

First Nations Post-  
Secondary Education:  
*A Costing Analysis on the  
Establishment and Advancement  
of First Nations Institutions*



## SUMMARY REPORT

*Revised: January 20, 2022*



Submitted to:  
**Assembly of First Nations**  
55 Metcalfe Street, Suite 1600  
Ottawa, ON K1P 6L5

Submitted by:

**Directions Evidence and Policy  
Research Group, LLP**

Vancouver: Suite 219-1231 Pacific  
Boulevard, Vancouver, BC, V6Z 0E2

Toronto: 64 Pinewood Avenue, Toronto,  
ON, M6C 2V1

Point of Contact:

Charles Ungerleider, Director of  
Research and Managing Partner

Telephone: 604-600-1040

E-mail: [cungerleider@directions-eprg.ca](mailto:cungerleider@directions-eprg.ca)

# Table of Contents

<b>Executive Summary</b> .....	2
<b>Introduction</b> .....	4
<b>Approach</b> .....	5
Literature Review .....	5
Success in Post-Secondary Education .....	5
Approaches to Indigenous Post-Secondary Education .....	6
Costs .....	7
<b>Environmental Scan</b> .....	8
Student Services / Wraparound Services.....	8
Program Development and Delivery .....	8
First Nations Languages / Multi-Lingual Capacity.....	9
Innovation, Research, & Development.....	10
Infrastructure, Operations, & Maintenance .....	10
Personnel .....	10
Building Community Capacity .....	11
Common Costs in Post-Secondary Education .....	11
<b>Review of Expenditure Data from the Mainstream (Western) Post-Secondary Sector</b> .....	11
Examination of Cost Drivers .....	12
<b>Development of a Baseline Costing Model Comparable to First Nations Post-Secondary Institutes</b> .....	13
<b>Adjustment of the baseline costing model to reflect first nations education</b> .....	16
Cost Adjustments Due to Scale .....	22
Cost Adjustments Due to Intensity and Uniqueness .....	23
Adjustments For Instructional Costs .....	23
Adjustments For Student-to-Faculty Ratios .....	26
Additional Cost Adjustments to Activities Due to Intensity and Uniqueness.....	26
Summary of Cost Adjustment Estimates .....	27
Cost Adjustment Scenarios for First Nations Universities in the Short, Medium, and Long Run .....	28



## Executive Summary

The Assembly of First Nations (AFN) engaged Directions Evidence and Policy Research Group to develop a comprehensive, research-based report to assist in identifying the costs to establish, operate, and maintain a First Nations university. Drawing from literature on Indigenous and First Nations post-secondary institutions (FNIs), consultations with administrators in First Nations institutes, the economics literature on university costs, and mainstream (Western) Canadian universities' financial information, Directions has provided estimates of the average costs per full-time equivalent (FTE) student for a First Nations university to deliver a university-level education that is appropriate to the unique features of First Nations-controlled post-secondary institutions. Recognizing that the process of creating First Nations universities is likely to come from the growth and transition of First Nations post-secondary institutions to university-degree institutions, three scenarios are proposed:

- In the initial phase of the transition, the average cost per full-time student is \$23,894.
- As institutions move through the early transition phase and begin to grow towards an emphasis upon university-level programs, the average cost per full-time student is \$27,942.
- Once the transition stages are complete, with First Nations universities in a steady-state environment where university-level programs, infrastructure, and services are in place, the continuing average cost per full-time student is \$29,959.

The premise for the costing estimates is that a First Nations university should be able to provide students with a post-secondary experience and degree-based education that is equivalent to, but not necessarily the same as, that provided by a comparable mainstream Canadian university (that is, public institutions that are not Indigenous-owned, -operated, or -mandated). Accordingly, the relevant costs for operating a First Nations university should be understood to be at least the same as the costs experienced in mainstream Canadian universities. The approach, therefore, is not to focus on what First Nations institutes have spent for their activities, especially given that they operate with inadequate funding, but to study the actual expenditures of mainstream Canadian universities.

Two main lines of analysis contributed to the estimates. The first analysis determined the major operating costs in Canadian universities and identified the key factors that drive the per-student costs in post-secondary education:

- instructional costs;
- program depth and diversity: programs of study and the variety of programs offered, where the core costs of programs differ across arts, sciences, humanities, and professional programs;
- research intensity;
- academic and administrative infrastructure;
- student services and supports; and
- size and the accompanying economies of scale and scope.

The second analysis adjusted the costs in mainstream Canadian universities to account for the factors that will distinguish a First Nations university. It is not assumed that a First Nations university will be



## First Nations Post-Secondary Education:

### *A Costing Analysis on the Establishment and Advancement of First Nations*

the same as a mainstream Canadian university, nor that it will do the same things, nor in the same ways. There will be costs that apply to any university, such as faculty, administration, student information systems, plant and equipment, and library services. The costing model for First Nations universities also recognizes and incorporate the unique features of education offered through a First Nations university. Profiles of First Nations institutions included in this report, First Nations University of Canada (Saskatchewan), FNTI (Ontario), Kenjgewin Teg (Ontario), Kiuna College (Québec), NEC Native Education College (British Columbia), and Saskatchewan Indian Institute of Technologies (Saskatchewan), show that the institutions have great diversity while sharing a commitment to: being accountable to First Nations; being governed by frameworks that reflect First Nations culture and values; having epistemology and pedagogy rooted in First Nations ways of knowing, being, and doing; creating environments where Indigenous students feel welcome, supported, and successful; and preserving and revitalizing First Nation history, culture, and language. They are fundamentally designed to serve First Nations students and communities and are the embodiment of the right to control educational institutions that serve First Nations peoples.



## Introduction

First Nations have an inherent right to self-government and to control of the educational systems and institutions that serve Indigenous peoples. As stated in the United Nations Declaration of the Rights of Indigenous Peoples:<sup>1</sup>

- Indigenous peoples have the right to establish and control their educational systems and institutions providing education in their own languages, in a manner appropriate to their cultural methods of teaching and learning. (Article 14.1)
- Indigenous individuals, particularly children, have the right to all levels and forms of education of the State without discrimination. (Article 14.2)
- States shall, in conjunction with indigenous peoples, take effective measures, in order for indigenous individuals, particularly children, including those living outside their communities, to have access, when possible, to an education in their own culture and provided in their own language. (Article 14.3)

First Nations Post-Secondary Institutions (FNIs) have consistently pointed to the lack of stable funding, capital funding, and pathways for recognition and accreditation as a barrier to growth of a First Nations institutes sector. Research is required to identify the true costs of institutions based on their program offerings and size and incorporating elements such as operations and maintenance, capital, language and culture programming, staffing, student support services, research, and remoteness.

The Assembly of First Nations (AFN) engaged Directions Evidence and Policy Research Group in 2021 to develop a comprehensive, research-based report to assist in identifying the costs operate and maintain FNIs. This costing model for FNIs supports the Inherent and Treaty Right to Post-Secondary Education and is aligned with AFN Resolution [48/2018: First Nations Post-Secondary Education \(PSE\) Policy Proposal](#) and the co-developed [First Nations Post-Secondary Education Policy Proposal](#). This research supports the AFN and First Nations' advocacy for stable funding for FNIs and supports First Nations regions in understanding the costs to maintain and advance established FNIs. This report also builds upon the [First Nations Post-Secondary Education \(PSE\) Review: Institutions Costing report \(2018\)](#), which identified high-level costing profiles for FNIs.

This report summarizes the key points in the research. The full report provides greater detail on the research, including the methods, literature review, environmental scan, and the costing analysis. The environmental contains profiles of the First Nations post-secondary institutions that participated in this research: First Nations University of Canada (Saskatchewan), FNTI (Ontario), Kenjgewin Teg (Ontario), Kiuna College (Québec), NEC Native Education College (British Columbia), and Saskatchewan Indian Institute of Technologies (Saskatchewan).

---

<sup>1</sup> United Nations Declaration on the Rights of Indigenous Peoples (A/RES/61/295), 2007.  
<https://www.un.org/development/desa/indigenouspeoples/declaration-on-the-rights-of-indigenous-peoples.html>



## Approach

The costing model developed in this research takes the approach of modelling per full-time-equivalent (FTE) student costs (related to instruction, program types, research intensity, academic and administrative infrastructure, student support services, size and the accompanying economies of scale and scope) needed to provide First Nations students with a post-secondary education that is comparable to that provided by a mainstream or Western<sup>2</sup> public post-secondary university. This costing model also recognizes and incorporates the unique features of education offered through First Nations post-secondary Institutions, which (1) are governed by frameworks that reflect First Nations culture and values; (2) embody epistemology and pedagogy specific to First Nations; (3) operate with a different model of student support and services; and (4) are committed to the preservation of First Nations history, culture, and language.

To inform the development of a costing model for First Nations post-secondary Institutions, Directions gathered information using the following methods:

- Literature review to inform understanding of (1) the unique features, objectives, and needs of First Nations post-secondary education, and (2) post-secondary costs and cost functions
- Environmental scan of FNIs (interviews and document reviews) to understand post-secondary education practices and models in FNIs and to gather enrolment and expenditures information
- Review of publicly available data on expenditures from the mainstream public post-secondary sector to identify the major activities in post-secondary education and associated costs

This project adheres to the First Nations principles of Ownership, Control, Access, and Possession (OCAP™), a process that ensures participants make decisions regarding why, how, and by whom information is collected, used, or shared.

## Literature Review

Directions conducted a literature review on the unique needs and factors in creating, operating, and maintaining Indigenous-controlled post-secondary institutions. Approximately half of the literature was devoted to the participation of Indigenous learners in mainstream post-secondary institutions, while the other half focused on Indigenous institutions established as a mean for Indigenous communities to “reclaim their cultures and languages and require educational programs that are responsive to their worldviews, histories, contemporary circumstances, social systems, and knowledge systems” (Aboriginal Institutes’ Consortium (AIC), 2005, p. 2).

## Success in Post-Secondary Education

The educational gap between Indigenous and non-Indigenous people has been decreasing (Canadian

---

2 “Mainstream” or “Western” institutions in this report refer to public institutions that are not Indigenous-owned, -operated or -mandated.



Council on Learning, 2009), but differences in educational attainment remain, many of which can be attributed to the barriers and challenges (geographical, historical, cultural, personal, and individual, systemic) that Indigenous learners face in post-secondary education (George (2008, cited in Wilson and Battiste, 2011, p. 39)).

Many Indigenous students persist and succeed in post-secondary education. Walton et al. (2020) identified four groups of factors that might influence students' persistence: social engagement (e.g., relationships with faculty and students, support services and courses and activities free of racism); cognitive supports (e.g., hands-on teaching and learning and academic supports); support for physical challenges (e.g., childcare or financial support); and cultural supports (e.g., culture-based programming and supports from Indigenous faculty). Motl et al. (2018) reported that psycho-sociocultural variables were predictive of persistence, including perceptions of being treated fairly by others, school pride, and ability to deal with homesickness. These factors are reflected in the approaches taken by FNIs.

### **Approaches to Indigenous Post-Secondary Education**

There are two fundamentally different approaches to consider in Indigenous education. One approach is to incorporate Indigenous perspectives, including knowledge, ways of knowing, being, and learning into mainstream post-secondary curricula, student services, policy, and strategic planning. The process of Indigenization, decolonization, and reconciliation includes efforts to increase understanding of Indigenous history, culture, and values by faculty, staff, administration, and students; building relationships with Indigenous communities; increasing the use of successful methods of instruction for Indigenous learners; and the promotion of social inclusion.

First Nations post-secondary institutions have a different approach, which is to design the post-secondary experience from the core to reflect the goals, culture, and values of Indigenous people. Indigenous-controlled post-secondary institutions are “a unique and complementary pillar” in Canadian post-secondary education that deliver programs that respond to the demands of Indigenous communities and students (Indigenous Institutes Consortium [IIC], 2019, p. 4). These institutions, mandated by Indigenous communities, provide culturally responsive and holistic programming. Instead of “Indigenizing” an existing Western approach to post-secondary curricula, student services, and policy, this approach involves planning FNIs based upon Indigenous perspectives, including knowledge, ways of knowing, being, learning, and doing. The second is a more ambitious approach, but one that grows out of the identities and epistemologies of Indigenous people.

Hill (n.d.) examined Indigenous institutes in Canada and internationally, observing that such institutes have three unique features: responsiveness, flexibility, and accessibility. They are demand-based, developed to address the needs of Indigenous communities in the labour market – both within and outside of the communities. They use a flexible programming model, delivering community-based programs that are in line with Indigenous learning styles and are culturally based. These institutes typically serve adult learners, who are often parents seeking a post-secondary education or returning to university after years of being away.



## Costs

There is little to no literature on the actual costs associated with Indigenous-controlled post-secondary institutions. Part of the challenge in identifying the true costs is that most FNIs operate in an environment where there is unstable and inadequate funding for education (e.g., AIC, 2005; FNEESC, 2008; Malatest, 2002; Richardson & Blanchet-Cohen, 2000; Storytellers' Foundation & Gitxsan Wet'suwet'en Education Society, 2006), and what institutes have spent historically is not necessarily representative of what the true costs of education would be if First Nation institutions were not underfunded.

At the same time, cost factors associated with FNIs have been identified. While First Nation institutions themselves exhibit diversity in their programming, supports, staffing, and the environment in which they operate, there are common threads in their emphases, many of which were highlighted in the AFN's First Nations Post-Secondary Education Review (2018a). The AFN's First Nations Post-Secondary Education Review: 2018 Interim Report (2018b) called for funding in four broad areas of need for First Nation institutions, including:

1. Core support for FNIs
  - a. Governance
  - b. Student services / wrap around services
  - c. Program development and delivery (everything not high school)
  - d. First Nations languages
  - e. Multi-lingual capacity
  - f. Innovation, research, and development
  - g. Infrastructure
  - h. Operations and maintenance
  - i. Additional supports
2. Building community capacity
3. Building regional capacity to support development of First Nations-controlled post-secondary institutions
4. Creating national entities to support the recognition and development of First Nations-controlled post-secondary institutions

These areas of need were reflected in the environmental scan of First Nations institutions.





## Environmental Scan

All FNIs in Canada (84 institutes) identified in collaboration with AFN were invited to share data and reports relevant to the costing analysis. A subset of FNIs, selected by the AFN from each region with FNIs, were invited to be profiled in the costing report. First Nations University of Canada (Saskatchewan), FNTI (Ontario), Kenjgewin Teg (Ontario), Kiuna College (Québec), NEC Native Education College (British Columbia), and Saskatchewan Indian Institute of Technologies (Saskatchewan) are profiled in the full final report. While these FNIs each have their own distinct character, they also share commonalities in their foci, supports, and services. Reinforcing what has been demonstrated in the literature (e.g., IIC, 2019), the profiled FNIs focus their missions on providing learning rooted in Indigenous worldviews, knowledge, wisdom, and values that supports both learners and their communities. Numerous distinguishing elements of FNIs were identified that impact costs:

### Governance

As creations of First Nations, FNIs are designed to reflect the values and worldview of the Nations that have created them and are accountable to those Nations. First Nations institutes are engaged in nation-building. Their “success is measured by social, cultural, political, and economic impact” (Cornell & Kalt, 1998) and, thus, their governing structures and values and practices are different from Western institutions.

Because they are drawing personnel from developing First Nations, building governance capacity engenders costs for First Nations institutions that Western institutions do not have because they can depend upon a wider pool of governors whose preparation has already occurred. The costs borne by First Nations for governance will be greater because the governance framework itself must correspond to the culture and values of the First Nations that control the institution.

The credibility of an institution depends in part on the quality and stability of its leadership. Similar differences will occur at the administrative level. Capacity will need to be developed or obtained elsewhere. Where the latter is necessary, enculturation of administrative staff members will need to occur.

### Student Services / Wraparound Services

FNIs create post-secondary environments where students feel they belong, are welcomed, and will succeed. Institutions have a significant emphasis on meeting and embracing students where they are in their learning journeys. Students are provided with the supports they need to succeed, including academic, spiritual, emotional, cultural, financial, material, and technical support. While students at FNIs represent a diverse range of ages and histories, students may be older, have families, have had negative experiences in mainstream education, be overcoming intergenerational trauma, experiencing socioeconomic challenges, or may have been away from formal education settings for a long time and require services to help them re-engage and succeed in education. Profiled FNIs had staff to actively engage with students to ensure they were supported in any needs, either directly or through referral to other services. FNIs also support students by nurturing their identities and cultural and spiritual connections; this is woven into the curriculum through the design of the content, recognized through practices such as ceremonies, cultural



celebrations, and language-revitalization, and reflected in the Indigenous Elders, knowledge keepers, instructors, and staff.

Students are also supported, to the extent possible, before, during and after their post-secondary education experiences. Lifelong learning for students and communities is generally seen as part of an FNI's mission. Supports provided before post-secondary education may include reducing barriers and facilitating access to post-secondary education (e.g., creating alternative pathways to access programming), or even providing K-12 education that can lead to post-secondary education. Supports provided after post-secondary education include career services that may be available long after students have finished their coursework and programs.

### **Program Development and Delivery**

Within the profiled FNIs, institutions had different emphases in their post-secondary and adult education programming, offering high school equivalency courses; adult upgrading; certificate, diploma, or degree programs; non-credit courses and programs; and/or continuing education. Program offerings were diverse, but all profiled FNIs are focused on developing and delivering course and programs grounded in Indigenous worldviews and designed specifically to respond to and serve Indigenous communities. At the same time, where applicable, programming is also designed so that graduates meet the needs of Western credentialing standards and professional regulation (e.g., early childhood education). To ensure a wide range of opportunities for their students, FNIs also establish pathways from their Indigenously focused programs to Western post-secondary institutions, and have their programs approved by accreditation bodies, which also has additional costs.

Because there is a cultural component to most programs (e.g., from welding to social work), program development is more intensive and costly. Program development teams can include Knowledge Keepers, cultural experts, and subject matter experts. Program development costs may also include the costs to access rare experts in a field needed to develop a programming. There are costs for developing and delivering land-based programming. Culturally restorative practices and ceremonies are often integral to program delivery, which may incur costs for related supplies and for Elders and knowledge keepers to perform the practices and ceremonies.

Class sizes vary but tend to be small. The overall smaller size of the student population means the economies of scale may not be available to the institution.

Some FNIs have articulation agreements with Western post-secondary institutions to grant credentials, and the nature of the agreements affects the costs borne by the FNI. As well, FNIs operate in different contexts in different jurisdictions, with only some provinces having passed legislation to support core funding and accreditation of FNIs (e.g., Saskatchewan Indian Institute of Technologies Act, S-25.11; Indigenous Institutes Act, 2017, in Ontario)<sup>3</sup>; in these contexts, FNIs have developed or are in the process of developing their own accredited programs.



### **First Nations Languages / Multi-Lingual Capacity**

The revitalization of First Nations Language is integral to the mission of First Nations education. This has additional costs that include program development and delivery costs for First Nations languages, such as providing materials and communications (e.g., course materials, program communications, websites) for the institution and programming in First Nations languages, as well as English and/or French, and working with Elders, Knowledge Keepers, and language keepers.

### **Innovation, Research, & Development**

While most FNIs are early in their development of faculty and institutional research agendas, their experts are sought after to contribute to Indigenous research projects outside of their institutions. Profiled FNIs were interested in being able to create or expand their own capacity to conduct research that is responsive to community needs. The cost of research is highly variable, depending upon the nature of the research and the maturity of the educational institution.

### **Infrastructure, Operations, & Maintenance**

While FNIs have many of the same infrastructure, operations, and maintenance needs as mainstream institutions, FNIs do not have the same access to economies of scale that can lead to lower costs for facilities and operations such as classrooms, laboratories, libraries, technological infrastructure, maintenance, and renovations. As well, FNIs build and maintain traditional and sacred spaces for teaching, gathering, and learning; facilities for Elders; traditional gardens; and other elements that are unique to FNIs and incur additional costs.

### **Personnel**

A significant proportion of program staff in FNIs are Indigenous. The competition for qualified Indigenous instructional and non-instructional staff comes from both within (Indigenous and Western post-secondary institutions) and outside of the post-secondary education sector may impose additional institutional salary costs.

Elders, Knowledge keepers, Knowledge holders, and language keepers are integral to FNIs and their communities, with roles in governance, student services, program development and delivery, language revitalization, and research.

### **Building Community Capacity**

Because First Nations educational institutions are engaged in nation-building and in building the capacity of the First Nation(s), their programming responds to the needs of the Nation and the circumstances in those

---

3 Saskatchewan Indian Institute of Technologies Act, S-25.11 <https://publications.saskatchewan.ca/api/v1/products/854/formats/1345/download>. Indigenous Institutes Act, 2017, S.O. 2017, c. 34, Sched. 20 <https://www.ontario.ca/laws/statute/17i34a><https://www.ontario.ca/laws/statute/17i34a>



communities that affect students from those communities. This includes providing learning and engagement opportunities for children, families, and communities. The contextual sensitivity of First Nations educational institutions gives rise to additional costs.

Another dimension of contextual sensitivity is the delivery of courses and programs in communities. Programming needs in communities change over time as the communities develop and Nations are built. Where possible, profiled FNIs deliver programming in communities and are hearing increased demand for access to education delivered within communities. When delivering directly in community, FNIs often hire personnel within those communities; if not, there are additional costs for housing and transportation to have staff in the community. When communities are remote, the additional costs for delivering program in community can be quite high. Costs can be reduced when First Nations have the resources to share program costs. When First Nations do not have resources for program sharing, the full cost is borne by the First Nations institute.

### **Common Costs in Post-Secondary Education**

While FNIs have many distinct elements, they also have many of the same types of resource needs as mainstream Western institutions, perhaps to an even greater degree, with costs related to governance, student services, program development and delivery, research, infrastructure, operations, and maintenance. For instance, all institutions have needs for strategic planning, human resources, academic support for students, mental health supports, program development, student information systems, learning management systems, information technology, libraries, athletics, facilities, and capital renewal. These needs exist regardless of whether FNIs currently can provide such services given the available funding.

## **Review of Expenditure Data from the Mainstream (Western) Post-Secondary Sector**

The premise for the costing estimates is that a First Nations university should be able to provide students with a post-secondary experience and degree-based education that is equivalent to, but not necessarily the same as, that provided by a comparable mainstream (Western) Canadian university. Thus, the relevant costs for operating a First Nations university should be understood to be at least the same as the costs experienced in mainstream Canadian universities. This approach differs from previous approaches to costing because it does not focus on what FNIs have spent for their activities, especially given that they operate with inadequate funding, but instead examines the actual expenditures of Canadian universities.

Another reason for examining the costs in publicly funded universities is that in the post-secondary education sector, for both First Nations and mainstream institutions, there is a lack of consistent, comprehensive data broken down by cost categories that is comparable across institutions to inform establishment, operation, and maintenance costs. One of the more consistent sources of data comes from the Canadian Association of University Business Officers (CAUBO), an advocacy organization that provides advice and support for university financial administrators and business officers. Member institutions, which



are primarily mainstream publicly funded universities, contribute data on finances and expenditures using a common reporting template. Thus, the *Directions* methodology for estimating costs-per-student for a First Nations university is based primarily upon information on expenditures from mainstream, university-level institutions in the CAUBO database and supplemented by information from participating First Nations institutions.<sup>4</sup> Data on post-secondary enrollments, number of faculty, and average salaries for 2015-16 to 2018-19 were obtained from the Statistics Canada Postsecondary Student Information System reports.

Directions examined the four most recent years (2015-16 to 2018-19) of CAUBO data on university expenditures to estimate the costs per student in mainstream publicly funded post-secondary institutions that are most like the type of institution that an FNI would become as a 4-year, degree granting institute. Due to data restrictions, the analysis is based on universities rather than colleges or other post-secondary institutions. Consequently, the costing projections focus on the costs of providing a First Nations university education.

### Examination of Cost Drivers

As a first step to building a costing model for First Nations universities, the institutions in the CAUBO dataset were examined with respect to the main drivers of cost, as the analysis will estimate the extent to which costs should be adjusted for First Nations post-secondary institutions to take account of their structure, objectives, context, or circumstances. This information is subsequently used to build models of “composite” or “prototype” universities that represent a subset of universities that share similar features.

**The key factors that were examined that drive the per-student costs in post-secondary education include:**

#### **Size and the accompanying economies of scale and scope**

Size refers to the capacity to accept student enrolment, and it can be examined with respect to (1) total enrolment, (2) total spending, which will be closely correlated with total income, and (3) total spending per student. For the purposes of this analysis, size refers to student enrolment. Size is a critical cost driver that carries across all the other factors noted below. Increasing size allows for economies of scale and scope (i.e., economies that result from producing multiple types of products) to emerge. These economies of scale could lead to lower operating costs in any of the general functions or activities of a post-secondary institution.

#### **Research intensity**

Institutions that actively pursue research as a strategic goal will generally have higher costs for reasons

---

<sup>4</sup> Data on capital costs for institutional start-up were not available, so are not included in the present analysis. CAUBO reports break down the major activities and costs of post-secondary education into 1) Instruction and non-sponsored research; (2) Non-credit instruction; (3) Library; (4) Computing and communications; (5) Administration and academic support; (6) Student services; (7) Physical plant; and (8) External relations.



such as higher salaries for faculty with a research profile, teaching load reductions where faculty have research responsibilities, and increased operating costs (e.g., non-academic staff, research administration, physical plant, equipment).

#### **Costs of instruction**

- **Compensation for academic staff** (e.g., salary differences across academic disciplines, salary premium for doctoral degrees)
- **Teaching loads** (e.g., lower loads if faculty conduct research, loads differ across disciplines)
- **Employment of part-time faculty** (affected by research intensity or the degree to which an institution can maintain its target enrolment with full-time faculty given its sources of income)
- **Average class size**

#### **Program depth and diversity**

- **Program depth** refers to the number of courses offered in a particular program area (e.g., four-year programs generally require more courses and more specialized courses and will lead to lower average class sizes).
- **Program diversity** refers to the number of different program areas offered and the academic disciplines covered. Programs that generally do not require laboratories, special equipment, or studios (e.g., general arts, humanities, and social sciences) will cost less. Programs that are inherently smaller, such as honours programs, will have higher costs due to lower class sizes.

#### **Academic and administrative infrastructure**

- **Academic infrastructure** (e.g., non-instruction costs for libraries, classrooms, learning commons, labs, studios, information technology, and academic advising and support services)
- **Administrative infrastructure** refers to the systems required to manage and administer an institution (e.g., registrarial functions, recruitment and admissions, record keeping, safety and security, housing, and maintenance of governance structures).

#### **Student support and services**

Student supports and services include administrative, academic, health and wellness, counselling, cultural, financial, and housing supports.

## **Development of a Baseline Costing Model Comparable to First Nations**

### **Post-Secondary Institutes**

The universities in the CAUBO dataset were examined according to the cost drivers to identify a subset of universities in Canada that could best serve as a baseline model or prototype for estimating student costs in First Nations universities. Specifically, the data were examined to find a subset of universities that was most comparable to a First Nations post-secondary institution so that the average costs per student could be examined and adjusted, if necessary, for the unique features of First Nations institutions. The challenge is to



construct subgroups such that within each group the universities are as homogeneous as possible (but distinct from those of other subgroups) while still being a large enough group to provide meaningful information about average costs.

Table 1 summarizes the five dimensions of post-secondary institutions that were used to search for a baseline set of institutions that that are most like what a First Nations post-secondary institution would become as a 4-year, degree granting institute. The table includes metrics that were developed as indicators of the different dimensions of post-secondary institutions. Details on the construction of these metrics can be found in the full project report.

Table 1: Dimensions of Post-secondary institutions

Dimension	What is being measured?	Relation to costs	Metric	Metric codes
<b>Institution size</b>	An indication of the university's capacity to "produce" student enrolments.	Larger size would be expected, to a point, to lower average costs, especially from the presence of economies of scale.	May be indicated by absolute number of enrolled Full-time Equivalent (FTE) students or summarized by defining enrolment size categories.	<p><b>Enrolment (FTE):</b> Full-Time Equivalent student enrolment</p> <p><b>Size Categories:</b></p> <ul style="list-style-type: none"> <li>• 1: 1 – 1500 FTEs</li> <li>• 2: 1501 – 3500 FTEs</li> <li>• 3: 3501 – 6500 FTEs</li> <li>• 4: 6501 – 11000 FTEs</li> <li>• 5: 11001 - 20,000 FTEs</li> <li>• 6: 20001 – 35000 FTEs</li> <li>• 7: 35000 + FTEs</li> </ul>
<b>Research environment</b>	Research intensity indicates the institution's commitment for its faculty to pursue an active, ongoing research agenda	A more research-intensive institution is likely to experience higher costs. More faculty time will be directed to research, thus requiring more full-time and/or part-time faculty to maintain "acceptable" class sizes.	Measures of the amount per faculty member of research funding received from external sources.	<ul style="list-style-type: none"> <li>• <b>RI-1:</b> University Income for research purposes, per full-time faculty member</li> <li>• <b>RI-2:</b> Total income from all sources for research purposes, as percentage of total funds received</li> <li>• <b>RI-3:</b> Total expenditures on research as a percentage of total expenditures for all purposes</li> <li>• <b>RI-4:</b> Research expenditures per full-time faculty member</li> </ul>
<b>Teaching-learning environment</b>	The university's commitment to providing a personal learning experience for students, in which students can get individual attention from faculty in and out of the classroom setting	A component of the costs of instruction. Other things equal (e.g., required teaching load for full-time faculty), the more individualized the teaching-learning environment, the greater number of faculty required.	<ul style="list-style-type: none"> <li>• Ratio of students to full-time faculty, which is a proxy for average class size.</li> <li>• Measures of the resources that the university directs to instruction relative to other purposes.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>SFR:</b> Ratio of FTE Students enrolled to number of full-time faculty in the university.</li> <li>• <b>ADJINSTRU:</b> Adjusted Instruction Cost Index</li> <li>• <b>P-TFAC:</b> Part-time faculty</li> </ul>



Dimension	What is being measured?	Relation to costs	Metric	Metric codes
<b>Program diversity and depth</b>	The proportion of a university's programs that are in areas such as (1) humanities and social sciences; (2) science and engineering; (3) professional studies; and (4) graduate studies.	Programs have different operating and capital costs, including costs for full-time faculty, research support, infrastructure and administration of programs, laboratories, and other equipment.	Measures of where research funding is coming from; especially grants for humanities research and science and engineering research.	<ul style="list-style-type: none"> <li>• <b>HUMINDX</b>: Ratio of humanities-council sponsored research funding to total council sponsored research funding. High: 50% or more of funding from humanities councils. Low: 0 – 19.9 % of funding from humanities councils</li> </ul>
<b>Student constituency</b>	Is there a group of students specifically targeted by the university?	Costs may be affected if unique programs, pedagogies, or student supports are integrated into general studies.	An online search to review an institution's mission and value statements.	<ul style="list-style-type: none"> <li>• <b>P-TENR%</b>: Part-time enrolment percentage. Low part-time enrolment is less than 15%, and high is greater than 30%.</li> </ul>

There are other considerations, in addition to commonality on a particular metric, that are important for identifying a subgroup of universities for a costing model:

1. **Similarity across multiple dimensions.** The subgroup should be as homogeneous as possible, such that the universities in the subgroup should be similar with respect to other dimensions (i.e., when considering universities similar on one metric as a potential subgroup, similarities in other metrics are considered as well for this potential subgroup).
2. **Subgroup size.** Diversity within the subgroup can be reduced by limiting the number of institutions within the group. However, there should be a large enough number of universities in the group to constitute a meaningful sample for investigating costs.
3. **Similarity to First Nations post-secondary institutions.** Most importantly, a subgroup is a better prototype for a First Nation university costing model when the subgroup more closely resembles what might be expected of a First Nation university in several of the dimensions of post-secondary education. Based on previous costing work, the literature review, and the environmental scan, one can conclude that a First Nation university would typically:
  - a. have a lower number of enrollments
  - b. offer a close teaching-learning experience between instructors and students
  - c. understand the commitment of its instructors to teach rather than conduct research (although many FNIs intend to expand their research goals)
  - d. primarily (although not necessarily exclusively) offer programs in the liberal arts and sciences, and
  - e. choose to serve a particular group of students.

The group of universities that most closely meet these criteria and capture these dimensions are those





universities in the lowest-enrolment size group in the CAUBO data (see Size Group 1 in full report). This group is comprised of 11 universities<sup>6</sup> in which average enrolment was less than 1500 FTEs, and, as a group, the universities are broadly similar for most of the metrics for the key dimensions of post-secondary education. For this prototype group, the cost per FTE student is **\$25,100**. Table 2 presents the baseline point for estimating per-student costs for a First Nations university across different post-secondary activities, before adjusting for the unique features of First-Nations post-secondary education.

Table 2: Baseline model for costing before adjusting for unique features of FNIs

Average Annual Expenditures per Full-Time Equivalent Student (adjusted for inflation)								
Instruction and non-sponsored research	Non-credit instruction	Library	Computing and communications summarized by defining enrolment size categories.	Administration and academic support	Student services	Physical plant	External relations	Total functions
\$11,300	\$1,410	\$860	\$820	\$4,920	\$2,160	\$2,730	\$900	\$25,100

## Adjustment of the baseline costing model to reflect First Nations education

Recognizing that First Nations universities will differ from mainstream universities, and that those differences will affect costs, the next step is to adjust the baseline costing model to reflect how costs in First Nations universities might differ from the baseline model universities. The cost adjustments were informed by the literature review and the environmental scan of participating FNIs.

Table 3 identifies three types of adjustments, scale (S), intensity (I), and uniqueness (U), that could lead to First Nations universities having higher or lower costs compared to the prototype universities model.

Table 3. Types of Cost Adjustments

Average Annual Expenditures per Full-Time Equivalent Student (adjusted for inflation)		
<b>Scale (S)</b>	There will be activities or operations that are essentially the same in a First Nations or a mainstream university, but where the costs per student will be higher in a First Nations university due to its smaller scale.	Student information systems are needed in both First Nations universities and mainstream universities but would be scaled down to be appropriate to an institution's level of enrolment.

6 Baseline model universities: Collège universitaire dominicain / Dominican University College, NSCAD University, Université de Saint-Boniface, École nationale d'administration publique, The King's University, Université Saint-Paul / Saint Paul University, University of King's College, Huron University College, Algoma University, St. Thomas More College, Brescia University College.



Average Annual Expenditures per Full-Time Equivalent Student (adjusted for inflation)		
<b>Intensity (I)</b>	Given the mission and constituency of First Nations universities, it would be likely to provide “more” of an activity compared to the mainstream institution, leading to higher per-student costs. The higher costs in this case are not because of a smaller scale of operations, but because of the need to put more resources into the activities.	Wraparound student support services offered in First Nations institutions are more comprehensive than similar supports in mainstream institutions. Another example might be the commitment to a strong teaching-learning environment through a lower student-to-faculty ratio (e.g., smaller class sizes).
<b>Uniqueness (U)</b>	There will be activities and undertakings that are fundamental to a First Nations university’s goals and objectives but are not fundamental to a mainstream institution (notwithstanding Indigenization efforts at mainstream Western institutions). The costs of these will be unique to First Nations universities.	An example might be the role of Elders or ceremonies within the structure of program delivery.

In Table 4, these three cost adjustments (scale, intensity, or uniqueness) are associated with the activities that First Nations universities may perform; these activities are categorized using the major categories of Core Support for First Nations-Controlled Post-Secondary Institutions called for in the *AFN First Nations Post-Secondary Education Review: 2018 Interim Report*. Where there is no code associated with an activity it indicates that no cost adjustments are likely to be needed; per-student costs are no different between a First Nations and a mainstream institution. The list of activities in Table 4 is not exhaustive, but it is a best representation of activities gathered from the information available. The cost adjustments are also not definitive; they are changing and are likely to continue changing. With efforts to support Indigenous learners and Indigenize and decolonize their institutions, Western institutions are taking on more activities that have been uniquely performed by First Nations post-secondary institutions, which will affect the cost adjustments due to uniqueness (e.g., development and delivery of programs from First Nations perspective). The difference is that, currently, such activities are fundamental to the goals and missions of First Nations institutions and not fundamental to Western institutions. However, as Indigenization increases at Western institutions, the cost adjustments for a particular activity may shift from being one of uniqueness to one of intensity at First Nations institutions.

Table 4: Generic activities in post-secondary institutions and cost adjustments for First Nations institutions

Activity	Activity		
	Scale	Intensity	Uniqueness
<b>Governance</b>			
<i>Board of Governors</i>			
Board of Governors; Board Committees; Board administration and staffing			
Community Ethics Board			U
<b>Administration</b>			
President/Institution Head			
Administrative staff and administrative infrastructure	S		



First Nations Post-Secondary Education:  
*A Costing Analysis on the Establishment and Advancement of First Nations*

Activity	Activity		
	Scale	Intensity	Uniqueness
Strategic planning: enrolments, faculty complement, budgets	S		
Legal and reporting requirements	S		
External relations and advocacy	S		
Fundraising and development	S		
Labour relations	S		
Human resources			
Capacity to establish articulation/partnership agreements	S		
Quality assurance, accreditation, professional regulatory recognition, program evaluation		I	
Protocol and communications	S		
Professional development and training for faculty, staff, and administration		I	
Data management systems/ Information technology (IT)	S		
Strategic enrolment management systems	S		
Student information/registrarial management systems	S		
Language training for administrators			U
<b>Academic governance</b>			
Faculty Senate	S		
Strategic planning, academic policy development			
Program development and approval			
Program advisory bodies: faculty, staff, administration			
Student and faculty policies: e.g., academic freedom, intellectual property, student safety, anti-racism			
<b>Other</b>			
Elders, knowledge keepers in governance			U
Recruitment and hiring of First Nations administrative staff			U
Program Advisory Councils - community, elders, industry partners for curriculum review and development			U
<b>Student Services / Wraparound Services</b>			
Administrative support and infrastructure (space, administration/management, counsellors)	S		
Academic support: tutors, mentors, in-class student navigators, expanded classroom time		I	
Administrative support for student councils, student networking, student governance	S		
Counselling: physical and mental health; life-skills; social skills; financial; workplace skills		I	
Recruitment and hiring of First Nations student services staff			U



First Nations Post-Secondary Education:  
*A Costing Analysis on the Establishment and Advancement of First Nations*

Activity	Activity		
	Scale	Intensity	Uniqueness
Support for transition for students who are returning to education after long period of disengagement		I	
Services for students with unique needs		I	
Mentorship with Elders; cultural awareness			U
Supports that are sensitive to the context of students' home communities, recognizing both strengths and trauma that exist in communities			U
Support for transitions to employment		I	
Support for transitions to Western post-secondary institutions			U
Financial support: scholarships and bursaries		I	
Financial support: student fees, books, computers, supplies, living allowances, childcare, transportation		I	U
Emergency fund		I	
Support for traditional practices, ceremonies, food, lived spaces			U
Community partnerships to support students		I	
Communication/promotion to ensure students know what campus supports are available		I	
Communication/promotion to ensure students know what community supports are available			U
Home support for students: awareness of issues such as family literacy, need for food and food security, clothing support		I	
Extra-curricular activities, sports			
Recruitment and outreach to elementary and secondary schools		I	
<b>Program Development and Delivery</b>			
General development of Certificate, Diploma and Degree programs		I	
Development and delivery of programs from a First Nations perspective: incorporating Indigenous learning styles and ways of knowing, history, culture, and traditions across the curriculum			U
Programs/courses in First Nations languages			U
Recruitment and hiring of First Nations instructors and scholars			U
Training for language teachers		I	
Employing alternative ways to assess student knowledge			U
Emphasis on small class sizes		I	
Building pathways to Western post-secondary institutions			U



First Nations Post-Secondary Education:  
*A Costing Analysis on the Establishment and Advancement of First Nations*

Activity	Activity		
	Scale	Intensity	Uniqueness
Recognition of Indigenous prior learning			U
Incorporating Elder and traditional knowledge holders in program development			U
Incorporating traditional practices, ceremonies in programs			U
Programs for adult education, skills upgrading, transition to the workplace			U
Support for internships and co-op positions (school, community); apprenticeship programs		I	
Developing alternative delivery models for on-campus learning, for community-based delivery, for delivery to remote communities		I	
Develop and maintain partnerships with Indigenous communities			U
Information technology camps, science camps, trades camps, language camps			
<b>First Nations Languages</b>			
Development activities and programs to support the retention and revitalization of First Nations languages			U
Translation services			U
Creating language resources			U
Documenting languages			U
Home-community language programming, language mentorship initiatives			U
Development and delivery of language immersion programs			U
Recruitment and Hiring of Language and Culture teachers			U
Development and delivery of language teacher programs			U
<b>Multi-Lingual Capacity</b>			
Recruitment, hiring teachers, specialists, and staff			
Training and professional development			
Research and development of language materials, resources			
Translation services		I	
Program and service delivery in multiple languages, i.e., French, Cree, Mohawk, Onondaga, Blackfoot, English			U
Program and service delivery in French language			
<b>Innovation, Research and Development</b>			
Innovation, pilot projects			
Curriculum research and program development			
Research chairs, capacity to supervise research			
Policies on research ethics			



First Nations Post-Secondary Education:  
*A Costing Analysis on the Establishment and Advancement of First Nations*

Activity	Activity		
	Scale	Intensity	Uniqueness
Research review and ethics board			
Research administration and management systems	S		
Research external relations: promoting, institutional success, student profiles, student success	S		
Elders and Knowledge Keepers inclusion in research design and execution			
Research in First Nations languages, histories, cultures			U
Community research - responsive to community needs			U
Elders/traditional leaders recognition program			U
Protection of Indigenous intellectual property, recognized authority		I	
Community development and well-being, holistic well-being for community		I	
<b>Infrastructure, Operations, and Maintenance</b>			
Physical and digital, indoor and outdoor learning spaces	S		
Libraries; learning commons; wireless communications systems	S		
Study rooms, space for academic research	S		
Trades facilities, health labs, science labs, technologically enhanced labs and facilities	S		
Office space, board rooms, meeting rooms	S		
Housing, childcare centres		I	
Gyms and auditoriums	S		
Libraries and resource centres; physical and digital document archives		I	
Counselling centres		I	
Access and accommodation for special or unique needs students		I	
Elder centres			U
Physical facilities, virtual and land-based learning spaces, mobile classrooms, maintaining traditional structures			U
Sacred spaces within and outside, teaching and ceremonial spaces, gathering places			U
Theatre, amphitheatre, gathering places, traditional gardens		I	U
Architectural design and new construction to incorporate geothermal and green energy		I	
Training for operations and maintenance, physical and virtual, geothermal and green energy		I	
Renovations, expansion maintenance, and repairs	S		
Network capability to deliver programming remotely		I	



Activity	Activity		
	Scale	Intensity	Uniqueness
Technology, computer labs, laptops and tablets for students, printers, internet access	S		
Transportation			U

Given this scan of the cost-generating activities in post-secondary education, the approach to cost adjustments for First Nations universities is to estimate whether the costs for a First Nation university might be higher or lower than the corresponding costs in the baseline group of mainstream universities in light of information and research about the activities listed in Table 4. There is no information available on the costs of these activities at the level of detail shown in Table 4, so Directions' modelling of cost adjustments must work from a less detailed, more aggregate/high-level perspective. In the following sections, the size of cost adjustments for scale, intensity, and uniqueness are considered based on existing information.

### Cost Adjustments Due to Scale

Economies of scale describe what happens to the average costs of producing a good or service as the "productive capacity" of the producer grows. In the case of universities, increasing scale refers to increasing the capacity to take on more students by expanding any or all the resources needed for "producing" the educational experience. These resources include teaching staff; administrative and maintenance staff; equipment such as computers, desks, and laboratory equipment; library materials such as books and periodicals; supplies and other materials; laboratory or studio space; physical plant; infrastructure such as library space; land; buildings; and the capacity to manage functions such as admissions, registration, student records, and student supports.

Economies of scale occur when the increase in size (productive capacity) results in a reduction in the average costs of educating a student. As productive capacity is increased, efficiencies may be realized by specialization of work processes and by the introduction of technologies, resources (plant and equipment), and processes that are only workable, feasible, or financially viable at larger scale of production. However, there may be limits to the ability of technologies or production processes to reduce costs, at which point increasing size leads to higher average costs, also known as diseconomies of scale. As well, if an institution is not large enough to achieve economies of scale, there is a cost penalty associated with small scale.

The higher costs from small scale (enrolment size in this analysis) are already built into the cost and expenditures structures for institutions contributing to the baseline model. First Nations universities are likely to be smaller still, and the question is whether and what further cost penalties might be expected. To address this, three scenarios of cost adjustments for scale are considered that occur in the early stages of transition from an institution's current state to a long-term steady state as a university:

1. **High cost penalty:** A first possibility is that scale economies are most pronounced in the early stages of growth and begin to level off at larger sizes. There is some evidence for this in the empirical work. If this is the case, sizes below that of the baseline group would experience even sharper penalties than those of the baseline group. In this scenario cost adjustments of 20 – 30% might hold (e.g., Brinkman & Leslie, 1986).



2. **Medium cost penalty:** A second possibility would be that average costs decrease at a steady rate, from start-up to the point when the greatest efficiencies of scale are achieved (also called the Minimum Efficient Scale). In this case, extrapolating backwards from the known cost penalties would provide an estimate of cost adjustments at smaller sizes. This would suggest a cost adjustment for First Nations universities, compared to the baseline group, in the order of 7 – 10% (Dickson, 1994).
3. **Low cost penalty:** The third possibility is that scale economies do not begin until a certain threshold size has been reached. For scales of operation below that, average costs are constant. If this threshold is, for instance, 25% of average size, then the cost penalty for a size that is 5% or 10% of the average size is no different than the cost penalty for an institution that is 25% of the average size. If this is the case, and assuming that 25% of average size is in the range of enrolments of in the baseline group, then the average costs for First Nations universities, although they may be half the size of the baseline group universities, would be broadly the same as in the baseline group. There might still be 2 – 3% higher costs associated with smaller scale because fixed costs cannot be spread across as much enrolment.

Estimates of the cost adjustments for each of these three scenarios is shown in Table 6 (p. 26) under Cost Penalty (Scale).

## Cost Adjustments Due to Intensity and Uniqueness

### Adjustments for instructional costs

The costs of instruction are an area where First Nations universities might be expected to use more resources than comparable mainstream universities. There are many factors that affect adjustments, and their interplay is complex. There are several factors that will drive the institution's total costs of instruction and the cost adjustments considered:

- Type of programs that are offered and the breadth of offerings in the programs: Operating costs for programs will differ across disciplines (e.g., between science and humanities), and will increase as the number of course offerings in each program are increased.
- Total compensation for academic and non-academic staff participating in instruction: Total compensation costs for the institution will be shaped by the salary rates for teaching faculty, which are an outcome of academic labour markets. Salary rates differ across academic disciplines which, again, brings in the types of programs offered as a factor in total compensation costs. Salary rates will also differ for doctoral-, masters-, and baccalaureate-trained teachers.
- Total compensation costs in the institution will also be affected by factors such as the teaching loads of full-time faculty, research expectations for faculty, mix between part- and full-time instructors, and average class size.

Some of the factors that will affect short-run and long-run salary costs are:

- The speed with which First Nations post-secondary institutions add university-level course/





programs, and how many programs are added (i.e., the timing and extent of increases during transition stage).

- Total enrolment, and the distribution among college, university, and other programs.
- Availability of research grant funding from the major granting councils.
- Development and offering of graduate programs in First Nations universities. This, along with research grant funding, will affect the teaching and research responsibilities of faculty, which in turn affects teaching load.
- Course offerings, and the distribution among college-level, university-level, and other offerings.
- Number and type of university programs where (a) First Nations universities require only Indigenous faculty (e.g., language or history/culture programs); (b) non-Indigenous faculty may be appropriate; (c) college-level instructors may be acceptable for a time; and (d) instructors outside of the academic disciplines (e.g., Elders, Knowledge Keepers) are appropriate and/or required.
- Demand for Indigenous faculty by Western post-secondary institutions (within and outside of Canada). How great is this demand and how long is the demand?
- Response of First Nations universities if Indigenous scholars command a premium salary. For instance, will First Nations universities use part-time faculty, college faculty, or instructors from outside the traditional academic disciplines?
- Time required to expand the pool of doctoral trained Indigenous students. This may take many years.
- Factors such as faculty unionization and the requirements for accreditation and quality assurance.

Two other factors must be considered for estimates of cost adjustments due to salary costs: (1) academic salaries comprise approximately 2/3 of instructional costs, and (2) average faculty salaries will result from the mix of salaries of faculty members of different ages, ranks, and disciplines. For simplicity, the estimates for cost adjustments will assume that the faculty complement is equally distributed, with 1/3 of the complement in each of junior, intermediate, and senior ranks and salary ranges.

Considering the present uncertainty and unpredictability of these factors, three models for adjustments for instructional costs are proposed:

1. **Short-run adjustment.** This model is most likely to be relevant to the short-run transition stage. In this model, salary costs are less than that of the baseline group institutions because: in the initial stage of expansion, it may take time to for programs and courses to build up to requiring university-level faculty; difficulties in hiring may lead to a significant proportion of faculty who are college-level instructors or part-time instructors; and it is likely that in the initial stages of university development the faculty who are hired will be at the early stages of their career.

For estimates in this case, it is assumed that the First Nations universities will in the short run hire a mix of junior faculty and college instructors. College-instructor salaries average 65% of full-time faculty salaries, and entry-level salaries are around 80% of overall average faculty salaries (see full report). Thus, salary costs will be 35% lower than the overall faculty average for the baseline model, and instructional costs will be 56% of the baseline group instructional costs; the result is a 44% reduction in salary costs compared to the baseline model.



2. **Medium-run adjustment.** This model is intended to capture the period when (a) First Nations universities have largely passed through the early transition stage and are looking primarily to hire Indigenous faculty who are PhD trained; (b) the First Nations universities are in competition with Western institutions and other organizations for employing Indigenous scholars; and (c) there are still too few Indigenous scholars coming out of graduate programs to meet the demand. In this case it is more difficult to predict what might happen to salaries for Indigenous faculty because many of the factors noted above would come into play such as the strength of demand from other institutions, the mix of programs in the First Nations universities; or how hiring decisions in First Nations universities would be affected by higher faculty salary rates. One can, however, be confident that there will be upward pressure on salaries for Indigenous scholars.

To estimate the effect on the salary rates for Indigenous faculty, average 2017/18 salaries in selected disciplines were examined for full-time faculty (Canadian Association of University Teachers, 2019a, 2019b). The salaries for disciplines that might be considered high demand (science, engineering, business) are approximately 15% higher than for disciplines in the humanities and liberal arts. For this medium-run case, it is assumed that First Nations universities are trying to establish a faculty complement that is predominately comprised of Indigenous scholars, and that their hiring is at the level of junior faculty. If junior faculty salary rates for Indigenous scholars increase by 15% (and under the same modeling assumptions as in the long-run adjustment model) and hiring is predominantly of those candidates, the effect would be that salary costs for First Nations universities would be 10% lower than the overall average for the baseline group universities. This translates into a reduction in instructional costs of 6.7%.

3. **Long-run adjustment.** This model assumes that the transition stage is complete and that there is an ongoing cohort of Indigenous scholars sufficient to meet the demands of both First Nations and Western institutions. It also assumes that First Nations universities have increased their faculty hiring and have a mix of junior, senior, and intermediate faculty. This is a long-run, steady-state perspective. However, even in those circumstances we might predict that faculty salaries paid in First Nations universities will be higher than the average in the baseline group institutions. For one, there will be a salary premium for academics in high-demand, low-supply areas, which Indigenous faculty are likely to be for some time (universities and colleges are not the only source of demand for Indigenous scholars). Data from the Canadian Association of University Teachers (2019a, 2019b) show that areas in high demand such as business, science, engineering, and legal command above-average salaries, while areas such as English, liberal arts and humanities, and languages are below average. These latter are the areas that most characterize the baseline group universities. Second, the assumption is that First Nations universities will be predominantly hiring Indigenous faculty. Given these considerations, it does not seem unreasonable to model a salary premium of 10% higher than the baseline group salary costs, which would be reflected as a 6.7% increase in instructional costs.



### Adjustments for student-to-faculty ratios

Another component of instructional costs in which adjustments should be considered is the size of the faculty; specifically, the number of faculty per student. First Nations post-secondary institutions participating in this research all valued a close teaching-learning experience for their students, and one aspect of this is a desire to maintain a low student-to-faculty ratio. This was not expressed explicitly as a target student-to-faculty ratio, but the view was that a First Nations institution would maintain a lower student-to-faculty ratio than mainstream universities.

To estimate the costs of reducing the student-to-faculty ratio, the ratio was regressed against instructional costs per student for the universities in the CAUBO sample. Over all universities, the result was that a 1% decrease in the student-to-faculty ratio generated a .6% increase in instructional costs per FTE student. Further, keeping in mind that the baseline group universities are generally liberal arts institutions, the student-to-faculty ratio was regressed against instructional costs per student for the universities where the Humanities Index (HUMINDEX, see Table 1) was High or Medium. For those universities, the result was that a 1% decrease in the student-to-faculty ratio generated a .8% increase in instructional costs per FTE student.

For modelling cost adjustments, three cases are proposed:

- **Low:** A 5 % reduction in the student-to-faculty ratio (from 19 to 18.1) would increase average instructional costs by 4%
- **Medium:** A 10% reduction in the student-to-faculty ratio (from 19 to 17.1) would increase average instructional costs by 8%
- **High:** A 15% reduction in the student-to-faculty ratio (from 19 to 16.2) would increase average instructional costs by 12%

### Additional cost adjustments to activities due to intensity and uniqueness

First Nations post-secondary institutions perform numerous activities and offer many services in greater amounts (intensity) or that are fundamental to the nature of First Nations institutions (uniqueness) but not to Western institutions. Although First Nations post-secondary institutions may experience competition for students and personnel from Western institutions, First Nations institutions take a different approach to building programs and delivering services from the ground up with an Indigenous worldview. Indigenous ways of knowing, being, and doing are embedded into the learning experience, and the entire programming and post-secondary experience is Indigenous-focused. At the same time, First Nations institutions experience many of the same needs as Western institutions, but perhaps to a greater degree than at Western institutions (e.g., in student mental health supports).

The cost adjustments to the prototype model for these distinct features (e.g., student services, program development and delivery, First Nations languages), are primarily of adjustments of intensity or uniqueness (see Table 4). Directions' research could locate no literature or data about the magnitude of intensity and uniqueness cost adjustments for First Nation universities. However, the discussions with profiled First Nations institutions and the literature review can inform cost adjustments for intensity and uniqueness. For example, program development that requires high levels of expertise on Indigenous traditions and culture may find it difficult to find experts. Program delivery to remote communities will entail additional costs. A challenge for translating this information into estimates of cost adjustments is that these estimates of



higher costs are what we might call “gross” rather than “net.” That is, one should allow for the possibility that some activities undertaken in mainstream institutions will not be undertaken in a First Nations university, and that in effect the First Nations university will be reducing its costs in some areas. Nonetheless, from the literature, documents and reports, and interviews, Directions suggests that models of a net 4% (low), 6% (medium), and 8% (high) cost adjustment for intensity and uniqueness would be appropriate. While adjustments of intensity and uniqueness will be found across many different activities and areas requiring support, they adjustments are mostly concentrated in instruction and non-sponsored research and in student services; this is where they will be applied in Table 6, which breaks down the cost adjustments.

### Summary of Cost Adjustment Estimates

The cost adjustments and adjustment levels can be summarized as follows:

- (1) **Cost penalty arising from small scale**
  - a. High: scale economies are most pronounced in the early stages of growth and begin to level off at larger scales
  - b. Medium: average costs decrease at a steady rate, from start-up to the point when the greatest efficiencies of scale are achieved
  - c. Low: scale economies do not begin until a certain threshold size has been reached
- (2) **Cost of instruction:** higher costs for faculty or instructor compensation (an intensity adjustment)
  - a. **Short-run:** initial expansion stage to become a university-level institution
  - b. **Medium-run:** partway through transition to university-level institution
  - c. **Long-run:** transition to university-level is complete
- (3) **Student-to-faculty ratio:** higher costs due to reductions in the student-to-faculty ratio (an intensity adjustment)
  - a. **Low:** A 5% reduction in the student-to-faculty ratio
  - b. **Medium:** A 10% reduction in the student-to-faculty ratio
  - c. **High:** A 14% reduction in the student-to-faculty ratio
- (4) **Intensity and uniqueness:** higher costs because of the greater intensity and/or the



uniqueness of many activities undertaken by a First Nations university.

- a. **Low:** 4% higher costs
- b. **Medium:** 6% higher costs
- c. **High:** 8% higher costs

### Cost Adjustment Scenarios for First Nations Universities in the Short, Medium, and Long Run

Table 5 summarizes cost adjustments along with the magnitude of the adjustments for three possible scenarios ranging from the short-term to the long-term:

- **Scenario 1 (short-run)** models what might take place in the short-run when the cost penalty is high (First Nations institutions have not had time to adjust physical capacity to scale), compensation costs for instruction are lower than the baseline group average because institutions have not yet employed university-level faculty; only small adjustments in the student-to-faculty ratio are feasible in the short-run; and cost adjustments for intensity and uniqueness are low, as institutes are in the transition stage.
- **Scenario 2 (medium-run)** is a medium-run case when institutions are increasing their hiring of university-level faculty, but at the junior level; institutional size is increasing so that the cost penalty is reduced; and there are greater opportunities for First Nations institutions to provide more intensive and unique courses, programs, and services.
- **Scenario 3 (long-run)** represents the possibilities for the long-run, steady-state institution. As First Nations institutions approach the scale of the baseline group universities, cost penalties are further reduced; faculty are distributed across the ranks of junior, intermediate, and senior ranks; and institutions can engage more fully in distinct programs, support services, and other activities unique to a First Nations university.

Each scenario models a combination of adjustment levels for each of the four adjustment categories and sums the costs across the four categories.

Table 5. Summary of three cost adjustment scenarios for costs per FTE student

Adjustment Scenario	Adjustment				Average cost per FTE
	Cost Penalty (Scale)	Costs of Instruction	Student-Faculty Ratio	Intensity & Uniqueness	
<b>Scenario 1: Short-run</b>	High +25%	Short-run -44%	Low +4%	Low +4%	\$23,894
<b>Scenario 2: Medium-run</b>	Medium +10%	Medium-run -6.7%	Medium +8%	Medium +6%	\$27,942
<b>Scenario 3: Long-run</b>	Low +3%	Long-run +6.7%	High +12%	High +8%	\$29,959



# First Nations Post-Secondary Education: A Costing Analysis on the Establishment and Advancement of First Nations

Table 6 breaks down the Table 5 cost adjustments, showing how they are applied to the prototype costs (\$25,100 per FTE student) to provide an estimate of per-student costs after adjustments. For each adjustment category, cost adjustments apply to select activities:

- (1) Cost penalties apply to all major expenditures except for the costs of instruction.
- (2) Costs of instruction adjustments do not apply to any of the other major activities. For the costs of instruction, the cost adjustments apply to 67% of the baseline costs.
- (3) Student-to-faculty ratio cost adjustments are applied to the adjusted salary cost estimates.
- (4) Intensity and uniqueness cost adjustments will be spread across all the major cost areas. For example, new programs will generate increased costs for instruction and for libraries and academic support. However, it is most likely that the great majority of additional costs will be in the areas of instructional costs (e.g., program development and delivery) and student services (wraparound support). For simplicity, the cost adjustment model will assume that 50% of the proposed adjustment costs will be in instructional costs and the other 50% in student services.

The last rows in Table 6 are the breakdowns of cost adjustments estimates for different possible scenarios (short-run, medium-run, and long-run). The adjusted estimates for per-student costs depend upon estimates of the cost adjustments for each of the four adjustment categories (cost penalty; costs of instruction; student-to-faculty ratio; intensity and uniqueness) and the construction of each summary scenario (short-run, medium-run, long-run), which incorporates all adjustments. The magnitude of the component adjustments can be changed in the model if any of the underlying assumptions change (for instance, if in the long run, First Nations universities do not approach the scale/size of the baseline group institutions, a higher cost penalty can be used in the model).

Table 6: Breakdown of Cost Adjustments by Category of Activity

Adjustment Level	Average Annual Expenditures (adjusted for inflation) per FTE Student									
	Adjustment Size	Instruction & non-sponsored research	Non-credit instruction	Library	Computing & communications	Administration & academic support	Student services	Physical plant	External relations	Total
Baseline group	Average Annual Expenditures for Size Group 1 Prototype before Adjustments									
	n/a	\$11,300	\$1,410	\$860	\$820	\$4,920	\$2,160	\$2,730	\$900	\$25,100
1. Cost Penalty (Scale)	Average Annual Expenditures for Size Group 1 Prototype before Adjustments									
High	+25%			+\$215	+\$205	+\$1,230	+\$540	+\$683	+\$225	
Medium	+10%			+\$86	+\$82	+\$492	+\$216	+\$273	+\$90	
Low	+3%			+\$26	+\$25	+\$148	+\$65	+\$82	+\$27	
2. Costs of Instruction	Average Costs of Instruction Adjustment									



## First Nations Post-Secondary Education:

### *A Costing Analysis on the Establishment and Advancement of First Nations*

Adjustment Level	Average Annual Expenditures (adjusted for inflation) per FTE Student									
	Adjust-ment Size	Instruction & non-sponsored research	Non-credit instruction	Library	Comput- ing & communi- cations	Adminis- tration & academic support	Student services	Physical plant	External relations	Total
Short-run	-44%	-\$4,972	-\$620							
Medium-run	-6.70%	-\$757	-\$94							
Long-run	+6.70%	+\$757	+\$94							
<b>3. Student-to-Faculty Ratio (S:F)</b>	<b>Average Student-to-Faculty Adjustment applied to Costs of Instruction</b>									
Low (5% S:F reduction)	+4%	+\$253	+\$32							
Medium (10% S:F reduction)	+8%	+\$843	+\$105							
High (15% S:F reduction)	+12%	+\$1,447	+\$181							
<b>4. Intensity and Uniqueness</b>	<b>Average Student-to-Faculty Adjustment applied to Costs of Instruction</b>									
Low	+4%	+\$502					+\$502			
Medium	+6%	+\$753					+\$753			
High	+8%	+\$1,004					+\$1,004			
<b>FNI-U Adjustment Scenarios</b>	<b>Average Annual Expenditures After Adjustments in Three Scenarios</b>									<b>Total</b>
<b>Scenario 1: Short-run</b>		\$7,083	\$821	\$1,075	\$1,025	\$6,150	\$3,202	\$3,413	\$1,125	<b>\$23,894</b>
<b>Scenario 2: Medium-run</b>		\$12,139	\$1,421	\$946	\$902	\$5,412	\$3,129	\$3,003	\$990	<b>\$27,942</b>
<b>Scenario 3: Long-run</b>		\$14,508	\$1,685	\$886	\$845	\$5,068	\$3,229	\$2,812	\$927	<b>\$29,959</b>

First Nations post-secondary institutions have great diversity while sharing a commitment to being accountable to First Nations; First Nations ways of knowing, being, and doing; creating environments where Indigenous students feel welcome, supported, and successful; and preserving and revitalizing First Nation history, culture, and language. They are fundamentally designed to serve First Nations students and communities and are the embodiment of the right to control educational institutions that serve First Nations peoples.

There are many possible routes and structure for transitions from current First Nations post-secondary institutions to fully developed First Nations universities. This research has developed a 'best estimate' of per-student operating costs for a four-year First Nations post-secondary education institution based on available data. It considers structural and operational differences between a First Nations post-secondary institution and a Western post-secondary institution and provides a reference point for regional and national strategies for the support of First Nations post-secondary institutions.



To learn more, please visit: [www.afn.ca/policy-sectors/education](http://www.afn.ca/policy-sectors/education)



55 Metcalfe Street  
Suite 1600, Ottawa  
Ontario K1P 6L5  
Tel: 613.241.6789  
Fax: 613.241.5808  
Education@afn.ca