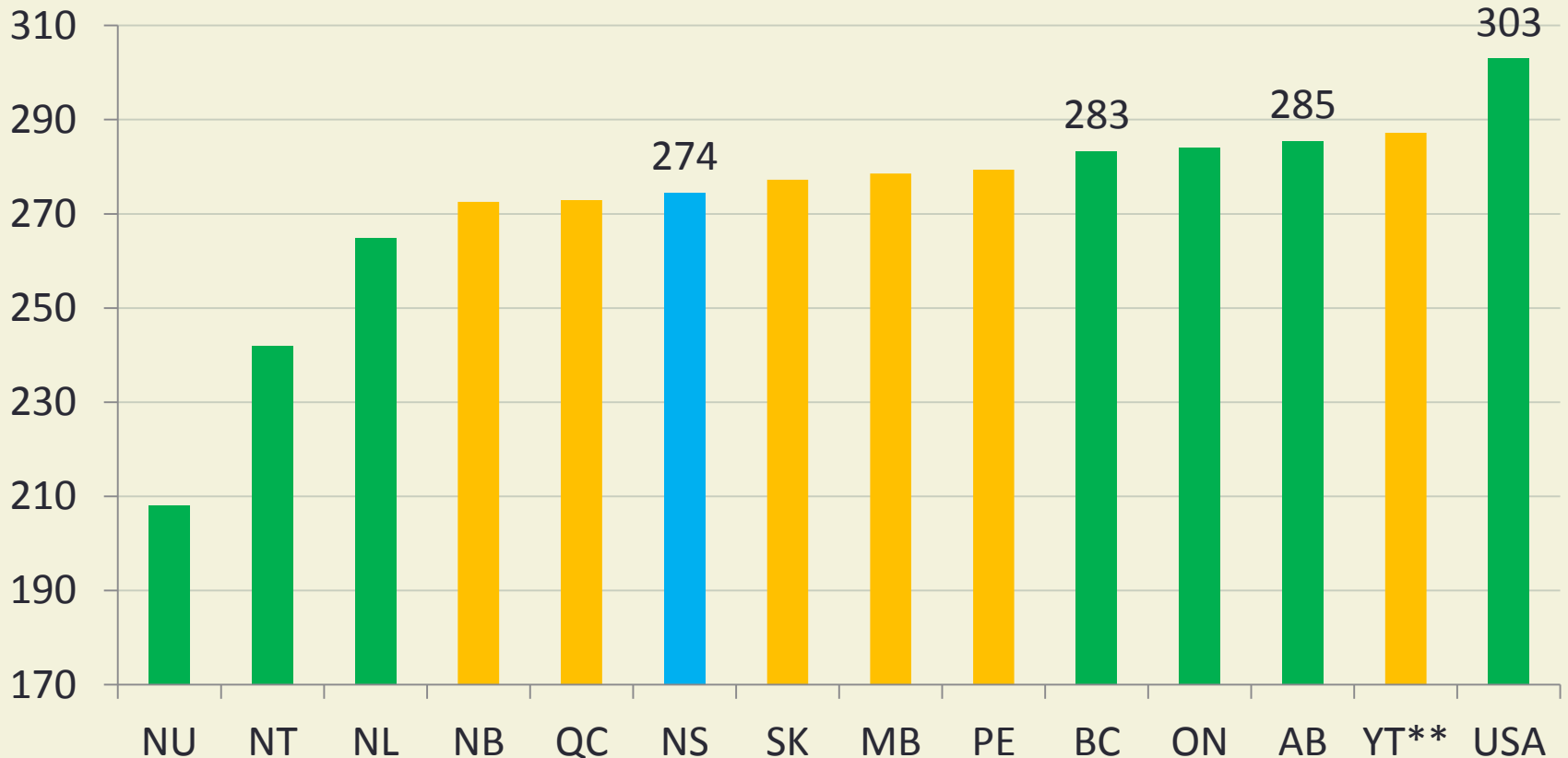
 Nova Scotia


 NOT Statistically Different From NS

 Statistically Different From NS


Literacy Results

(By Geography where High School* education Received)



 Nova Scotia

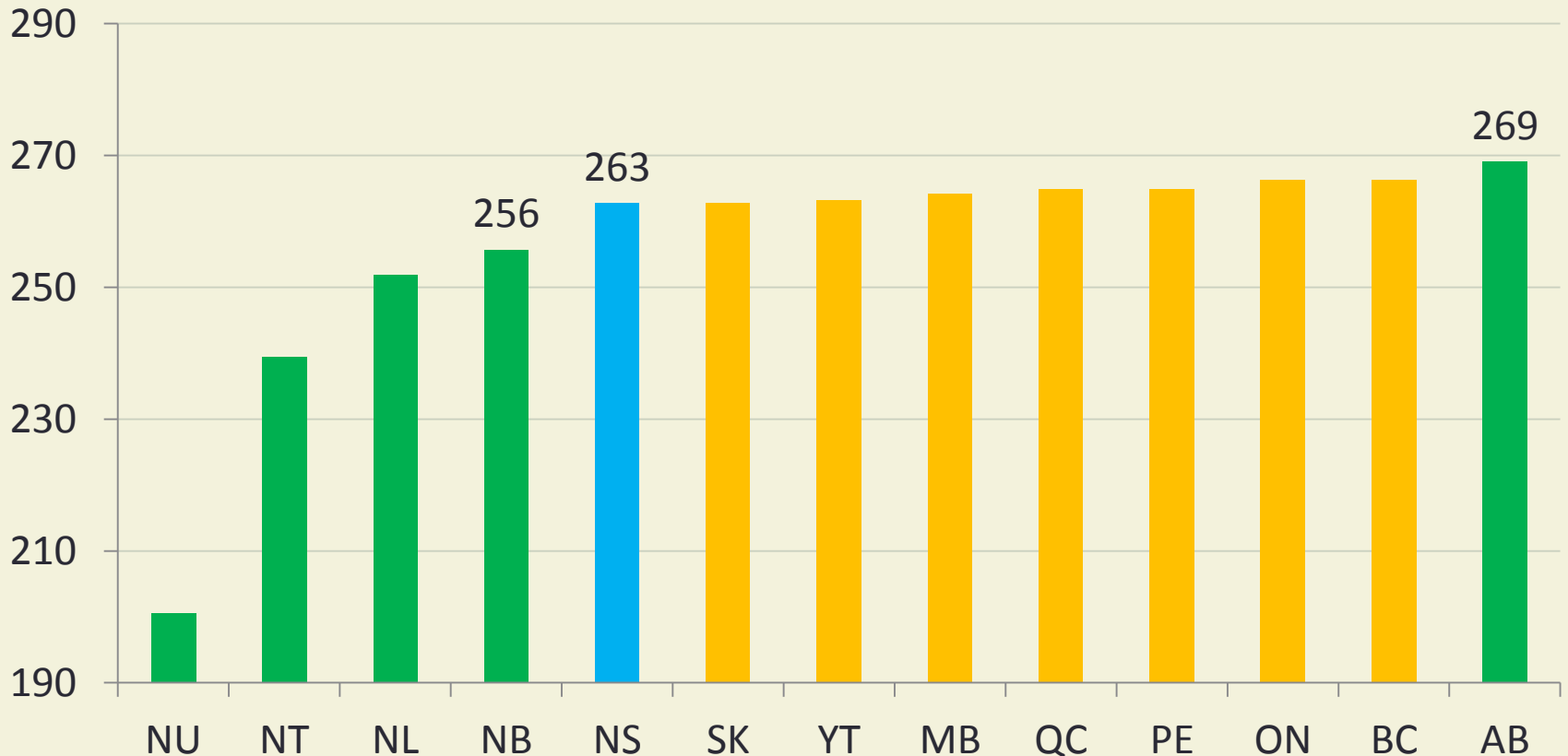
 NOT Statistically Different From NS


 Statistically Different From NS

* PT last in HS/junior high school **Issues with YT data


Numeracy Results

(Mean Numeracy Results Age 16-65)



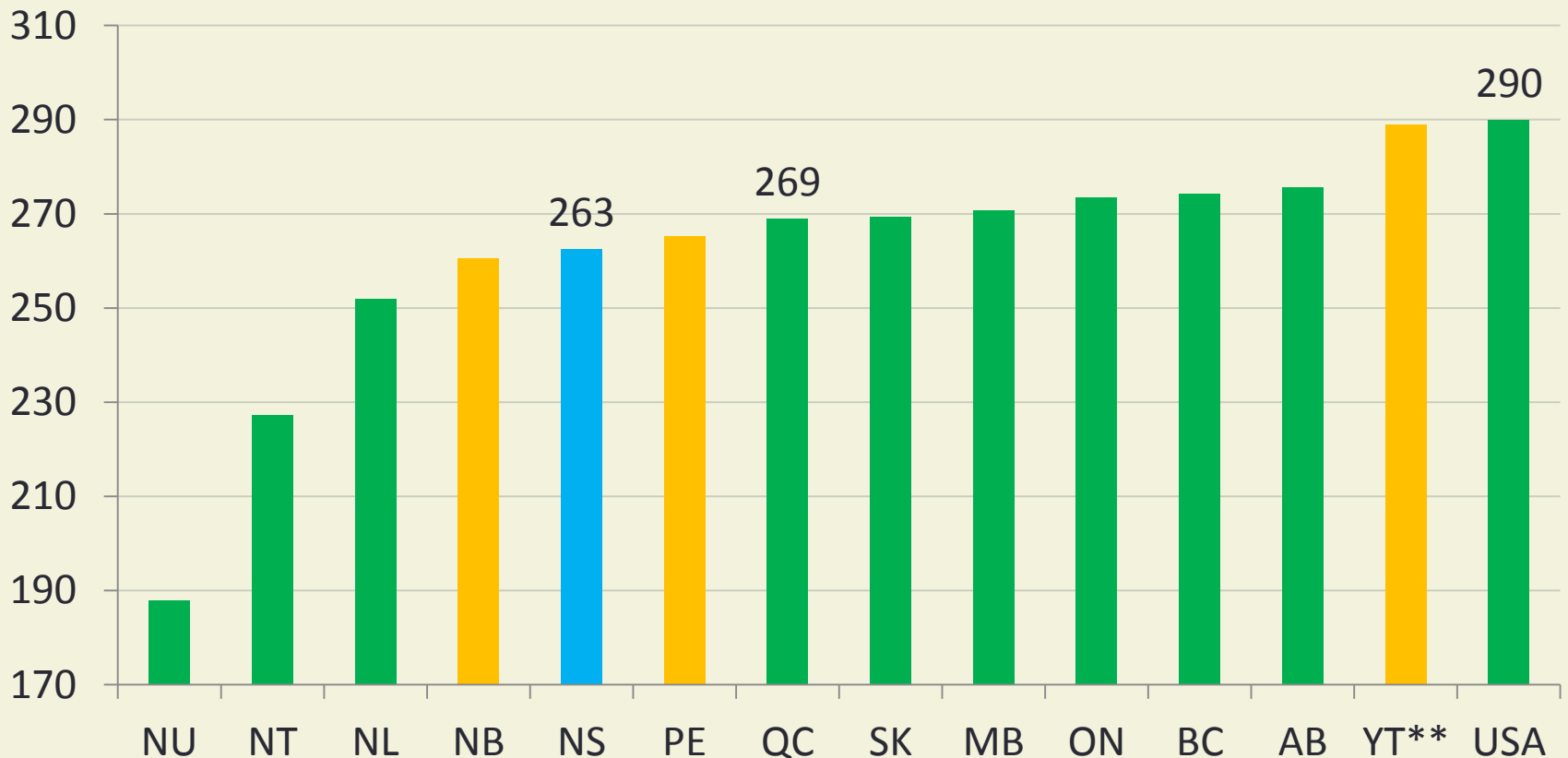
 Nova Scotia


 NOT Statistically Different From NS

 Statistically Different From NS


Numeracy Results

(By Geography where High School* education Received)



 Nova Scotia

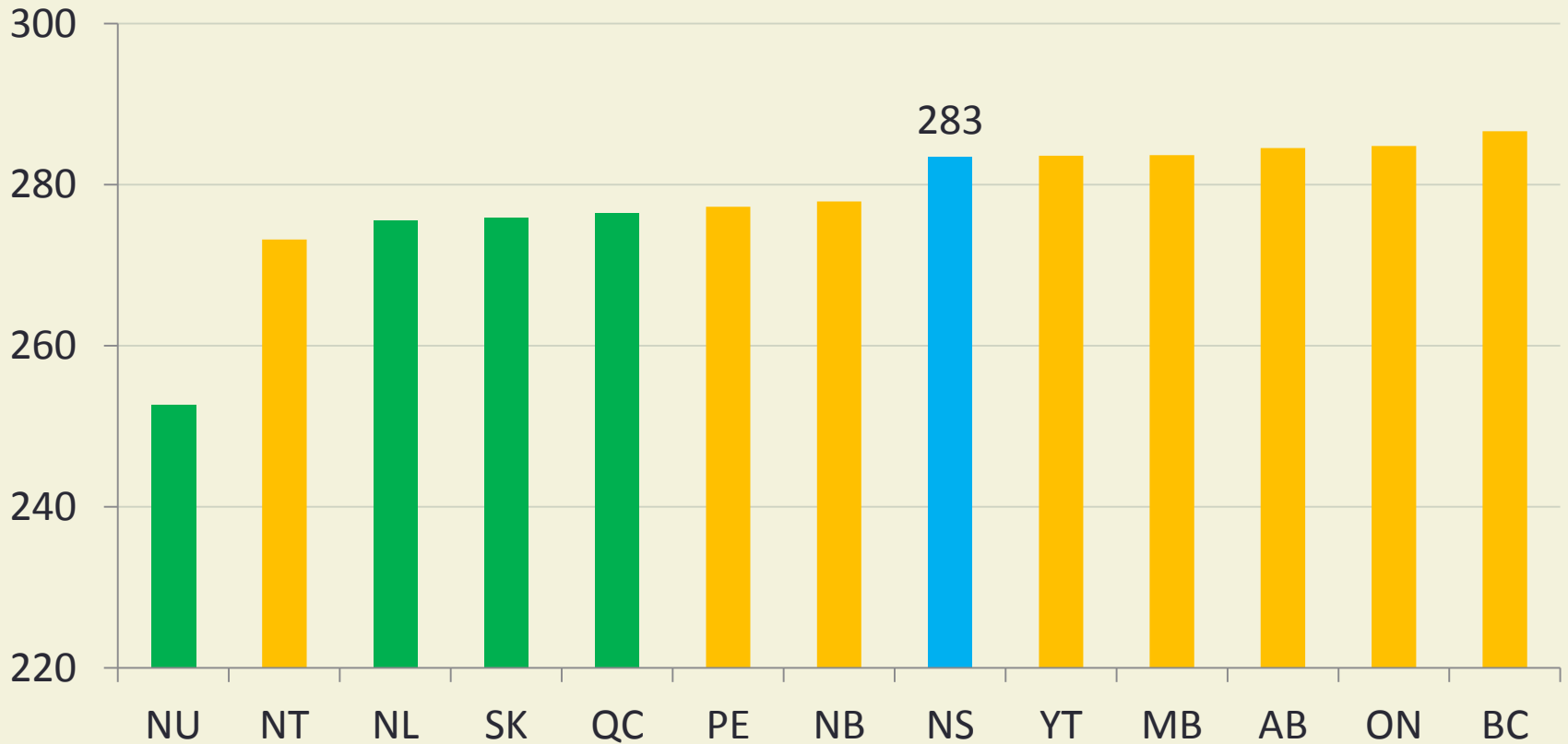
 NOT Statistically Different From NS


 Statistically Different From NS

* PT last in HS/junior high school **Issues with YT data


Technology Results

(Mean Technology Results Age 16-65)



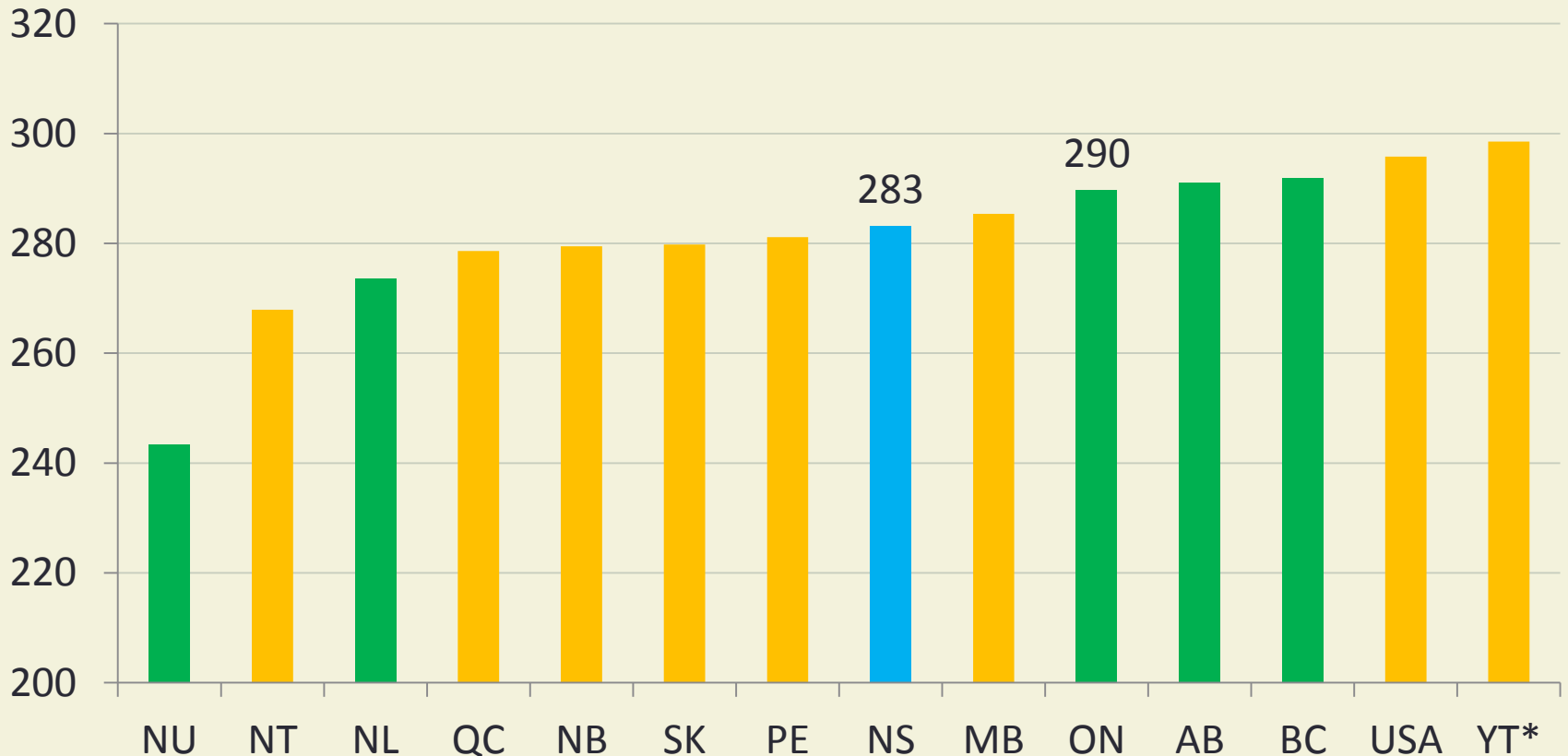
 Nova Scotia

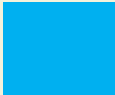
 NOT Statistically Different From NS

 Statistically Different From NS


Technology Results

(By Geography where High School* education Received)



 Nova Scotia

 NOT Statistically Different From NS

 Statistically Different From NS

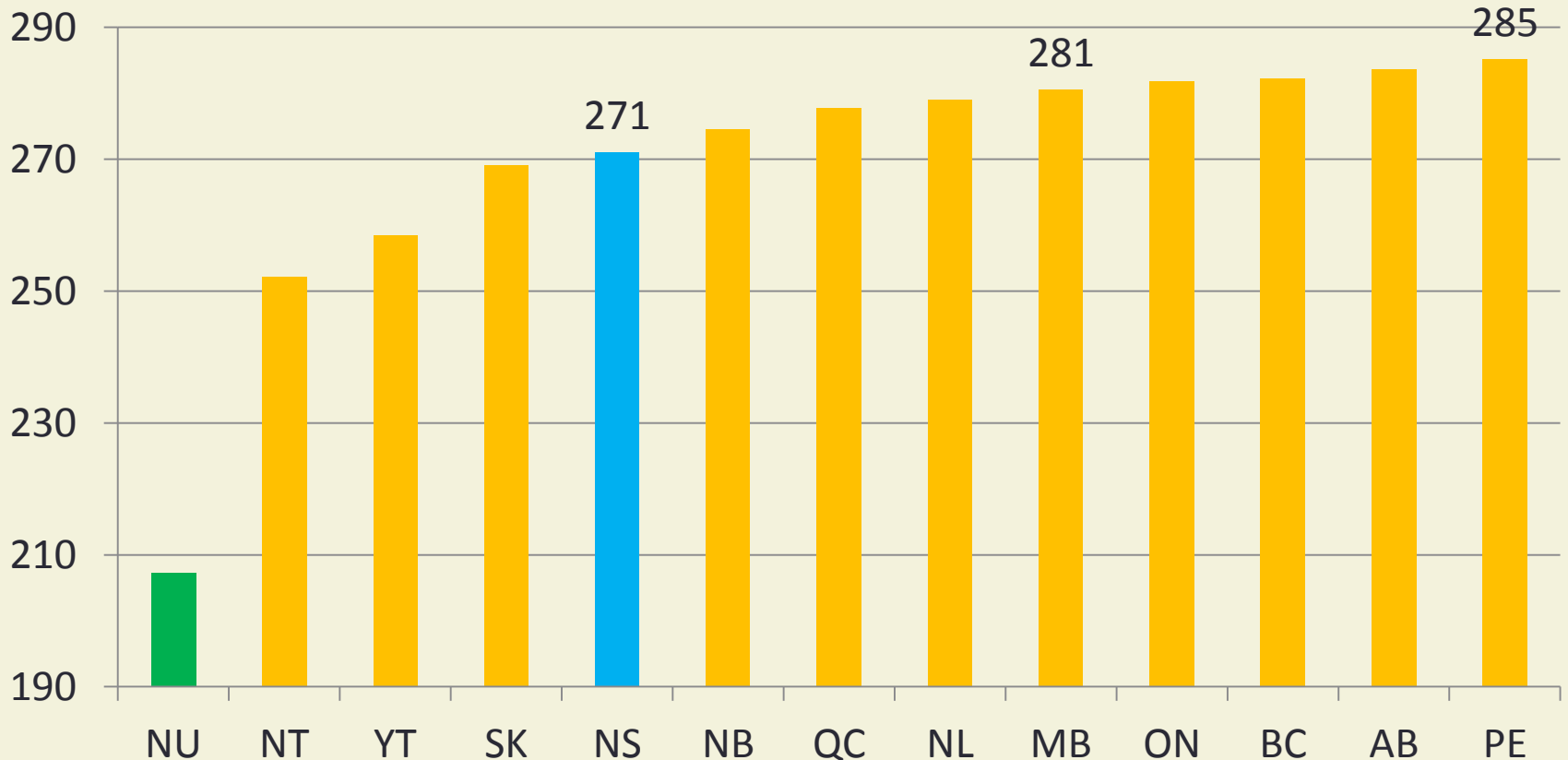
* PT last in HS/junior high school **Issues with YT data

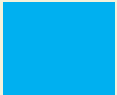
Findings

- Difference between younger age groups (20-24 vs 25-29) in Nova Scotia is noticeably large.
 - 25-29 age group scored quite high, while 20-24 age group scored relatively low.
 - This is true for both literacy and numeracy.
 - The validity of the data was confirmed.


Literacy Results

(Mean Literacy Results Age 20-24)



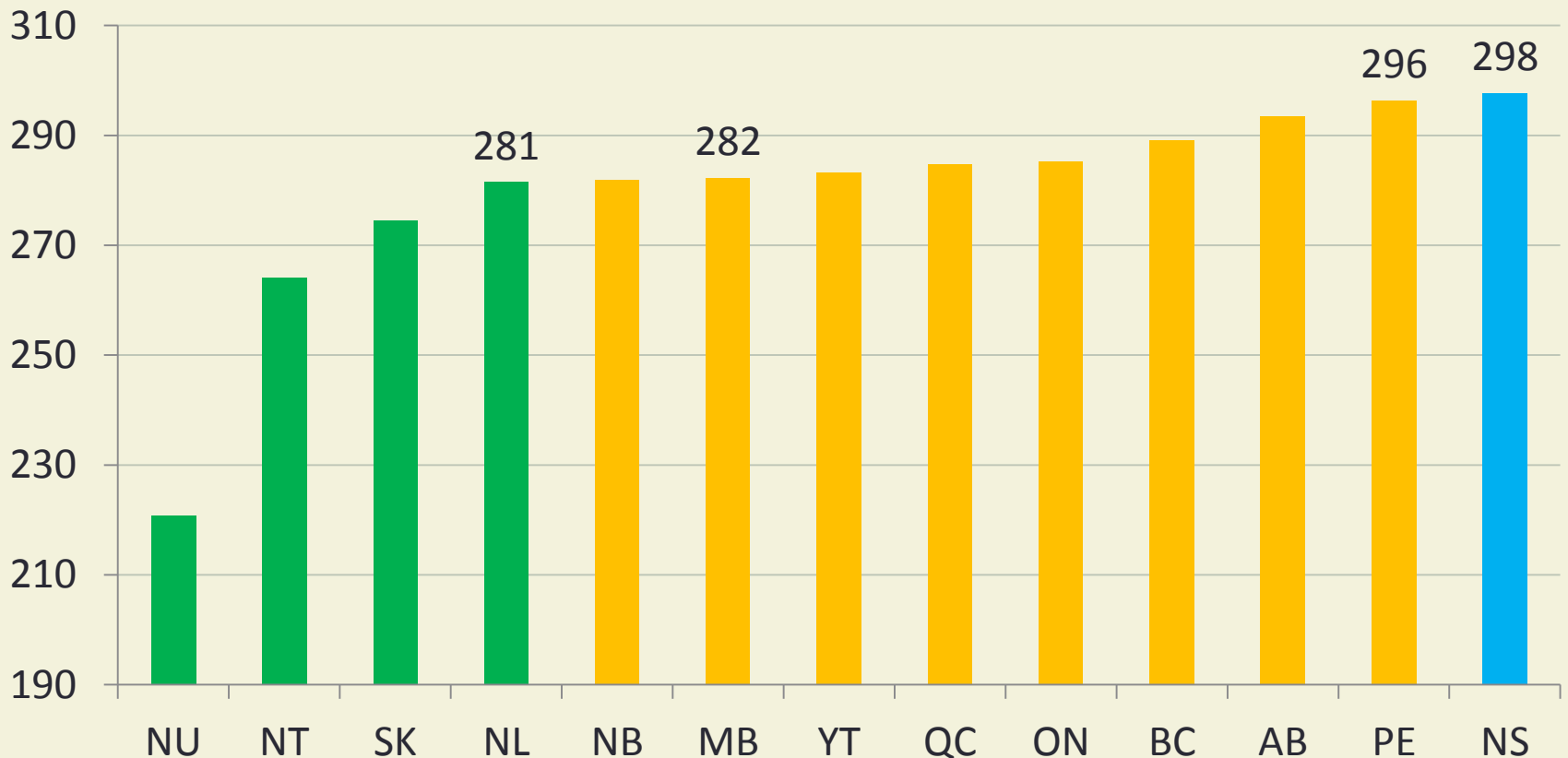
 Nova Scotia

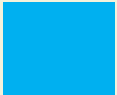
 NOT Statistically Different From NS

 Statistically Different From NS


Literacy Results

(Mean Literacy Results Age 25-29)



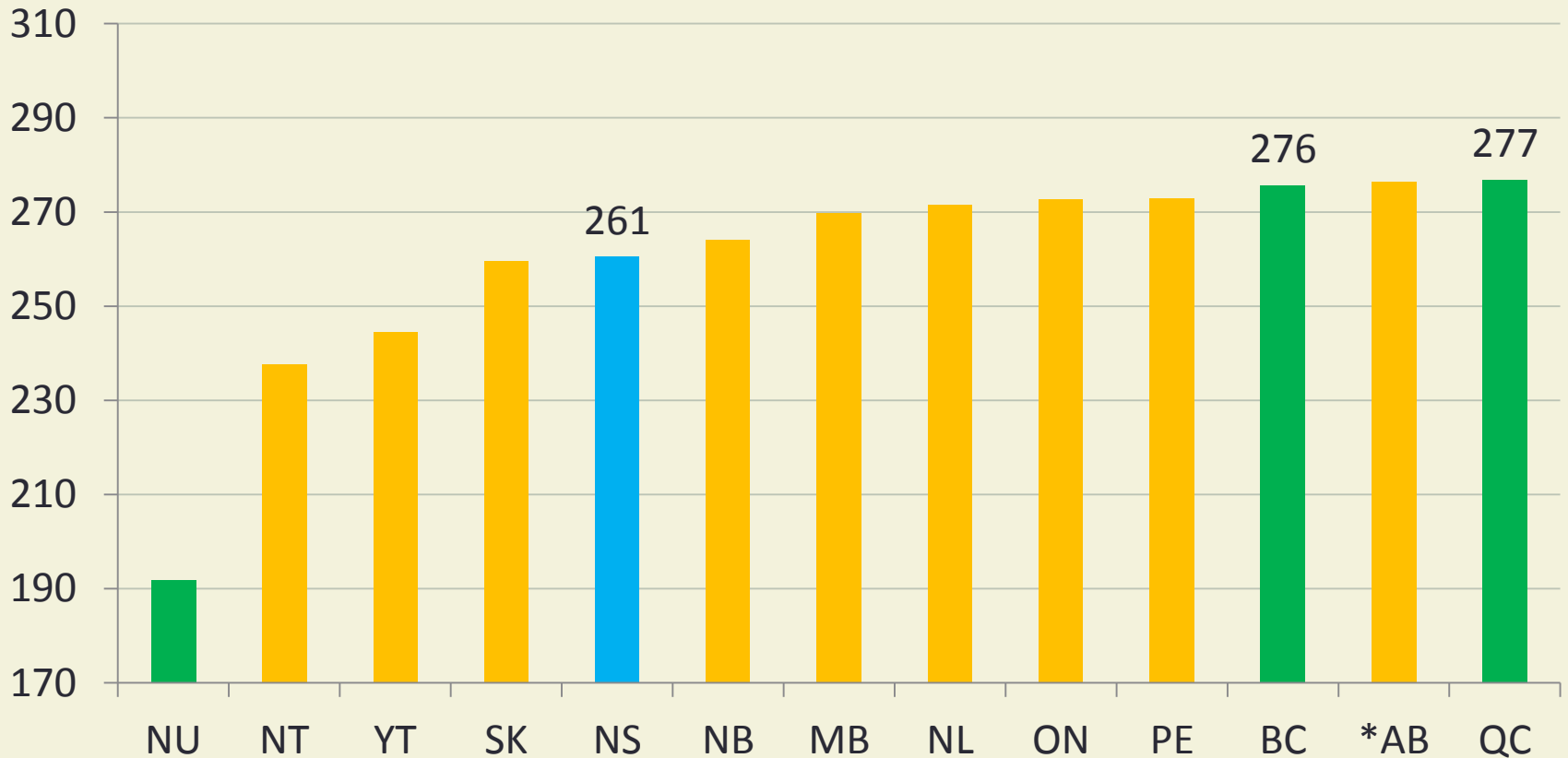
 Nova Scotia


 NOT Statistically Different From NS

 Statistically Different From NS


Numeracy Results

(Mean Numeracy Results Age 20-24)



 Nova Scotia

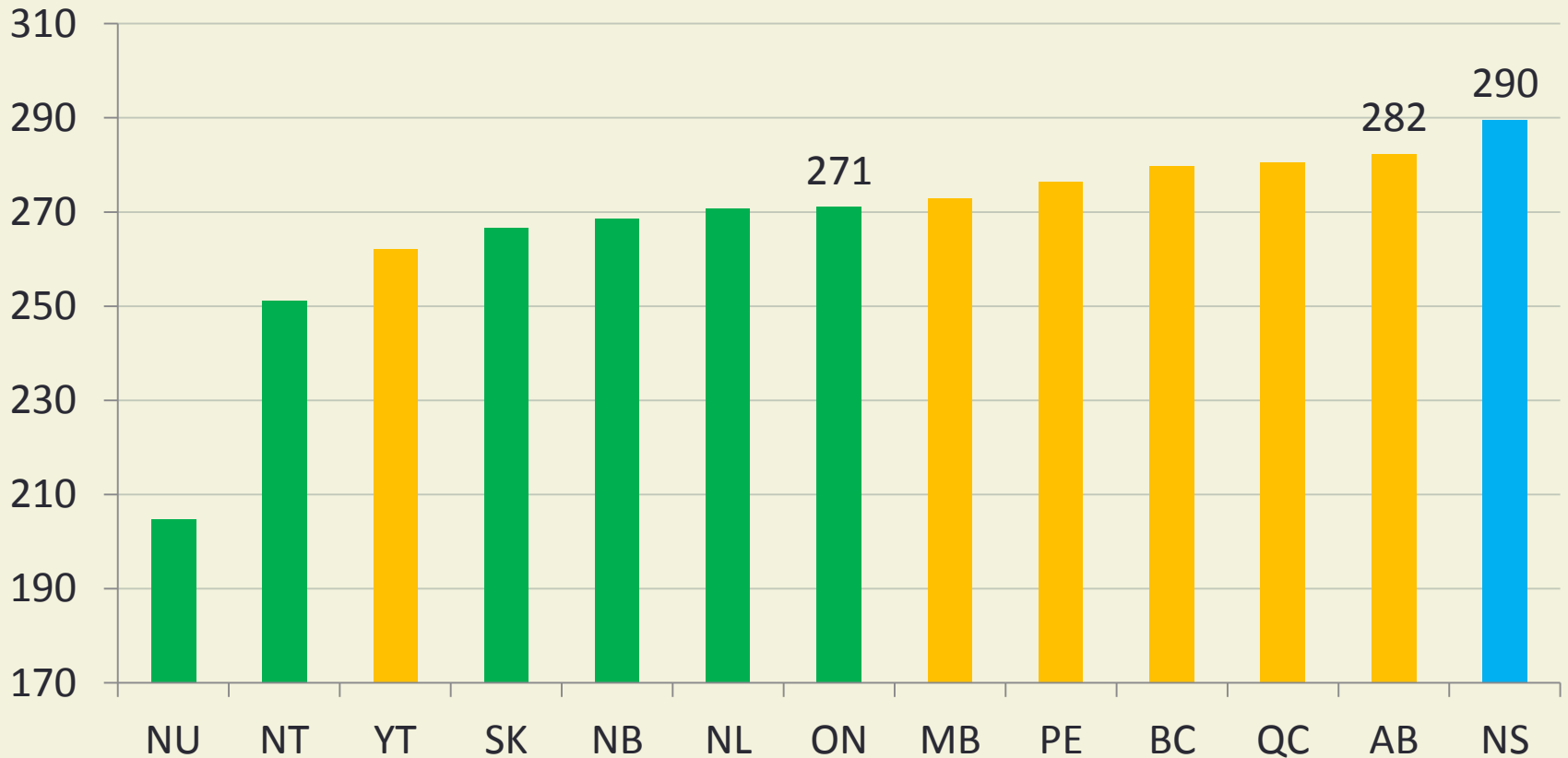
 NOT Statistically Different From NS

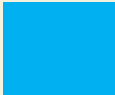
 Statistically Different From NS

*Very Low Sample in Alberta


Numeracy Results

(Mean Numeracy Results Age 25-29)



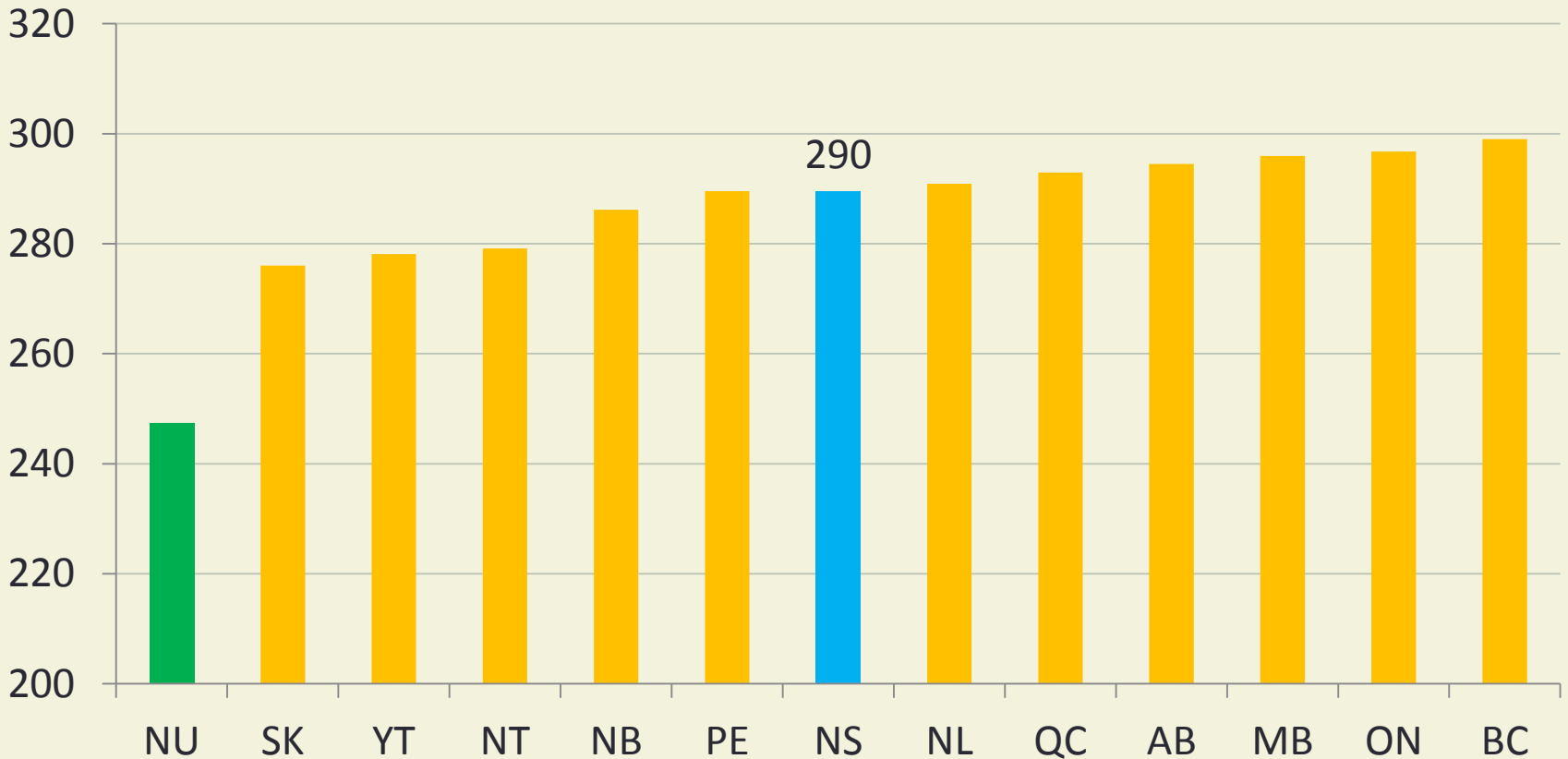
 Nova Scotia

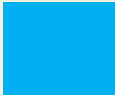
 NOT Statistically Different From NS

 Statistically Different From NS


Technology Results

(Mean echnology Results Age 20-24)



 Nova Scotia

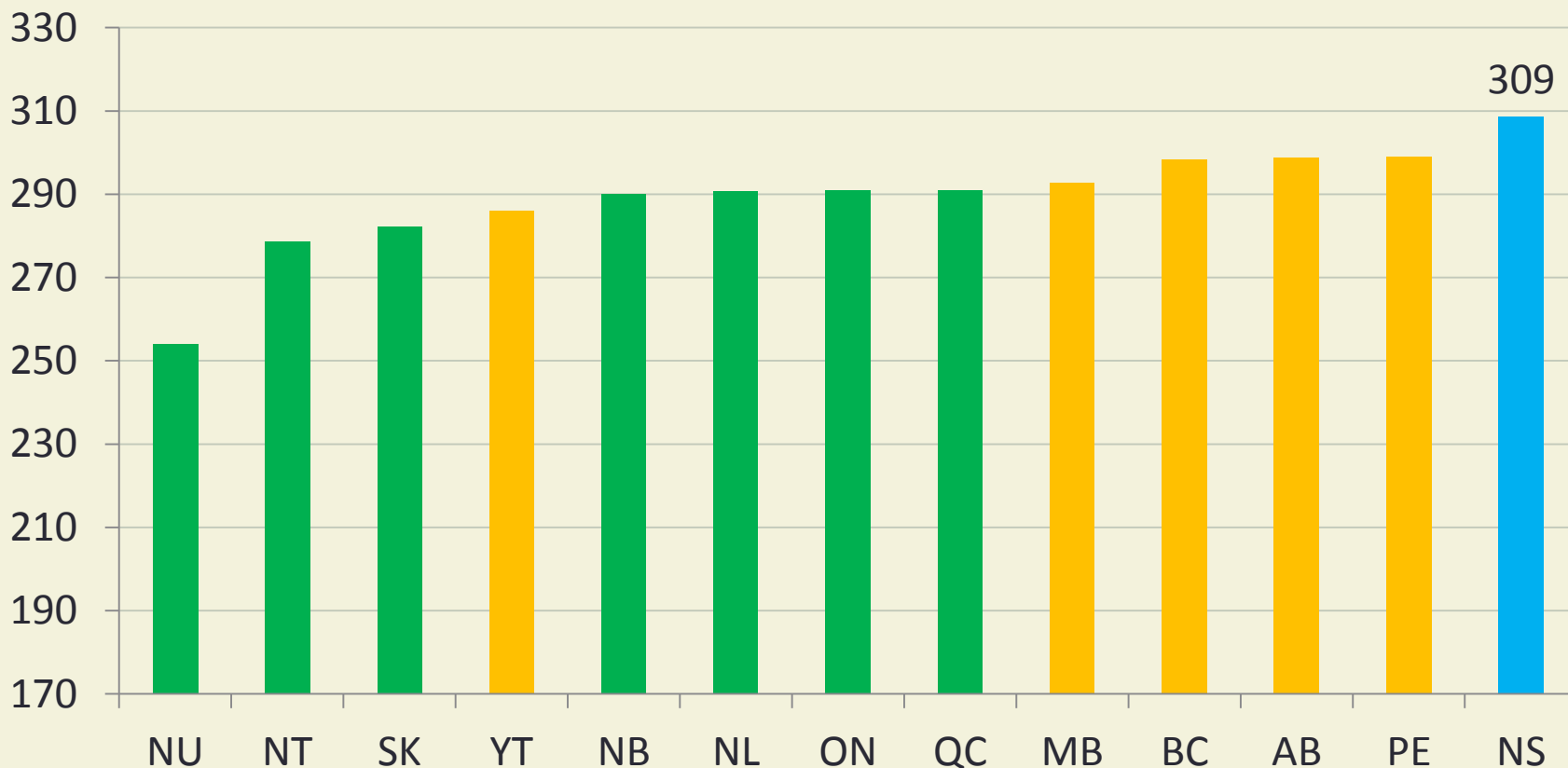
 NOT Statistically Different From NS


 Statistically Different From NS

*Very Low Sample in Alberta


Technology Results

(Mean Numeracy Results Age 25-29)

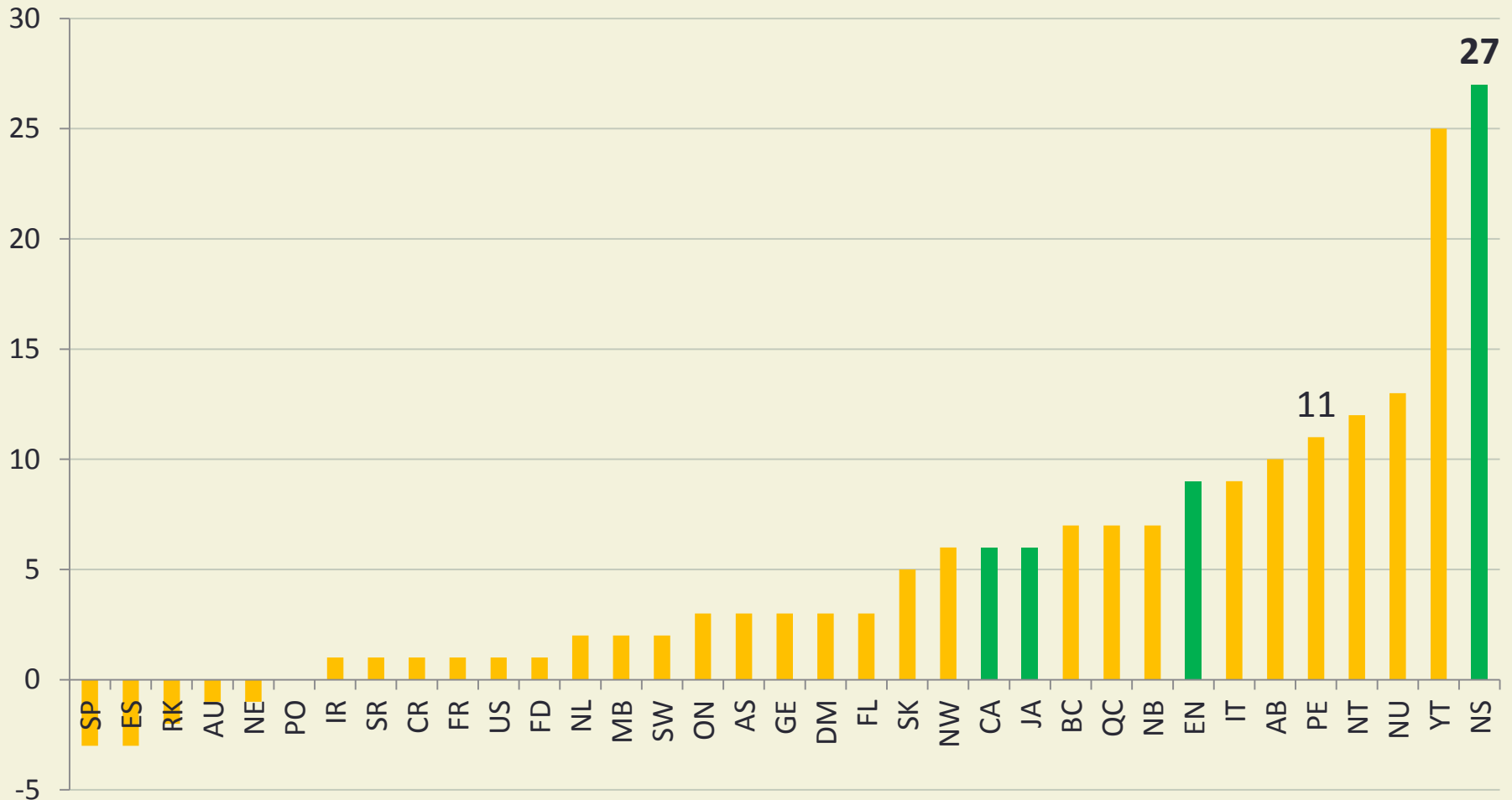



 Nova Scotia


 NOT Statistically Different From NS

 Statistically Different From NS

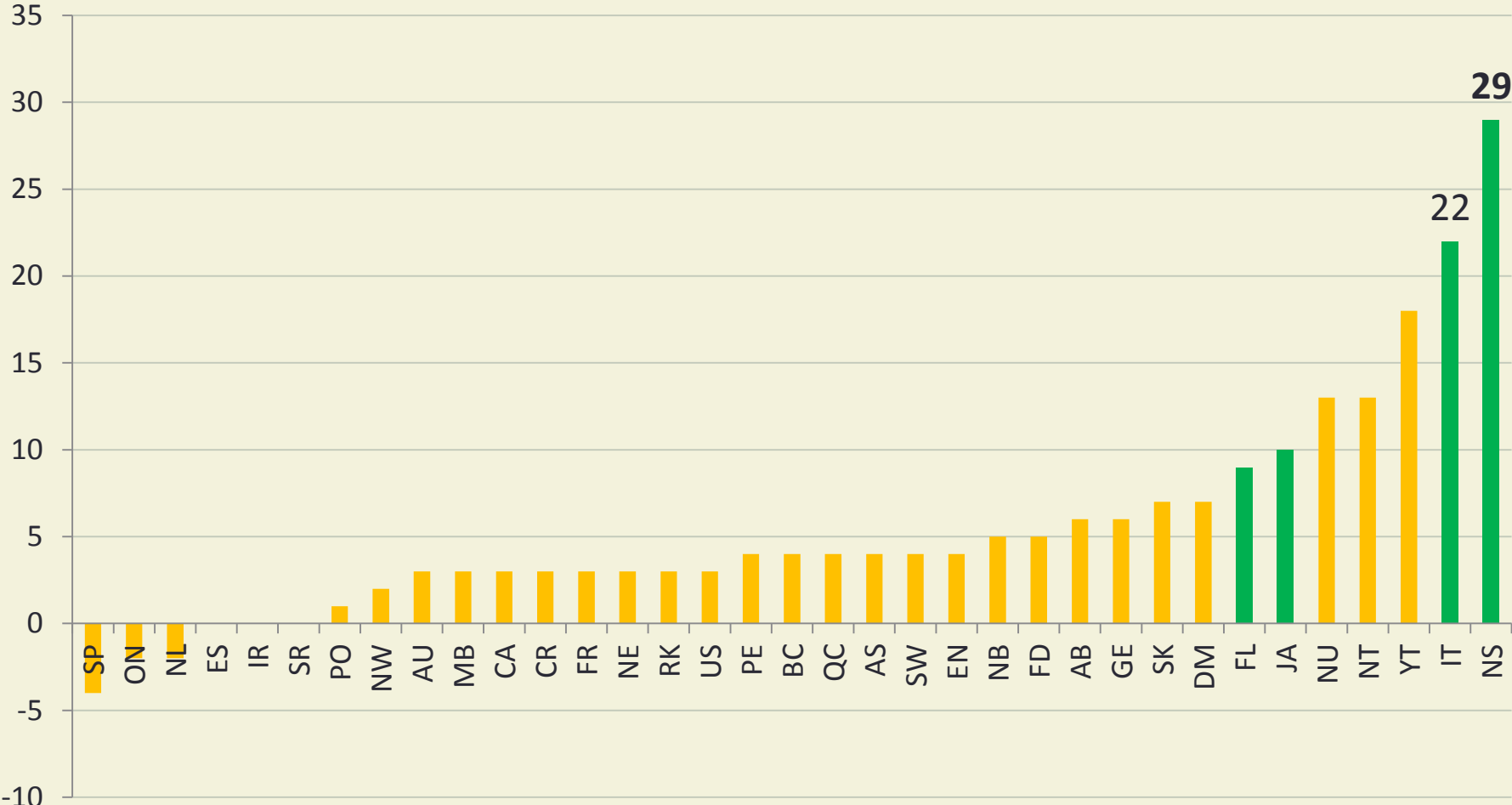
Literacy Difference 20-24 vs 25-29



 Ages Difference NOT Statistically Significant

 Age Difference Statistically Significant

Numeracy Difference 20-24 vs 25-29



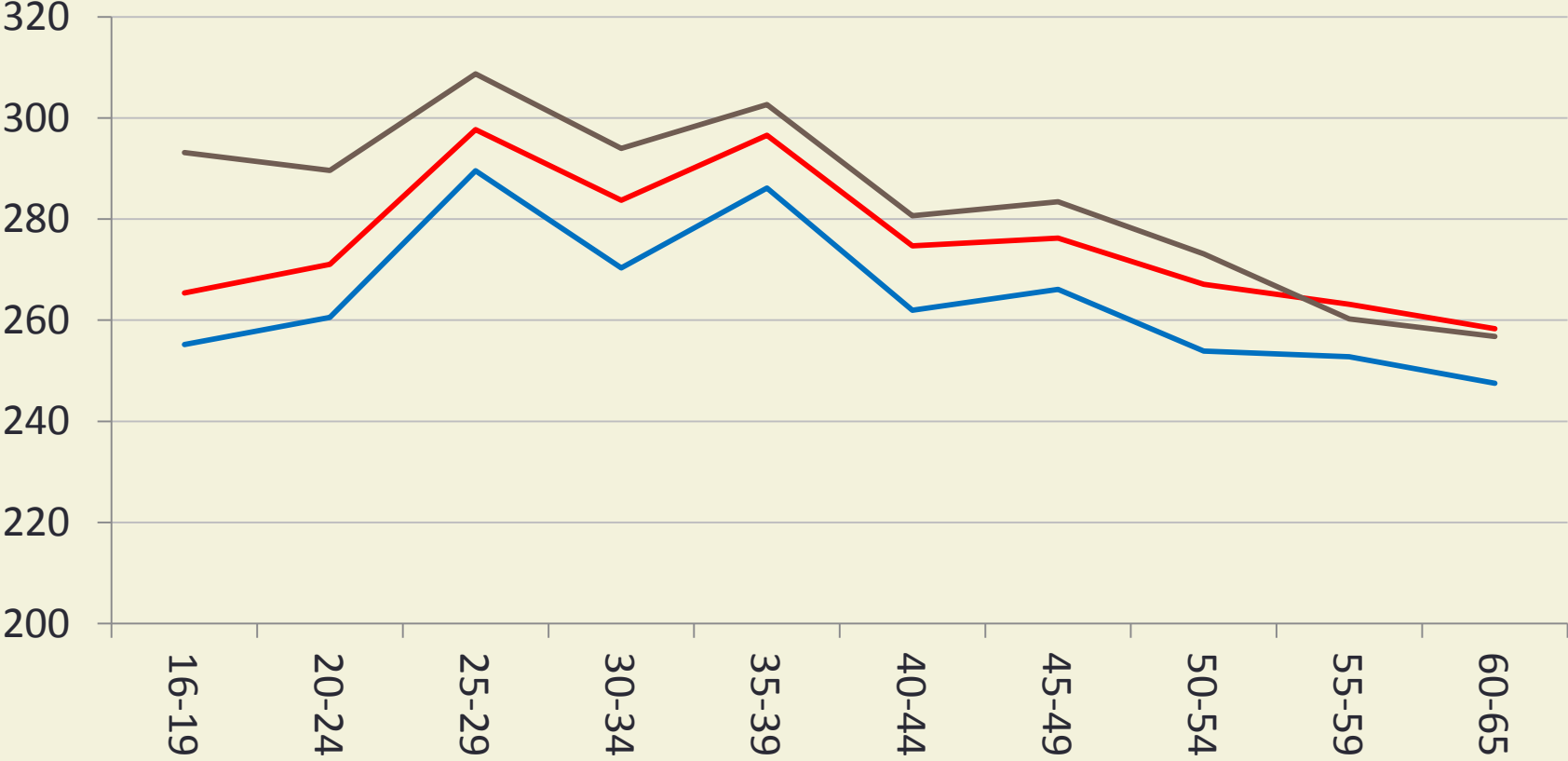
Ages Difference NOT Statistically Significant



Age Difference Statistically Significant

Literacy and Numeracy Across Age Groups in Nova Scotia

— Literacy — Numeracy — Technology



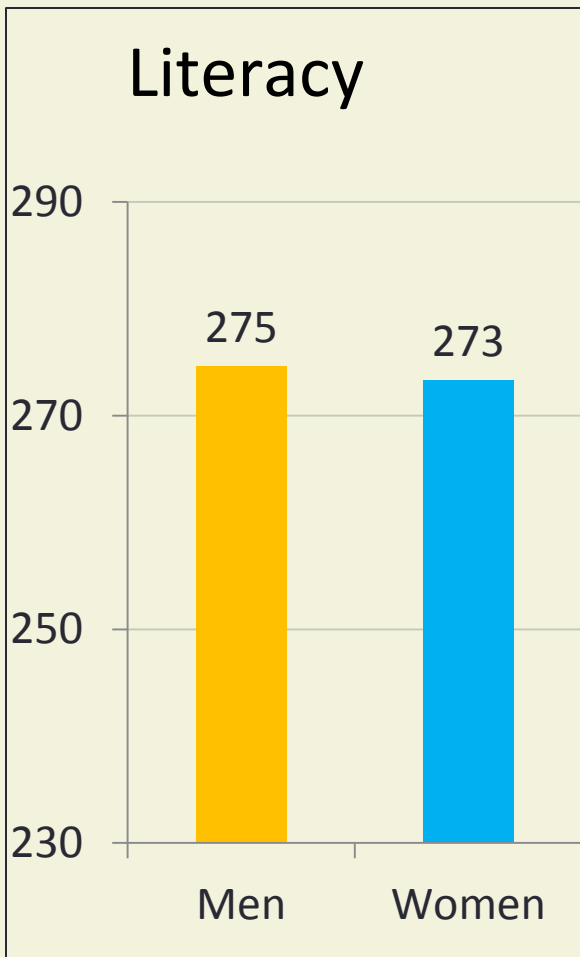
Findings

- Gender Difference in Numeracy but not in Literacy in Nova Scotia.
 - The numeracy differences persist through different levels of education, except for the population with less than high-school.
 - The numeracy difference is more pronounced in certain age groups.

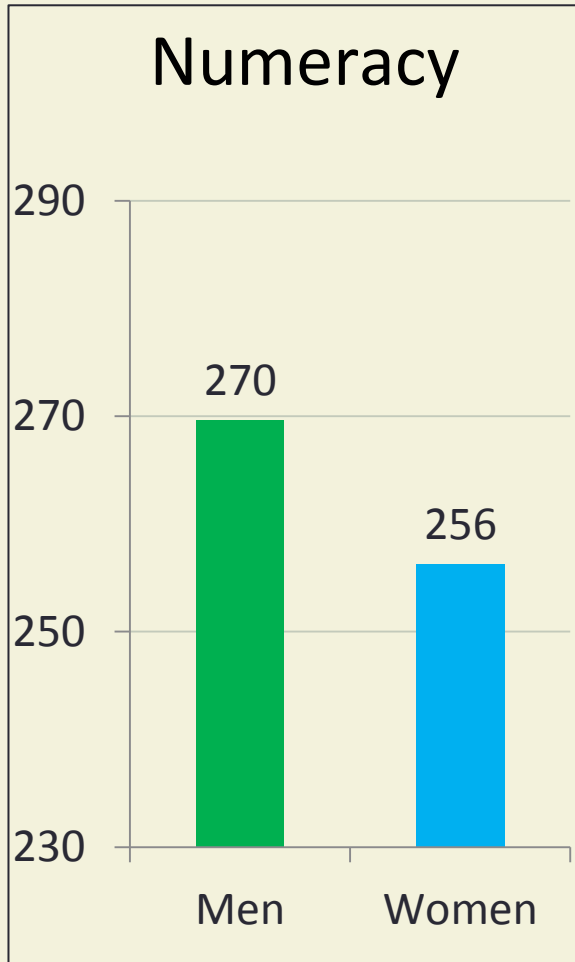
Gender Difference

(In Nova Scotia)

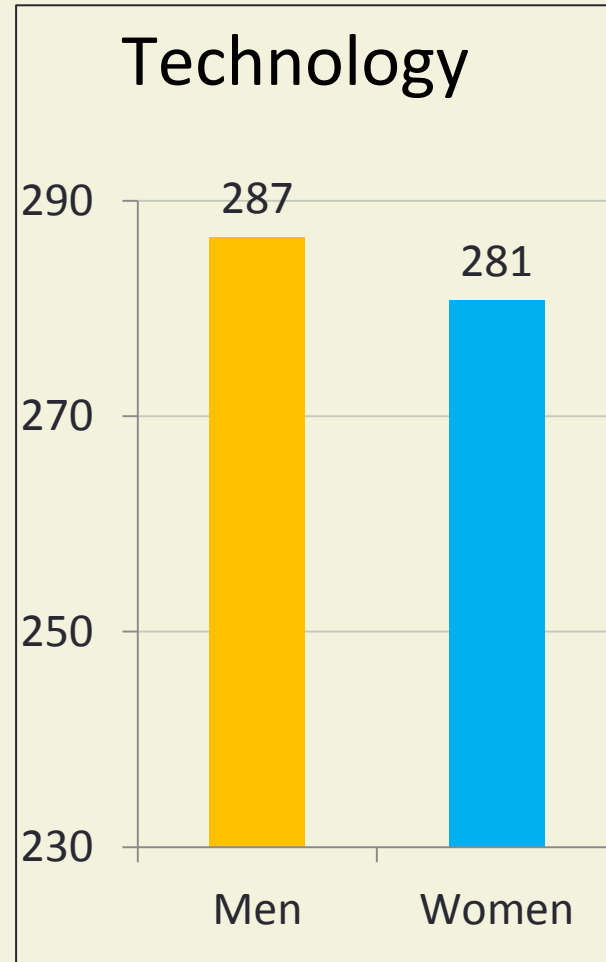
Literacy

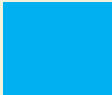



Numeracy




Technology



 Women

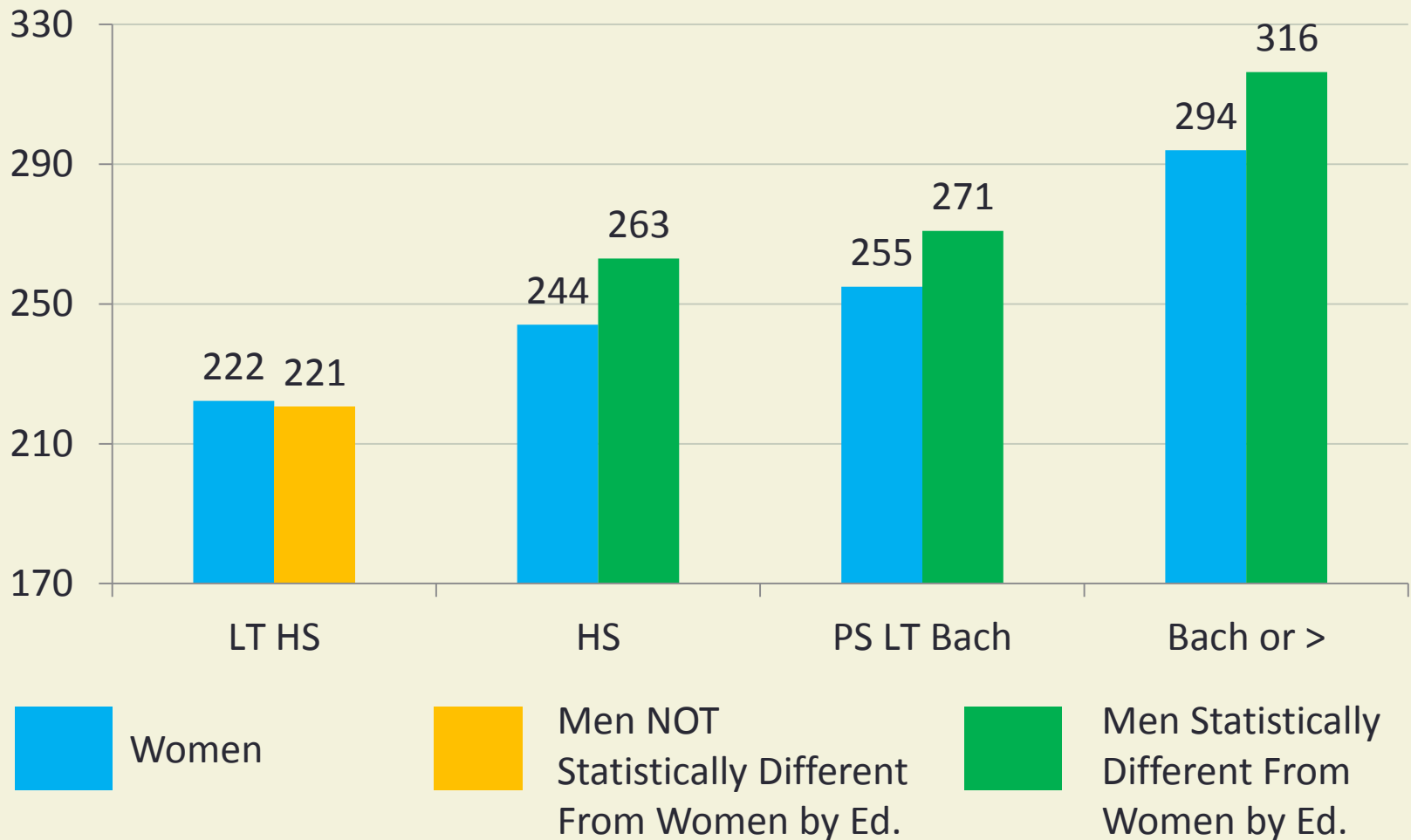
 NOT Statistically Different From Women

 Statistically Different From Women

Gender Difference

(In Nova Scotia by Highest Lvl. Education)

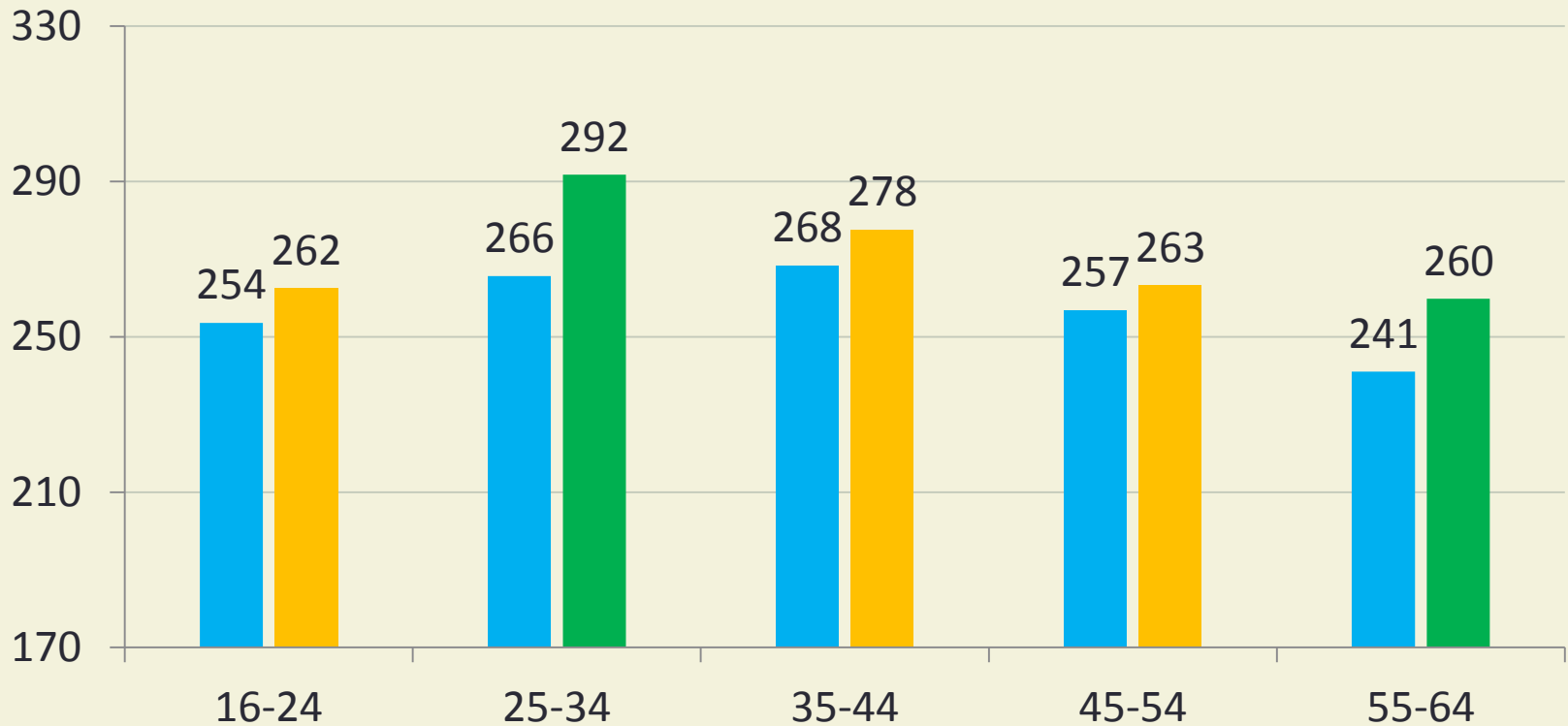
Numeracy



Gender Difference

(In Nova Scotia by Age)

Numeracy



Women

Men NOT
Statistically Different
From Women by age

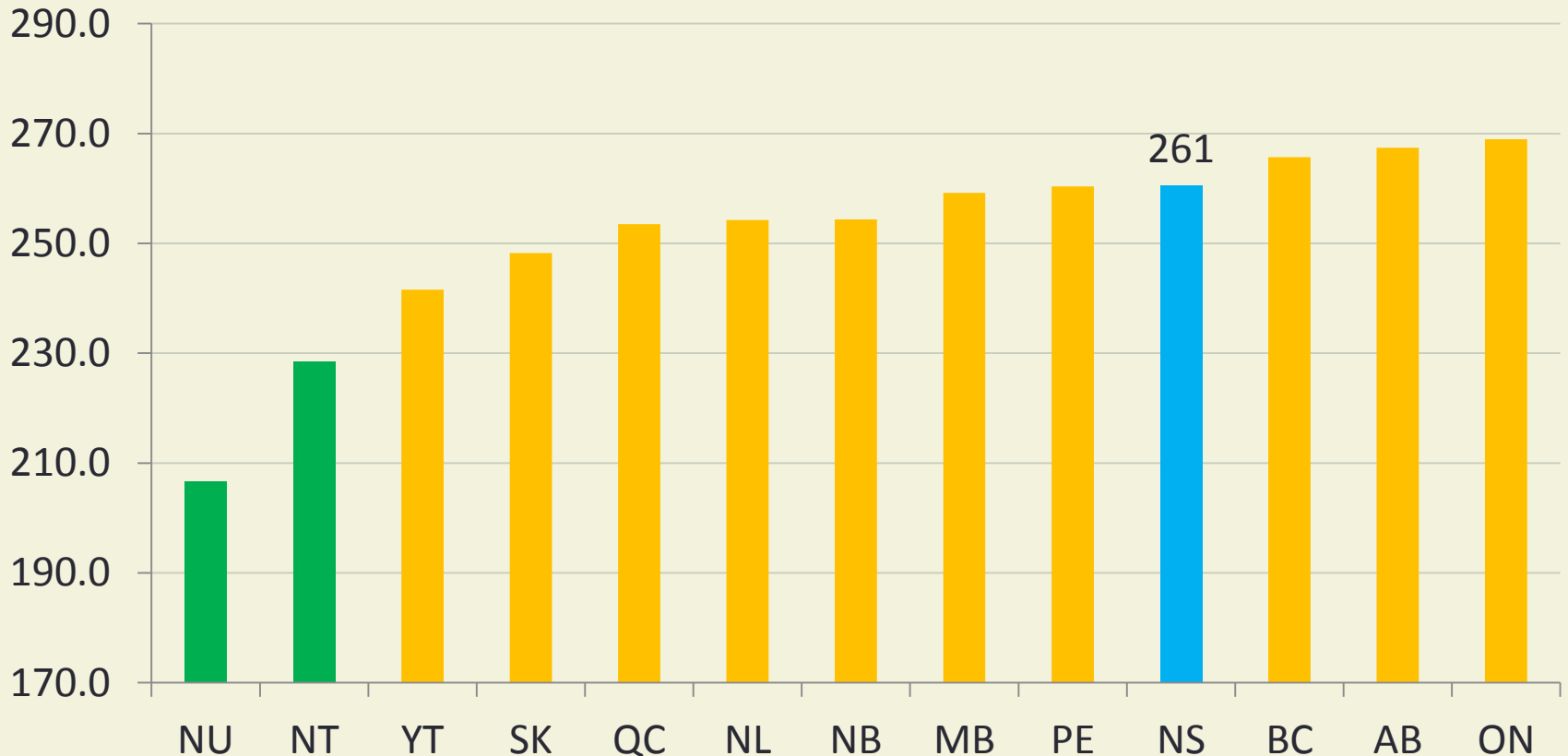
Men Statistically
Different From
Women by Age


Findings

- Aboriginal population in Nova Scotia score similarly those in other provinces.
 - Results for Aboriginal population not statistically different from rest of NS population.


Literacy Results

(Mean Literacy Results Aboriginal Population)



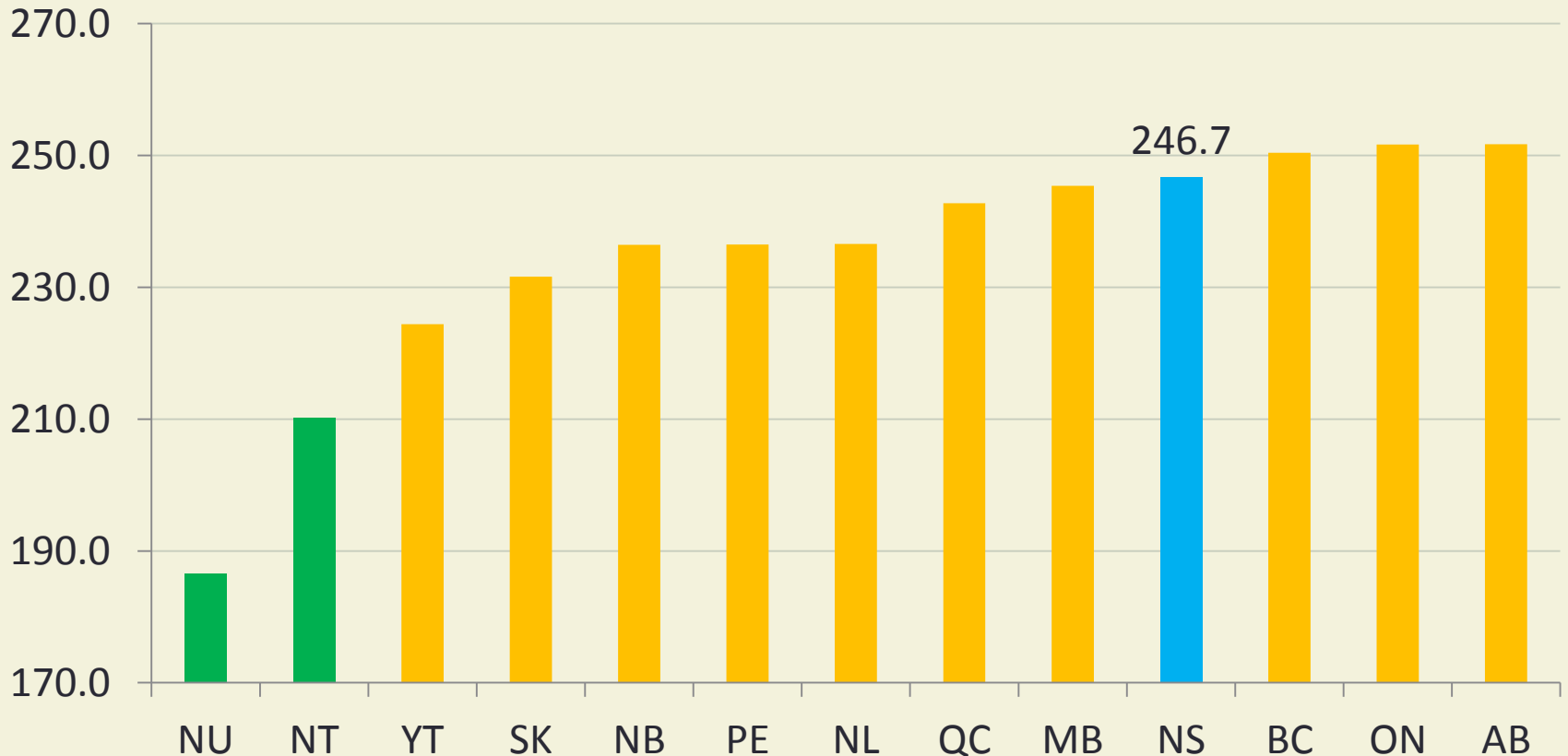
 Nova Scotia


 NOT Statistically Different From NS

 Statistically Different From NS


Numeracy Results

(Mean Numeracy Results Aboriginal Population)



 Nova Scotia

 NOT Statistically Different From NS

 Statistically Different From NS

Findings

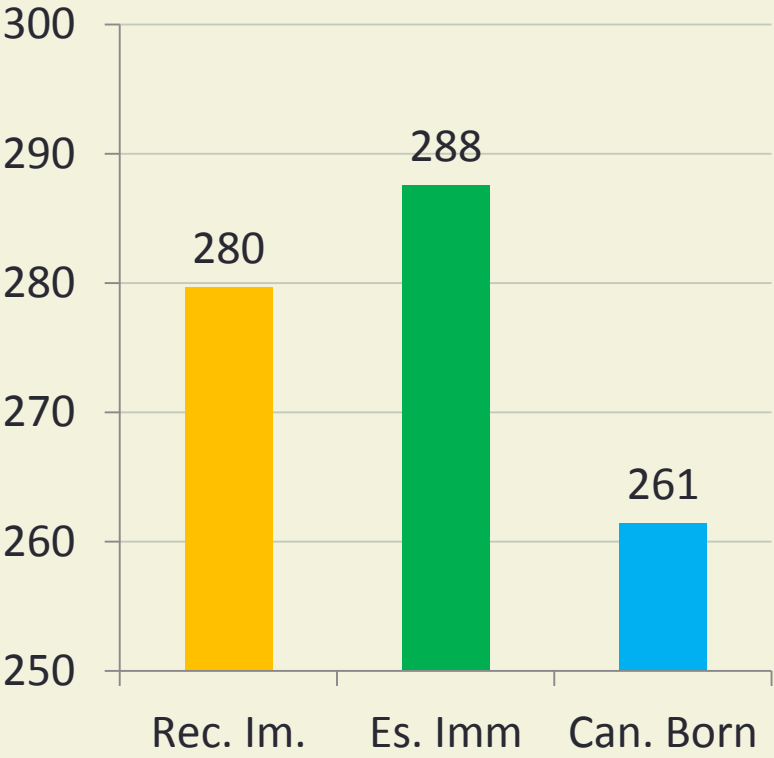
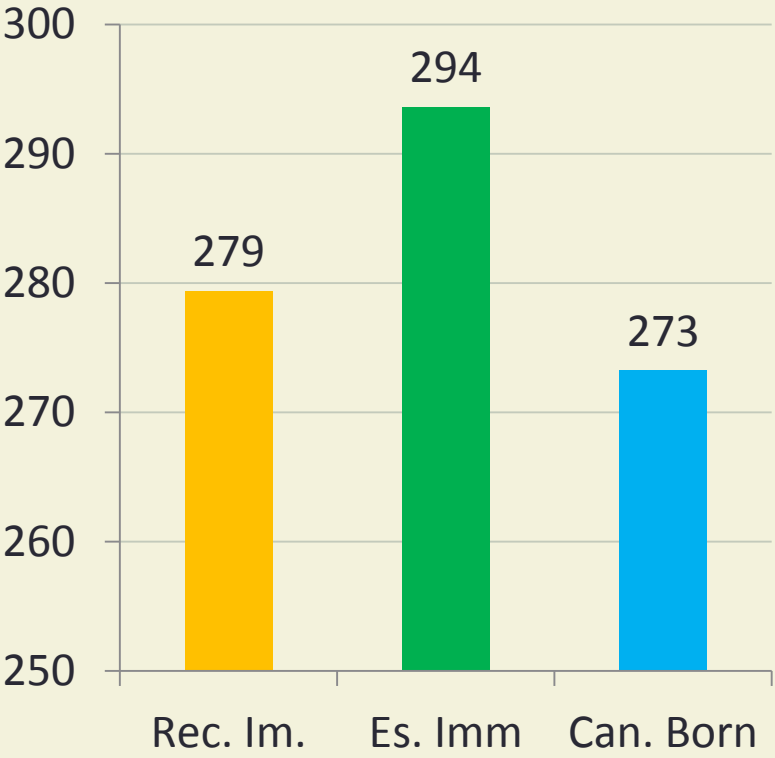
- Established Immigrants in Nova Scotia score better than Canadian Born Nova Scotians.
 - In many other provinces, the Canadian Born scored high

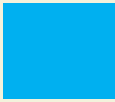
Difference in Immigrant Population


(In Nova Scotia)


Literacy

Numeracy



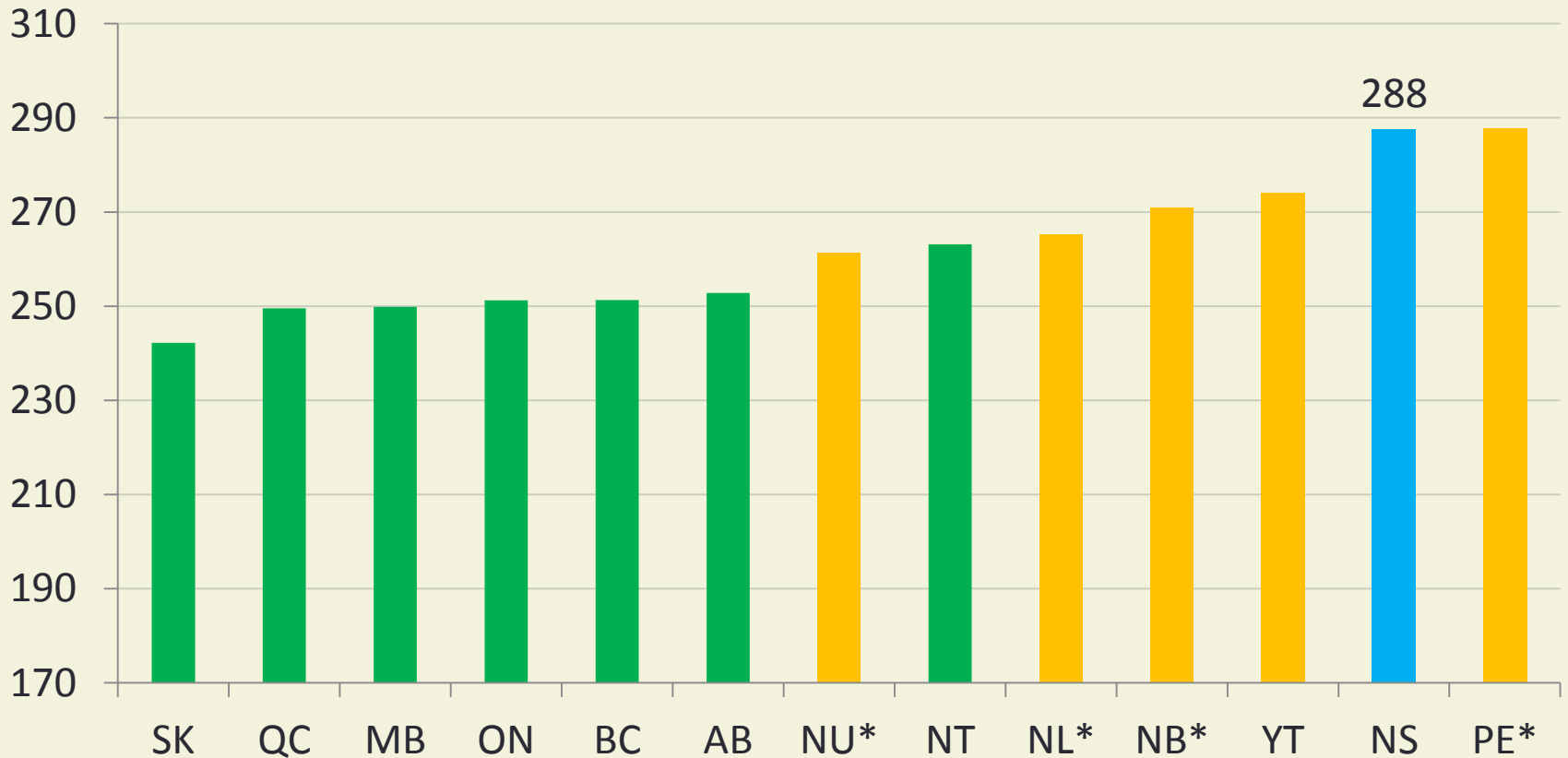
 Canadian Born

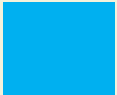
 NOT Statistically Different From Can. Born

 Statistically Different From Can. Born


Numeracy Results

(Mean Numeracy Results Established Immigrants)



 Nova Scotia

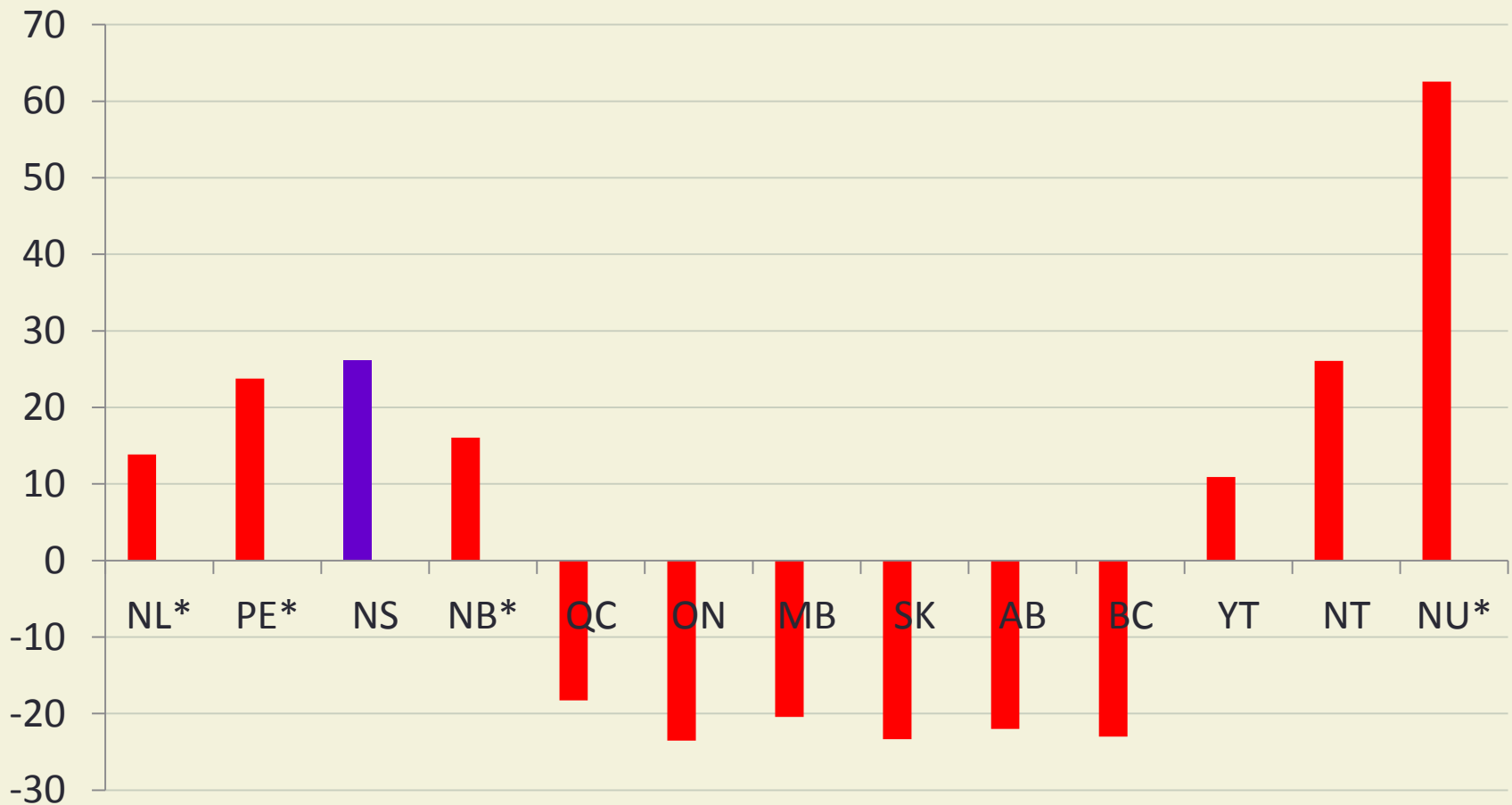
 NOT Statistically Different From NS

 Statistically Different From NS

* Sample size is very low

Numeracy Difference

(Established Immigrant difference from Canadian Born)



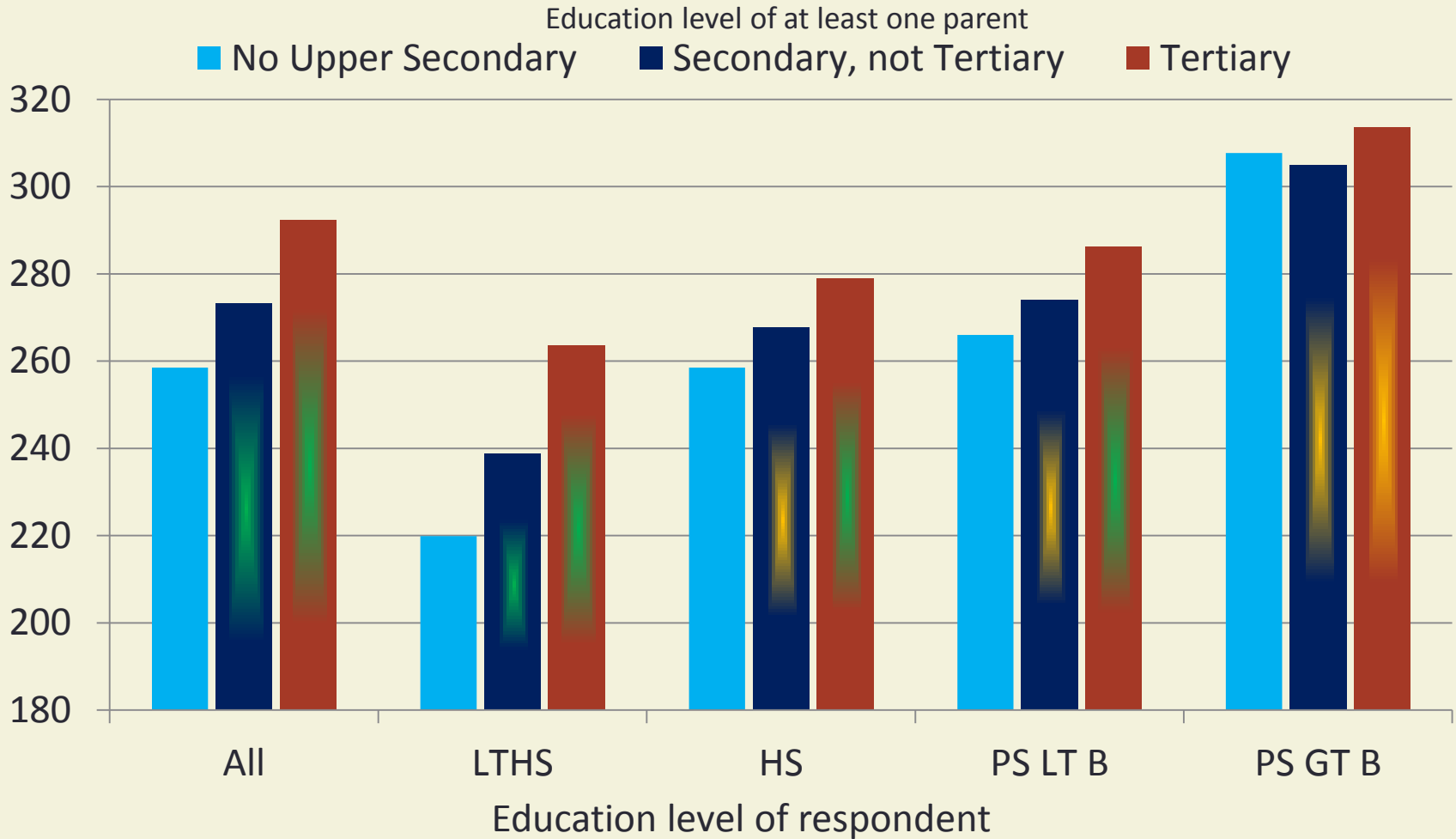
* Sample size is very low for Established Immigrants

Findings

- When Children have a higher education, the education of their parents does not contribute to their literacy score.
 - Those without higher education have higher literacy/numeracy if their parents are highly educated.

Parental Education Effects on Literacy

Nova Scotia

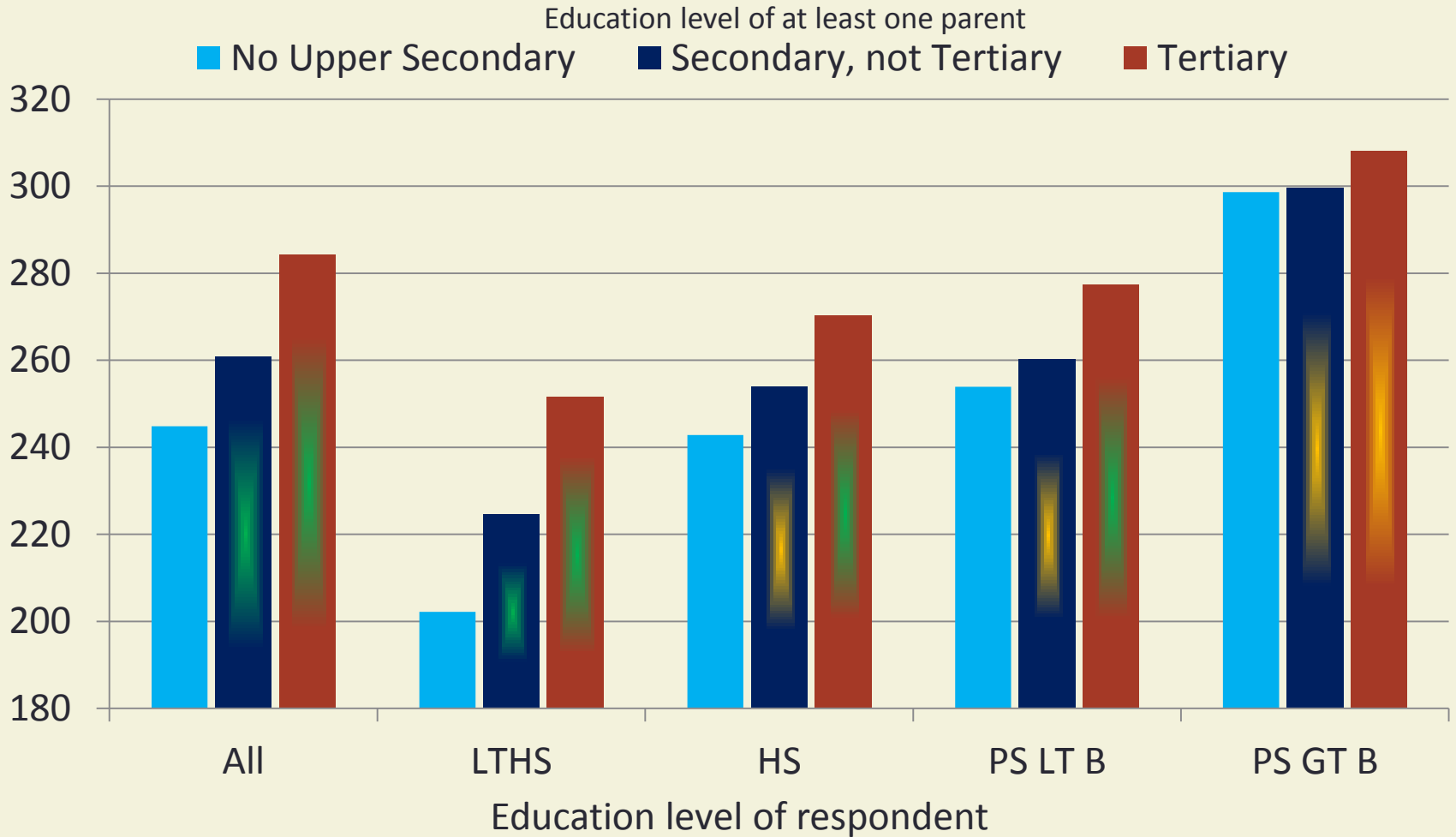


Green tinted bars are significantly different from light blue.

Orange tinted bars are not significantly different from light blue.

Parental Education Effects on Numeracy

Nova Scotia

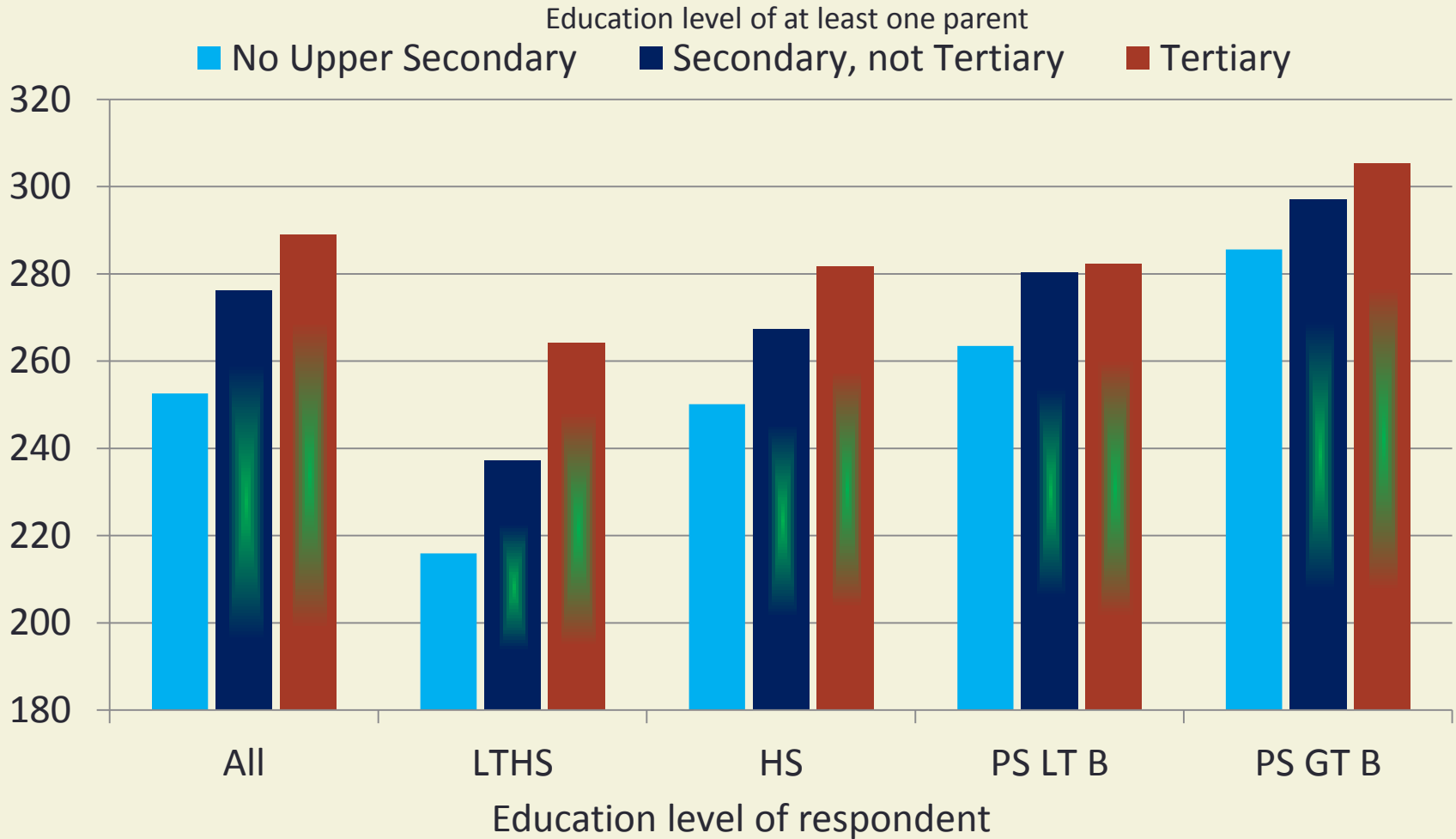


Green tinted bars are significantly different from light blue.

Orange tinted bars are not significantly different from light blue.

Parental Education Effects on Literacy

Canada

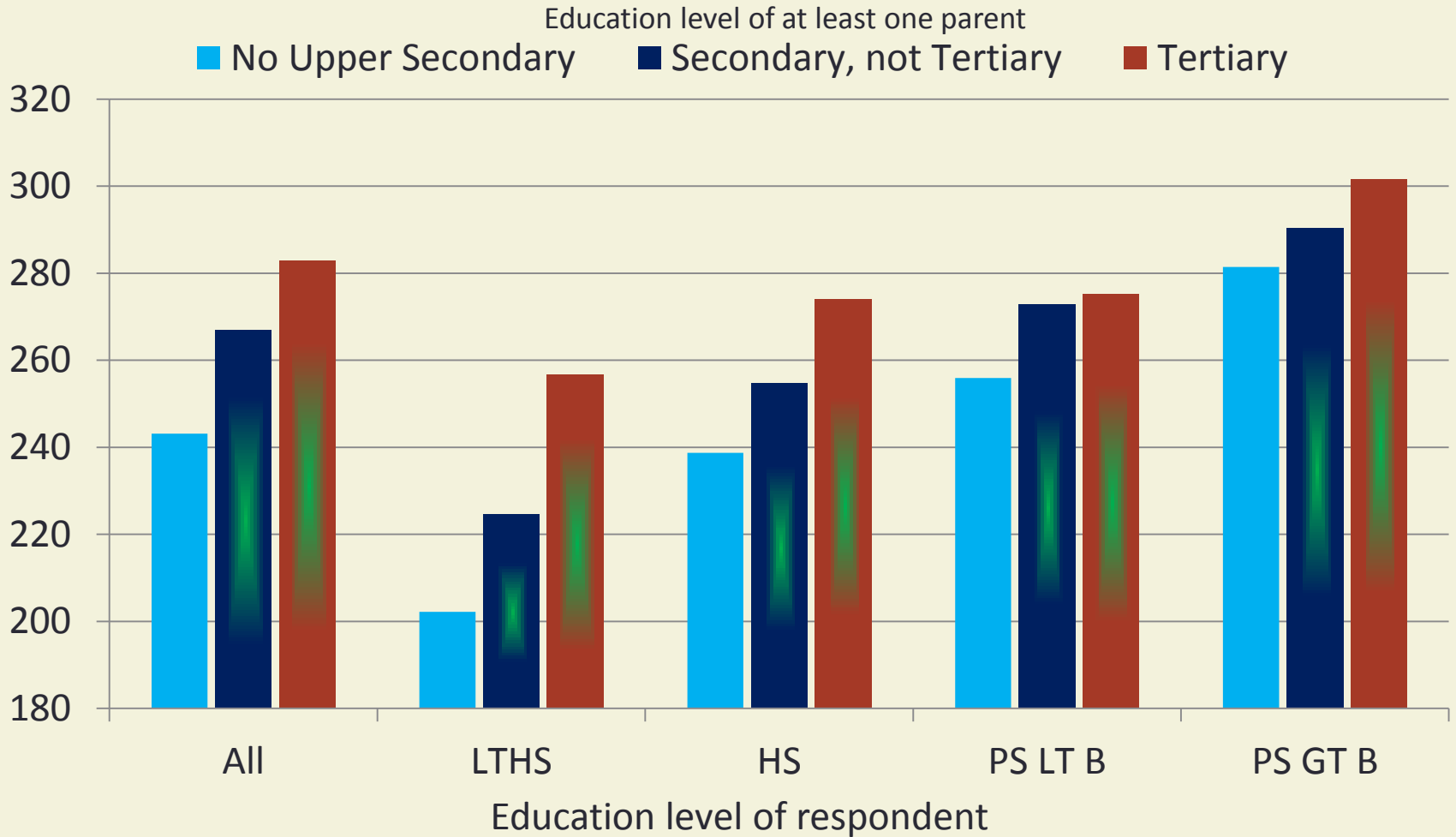


Green tinted bars are significantly different from light blue.

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Parental Education Effects on Numeracy

Canada



Green tinted bars are significantly different from light blue.

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