

COVE WORKFORCE INITIATIVE

STUDENT INTENTIONS AND PERCEPTIONS STUDY 2019

Executive Summary Report prepared by the

Centre for Ocean Ventures and Entrepreneurship (COVE)

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Centre for Ocean Ventures and Entrepreneurship (COVE)

COVE Workforce Initiative (formally known as Marine People Partnership)

The Centre for Ocean Ventures and Entrepreneurship (COVE) is an ocean tech business hub that encourages collaboration across sectors to connect local, national and international companies in the ocean industry. We are a catalyst in creating the world's next commercial and revolutionary ocean tech advances by bringing together people, ideas, industry and research.

Strategically located on the Halifax Harbour, more than 55 companies are located at COVE, ranging from small ocean technology start-ups to large companies. The companies are focused on all sectors of the ocean economy – transportation, energy, fishing & aquaculture, marine tourism, and defence & security. The programs, facilities and services offered through COVE brings the ocean technology cluster together to advance the competitive position of members in the global oceans industry.

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Dr. Sherry Scully

Table of Contents

Executive Summary	7
Introduction	10
Follow-On Study	10
Research Objectives	11
Modifications to the Original Survey Tool	12
Sample Group	14
Methodology.....	14
Data Analysis.....	15
Sample Groups Demographic Data:.....	17
Gender	17
Grade	17
Participation by Regional Centre of Education:	18
Did any of your parents or guardians go to College or University or do they go now?	19
Post-Secondary Pathway Intentions	21
After I finish high school I would like to: (pathway).....	21
By gender	22
By grade	23
The effects of whether parent(s)/guardian(s) went or are currently going to College/University on students’ pathway intentions	24
I think the best way to get ideas about my future goals and job choices is from.....	25
By gender	26
Skill & Experience Building.....	27
What jobs are you most interested in doing when you are older?	29
By Grades 10-12	31
Course Selection and Pathway Alignment.....	33
Gap Year	34
By gender	35
By grade	36
By ethnicity	36
If you wouldn’t consider a gap year, explain why not.....	38
Interprovincial Mobility:	39
After I finish high school I would like to: (mobility)	39
By gender	39

By grade	40
Long-Term Mobility	40
Ocean-Oriented Education and Careers	41
Types of Careers in the Marine Industry	41
Are you interested in a job in the marine industry?	42
By gender	42
If you're not interested in a job in the marine industry, explain why:.....	43
By gender	44
What word or phrase do you think of when you hear the term "Ocean Economy"?	45
Interest in Careers in Skilled Trades and Technology	46
Do you know someone who works in a skilled trade?	46
By grade:	46
Are you interested in a skilled trade?.....	47
By gender	47
By grade	48
Effect of Knowing Someone in a Skilled Trades Job on Student Interest in Skilled Trades Jobs	49
Perceptions of Skilled Trades	50
What statements do you believe to be True/False about skilled trades?.....	50
The Influence of Perceptions on Interest in Skilled Trades Job	53
Perceptions of Career Opportunities in Nova Scotia	55
Do you have family or friends who live in Nova Scotia but work in another province?	55
Interprovincial Mobility	55
Which statements do you believe are true or false about jobs in Nova Scotia?	55
Career Consideration Drivers	59
Urban vs. Rural	61
Mobility interests	63
Effects of Parental Education on Pathway Intentions in Rural and Urban Youth	64
Career Interests.....	65
Perceptions of Skilled Trades Roles.....	65
Jobs in Nova Scotia	67
Insights & Recommendations	69
Main Findings.....	69
Career Coaching	69
Marine Careers.....	69

Centre for Ocean Ventures and Entrepreneurship (COVE)

Skilled Trades	70
Entrepreneurship	70
Gender and Career Literacy	71
Competency Development	71
Bibliography	73
Appendix A: Career Categories.....	77

Executive Summary

In March 2019, in partnership with the Department of Education and Early Childhood Development (EECD), a study was initiated involving students in grades 6-12 across the province of Nova Scotia. The Student Intentions and Perceptions survey was launched for voluntary/non-mandatory participation across English, French, and MK schools, and received 4,042 responses – a nearly 15% response rate.

Understanding the perceptions of marine-related and trades/technology careers among today's youth and understanding their intentions and influences will provide useful insights to inform recommendations for the design of future awareness/exposure building initiatives and career development programs to help us shift the dial on this workforce challenge.

This follow-on study to the original 2016 province-wide study, surveyed the original cohort of youth (now in grades 9-12) to determine if and how attitudes and perceptions have changed or evolved in the interim years, and determine if there is evidence of strategic influence from career counseling initiatives and efforts. The study also surveyed youth in grades 6-8, like the original study. This provided a data set for a comparative analysis of change in attitudes, perceptions and intentions. Like the original study, the new data was analyzed for insights into understanding when and how career perceptions are formed, and optimal periods/strategies for targeting career counseling and awareness and exposure building programs. Like the original study, this current survey was also meant to measure any progress of awareness among students in Nova Scotia specifically towards marine-related and trades/technology careers, as well as intentions relating to interprovincial mobility, and optimism in labor market participation.

The survey tool was comprised of 18 key questions that solicited responses to key constructs relating to awareness, intentions, perceptions, and attitudes regarding careers in the region generally, and careers relating to the marine industry and skilled trades and technology roles specifically. This survey data provided insights into:

- The perceptions young people have of non-traditional education and career pathways
- How and when these perceptions are formed
- Insights into who has the strongest influence over young people's career and mobility intentions
- Young peoples' perceptions of minimum requirements for jobs and education
- Attitudes regarding work-integrated learning opportunities and gap year options (new to this study)
- Changes in attitudes among students in Nova Scotia compared to the 2016 survey

This report provides a detailed analysis of the data, a comparative analysis between the former and current studies, a comparative analysis of urban and rural data, and a summary of insights and recommendations for career literacy interventions and programs aimed at grade 6-12 cohort. Among the key findings of this study are:

- 40% of students responded that they intended to stay in Nova Scotia, while roughly 29% of students intended to leave, and 31% did not know. Like the original study, the data suggests that the intention to leave is not as a result of a push from the region (i.e., due

to poor economic conditions, and poor employment prospects), but rather a pull to other regions (i.e., the allure of mobility itself, powerful socialization and normalization of mobility options). There is no significant change in student intention to stay/leave Nova Scotia compared to the 2016 survey.

- The question of mobility was addressed a second time towards the end of the survey to evaluate consistency of response. Like the original study, both the intention to leave and intention to stay in Nova Scotia decreased, while uncertainty increased significantly. The change effect was equally pronounced among urban and rural students. This indicates that the survey itself provoked students to think more critically about their future options. It also demonstrated the malleability of youths' attitudes and intentions when they are given an opportunity to consider new information, ideas, and pathways. This in turn illustrates the potential influence of career literacy initiatives to broaden young peoples' exploration of career options.
- Responses demonstrated that students form strong early biases against certain education and career pathways, and a correspondingly strong bias towards a socially-endorsed academic pathway – even without a specific career/credential outcome in mind. Roughly 60% of students intended to pursue a University pathway upon graduation, although this intention did not always align with an expressed career intention (i.e. not sure what I want to do, but I want to go to University; I want to be a chef). This means that young people are narrowing down their options and disregarding those that don't align with their perceptions of valid, endorsed (by parents and peers) options.
- A significant proportion of students expressed fear, lack of interest, or outright aversion to oceans as their reasons for not considering an ocean-related career (only ~12% of students indicated an interest in the marine industry). This is consistent with the original study and suggests that little progress has been made in the interim between studies (3 years) to change the engagement levels of youth in the ocean around them. This suggests a need for more experiential learning opportunities, in and out of school, that expose youth to oceans in safe, engaging, and adventurous ways. There is a continuing need to replace fear of the oceans with curiosity and build awareness that a career in an ocean industry does not require any exposure to the perceived wet, dangerous or dirty elements of the ocean – indeed, it doesn't even require geographical proximity to the ocean. It should be noted that some programs and initiatives that have been launched to address this need may not have had sufficient time to gather momentum or have measurable impact. It will be interesting to observe if progress has been made in another 3-5 years.
- Similar to the original study, responses from students gave insight into the gaps of knowledge and awareness youth have of the myriad ocean-related careers available to them (i.e. some expressed a lack of interest in an ocean career because they wanted to work in a science or engineering field, or because they wanted to work with digital technology or start a business). This reinforced the importance of an informed yes and an informed no, to ensure that students aren't dismissing career options in high growth industries, or defaulting to others, because of poor or missing information.
- Only ~3% of Nova Scotian youth expressed an interest in pursuing an entrepreneurial pathway.

This report provides evidence-based observations and recommendations for future career literacy programs and engagement initiatives.

Introduction

In 2016, in partnership with the Nova Scotia EECD and St Francis Xavier University (leveraging MITACS funding) the Marine People Partnership¹, led by Dr. Sherry Scully of the Institute for Ocean Research Enterprise (IORE)², initiated a survey of youth grades 6-9 from across the province. The data gathered in this study provided insights into youth perceptions of marine-related and skilled trade-related careers among today's youth. Captured in a report, ***The student intentions and perceptions study: Report of key findings to stakeholders***, this study has been broadly read, referenced and used by myriad stakeholders across the region with an interest in youth engagement, career literacy, ocean literacy, curriculum development, experiential and inquiry-based learning for STEM education, or workforce development. This report identified several key priority areas that have particular relevance to workforce issues in Atlantic Canada. Among them include:

- Bias and stigma of the marine industry in particular, and of trades and technology roles in general
- Gaps in learning and coaching in the mindset and skills of entrepreneurship
- The need for career literacy programs for young people and their parents
- Opportunities to develop additional exposure and awareness building programs with broader reach and focus
- Understanding the drivers and motivators of inter-provincial mobility that draw youth away from our region
- Understanding how perceptions of regional career opportunities are shaped and how this influences student intentions early in their education and career pathways

Follow-On Study

Three years have passed since the original study, and this follow-on study summarizes data captured from the original sample group of youth who are now in grades 9-12 to gain insights into if and how attitudes, perceptions and intentions have shifted as they launch (grade 12 students) or choose pathways and pre-requisites in their high school studies (grades 9-11). This study also summarizes data from the current grade 6-8 cohort to compare attitudes, perceptions and intentions with the same grade grouping from the original study, to determine if and how targeted messaging, awareness and exposure programs, and career and ocean literacy programs have begun to resonate within this cohort. This study thus comprises three comparative analyses; change over time with the original cohort, responses variation or similarities among middle-school youth from the original and the new 6-8 cohorts, and response variations and similarities among urban and rural youth.

¹ This research project has been renamed as COVE Workforce Initiative.

² IORE has been renamed as the Centre for Ocean Ventures and Entrepreneurship (COVE)

Research Objectives

The objectives of this study are to capture current and relevant data that will help to inform evidence-based decisions regarding:

- Career literacy programs and coaching
- Career literacy programs relating specifically to interprovincial mobility
- Awareness and exposure building programs in grades 6-9
- Discussions and decisions regarding dual-credit and co-op programs in k-12
- Decisions regarding a common digital career literacy platform
- Preferred channels for accessing youth with career coaching
- Involvement of proximal role models in awareness and exposure programs
- Recruitment and retention strategies for PSIs, apprenticeship programs, and employers (entry level) in Nova Scotia
- Marketing and social messaging strategies to influence youth perceptions of career opportunities in Nova Scotia
- Curriculum links with career opportunities (and skill relevance)

The objectives for this initiative also align well with the areas for change identified in the ***Report of the Minister's Panel on Education and the Students First: Commission Report on Inclusive Education***

Areas for Change/Objectives

- Transitions: Prepare today's students for tomorrow's opportunities
- Common Focus on student success – the survey and the ensuing report are focused on changing the narrative of student success to include multiple education and career pathways and goals
- Survey was designed to be broadly accessible to students

COVE Workforce Initiative Objectives

- To recommend strategies to better prepare, attract, train, and retain participants in emerging regional sectors such as the greater marine industry
- To promote initiatives and training that will engage Canadian youth and underrepresented groups (i.e. women, First Nations, immigrants) in careers in trades and technology

Opportunity

The results from this brief survey could provide valuable insights into social perceptions of careers in trades and technology, engineering, ocean sciences, and of factors that strongly influence the socialization and normalization of those perceptions. Surveying younger students (grades 6-9) in the original study was shown to provide useful insights into understanding when and how those perceptions are formed and may signal optimal periods for targeting career counseling and awareness and exposure building programs. Additionally, focusing on younger students means there is a more flexible window of time during which intervention programs can be developed and delivered to fill gaps in awareness and perception, before critical education and career decisions need to be made. Surveying the older, original cohort (now in grades 9-12) provides insights into how perceptions and intentions have shifted (or remained static) over time, the effect or influence that media messaging, coaching, and awareness/exposure building programs have had on perceptions and intentions, and the actual career and education pathways that are being actively pursued by Nova Scotian youth (as well as their mobility intentions). This data will also demonstrate the predictive value of perceptions and intentions formed and expressed in the middle-school years.

Data Collection

This study collected data by way of an online survey comprising 27 questions (4 demographics, 23 construct-related). The survey was designed to assess several constructs relating to career intentions and perceptions for careers in the marine industry, including skilled trades, ocean research, entrepreneurship, and knowledge worker roles (i.e. engineering and architecture).

Modifications to the Original Survey Tool

The survey tool used for this study was very similar to the original one. Some questions that had originally allowed for unlimited multiple responses were modified to restrict responses (i.e. to top 4) to provide more insight into priority or preference. The original survey tool was also used in a study in the United States, with very similar results, which serves to further validate the tool. A question from the US study was borrowed for this follow-on study. The question (i.e. Question 9. What word or phrase do you think of when you hear the term “Ocean Economy”?) was posed to gain insight into youth awareness of the evolving opportunities arising from the growing ocean economy. Responses were expected to align with media messaging about this economy and to regional industries that are gaining high profile.

In the True/False section for perceptions of skilled trades, an additional question was asked regarding the importance of digital skill and knowledge (i.e. 12 b) What statements do you believe are true or false about skilled trades. [You need to be good at computers and digital technology]). This question was added to gain insight into youth awareness of the evolution and modernization of many skilled trades roles with the adoption of digital technologies.

Two questions were added that relate to awareness of the importance of extracurricular experiences in developing work-relevant skills and competencies (i.e. 15 a) Do you feel that having a part time job or

doing co-op in high school is important to building your skills and experience for a future career? 15 b) Do you feel that doing extracurricular activities (i.e. like sports teams, clubs, music bands, theatre, etc) will help build skills and experiences useful for a future career?).

Given the growing issue of transition challenges and first-year attrition from post-secondary education programs, a question was added regarding the option of a gap year to assess options and develop maturity in order to make next-step decisions that are a better fit for youth (i.e. 15 c) Would you ever consider taking a 'gap year' (a year without school) or a 'gap term' (a term without school) after you graduate high school and before making a decision about your next steps? If not, why not (open-text)?).

Finally, a follow-up question was posed after asking youth (open text) what job or career they would like to pursue. Students were asked; "16 b) I am currently taking courses that would directly lead me to ...(single choice options included; the world of work, University, Community College, Apprenticeship). This question was posed to determine the extent to which youth are thoughtfully selecting courses that align with their intended pathway.

Key Constructs

The constructs examined in this study include;

- Career literacy – the awareness of the myriad career options available to them, and of the education and training requirements that precede those options
- Career maturity - individual's ability to make appropriate career choices, including awareness of what is required to make a career decision and the degree to which one's choices are both consistent and realistic over time (Crites, 1978; King, 1989; Ohler, Levinson, & Hays, 1996)
- Interprovincial mobility intentions and perceptions – extent to which young people perceive interprovincial mobility as a valid and desirable option (and perhaps as a primary option)
- Presence of proximal role models in oceans careers or trades careers
- Perceptions and awareness of oceans careers and trades careers
- Intentions regarding oceans careers and trades careers
- Key influencers for career intentions
- Key influencers for mobility intentions

Sample Group

This survey was made available to all students in grades 6-12 across the province of Nova Scotia via their respective Centres for Education, and to the students from the Mi'kmaq Kina'matneway schools of Nova Scotia, including French and English school boards, and First Nations community schools. The sample includes a mix of rural and urban students.

This survey was endorsed by the Department of Education for Nova Scotia but was not communicated as a mandatory activity for schools. As a result, participation levels were significantly lower than for the previous study, with only 4,042 youth participating. Despite the smaller sample size, this was still calculated to represent nearly 15% of the target population and met the minimum for statistical validity.

Methodology

The study was launched through the NS Department of Education and Early Childhood Education (EECD) on Monday, April 15th, 2019, and closed on Tuesday, April 30th, 2019 at 4:30pm. Students were provided the link to the survey by the teacher, were given brief instructions for completion, and completed the survey during class time. The timestamp accompanying each submission indicated that no surveys were conducted outside of school hours, implying that none were conducted without the support and instructions from the administering teacher. Upon completion of the survey period, the data was transferred as an Excel spreadsheet to the principal investigator. At this point the data was only handled by the principal investigator and the Mitacs intern. All working data was stored on the secure laptops of these two investigators.

French-language data was translated by the principal investigator and the intern, and then integrated into the English data. A primary analysis was then conducted that provided a summary and overview of each question in isolation. This was followed by a detailed analysis that examined predictive qualities and correlations between the variables.

Following the primary analysis, any identifying information was removed from the data (i.e. school name). It was agreed with the EECD that analysis and reporting would not occur below the regional board level, as some schools had so few participants that anonymity could not be guaranteed with more granular reporting.

Data Analysis

The data was coded by the intern and the principal investigator, and was separately and simultaneously analyzed by the two investigators to evaluate variance/consistency in findings (validity). A thematic analysis (for open-text responses) was conducted in Excel.

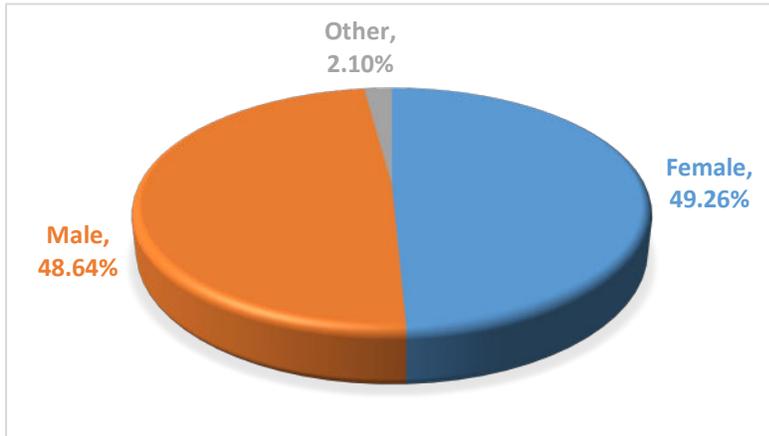
All responses were analysed by grade and gender. Significant findings are stated in the report. If not stated it can be assumed that grade and gender were not found to influence the construct.

Open-text responses were analyzed by pulling a random sample of 500 from the full sample group (a different random sample was pulled for each open-text response group). Responses were analysed for common themes and coded according to those themes. The proportionately low participation by high school-level students meant that their responses were under-represented in these random samples. Since insight into this key cohort was central to this study, it was decided that a second random sample, drawn only from the grade 10-12 respondents, be pulled and analyzed. Validity of codes was established in the original study and the same codes were used for analysis of open-text responses.

Demographic Data

- 4042 students in grades 6-12 participated in the survey (nearly 15%)
- The sample group reflected the population well, with representative participation by grade, gender, regional centre of education, region, and urban/rural community
- Personal, potentially identifying demographic data was not solicited (i.e., religion, family structure)
- Demographic data is reported at the regional centre of education level only (i.e., not at the school level)
- Data on cultural identity/heritage was used for internal analysis, and is not reported with any identifying data

Sample Groups Demographic Data:

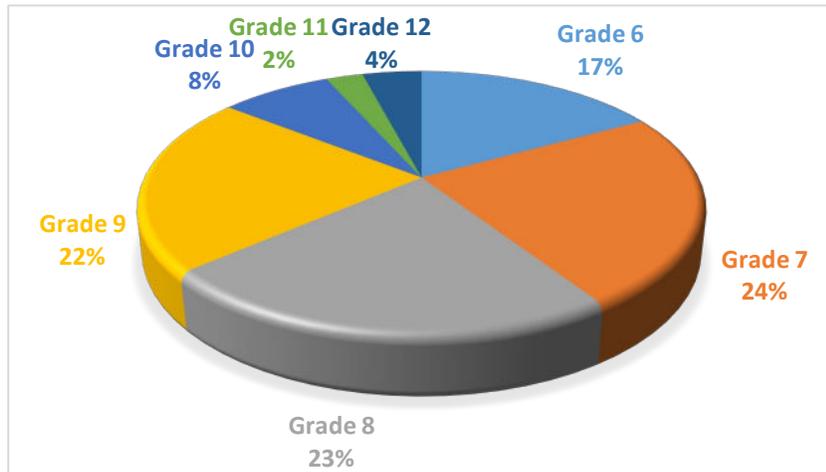


Gender

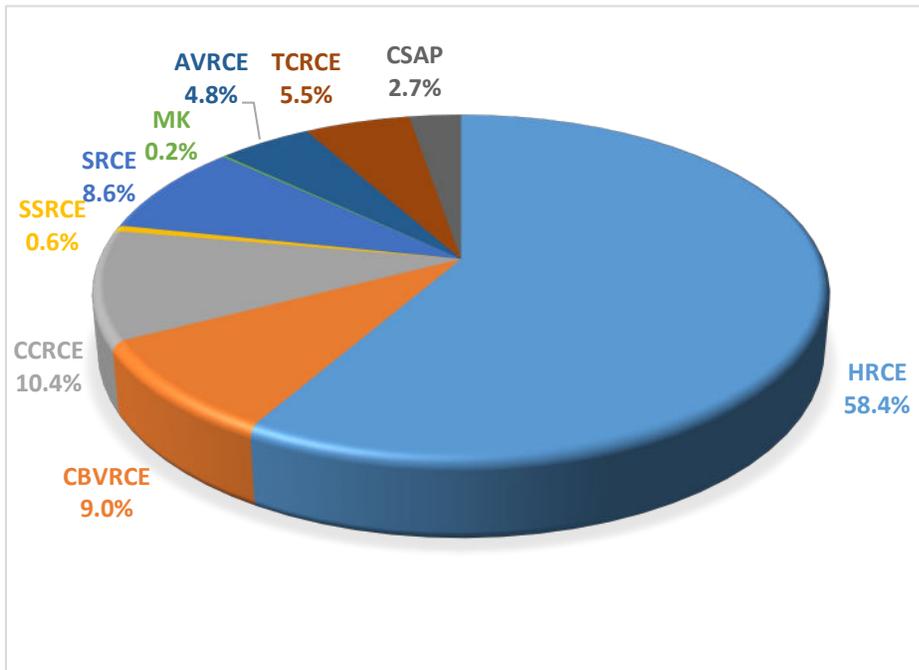
An approximately equal number of males and females participated in this study.

Grade

Youth in grades 6-9 were well represented, however; grades 10-12 were less well represented, comprising only 14% of the overall sample size. This is important to note when considering grade and school-level (junior high vs. senior high) related correlations within the data. There can appear to be a greater significant difference in grade 6-9 responses due to the larger group sample size. The data for senior grades was analyzed separately (e.g. open-text responses) to provide more insight into this cohort and to correct for the effects of proportionality.



Participation by Regional Centre of Education:

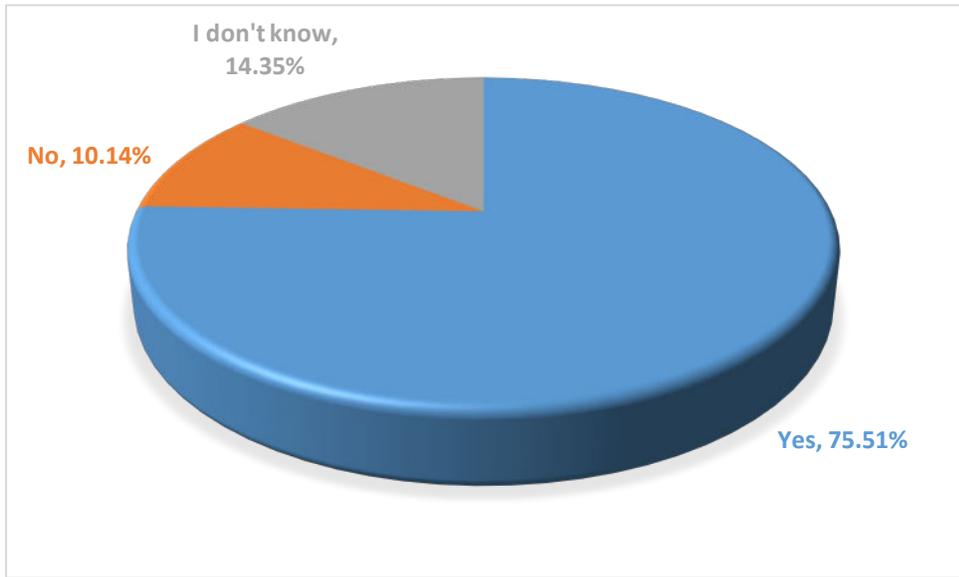


The total number of grade 6-12 students in NS, including English, French, and MK students, is ~56,275³. Participation by board, as a percentage of total participation demonstrates that all eight regions were represented. Although it may appear that the HRCE region was overrepresented within the total sample due to its proportionately larger population, the Centre of Education's

participation levels are reflective of the actual proportions within the broad sample.

³ 2018-19 Enrolments by Region & Level, 2019

Did any of your parents or guardians go to College or University or do they go now?



Research has shown that parents are powerful influencers in young peoples' attitudes, biases, and choices about their future⁴. It has also been shown that parental participation in post-secondary education is a powerful predictor of student pursuit of the same⁵.

More than 85% of students (yes and no) showed an awareness of their parents' or caregiver's education pathway. This response rate didn't significantly differ among grade and gender. This data will be analyzed to determine its influence on youth education and career intentions, and on perceptions of career options and opportunities.

The accuracy of the youths' awareness of their parents' education does come into question, as the 'yes' responses are significantly out of proportion with the ~56% reported by adults ages 25-64 in Canada in the 2016 National Consensus⁶. Similar to the original 2016 student intentions study, this might be explained by participation without completion in post-secondary education or may reflect youth's idealistic view of their parents (i.e., where they lack confirmation, they assume that their parents have completed some form of post-secondary education). This in turn demonstrates that perceptions of parents' education levels are not a perfect proxy for true awareness, or for the assumption that the perceptions are informed by career/education discussions at home.

⁴ Bandura, Barbaranelli, Caprara, & Pastorelli, 2001; Dietrich; Leung, Wright, & Foster, 1987

⁵ Hango & de Brouker, 2007

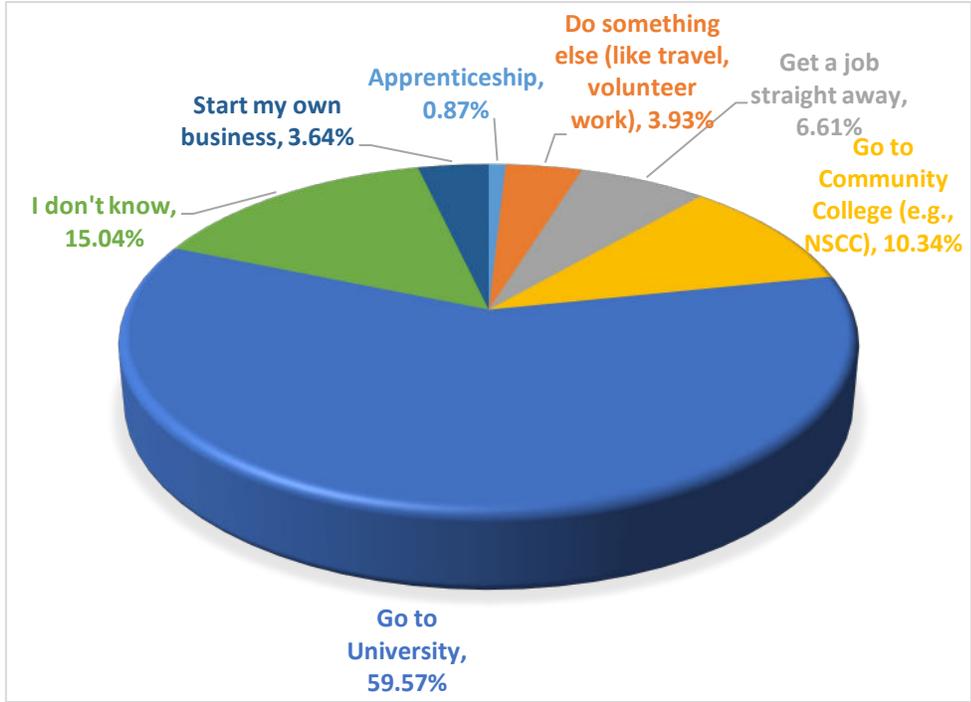
⁶ Education in Canada: Key results from the 2016 Census, 2017

Data Analysis

- Students form biases against particular careers and education paths by grade 6
- Attitudes and intentions are malleable and changeable with exposure, awareness, and information
- Over a third of Nova Scotian youth express an interest to leave the region following high school
- No change in the proportion of youth wanting to leave Nova Scotia since the 2016 survey
- Pessimism in regional employment options is not the driver of mobility – normalization of a *mobility motive* is
- The majority of regional youth are not interested in a career in the marine industry
- Traditional pathways (i.e., University education) remain the most popular pathway for youth

Post-Secondary Pathway Intentions

After I finish high school I would like to: (pathway)



More than 2/3 of students reported an interest in continuing with post-secondary education immediately following high school. These findings are in line with a similar survey done in Nova Scotia in 2016 by WISEatlantic, that found that roughly 70% of students plan to study at a University after graduating high school⁷. This is considerably higher

than the present rate of tertiary attainment of 54% in Canada (among adults ages 25-64), according to the 2015 Consensus report⁸, which shows a trend towards (expectations for) post-secondary education, or increased optimism among young people in their abilities to participate and persist in the tertiary system. Persistence in post-secondary is of growing concern, as between 7-15% of first-year students in College/University do not remain in their schools, and overall between 26-35% of students will not complete their post-secondary schooling⁹. Overall, there is very little change in the data compared to the 2016 survey. The only significant difference is that the proportion of youth indicating that they would like to go to Community College has decreased since 2016 (2016: 16.01% - 2019: 10.34%).

Higher reported intention may also reflect a growing preference for post-secondary education arising from the coaching and expectation-setting by parents. OECD found that 89% of students who had two parents with a higher education also attained post-secondary education. Parental education status was found to be a predictor of post-secondary intention in this survey as well. Among students who indicated that their parent/parents/guardians has/have gone or were presently attending a College or University, 58.48% also expressed this intention¹⁰.

These data are consistent with the findings from a 2011 survey by the Nova Scotia Department of Education, in which they found that 65.3% of Nova Scotians aged 25-54 had a post-secondary certificate,

⁷ Franz-Odendaal, Blotnicky, French, & Joy, 2016

⁸ Education in Canada: Key results from the 2016 Census, 2017

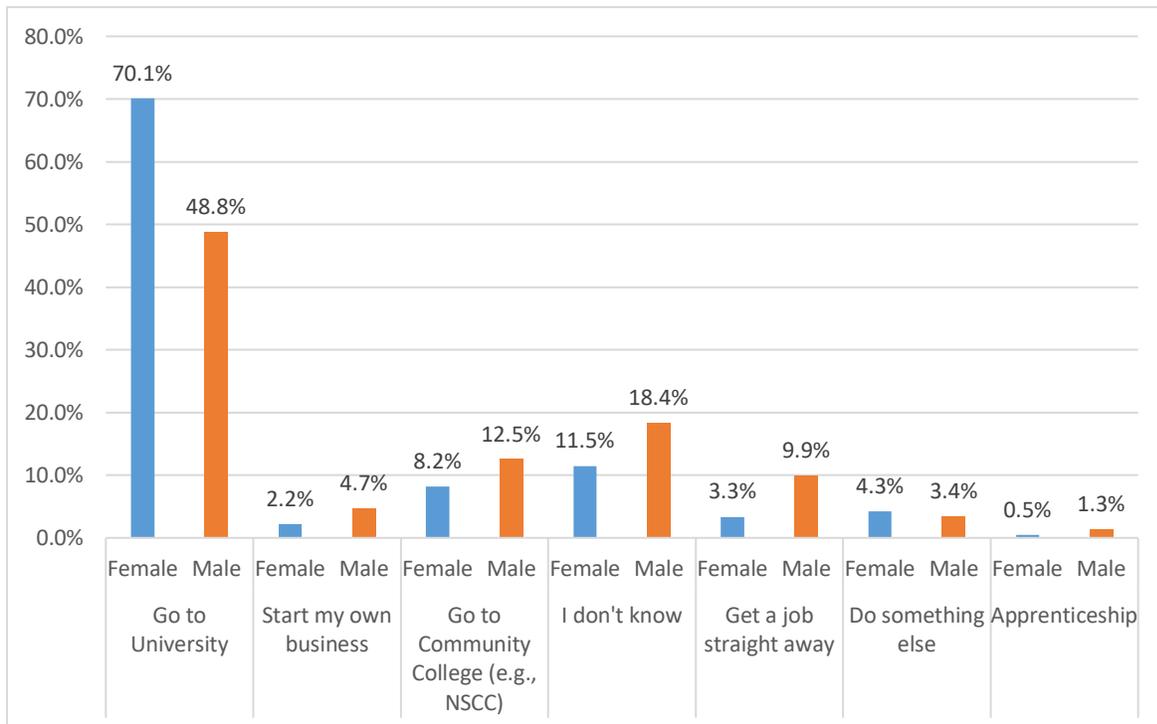
⁹ Parkin & Baldwin, 2009

¹⁰ Education at a Glance 2018, 2018

diploma, or degree¹¹. This is encouraging as it bodes well for a future where completing tertiary education is a key indicator of social success.

Roughly one fourth of students indicated that their educational pathway would likely end (or weren't sure) following high school, which is also consistent with OECD findings¹². These students selected other options that included: get a job (7%), start a business (4%), and do something else (4%). An additional 15% of participants expressed uncertainty over which pathway they would follow. It may be that this group of students hasn't considered life beyond public school yet. This demonstrates the opportunity to get young people thinking broadly about their pathways early in their educational careers, as research has shown that students who establish clear career goals are more likely to persist in their pursuit of tertiary education¹³. Early exposure to a broad range of career types provides greater opportunity for youth to establish a goal, and in turn, engage in both their education and later, their work lives. The percentage of students who are uncertain typically decreases as students get closer to graduation and are directly confronted with the topic of what to do after high school.

By gender



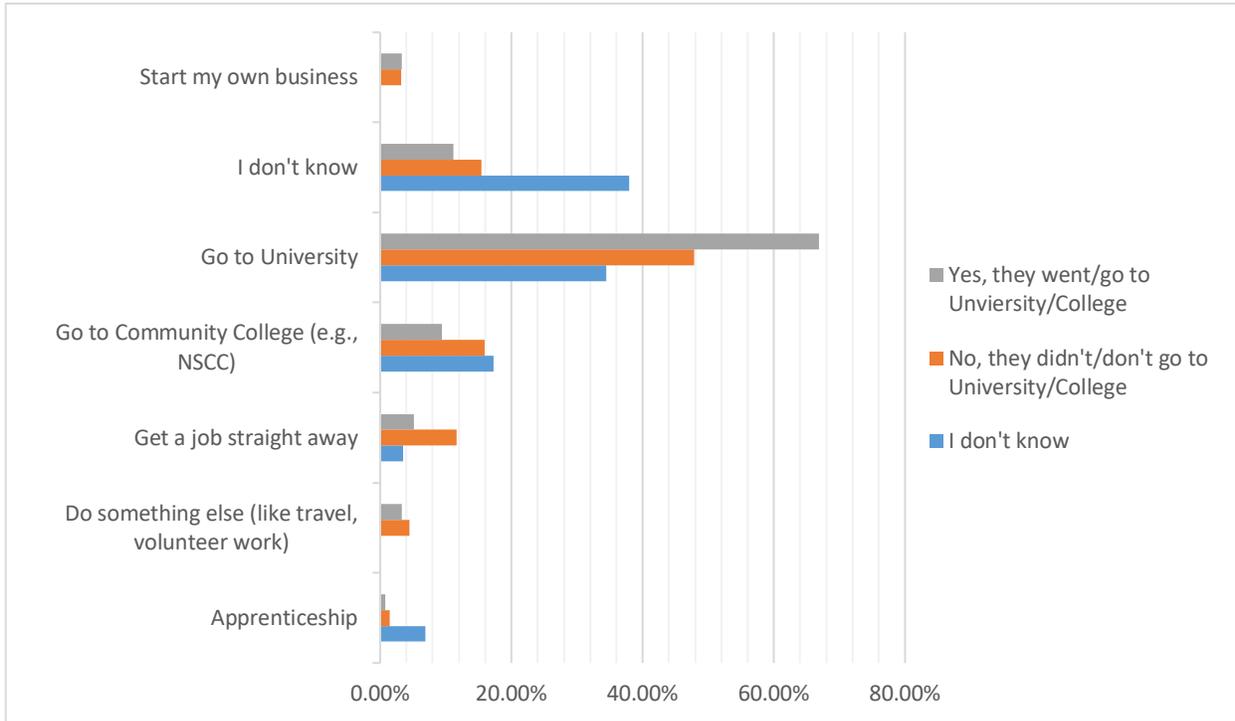
Females were significantly more likely to report planning to attend University, and slightly less likely to report planning to attend Community College, or to be uncertain about their next steps.

¹¹ Nova Scotia Department of Education Annual Accountability Report Fiscal Year 2010-2011

¹² OECD 2012. Grade Expectations: How Marks and Education Policies Shape Students' Ambitions, PISA OECD Publishing. PISA IN FOCUS. 2012/12 (December)

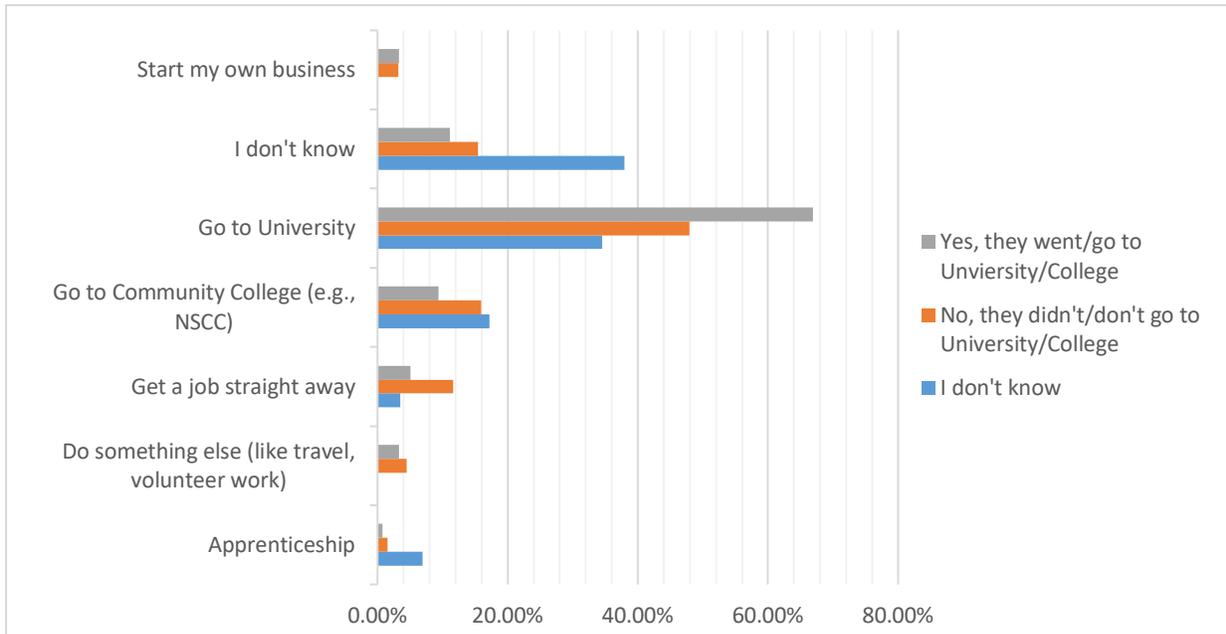
¹³ Berger, Motte, & Junor, 2007

By grade



As students get closer to graduation (i.e., grade 12), they are less uncertain of what they want to do after high school (17% grade 6 – 9% grade 12). This is probably because they are being confronted with this topic more frequently. Interestingly, students are reporting a greater interest in going to Community College after high school as they get into higher grades (7% grade 6 – 24% grade 12), and there is a dip in senior high in the proportion of students who intend on going straight to University. There is a slight increase in students who want to get a job straight out of high school between grade 6 and grade 12, which may reflect interest or actual participation in part-time employment. Overall, grade has no significant effect on student intentions to start their own business or do an apprenticeship. The intention to do something else, such as travel, or volunteer work is only an option for about 6% of students in grade 6, and although it falls drastically to 0% in grade 11, it increases to 6% again in grade 12. This may be because students are growing more interested in the option of taking a break from academics and school.

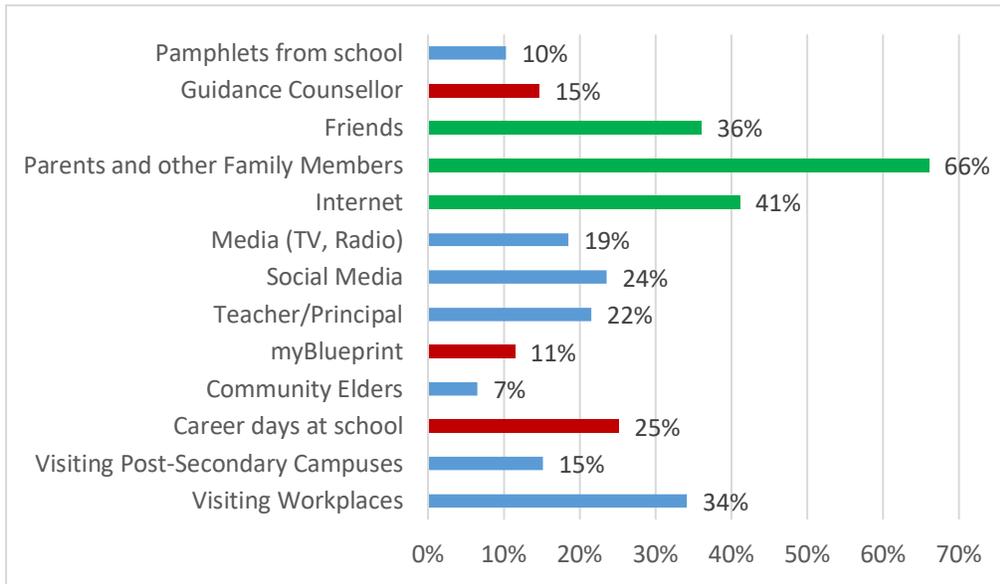
The effects of whether parent(s)/guardian(s) went or are currently going to College/University on students' pathway intentions



This graph shows that parental education does predict how likely students are to want to go to University or College. Students whose parents didn't or don't go to higher education are more likely to express an intention to get a job straight away, or go to Community College, and are more likely to express uncertainty over their pathway intentions than students who are aware of their parents having gone/are going to University or College. However, of all the students who said that they believe that their parents haven't gone/aren't going to University or College, 48% state that they want to go to University after they graduate from high school. Uncertainty is highest among students who are also uncertain of their own parents' level of education, which suggests that the absence of career discussions in the home results in minimal individual and unprompted consideration of one's future.

I think the best way to get ideas about my future goals and job choices is from...

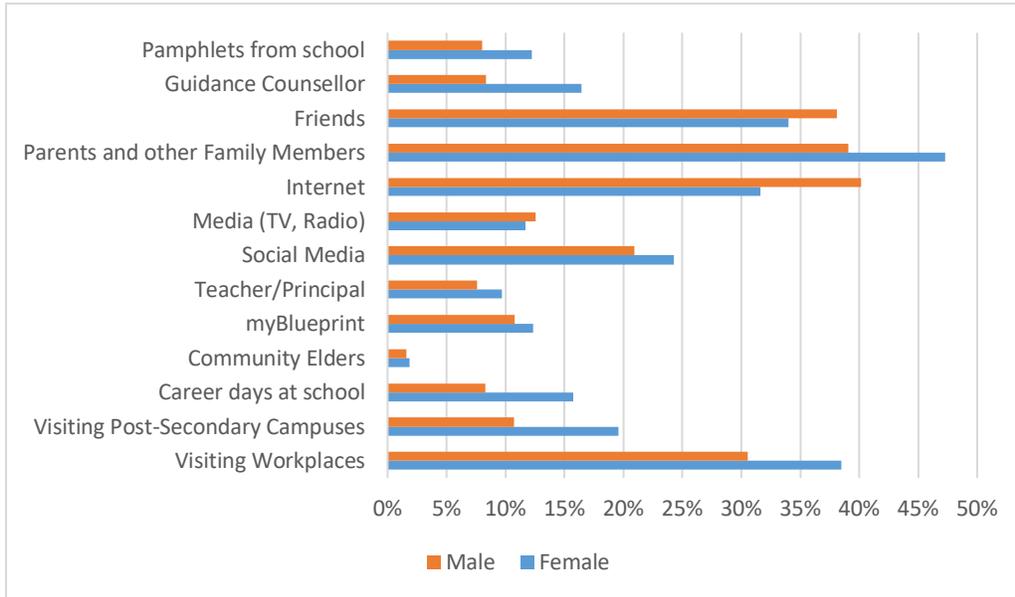
Students were asked to choose from several options how they thought it was best to get ideas about



their future goals and job choices. There were 13 listed options, and students could pick up to four of these options. The top identified source of information, selected by 66% of youth, was parents and other family members. This is in line with

research suggesting that parental education will influence youths' goals and post-graduation motivations. The other top responses were digital sources (i.e. internet), friends, and visiting workplaces. The reported influence of school on youths' goals is fairly small, with only 22% of students identifying teachers/principals, and only 15% of students identifying guidance counsellors as helpful in getting ideas about future goals. These results show that there is room to improve the role of schools in providing informed career coaching to youth. It should also be noted that a new digital resource available to youth across the province (i.e., myBlueprint) was not identified as a significant source of career information (11%). This resource was not available at the time of the original study, so no comparison in student perceptions of utility can be done. It is hoped that as more students, parents and teachers become aware of/interested in this resource, that its perceived utility will grow.

By gender

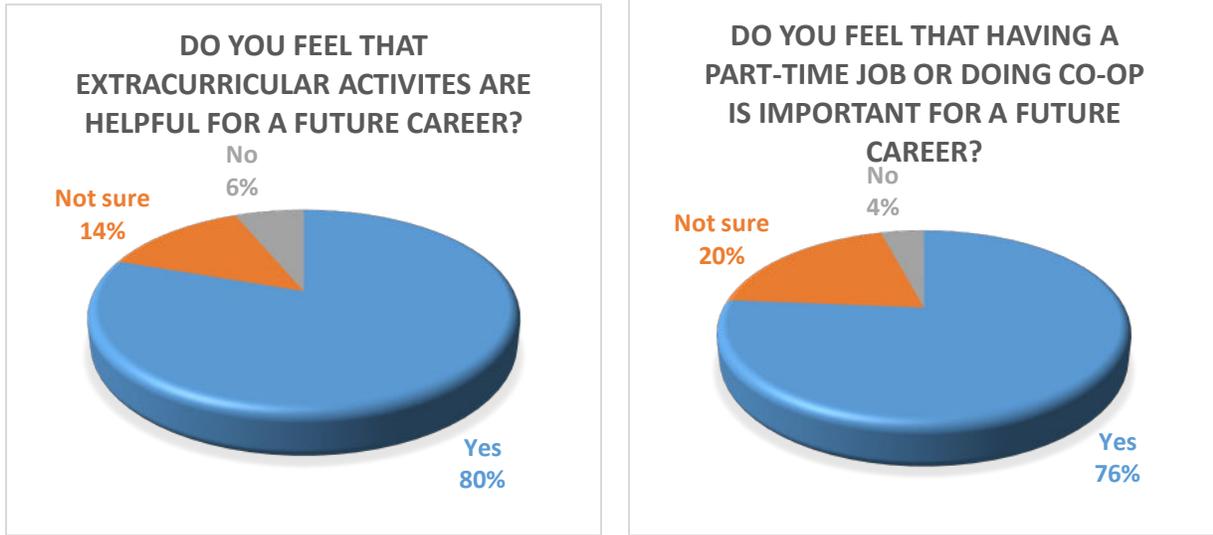


Gender has a significant effect on what students report to be the best ways for them to get ideas about their future goals. While parents and other family members are the greatest resource for female

students (female: ~48% - male: ~31%), the Internet is the greatest resource for the male students (male: 40% - female: 31%). Friends are of greater significance when it comes to developing ideas about individuals' future for males than females. However, females are more likely to report that school resources, such as pamphlets, guidance counsellors, or career fairs, are helpful to developing ideas about their future. These results were also found in the 2016 WISEatlantic survey, in which it was found that girls are more likely than boys to report being influenced by family and teachers¹⁴.

¹⁴ Franz-Odendaal, Blotnick, French, & Joy, 2016

Skill & Experience Building



In the period between the original study and this follow-on study, there has been growing interest in and evidence for the benefits of work-integrated-learning (WIL) and the development of workplace relevant skills through part-time jobs or extra-curricular activities. Two questions were added to the survey to gain insight into youth awareness and understanding of these important skill-building experiences that are available to them.

Overall, between 75%-80% of students reported that they felt that participating in extracurricular activities and having a part-time job or doing a co-op in high school are important aspects to help build skills and experience for a future career. While gender had no significant effect on student ratings about having a part-time job or doing a co-op, females were significantly more likely to rate extracurricular activities as important compared to males (85% females vs. 77% males). Grade had a mild effect on student ratings for both extracurricular and part-time jobs/co-ops; students in grades 11/12 were slightly more likely to rate that these were important than students in younger grades.

These results indicate that students are aware of the benefits of extracurricular activities and co-ops/part-time jobs, and that there is great willingness to partake in such. It would be interesting to contrast this interest level with actual participation levels in WIL programs and part-time employment. Anecdotally, there is evidence that interest may exceed opportunities available to youth, which leads to a call for greater opportunity for students to be able to participate in such important skill and experience building activities.

Research has found that many employers are searching for students with co-op or part-time job experience, however the employers are failing to find them^{15,16}. Furthermore, many employers value additional skills such as critical thinking and problem-solving skills, yet these are often overlooked in students' resumes due to employers' resume algorithms that search for technical skill and experience but that do not search for these socio-cognitive competencies (~40% of employers use this technology).

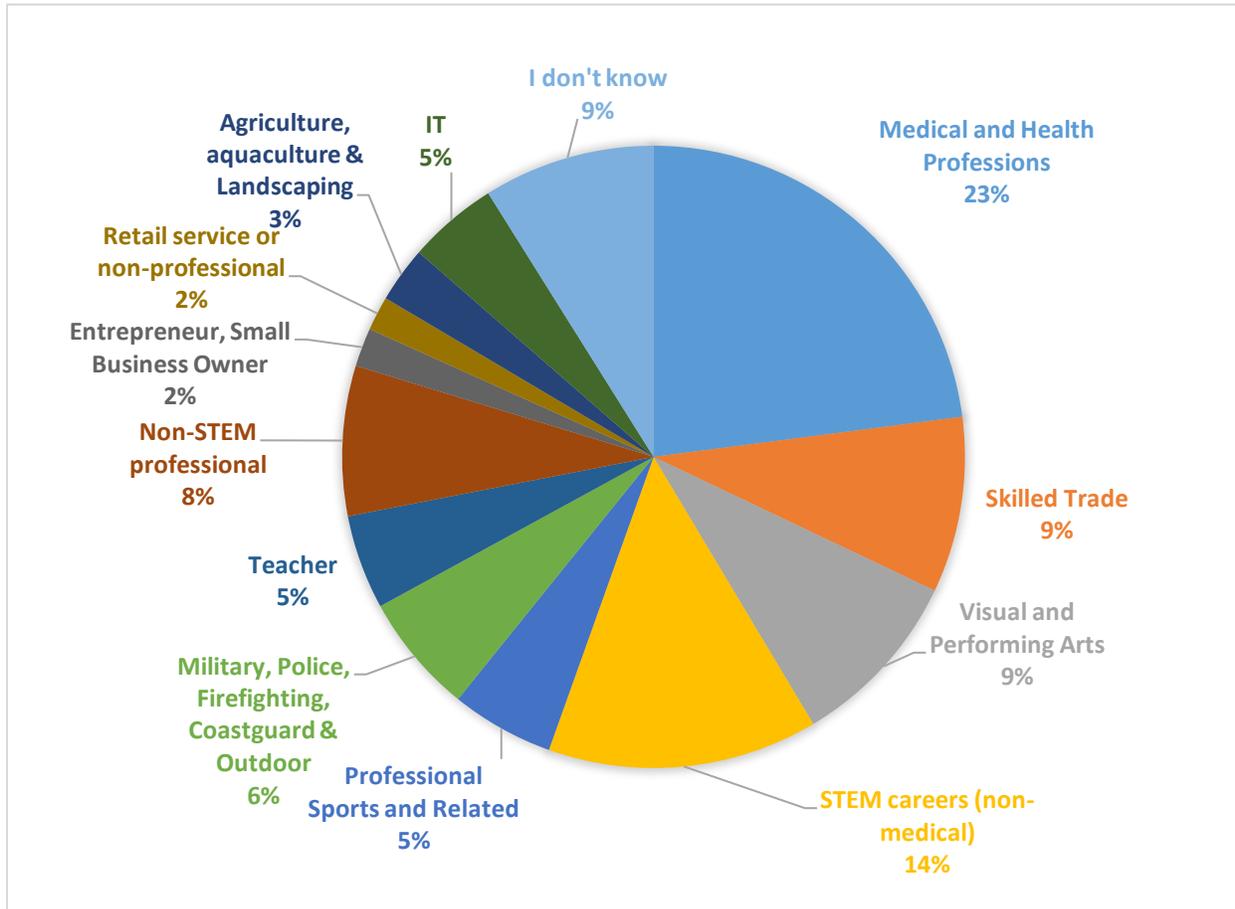
¹⁵ RBC, 2019

¹⁶ Helyer & Lee, 2014

There is strong evidence that these critical, essential, and high value competencies can be developed in students through extra-curriculars and co-ops, however these opportunities need to be offered and presented, and students need to feel as if this experience is preferred and valued by potential future employers, and need to know how to represent these competencies on a resume or during an interview. Approximately 98% of employers are unaware of co-curricular records that students have¹⁷. Co-curricular records are an official document from schools/post-secondary institutions that will recognize students' accomplishments and the experiential learning that occurs outside of the classroom, including campus-life and community engagement, volunteer and service leadership and awards for exemplary contributions. Hence, there is a need to educate employers about these records, as well as highlighting where on a resume to find additional skills that their computers/algorithms may not be picking up.

¹⁷ RBC, 2019

What jobs are you most interested in doing when you are older?



A random sample of 500 was drawn from the full sample group to analyze the open-text responses to the question “What jobs are you most interested in doing when you’re older?”. Responses were coded and grouped into similar themes.

Non-STEM professional roles include lawyers, accountants, bankers, architects, etc. Medical and health professionals included doctors, nurses, dentists, veterinarians, etc. STEM careers included engineers and scientists. Visual and performing arts included artists, ‘Youtubers’, actors, authors, dancers, musicians, designers, and film makers. A wide variety of skilled trades were captured under ‘trades’, including welder, electrician, mechanic, hairdresser, and chef¹⁸.

The results shown above illustrate a fairly broad range of traditional (i.e., doctor, lawyer, teacher) and a few non-traditional (Youtuber) careers. The results also revealed that some youth are still in the ‘dreaming big’ stage of their career maturity, with 5% focused on careers in professional sports, and 9% intent on careers in visual and performing arts. These responses reveal optimism driven by interest and talent; however, discussions of dream careers are a necessary but insufficient part of career education.

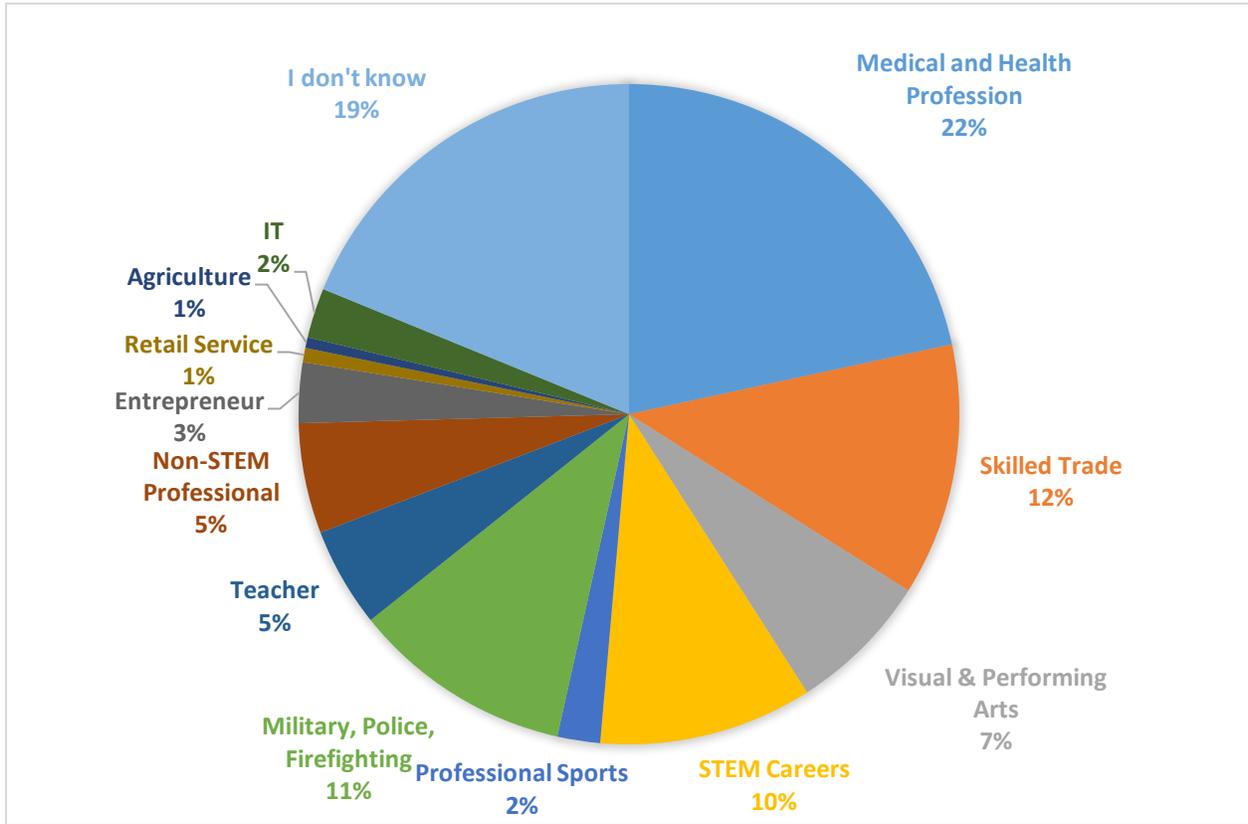
Only 2% of participants indicated that they had entrepreneurial intentions (i.e., small business owner), which was consistent with the earlier pathway intention questions. This reinforces the need for more

¹⁸ See Appendix A: Career Categories for a summary of how student responses were coded by career category

entrepreneurship education and exposure earlier on and throughout the full education pathway, to support more strategic (and successful) than serendipitous (and risky) entrepreneurship among emerging workforces across the region.

Compared to the results of the 2016 survey, there was a significant increase in youth who are interested in a medical career (2016: 18% - 2019: 23%), as well as significant decline in youth who are interested in skilled trade jobs (2016: 13% - 2019: 9%). This is a concerning trend, as there are many jobs and industries in Nova Scotia that require individuals with skilled trade backgrounds. This emphasizes the need to educate youth and expose them to these jobs more frequently to increase interest and awareness.

By Grades 10-12



The senior grades were proportionately poorly represented in the sample group overall, and this effect was amplified in the random sample of 500. Given the importance of understanding the intended next steps of this cohort that is preparing to launch, a second random sample of 500 was drawn only from the open-text responses of grade 10-12 students and coded in the same manner as the original random sample. Grade level seemed to influence uncertainty, with highest reported levels in grade 11. This raises questions about what might be contributing to pronounced student uncertainty in grade 11. It may be that students in this grade are being confronted more regularly with this question and are realizing that they must be more realistic about career goals than in the past. By grade 12 they have come to terms with the realities of their own potential and the pathway choices they have made to this point.

Overall, uncertainty responses increased significantly from junior high to senior high (8% in junior high to 18% in senior high). This may be due to students realizing that their dream job that they had when they were younger is either not achievable for them (e.g., becoming an astronaut is becoming less likely) or students realizing that their childhood dream no longer holds any interest to them.

A notable data point is that only 5% of all students (grades 6-12) expressed an interested in IT (coding, programming, game development), with only 2% of students in senior high being interested in an IT career. This may be due to perceptions of the ubiquity of digital and technology skills in all careers –

that youth don't recognize this as a distinct career category or may identify with another feature of a career (i.e. creativity and design for game development) and not the technical skill or traditional IT label.

There is a slight increase in students who are interested in skilled trade jobs in senior high (12%) vs. junior high (9%).

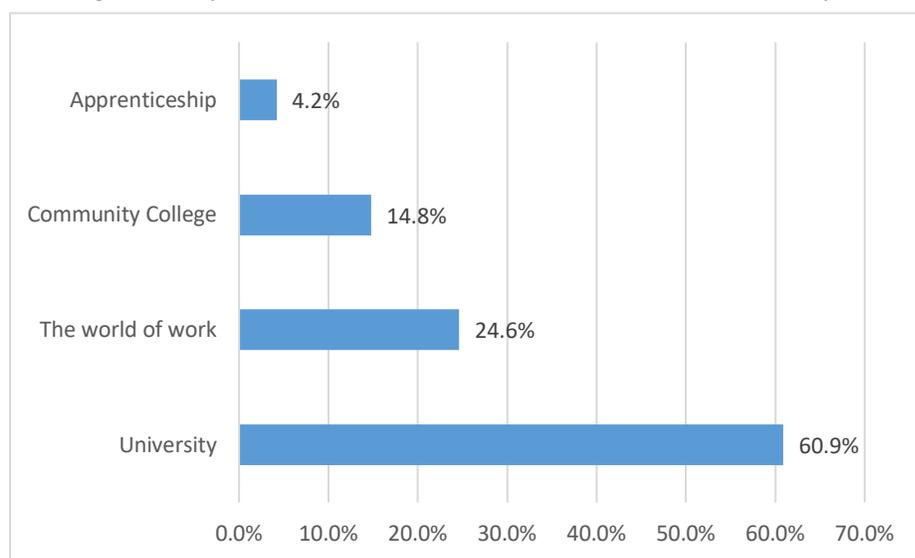
When examining the career ambitions/goals that grade 10-12 students have against what their academic intentions are, it becomes clear that these three years can be seen as a 'reality check' for some students. While in grade 10, of all students who are interested in the medical profession, 50% are planning on going to Community College, only ~16% of students state that they want to go to Community College and be in the medical profession in grade 12. It should be noted that the medical profession category does include several careers that require a Community College certificate (i.e. nurse, dental hygienist, social worker, geriatric caregiver), and so the original 50% is a reasonable pathway intention.

Course Selection and Pathway Alignment

I am currently taking courses that would directly lead me to...

The notion of career maturity involves more than just the ability to choose a career goal. Previous studies have shown that the ability to understand the prerequisite qualifications and knowledge that are needed to pursue careers that are of interest¹⁹, and the ability to evaluate the likelihood of a goal in light of one's individual competencies²⁰, are also factors that contribute to career maturity.

The original study asked students to relate course relevance to their pathway intention. There was very



strong awareness of course relevance (i.e. math, science, language arts, etc.) however, the data did not provide any insight into students' awareness of the importance of course levels (i.e. academic math and science). This question was substituted to assess awareness of this relevance and importance in opening education pathways.

Students were asked where the courses they are taking are leading them to. Approximately 5% of students didn't have a clear idea of where the courses they were taking were leading them to. The most common answer was University (60.9%). This was consistent with the responses that students gave when asked what their intentions were post-high school graduation. The high proportion of students who are taking courses that will lead them to University could also indicate that students are 'keeping their options open' by following this pathway, even if that isn't their planned endpoint. The question did not explicitly identify course levels, but simply asked for students to evaluate their perceptions of course relevance to their intended pathway. It would be interesting to gather more data to determine if students are actually taking the required level of prerequisite courses that will avail the pathways they intend to follow.

The high proportion of students who indicate that they are taking courses that directly lead them to the world of work is surprising, as only 6% of students indicated that they wanted to get a job straight out of high school. It could be that youth recognize the present value of their learning and see that it is preparing them for immediate jobs – making a distinction between jobs they can have now and careers that will require additional post-secondary education.

¹⁹ Hartung, Porfelli & Vondracek, 2005

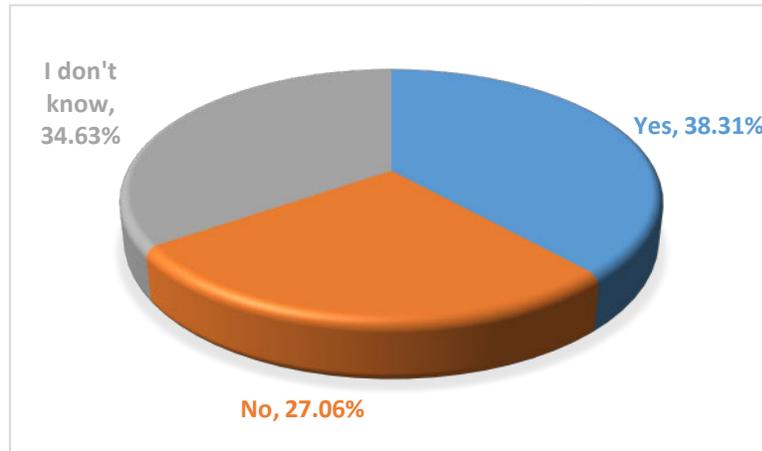
²⁰ Crites & Savickas, 1996

When looking at long-term census data in Canada, results would indicate that approximately 15% of post-secondary graduates will continue on into jobs that they are overqualified for, and that may not have anything to do with the degree they chose to complete²¹. Furthermore, research has found that many jobs are evolving and changing at the moment, so that many students may need to have the skills and flexibility to change in their scope of work. This change is only possible if students are prepared and equipped for such, calling into question how well young Canadians are prepared for this.

Gap Year

Would you consider taking a gap year or a gap term after you graduate from high school and before making a decision about your next steps?

Educators and PSI administrators have recently given sharp focus to issues relating to transition



challenges for youth entering post-secondary education. Numerous reports have identified mental health, program mismatch, and deficits in essential skills as three important issues relating to growing first-year attrition rates. In response, there is growing advocacy for taking a 'gap year' to mature, upgrade courses, gain work experience, or take a break from formal education to reconsider options. Gap year participants report

that a major reason for taking time out from formal education or work relates to a need to have a break from education or work. The purported effects of gap year participation tend to be positive. According to proponents, a gap year better prepares young adults for the self-directedness and maturity needed to make the most of further education or work. Following a gap year, young people are reported to reflect higher performance outcomes, career choice formation, improved employability, and a variety of essential life skill²². In 2008, Statistics Canada reported that approximately 30% of Canadians took more than four months off from school before entering a postsecondary institution, often for financial reasons²³. In the current sample, 38% of youth, grade 6-12, indicated that they would consider taking a gap year after they graduate high school. Approximately 34% of youth are undecided on whether they would take a gap year. There was no significant difference between students from rural areas compared to students from urban areas in whether they wanted to take a gap year.

²¹ RBC, 2018

²² Martin, 2010

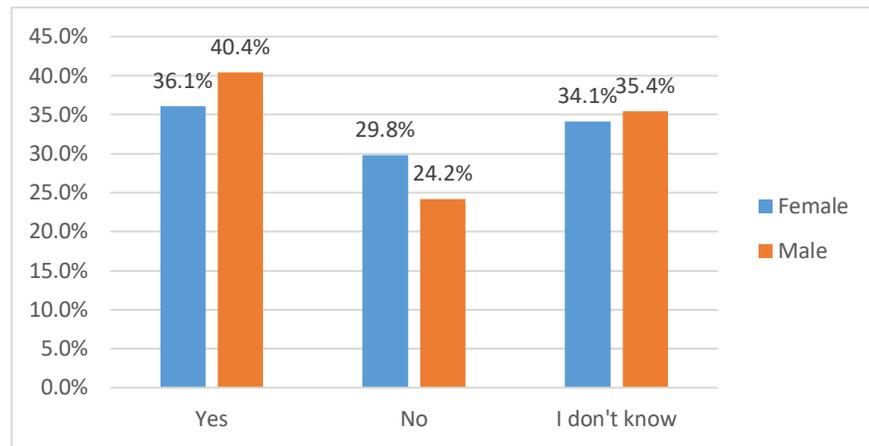
²³ Taking time off between high school and postsecondary education: Determinants and early labour market outcomes, 2008

Interestingly, although a significant number of students indicated that they would consider taking a gap year or a gap term after they graduate from high school, only 4% of students indicated that they wanted to 'do something else' after they graduated from high school, such as volunteering, or travelling. This may be due to the order of the questions, and youth not realizing that a break from education could be considered as a valid option.

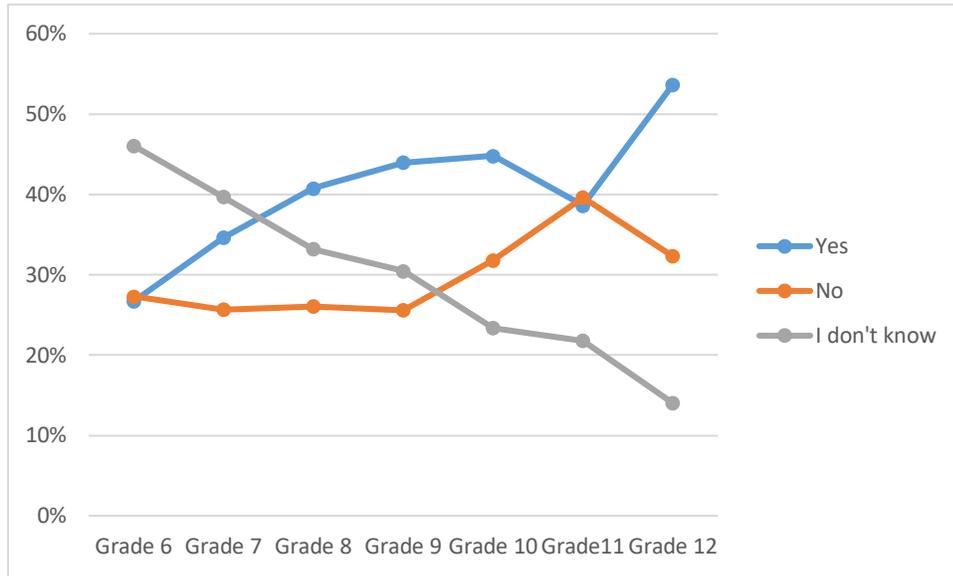
Students who weren't aware that their parents/guardians had gone or were going to University or College were significantly more likely to consider taking a gap year than students who were aware that their parents/guardians had gone or were going to University or College. This may indicate the type of intentional pathway coaching that is coming from parents with post-secondary education, for whom a break in education may not be an option or may be actively discouraging what they see as a dangerous withdrawal from formal education.

By gender

Males were slightly more inclined to consider a gap year than females, and roughly 18% of both males and females weren't sure whether a gap year was a viable option for them.



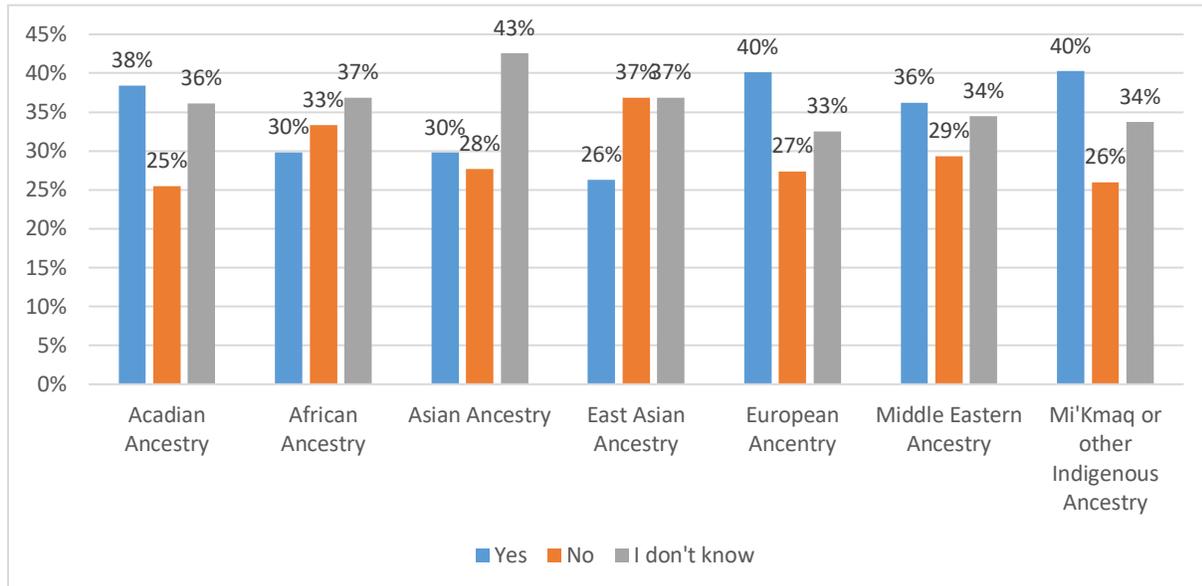
By grade



There was a significant effect of grade on whether students considered taking a gap year. While only 27% of students indicated that they would consider taking a gap year in grade 6, 54% of students in grade 12 indicated that they would consider taking a gap year. The uncertainty over

whether to consider a gap year was at the highest in grade 6 (46%) and at its lowest in grade 12 (14%). It is likely that students in grade 6 may not be familiar with the term ‘gap year’ or may not know that it is an option for them. In line with this interpretation, almost half of grade 6 students were uncertain whether they would consider a gap year. This uncertainty would leave room for conversations and education about gap years, to support individuals in their decision-making process.

By ethnicity

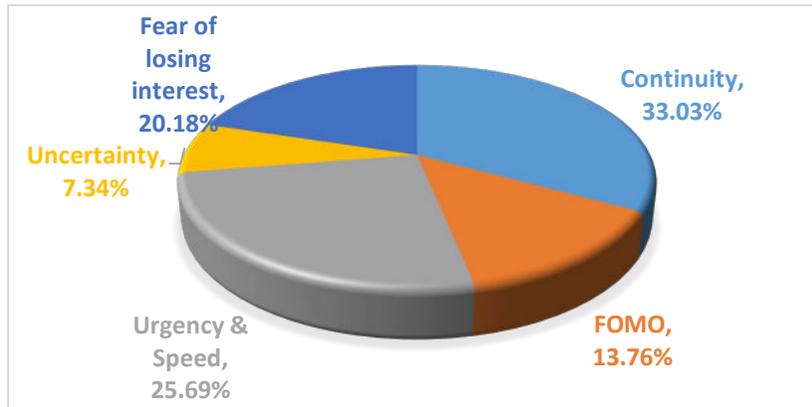


These results show that students of European and Mi’kmaq or other Indigenous Ancestry are most likely to consider taking a gap year. These are closely followed by students from Acadian or Middle Eastern Ancestry. Students from African and East Asian Ancestry were most likely to indicate that they were not interested in taking a gap year. Approximately 70% of Asian and East Asian Ancestry students were either not interested or didn’t want to take a gap year. This may be due to students from Asian and East

Asian heritage being torn between their familiar cultural values that privilege post-secondary education, and the influences of the country they are living in and the peers who surround them ²⁴.

²⁴ Radmacher & Azmitia, 2016

If you wouldn't consider a gap year, explain why not...



The students were given the opportunity to explain why they weren't interested in a gap year. 500 randomly selected responses were coded into five different categories. Students expressed a desire for continuity (33%), as they "don't want to waste any time" (grade 9 female). Furthermore, ~26% of students expressed a perceived need for

urgency of education, such as, "I want to be finished with my education as quickly as possible" (grade 11 female). 20% of students indicated a fear of losing interest in education or diminishing intelligence as a reason to not take a gap year, "The part of your brain that helps you learn easier does not work as well if you take the gap year" (grade 9 female). A fear of missing out (FOMO) on jobs or not getting into university was the reason for ~13% of youth to not consider a gap year, "I don't want to limit my chances of getting into university" (grade 9 female). There also appeared to be a tendency for misinformation about the value of gap years from a university perspective, as students reasoned that "most scholarships aren't offered to people who take a gap year before going to university" (grade 10 female). It's not clear if this is truly a risk for youth being offered scholarships to Canadian Universities and Community Colleges (more inquiry is needed to determine this). However, Harvard University, along with other Ivy League Universities in the US released an official statement, urging students to take a gap year, and to defer their enrollment. They publicly stated that this wouldn't affect students' chances for a scholarship²⁵. It is important to understand if there are scholarships in Canada that require students to directly enroll in post-secondary education after high school, and if so, why. This would be a notable barrier for some students to consider a gap year. In the meantime, socializing the potential benefits of a temporary break from school will be challenging in the face of uncertainty over whether the gap year will help or hinder them in post-secondary applications. Lastly, students indicated that they were uncertain about what a gap year was and what it meant, "I don't know what that is" (grade 7).

Research has found that taking a gap year is linked to identity work, involving talk of confidence, maturity and/or independence in youth²⁶. Researchers have suggested that the gap year represents a time in an individual's life to reflect and reflexively construct a sense of self²⁷. This year can give students time to take a step away from an academic life, and it can give them time to figure out who they are and what they want to do. It has been found that students who take a gap year and go on to University have higher grades, and better mental health than students who don't take a gap year²⁸. This indicates the importance of students taking a term/year for themselves, and figuring out what they want to do, rather than rushing into post-secondary education.

²⁵ Considering a Gap Year, 2017

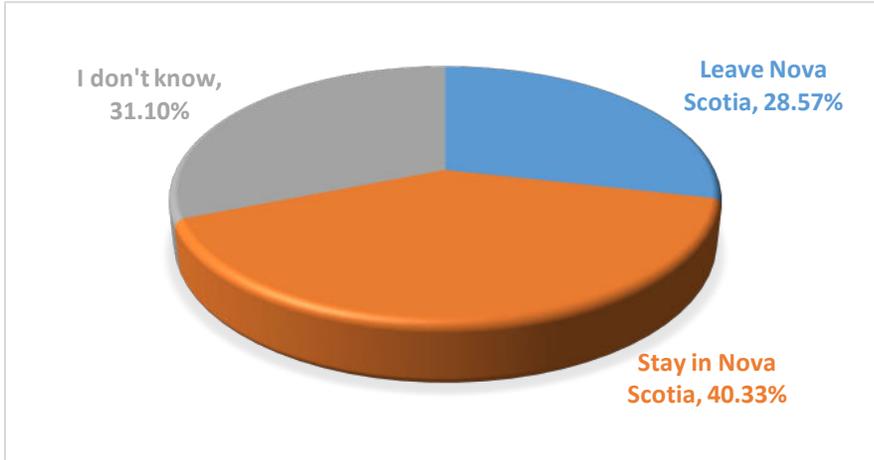
²⁶ King, 2011

²⁷ Bagnoli, 2009

²⁸ Martin, 2010

Interprovincial Mobility:

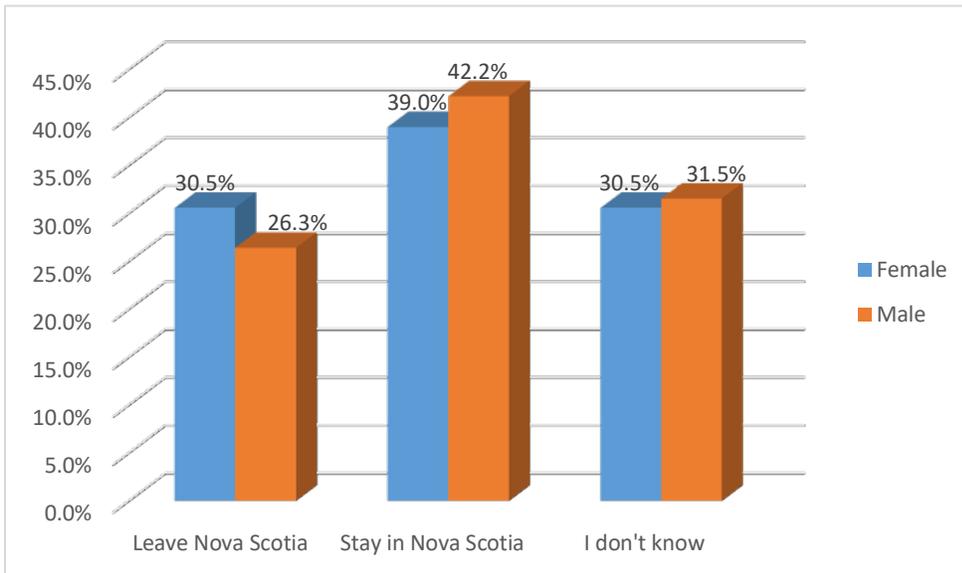
After I finish high school I would like to: (mobility)



One third of youth in Nova Scotia are already considering leaving the province to study or work, and another third are undecided. This can be a worrying result if students are feeling pushed to consider leaving the province because of misperceptions of lack of opportunities within the region. This question is

addressed further in this report where the responses are analyzed against data regarding perceptions of careers and opportunities regionally to determine why they want to leave.

These results are fairly similar to the results from the 2016 survey, in which 31% of students wanted to leave Nova Scotia, 42% wanted to stay in Nova Scotia, and 27% were uncertain.

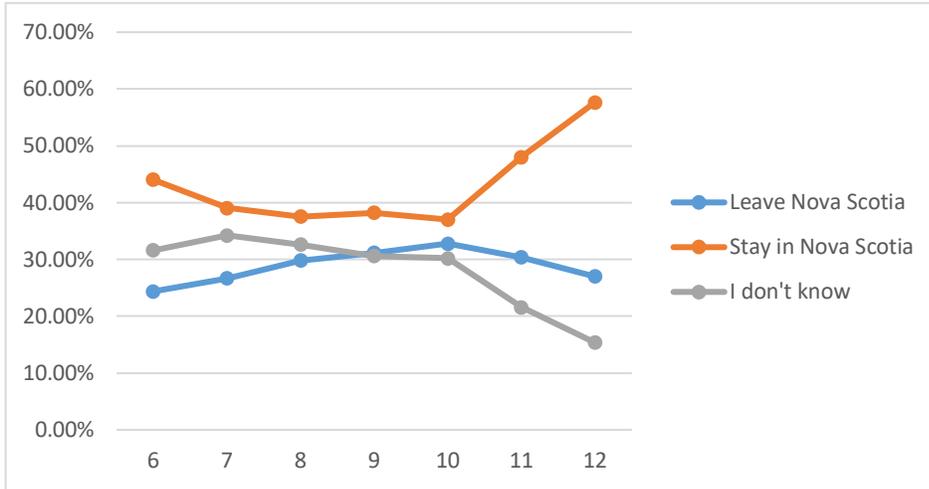


By gender

Females are slightly more likely to indicate the intention to leave Nova Scotia to study or work elsewhere than males. Roughly 15% of both females and males are undecided on whether they wanted to leave or stay in Nova Scotia.

These results are similar to the results from 2016, in which slightly more males intended on staying in Nova Scotia, while more females reported wanting to leave Nova Scotia. The uncertainty was approximately equal between males and females in both 2016 and the current survey.

By grade



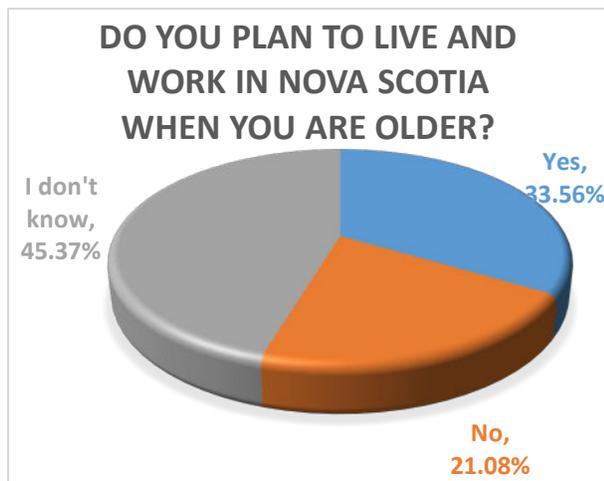
When looking at mobility intentions by grade, it can be seen that the intention to leave Nova Scotia among youth increases until grade 10 and starts to decline again in grade 11 and 12. This may be due to the reality confrontation that students in these last two years are receiving, mixed with the

increasing proximity of the decision – as the decision grows closer it may become harder to commit to a ‘leave’ decision. Another possible explanation is that students in senior grades are exploring post-secondary institution options and looking at regional options first - hoping to transition to a school/apprenticeship within the province. The intention to stay in Nova Scotia is the highest among students in the youngest and oldest grade (i.e., grade 6 and grade 12). Interestingly, the intention to stay in Nova Scotia is still significantly different from grade 6 to 12 (44% in grade 6 - 57% in grade 12). The uncertainty over whether the students want to leave or stay in Nova Scotia after high school steadily declines through the grades, until it drops off significantly in grade 11.

Long-Term Mobility

A similar question was posed towards the end of the survey to evaluate consistency of response. This question asked, “Do you plan to live and work in Nova Scotia when you are older?”. Affirmative responses indicating an interest in remaining in Nova Scotia declined from 40.33% to 33.56%.

While approximately 30% of students report being unsure over whether they want to stay or leave Nova Scotia right after high school, we are seeing an increase in uncertainty in the long-term. When asked whether they can see themselves living and working in Nova Scotia when they are older, around 45% of students are uncertain (hence, approximately a 15% increase in uncertainty over the long-term). This may be due to students struggling to envision their long-term future versus their short-term future.

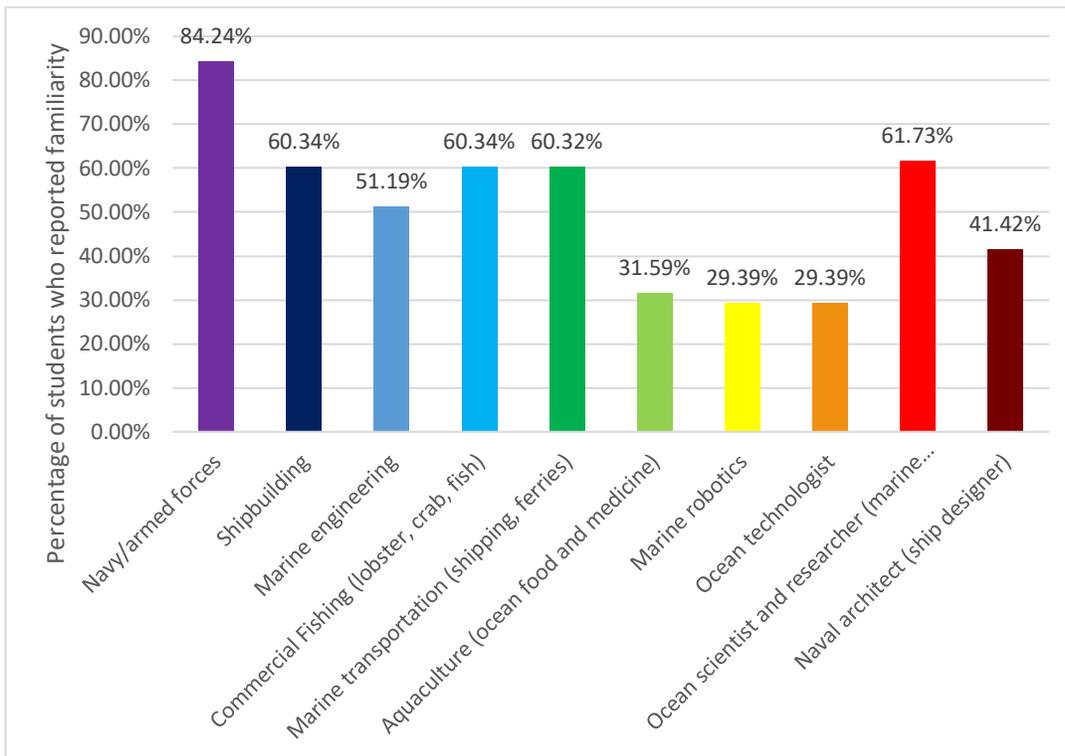


Ocean-Oriented Education and Careers

A question was posed to assess interest in pursuing an ocean-oriented career. This question served two key objectives; primarily to assess participants’ purported current awareness of ocean-oriented careers; and secondly, to ostensibly build some awareness of the scope and variety of ocean-oriented careers to prepare them to respond to the question that follows regarding interest in working in the marine industry.

Types of Careers in the Marine Industry

In Nova Scotia there are many different kinds of jobs in the marine industry. Here are some examples. Tick the ones that you’ve heard of:

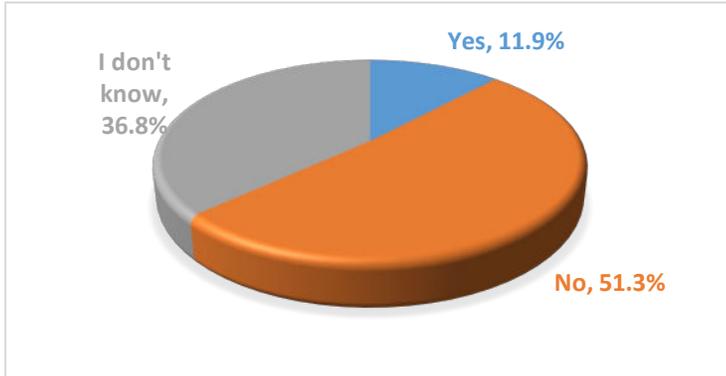


The survey results show better-than-anticipated awareness of careers in the marine industry generally, however given the regional profile of some careers, there was relatively low awareness of shipbuilding (60.34%) and ocean scientist (61.73%).

However, the results also showed a general lack of awareness of emerging regional sectors (i.e., ocean technology, marine robotics, marine engineering, ocean technologist).

Grade and gender were not found to be predictive variables for awareness of ocean-oriented career types.

Are you interested in a job in the marine industry?

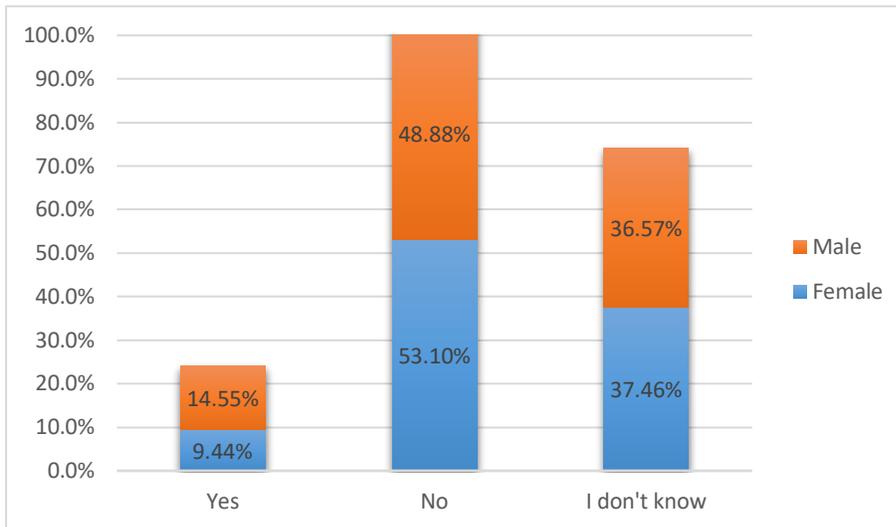


Responses show a significant lack of interest and intention to pursue careers in the marine industry. Based on the previous question, it is fair to suggest that students aren't aware of the broad range of career options available to them in the marine industry. It is notable that in a province surrounded by water, that over half of the students communicate no interest in a marine oriented career, without actually having a good

understanding of what they are saying no to.

Compared to the 2016 survey, there was a slight increase in students who weren't interested in a job in the marine industry (2016: 49%, 2019: 51%). Conversely, there was a slight decline in students who reported being interested in a job in the marine industry (2016: 14%, 2019: 12%).

By gender



Boys were slightly more likely to express an interest in the marine industry, and females were slightly more likely to communicate a lack of interest. Most notably, over half the students provided a negative response. Furthermore, approximately 36% of the students aren't sure. This response might have been derived from the previous question that

broadened their awareness enough to consider the option (or not provide a negative response).

Based on the sampled students in each grade, grade 11 and 12 students were most likely to state that they weren't interested in a job in the marine industry. Other than that, grade didn't appear to have a significant effect on job interest.

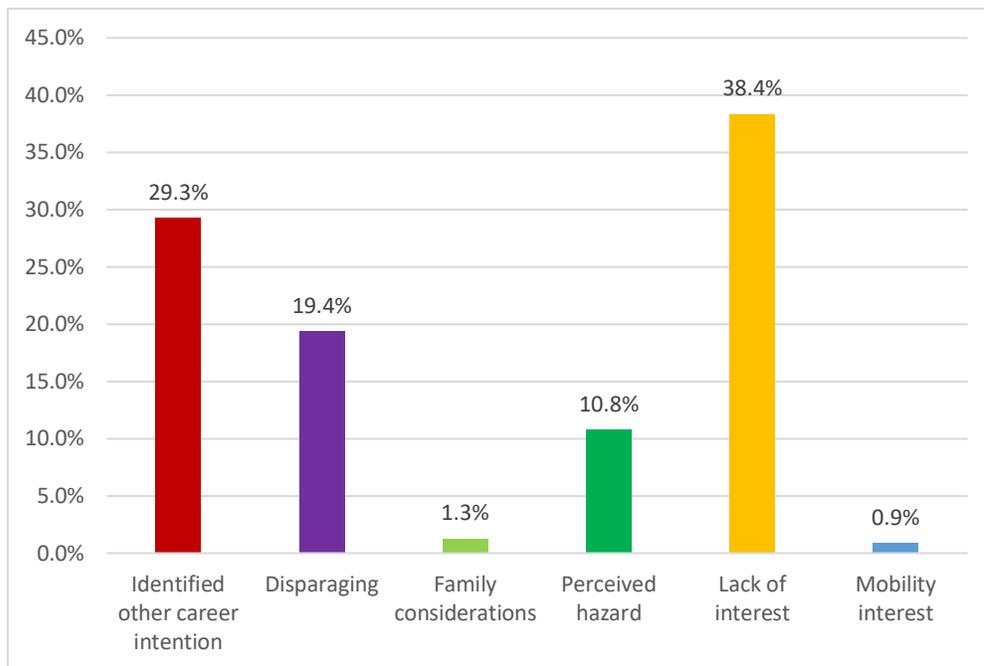
If you're not interested in a job in the marine industry, explain why:

Students were provided an opportunity to elaborate on their 'no' response with open-text. A random sample of 500 of these open-text responses were analysed for common themes. The most common response (38.4%) indicated a general lack of interest in the Marine industry, regardless of the career area or sector.

Some examples of responses coded as lack of interest include, *"I'm really good in school, I get all As and I'm very athletic and very involved in sports, and I feel like I could get a better job with all my abilities"*

(grade 6 female); *"I love marine life, and the ocean, but I don't feel very passionate about this career option in the marine industry. I don't feel like I'd enjoy it"* (grade 9 female); *"I don't want to go to sea"* (grade 7 male); *"I am not a fan of those kinds of jobs. I don't have a solid reason so if I were to be told more it may sway my opinion but I don't think I'll ever get a job in the marine industry but I don't know only time will tell"*

(grade 7 other). Lack of interest responses included responses indicating a lack of awareness or knowledge of the industry or of careers in the industry. On a positive note, because their responses indicate that their lack of interest is driven primarily by lack of information and awareness, this group presents a key group whose minds could be changed with awareness and exposure programs and experiential learning. These students were less likely to communicate a negative perception, which would be more difficult to overcome and remedy.



The second most common type of response was one in which students identified another career intention (29.3%), such as *"because I want to do something mammal related or a paleontologist"* (grade 8 female). However, often these responses also reflected a general lack of awareness and understanding of the breadth and scope of ocean-oriented careers and of the skills and competencies associated with them. For example, *"because I would rather be an engineer or a mechanic so I would have to be on land"* (grade 6 male); *"I want to do something that has to do with computers or swimming and make a living out of it"* (grade 6 female). With more awareness and exposure to demonstrate the breadth of options (e.g., engineering careers) this group of respondents could be more open to a marine oriented career.

Hazard responses (10.8%) included those that expressed perceptions of a dangerous or undesirable industry (i.e., *“I’m afraid of the ocean”* (grade 9 female); *“I usually get a sick feeling when I’ve been on a boat for too long”* (grade 6 male); *“I don’t like the ocean and have a fear of drowning”* (grade 11 male)). These responses reflect attitudinal and bias challenges which are far more difficult to correct and overcome than lack of interest.

The third most common type of response was a disparaging response (19.4%), such as, *“Why would I want to be touch dirty stinky water all day”*. (grade 8 male); *“I don’t care about the ocean”* (grade 10 male); *“Boats and fish are boring. I want a good job that actually pays well.”* (grade 12 male); *“there’s no way I would ever do a job like that. Killing fish or killing people in ships – no thanks”* (grade 11 female); *“Because fish smell bad”* (grade 9 male); *“I don’t like sharks or dirty water”* (grade 9 female).

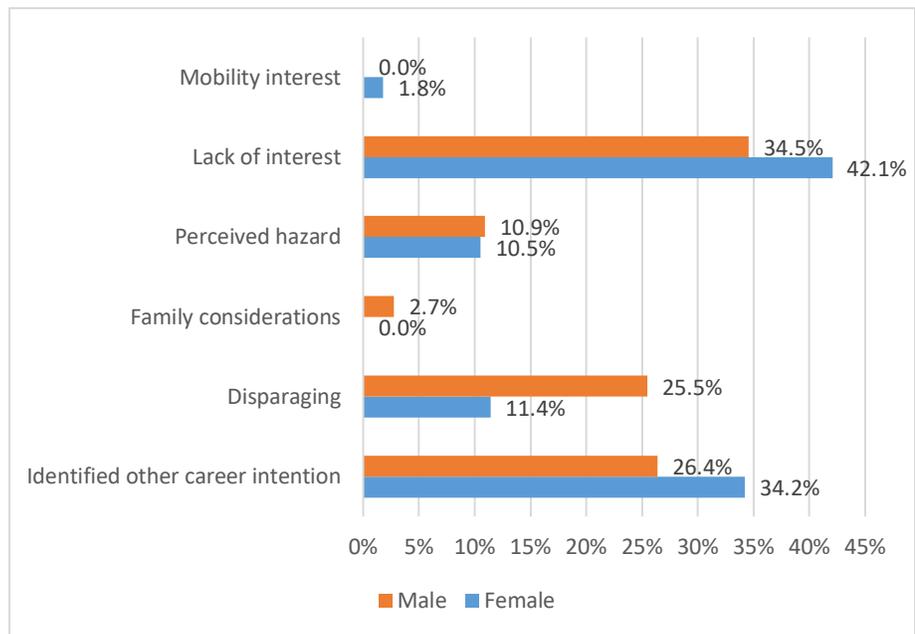
If you combine the disparaging response with the perceived hazard response, then approximately one third of youth who provided an open-text response indicated that they either didn’t like or were fearful of some aspect of the oceans. This demonstrates an important opportunity to provide more experiential oceans education broadly to all students, to allow students to develop more positive familiarity, curiosity, and relationships with the oceans around them, and to change the narrative and fearful perceptions of oceans-related careers in Nova Scotia.

By gender

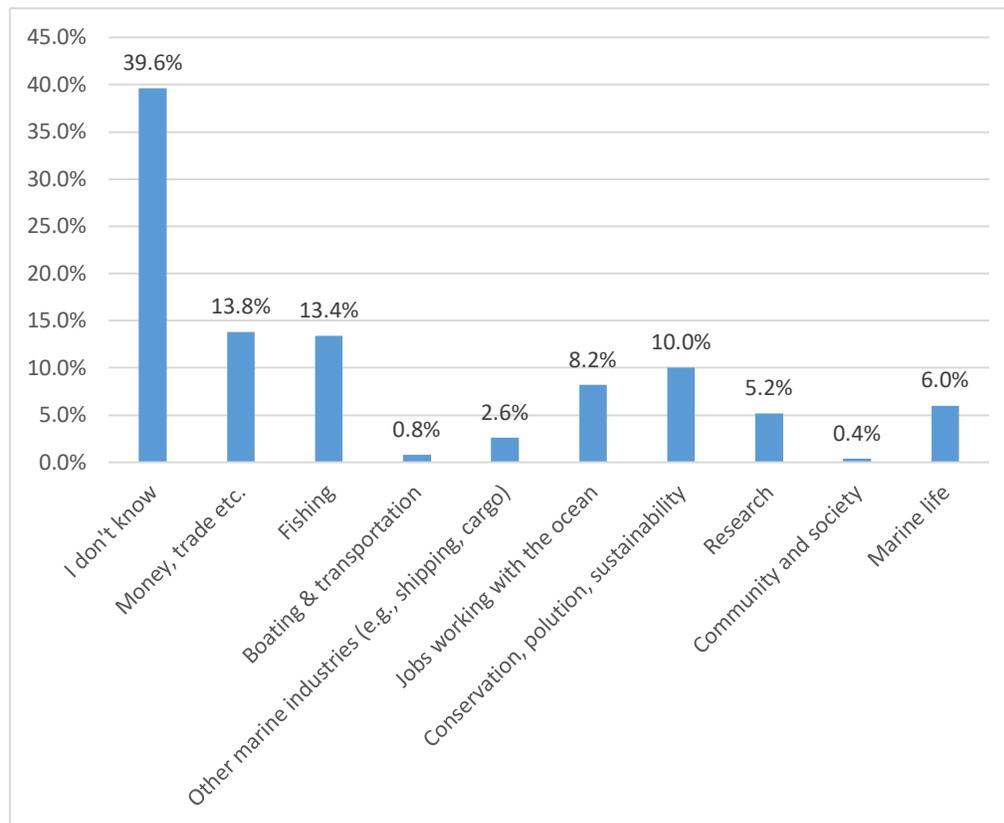
Gender was found to be

significantly related to the reasons students expressed for not wanting to consider a career in the marine industry. Females were significantly more likely than male students to express a lack of interest and were also more likely to explain that they had other career intentions. Interestingly, family consideration was not a reason for the female students to not

be interested in the marine industry, whereas it was a reason for male students to not be interested in that industry (e.g., *“I just don’t want to leave home and stay close to my family”* (grade 8 male)).



What word or phrase do you think of when you hear the term “Ocean Economy”?



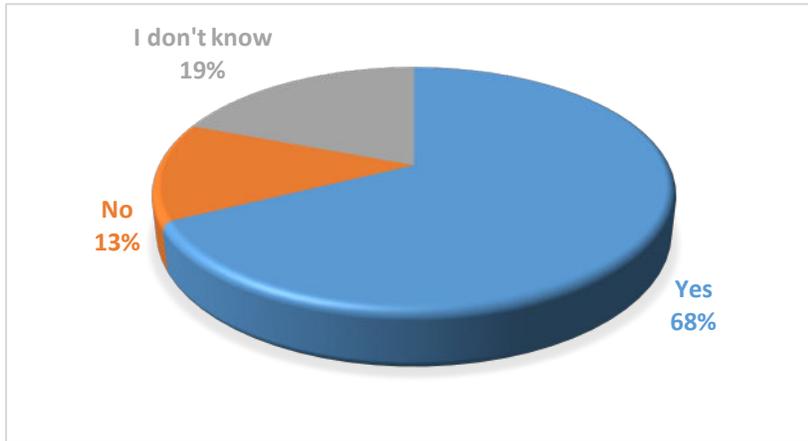
Borrowing from a similar question that was asked of youth in Massachusetts, students were asked what they thought the term ‘ocean economy’ meant. This question was posed to gain some insight into youth perceptions of this field of work, and their awareness of this as an emerging industry in their region. 500 randomly sampled open-

text responses were coded into different categories. Almost 40% of students responded that they didn’t know what the term meant, which suggests that they are neither hearing this term at school or through the media. This indicates a need for greater education about the broad marine industry and its historical, economic, social, and cultural relevance to our region. The two most common responses were, that the term ocean economy was about money and trade (13.8%), or about fishing (13.4%). There was quite the wide range over what ocean economy could mean. Responses varied from “*An economic system that relies on the marine world to generate jobs and further research. This could be anything from jobs that aid in explorations of the seas to people that are actually on the ocean for days on end*” (grade 9 male) to “*nature*” (grade 8 male) illustrate the broad range of understanding. The majority of responses were very general (e.g., “*water and money*”(grade 11 male); “*fishing*” (grade 6 female), or were related to notions of ecology and conservation (e.g., “*saving and protecting ocean life*” (grade 7 female); “*Using the oceans responsibly*” (grade 7 male). Overall, their responses indicated vague notions that may help explains the low levels of interest in careers in the marine industry. The Cape Cod Chamber of Commerce ran a similar survey to this one in 2018 in Massachusetts with students grades 6-9, and when asked this exact question, provided similarly vague responses. Student answers included terms such as “*money*” or “*ocean*” or “*clean world*”²⁹. This indicates a similar level of lack of awareness and knowledge over the term ‘Ocean Economy’.

²⁹ McGee & Borges, 2018

Interest in Careers in Skilled Trades and Technology

Do you know someone who works in a skilled trade?



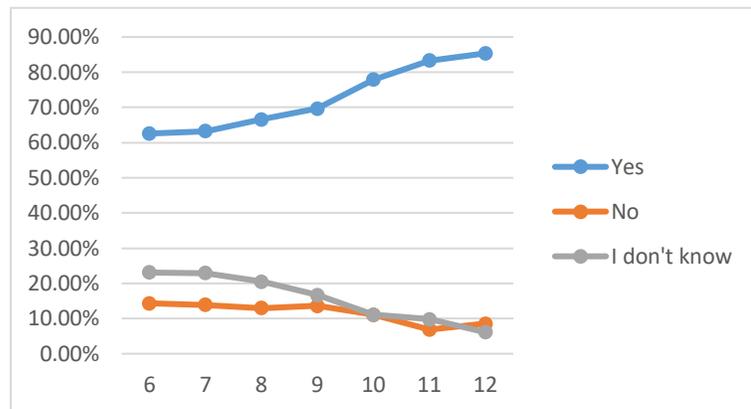
Research has shown us that awareness through familiarity (i.e. knowing someone who does a job) is strongly correlated with interest in a specific job³⁰. A significant proportion of respondents did indicate an awareness of someone who works in a skilled trade. This question provided some insight into students' awareness of skilled trades roles, which provides some context for

students to evaluate their interest in participating in one of these jobs. The reported awareness level was higher than expected, suggesting that students might have provided an affirmative response with very distal knowledge of a skilled tradesperson (i.e., the person who fixed their sink) versus a proximal relationship (i.e., friend, relative, or neighbour). This might inflate the 'awareness' scores, resulting in students who have 'heard of' skilled trades, but who don't possess enough awareness of the careers to provide an informed response to the questions below. There were no significant response differences to this question by gender.

Compared to the results from the 2016 survey, there is no significant change in students' awareness of proximal adults who work in a skilled trade.

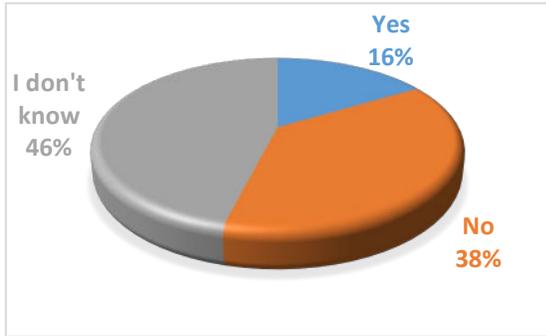
By grade:

There appeared to be a significant increase in awareness of a proximal adult holding a skilled trade job by grade, as there is a roughly 20% increase of knowledge over someone holding a skilled trade job from grade 6 to grade 12. This is in line with the slight increase in interest in skilled trade jobs in grade 11/12. This emphasizes the importance of familiarity with professions in order to be interested in it, and to consider it for one's self.



³⁰ Norman & Bessemer, 1968

Are you interested in a skilled trade?



Only 16% of students reported that they would be interested in a skilled trades job. The majority of students were either not sure if they'd be interested or reported not being interested in the field. However, it is important to note that there may be students who are interested in a skilled trade job but are unaware that the job they are interested in is categorized as a skilled trade job (e.g., hairdresser, chef, etc.).

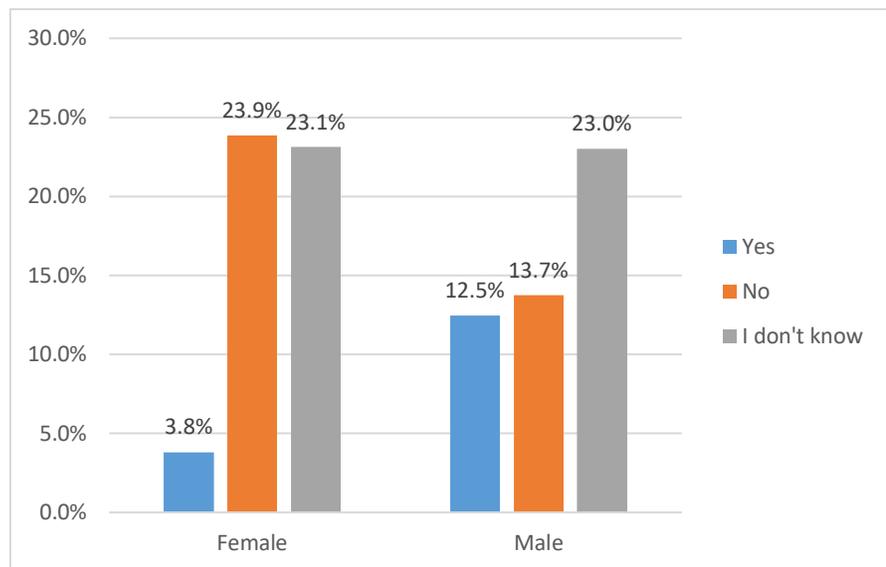
There was a significant increase in negative responses ('no') compared to the 2016 survey on grade 6-9 (31% in 2016 – 38% in 2019). Conversely, there was also a decrease in students who were interested in a skilled trade job (19% in 2016 – 16% in 2019). The uncertainty response was fairly stable across the last three years.

The Atlantic Provinces are only meeting approximately 1/3 of their targeted amount of new apprenticeships and have one of the lowest distributions of skilled trade workers in Canada³¹. This is very concerning, and the results of this survey show that there continues to be a low level of interest in skilled trade jobs among youth in Nova Scotia. This emphasizes the need for greater awareness of skilled trade jobs to create greater curiosity among youth for these jobs.

High level of awareness of skilled trades roles were found to be correlated with interest in these jobs. For example, 14% of students who knew someone in a skilled trade said they were interested in a skilled trades job, whereas only ~1% of students without role models in a skilled trades job, or who weren't sure, were interested in one.

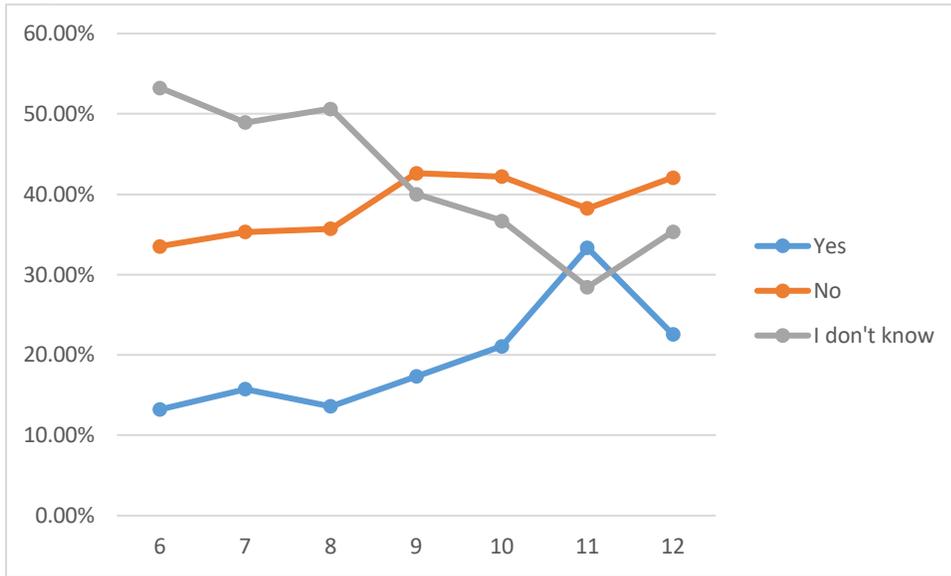
By gender

Male students were significantly more likely to report that they were interested in a skilled trades job (12.5% males vs. 3.8% females). Both males and females were equally uncertain about this career option.



³¹ Prism Economica and Analysis, 2019

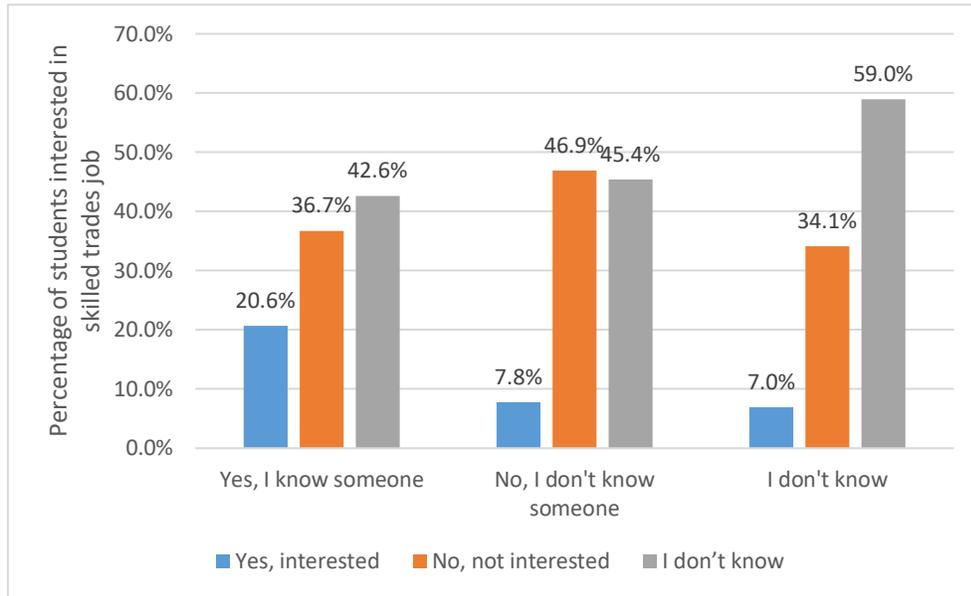
By grade



Grade appeared to have an effect on interest in a job in the skilled trades. On average, there was an approximately ~20% increase in students being interested in a skilled trades job from grade 6 to grade 11. This could be explained by the higher awareness of senior high students of other individuals in

their life holding a skilled trades job.

Effect of Knowing Someone in a Skilled Trades Job on Student Interest in Skilled Trades



Jobs

Of all students who knew somebody who worked in a skilled trades job, only 20% of students indicated that they are interested in a skilled trades job. Overall, students who knew someone were more likely to report being interested in a skilled trade job

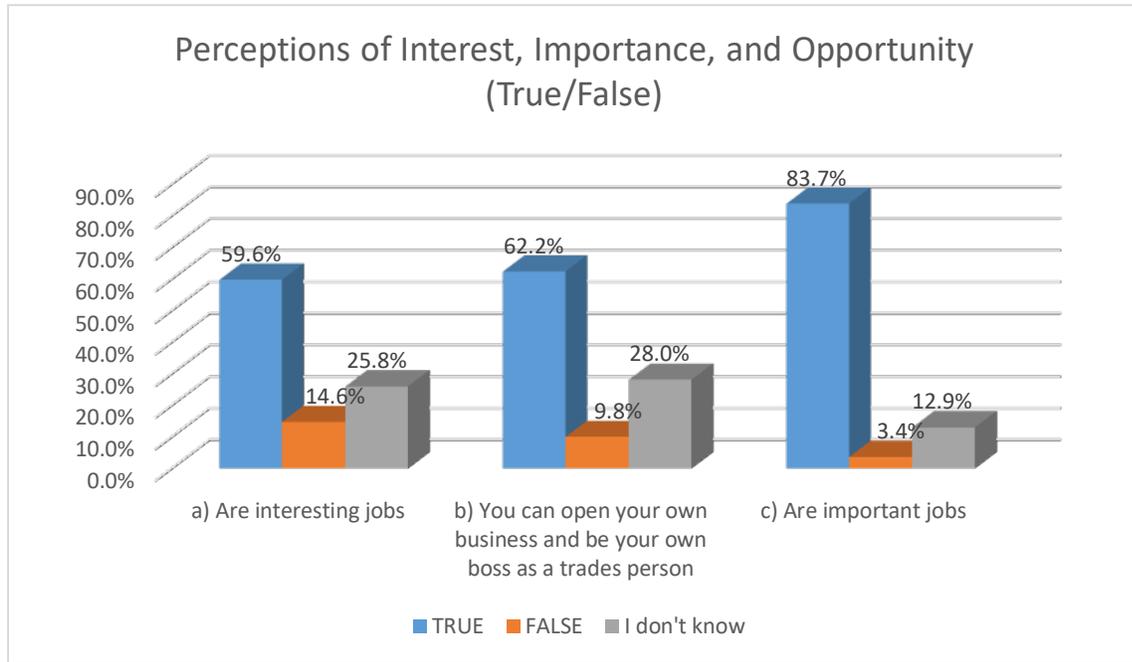
than students who didn't know anyone who worked in a skilled trade job.

Interestingly, when we invert the relationship, starting with examining all students who are interested in a skilled trades job, it was found that of all students who are interested, 85% of them reported knowing someone who works in a skilled trades job. This is consistent with the purported influence of familiarity.

Perceptions of Skilled Trades

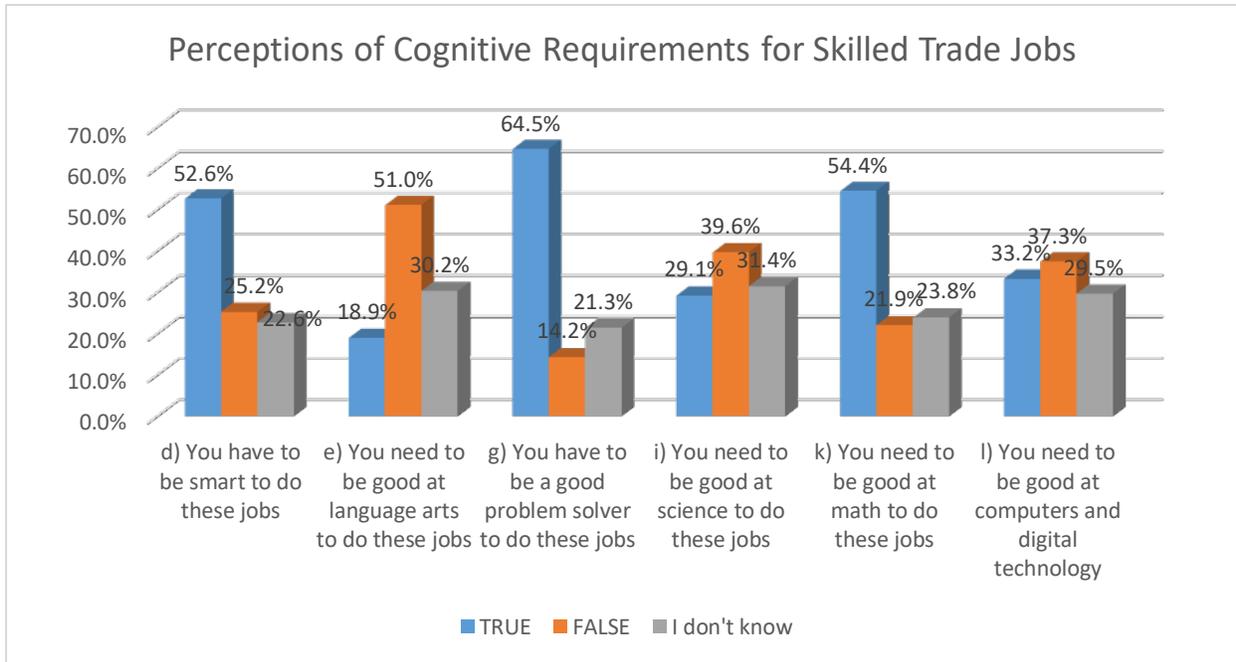
To prompt more detailed data about students’ perceptions of skilled trades, they answered the following true/false questions. Students were able to respond, true, false, or I don’t know. The *I don’t know* option was included to mitigate uncertainty being captured as an affirmative/negative response.

What statements do you believe to be True/False about skilled trades?



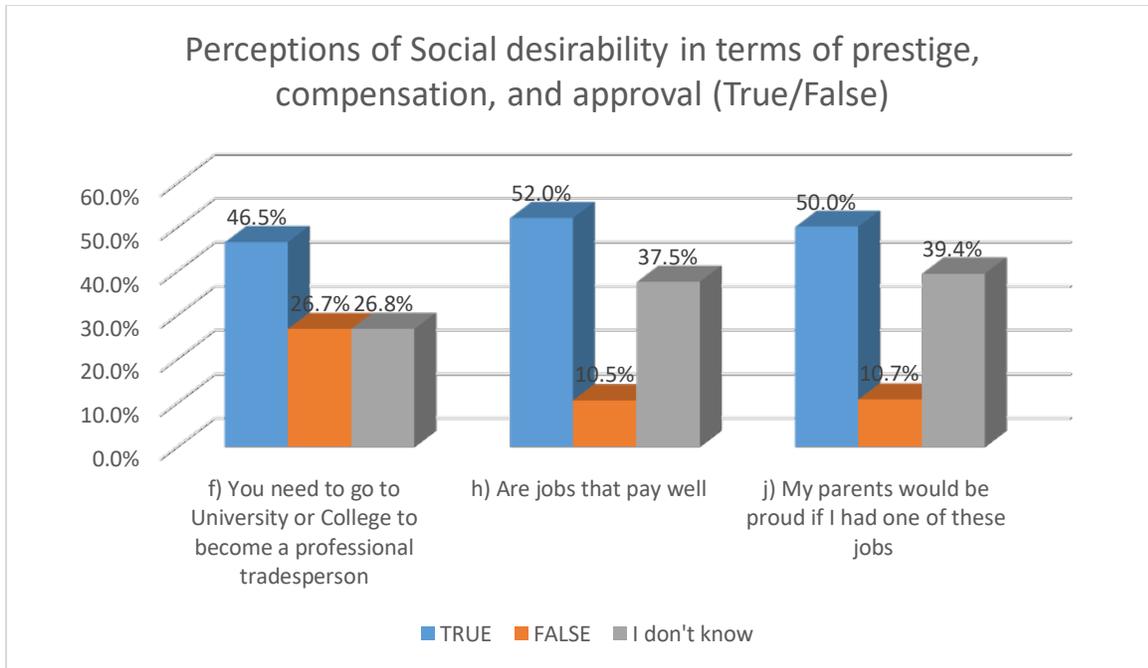
This graph shows the responses to questions a, b, and c, which all received more positive responses, and less negative responses overall. These responses, in particular the ‘false’ responses, demonstrate that youth in the region have an overall positive impression of the social desirability of these roles, as reflected in their promise of interest, importance, and opportunity. It was also interesting to note that more than 60% of students recognized the entrepreneurial opportunities associated with skilled trades roles. Interestingly, of the ~3% of students who expressed an interest in entrepreneurship, only 5.5% of those (or 35 students) expressed an interest in opening a business that was skilled trades related. This suggests that, while students have some awareness of this option, entrepreneurship is not the pull that draws students along a skilled trades career pathway.

Overall, these findings are very similar to the findings of the 2016 survey, though slightly less students responded ‘true’ to the first statement (“are interesting jobs”) (2016: 62.5% - 2019: 59.6%), and conversely more students responses ‘false’ to the statement (2016: 9.7% - 2019: 14.6%).



This graph shows the responses to questions d, e, g, i, k, and l. These variables mostly received less positive (true) responses, and more negative (false) or uncertain (don't know) responses. These statements evaluated participants' perceptions of the cognitive requirements for skilled trades jobs, including the need for competency in language arts, math, science, and computer technology. A general statement about the requirements to 'be smart' was included to capture young peoples' perceptions of skilled trades jobs as generally the work of 'smart' people. The question about being good at computers and digital technology was added in this current survey (i.e., there is no 2016 data to compare these findings to). Overall, these findings are very consistent with the findings of the 2016 survey, though there was a slight increase in positive ('true') responses to all statements (d, e, g, i, k).

These responses are more consistent with the general stigma (anecdotal) that continues to linger around skilled trades roles. Broadly speaking, these roles tend to be perceived to require brawn over brain, and to require physical versus verbal interactions. These variables also relate to the social desirability of skilled trades roles, insofar as cognitive-oriented roles are socially privileged over physically-oriented ones (with the exception of professional sports). Interestingly, the responses to the question whether one needed to be good at computers were evenly divided, indicating a lack of awareness of how digital technology plays a role in skilled trades roles. There appears to be a prevailing stigma of wrenches and muscles vs computer-aided diagnostics and monitoring. In light of the responses captured in these two graphs it seems that while the majority of students perceived these roles to be interesting and important, they did not possess the cognitive affirmation to render them as a legitimate option for themselves. However, these results also call into question whether youth in Nova Scotia truly know what skilled trades jobs are, and the vast variety of jobs that are considered skilled trade jobs.



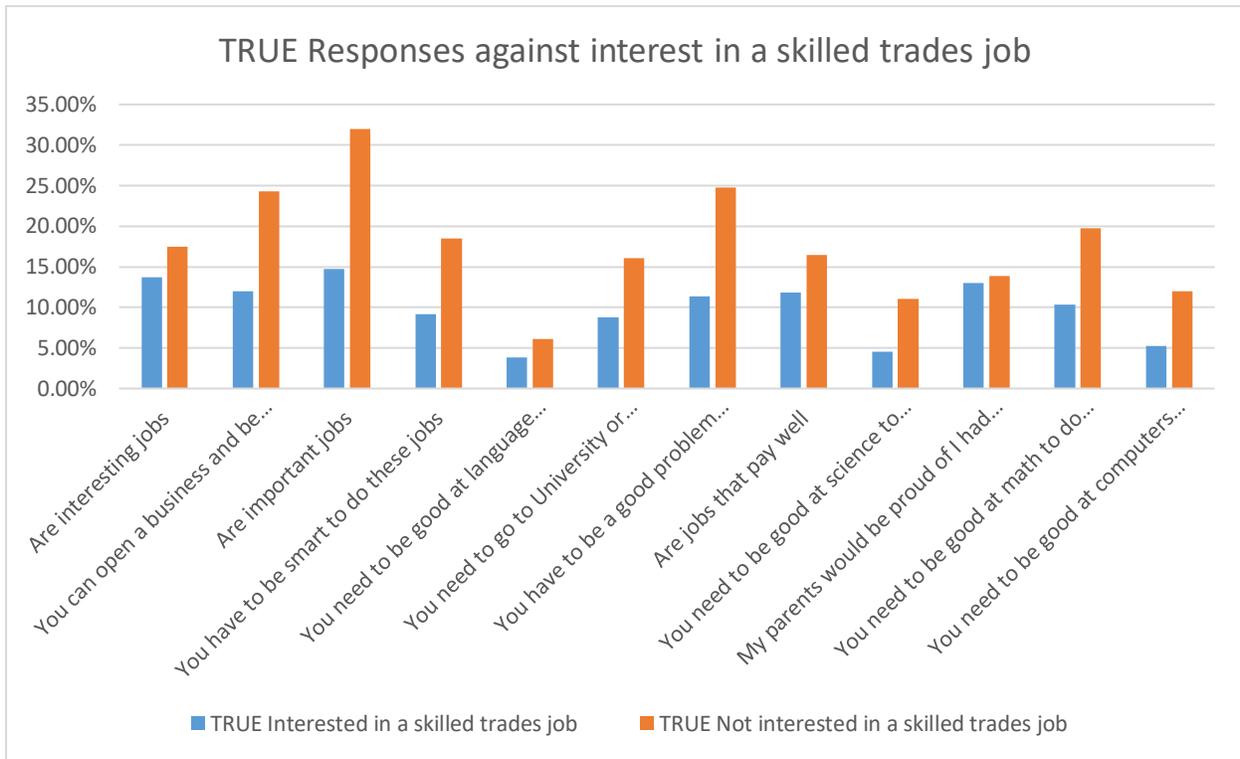
This graph shows responses to questions f, h, and j, which captured participants’ perceptions of the desirability of skilled trades jobs, relating to three key motivators: education pathway (prestige), money (compensation), and parental approval. These responses provide more insight into perceptual barriers to participation in skilled trades and revealed strong stigma builders for these careers.

Compared to the 2016 survey results, significantly more students responded positively (true) to the statements that skilled trade jobs pay well (2016: 47% - 2019: 52%), and that their parents would be proud if they help one of these jobs (2016: 44% - 2019: 50%). These findings are in line with the results that parents are a big source of guidance and information when youth develop career goals, and income is a significant career consideration driver.

Education pathway, compensation, and parental approval have already been established in this report as powerful influencers of young peoples’ career perceptions and intentions. This data, in particular the ‘don’t know’ responses, do however point to opportunities to shift young peoples’ perceptions and attitudes. Awareness and exposure programs aimed at all students will help to correct and inform educational pathway perceptions. Similar initiatives aimed at parents will help to inform this group of influences, and hopefully lead to more validation of the skilled trades pathway. This is particularly important, as youth are indicating that their parents and family members are one of the greatest influences on their own development of life goals, rather than teachers and guidance counsellors. Perceptions of fair/good compensation are relative and individual, and thus more difficult to address. However, pairing awareness programs with current labor market information (that includes job availability and compensation) will help to provide more informed perceptions among youth and their parents.

The Influence of Perceptions on Interest in Skilled Trades Job

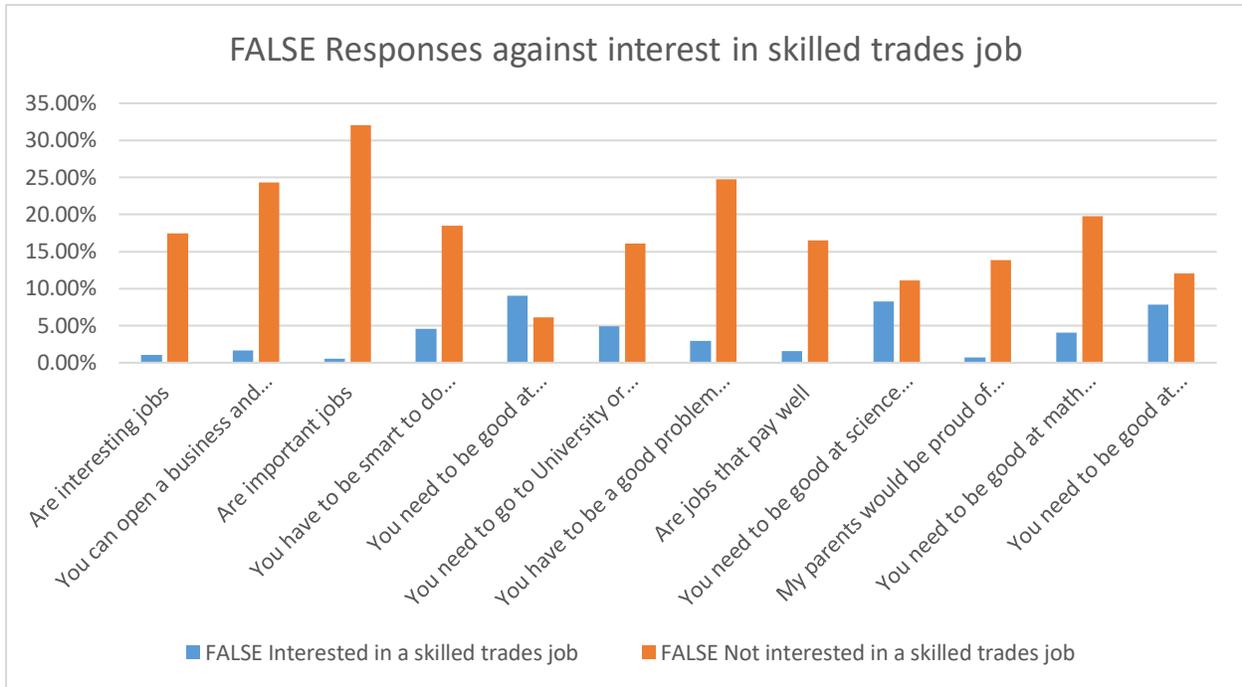
When we compared true and false responses (perceptions) against interest in a job in a skilled trade we found:



This data shows that students who are **not** interested in a skilled trade gave positive (TRUE) responses to the comments more frequently than students who were interested in a skilled trades job. This suggests that it is not the negative perceptions of the job characteristics (that were presented to them) that dissuade them from these jobs. That is, it is not so much a negative perception of skilled trades careers that motivates the dismissal of this option, but rather the lack of interest – which itself seems to be due to lack of experiential awareness with these roles. Most youth seem to be telling us that these are good jobs – for someone else, but not for them. This may be due to the plan A academic default pathway which means that they haven’t given an alternative much thought. These results may also be due to the priming effect already mentioned.

The results of this question are slightly different from the results of the 2016 survey: In the current study students who aren’t interested in a skilled trades job gave more positive responses to all of the comments than students who were interested, whereas in the 2016 there were certain comments (e.g., “Are interesting jobs”) that were scored more positively by students who were interested versus the students who weren’t interested in a skilled trades job. This is of particular interest, as it appears that even the students who are interested in the field aren’t particularly passionate or positive about it.

What is notable is the third bar – ‘Are important jobs’, a statement which students who aren’t interested in a skilled trades job rated as TRUE twice as often than students who are interested in a skilled trades job.



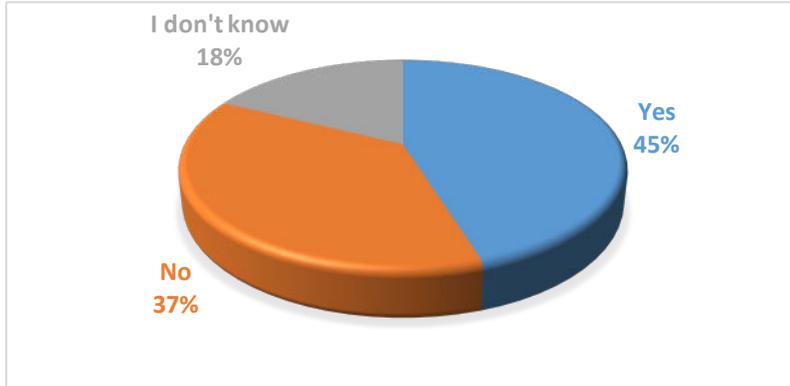
Conversely, those who were not interested in a skilled trade gave negative (FALSE) responses more often than those who were interested. This suggests that negative perceptions of skilled trades jobs do lead to lack of interest, but favourable perceptions do not necessarily lead to more interest. This is consistent with the findings from the open-text responses to the question *“If you’re not interested in a career in skilled trades, explain why not”*, where many students indicated a general lack of interest, or a definitive career goal that doesn’t include a skilled trades job. Interestingly, a number of students who indicated that they weren’t interested in a skilled trades jobs, demonstrated lack of awareness of what is included in this category. For example; *“Because I am interest in being a hair dresser”* (grade 6 female) or *“Because I want to be a chef”* (grade 6 male), are two responses that illustrate this.

Overall, the responses were more positive than expected. For students who did provide negative (false) responses, there were stronger perceptions that one did not need to be good at language arts or science to do these jobs. For some students who shared these perceptions, they were still interested in skilled trades jobs – despite, or perhaps because of these perceptions. Inasmuch as youths’ espoused interests (or lack thereof) are driven by awareness and experience, there is an opportunity to build more interest through awareness and exposure programs earlier on in students’ education.

Perceptions of Career Opportunities in Nova Scotia

The pervasive belief in Nova Scotia is that the real or perceptual lack of opportunity in the region is the driver of out-migration of youth. This section addresses this assumption and draws out some critical insights into youths' perceptions of career opportunities in Nova Scotia.

Do you have family or friends who live in Nova Scotia but work in another province?



This question was posed to provide insights into socialization and normalization of interprovincial mobility among participants. As expected, a considerable proportion (45%) of Nova Scotian youth have proximal experience with this mobility option.

Experience with the phenomenon of leaving for work is an important variable to understand insofar as it

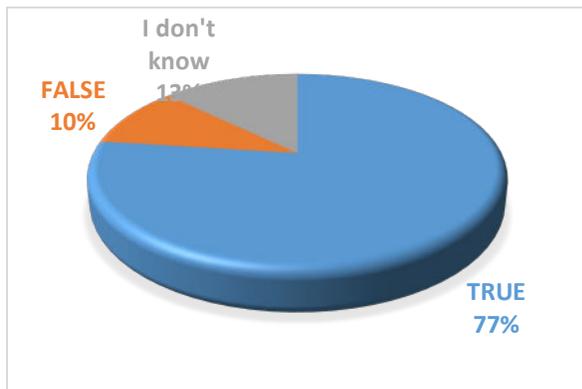
influences young peoples' own comfort levels or aspirations to consider the option. Familiarity helps to validate the choice of mobility and elevate it in the minds of youth to not just a reasonable option, but possibly a primary one.

Interprovincial Mobility

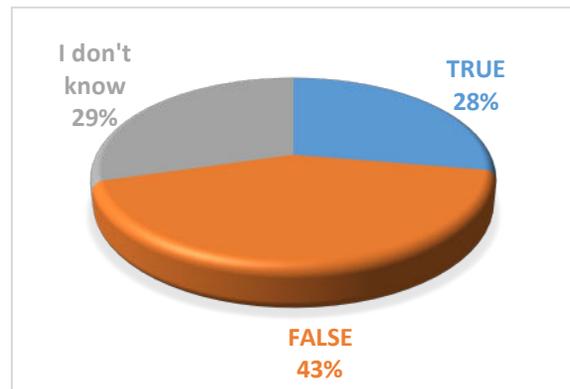
The driver of interprovincial mobility has historically been the absence of regional opportunity and employment coupled with myriad and lucrative opportunities in other provinces (i.e., out West). The assumption holds (anecdotally) that young people are anticipating a push from the Nova Scotia region by the same economic limitations. The following group of questions challenge this assumption by soliciting young peoples' perceptions of their future employment options regionally.

Which statements do you believe are true or false about jobs in Nova Scotia?

a) There are good jobs in Nova Scotia:

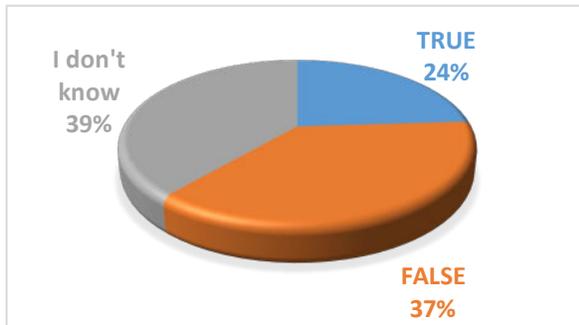


b) The best jobs are in the cities:

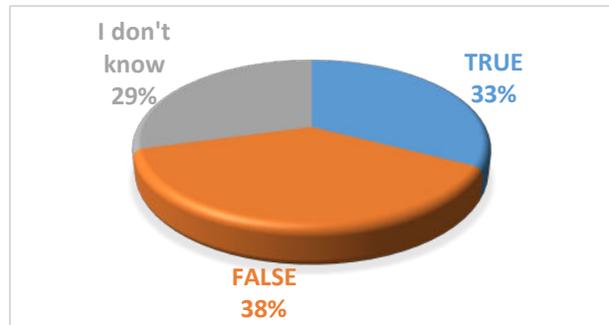


Both of these questions reveal significant optimism among our youth regarding career opportunities in their broad (NS) and regional environments. There appears to be an increase in negative (FALSE) responses to the question (b) compared to 2016: While in 2016 40% of students said that it's not true that the best jobs are in the cities, 43% are reporting this to be false in 2019. There is a slight inverse relationship between positive (true) responses about there being good jobs in Nova Scotia and grade level, with a drop of approximately 10% between grade 6 and 10, plateauing at that point. This may reflect the general disengagement that occurs in youth during this same period and may not be a reflection of declining optimism in career options generally. Interestingly, there is an approximately 14% increase in positive (true) responses about the best jobs being in the city between grade 6 and 10. This is very similar to the 2016 survey results.

c) The best jobs are out west:



d) It will be easy to get a job when I'm older

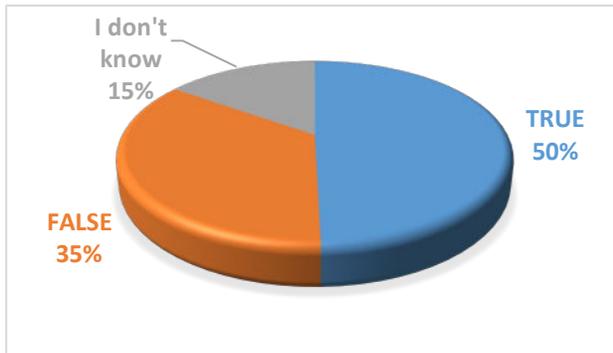


Responses to statement (c) show that youth in NS do not share the anecdotal common regional assumption that the best opportunities are to be found out west. These responses may be explained by variability in the perception of what constitutes the 'best' jobs and may show that youth are able to evaluate some of the different aspects that comprise a good job. When this question was analyzed against the question *Do you have family or friends who live in NS but work in another province*, it was not shown to influence the responses (i.e., knowing someone who has been living here but working elsewhere, did not change their perceptions of the best jobs being out west). Interestingly, students who identified an academic pathway after high school were more likely to mark statement (c) as false, suggesting optimism in the range and locations of professional careers regionally.

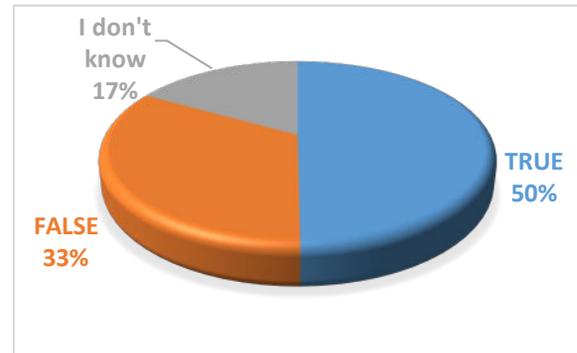
Responses to statement (d) were fairly equally divided. Participants seem to be communicating optimism in the availability of good jobs regionally, but lack of confidence in their future ability to take advantage of those opportunities. Interestingly, males were significantly more likely to be optimistic about how easy it will be to find a job than females (36% males vs. 28% females).

Compared to the 2016 survey results, there seems to be a slightly higher proportion of students who aren't as optimistic about finding a good job when they are older (question (d)), as 32% of students responded with 'false' in 2016, whereas 38% of students responded with 'false' in 2019. Furthermore, fewer students believed that the best jobs are out west (question (c)) than do currently (2016: 31% - 2019: 24%).

e) To get a good job I will need to go to University:



f) To get a good job I will need to go to College:

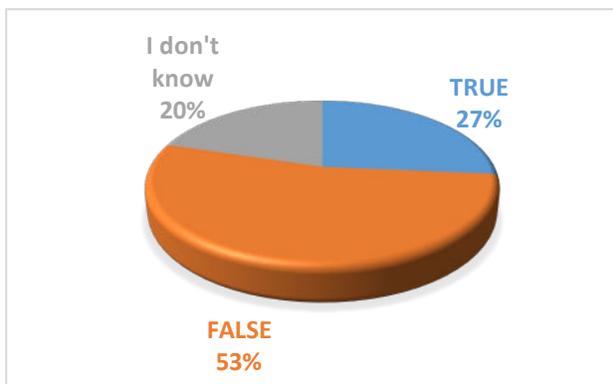


Half of students are in agreement that post-secondary education is a prerequisite for 'good' employment, although more than 45% disagree or are uncertain. This may again be attributable to mixed perceptions of what a 'good job' is. Alternatively, it may speak to the need for more deliberate career education to help students to understand the pathways to employment.

There was a significant decline in students believing that they need post-secondary education to get a good job compared to 2016. In 2016, 58% of students believed that you needed to go to University, and 53% of students reported having to go to College to get a good job.

Not surprisingly, there is a significant overlap between the students who indicated that they want to follow an academic pathway (specifically University) out of high school, with those who believe that they require this pathway to get a good job. The overlap was considerably less significant for College education, suggesting that many students believe that Community College is an available pathway to employment, but not an essential one. This reinforces the importance of developing career maturity and an awareness of the link between academic requirements and employment in certificate/diploma-credentialed careers.

g) I can get a good job without finishing high school:



It is surprising to note that a little more than a quarter of students marked this question as 'true'. When analyzed against the question regarding pathway after high school, it was found that almost 18% of students who do plan to go to College or University, marked this question as true. When combining 'true' and 'don't know' responses, we see that almost half of the students believe it may be possible to get a good job without finishing high school. This may be due to

different perceptions of what constitutes a 'good' job. These students may have siblings who are already employed in part-time jobs that they regard as 'good'. This may indicate the importance of more education about the type of lifestyle they wish to have when they are older, and the kind of job (income)

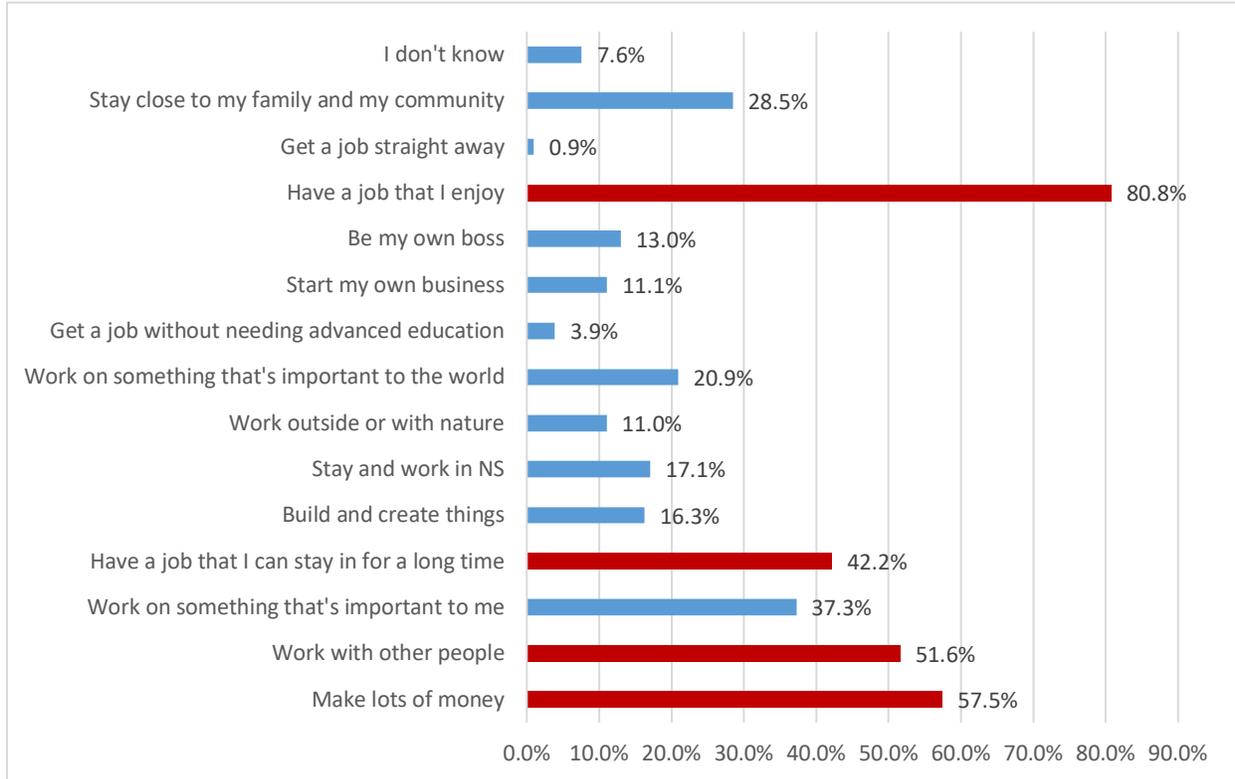
they would require to support that. Furthermore, students may not have the financial acumen to understand the link between income and lifestyle.

Responses to these true/false questions indicate that youth perceptions of career opportunities in the region (as compared with other regions), generally, are more optimistic than expected. However, responses do indicate some concern about the future availability of jobs, as well as a lack of awareness of the education requirements and pathways for future careers.

Career Consideration Drivers

Students were asked the following question “When I think about my future jobs, what is important to me is” ...

Students were able to select up to four of the given responses



Compensation continues to be one of the primary driving forces for career selection (~58%). However, the largest reported career driver is having a job that one enjoys (~80%). Job satisfaction is becoming of greater value for people, especially among individuals age 25-34. According to 2016 Statistics Canada report, 86% of 25-34-year-olds are satisfied with their job, and 80% of individuals 45-64-years old are reporting job satisfaction in Nova Scotia³². Working with other people also appears to be a powerful driver in career consideration (~51%). This is in line with similar findings that roughly a third of the students are reporting interest in professions that require working with others, such as health care professions, or teaching, as well as the findings of the WISEatlantic survey, which found that roughly 50% of youth want a job in which they can work with other people³³. Lastly, it is notable that youth in Nova Scotia are thinking about job security at such a young age. ~44% of students reported that holding a job that they can stay in for a long time is of great importance to them. This is consistent with the expressed importance of job security to the new generation (Generation Z), that is often reported in popular literature³⁴.

³² Job satisfaction by age group and sex, Canada, provinces and regions, 2019

³³ Franz-Odendaal, Blotnick, French, & Joy, 2016

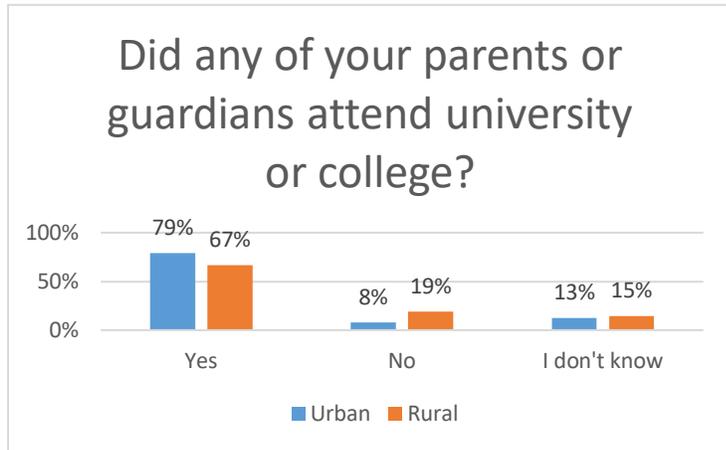
³⁴ First-Ever National Generation Z Survey Study Yields Valuable Insights for Employers, 2019

A similar survey/question was asked by Cape Cod Chamber of Commerce in Massachusetts with grade 6-9 students (2018). The results of their survey indicated similar findings, with youth reporting that they value job-enjoyment, job security, and income most³⁵.

³⁵ McGee & Borges, 2018

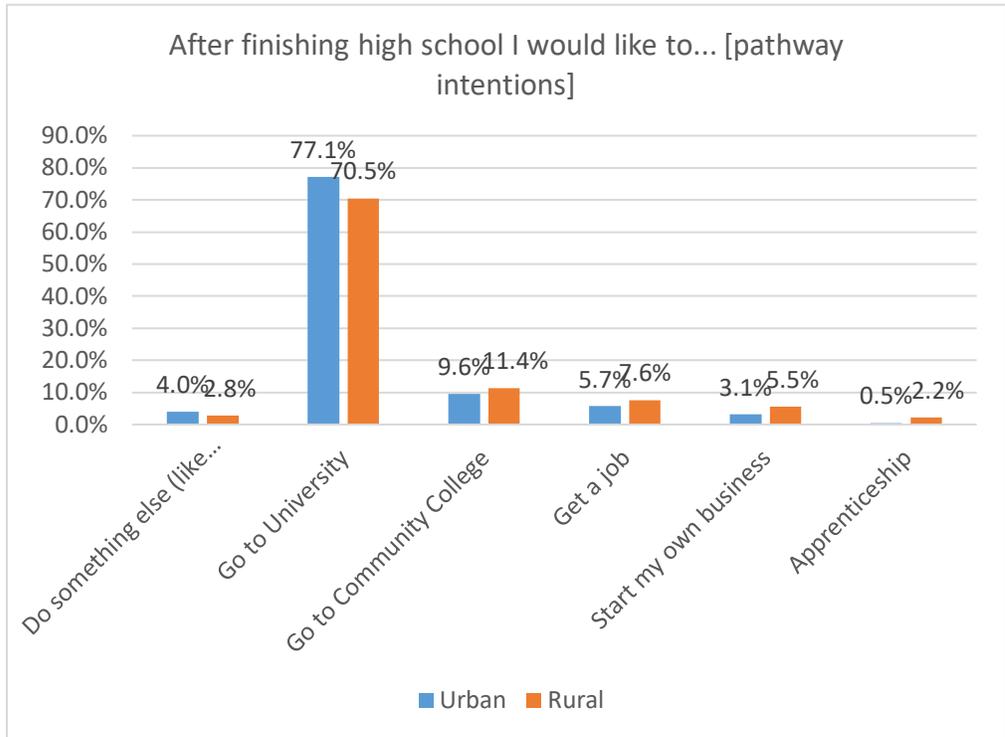
Urban vs. Rural

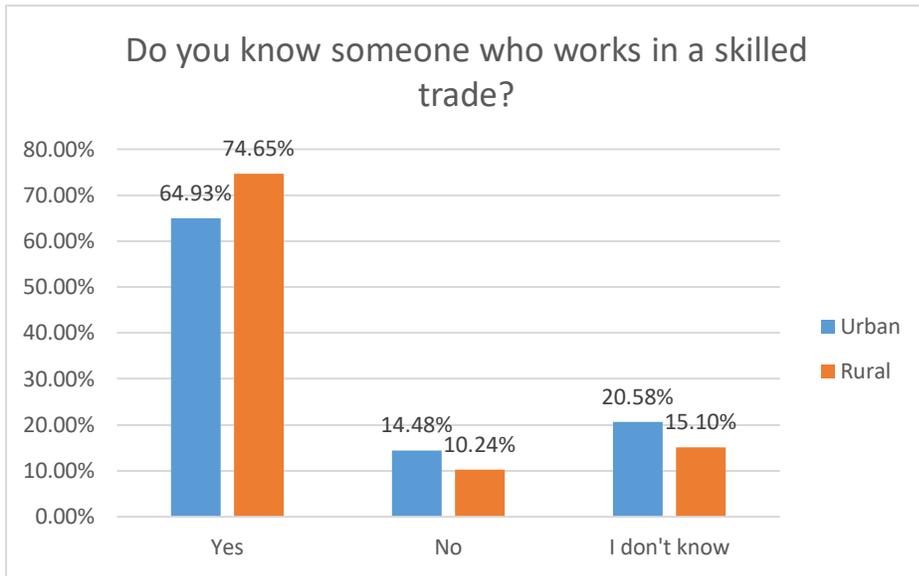
An analysis was conducted to compare urban versus rural responses. To do this, the results of three of the Regional Centres of Education were examined in detail. One predominantly urban centre of education (HRCE) was compared to two predominantly rural centres of education (TCRCE & CBVRCE). The same school regions were used in the rural/urban comparison from the 2016 study. Variables that showed significant response differences (i.e., calculated at greater than 4%) are reported in this section.



There was a significant difference in the reporting of parent education levels. This was also consistent with the reporting of pathway intentions of students in rural versus urban locations. Urban students were significantly more likely to report that their parents have post-secondary education, and to express an interest in a university pathway.

Rural students were more likely to express an interest in a community college pathway, or in an alternative option (i.e., get a job, start own business). Rural students were slightly more likely to report an interest in entrepreneurship.



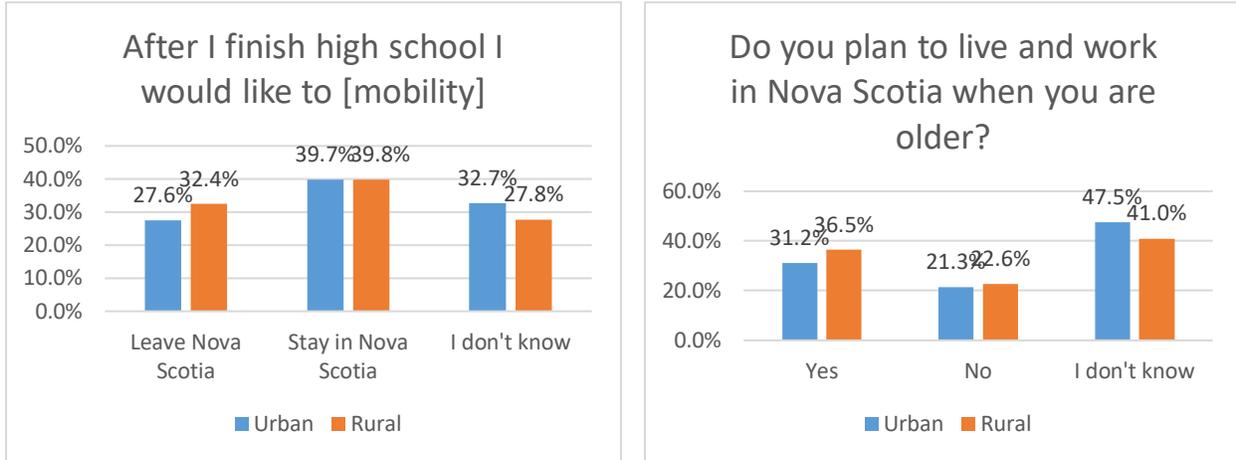


Significantly more rural students knew somebody who works in a skilled trade job. As previously stated, high level awareness of skilled trades roles is found to be correlated with interest in these jobs. For example, 85% of students who are interested in working a skilled trade job know someone who works in a skilled trade job.

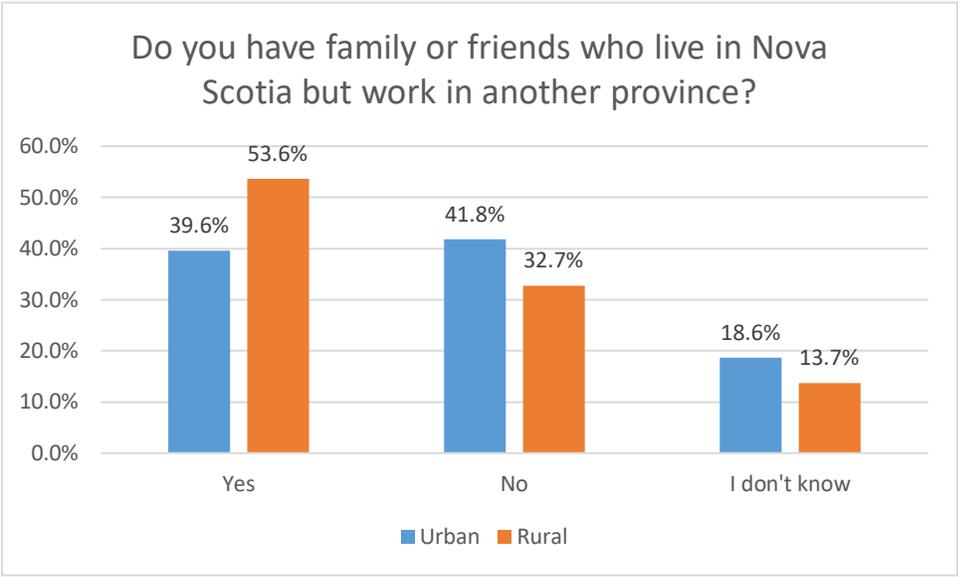
Hence, it is expected that more rural students are interested in a skilled trades job, as they have higher levels of awareness of individuals working in such.

Mobility interests

Urban and rural youth showed equal intentions to leave the region. Rural youth indicated a stronger desire to leave Nova Scotia, while urban youth expressed more uncertainty. This may be because rural students find mobility a more compelling option and they see more opportunities in urban settings and other provinces. The amount of students who indicated that they wanted to stay in Nova Scotia was roughly equal between urban and rural youth.



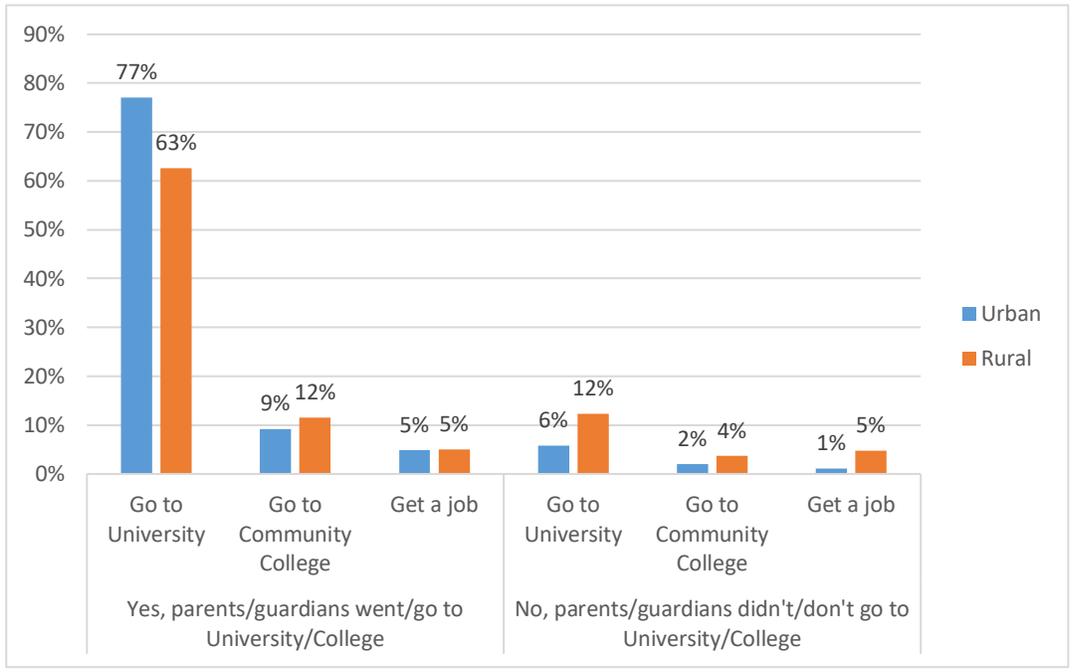
When this question is compared with responses to the second mobility question, we see a decline in the 'stay' responses for urban students in particular (39.7%-31.2%). For rural students, we see a decline in the 'leave' option, in which approximately 32% of students indicate they want to leave Nova Scotia after high school, but only roughly 22% of students cannot see themselves living and working in Nova Scotia when they get older. The uncertainty answer rose sharply from the intention to leave NS after high school to the intention of living in Nova Scotia when they are older, for both rural and urban youth (32.7%-47.5% urban; 27.8%-41.06% rural).



As expected, rural youth were significantly more likely to report an awareness of a proximal role model (family or friend) who has relied on employment in another province, while maintaining residence in Nova Scotia. This speaks to the significant potential influence

of the socialization and normalization of interprovincial mobility on the intentions of rural vs. urban youth.

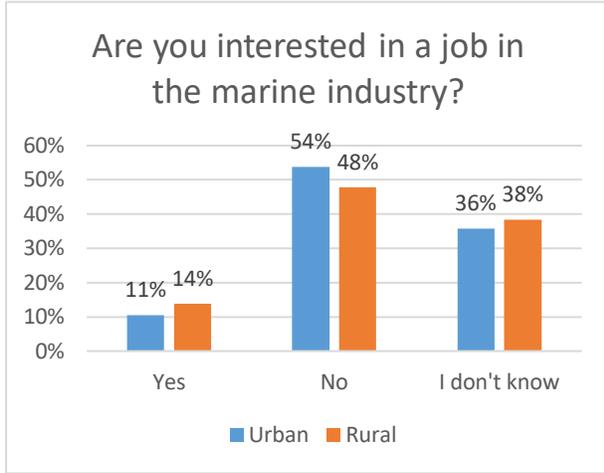
Effects of Parental Education on Pathway Intentions in Rural and Urban Youth



In line with the findings that students in urban areas are reporting greater parental education levels, and students in urban areas have higher intentions to continue their education in

a university setting, there is a significant effect of parental education on student pathway intentions, particularly in urban areas.

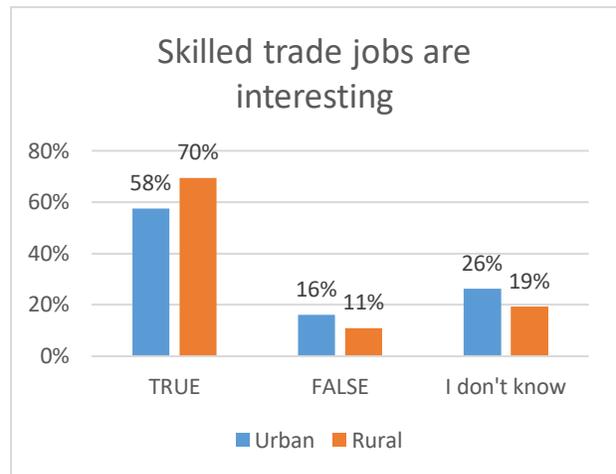
Career Interests

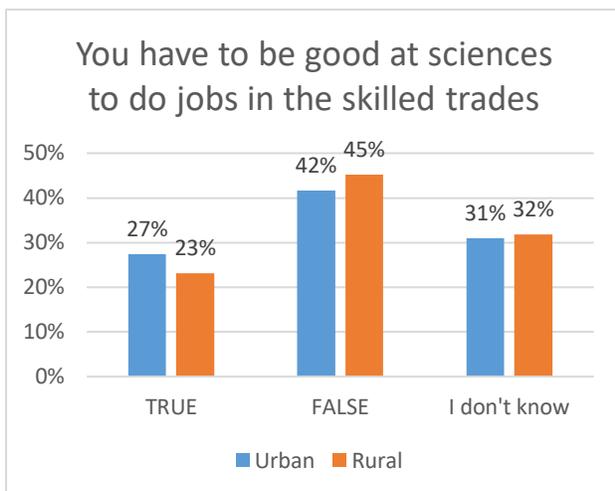
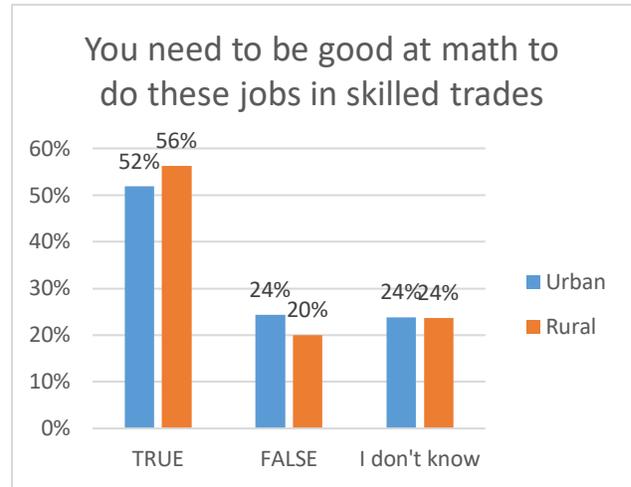
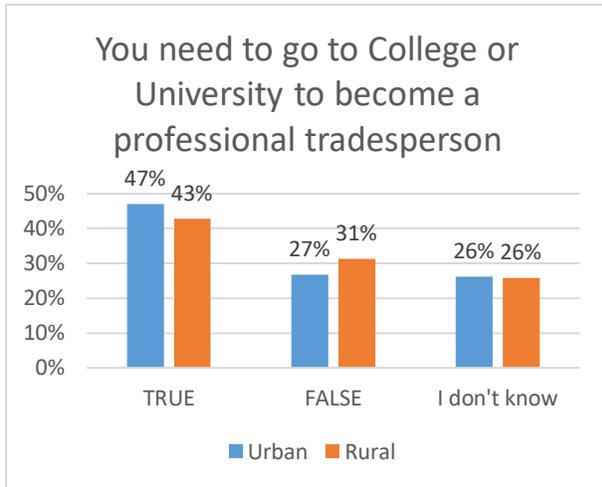
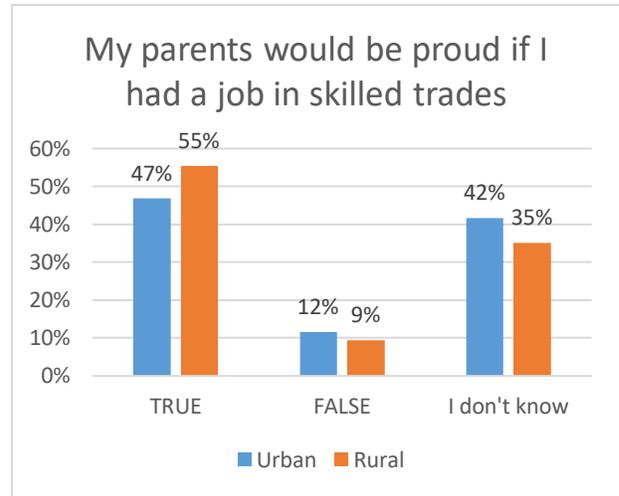
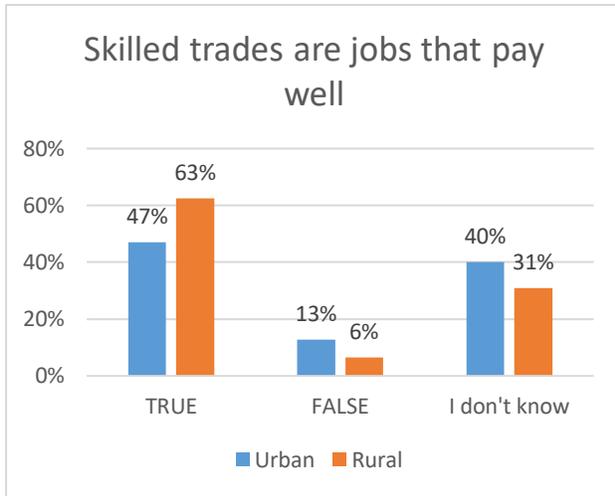


Significant differences were also found in the career interests of urban and rural students. Rural youth were slightly more likely to report an interest in marine-oriented careers, and significantly more likely to report an interest in skilled trades careers. Both urban and rural youth were equally uncertain about an interest in the marine industry or a skilled trade job, however urban youth were significantly more certain about their disinterest of a job in the marine industry or in a skilled trade job.

These findings are very similar to the results of the 2016 survey.

Perceptions of Skilled Trades Roles

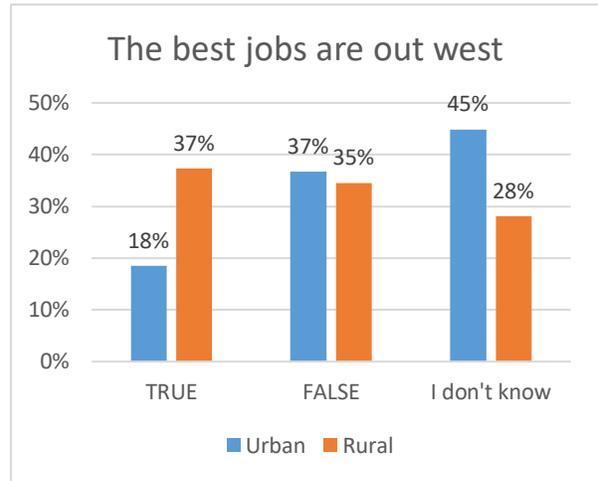
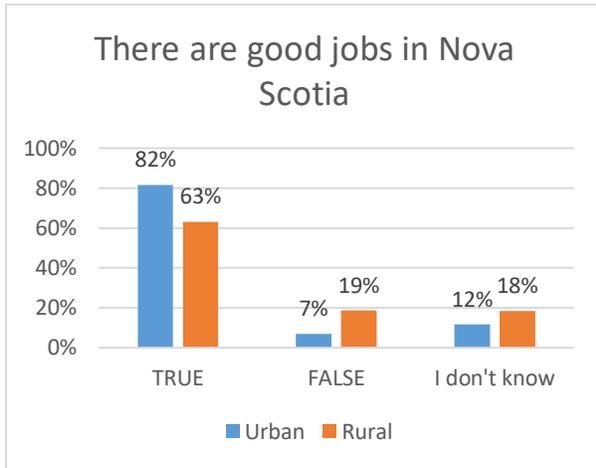




Seven areas of perceptions of skilled trades showed significant response differences between urban and rural youth. Rural youth were more likely to perceive skilled trades roles to be interesting, needing to be good at math, as well-paying jobs, and reported that their parents would be proud if they worked in the skilled trades. They were significantly less likely to report needing good problem-solving skills in order to work in the skilled trades. When these responses are combined with the 'career interest' responses, it underscores the importance of parental influence on student career intentions.

Interestingly, students from urban areas were more likely to report that they thought that a college/university degree was needed to work in skilled trades.

Jobs in Nova Scotia



Students living in rural areas often have additional challenges to consider when making career-related decisions, including the limited range of careers that may be available in their hometowns, and their social attachments to friends, and family.

Rural students were significantly more likely to communicate the belief that the best jobs are out west. Interestingly, only 9% of students who claim that they want to leave Nova Scotia after they finish high school believe that the best jobs are out west. This indicated that there isn't a perceived pull for students to leave NS for jobs out west, but rather a perceived push to leave NS. Similarly, rural students are significantly less optimistic than their urban peers in the availability of good jobs in NS.

Insights and Recommendations

- Youth have a lack of interest and knowledge of ocean-oriented career opportunities in the region (e.g., fishing, Navy)
- Lack of interest in ocean-related and skilled trade careers is due to lack of awareness, exposure, and accurate information
- There is strong evidence for the influence of parents, teachers, and media in the bias youth form towards certain career pathways
- This data provides little evidence of improvement at this time in supporting youth to make an informed decision about careers in regional growth areas such as ocean industries and skilled trades. Initiatives from key stakeholders in the public school system and extracurricular programs have been launched to build accurate awareness and knowledge about these opportunities. More time is needed to shift and improve the narrative and perceptions of these career areas.
- There is a need for highly interactive career exposure programs well before grade

Insights & Recommendations

Overall, the results from this study were consistent with those from the original 2016 study, with few areas showing significant changes. More significant response variation was seen between junior (grade 6-9) and senior (grades 10-12) students, with older students generally showing more certainty in their decisions, less interest in out of province mobility for work or study, and more interest in a broader range of next step pathways (i.e. college, apprenticeship, gap year versus defaulting to a University pathway).

Main Findings

Career Coaching

Youth continue to look to their parents as primary coaches for information and guidance when considering their future education and careers. It is recommended that the role of parents as career coaches be emphasized and leveraged more. A formal and structured communications campaign is recommended to alert parents to their powerful influence – reminding them that they are coaching even when they're not aware of it. Parents also need to be aware of the mixed messages they may be giving their children, with aspirational encouragement (e.g. *you can do anything*) followed with casual redirection (e.g. *you're too smart to waste your time on one of those dirty trades jobs*). There was much evidence in this study of parents' influence, and unfortunately also evidence that the guidance is often ill-informed. Efforts aimed at improving awareness of the ocean industry and the range of ocean-related careers available across the region and the country need to target youth and their parents. Neither group currently recognizes the future-potential of this industry, or understands the broad range of both STEM and non-STEM careers that it comprises.

While youth did not identify teachers as key career coaches, they can be powerful allies in reinforcing and validating additional educational pathways, and in anchoring STEM and ocean learning to regional industries and careers. Similar to the 2016 study, youth again identified that they prefer digital sources of career information. Teachers can do more to connect youth to technologies like MyBlueprint, and socialize their utility and accessibility, to encourage youth to explore them independently or with peers or parents.

Marine Careers

The study showed that awareness and attitudes regarding marine-oriented careers are not improving, and there was even a small but significant decline in the intention to pursue a career in the marine industry. Similarly, the open-text responses to the question about the Ocean Economy revealed low awareness of the industry, and often emphatically pessimistic views of what that industry might include. Many of the comments defined ocean industry in ecological terms (i.e. making money by polluting the ocean and taking things from the ocean). There was some evidence that youth are aware of traditional ocean industries (e.g. fishing) generally but that their opinions and points of view are limited to conservation issues that polarize ecology with economy. This seems to be a factor in mitigating interest

in marine careers, as they perceive ocean industries to be exploitative and polluting. There is an opportunity to improve ocean education and communication about the industry to emphasize the ways in which industry is a key contributor to activities and technologies relating to sustainable resource use, ocean clean-up and remediation, energy efficient transportation, renewable energy generation, sustainable fishing and cultivation of seafoods and ocean pharmaceuticals, and to improved knowledge and exploration of the ocean. It should be emphasized that the intention of this study and of COVE's work is not to steer all maritime youth toward ocean careers, but rather to ensure that youth can fairly and accurately assess all potential pathways, including regional opportunities, so that they are making informed decisions and not dismissing potential avenues because they possess misinformation or have misguided coaching.

Skilled Trades

Similarly, there was a slight decline in interest in pursuing a career in skilled trades. Grade was shown to be a significant factor in awareness and interest, with informed perceptions and increased intentions towards skilled trades careers found among the older students. Many youth continue to offer positive evaluations of skilled trades roles, but conclude that these are good jobs, for someone else. Lingering perceptions that these careers are unreliable (i.e. not stable) and poorly paid seem to strongly influence youth interest. This is consistent with the expressed career motivators that youth identified, that showed money and secure employment in the top four drivers for career considerations. The other top two career drivers were, *having a job I enjoy* and *having a job where I can work with other people*. The open text responses in the study also showed that many youth perceive skilled trades careers to be isolating (e.g. *I don't want to work by myself all day*) or unenjoyable (e.g. *seems boring to fix the same thing every day*). It is recommended that any skilled trades communication strategies targeting youth address these four career drivers (i.e. these jobs are enjoyable, social, stable and well-compensated). This study and extant research have shown that these messages are most trusted if they come from a relatable role model.

Entrepreneurship

The data showed that youth interest in entrepreneurship continues to be very low, with similar results to the 2016 study (i.e. between 3-4 %). This data contradicts findings reported in the *'Turn and Face the Strange'*³⁶ study put out by the Brookfield Institute, which heralded this next generation of youth as the future of small business, and the cohort showing the highest entrepreneurial interest. It seems our region's youth are lagging in these interests and skills, suggesting a continued need to cultivate a mindset and skillset for entrepreneurship throughout the k-12 career and post secondary education, to ensure we are launching a cohort of youth with skills that will be flexible and relevant within the future economy.

³⁶ Thornton, Russek, & O'Neil, 2019

Gender and Career Literacy

This study showed some evidence of gender patterns in youth intentions and engagement that could be setting our youth up for workforce marginalization, or increased difficulty in identifying a 'good fit' early on. Males were found to be more passive and uncertain about their pathway intentions compared to females, and were less likely to seek out informed coaching. Females continue to be more likely to pursue University pathways and professional roles which seems to suggest that efforts to engage and empower females along traditional pathways have been effective, but may have been achieved at the expense of engaging their male counterparts. It is recommended that the powerful strategies that have been used to provoke females to think about what's next be applied to all youth.

A more worrisome finding is that females are considerably less interested in exploring growth industries and careers such as the marine industry and skilled trades. It is important that females be as well-positioned to participate and lead the emerging ocean economy as their male counterparts are. Regrettably, this study suggests that young females are not well-oriented to the myriad opportunities that will be available to them. Indeed, current female representation across marine careers is estimated to be as low as 2%³⁷. We can take a lesson on preparing females for emerging industries from the ICT sector. Because girls and women were not socialized, career counseled, and encouraged to pursue careers in ICT, they have been missing out on the opportunity to reap the financial and social and security benefits that participation in this industry yielded over the past few decades. Not only have women been late to the ICT occasion, they have been slow to catch up. It is important that we not repeat this scenario – for the benefit of women as well as the benefit of our ocean sector, and as evidence of our commitment to sustainable development goals (SDG5) for achieving gender equality and empowering all women and girls³⁸.

Competency Development

A further insight of the data is that youth do see the beneficial connection between extracurricular activities, co-ops, part-time jobs, and teams, and their readiness for post-secondary education and the work force. However, the opportunities for these are still limited, with employers reluctant to hire youth into co-op or part-time paid positions. Mandatory workforce readiness courses in school, coupled with business and financial acumen learning would better position our youth to seek out such opportunities, better-equip them for these roles, and boost employer willingness to take on younger employees. Further, the existence of co-curricular records needs to be a topic of conversation with students, as many appear to not be familiar with them. Guidance counsellors also need to be better equipped to have conversations about the various pathways available to students. Good grades should not default the conversation to University options only; similarly, poorer academic performance should not default the conversation to skilled trades options only. These dated stereotypes need to be challenged, and pathway conversations need to take into consideration a combination of variables that include interest, experience, innate talents and academic performance.

³⁷ Angevin, 2018

³⁸ EuropeanParliament, 2018

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Appendix A: Career Categories

CATEGORY	EXAMPLES
MEDICAL AND HEALTH PROFESSIONS	Doctor, nurse, physiotherapist, massage therapy, dentist, veterinarian, psychologist
VISUAL AND PERFORMING ARTS	Performing arts (singer, actor, youtuber, musician, dancer), visual arts (seamstress, artist, cartoonist, filmmaker..., tattoo artist)
PROFESSIONAL SPORTS AND RELATED	Professional sports, including related jobs such as coach, agent, equipment manager, trainer
MILITARY, POLICE, FIREFIGHTING	First responder, paramedic, park ranger, coast guard
RETAIL OR NON-PROFESSIONAL	Retail, waitress, bartender, flight attendant, fitness instructor, personal trainer
STEM CAREERS (NON-MEDICAL)	Accountant, engineer, scientist, architect
NON-STEM PROFESSIONALS	Lawyer, office job, banker, pilot, publisher, editor, author, journalist, government/politics
IT	Computer programmer, video game designer, video gamer, online illustrator or cartoonist
AGRICULTURE, AQUACULTURE & LANDSCAPING	Farmer, fisherman, lobster trapper
SKILLED TRADE	Mechanic, hairdresser, chef, carpentry, electrician, welder, esthetics (makeup, nails), car painter